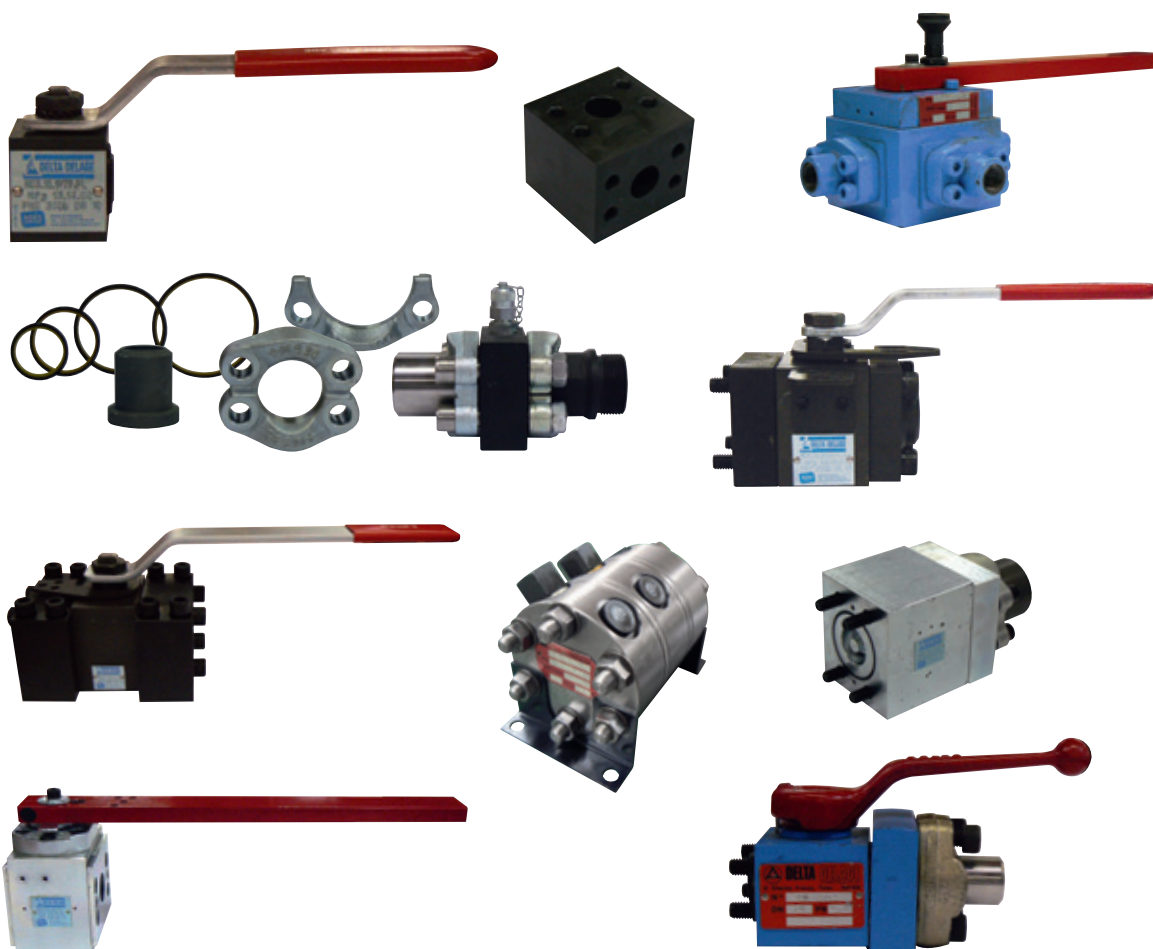




## Catalogue ROBINETS HYDRAULIQUES

> Clapets anti-retour - brides hydrauliques

## HYDRAULIC VALVES CATALOG

> Non return check valves - hydraulic flanges

## KATALOG ABSPERRHÄHNE

> Rückschlagventile - hydraulische Befestigungsflanschen





# Historique

Summary  
Überblick



**Fondée en 1948** lors du lancement des robinets hydrauliques haute pression à raccords par brides, DELTA DELAGE™ a, dès l'origine, conçu et développé des solutions permettant de sécuriser les hommes, les équipements et la production dans les secteurs à forte contrainte. Rapidement, les produits DELTA DELAGE™ ont intéressé les secteurs de la Sidérurgie et de l'Energie.

Née de la fusion des robinets et clapets AUXIM™ (gamme Ferroviaire, Naval et Nucléaire créée en 1948) et DELTA DELAGE™, la société ADES Technologies est créée en 1994 pour apporter une offre globale répondant aux besoins spécifiques de chaque secteur. Elle associe l'expertise de ces grandes marques, élargit les domaines d'applications de leurs produits et développe de nouvelles solutions.

La volonté d'apporter un service au plus près des clients a conduit ADES Technologies à compléter son portefeuille de produits par l'acquisition de la marque RAFLEX en 1998 (raccords basse pression) et la création des marques DELTAFLEX™ en 2003 (brides et blocs hydrauliques haute pression selon les normes SAE3000, SAE6000 et PN400) et STANDIX en 2014 (raccords haute pression norme 2353/ISO 8434-1).

Vous découvrirez dans ce catalogue l'ensemble de la gamme DELTA DELAGE™. Mais ADES Technologies peut également proposer des adaptations en fonction de spécifications particulières.



**Founded in 1948**, at the launch of high-pressure hydraulic valves flanged connections, DELTA DELAGE™ since the beginning conceived and developed solutions to protect men, equipment and production in high stress areas. Quickly, the DELTA DELAGE™ products turned to other industry sectors such as Steel and Energy industries.

Born from a fusion between AUXIM™ valves (Railway, Naval and Nuclear range created in 1948) and DELTA DELAGE™, the company ADES Technologies is created in 1994 to bring a global offer meeting the specific needs of each sector. It associates the expertise of these famous brands, widens the scopes of application of their products and develops new solutions.

The willing to provide a service closer to customers led ADES Technologies to complete its product portfolio by acquiring the RAFLEX brand in 1998 (low pressure fittings) and the creation of brands DELTAFLEX™ in 2003 (high pressure flanges and hydraulic blocks according to the standards SAE3000, SAE6000 and PN400) and STANDIX in 2014 (high pressure fittings standard 2353 / ISO 8434-1).

You will discover in this catalogue the whole range of DELTA DELAGE™ products. ADES technologies can also propose adaptations according to particular customer specifications.



**Seit 1948** hat DELTA DELAGE™ von Anfang an Lösungen gesucht und weiterentwickelt, während Einführung von hydraulischen Kugelhähnen mit Flanschverbindung gegründet, um die Sicherheit der Männer, Maschinen und Produktion im Bergbau zu gewährleisten. Sehr schnell wurde die DELTA DELAGE™ Produktion für andere Industriesektoren interessant: Schifffahrt, Eisenbahn und etwas später die Eisen- und Stahlbauindustrie.

Nach der Fusion mit den bereits bekannten Marken AUXIM™ (seit 1948 für die Eisenbahn-, Schifffahrt- und Atomsektoren gegründet) und DELTA DELAGE™ wurde ADES Technologies im 1994 gegründet, um die Spezialisierung der einzelnen Branchen gemeinsam anbieten zu können. Durch diesen Verband beförderte ADES Technologies die Weiterentwicklung neuer Produktreihen dank einem bedeutenden Know-How und einem breiten Produktprogramm.

Im 1998 kommt die Firma RAFLEX (in der Herstellung von Verschraubungen sowohl für den Eisenbahnsektor, als auch für die Schifffahrt und die Chemieindustrie spezialisiert) hinzu, DELTAFLEX™ (für hydraulische Hochdruckflanschen und Blocken je nach SAE3000, SAE6000 und PN400 Normen) im 2003 und STANDIX (Hochdruckverschraubungen je Norm 2353/ISO 8434-1) im 2014. So konnte ADES Technologies die Produktpalette entsprechend erweitern.

Dieser Katalog gibt Ihnen eine gute Übersicht des gesamten Produktbereichs. ADES Technologies fertigt auch Sonderteile nach Kundenspezifikationen bzw. deren speziellen Bedürfnissen.



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Les produits ADES TECHNOLOGIES répondent à la directive des équipements sous pression : PED 97.23.CE, pour les fluides liquides du groupe 2 dans leurs conditions d'utilisations (pour autre utilisation nous consulter). Les modèles et références présentés dans cette documentation ne constituent pas un document contractuel, et peuvent se trouver modifiés sans préavis, pour une évolution technique.

The products designed by ADES TECHNOLOGIES are complying with the prescription given for under pressured devices PED 97.23.CE, for liquids group 2 within their operating uses (for other applications please contact us). Models and references included in this documentation are not contractual and we reserve the right to change them at any time, further to technical improvements.

Die ADES TECHNOLOGIES Produkte antworten auf die Direktive der Ausrüstungen unter Druck PED 97.23.CE für die flüssigen Flüssigkeiten auf Gruppe 2 in ihren Benutzungsbedingungen. (Uns in anderer Benutzung zu Rate zu ziehen). Modelle und Referenzen in dieser Dokumentation sind nicht vertragspflichtig und können aus technischen Gründen jederzeit geändert werden.



**Toutes les ventes de matériels, quelles qu'en soient la nature et l'origine, le sont expressément aux conditions précisées ci-dessous, lesquelles s'imposent même si le cocontractant en a de différentes. Toutes les ventes sont faites avec réserve de propriété au profit de la Société ADES TECHNOLOGIES.**

## 1 - FORMATION DU CONTRAT

Toute commande - étude de matériels et accessoires n'est définitive qu'après acceptation par la Direction de la Société ADES TECHNOLOGIES, mais elle est définitive vis-à-vis de l'acheteur dès sa signature du bon de commande. Minimum de facturation 160 € Net H.T.

Toute résiliation de commande, quelle qu'en soit la raison, ouvrira le droit à ADES TECHNOLOGIES, soit de poursuivre en exécution du marché, soit de demander des dommages et intérêts pour couvrir ses dépenses et son manque à gagner.

Pour le cas où une modification du modèle interviendrait entre le jour de la commande et celui de la livraison, l'acheteur pourra résilier sa commande dans un délai de huit jours à partir de l'information reçue.

Tout produit conforme à la commande du client ne pourra être ni repris ni échangé sans l'accord d'ADES TECHNOLOGIES, et sera lié à une moins value.

## 2 - PRIX

Les prix des matériels, accessoires et/ou fournitures sont ceux pratiqués le jour de la commande, à la condition que celle-ci soit intervenue dans un délai d'un mois à partir de l'offre. Si cela n'est pas, sauf convention expresse contraire, les prix appliqués seront ceux du jour de la livraison.

Si l'objet de la commande est un marché à exécuter sur plusieurs mois, le marché pourra être assorti d'une clause de révision de prix qui sera précisée sur l'offre.

Les prix sont établis hors T.V.A., départ ateliers, port et emballages en sus.

Les matériels, accessoires et/ou fournitures sont toujours stipulés payables au siège de la Société ADES TECHNOLOGIES.

## 3 - CONDITIONS DE PAIEMENT

(Sauf dérogation écrite)

S'il s'agit d'un marché (installation, matériels), un acompte de 30% doit être versé à la commande par virement, le solde par traite acceptée domiciliée à 60 jours nets date de facture.

Conformément à la Loi LME n° 2008-776 du 4 Août 2008, nos conditions de paiement sont de 60 jours nets date de facture.

Tout défaut de paiement ou de non respect de la date d'échéance fixée sur la facture, donnera lieu au paiement d'intérêts de retard calculés par application d'un taux d'intérêt égal à 3 fois le taux d'intérêt légal. Ces intérêts courront au jour de la date d'échéance jusqu'au paiement. Tout mois civil commencé est dû en totalité concernant l'intérêt. Les frais de retour d'impayé, de remise en banque et de dossier restent à la charge du débiteur. Le défaut de paiement à l'échéance entraîne en outre :

L'exigibilité immédiate de la totalité des créances en cours.

L'exigibilité à titre de clause pénal d'une indemnité égale à 15% du montant des créances, ainsi que le remboursement de tous frais judiciaires et extra judiciaires éventuels.

En cas d'accord de prorogation avant l'échéance prévue, les sommes porteront intérêt sur la même base que celle énoncée plus haut.

L'acceptation de nouvelle commande qu'accompagnée de son règlement.

## 4 - TRANSPORTS

Les matériels et accessoires vendus voyagent toujours aux risques et périls de l'acquéreur qui, en cas de perte ou de détérioration, devra faire toutes les réserves utiles sur le bon de livraison, ce qui implique pour lui qu'il vérifie la marchandise livrée.

## 5 - DELAIS DE LIVRAISON

Tous les délais indiqués le sont à titre indicatif, sauf s'ils sont stipulés de rigueur. Les cas de force majeure, les cas fortuits, grèves comprises, suspendent les délais de livraison. Toute commande livrée partiellement sera facturée poste par poste dans le mois de la livraison, et ne pourra donner lieu à un report d'échéance lié à la livraison du solde.

Il ne pourra être appliqué de pénalités supérieures à 0,5% par semaine de retard, à partir de la 3<sup>ème</sup> semaine suivant celle définie comme délai de livraison, avec toutefois, un cumul de 5% de la valeur des pièces concernées.

## 6 - RETARD DE PAIEMENT

Tout défaut de paiement ou de non respect de la date d'échéance fixée sur la facture, donnera lieu au paiement d'intérêts de retard calculés par application d'un taux d'intérêt égal à 3 fois le taux d'intérêt légal. Ces intérêts courront au jour de

la date d'échéance jusqu'au paiement. Tout mois civil commencé est dû en totalité concernant l'intérêt. Les frais de retour d'impayé, de remise en banque et de dossier restent à la charge du débiteur. Le défaut de paiement à l'échéance entraîne en outre :

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En cas d'accord de prorogation avant l'échéance prévue, les sommes porteront intérêt sur la même base que celle énoncée plus haut.

L'acceptation de nouvelle commande qu'accompagnée de son règlement.

Tous les frais de recouvrement, de tribunaux, honoraires d'huissiers et d'avocats sont à la charge de l'acheteur.

Lorsque le crédit de l'acheteur se détériore (retard de règlement / annulation assurance crédit) ADES se réserve le droit d'annuler tout ou partie d'un marché.

## 7 - GARANTIE

La garantie d'ADES TECHNOLOGIES contre tout vice de fabrication ou de matière est de SIX mois, à dater de la livraison, pour une utilisation normale, correspondant aux possibilités du matériel livré, la garantie se limitant au remplacement des pièces défectueuses. Est considérée comme anormale une utilisation de plus de neuf heures par jour ouvrable : dans ce cas, la garantie est réduite à TROIS mois. La garantie ne s'applique pas si les matériels ou accessoires livrés ont fait l'objet d'interventions par des tiers, quelle qu'en soit la nature. Pour que cette garantie soit appliquée, il faut que la Société ADES TECHNOLOGIES soit avertie par lettre recommandée avec avis de réception de la défaillance constatée, une semaine au plus tard après la livraison. Aucun retour ne pourra être fait sans accord exprès ni aucune intervention. Les pièces défectueuses doivent être soigneusement conservées à la disposition de ADES TECHNOLOGIES. Si cette garantie n'est pas contestée elle sera contractuelle.

## 8 - RESERVE DE PROPRIETE

La Société ADES TECHNOLOGIES se réserve expressément la propriété des matériels livrés jusqu'au paiement intégral de leur prix, les matériels étant ceux désignés dans la facture au recto. A défaut de paiement par l'acheteur, d'une seule fraction du prix aux échéances convenues et quinze jours après une mise en demeure par lettre recommandée, avec avis de réception, demeurée infructueuse, la présente vente sera résolue de plein droit si bon semble à la Société ADES TECHNOLOGIES. En cas de désaccord sur les modalités de la restitution du matériel, celle-ci pourra être obtenue par ordonnance de référé rendue par Monsieur le Président du Tribunal de Commerce de Saint-Etienne auquel les parties attribuent expressément compétence, la même décision désignant un expert pour évaluer la valeur du matériel restitué au jour de la restitution. En cas de règlement judiciaire ou de liquidation de biens de l'acheteur, en application de la loi en vigueur, la revendication de ces matériels pourra être exercée dans un délai de quatre mois à partir de la publicité ouvrant la procédure.

L'acheteur s'engage à informer ces propres clients ou tiers de l'existence de la clause de réserve de propriété en notre faveur. Les marchandises, matériels et accessoires restent la propriété de la Société ADES TECHNOLOGIES jusqu'au paiement intégral de leur prix, mais l'acquéreur en devient responsable dès la remise matérielle qui en est faite, les risques lui étant transmis. A titre de simple tolérance, la Société ADES TECHNOLOGIES autorise dès à présent, l'acheteur à revendre le matériel objet de la réserve de propriété, à la condition expresse que la partie du prix de vente due à la Société ADES TECHNOLOGIES, dès la revente, soit nantie sur le prix de revente au profit de la Société ADES TECHNOLOGIES conformément à l'article 2071 du Code Civil, l'acquéreur devenant simple dépositaire du prix.

## 9 - ETUDES

Les plans et documents accompagnant toute proposition d'installation demeurent la propriété exclusive de la Société ADES TECHNOLOGIES ; ils ne peuvent être ni utilisés, ni recopiés, ni reproduits, ni jetés sans être détruits. Si la proposition faite n'est pas acceptée pour une raison quelconque, l'étude y correspondant sera payée par le client.

## 10 - LITIGES

En cas de contestation, les Tribunaux du Siège Social de la Société ADES TECHNOLOGIES seront seuls compétents, de convention expresse, même s'il y a pluralité de défendeurs, appel en garantie ou en intervention.

## 11 - ANNULATION DE COMMANDE

Aucune annulation de commande ne sera acceptée. Pour le cas exceptionnel où le vendeur accepterait une annulation de commande, l'acheteur devrait alors verser au vendeur une indemnité fixée par celui-ci et couvrant l'intégralité de son préjudice.





# EXTRACT OF THE GENERAL TERMS OF SALE



**All the sales of materials, from whatever nature and origin, are made expressly in the conditions specified below, which are essential even if the contracting one has different ones. All the sales are made with reserve of property to the profit of ADES TECHNOLOGIES.**

## 1 - GENERATION OF THE CONTRACT

Any order - study of materials and accessories is final only after acceptance by the Management of ADES TECHNOLOGIES, but it is final with respect to the purchaser as of his signature of the purchase order. Minimum of invoicing: 160 € Net H.T. Any cancellation of order, for whatever reason, will open the right to ADES TECHNOLOGIES, or to continue to perform the market, or to require damages to cover its expenditure and its shortfall. For the case where a modification of the model would intervene between the day of the order and that of the delivery, the purchaser will be able to cancel his order within eight days starting from received information. Every product in conformity with the order of the customer could neither be returned nor exchanged without the agreement of ADES TECHNOLOGIES, and will be related to a depreciation.

## 2 - PRICES

The prices of the materials, accessories and/or supplies are those practiced the day of the order, in the condition that this one intervened within one month starting from the offer. If not, except express contrary convention, the prices applied will be those of the day of the delivery.

If the object of the order is a market to be carried out over several months, the market could be together with a price variation clause which will be specified on the offer. The prices are established excluding VAT, departure workshops, port charges and packing in addition. The materials, accessories and/or supplies are always stipulated payable with the head office of ADES TECHNOLOGIES.

## 3 - TERMS OF PAYMENT

(Except written exemption)

If it concerns a market (installation, materials), an instalment of 30% must be transferred with the order, the rest by accepted domiciled bill at 60 days net date of invoice. In accordance with the Law LME n° 2008-776 of August 4th, 2008, our terms of payment are 60 days net date of invoice. Any non-payment or non respect of due date fixed on the invoice, will give place to the payment of post maturity interest calculated by application of an interest rate equal to 3 times the legal interest rate. These interests will run from the due date until the payment. Any started calendar month is entirely due concerning the interest. The expenses of return of unpaid, handing-over in bank and file remain in charge of the debtor. The non-payment at due date involves moreover: Immediate current liability of the totality of the debts. The current liability as penalty clause for an allowance equal to 15% of the amount of the debts, as well as the refunding of all possible legal and extra legal expenses. In the event of agreement of extension before the due date envisaged, the sums will bear interest on the same basis as that stated higher.

The acceptance of new order only accompanied by its payment.

## 4 - TRANSPORT

The sold materials and accessories always travel to the risks and dangers of the purchaser who, in the event of loss or of deterioration, will have to make all the useful reserves on the delivery order, which implies for him that he checks the delivered goods.

## 5 - DELIVERY TIME

All the times indicated are as an indication, except if they are stipulated of rigor. The cases of "force majeure", accidents, strikes included, suspend the delivery periods. Any partially delivered order will be invoiced item per item, in the month of the delivery, and will not give place to an extension of due date related to the delivery of the rest.

It could not be applied penalties higher than 0,5% per week of delay, as from the 3rd week following that definite like, with however, a running total of 5% of the value of the parts concerned.

## 6 - LATE PAYMENT

Any non-payment or non-respect of the due date fixed on the invoice, will give place to the payment of post maturity interest calculated by application of an interest rate equal to 3 times the legal interest rate. These interests will run from the due date until the payment. Any started calendar month is entirely due concerning the interest. The expenses of return of unpaid, handing-over in bank and file remain in charge of the debtor. The non-payment at due date involves moreover:

Immediate current liability of the totality of the debts.

The current liability as penalty clause for an allowance equal to 15% of the amount of the debts, as well as the refunding of all possible legal and extra legal expenses.

In the event of agreement of extension before the due date envisaged, the sums will bear interest on the same basis as that stated higher.

The acceptance of new order only accompanied by its payment.

All charges of debt collection, of courts, fees of bailiff and lawyers are the responsibility of the purchaser. When the credit of the purchaser worsens (delay of payment/cancellation credit insurance) ADES reserves the right to cancel whole or part of a market.

## 7 - GUARANTEE

The guarantee of ADES TECHNOLOGIES against any defect of manufacture or matter is SIX months, from the delivery, for a normal use, corresponding to the possibilities of the delivered material, the guarantee being limited to the replacement of the defective pieces. Is regarded as abnormal a use of more than nine hours per business day: in this case, the guarantee is reduced to THREE months. The guarantee does not apply if the delivered materials or accessories were subject of interventions by thirds, whatever its nature. So that this guarantee is applied, ADES TECHNOLOGIES must be informed by registered letter with notice of receipt of the noted failure, one week at the latest after the delivery. No return, or any intervention could be made without express agreement. The defective pieces must be carefully preserved at the provision of ADES TECHNOLOGIES. If this guarantee is not disputed it will be contractual.

## 8 - RESERVE OF PROPERTY

ADES TECHNOLOGIES expressly reserves the property of the materials delivered until the integral payment of their price, the materials being those indicated in the invoice on the recto. In the absence of payment by the purchaser, of only one fraction of the price at the agreed due dates and, remained unfruitful, fifteen days after formal notice by registered letter with notice of receipt, the present sale will be solved automatically as seems good to ADES TECHNOLOGIES. In the event of dissension on the methods of the restitution of the material, this one could be obtained by sanction returned by Mr. President of the Commercial court of Saint-Etienne to which the parts allocate expressly responsibility, the same decision appointing an expert to evaluate the value of the material restored at the day of the restitution. In the event of bankruptcy proceedings or of liquidation of goods of the purchaser, pursuant to the law in force, the claim of these materials could be exercised within four months starting from publishing proceedings.

The purchaser commits himself informing his proper customers or third persons of the existence of the clause of reserve of property in our favor. The goods, materials and accessories remain the property of ADES TECHNOLOGIES until the integral payment of their price, but the purchaser becomes responsible about it from the material handing-over made, the risks being transmitted to him. As simple tolerance, ADES TECHNOLOGIES authorizes from now, the purchaser to resell the material object of the reserve of property, in the express condition that the part of the selling price due to ADES TECHNOLOGIES, as of the resale, is given security on the resale price to the profit of ADES TECHNOLOGIES in accordance with the article 2071 of the Civil code, the purchaser becoming simple holder of the price.

## 9 - STUDIES

The plans and documents accompanying any proposal of installation remain the exclusive property of ADES TECHNOLOGIES; they can neither be used, neither copied, neither reproduced, nor thrown without being destroyed. If the made proposal is not accepted for an unspecified reason, the corresponding study will be paid by the customer.

## 10 - LITIGATIONS

In the event of dispute, of express convention, only the Courts of the Head office of ADES TECHNOLOGIES will be qualified, even if there is plurality of defendants, call for guarantee or intervention.

## 11 - CANCELLATION OF ORDER

No cancellation of order will be accepted. For the exceptional case where the salesman would accept a cancellation of order, the purchaser should then pour an allowance to the salesman fixed by him and covering the integrity of his damage.



**Jegliche Verkäufe von Ausrüstung gleich welcher Art und welchen Ursprungs erfolgt ausdrücklich zu den nachfolgend bezeichneten Bedingungen, die im Falle abweichender Bedingungen des Vertragspartners Vorrang haben. Alle Verkäufe erfolgen unter Eigentumsvorbehalt zugunsten der Firma ADES TECHNOLOGIES.**

## 1 - ZUSTANDEKOMMEN DES VERTRAGS

Jegliche Beauftragung – Studie von Ausrüstung und Zubehörelementen ist erst dann endgültig, nachdem sie von der Geschäftsleitung der Firma ADES TECHNOLOGIES angenommen worden ist, bindet hingegen den Käufer bereits ab dem Zeitpunkt von dessen Unterzeichnung des Auftragsformulars. Der Mindestrechnungsbetrag beläuft sich auf 160 € netto vor Steuern.

Jegliche Auftragsstornierung berechtigt unabhängig von deren Grund ADES TECHNOLOGIES dazu, entweder die Ausführung des beauftragten Leistungspakets fortzusetzen oder Schadenersatz zur Deckung der von ADES TECHNOLOGIES getätigten Aufwendungen und von dessen entgangenem Gewinn zu fordern.

Sollte zwischen dem Tag der Auftragserteilung und dem Tag der Lieferung eine Modelländerung eintreten, kann der Käufer seinen Auftrag innerhalb von sieben Tagen ab Empfang der entsprechenden Mitteilung stornieren.

Jedes dem Auftrag des Kunden entsprechende Produkt kann nur mit Einverständnis seitens ADES TECHNOLOGIES sowie mit einer Wertminderung verknüpft zurückgenommen oder umgetauscht werden.

## 2 - PREISE

Als Preise für die Ausrüstung, die Zubehörelemente und/oder Zulieferungen werden diejenigen herangezogen, welche am Tag der Auftragserteilung gelten, sofern Letztere innerhalb eines Monats ab Angebotsvorlage erfolgt. Andernfalls gelangen, sofern nicht ausdrücklich eine hiervon abweichende Vereinbarung getroffen worden ist, die am Tag der Lieferung geltenden Preise zur Anwendung.

Handelt es sich beim Auftrag um ein Leistungspaket, dessen Ausführung sich über mehrere Monate erstreckt, so kann dieses mit einer Preisanpassungsklausel versehen werden, die im Angebot näher bezeichnet wird.

Bei den Preisangaben handelt es sich um Nettopreise vor Steuern ab Werk zuzüglich Porto und Verpackung.

Es gilt als vertraglich vereinbart, dass die Zahlungen für die Ausrüstung, die Zubehörelemente und/oder Zulieferungen stets am Sitz der Firma ADES TECHNOLOGIES zu entrichten sind.

## 3 - ZAHLUNGSBEDINGUNGEN

(sofern nicht schriftlich eine abweichende Regelung getroffen wird)

Im Falle eines Leistungspakets (Montage, Ausrüstung) ist zum Zeitpunkt der Beauftragung per Überweisung eine Anzahlung in Höhe von 30 % zu leisten; der Restbetrag ist per domiziliertem akzeptiertem Wechsel innerhalb von 60 Tagen netto ab Rechnungsdatum zu entrichten.

Im Einklang mit dem frz. Gesetz über die Modernisierung der Wirtschaft (LME) Nr. 2008-776 vom 4. August 2008 lautet das von uns gesetzte Zahlungsziel 60 Tage netto ab Rechnungsdatum.

Jegliche Nichtleistung einer fälligen Zahlung zieht ebenso wie die Leistung einer Zahlung erst nach Ablauf der in der betreffenden Rechnung gesetzten Frist die Erhebung von Verzugszinsen in Höhe des Dreifachen des gesetzlichen Zinssatzes nach sich. Diese Verzugszinsen werden vom Fälligkeitsdatum bis zur Zahlung erhoben. Zu jedem angebrochenen Kalendermonat werden die Zinsen über dessen volle Länge erhoben. Die Gebühren für fehlende Deckung, für Bankauslagen und Bearbeitung sind vom Schuldner zu tragen. Das Versäumnis der fristgerechten Zahlung bewirkt darüber hinaus:

die unverzügliche Fälligkeit sämtlicher bestehenden Forderungen sowie die Fälligkeit einer als Konventionalstrafe erhobenen Entschädigung in Höhe von 15 % des Betrags der Forderungen sowie die Erstattung sämtlicher eventuellen gerichtlichen und außergerichtlichen Kosten.

Im Falle einer Vereinbarung über eine Stundung vor der vorgesehenen Fälligkeit werden auf die betreffenden Beträge Zinsen in der gleichen Höhe wie vorstehend dargelegt erhoben.

Weitere Aufträge werden nur in Begleitung von deren Zahlung angenommen.

## 4 - TRANSPORT

Der Transport der Ausrüstung und der Zubehörteile erfolgt stets auf Kosten und Risiko des Käufers, der im Falle des Verlusts oder der Beschädigung jegliche sachdienlichen Vorbehalte auf dem Lieferschein zu vermerken hat, was für diesen die Pflicht zur Prüfung der Ware bei deren Entgegennahme impliziert.

## 5 - LIEFERFRISTEN

Sämtliche genannten Lieferfristen sind unverbindlich, sofern diese nicht ausdrücklich vorgeschrieben werden. Fälle höherer Gewalt und außergewöhnliche Umstände einschließlich Streiks bewirken eine Aussetzung der Lieferfristen. Jede teilweise erfolgte Lieferung wird Posten für Posten im Monat der Lieferung in Rechnung gestellt und begründet keinen Anspruch auf Fristverlängerung mit Bezug auf die Lieferung des ausstehenden Teils.

Es können Konventionalstrafen in Höhe von maximal 0,5 % pro Verzugswoche ab

der 3. Woche erhoben werden, die der als Lieferfrist vorgesehenen Woche folgt; der Gesamtbetrag kann dabei 5 % des Werts der betreffenden Teile nicht übersteigen.

## 6 - ZAHLUNGSVERZUG

Jegliche Nichtleistung einer fälligen Zahlung zieht ebenso wie die Leistung einer Zahlung erst nach Ablauf der in der betreffenden Rechnung gesetzten Frist die Erhebung von Verzugszinsen in Höhe des Dreifachen des gesetzlichen Zinssatzes nach sich. Diese Verzugszinsen werden vom Fälligkeitsdatum bis zur Zahlung erhoben. Zu jedem angebrochenen Kalendermonat werden die Zinsen über dessen volle Länge erhoben. Die Gebühren für fehlende Deckung, für Bankauslagen und Bearbeitung sind vom Schuldner zu tragen. Das Versäumnis der fristgerechten Zahlung bewirkt darüber hinaus:

die unverzügliche Fälligkeit sämtlicher bestehenden Forderungen sowie die Fälligkeit einer als Konventionalstrafe erhobenen Entschädigung in Höhe von 15 % des Betrags der Forderungen sowie die Erstattung sämtlicher eventuellen gerichtlichen und außergerichtlichen Kosten.

Im Falle einer Vereinbarung über eine Stundung vor der vorgesehenen Fälligkeit werden auf die betreffenden Beträge Zinsen in der gleichen Höhe wie vorstehend dargelegt erhoben.

Weitere Aufträge werden nur in Begleitung von deren Zahlung angenommen.

Jegliche im Zusammenhang mit der Beitreibung anfallenden Kosten wie etwa die Inanspruchnahme eines Gerichtsvollziehers, Gerichts- und Anwaltskosten sind vom Käufer zu tragen.

Im Falle einer Verschlechterung der Kreditwürdigkeit des Käufers (Zahlungsverzug/Annullierung einer Kreditversicherung) behält sich ADES das Recht vor, ein [zur Ausführung angenommenes] Leistungspaket ganz oder teilweise zu stornieren.

## 7 - GARANTIE

Die Garantie seitens ADES TECHNOLOGIES gegen Fertigungsmängel und Materialfehler aller Art erstreckt sich über SECHS (6) Monate ab dem Datum der Lieferung bei einem normalem Gebrauch, der den Möglichkeiten der gelieferten Ausrüstung entspricht, wobei sich diese Garantie auf den Ersatz der schadhaften Teile beschränkt. Als unnormal wird eine tägliche Nutzung angesehen, die über NEUN (9) Stunden pro Werktag hinausgeht; in einem solchen Falle verkürzt sich die Garantie auf DREI (3) Monate. Die Garantie erlischt, wenn an der gelieferten Ausrüstung/den gelieferten Zubehörelementen Eingriffe gleich welcher Art durch Dritte vorgenommen worden sind. Zur Inanspruchnahme dieser Garantie muss die Firma ADES TECHNOLOGIES innerhalb einer Woche nach Lieferung per Einschreiben mit Rückschein vom festgestellten Mangel verständigt werden. Jegliche Rücksendungen und Eingriffe dürfen nur mit ausdrücklicher Zustimmung erfolgen. Die schadhaften Teile sind sorgsam aufzubewahren und ADES TECHNOLOGIES zur Verfügung zu stellen. Sofern diese Garantie nicht angefochten wird, erlangt sie vertragliche Verbindlichkeit.

## 8 - EIGENTUMSVORBEHALT

Die Firma ADES TECHNOLOGIES behält sich bis zur vollständigen Entrichtung des Kaufpreises ausdrücklich das Eigentum an den gelieferten, auf der Rückseite der Rechnung aufgeführten Artikeln vor. Bei ausbleibender Zahlung auch nur eines Teils des Kaufpreises innerhalb den vereinbarten Fristen wird, nachdem darüber hinaus eine per Einschreiben mit Rückschein zugestellte Inverzugsetzung fruchtlos geblieben ist, der betreffende Verkauf nach Belieben der Firma ADES TECHNOLOGIES für nichtig erklärt. Bei Meinungsverschiedenheiten über die Rückgabe der Ausrüstung kann eine einstweilige Verfügung dieser Rückgabe beim vorsitzenden Richter des Handelsgerichts von Saint-Etienne erwirkt werden, dem die Parteien ausdrücklich die Entscheidungsbefugnis übertragen. Im Rahmen desselben Entscheids erfolgt die Benennung eines Sachverständigen, der den Wert der zurückgegebenen Ausrüstung am Tage der Rückgabe ermittelt. Im Falle eines Vergleichs- oder Konkursverfahrens kann in Anwendung des geltenden Rechts innerhalb von VIER (4) Monaten ab der Bekanntmachung der Eröffnung eines solchen Verfahrens die Herausgabe dieser Ausrüstung verlangt werden.

## 9 - STUDIEN

Die jeden Montagevorschlag begleitenden Pläne und Unterlagen bleiben alleiniges Eigentum der Firma ADES TECHNOLOGIES; sie dürfen weder verwendet noch vervielfältigt noch reproduziert noch ohne vorherige Zerstörung entsorgt werden. Wird der Vorschlag aus irgendeinem Grunde nicht angenommen, so ist die zugehörige Studie vom Kunden zu bezahlen.

## 10 - RECHTSSTREITIGKEITEN

Es wird ausdrücklich vereinbart, dass im Falle von Rechtsstreitigkeiten auch bei mehreren Beklagten, bei Streitverkündung oder Interventionsklagen allein die Gerichte am Unternehmenssitz der Firma ADES TECHNOLOGIES in SAINT-ETIENNE / Frankreich zuständig sind.

## 11 - STORNIERUNG DES AUFTRAGS

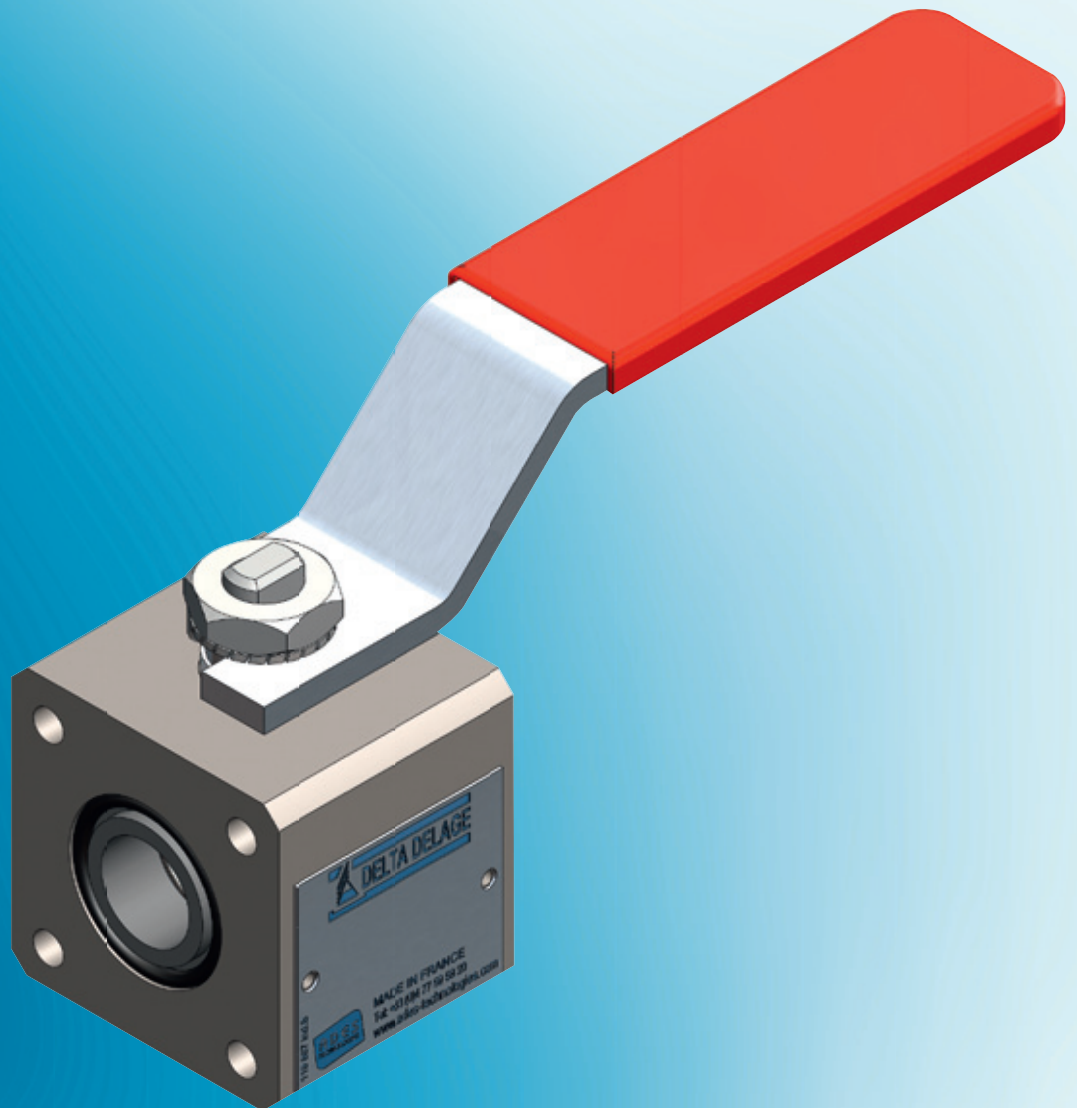
Eine Stornierung des Auftrags ist nicht möglich. Sollte der Verkäufer ausnahmsweise einer Auftragsstornierung zustimmen, so hat der Käufer an den Verkäufer eine von Letzterem festgelegte Entschädigung zur Deckung des von jenem erlittenen Nachteils zu entrichten.

# RD 3

## ROBINETS À SPHÈRE FLOTTANTE

FLOATING BALL VALVES

SCHWIMMERHAHNEN



# RD 3

## DIMENSIONS DE LA CELLULE DE BASE

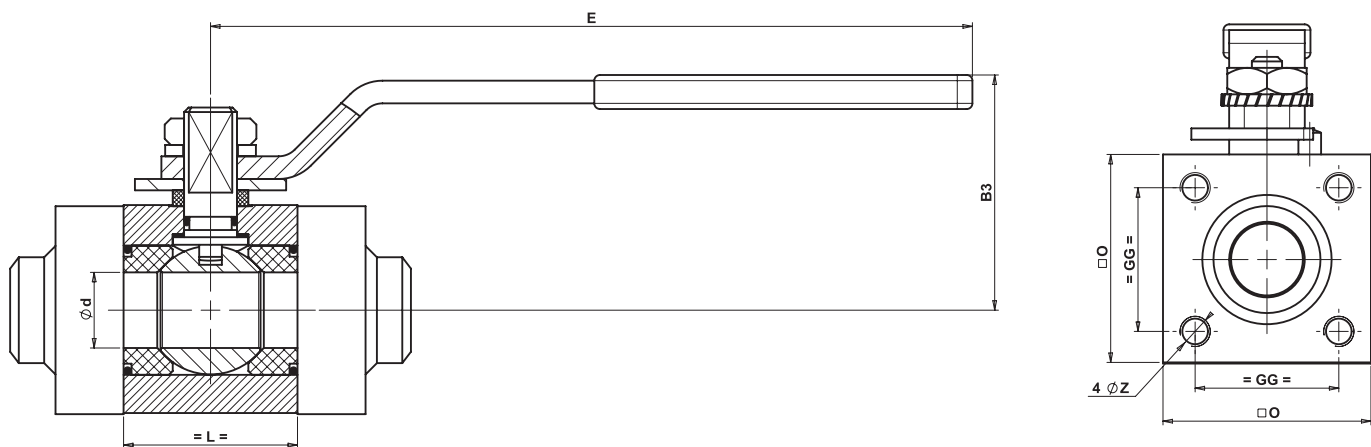
Basic valve dimensions

Abmessungen der Basiszelle

### VERSION STANDARD : FERMETURE DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

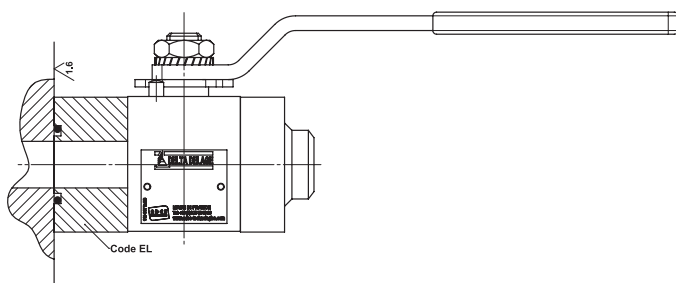
Standard Ausführung: Verschuß in Uhrzeigersinn



### MONTAGE EN LIGNE

In line assembly

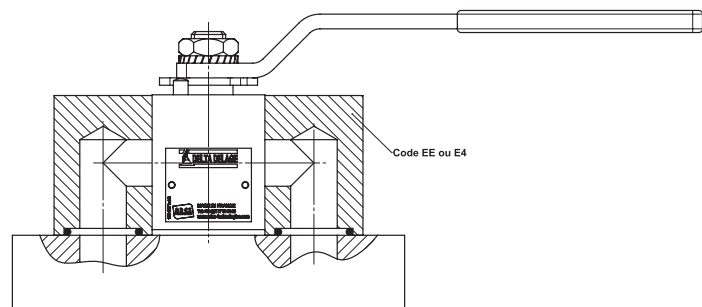
Aufbau in Linie



### FLASQUAGE LATERAL

Side flanged assembly

Laterale Anflanschung



### MONTAGE SUR EMBASE

Manifold assembly

Aufbau auf Befestigungsfläche

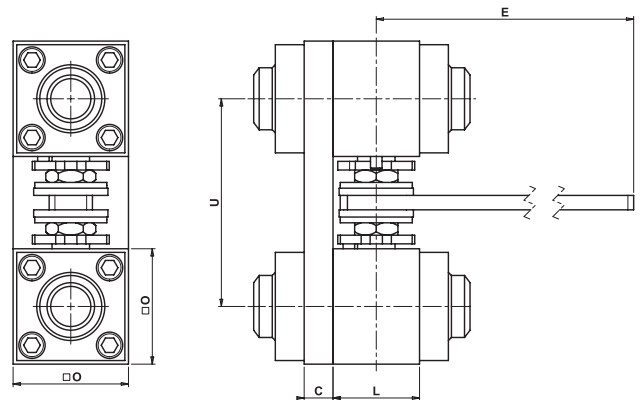
| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>MAXI (BAR)<br>Maxi. pressure<br>Maximal Druck | DIMENSIONS (mm)<br>Abmessungen |    |      |     |     |    |     | MASSE (kg)<br>Weight<br>Gewicht (kg) |
|-------------------------------------|-------------------------|-----------------------------------------------------------|--------------------------------|----|------|-----|-----|----|-----|--------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                           | Ød                             | ØO | GG   | B3  | Z   | L  | E   |                                      |
| 6 - 10                              | 1/4" - 3/8"             | 350                                                       | 10                             | 40 | 29,7 | 70  | M5  | 36 | 167 | 0,5                                  |
| 15                                  | 1/2"                    | 350                                                       | 15                             | 45 | 32,5 | 75  | M6  | 40 | 167 | 0,64                                 |
| 20                                  | 3/4"                    | 350                                                       | 20                             | 55 | 38   | 90  | M8  | 46 | 205 | 1,06                                 |
| 25                                  | 1"                      | 350                                                       | 25                             | 70 | 46   | 105 | M10 | 52 | 205 | 1,76                                 |
| 32                                  | 1 1/4"                  | 200                                                       | 32                             | 80 | 53,8 | 140 | M12 | 60 | 305 | 2,88                                 |

# RD 3

## ENSEMBLE JUMELÉ

Twin assembly / Schnappbefestigung

| TAILLE<br>Size<br>Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1"  | 1"1/4" | 1"1/2" | 2"  |
|-------------------------|------|------|------|------|-----|--------|--------|-----|
| DN<br>ND<br>ND          | 6    | 10   | 15   | 20   | 25  | 32     | 40     | 50  |
| L                       | 36   | 36   | 40   | 46   | 52  | 60     | 68     | 80  |
| O                       | 40   | 40   | 45   | 55   | 70  | 80     | 100    | 120 |
| C                       | 10   | 10   | 10   | 15   | 15  | 20     | 20     | 20  |
| U                       | 72   | 72   | 80   | 110  | 117 | 144    | 168    | 189 |
| E                       | 190  | 190  | 230  | 285  | 285 | 340    | 380    | 380 |



## OPTIONS / Option

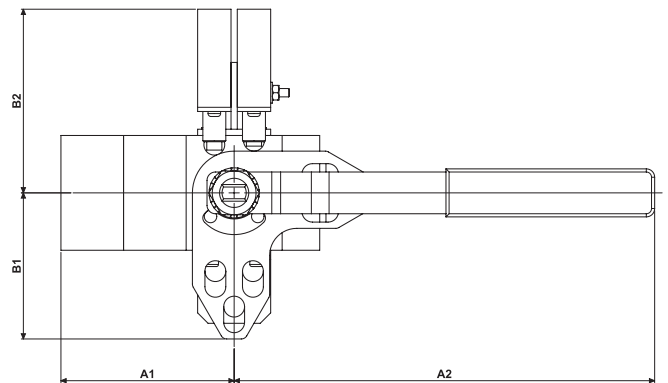
Optionen

### CADENASSAGE CONTACT FIN DE COURSE

Padlock device limit switch

Vorhängeschloß Endstellung

| TAILLE<br>Size<br>Größe | 3/8" | 1/2" | 3/4" | 1"  | 1"1/4" |
|-------------------------|------|------|------|-----|--------|
| DN<br>ND<br>ND          | 10   | 15   | 20   | 25  | 32     |
| A1                      | 58   | 70   | 83   | 86  | 100    |
| A2                      | 225  | 225  | 205  | 205 | 305    |
| B1                      | 55   | 57,5 | 70   | 70  | 75     |
| B2                      | 85,5 | 85,5 | 88   | 88  | 94     |



## AUTOMATISME

Automation / Automatik

### TOUT TYPE D'OPERATEUR

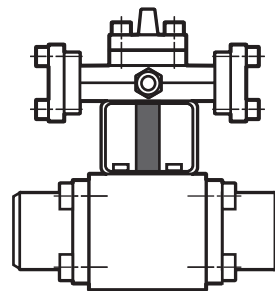
All kinds of actuators

Alle Typen Antriebe

### SUR DEMANDE

ON REQUEST

AUF ANFRAGE



## BRIDES

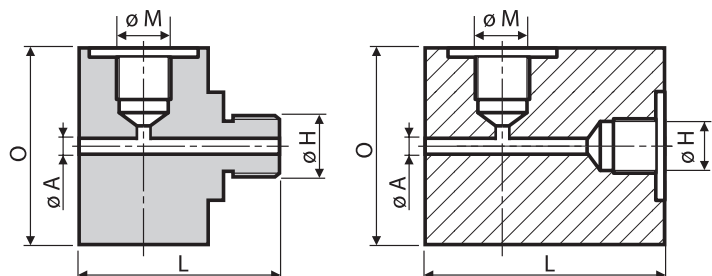
Flanges / Flansche

### POUR CAPTEURS ET PRISES DE PRESSION BSPP

Flanges for test point fittings BSPP

Für Meßzellen und Druckanschlusssstelle

| TAILLE<br>Size<br>Größe | 1/4" | 3/8" |
|-------------------------|------|------|
| DN<br>ND<br>ND          | 6    | 10   |
| O                       | 40   | 40   |
| L                       | 46   | 46   |
| Ø A                     | 1,5  | 1,5  |
| Ø H                     | 1/4" | 1/4" |
| Ø M                     | 1/4" | 1/4" |



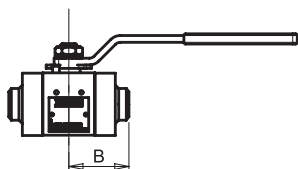


# RD 3

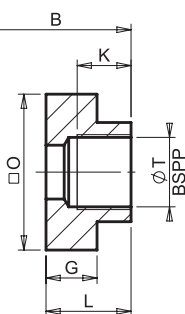
## BRIDES

Flanges / Flansche

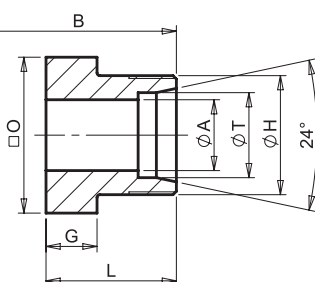
VERSION TT



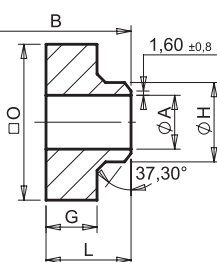
BRIDE GA



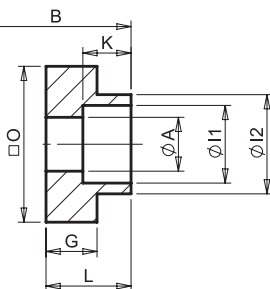
BRIDE C24



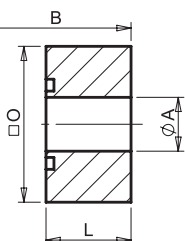
BRIDE BW



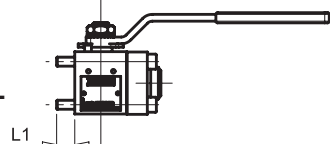
BRIDE SW



BRIDE EL



VERSION FL



| TAILLE / Size / Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" |
|-----------------------|------|------|------|------|----|--------|
| DN / ND / ND          | 6    | 10   | 15   | 20   | 25 | 32     |
| øT                    | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" |
| O                     | 40   | 40   | 45   | 55   | 70 | 80     |
| B                     | 38   | 38   | 45   | 53   | 56 | 65     |
| K                     | 12   | 14   | 15   | 19   | 22 | 25     |
| G                     | 10   | 10   | 16   | 18   | 18 | 20     |
| L                     | 20   | 20   | 25   | 30   | 30 | 35     |

| Ø passage / ?? | TAILLE / Size / Größe | DN / ND / ND | PN  | Série | Tube     | O  | ØA | ØH        | ØT   | B  | G  | L  | Codification | Vis CHc FL | Vis CHc TT |
|----------------|-----------------------|--------------|-----|-------|----------|----|----|-----------|------|----|----|----|--------------|------------|------------|
| 10             | 3/8"                  | 10           | 350 | 16S   | 16 x 3   | 40 | 10 | M24 x 1,5 | 16   | 48 | 10 | 30 | BRRD10C24S16 | M5 x 60    | M5 x 20    |
| 15             | 1/2"                  | 15           | 350 | 25S   | 25 x 4,5 | 45 | 16 | M36 x 2   | 25   | 60 | 16 | 40 | BRRD15C24S25 | M6 x 70    | M6 x 30    |
| 20             | 3/4"                  | 20           | 250 | 30S   | 30 x 4   | 55 | 22 | M42 x 2   | 30   | 69 | 18 | 46 | BRRD20C24S30 | M8 x 80    | M8 x 30    |
| 25             | 1"                    | 25           | 250 | 38S   | 38 x 5   | 70 | 28 | M52 x 2   | 38,3 | 76 | 18 | 50 | BRRD25C24S38 | M10 x 90   | M10 x 40   |
| 32             | 1 1/4"                | 32           | 160 | 38S   | 38 x 3   | 80 | 32 | M52 x 2   | 38,3 | 84 | 20 | 54 | BRRD32C24S38 | M12 x 100  | M12 x 40   |

| TAILLE / Size / Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" |
|-----------------------|------|------|------|------|----|--------|
| DN / ND / ND          | 6    | 10   | 15   | 20   | 25 | 32     |
| ø H                   | 14   | 18   | 22   | 28   | 35 | 43     |
| ø A                   | 8    | 10   | 13   | 19   | 24 | 30     |
| O                     | 40   | 40   | 45   | 55   | 70 | 80     |
| B                     | 38   | 38   | 45   | 53   | 56 | 65     |
| G                     | 10   | 10   | 16   | 18   | 18 | 20     |
| L                     | 20   | 20   | 25   | 30   | 30 | 35     |

| TAILLE / Size / Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" |
|-----------------------|------|------|------|------|------|--------|
| DN / ND / ND          | 6    | 10   | 15   | 20   | 25   | 32     |
| ø I1                  | 14,1 | 17,7 | 21,8 | 27,4 | 34,2 | 42,9   |
| ø I2                  | 28   | 28   | 30   | 35   | 47   | 56     |
| ø A                   | 8    | 10   | 13   | 19   | 24   | 30     |
| K                     | 9,5  | 9,5  | 9,5  | 13   | 13   | 13     |
| O                     | 40   | 40   | 45   | 55   | 70   | 80     |
| B                     | 38   | 38   | 45   | 53   | 56   | 65     |
| G                     | 10   | 10   | 16   | 18   | 18   | 20     |
| L                     | 20   | 20   | 25   | 30   | 30   | 35     |

| TAILLE / Size / Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" |
|-----------------------|------|------|------|------|----|--------|
| DN / ND / ND          | 6    | 10   | 15   | 20   | 25 | 32     |
| ø A                   | 8    | 10   | 13   | 19   | 24 | 30     |
| O                     | 40   | 40   | 45   | 55   | 70 | 80     |
| B                     | 38   | 38   | 45   | 53   | 56 | 65     |
| L                     | 20   | 20   | 25   | 30   | 30 | 35     |

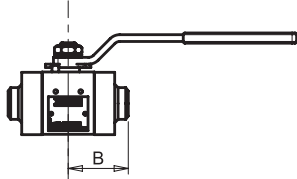
| TAILLE / Size / Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" |
|-----------------------|------|------|------|------|------|--------|
| DN / ND / ND          | 6    | 10   | 15   | 20   | 25   | 32     |
| O'RING                | 2210 | 2210 | 2210 | 2214 | 2219 | 2222   |
| VIS                   | M5   | M5   | M6   | M8   | M10  | M12    |
| L1                    | 14   | 14   | 14   | 16   | 20   | 20     |

# RD 3

## BRIDES

Flanges

Flansche

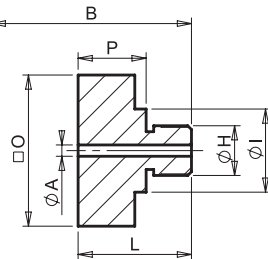


### EMBOUT BSPP

Male thread bspp

BSPP Ansatzstück

CODE / KODE / GC



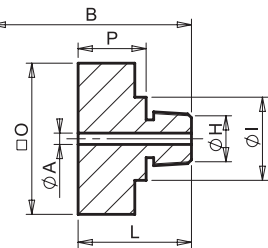
| TAILLE / Size<br>Größe | 1/4" | 3/8" | 1/2" |
|------------------------|------|------|------|
| DN / ND<br>ND          | 6    | 10   | 15   |
| ø H                    | 1/4" | 3/8" | 1/2" |
| O                      | 40   | 40   | 45   |
| ø I                    | 22   | 22   | 27   |
| B                      | 48   | 48   | 60   |
| ø A                    | 3    | 3    | 7    |
| P                      | 18   | 18   | 19   |
| L                      | 30   | 30   | 40   |

### EMBOUT NPT

Male thread npt

NPT Ansatzstück

CODE / KODE / NC



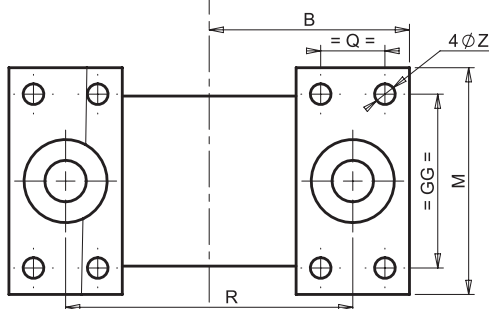
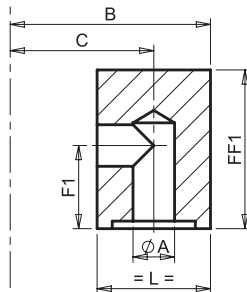
| TAILLE / Size<br>Größe | 1/4" | 3/8" | 1/2" |
|------------------------|------|------|------|
| DN / ND<br>ND          | 6    | 10   | 15   |
| ø H                    | 1/4" | 3/8" | 1/2" |
| O                      | 40   | 40   | 45   |
| ø I                    | 22   | 22   | 27   |
| B                      | 48   | 48   | 60   |
| ø A                    | 3    | 3    | 7    |
| P                      | 18   | 18   | 19   |
| L                      | 30   | 30   | 40   |

### BRIDE D'EQUERRE

Manifold flange

Eckflansch

CODE / KODE / EE



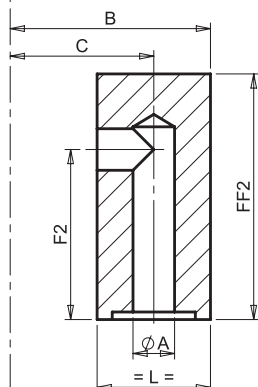
| TAILLE / Size<br>Größe | 3/8" | 1/2" | 3/4" | 1"  | 1"1/4 |
|------------------------|------|------|------|-----|-------|
| DN / ND<br>ND          | 10   | 15   | 20   | 25  | 32    |
| F1                     | 22   | 24,5 | 29,5 | 37  | 42,5  |
| FF1                    | 42   | 47   | 57   | 69  | 79,5  |
| ø A                    | 11   | 13   | 19   | 25  | 32    |
| C                      | 33   | 40   | 43   | 50  | 58,5  |
| B                      | 48   | 60   | 63   | 74  | 90    |
| Q                      | 17   | 22   | 23,4 | 26  | 34    |
| GG                     | 46   | 52,5 | 66   | 78  | 94    |
| Z                      | 5,5  | 7    | 9    | 11  | 13    |
| M                      | 60   | 65   | 85   | 100 | 120   |
| L                      | 30   | 40   | 40   | 48  | 60    |
| F2                     | 45   | 45   | -    | -   | -     |
| FF2                    | 65   | 67,5 | -    | -   | -     |
| R                      | 66   | 80   | 86   | 100 | 117   |

### BRIDE D'EQUERRE

Manifold flange

Eckflansch

CODE / KODE / E4



# RD 3

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?

| RD                       | 3                         | 20                        | 1                       | V                                          | 7                       | P                                                      | TT                            | X                              |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| SÉRIE<br>SERIES<br>SERIE |                           | TAILLE<br>SIZE<br>GRÖSSE  | CORPS<br>BODY<br>KÖRPER | JOINTS DE CORPS<br>BODY SEALS<br>DICHRINGE | SPHERE<br>BALL<br>KUGEL | GARNITURE D'ÉTANCHEITÉ<br>SEALING DEVICE<br>DICHTUNGEN | MONTAGE<br>MOUNTING<br>AUFBAU | OPTIONS<br>OPTIONS<br>OPTIONEN |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MODÈLE<br>MODEL<br>TYP   | CLASSE<br>CLASS<br>KLASSE |                           |                         |                                            |                         |                                                        |                               |                                |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CODE / KODE              |                           | DESIGNATION / BEZEICHNUNG |                         |                                            |                         | CODE KODE                                              |                               | DESIGNATION BEZEICHNUNG        |                         | CODE KODE |                                         | REF. |    | DESIGNATION BEZEICHNUNG                                                                      |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RD                       | 3                         | ISO-PN                    | ΔP. min                 | ΔP. max                                    | P. m                    | CODE KODE                                              | DESIGNATION BEZEICHNUNG       | CODE KODE                      | DESIGNATION BEZEICHNUNG | CODE KODE | DESIGNATION BEZEICHNUNG                 | X    | PB | Cadenassage ouvert + fermé<br>Padlock closed + open<br>Vorhängeschloß geöffnet + geschlossen |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           | 430                       | bar                     | bar                                        | 250                     | 350                                                    | 6                             | 1/4"                           | 11                      | 1         | Acier<br>Carbon steel<br>Stahl          |      |    | 7                                                                                            | Inox<br>Stainless Steel<br>Rostfreier Stahl | SO                                                                                      | Fin de course position ouvert<br>Limit switch open position<br>Endstellung geöffnet |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        | 10                            | 3/8"                           | 11                      | 2         | Kanigen<br>Nickel plated<br>Vernicklung |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        | 15                            | 1/2"                           | 13                      |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        | 20                            | 3/4"                           | 19                      |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        | 25                            | 1"                             | 25                      |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           | 0,1                       | 200                     | 300                                        | 32                      | 1" 1/4                                                 | 32                            |                                |                         |           |                                         |      |    |                                                                                              | SC                                          | Fin de course position fermé<br>Limit switch closed position<br>Endstellung geschlossen |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        |                               |                                |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     | SB | Fin de course ouvert + fermé<br>Limit switch closed + open<br>Endstellung geöffnet + geschlossen |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        |                               |                                |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    | TW                                                                                               | Montage jumelé<br>Twin mounted<br>Schnappbefestigung |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        |                               |                                |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                          |                           |                           |                         |                                            |                         |                                                        |                               |                                |                         |           |                                         |      |    |                                                                                              |                                             |                                                                                         |                                                                                     |    |                                                                                                  |                                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

● ΔP. max : pression autorisant une bonne manœuvrabilité manuelle.  
NOTE : Ces valeurs sont indiquées pour des fluides hydrauliques, pour des fluides gazeux consulter nos services techniques.  
Codification incluant les instructions conformes à ISO 5209 AFNOR N.F.E. 29470.

● ΔP. max: pressure advised for an easy hand operating.  
NOTE: These values concern hydraulic fluids. For gas, please contact us.  
Model number including the ISO 5209 instructions.

● ΔP.max: Dieser Druck erlaubt eine gute Handbedienung.  
Achtung: diese Werte sind für hydraulische Medien, für Gaz befragen Sie unsere Technische Dienst. Die Referenz ist Gemäß ISO 5209 AFNOR N.F.E. 29470.

X : Toute option est codée "X" sur la plaque signalétique : en cas de commande de rechange nous indiquer le n° Mfg..... ou le numéro de commande d'origine.

X: All options are shown with an "X" printed on the identification plate. To order replacement parts, please give us the Mfg number or your purchase order number.

X: Jeder Option ist mit „X“ auf das Betriebsanweisungsschild markiert: bei Bestellung von Ersatzteile bitte Nr. Mfg ....aufgeben oder Nummer der Originalbestellung.

\* Pression de service maxi = 100 bar.  
\* Maxi working pressure = 100 bar.  
\* Maximal Betriebsdruck = 100 Bar.

| CODE KODE | DESIGNATION / BEZEICHNUNG                                                                     | CODE KODE | DESIGNATION / BEZEICHNUNG                                                              |
|-----------|-----------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------|
| GA        | Bride taraudée BSPP / Female thread flange BSPP / Flansch mit Gewindeschneiden BSPP           | NC        | Bride à embout mâle "NPT" / Male thread flange "NPT" / Flansch mit Übergangsnippel NPT |
| NP        | Bride taraudée NPT / Female thread flange NPT / Flansch mit Gewindeschneiden NPT              | EE        | Bride d'équerre "Basse" / Manifold flange "Low type" / „Niedrige“ Eckflansch           |
| BW        | Bride à souder "Butt welding" / Flansch zum Schweißen „Butt Welding“                          | E4        | Bride d'équerre "Haute" / Manifold flange "High type" / „Hohe“ Eckflansch              |
| SW        | Bride à souder "Socket welding" / Socket weld flange / Flansch zum Schweißen „Socket Welding“ | EL        | Bride intermédiaire / Adaptor flange / Zwischenflansch                                 |
| GC        | Bride à embout mâle "BSPP" / Male thread flange "BSPP" / Flansch mit Übergangsnippel BSPP     |           |                                                                                        |

EXEMPLE DE RÉFÉRENCE / Model code example / Beispiel Referenz : RD3.20.1V7P.FL.PB.EL.BW

## CARACTERISTIQUES / Features / Eigenschaften

### Matières :

Corps : acier  
Sphère : inox  
Garnitures : polyacétal  
Joints : buna - N  
Autres matières sur demande.

### Materials:

Body: steel  
Ball: stainless steel  
Packing: polyacetal  
O'ring: buna - N  
Other material on request.

### Werkstoffe:

Körper: Stahl  
Kugel: aus rostfreier Stahl  
Dichtungen: Polyacetal  
Dichtringen: Buna - N  
Andere Werkstoffe auf Anfrage.

### Installation :

"SOUDÉ" - pointer sur la tuyauterie puis enlever la cellule pour le soudage complet des collets.  
"RINÇAGE" - Ne pas rincer les tuyauteries avec la cellule (robinet) montée.

### Installation:

"WELDING" - tack weld the pipe, and then remove the valve body before the final welding on the necks.  
"FLUSHING" - Do not flush the pipe with the valve body in place.

### Aufbau:

„Geschweißt“ - Auf die Röhrenleitung heften und dann die Zelle wegnehmen für die komplette Schweißung der Kragen.  
„Spülung“: Die Rohrleitung nicht spülen mit aufgebauter Zelle (Hahn).

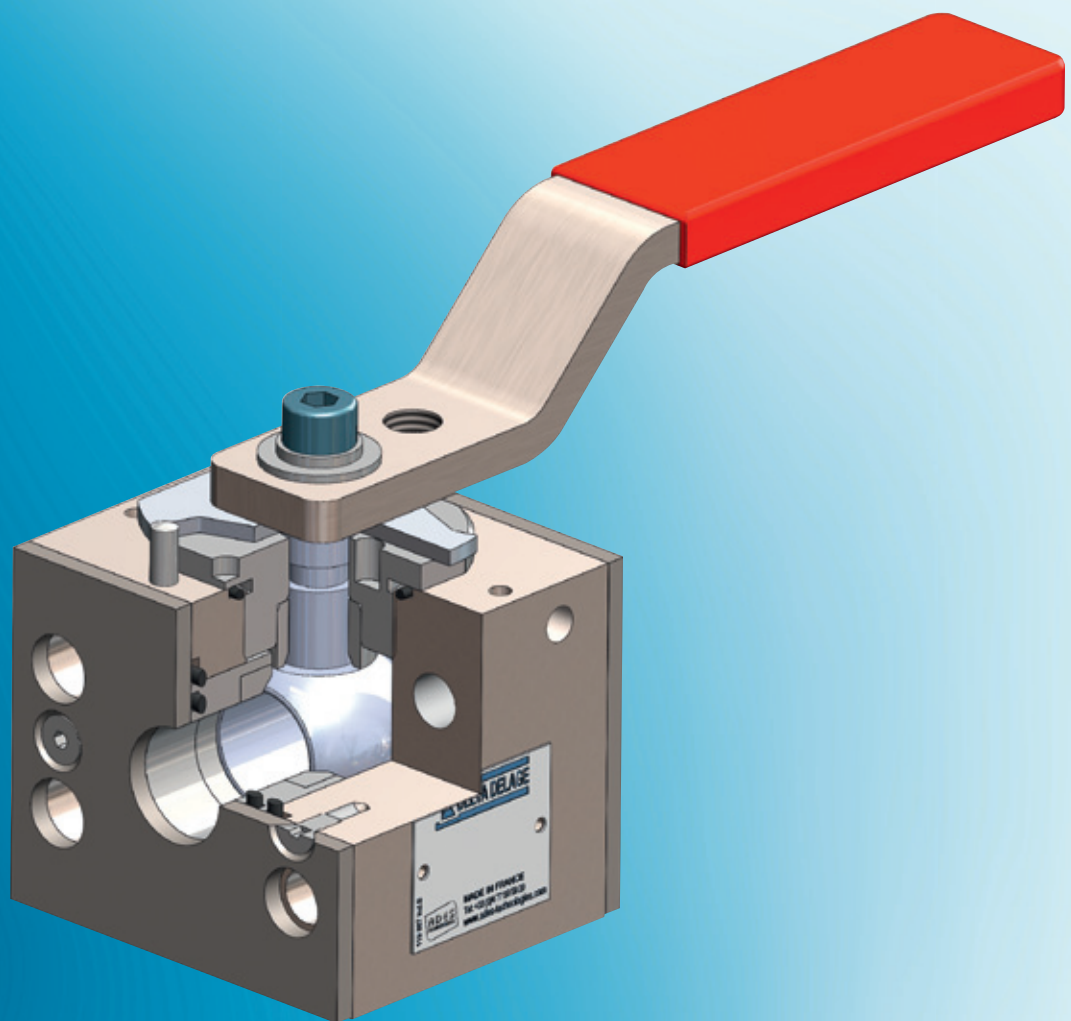
# HP 3

ISO 6162-1  
SAE 3000

**ROBINETS À SPHÈRE ARBRÉE**

BALANCED BALL VALVES

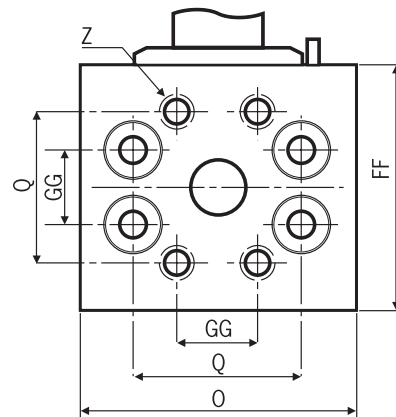
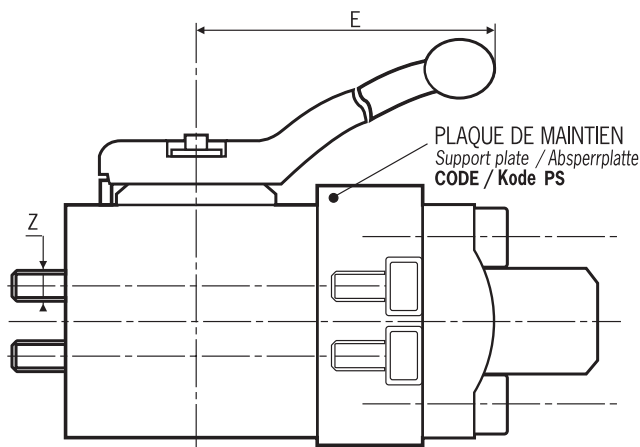
KUGELHAHNEN



## DIMENSIONS DE LA CELLULE DE BASE

Basic valve dimensions

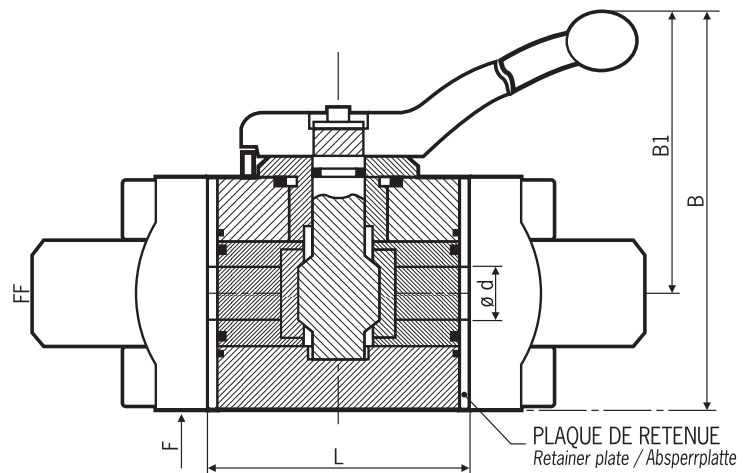
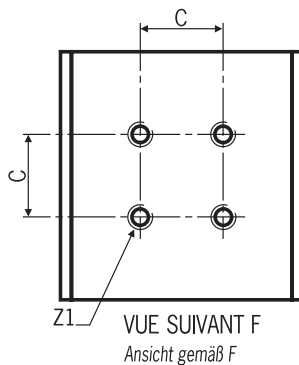
Abmessungen der Basiszelle



### FLASQUAGE LATÉRAL

Side flanged assembly

Laterale Abflansung



### VERSION STANDARD : FERMETURE DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standard Ausführung: Verschluss in Uhrzeigersinn

### MONTAGE EN LIGNE

In line assembly

Aufbau in Linie

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><br>Working<br>pressure<br>Betriebsdruck<br>(Bar) | DIMENSIONS (mm)<br>Dimensions / Abmessungen (mm) |     |      |       |     |       |     |     |     |                   |      |     |     |      | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) | Type<br>Mon-<br>tage |
|-------------------------------------|-------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------|-----|------|-------|-----|-------|-----|-----|-----|-------------------|------|-----|-----|------|--------------------------------------------|----------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                      | ø d                                              | L   | GG   | Q     | FF  | O     | B   | B1  | E   | Z                 | C    |     | Z1  |      |                                            |                      |
|                                     |                         |                                                                                      |                                                  |     |      |       |     |       |     |     |     | ISO               | UNC  |     | ISO | UNC  |                                            |                      |
| 15                                  | 1/2"                    | 250                                                                                  | 13                                               | 63  | 17,5 | 38,1  | 54  | 60,0  | 105 | 79  | 150 | M8                | 5/16 | 20  | M6  | 1/4  | 0,7                                        |                      |
| 20                                  | 3/4"                    | 250                                                                                  | 18                                               | 68  | 22,2 | 47,6  | 65  | 70,0  | 112 | 82  | 150 | M10               | 3/8  | 20  | M6  | 1/4  | 2,2                                        |                      |
| 25                                  | 1"                      | 250                                                                                  | 22                                               | 73  | 26,2 | 52,4  | 70  | 80,0  | 136 | 101 | 180 | M10               | 3/8  | 25  | M6  | 1/4  | 3,5                                        |                      |
| 32                                  | 1"1/4                   | 250                                                                                  | 25                                               | 78  | 30,2 | 58,7  | 80  | 80,0  | 145 | 106 | 180 | M10<br>M12<br>M14 | 7/16 | 25  | M6  | 1/4  | 4,0                                        | T6 ou F6<br>TT ou FL |
| 40                                  | 1"1/2                   | 250                                                                                  | 30                                               | 88  | 35,7 | 69,8  | 94  | 100,0 | 181 | 137 | 260 | M12<br>M14        | 1/2  | 30  | M8  | 5/16 | 6,1                                        | T6 ou F6<br>TT ou FL |
| 50                                  | 2"                      | 250                                                                                  | 37                                               | 98  | 42,9 | 77,8  | 100 | 105,0 | 201 | 148 | 260 | M12<br>M14        | 1/2  | 35  | M8  |      | 7,5                                        | T6 ou F6<br>TT ou FL |
| 65                                  | 2"1/2                   | 170                                                                                  | 55<br>45                                         | 118 | 50,8 | 88,9  | 118 | 118,0 | 180 | 158 | 500 | M12<br>M14        | 1/2  | 80  | M12 | 7/16 | 20,0                                       | T6 ou F6<br>TT ou FL |
| 80                                  | 3"                      | 140                                                                                  | 69<br>55                                         | 166 | 61,9 | 106,4 | 148 | 150,0 | 193 | 167 | 500 | M16               | 5/8  | 80  | M14 | 1/2  | 30,0                                       |                      |
| 100                                 | 4"                      | 80                                                                                   | 97                                               | 230 | 77,8 | 130,2 | 237 | 220,0 | 256 | 208 | 500 | M16               | 5/8  | 160 | M14 | 1/2  | 80,0                                       |                      |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

■ Do not use this male metric thread for new constructions

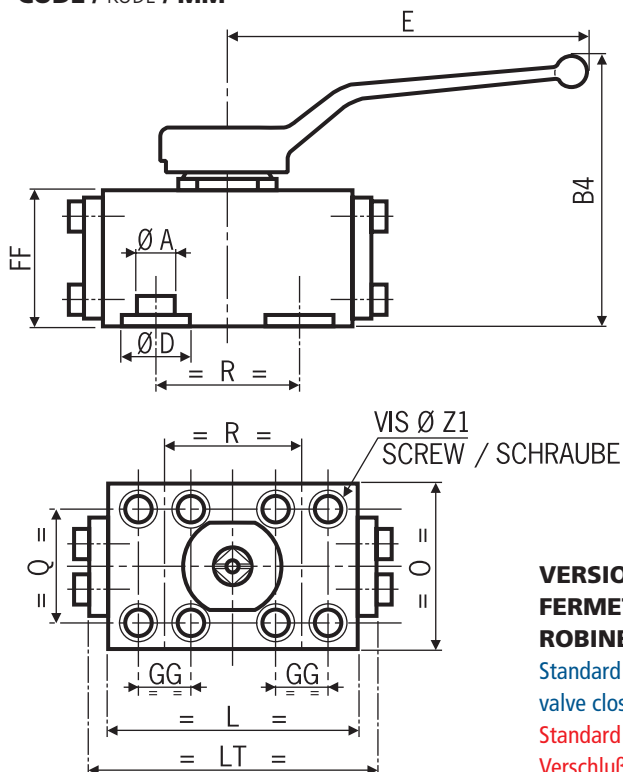
■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten



## MONTAGE SUR MANIFOLD

Manifold mounting / Aufbau auf Rohrverteiler

CODE / KODE / MM

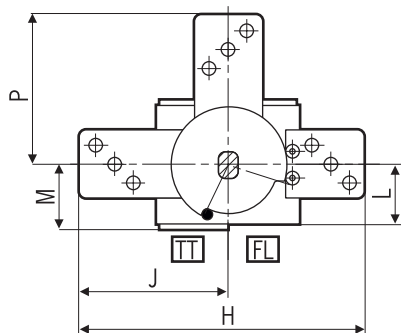


**VERSION STANDARD :**  
**FERMETURE DU**  
**ROBINET SENS HORAIRE**  
 Standard version: clockwise  
 valve closing  
 Standard Ausführung:  
 Verschuß in Uhrzeigersinn

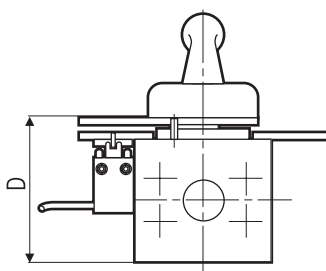
| TAILLE / Size<br>Größe    | 1"1/4  | 1"1/2   | 2"      |
|---------------------------|--------|---------|---------|
| DN / ND<br>ND             | 32     | 40      | 50      |
| Ø A                       | 25,0   | 30,0    | 1/2"    |
| Ø D                       | 44,0   | 54,0    | 45      |
| R                         | 82,0   | 98,0    | 27      |
| L                         | 150,0  | 174,0   | 55      |
| GG                        | 30,2   | 35,7    | 7       |
| Q                         | 58,7   | 69,8    | 19      |
| FF                        | 78,0   | 88,0    | 35      |
| O                         | 82,0   | 100,0   | 45      |
| LT                        | 168,0  | 196,0   | 27      |
| E                         | 180,0  | 260,0   | 55      |
| B4                        | 145,0  | 182,0   | 7       |
| Z1                        | M10    | M12     | M12     |
|                           | M12    | M14     | M14     |
| MASSE / Weight<br>Gewicht | 6,6 KG | 10,4 KG | 15,0 KG |

- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

## OPTIONS / Options / Optionen

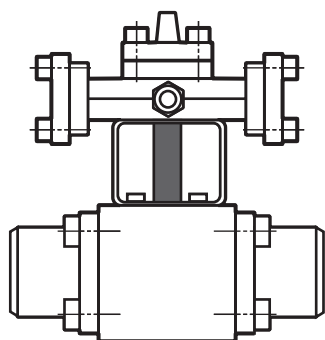


**CADENASSAGE**  
 Padlock device  
 Vorhängeschloß

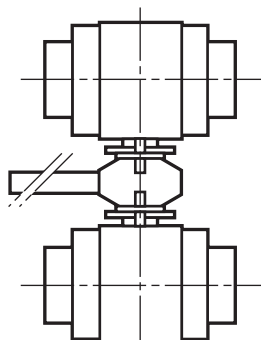


**CONTACT FIN DE COURSE**  
 Limit switch  
 Endstellung

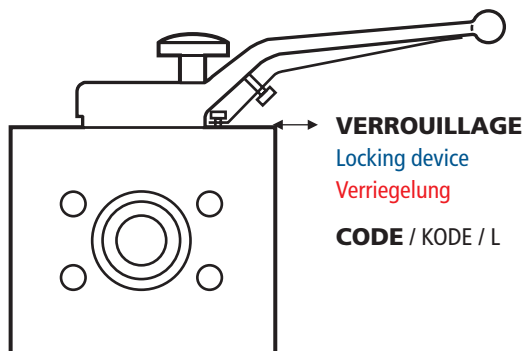
| TAILLE<br>Size<br>röße | 1/2"  | 3/4"  | 1"    | 1"1/4 | 1"1/2 | 2"  |
|------------------------|-------|-------|-------|-------|-------|-----|
| DN / ND<br>ND          | 15    | 20    | 25    | 32    | 40    | 50  |
| P                      | 60,0  | 65,0  | 71,0  | 71    | 78    | 82  |
| M                      | 31,5  | 34,0  | 36,5  | 39    | 44    | 49  |
| H                      | 120,0 | 130,0 | 142,0 | 142   | 156   | 164 |
| D                      | 56,5  | 63,5  | 78,5  | 88    | 98,5  | 119 |
| L                      | 27,5  | 30,0  | 32,5  | 35    | 40,0  | 45  |



**AUTOMATISME :**  
**TOUT TYPE D'OPERATEUR**  
 Automatisme: all kinds of actuators  
 Automatik: Alle Typen von Antriebe



**ENSEMBLE JUMELE**  
 Twin assembly  
 Schnappbefestigung



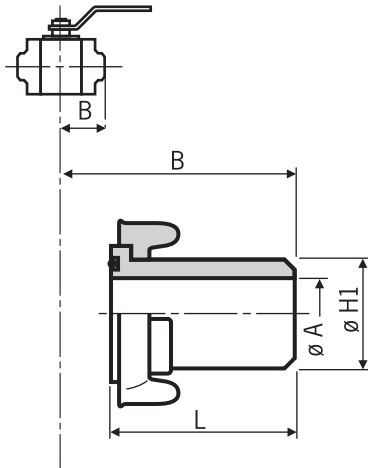
**VERROUILLAGE LEVER/BAISSER**  
 Up/down locking  
 Verriegelung heben/herunterlassen

CODE / KODE / T

### BRIDES

Flanges

Flansche



### SOUDÉ BOUT À BOUT

Butt welding

Stoßnaht Schweißung

CODE / KODE / BW

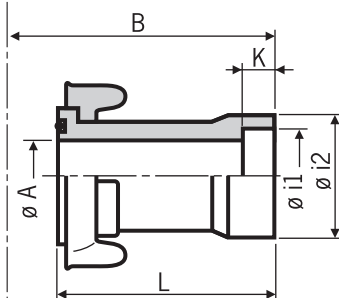
| DN ROBINET<br>ND valve<br>ND Hahn   | 15   | 20 | 25   | 32 | 40  | 50  | 65  | 80  | 100 |
|-------------------------------------|------|----|------|----|-----|-----|-----|-----|-----|
| DN BRIDE<br>ND flange<br>ND Flansch | 13   | 19 | 25   | 32 | 38  | 51  | 64  | 76  | 102 |
| Ø H1                                | 22,0 | 28 | 35,0 | 43 | 50  | 62  | 74  | 90  | 114 |
| Ø A                                 | 13,0 | 19 | 25,0 | 32 | 38  | 47  | 58  | 70  | 102 |
| B                                   | 76,5 | 84 | 91,5 | 99 | 109 | 119 | 134 | 164 | 215 |
| L                                   | 45,0 | 50 | 55,0 | 60 | 65  | 70  | 75  | 85  | 100 |

### EMBOÎTEMENT SOUDÉ

Socket Welding

Geschweißte Einführung

CODE / KODE / SW



| DN<br>ND<br>ND | 13   | 19    | 25    | 32  | 38  | 51  | 64  | 76    | 102 |
|----------------|------|-------|-------|-----|-----|-----|-----|-------|-----|
| Ø i1           | 21,7 | 27,3  | 34,0  | 43  | 49  | 61  | 77  | 90,5  |     |
| Ø i2           | 30,0 | 35,0  | 44,0  | 55  | 63  | 79  | 98  | 116,0 |     |
| Ø A            | 13,0 | 19,0  | 25,0  | 32  | 38  | 47  | 58  | 70,0  |     |
| K              | 13,0 | 13,0  | 16,0  | 18  | 20  | 22  | 24  | 28,0  |     |
| B              | 91,5 | 102,0 | 111,5 | 134 | 144 | 156 | 189 | 223,0 |     |
| L              | 60,0 | 68,0  | 75,0  | 95  | 100 | 107 | 130 | 150,0 |     |

### OPTION : TUBE MÉTRIQUE

Option: metric tube

Option: Metrisches Rohr

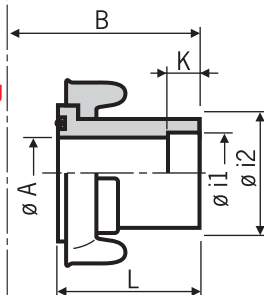
CODE / KODE / SWM

### EMBOÎTEMENT SOUDÉ RÉDUIT

Reduced Socket Welding

Reduzierte Geschweißte Einführung

CODE / KODE / SR



| DN<br>ND<br>ND | 13   | 19   | 25   | 32 | 38   | 51  | 64  | 76  | 102 |
|----------------|------|------|------|----|------|-----|-----|-----|-----|
| Ø i1           | 17,7 | 21,7 | 27,3 | 34 | 42,8 | 49  | 61  | 74  |     |
| Ø i2           | 24,0 | 31,5 | 38,0 | 43 | 50,0 | 62  | 74  | 90  |     |
| Ø A            | 12,0 | 13,0 | 19,0 | 25 | 32,0 | 38  | 47  | 58  |     |
| K              | 13,0 | 13,0 | 13,0 | 16 | 18,0 | 20  | 22  | 25  |     |
| B              | 66,5 | 74,0 | 81,5 | 89 | 99,0 | 114 | 134 | 168 |     |
| L              | 35,0 | 40,0 | 45,0 | 50 | 55,0 | 107 | 75  | 85  |     |

### OPTION : TUBE MÉTRIQUE

Option: metric tube

Option: Metrisches Rohr

CODE / KODE / SRM

| DN<br>ND<br>ND                                      | 13          | 19          | 25          | 32          | 38          | 51          | 64          | 76          | 102         |
|-----------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| O'RING                                              | 2210        | 2214        | 2219        | 2222        | 2225        | 2228        | 2232        | 2237        | 2245        |
| JOINT CARRÉ<br>Square seal<br>Vierteckige Dichtring | FLS<br>0151 | FLS<br>0201 | FLS<br>0251 | FLS<br>0321 | FLS<br>0401 | FLS<br>0501 | FLS<br>0651 | FLS<br>0801 | FLS<br>1001 |

| DN<br>ND<br>ND                                      | 13    | 19   | 25   | 32    | 38   | 51   | 64   | 76   | 102  |
|-----------------------------------------------------|-------|------|------|-------|------|------|------|------|------|
| VIS MÉTRIQUE<br>Metric screw<br>Metrische Schrauben | M8    | M10  | M10  | M10   | M12  | M12  | M12  | M16  | M16  |
| VIS UNC<br>Screw<br>UNC Schrauben                   | 5/16" | 3/8" | 3/8" | 7/16" | 1/2" | 1/2" | 1/2" | 5/8" | 5/8" |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

### BRIDES

#### Flanges

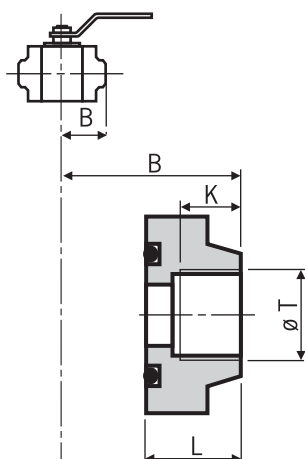
#### Flansche

#### TARAUDAGE BSPP

Female thread BSPP

BSPP Gewindeschneiden

CODE / KODE / GA

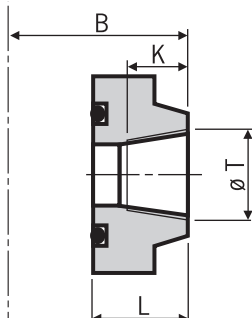


#### TARAUDAGE NPT

Female thread NPT

NPT Gewindeschneiden

CODE / KODE / NP

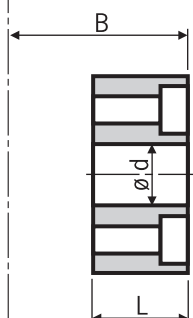


#### PLAQUE DE MAINTIEN

Support plate

Absperrplatte

CODE / KODE / PS

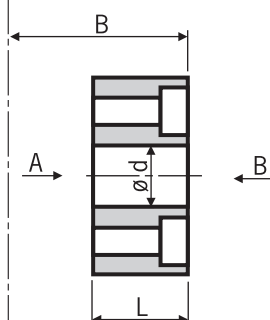


#### PLAQUE DE MAINTIEN RÉDUITE

Reduced support plate

Reduzierte Absperrplatte

CODE / KODE / PSR



#### OPTION : SUR DEMANDE

Option : on request

Option: Auf Anfrage

| DN ROBINET<br>ND valve<br>ND Hahn   | 15   | 20   | 25   | 32    | 40    | 50 | 65    | 80  | 100 |
|-------------------------------------|------|------|------|-------|-------|----|-------|-----|-----|
| DN BRIDE<br>ND flange<br>ND Flansch | 13   | 19   | 25   | 32    | 38    | 51 | 64    | 76  | 102 |
| Ø T                                 | 1/2" | 3/4" | 1"   | 1"1/4 | 1"1/2 | 2" | 2"1/2 | 3"  | 4"  |
| K                                   | 19,0 | 19   | 22,0 | 22    | 24    | 30 | 30    | 34  | 34  |
| B                                   | 67,5 | 70   | 74,5 | 80    | 89    | 94 | 109   | 133 | 163 |
| L                                   | 36,0 | 36   | 38,0 | 41    | 45    | 45 | 50    | 50  | 48  |

| DN<br>ND<br>ND | 13   | 19   | 25   | 32    | 38    | 51 | 64    | 76  | 102 |
|----------------|------|------|------|-------|-------|----|-------|-----|-----|
| Ø T            | 1/2" | 3/4" | 1"   | 1"1/4 | 1"1/2 | 2" | 2"1/2 | 3"  | 4"  |
| K              | 19,0 | 19   | 22,0 | 22    | 24    | 30 | 30    | 34  | 34  |
| B              | 67,5 | 70   | 74,5 | 80    | 89    | 94 | 109   | 133 | 163 |
| L              | 36,0 | 36   | 38,0 | 41    | 45    | 45 | 50    | 50  | 48  |

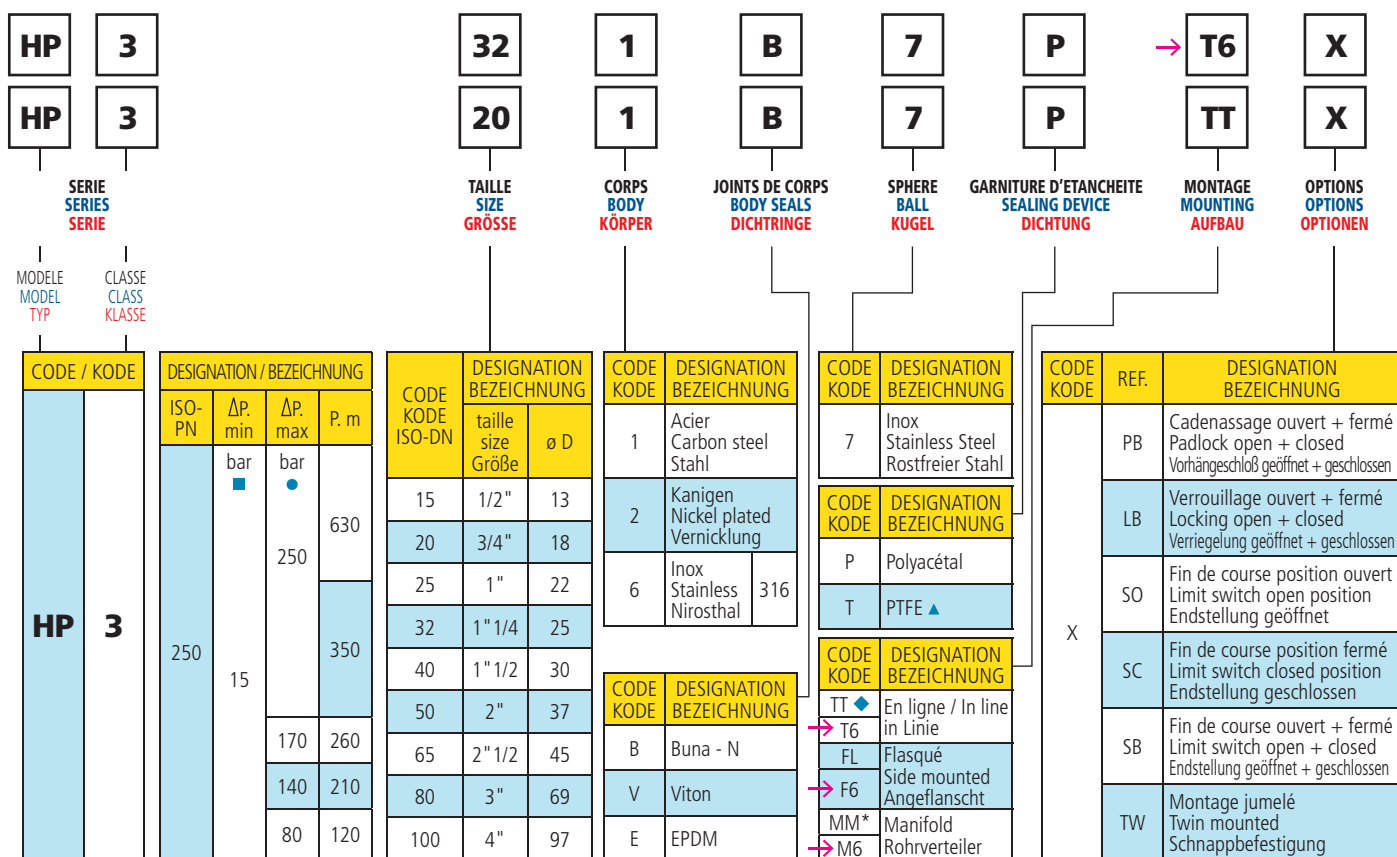
| DN<br>ND<br>ND | 13   | 19 | 25   | 32 | 38 | 51 | 64       | 76       | 102 |
|----------------|------|----|------|----|----|----|----------|----------|-----|
| Ø d            | 13,0 | 18 | 22,0 | 25 | 30 | 37 | 55<br>45 | 69<br>56 |     |
| B              | 51,5 | 59 | 61,5 | 68 | 73 | 78 | 93       | 115      |     |
| L              | 24,0 | 29 | 29,0 | 33 | 33 | 33 | 38       | 40       |     |

| DN<br>ND<br>ND | 13 | 19   | 25   | 32    | 38    | 51    | 64 | 76 | 102 |
|----------------|----|------|------|-------|-------|-------|----|----|-----|
| Ø d            |    | 13,0 | 18,0 | 22    | 25    | 30    |    |    |     |
| B              |    | 58,0 | 60,5 | 63    | 73    | 78    |    |    |     |
| L              |    | 23,0 | 28,0 | 28    | 33    | 33    |    |    |     |
| A/B            |    | 3/4" | 1"   | 1"1/4 | 1"1/2 | 2"    |    |    |     |
|                |    | 1/2" | 3/4" | 1"    | 1"1/4 | 1"1/2 |    |    |     |

| DN<br>ND<br>ND                                      | 13          | 19          | 25          | 32          | 38          | 51          | 64          | 76          | 102         |
|-----------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| O'RING                                              | 2210        | 2214        | 2219        | 2222        | 2225        | 2228        | 2232        | 2237        | 2245        |
| JOINT CARRÉ<br>Square seal<br>Viereckige Dichtring  | FLS<br>0151 | FLS<br>0201 | FLS<br>0251 | FLS<br>0321 | FLS<br>0401 | FLS<br>0501 | FLS<br>0651 | FLS<br>0801 | FLS<br>1001 |
| VIS MÉTRIQUE<br>Metric screw<br>Metrische Schrauben | M8          | M10         | M10         | M10         | M12         | M12         | M12         | M16         | M16         |
| VIS UNC<br>Screw<br>UNC Schrauben                   | 5/16"       | 3/8"        | 3/8"        | 7/16"       | 1/2"        | 1/2"        | 1/2"        | 5/8"        | 5/8"        |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions  
 ■ Do not use this male metric thread for new constructions  
 ■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?



■  $\Delta P_{min}$  : Pression différentielle minimale pour assurer une étanchéité maximale. Si le P est inférieur nous utilisons des garnitures avec pré-serrage (code option SG).

- $\Delta P_{\text{max}}$  : pression autorisant une bonne manoeuvrabilité manuelle.

NOTE : Ces valeurs sont indiquées pour des fluides hydrauliques,  
pour des fluides gazeux consulter nos services techniques.  
Codification incluant les instructions conformes à ISO 5209  
AFNOR N.F.F. 29470.

■  $\Delta P$ . min: minimum value for a good sealing. If P is below, we use sealing device with preloading (option code SG).

● P. max: pressure advised for an easy hand operating.  
NOTE: These values concern hydraulic fluids. For gas, please contact us.

Model number including the ISO 5209 instructions.

■  $\Delta P$  min. Minimal Differenzdruck für maximale Dichtigkeit  
Bei niedriger  $\Delta P$  wenden wir Dichtungen mit Vorpressung an

● **ΔP max.** Dieser Druck erlaubt eine gute Handbedienung  
Achtung: diese Werte sind für hydraulische Medien, für  
Gas befragen Sie unsere Technische Dienst. Die Referenz  
ist Gemäß ISO 5209 AFNOR N.F.E. 29470.

X : Toute option est codée "X" sur la plaque signalétique :  
en cas de commande de rechange nous indiquer le n°  
Mfg..... ou le numéro de commande d'origine.

**X:** All options are shown with an "X" printed on the identification plate. To order replacement parts, please give us the Mfg number or your purchase order number.

X: Jeder Option ist mit „X“ auf das Betriebsanweisungsschild markiert: bei Bestellung von Ersatzteile bitte Nr. Mfg ....aufgeben oder Nummer der Originalbestellung.

→ T6, F6, M6 ISO 6162-1 (SAE 3000)  
DN 32 VIS/SCREWS/SCHRAUBEN M10, DN 40,  
DN 50 ET DN 65 VIS/SCREWS/SCHRAUBEN M12.

▲ Pression de service maxi = 100 bar.

▲ Maxi working pressure = 100 bar.

▲ Maximal Betriebsdruck : 100 Bar.

◆ Code US pour version USA.

◆ US code for USA.

◆ **Kode für USA.**

\* Seulement en DN 32, 40 et 50'.

\* Only for DN 32, 40 and 50'.

\* Nur für ND 32.40 und 50.

| CODE<br>CODE | DESIGNATION / BEZEICHNUNG                                                           | CODE<br>CODE | DESIGNATION / BEZEICHNUNG                                                           |
|--------------|-------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|
| BW           | Bride à souder "Butt welding" / Butt weld flange / Flansch zum Schweißen BW         | GA           | Bride taraudée BSPP / Female thread flange BSPP / Flansch mit Gewindeschneiden BSPP |
| SW           | Bride à souder "Socket welding" / Socket weld flange / Flansch zum Schweißen SW     | NP           | Bride taraudée NPT / Female thread flange NPT / Flansch mit Gewindeschneiden NPT    |
| SWR          | Bride à souder "Socket welding réduit" / Reduced socket / Flansch zum Schweißen SWR | PS           | Bride de maintien / Support plate / Flansch                                         |

**EXEMPLE DE RÉFÉRENCE** / Model code example / Beispiel Referenz : **HP3.20.1V7P.FL.PB.EL.BW**

## CARACTERISTIQUES / Features / Eigenschaften

**Matières :**

Corps : acier  
Sphère : inox  
Garnitures : polyacétal  
Joints : buna - N  
Autres matières sur demande.

### Installation :

"SOUDÉ" - pointer sur la tuyauterie puis enlever la cellule pour le soudage complet des collets.  
"RINÇAGE" - Ne pas rincer les tuyauteries avec la cellule (robinet) montée.

### Materials:

Body: steel  
Ball: stainless steel  
Packing: polyacetal  
O'ring: buna - N  
Other material on request.

### Installation:

"WELDING" - tack weld the pipe, and then remove the valve body before the final welding on the necks.  
"FLUSHING" - Do not flush the pipe with the valve body in place.

**Werkstoffe:**

Körper: Stahl  
Kugel: aus rostfreier Stahl  
Dichtungen: Polyacetal  
Dichtring: Buna - N  
Andere Werkstoffe auf Anfrage.

### Aufbau:

„Geschweiß“ - Auf die Röhrenleitung heften und dann die Zelle wegnehmen für die komplette Schweißung der Kragen.  
„Spülung“ : Die Rohrleitung nicht spülen mit aufgebauter Zelle (Hahn).

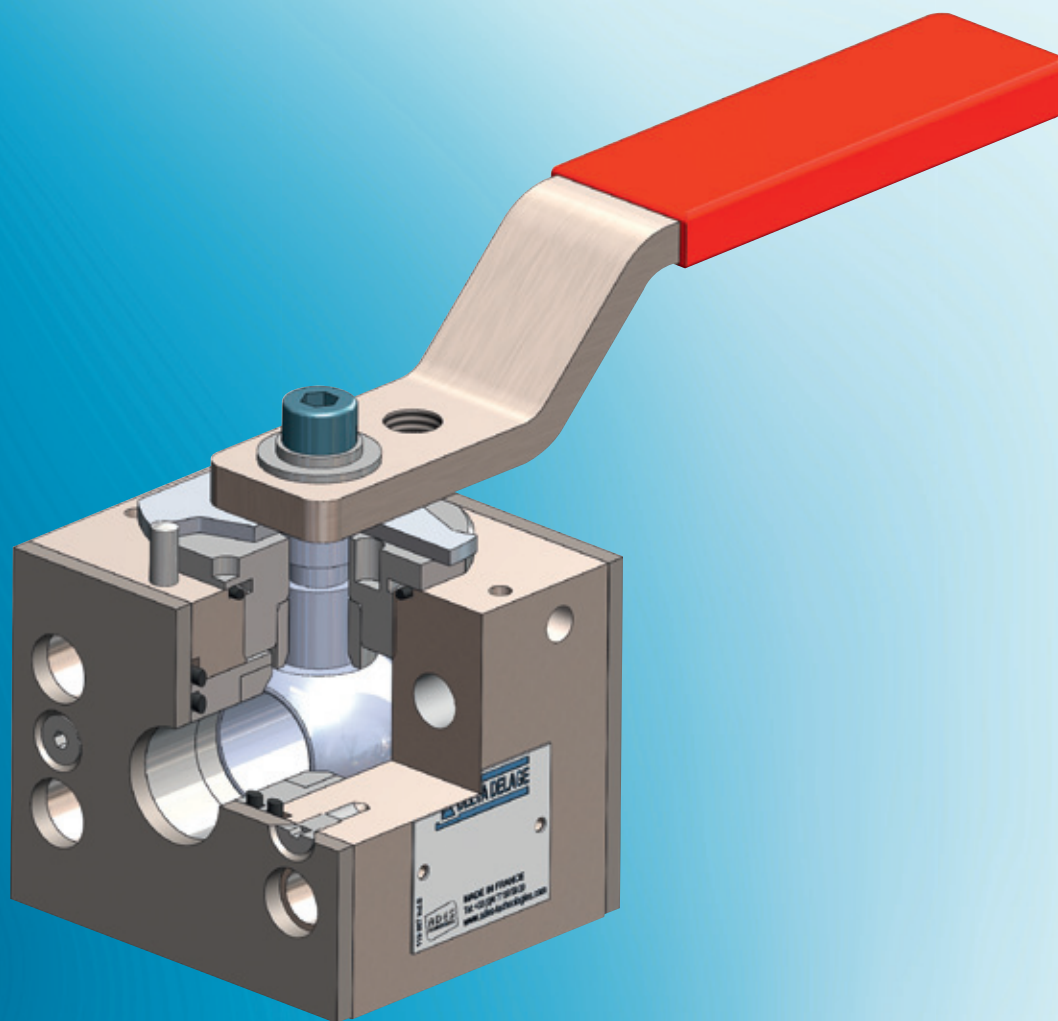
# HP 6

ISO 6162-2  
SAE 6000

**ROBINETS À SPHÈRE ARBRÉE**

BALANCED BALL VALVES

KUGELHAHNEN

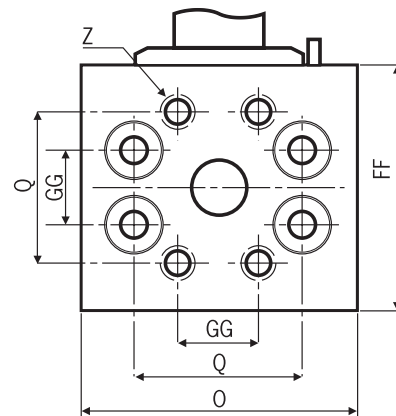
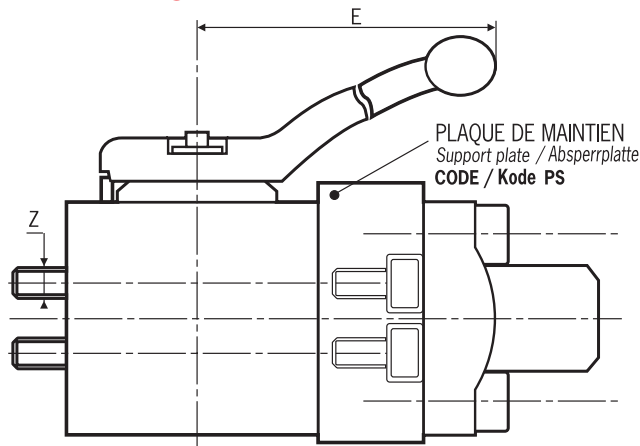




## DIMENSIONS DE LA CELLULE DE BASE

Basic valve dimensions

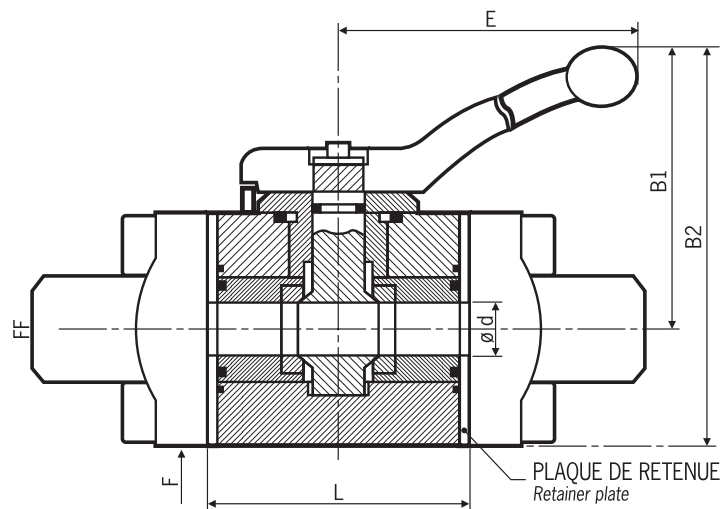
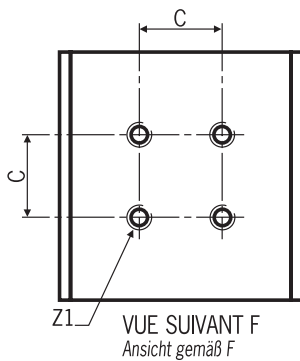
Abmessungen der Basiszelle



### FLASQUAGE LATERAL

Side flanged assembly

Lateral angeflanscht



### VERSION STANDARD : FERMETURE DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standard Ausführung : Verschluß in Uhrzeigersinn

### MONTAGE EN LIGNE

In line assembly

Aufbau in Linie

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><br>Working<br>pressure<br>Betriebsdruck<br>(Bar) | DIMENSIONS (mm)<br>Dimensions / Abmessungen |     |       |      |     |     |     |     |     |                |       |    |     |       | MASSE<br>(kg)<br>Weight<br>Gewicht<br>kg | Type<br>Mon-<br>tage |
|-------------------------------------|-------------------------|--------------------------------------------------------------------------------------|---------------------------------------------|-----|-------|------|-----|-----|-----|-----|-----|----------------|-------|----|-----|-------|------------------------------------------|----------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                      | ø d                                         | L   | GG    | Q    | FF  | O   | B1  | B2  | E   | Z              |       | C  | Z1  |       |                                          |                      |
|                                     |                         |                                                                                      |                                             |     |       |      |     |     |     |     |     | ISO            | UNC   |    | ISO | UNC   |                                          |                      |
| 15                                  | 1/2"                    | 420                                                                                  | 13                                          | 63  | 18,25 | 40,5 | 56  | 60  | 79  | 105 | 150 | M8             | 5/16" | 20 | M6  | 1/4"  | 1,7                                      |                      |
| 20                                  | 3/4"                    | 420                                                                                  | 18                                          | 68  | 23,80 | 50,8 | 70  | 71  | 82  | 112 | 150 | M10            | 3/8"  | 20 | M6  | 1/4"  | 2,2                                      |                      |
| 25                                  | 1"                      | 420                                                                                  | 22                                          | 73  | 27,75 | 57,2 | 80  | 80  | 100 | 136 | 175 | M12            | 7/16" | 25 | M6  | 1/4"  | 3,5                                      |                      |
| 32                                  | 1"1/4                   | 420                                                                                  | 28                                          | 80  | 31,75 | 66,7 | 95  | 100 | 100 | 146 | 380 | M12            | 7/16" | 35 | M6  | 5/16" | 4,8                                      | T6 ou F6             |
|                                     |                         | 420                                                                                  |                                             |     |       |      |     |     |     |     |     | <del>M14</del> |       |    |     |       |                                          | T ou FL              |
| 40                                  | 1"1/2                   | 420                                                                                  | 34                                          | 90  | 36,50 | 79,4 | 110 | 115 | 100 | 152 | 500 | M16            | 5/8"  | 35 | M8  | 5/16" | 8,0                                      |                      |
| 50                                  | 2"                      | 420                                                                                  | 43                                          | 102 | 44,45 | 96,8 | 133 | 135 | 121 | 181 | 500 | M20            | 3/4"  | 35 | M8  | 5/16" | 14,0                                     |                      |
|                                     |                         | 420                                                                                  |                                             |     |       |      |     |     |     |     |     |                |       |    |     |       |                                          |                      |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

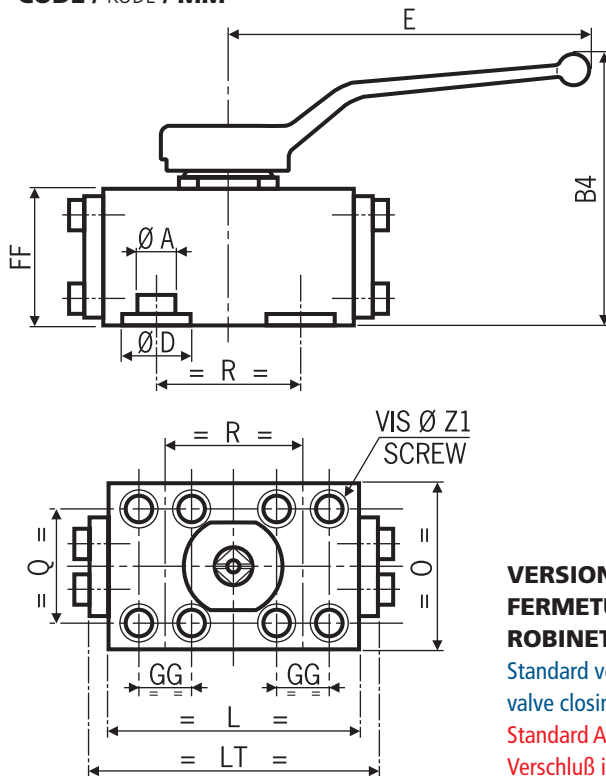
■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

### MONTAGE SUR MANIFOLD

Manifold mounting / Aufbau auf Rohrverteiler

CODE / KODE / MM



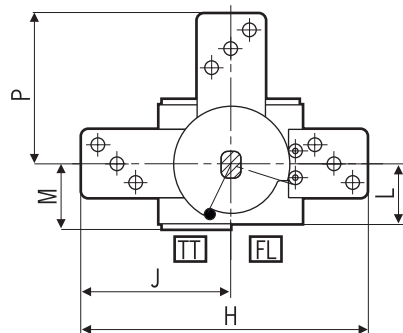
**VERSION STANDARD :  
FERMETURE DU  
ROBINET SENS HORAIRE**

Standard version : clockwise  
valve closing

Standard Ausführung :  
Verschluß in Uhrzeigersinn

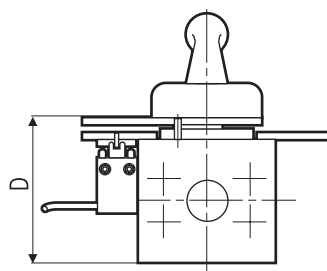
| TAILLE<br>Size<br>Größe    | 1/4"   | 3/8"   | 1/2"   | 3/4"   | 1"     |
|----------------------------|--------|--------|--------|--------|--------|
| DN / ND<br>ND              | 6      | 10     | 15     | 20     | 25     |
| ø A                        | 8      | 11     | 13     | 19     | 22     |
| ø D                        | 14,2   | 22     | 25,3   | 31,8   | 38     |
| R                          | 56     | 56     | 58     | 69     | 80     |
| L                          | 96     | 96     | 110    | 120    | 140    |
| GG                         | 16,5   | 16,5   | 18,2   | 23,8   | 27,8   |
| Q                          | 35     | 35     | 40,5   | 50,8   | 57,1   |
| FF                         | 41     | 41     | 48     | 55     | 69     |
| O                          | 52     | 52     | 60     | 70     | 80     |
| LT                         | 127    | 127    | 140    | 150    | 158    |
| E                          | 140    | 140    | 150    | 150    | 175    |
| B4                         | 96     | 96     | 104    | 111    | 135    |
| VIS<br>SCREW<br>SCHRAUBEN  | M8     | M8     | M8     | M10    | M12    |
| UNC                        | 5/16"  | 5/16"  | 5/16"  | 3/8"   | 7/16"  |
| MASSE<br>WEIGHT<br>GEWICHT | 1,6 KG | 1,6 KG | 2,0 KG | 3,2 KG | 5,5 KG |

### OPTIONS / Options / Optionen



**CADENASSAGE**

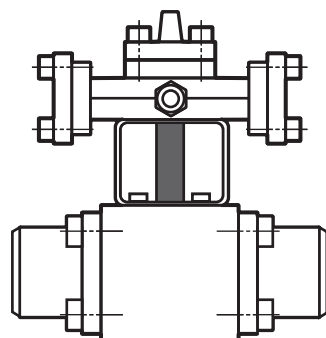
Padlock device  
Vorhängeschloß



**CONTACT FIN DE COURSE**

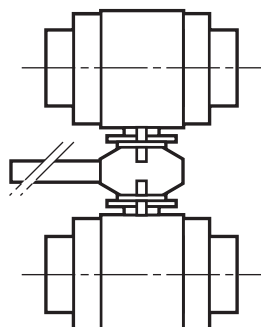
Limit switch  
Endstellung

| TAILLE<br>Size<br>Größe | 1/2"  | 3/4"  | 1"    | 1 1/4" | 1 1/2" | 2"    |
|-------------------------|-------|-------|-------|--------|--------|-------|
| DN / ND<br>ND           | 15    | 20    | 25    | 32     | 40     | 50    |
| P                       | 60,0  | 65,0  | 71,0  | 79,0   | 93,5   | 103,0 |
| M                       | 31,5  | 34,0  | 36,5  | 40,0   | 45,0   | 51,0  |
| H                       | 120,0 | 130,0 | 142,0 | 158,0  | 187,0  | 206,0 |
| D                       | 56,5  | 63,5  | 78,5  | 117,5  | 124,0  | 150,0 |
| L                       | 27,5  | 30,0  | 32,5  | 35,0   | 40,0   | 45,0  |



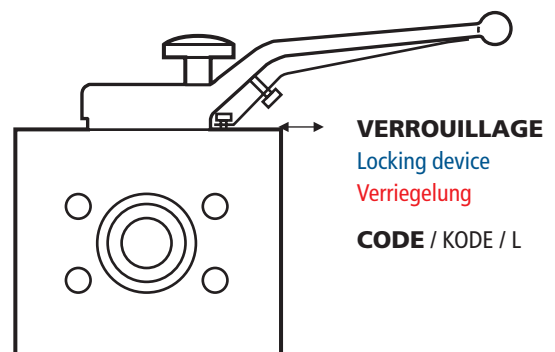
**AUTOMATISME :  
TOUT TYPE D'OPERATEUR**

Automatisme: all kinds of actuators  
Automatik: Alle Typen von Antriebe



**ENSEMBLE JUMELE**

Twin assembly  
Schnappbefestigung



**VERROUILLAGE**  
Locking device  
Verriegelung

CODE / KODE / L

**VERROUILLAGE LEVER/BAISSER**

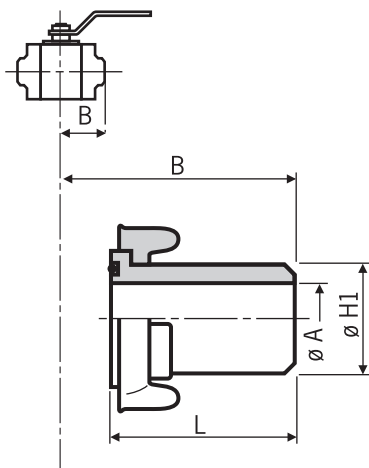
Up/down locking  
Verriegelung heben/herunterlassen

CODE / KODE / T

## BRIDES

### Flanges

### Flansche



### SOUDÉ BOUT À BOUT

Butt welding

Stoßnaht Schweißung

CODE / KODE / BW

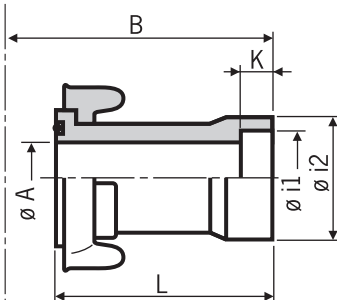
| DN ROBINET<br>ND valve<br>ND Hahn   | 15   | 20 | 25   | 32  | 40  | 50  |
|-------------------------------------|------|----|------|-----|-----|-----|
| DN BRIDE<br>ND flange<br>ND Flansch | 13   | 19 | 25   | 32  | 38  | 51  |
| ø H1                                | 22,0 | 28 | 35,0 | 44  | 51  | 65  |
| ø A                                 | 14,0 | 18 | 22,0 | 29  | 35  | 43  |
| B                                   | 76,5 | 84 | 91,5 | 100 | 110 | 121 |
| L                                   | 45,0 | 50 | 55,0 | 60  | 65  | 70  |

### EMBOÎTEMENT SOUDÉ

Socket Welding

Geschweißte Einführung

CODE / KODE / SW



| DN<br>ND<br>ND | 13   | 19    | 25  | 32 | 38 | 51 |
|----------------|------|-------|-----|----|----|----|
| ø i1           | 21,7 | 27,3  | 34  |    |    |    |
| ø i2           | 32,0 | 40,0  | 48  |    |    |    |
| ø A            | 14,0 | 19,0  | 22  |    |    |    |
| K              | 13,0 | 13,0  | 16  |    |    |    |
| B              | 92,0 | 102,0 | 112 |    |    |    |
| L              | 60,0 | 68,0  | 75  |    |    |    |

### OPTION : TUBE METRIQUE

Option: metric tube

Option: Metrisches Rohr

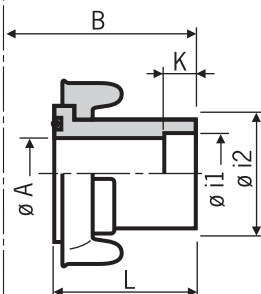
CODE / KODE / SWM

### EMBOÎTEMENT SOUDÉ RÉDUIT

Reduced Socket Welding

Reduzierte Geschweißte Einführung

CODE / KODE / SR



| DN<br>ND<br>ND | 13   | 19   | 25   | 32 | 38    | 51  |
|----------------|------|------|------|----|-------|-----|
| ø i1           | 17,7 | 21,7 | 27,3 | 34 | 42,8  | 49  |
| ø i2           | 24,0 | 31,8 | 38,0 | 44 | 51,0  | 67  |
| ø A            | 11,0 | 14,0 | 18,0 | 22 | 29,0  | 38  |
| K              | 13,0 | 13,0 | 13,0 | 16 | 18,0  | 20  |
| B              | 67,0 | 74,0 | 82,0 | 90 | 100,0 | 116 |
| L              | 35,0 | 40,0 | 45,0 | 50 | 55,0  | 65  |

### OPTION : TUBE METRIQUE

Option: metric tube

Option: Metrisches Rohr

CODE / KODE / SRM

| DN<br>ND<br>ND                                     | 13          | 19          | 25          | 32          | 38          | 51          |
|----------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| O'RING                                             | 2210        | 2214        | 2219        | 2222        | 2225        | 2228        |
| JOINT CARRÉ<br>Square seal<br>Viereckige Dichtring | FLS<br>0151 | FLS<br>0201 | FLS<br>0251 | FLS<br>0321 | FLS<br>0401 | FLS<br>0501 |

| DN<br>ND<br>ND                                      | 13    | 19   | 25    | 32   | 38   | 51   |
|-----------------------------------------------------|-------|------|-------|------|------|------|
| VIS MÉTRIQUE<br>Metric screw<br>Metrische Schrauben | M8    | M10  | M12   | M12  | M16  | M20  |
| VIS UNC<br>Screw<br>UNC Schrauben                   | 5/16" | 3/8" | 7/16" | 1/2" | 5/8" | 3/4" |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions  
 ■ Do not use this male metric thread for new constructions  
 ■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

### OPTION : SUR DEMANDE

Option : on request

Option: Auf Anfrage

NOTA :  
 Dim. i1 pour tubes Gaz et Schedule 80  
 Dim. i1 for gas tubes and Schedule 80  
 Achtung : Abmessungen i1 für Gasrohre  
 und „Maßstab 80

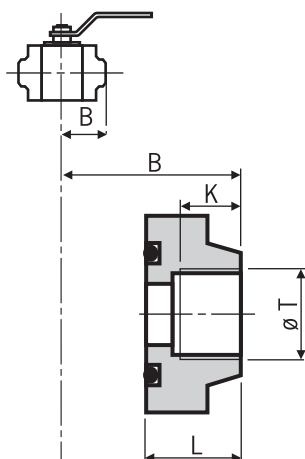
## BRIDES Flanges Flansche

### TARAUDAGE BSPP

Female thread BSPP

Mit Gewindeschneiden BSPP

CODE / KODE / GA

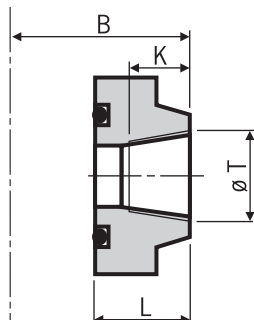


### TARAUDAGE NPT

Female thread NPT

Mit Gewindeschneiden NPT

CODE / KODE / NP

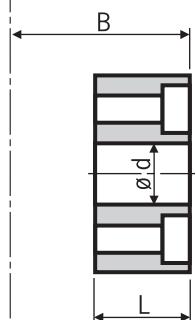


### PLAQUE DE MAINTIEN

Support plate

Absperrplatte

CODE / KODE / PS

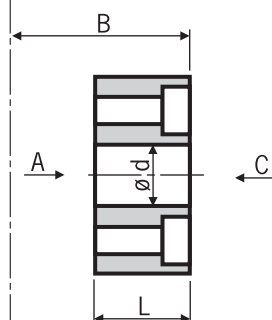


### PLAQUE DE MAINTIEN RÉDUITE

Reduced support plate

Reduzierte Absperrplatte

CODE / KODE / PSR



### OPTION : SUR DEMANDE

Option : on request

Option: Auf Anfrage

| DN ROBINET<br>ND valve<br>ND Hahn   | 15   | 20   | 25   | 32     | 40     | 50  |
|-------------------------------------|------|------|------|--------|--------|-----|
| DN BRIDE<br>ND flange<br>ND Flansch | 13   | 19   | 25   | 32     | 38     | 51  |
| Ø T                                 | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"  |
| K                                   | 19,0 | 22,0 | 24,0 | 25     | 28     | 30  |
| B                                   | 67,5 | 69,0 | 78,5 | 85     | 95     | 116 |
| L                                   | 36,0 | 35,0 | 42,0 | 45     | 50     | 65  |

| DN<br>ND<br>ND | 13   | 19   | 25   | 32     | 38     | 51  |
|----------------|------|------|------|--------|--------|-----|
| Ø T            | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"  |
| K              | 19,0 | 22,0 | 24,0 | 25     | 28     | 30  |
| B              | 67,5 | 69,0 | 78,5 | 85     | 95     | 116 |
| L              | 36,0 | 35,0 | 42,0 | 45     | 50     | 45  |

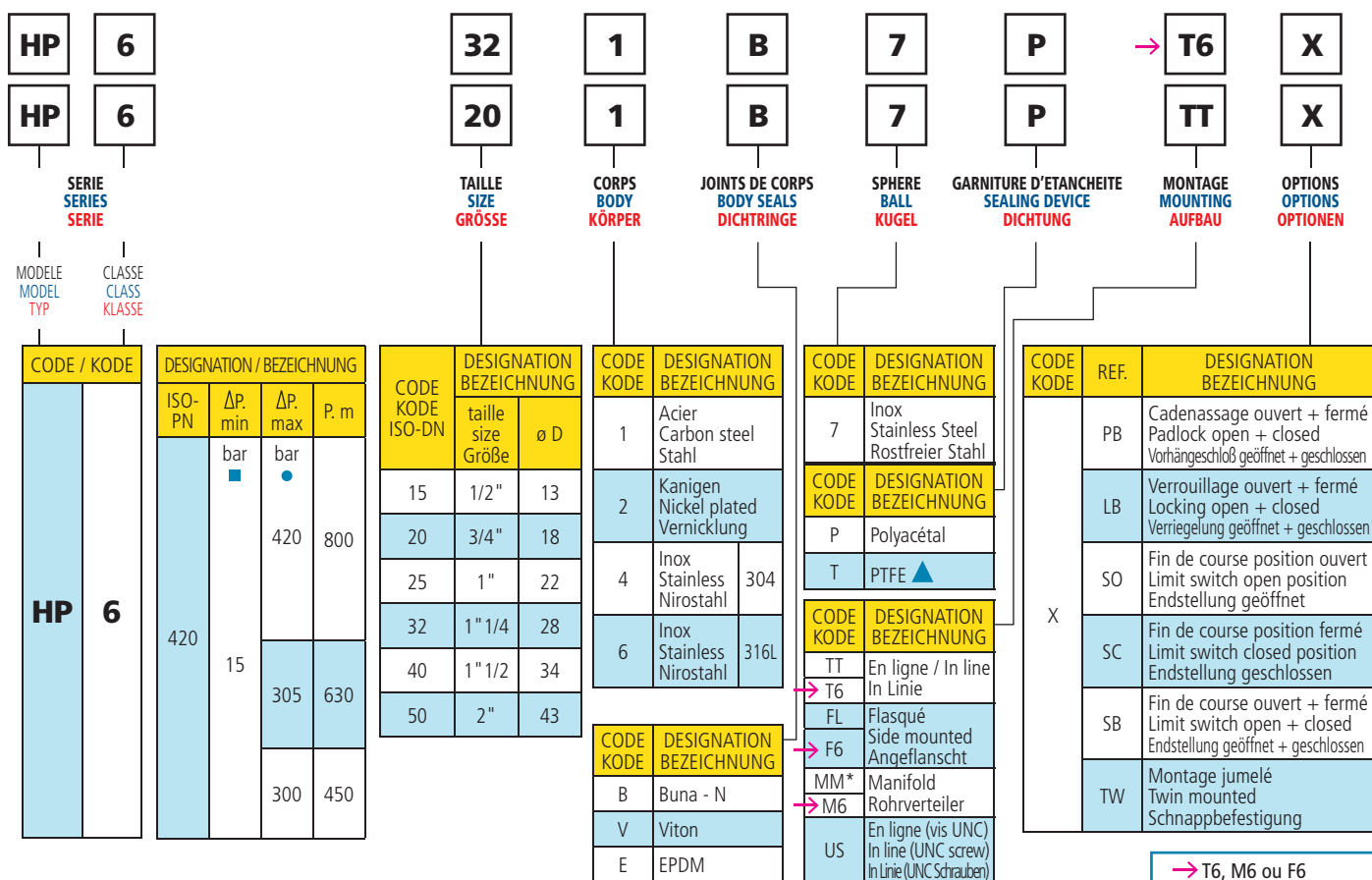
| DN<br>ND<br>ND | 13   | 19   | 25   | 32 | 38 | 51 |
|----------------|------|------|------|----|----|----|
| Ø d            | 13   | 18,0 | 22,0 | 25 | 30 | 37 |
| B              | 51,5 | 59,0 | 65,5 | 68 | 78 | 93 |
| L              | 24,0 | 29,0 | 33,0 | 33 | 38 | 48 |

| DN<br>ND<br>ND | 13 | 19   | 25   | 32     | 38     | 51     |
|----------------|----|------|------|--------|--------|--------|
| Ø d            |    | 13   | 18,0 | 22     | 25     | 30     |
| B              |    | 53   | 60,5 | 68     | 73     | 83     |
| L              |    | 24   | 29,0 | 33     | 33     | 38     |
| A/C            |    | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"     |
|                |    | 1/2" | 3/4" | 1"     | 1 1/4" | 1 1/2" |

| DN<br>ND<br>ND                                      | 13       | 19       | 25       | 32       | 38       | 51       |
|-----------------------------------------------------|----------|----------|----------|----------|----------|----------|
| O'RING                                              | 2210     | 2214     | 2219     | 2222     | 2225     | 2228     |
| JOINT CARRÉ<br>Square seal<br>Vierteckige Dichtring | FLS 0151 | FLS 0201 | FLS 0251 | FLS 0321 | FLS 0401 | FLS 0501 |
| VIS MÉTRIQUE<br>Metric screw<br>Metrische Schrauben | M8       | M10      | M12      | M12      | M16      | M20      |
|                                                     |          |          |          | M14      |          |          |
| VIS UNC<br>Screw<br>UNC Schrauben                   | 5/16"    | 3/8"     | 7/16"    | 1/2"     | 5/8"     | 3/4"     |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions  
 ■ Do not use this male metric thread for new constructions  
 ■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?



■  $\Delta P_{min}$  : Pression différentielle minimale pour assurer une étanchéité maximale. Si le P est inférieur nous utilisons des garnitures avec pré-serrage (code option SG).

- $\Delta P_{\text{max}}$  : pression autorisant une bonne manoeuvrabilité manuelle.

NOTE : Ces valeurs sont indiquées pour des fluides hydrauliques, pour des fluides gazeux consulter nos services techniques.  
Codification incluant les instructions conformes à ISO 5209  
AFNOR N.FE. 29470.

■  $\Delta P$ . min: minimum value for a good sealing. If P is below, we use sealing device with preloading (option code SG).

● P. max: pressure advised for an easy hand operating.  
NOTE: These values concern hydraulic fluids. For gas, please contact us.  
Model number including the ISO 5209 instructions.

■  $\Delta p$  min. Minimal Differenzdruck für maximale Dichtigkeit  
Bei niedriger  $\Delta p$  wenden wir Dichtungen mit Vorpressung an

●  $\Delta P$  max. Dieser Druck erlaubt eine gute Handbedienung  
Achtung: diese Werte sind für hydraulische Medien, für Gas  
befragen Sie unsere Technische Dienst. Die Referenz ist Gemäß  
ISO 5209 AFNOR N.F.E. 29470.

X : Toute option est codée "X" sur la plaque signalétique : en cas de commande de rechange nous indiquer le n° Mfg..... ou le numéro de commande d'origine.

X: All options are shown with an "X" printed on the identification plate. To order replacement parts, please give us the Mfg number or your purchase order number.

X: Jeder Option ist mit „X“ auf das Betriebsanweisungsschild markiert: bei Bestellung von Ersatzteile bitte Nr. Mfg .... aufgeben oder Nummer der Originalbestellung.

▲ Pression de service maxi = 100 bar.

▲ Maxi working pressure = 100 bar.

▲ Maximal Betriebsdruck: 100 Bar.

\* Jusqu'au DN 25.

\* Only up to DN 25.

\* Bis ND 25.

| CODE<br>CODE | DESIGNATION / BEZEICHNUNG                                                           | CODE<br>CODE | DESIGNATION / BEZEICHNUNG                                                           |
|--------------|-------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|
| BW           | Bride à souder "Butt welding" / Butt weld flange / Flansch zum Schweißen BW         | GA           | Bride taraudée BSPP / Female thread flange BSPP / Flansch mit Gewindeschneiden BSPP |
| SW           | Bride à souder "Socket welding" / Socket weld flange / Flansch zum Schweißen SW     | NP           | Bride taraudée NPT / Female thread flange NPT / Flansch mit Gewindeschneiden NPT    |
| SWR          | Bride à souder "Socket welding réduit" / Reduced socket / Flansch zum Schweißen SWR | PS           | Bride de maintien / Support plate / Flansch                                         |

**EXEMPLE DE RÉFÉRENCE** / Model code example / Beispiel Referenz : **HP6.20.1B7P.FL.PB.PS.BW**

## CARACTERISTIQUES / Features / Eigenschaften

**Matières :**

Corps : acier  
Sphère : inox  
Garnitures : polyacétal  
Joints : buna - N  
Autres matières sur demande.

### Installation :

"SOUDÉ" - pointer sur la tuyauterie puis enlever la cellule pour le soudage complet des collets.  
"RINÇAGE" - Ne pas rincer les tuyauteries avec la cellule (robinet) montée.

### Materials:

Body: steel  
Ball: stainless steel  
Packing: polyacetal  
O'ring: buna - N  
Other material on request.

### Installation:

**"WELDING"** - tack weld the pipe, and then remove the valve body before the final welding on the necks.  
**"FLUSHING"** - Do not flush the pipe with the valve body in place.

**Werkstoffe:**

Körper: Stahl  
Kugel: aus rostfreier Stahl  
Dichtungen: Polyacetal  
Dichtring: Buna - N  
Andere Werkstoffe auf Anfrage.

### Aufbau:

„Geschweißt“ - Auf die Röhrenleitung heften und dann die Zelle wegnehmen für die komplette Schweißung der Kragen.  
„Spülung“ : Die Rohrleitung nicht spülen mit aufgebauter Zelle (Hahn).



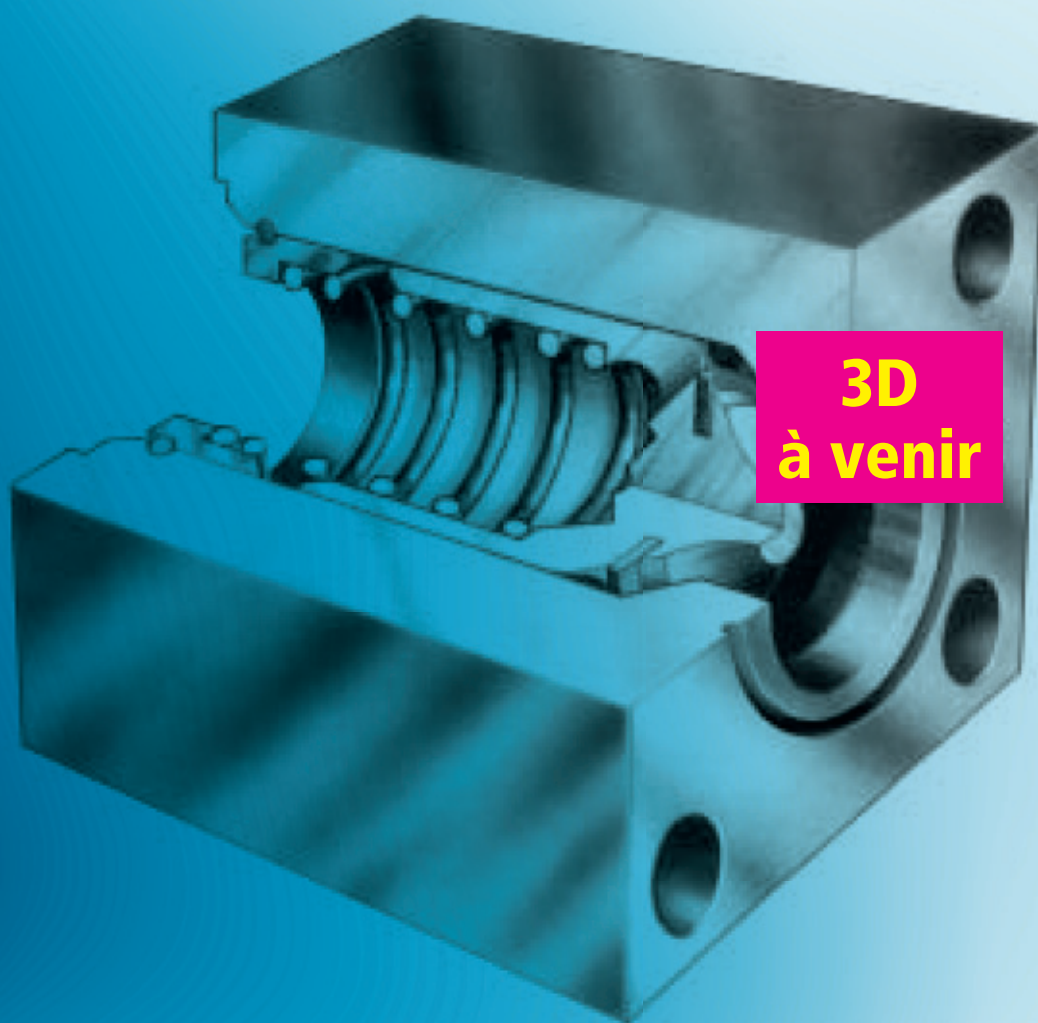
# AR

**CLAPETS DE NON RETOUR**

NON RETURN CHECK VALVES

RÜCKSCHLAGVENTILE

ISO 6162-1 (SAE 3000)  
ISO 6162-2 (SAE 6000)



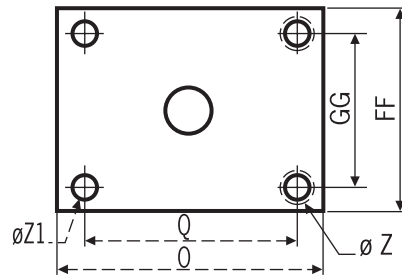
**3D  
à venir**



## DIMENSION

Dimensions

Abmessungen



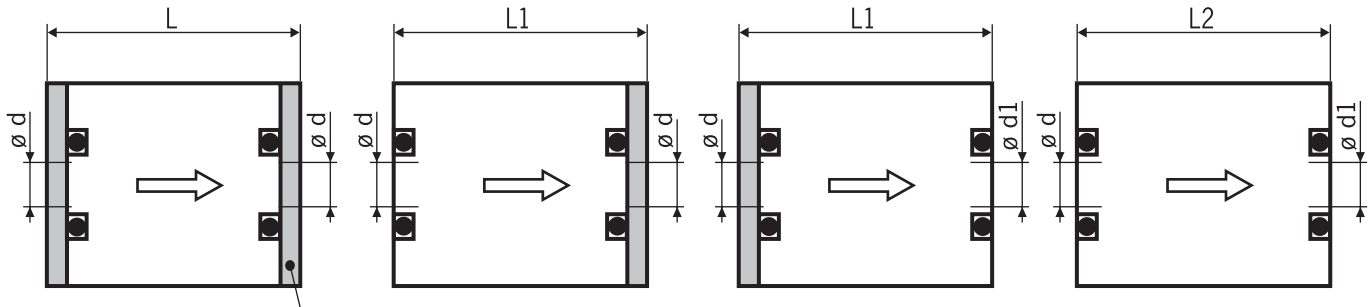
PR= PLAQUE DE RETENUE  
RETAINER PLATE / SPERRPLATTE

MONTAGE EN LIGNE  
IN LINE MOUNTING  
AUFBAU IN LINIE

4 trous ø Z  
4 holes ø Z  
4 Löcher ø Z

MONTAGE FLASQUE  
SIDE FLANGED MOUNTING  
ANFLANSCHUNG

4 trous ø Z1  
4 holes ø Z1  
4 Löcher ø Z1



**SANS JOINT**

Without seal

Ohne Dichtring

CODE / KODE / N

**JOINT CÔTÉ ENTRÉE**

Inlet side sealed

Dichtring am Eingangsseite

CODE / KODE / E

**JOINT CÔTÉ SORTIE**

Outlet side sealed

Dichtring am Ausgangsseite

CODE / KODE / S

**JOINTS DES 2 CÔTÉS**

Seals on both sides

Dichtringe an beiden Seiten

CODE / KODE / D

## ISO 6162-1 (SAE 3000)

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |     |      |      |      |     |       |     |     |     |    |            |      | O-RING            |                   | MASSE<br>(kg)<br>Weight<br>Gewicht<br>Kg |
|-------------------------------------|-------------------------|-----|------|------|------|-----|-------|-----|-----|-----|----|------------|------|-------------------|-------------------|------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | PN  | ø d  | ø d1 | GG   | FF  | Q     | O   | L   | L1  | L2 | ø Z        | ø Z1 | ENTREE<br>Eingang | SORTIE<br>Ausgang |                                          |
| 15                                  | 1/2"                    | 250 | 11   | 17,5 | 17,5 | 45  | 38,1  | 60  | 46  | 42  | 38 | M8         | 8,5  | 2118              | 2118              | 0,5                                      |
| 20                                  | 3/4"                    | 250 | 14,5 | 23   | 22,2 | 55  | 47,6  | 70  | 54  | 50  | 46 | M10        | 11   | 2122              | 2122              | 1,0                                      |
| 25                                  | 1"                      | 250 | 17   | 28   | 26,2 | 70  | 52,4  | 80  | 61  | 57  | 53 | M10        | 11   | 2126              | 2126              | 1,3                                      |
| 32                                  | 1" 1/4                  | 250 | 22   | 37,3 | 30,2 | 80  | 58,7  | 80  | 82  | 78  | 74 | M10<br>M12 | 11   | 2131              | 2131              | 2,6                                      |
| 40                                  | 1" 1/2                  | 250 | 28   | 43   | 35,7 | 90  | 69,85 | 95  | 89  | 85  | 81 | M12<br>M14 | 13   | 2136              | 2126              | 3,8                                      |
| 50                                  | 2"                      | 250 | 37   | 55   | 42,9 | 100 | 77,8  | 110 | 105 | 101 | 97 | M12<br>M14 | 13   | 2143              | 2143              | 5,9                                      |

## ISO 6162-2 (SAE 6000)

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |     |      |      |       |     |       |     |     |     |    |            |      | O-RING            |                   | MASSE<br>(kg)<br>Weight<br>Gewicht<br>Kg |
|-------------------------------------|-------------------------|-----|------|------|-------|-----|-------|-----|-----|-----|----|------------|------|-------------------|-------------------|------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | PN  | ø d  | ø d1 | GG    | FF  | Q     | O   | L   | L1  | L2 | ø Z        | ø Z1 | ENTREE<br>Eingang | SORTIE<br>Ausgang |                                          |
| 15                                  | 1/2"                    | 420 | 11   | 17,5 | 18,25 | 50  | 40,5  | 60  | 46  | 42  | 38 | M8         | 8,5  | 2118              | 2118              | 0,7                                      |
| 20                                  | 3/4"                    | 420 | 14,5 | 23   | 23,8  | 60  | 50,8  | 70  | 54  | 50  | 46 | M10        | 11   | 2123              | 2123              | 1,2                                      |
| 25                                  | 1"                      | 420 | 17   | 28   | 27,75 | 70  | 57,15 | 80  | 61  | 57  | 53 | M12        | 13   | 2128              | 2128              | 1,9                                      |
| 32                                  | 1" 1/4                  | 420 | 22   | 37,3 | 31,75 | 80  | 66,7  | 95  | 84  | 79  | 74 | M12<br>M14 | 15   | 2132              | 2132              | 3,3                                      |
| 50                                  | 2"                      | 420 | 37   | 55   | 44,45 | 115 | 96,8  | 135 | 109 | 103 | 97 | M16        | 17   | 2138              | 2138              | 5,2                                      |
| 50                                  | 2"                      | 250 | 37   | 55   | 42,9  | 100 | 77,8  | 110 | 105 | 101 | 97 | M20        | 21   | 2146              | 2146              | 8,9                                      |

◆ Diamètre maxi de perçage du bloc foré - Entrée/Inlet  
◆ Maximum diameter of inlet hole  
◆ Maximal Durchmesser der Bohrung

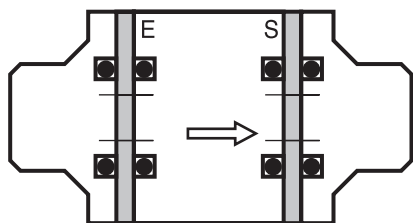
● Sortie/Outlet  
● outlet hole - in the manifold  
● Eingang/Ausgang

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions  
■ Do not use this male metric thread for new constructions  
■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

## MONTAGE EN LIGNE

In line assembly

Aufbau in Linie



## FLASQUAGE LATERAL

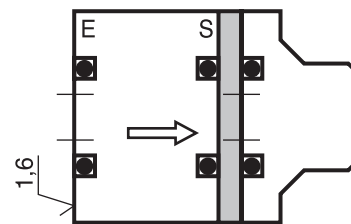
Side flanged assembly

Laterale Anflanschung

CÔTÉ ENTRÉE

Inlet side

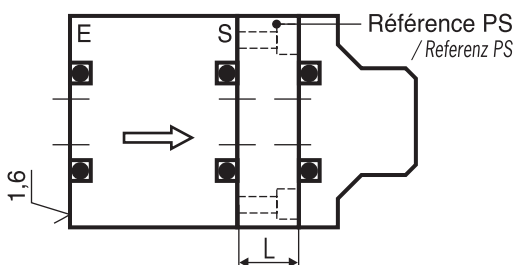
Eingang



## FLASQUE AVEC PLAQUE DE MAINTIEN

Side mounted with retaining plate

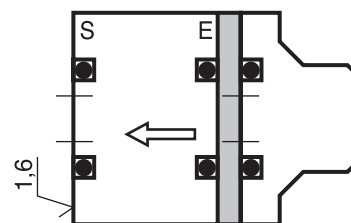
Flansch mit Sperrplatte



CÔTÉ SORTIE

Outlet side

Ausgang



## ISO 6162-1

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | SAE 3000 |                      |
|-------------------------------------|-------------------------|----------|----------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | L        | REFERENCE / Referenz |
| 15                                  | 1/2"                    | 23       | PS.01.0151           |
| 20                                  | 3/4"                    | 29       | PS.01.0201           |
| 25                                  | 1"                      | 29       | PS.01.0251           |
| 32                                  | 1" 1/4                  | 33       | PS.01.0321           |
| 40                                  | 1" 1/2                  | 33       | PS.01.0401           |
| 50                                  | 2"                      | 33       | PS.01.0501           |

## ISO 6162-2

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | SAE 6000 |                      |
|-------------------------------------|-------------------------|----------|----------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | L        | REFERENCE / Referenz |
| 15                                  | 1/2"                    | 23       | PS.02.0151           |
| 20                                  | 3/4"                    | 29       | PS.02.0201           |
| 25                                  | 1"                      | 33       | PS.02.0251           |
| 32                                  | 1" 1/4                  | 33       | PS.02.0321           |
| 40                                  | 1" 1/2                  | 39       | PS.02.0401           |
| 50                                  | 2"                      | 49       | PS.02.0501           |

Nous contacter pour plus d'informations.  
For more information, contact us.  
Für mehr Informationen, bitte Fragen Sie uns.

## DEBIT/PERTES DE CHARGE

FLOW/PRESSURE DROP / Durchfluß / Gefällverlust

| DN<br>ND<br>ND                          | 10   |     |     | 15   |      |      | 20   |      |      | 25   |     |      | 32     |      |      | 40     |      |      | 50   |      |      |
|-----------------------------------------|------|-----|-----|------|------|------|------|------|------|------|-----|------|--------|------|------|--------|------|------|------|------|------|
| TAILLE<br>Size / Größe                  | 3/8" |     |     | 1/2" |      |      | 3/4" |      |      | 1"   |     |      | 1" 1/4 |      |      | 1" 1/2 |      |      | 2"   |      |      |
| Débit / Flow • L/mn<br>Durchfluß L/Min. | 10   | 15  | 20  | 30   | 40   | 60   | 50   | 70   | 90   | 70   | 100 | 120  | 100    | 150  | 200  | 120    | 180  | 260  | 160  | 200  | 270  |
| Δ p. bar                                | 0,6  | 0,7 | 1,0 | 0,86 | 1,46 | 3,06 | 0,58 | 1,04 | 1,67 | 0,42 | 0,8 | 1,14 | 0,51   | 0,72 | 1,21 | 0,63   | 0,69 | 0,85 | 0,53 | 0,54 | 0,55 |

DEBIT/PERTES DE CHARGE (Δp. bar).  
FLOW/PRESSURE DROP (Δp. bar).  
Durchfluß / Gefällverlust.

Huile minérale 30 cst à 40°C avec ressort taré à 0,5 bar. v= 9 m/s.  
Mineral oil 30 cst at 40°C with 0,5 bar spring v= 9 m/s.  
Mineralöl 30 cst bei 40°C mit Feder zu 0,5 Bar geeicht. V= 9M/S.



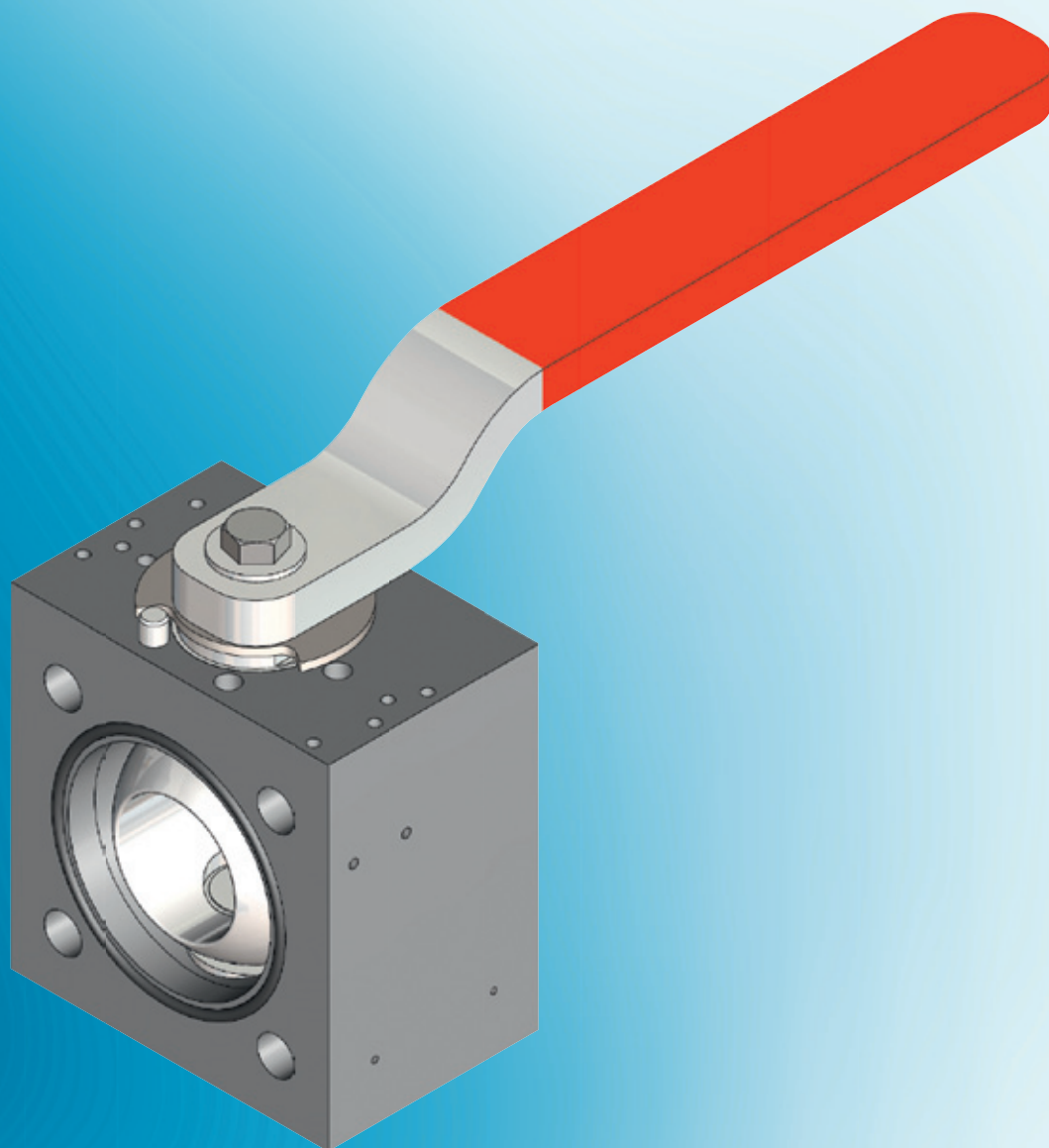
**ROBINETS À SPHÈRE TOURILLONNÉE**

**TRUNNIONED BALL VALVES**

**KUGELHAHNEN**

**H 352**  
**H 354**

**HYDRAUXIM**





# H 352

## DIMENSIONS DE LA CELLULE DE BASE

Basic valve dimensions

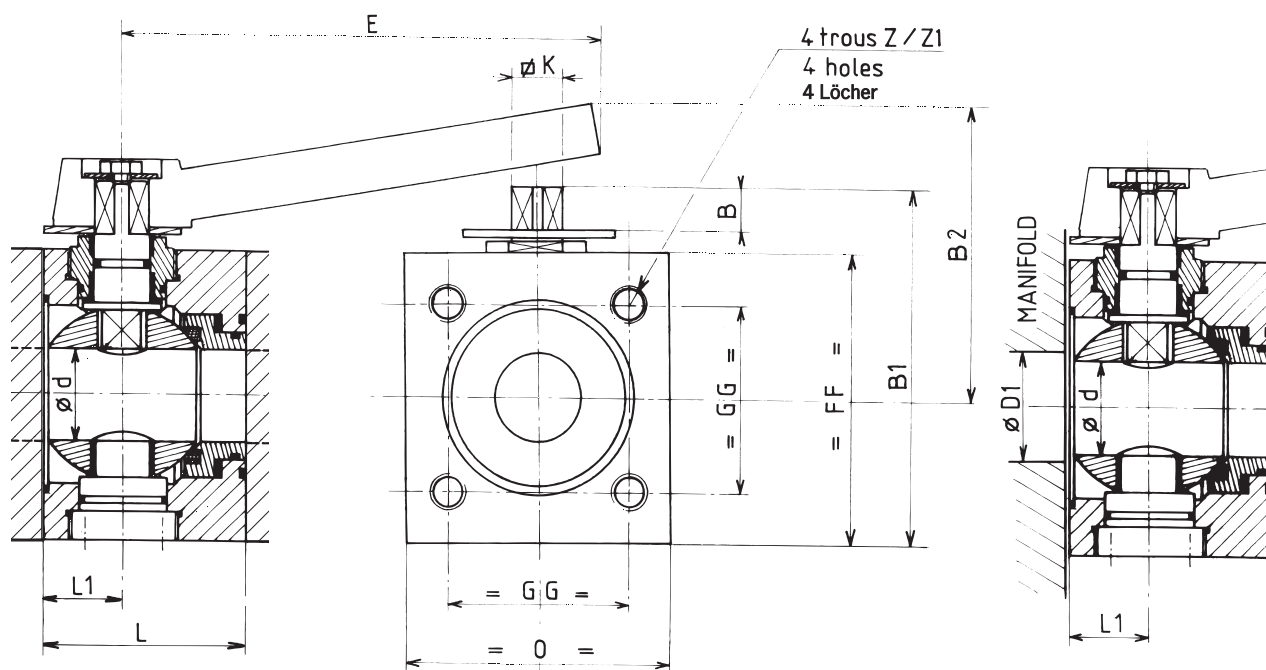
Abmessungen der Basiszelle

VERSION STANDARD : FERMETURE  
DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standardausführung: Verschuß in Uhrzeigersinn

DN 40 & 50



### MONTAGE EN LIGNE

In line mounted

Aufbau in Linie

### MONTAGE FLASQUÉ

Side flanged mounting

Angeflanscht

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION DE<br>SERVICE (BAR)<br><i>Working<br/>pressure</i><br>Betriebsdruck<br>(Bar) | DIMENSIONS (mm)<br><i>Dimensions / Abmessungen</i> |      |      |     |     |    |    |    |      |    |       |       |     |     |      |     | MASSE<br>(kg)<br><i>Weight</i><br>Gewicht<br>(kg) |
|-------------------------------------|-------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------|------|------|-----|-----|----|----|----|------|----|-------|-------|-----|-----|------|-----|---------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                       | ø d                                                | D1   |      | 0   | FF  | GG | J  | L  | L1   | B  | B1    | B2    | E   | Z   | Z1   | ⌀ K |                                                   |
|                                     |                         |                                                                                       |                                                    | mini | maxi |     |     |    |    |    |      |    |       |       |     |     |      |     |                                                   |
| 40                                  | 1"1/2                   | 350                                                                                   | 35                                                 | 35   | 60   | 100 | 104 | 64 | 51 | 68 | 27,0 | 14 | 126,5 | 121,5 | 220 | M14 | 14,5 | 14  | 6                                                 |
| 50                                  | 2"                      | 350                                                                                   | 44                                                 | 44   | 75   | 120 | 127 | 80 | 62 | 80 | 32,5 | 14 | 150,0 | 176,0 | 400 | M16 | 16,5 | 18  | 10                                                |

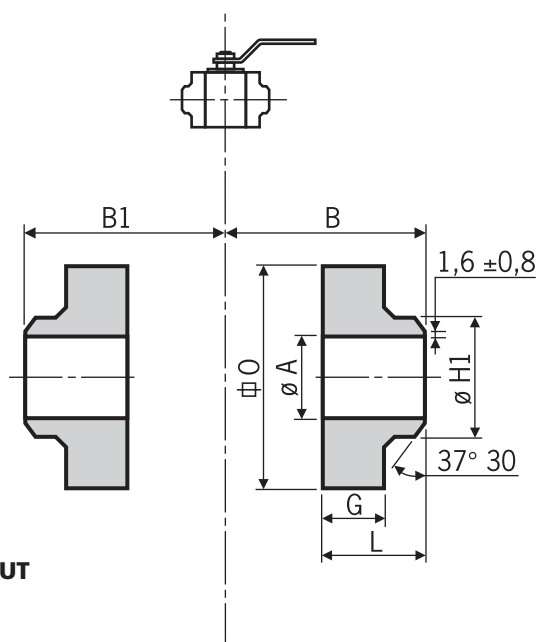


# H 352

## BRIDES

Flanges

Flansche



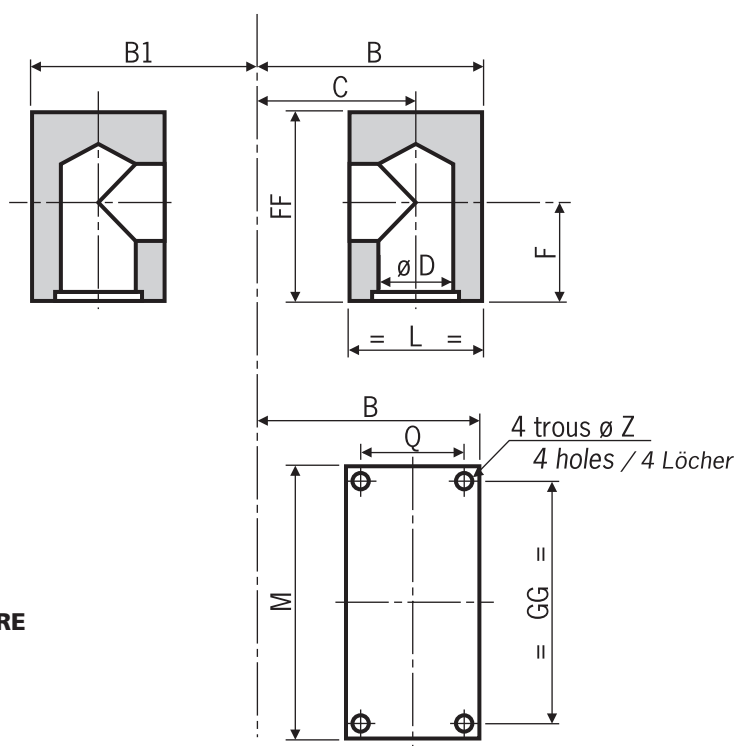
### SOUDÉ BOUT À BOUT

Butt welding

Stoßnaht Schweißung

CODE / KODE / BW

| TAILLE<br>Size<br>Größe | 1"1/2 | 2"   |
|-------------------------|-------|------|
| DN<br>ND<br>ND          | 40    | 50   |
| D.H1                    | 50    | 62   |
| DA                      | 36    | 48   |
| O                       | 90    | 110  |
| B                       | 76    | 89,5 |
| B1                      | 62    | 74,5 |
| G                       | 20    | 24   |
| L                       | 35    | 42   |



### BRIDE D'ANGLE

Manifold flange

Eckflansch

CODE / KODE / EE

| TAILLE<br>Size<br>Größe | 1"1/2 | 2"    |
|-------------------------|-------|-------|
| DN<br>ND<br>ND          | 40    | 50    |
| F                       | 52,5  | 63,5  |
| FF                      | 97,5  | 120,0 |
| D                       | 38,0  | 50,0  |
| C                       | 70,5  | 82,5  |
| B                       | 100,0 | 117,5 |
| B1                      | 86,0  | 102,5 |
| Q                       | 32,0  | 40,0  |
| GG                      | 112,0 | 126,0 |
| Z                       | 15,0  | 16,5  |
| M                       | 140,0 | 155,0 |
| L                       | 59,0  | 70,0  |

# H 354

## CETOP PN 400

### DIMENSIONS DE LA CELLULE DE BASE

Basic valve dimensions

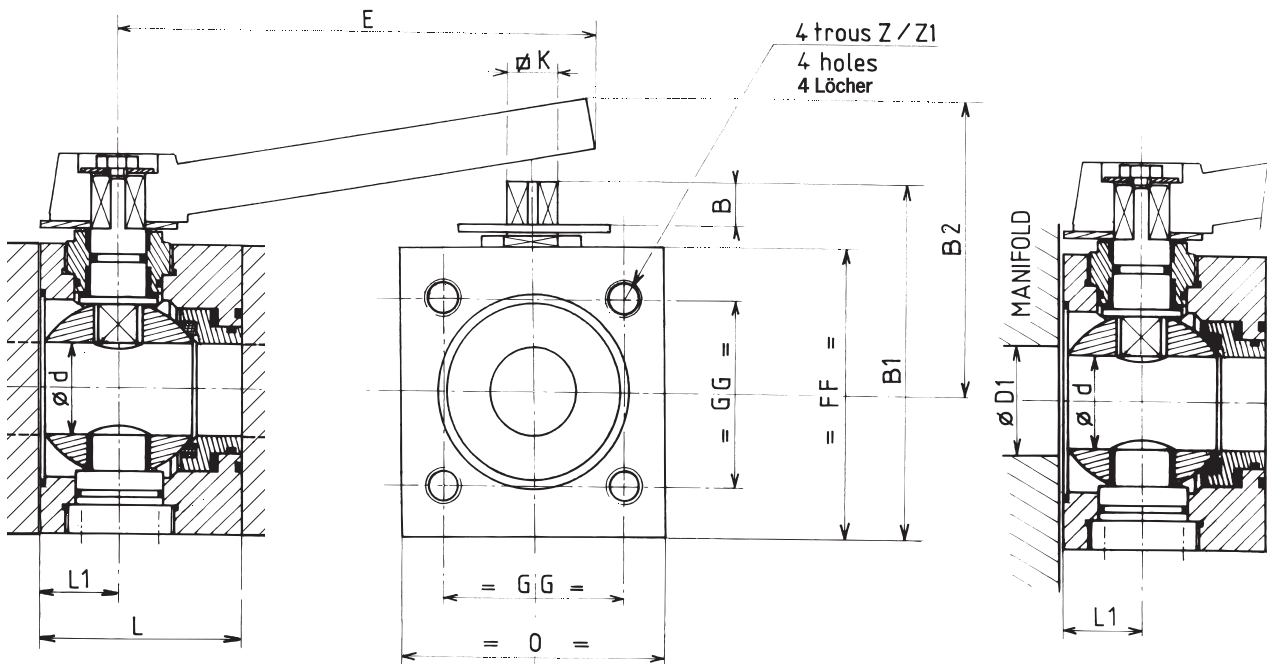
Abmessungen der Basiszelle

VERSION STANDARD : FERMETURE  
DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standardausführung: Verschuß in Uhrzeigersinn

### DN 65 & 80



#### MONTAGE EN LIGNE

In line mounted

Aufbau in Linie

CODE / KODE / TT

#### MONTAGE FLASQUÉ

Side flanged mounting

Angeflanscht

CODE / KODE / FL

| Ø NOMINAL<br><i>Nominal Ø</i><br>Nominal Ø |                                | PRESSION DE SERVICE (BAR)<br><i>Working pressure</i><br>Betriebsdruck (Bar) | DIMENSIONS (mm)<br><i>Dimensions / Abmessungen</i> |      |      |     |      |                                                                                           |     |     |    |       |       |     |     |    |                                                                                         | MASSE (kg)<br><i>Weight</i><br>Gewicht Kg |    |
|--------------------------------------------|--------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------|------|------|-----|------|-------------------------------------------------------------------------------------------|-----|-----|----|-------|-------|-----|-----|----|-----------------------------------------------------------------------------------------|-------------------------------------------|----|
| DN<br><i>ND</i><br>ND                      | TAILLE<br><i>Size</i><br>Größe |                                                                             | ø d                                                | D1   |      | L   | L1   | GG<br> | FF  | O   | B  | B1    | B2    | E   | Z   | Z1 |  K | CODE<br>KODE                              |    |
|                                            |                                |                                                                             |                                                    | mini | maxi |     |      |                                                                                           |     |     |    |       |       |     |     |    |                                                                                         | TT                                        | FL |
| 65                                         | 2"1/2                          | 350                                                                         | 50                                                 | 42   | 94   | 110 | 44,0 | 102,5                                                                                     | 160 | 150 | 26 | 199,0 | 218,0 | 560 | M20 | 21 | 27                                                                                      | 25                                        | 23 |
| 80                                         | 3"                             | 350                                                                         | 64                                                 | 60   | 112  | 125 | 49,5 | 113,1                                                                                     | 190 | 180 | 29 | 231,5 | 261,5 | 700 | M24 | 26 | 30                                                                                      | 29                                        | 36 |

■ La taille DN65 (2" 1/2) utilise des brides de 3" PN400  
La taille DN80 (3") utilise des brides de 4" PN400

■ The size DN65 (2" 1/2) used PN400 flanges of 3"  
The size DN80 (3") used PN400 flanges of 4"

■ Größe ND 65 (2" 1/2) braucht Flansche von 3" PN 400  
Größe ND 80 (3") braucht Flansche von 4" PN 400

# H 354 CETOP PN 400

## BRIDES

Flanges

Flansche

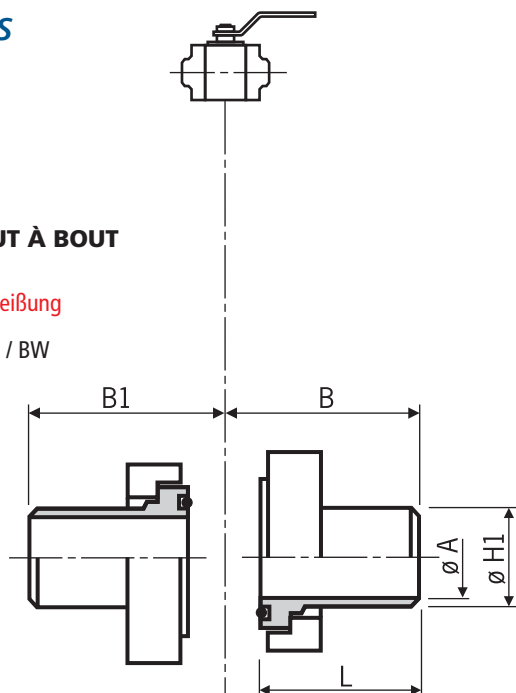
### SOUDÉ BOUT À BOUT

Butt welding

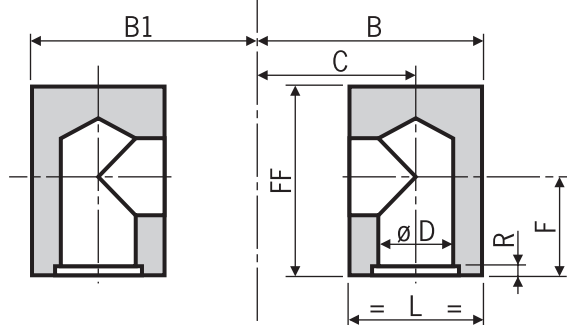
Stoßnaht Schweißung

CODE / KODE / BW

BRIDES  
Flanges  
Flansche



| TAILLE<br>Size<br>Größe | 2"1/2 | 3"    |
|-------------------------|-------|-------|
| DN<br>ND<br>ND          | 65    | 80    |
| DN                      | 3"    | 4"    |
| D.H1                    | 90    | 114,0 |
| D.A                     | 58    | 74,0  |
| L                       | 90    | 110,0 |
| B                       | 156   | 185,5 |
| B1                      | 134   | 159,5 |



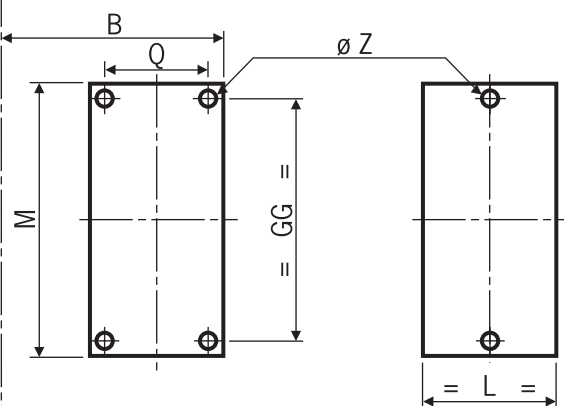
| TAILLE<br>Size<br>Größe | 2"1/2 | 3"    |
|-------------------------|-------|-------|
| DN<br>ND<br>ND          | 65    | 80    |
| F                       | 83,0  | 98,0  |
| FF                      | 160,0 | 178,0 |
| R                       | 2,1   | 2,8   |
| D                       | 63,7  | 76,5  |
| C                       | 104,0 | 122,5 |
| B                       | 143,0 | 169,5 |
| B1                      | 121,0 | 143,5 |
| Q                       | 45,0  |       |
| GG                      | 155,0 | 170,0 |
| Z                       | 17,0  | 21,0  |
| M                       | 190,0 | 220,0 |
| L                       | 77,0  | 94,0  |

### BRIDE D'EQUERRE

Manifold flange

Eckflansch

CODE / KODE / EE



DN 65

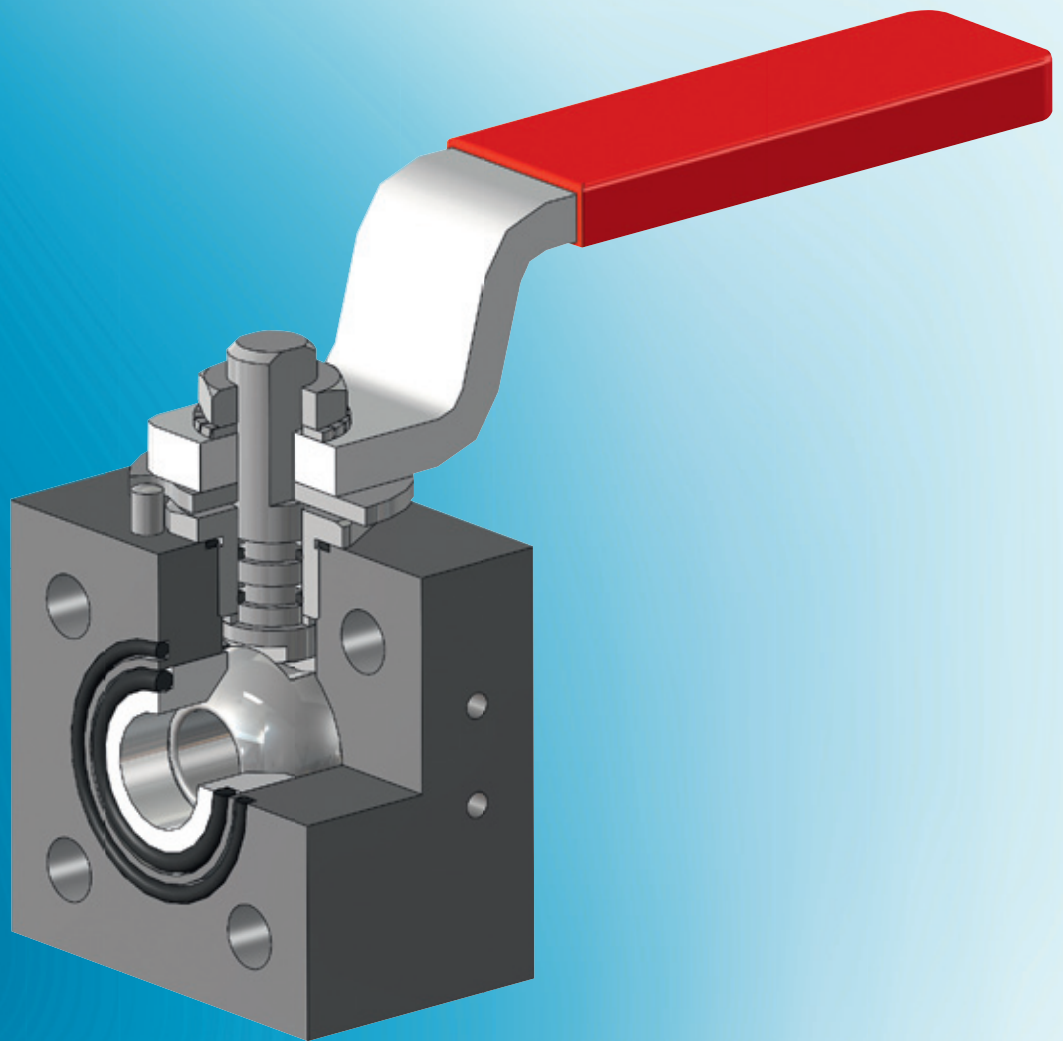
DN 80



## ROBINETS A SPHERE FLOTTANTE

FLOATING BALL VALVES

SCHWIMMERHAHNEN



# RD 7

## DIMENSIONS DE LA CELLULE DE BASE

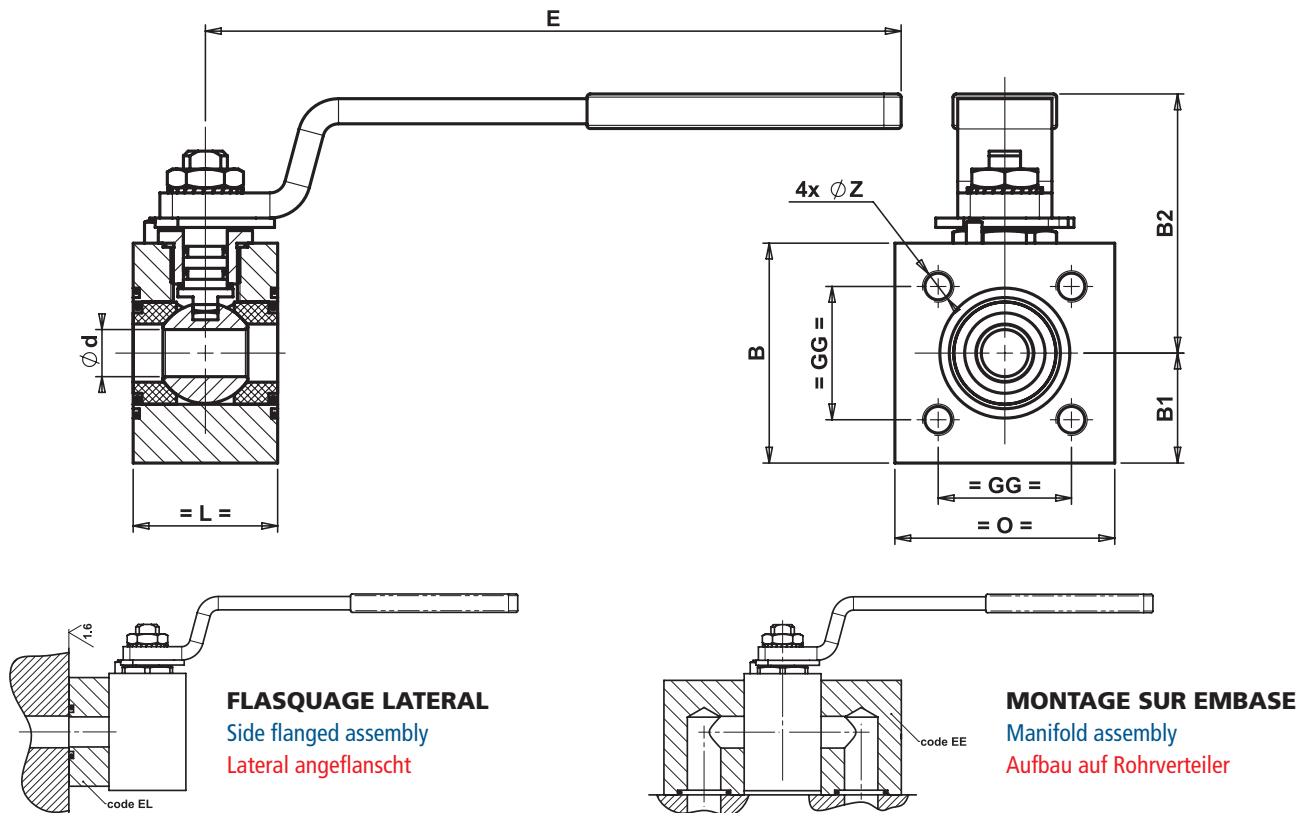
Basic valve dimensions

Abmessungen der Basiszelle

VERSION STANDARD : FERMETURE  
DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standard Ausführung: Verschluss in Uhrzeigersinn



| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION DE SERVICE (BAR)<br>Working pressure<br>Nominal Druck | DIMENSIONS (mm)<br>Dimensions / Abmessungen |    |      |      |       |    |     |      |     | MASSE (kg)<br>Weight<br>Gewicht kg |
|-------------------------------------|-------------------------|----------------------------------------------------------------|---------------------------------------------|----|------|------|-------|----|-----|------|-----|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                | Ød                                          | O  | B    | B1   | B2    | L  | E   | GG   | Z   |                                    |
| 6                                   | 1/4"                    | 630                                                            | 6                                           | 50 | 50   | 25   | 69    | 36 | 150 | 32,5 | M8  | 0,7                                |
| 15                                  | 1/2"                    | 630                                                            | 11                                          | 55 | 55   | 27,5 | 71,5  | 40 | 150 | 36,1 | M10 | 1                                  |
| 20                                  | 3/4"                    | 630                                                            | 15                                          | 70 | 67,5 | 35   | 80    | 46 | 220 | 42,4 | M12 | 1,7                                |
| 25                                  | 1"                      | 630                                                            | 20                                          | 90 | 87,5 | 45   | 90    | 52 | 220 | 51   | M14 | 3,2                                |
| 32                                  | 1"1/4"                  | 630                                                            | 26                                          | 95 | 95   | 47,5 | 106,5 | 72 | 300 | 58,7 | M16 | 5                                  |

## OPTIONS / Option

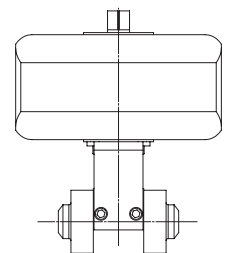
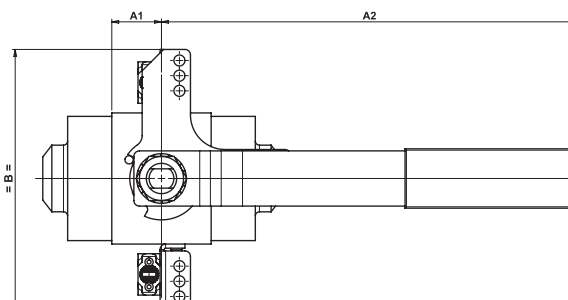
Optionen

| TAILLE<br>Size<br>Größe | 1/4" | 1/2" | 3/4" | 1"  | 1"1/4" |
|-------------------------|------|------|------|-----|--------|
| DN<br>ND<br>ND          | 6    | 15   | 20   | 25  | 32     |
| A1                      | 18   | 20   | 23   | 26  | 36     |
| A2                      | 150  | 150  | 220  | 220 | 300    |
| B                       | 142  | 147  | 162  | 182 | 187    |

## RD7 AVEC CADENASSAGE ET MICRO-CONTACT

??????????

????????????????



## RD7 AVEC OPÉRATEUR

??????

????????

**SUR DEMANDE**

ON REQUEST

AUF ANFRAGE

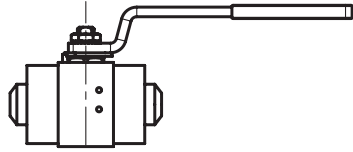


# RD 7

## BRIDES

Flanges

Flansche

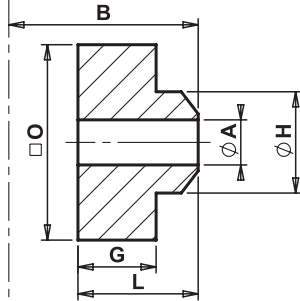


### SOUDÉ BOUT À BOUT

Butt welding

Stoßnaht Schweißung

CODE / KODE / BW

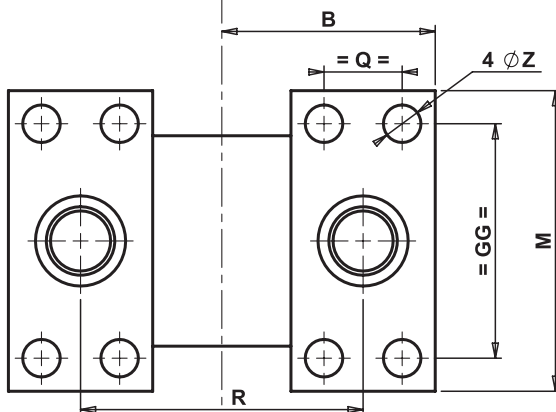
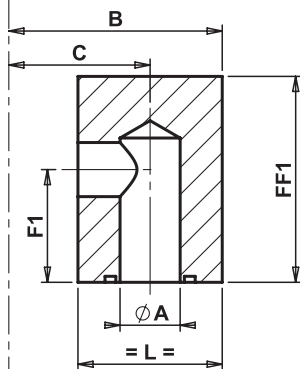


### BRIDE D'EQUERRE

Manifold flange

Eckflansch

CODE / KODE / EE

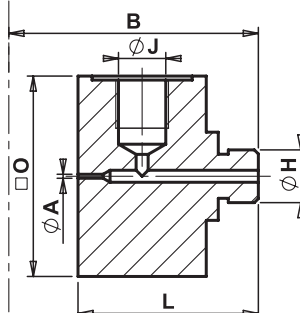
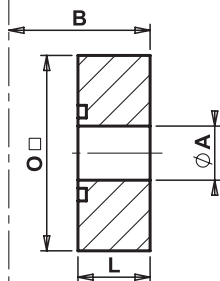


### BRIDE INTERMEDIAIRE

Adaptor flange

Zwischenflansch

CODE / KODE / EL



### EMBOU BSPP

Male thread BSPP

BSPP Ansatzstück

CODE / KODE / G4

| TAILLE<br>Size<br>Größe | 1/4" | 1/2" | 3/4" | 1"     | 1 1/4" |
|-------------------------|------|------|------|--------|--------|
| DN<br>ND<br>ND          | 6    | 15   | 20   | 25     | 32     |
| DN bride                | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" |
| ØA                      | 6,3  | 11   | 15   | 22,8   | 28     |
| ØH                      | 21,3 | 27   | 33,7 | 42,5   | 48,3   |
| O                       | 55   | 55   | 65   | 80     | 90     |
| B                       | 55   | 55   | 63   | 76     | 86     |
| G                       | 22   | 22   | 26   | 27     | 32     |
| L                       | 35   | 35   | 40   | 50     | 50     |

| TAILLE<br>Size<br>Größe | 1/4" | 1/2" | 3/4" | 1"    | 1 1/4" |
|-------------------------|------|------|------|-------|--------|
| DN<br>ND<br>ND          | 6    | 15   | 20   | 25    | 32     |
| F1                      | 27   | 29,5 | 37,5 | 47    | 50     |
| FF1                     | 52   | 57   | 68,5 | 87    | 95     |
| ØA                      | 6,3  | 11   | 15   | 22    | 28     |
| C                       | 33   | 40   | 47   | 50,25 | 68,5   |
| B                       | 48   | 60   | 71   | 74,5  | 101    |
| Q                       | 17   | 22   | 26   | 26    | 40     |
| GG                      | 52   | 65   | 78   | 95    | 100    |
| Z                       | 7    | 7    | 12,5 | 12,5  | 15     |
| M                       | 65   | 80   | 100  | 120   | 130    |
| L                       | 30   | 40   | 48   | 48,5  | 65     |
| R                       | 53   | 62   | 72   | 78    | 112    |

| TAILLE<br>Size<br>Größe | 1/4" | 1/2" | 3/4" | 1" | 1 1/4" |
|-------------------------|------|------|------|----|--------|
| DN<br>ND<br>ND          | 6    | 15   | 20   | 25 | 32     |
| ØA                      | 6,3  | 11   | 15   | 22 | 28     |
| O                       | 50   | 55   | 65   | 80 | 90     |
| B                       | 33   | 39   | 47   | 51 | 61     |
| L                       | 15   | 19   | 24   | 25 | 25     |

| TAILLE / Size / Größe | 1/4"  |
|-----------------------|-------|
| DN / ND / ND          | 6     |
| ØA                    | 1     |
| ØH                    | G1/4B |
| ØJ                    | G1/4  |
| O                     | 50    |
| B                     | 63    |
| L                     | 45    |

# RD 7

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?

|                          |                           |                            |                         |                                            |                         |                                                      |                               |                                                        |    |                                                                                                     |
|--------------------------|---------------------------|----------------------------|-------------------------|--------------------------------------------|-------------------------|------------------------------------------------------|-------------------------------|--------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------|
| <b>RD</b>                | <b>7</b>                  | <b>20</b>                  | <b>1</b>                | <b>B</b>                                   | <b>9</b>                | <b>K</b>                                             | <b>TT</b>                     | <b>X</b>                                               |    |                                                                                                     |
| SÉRIE<br>SERIES<br>SERIE |                           | TAILLE<br>SIZE<br>GRÖSSE   | CORPS<br>BODY<br>KÖRPER | JOINTS DE CORPS<br>BODY SEALS<br>DICHRINGE | SPHERE<br>BALL<br>KUGEL | GARNITURE D'ÉTANCHEITÉ<br>SEALING DEVICE<br>DICHTUNG | MONTAGE<br>MOUNTING<br>AUFBAU | OPTIONS<br>OPTIONS<br>OPTIONEN                         |    |                                                                                                     |
| MODÈLE<br>MODEL<br>TYP   | CLASSE<br>CLASS<br>KLASSE |                            |                         |                                            |                         |                                                      |                               |                                                        |    |                                                                                                     |
| CODE / KODE              |                           | DESIGNATION<br>BEZEICHNUNG |                         | CODE KODE<br>DESIGNATION<br>BEZEICHNUNG    |                         | CODE KODE<br>DESIGNATION<br>BEZEICHNUNG              |                               | CODE KODE<br>REF.<br>DESIGNATION<br>BEZEICHNUNG        |    |                                                                                                     |
| RD                       | 7                         | ΔP.<br>min                 | PS<br>max               | Pe                                         | 1                       | Acier<br>Carbon steel<br>Stahl                       | 7                             | Inox Z.30.C13<br>Stainless Steel<br>Nirostahl Z.30.C13 | PO | Cadenassage position ouvert<br>Padlock open position<br>Vorhängeschloß geöffnet                     |
|                          |                           | bar                        | bar                     |                                            | 2                       | Kanigen<br>Nickel plated<br>Vernickelt               |                               |                                                        | PC | Cadenassage position fermé<br>Padlock closed position<br>Vorhängeschloß geschlossen                 |
|                          |                           |                            |                         |                                            |                         |                                                      | K                             | Peek                                                   | PB | Cadenassage ouvert + fermé<br>Padlock closed + open<br>Vorhängeschloß geöffnet +<br>geschlossen     |
|                          |                           |                            |                         |                                            |                         |                                                      |                               |                                                        | SO | Fin de course position ouvert<br>Limit switch open position<br>Endstellung geöffnet                 |
|                          |                           |                            |                         |                                            |                         |                                                      | TT                            | En ligne<br>In line<br>In Linie                        | SC | Fin de course position fermé<br>Limit switch closed position<br>Endstellung geschlossen             |
|                          |                           |                            |                         |                                            |                         |                                                      | FL                            | Flasqué<br>Side mounted<br>Angeflanscht                | SB | Fin de course ouvert + fermé<br>Limit switch closed + open<br>Endstellung geöffnet +<br>geschlossen |
|                          |                           |                            |                         |                                            |                         |                                                      |                               |                                                        |    |                                                                                                     |
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→ Pe : Pression d'épreuve  
- robinet fermé 770 bar  
- robinet ouvert 1050 bar suivant norme NFE-29-311

→ Pe: Test pressure  
- valve closed 770 bar  
- valve open 1050 bar in conformity with NFE-29-311

→ Pe: Probedruck  
- Geschlossene Hahn 770 Bar  
- Geöffnete Hahn 1050 Bar gemäß NFE-29-311

X : Toute option est codée "X" sur la plaque signalétique : en cas de commande de rechange nous indiquer le n° Mfg..... ou le numéro de commande d'origine.

X: All options are shown with an "X" printed on the identification plate. To order replacement parts, please give us the Mfg number or your purchase order number.

X: Jeder Option ist mit „X“ auf das Betriebsanweisungsschild markiert: bei Bestellung von Ersatzteile bitte Nr. Mfg ....aufgeben oder Nummer der Originalbestellung.

| CODE KODE | DESIGNATION / BEZEICHNUNG                                                        | CODE KODE | DESIGNATION / BEZEICHNUNG                              |
|-----------|----------------------------------------------------------------------------------|-----------|--------------------------------------------------------|
| BW        | Bride à souder "Butt welding" / Butt weld flange / Flansch zum Schweißen BW      | EE        | Bride d'équerre / Manifold flange / Eckflansch         |
| G4        | Bride à embout mâle "BSPP" / Male thread flange "BSPP" / Flansch mit Ansatz BSPP | EL        | Bride intermédiaire / Adaptor flange / Zwischenflansch |

## EXEMPLE DE RÉFÉRENCE / Model code example / Beispiel Referenz : RD7.20.1B9K.TT.EE.EE

## CARACTERISTIQUES / Features / Eigenschaften

### Matières :

Corps : acier  
Sphère : inox Z.30.C13  
Garnitures : Peek  
Joints : buna - N  
Autres matières sur demande.

### Materials:

Body: steel  
Ball: stainless steel Z.30.C13  
Packing: Peek  
O'ring: buna - N  
Other material on request.

### Werkstoffe:

Körper: Stahl  
Kugel: Nirostahl Z.30.C13  
Dichtung: Peek  
Dichtring: Buna-N  
Andere Werkstoffe auf Anfrage.

### Installation :

"SOUDÉ" - pointer sur la tuyauterie puis enlever la cellule pour le soudage complet des collets.  
"RINÇAGE" - Ne pas rincer les tuyauteries avec la cellule (robinet) montée.

### Installation:

"WELDING" - tack weld the pipe, and then remove the valve body before the final welding on the necks.  
"FLUSHING" - Do not flush the pipe with the valve body in place.

### Aufbau:

Geschweißt" - Auf die Röhrenleitung heften und dann die Zelle wegnehmen für die komplette Schweißung der Kragen.  
„Spülung“: Die Rohrleitung nicht spülen mit aufgebauter Zelle (Hahn).

# DH

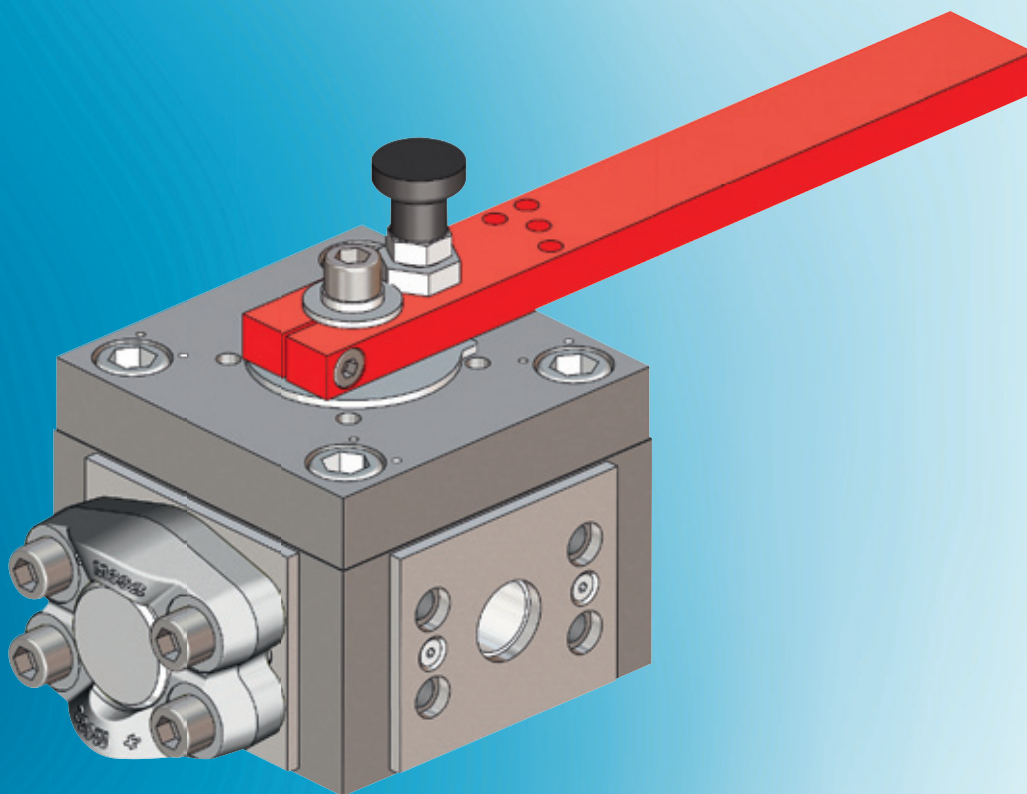
## DISTRIBUTEUR ROTATIF A SPHÈRE ARBRÉE 3 OU 4 VOIES

ROTARY BALANCED BALL VALVE 3 OR 4 WAYS

ZWEIWEG- ODER DREIWEGHÄHNE

ISO 6162-1 (SAE 3000)  
ISO 6162-2 (SAE 6000)

**DL**  
**DT**  
**DX**



# DISTRIBUTEUR 3 OU 4 VOIES

ISO 6162-1 (SAE 3000)  
ISO 6162-2 (SAE 6000)

## DIMENSIONS DE LA CELLULE DE BASE

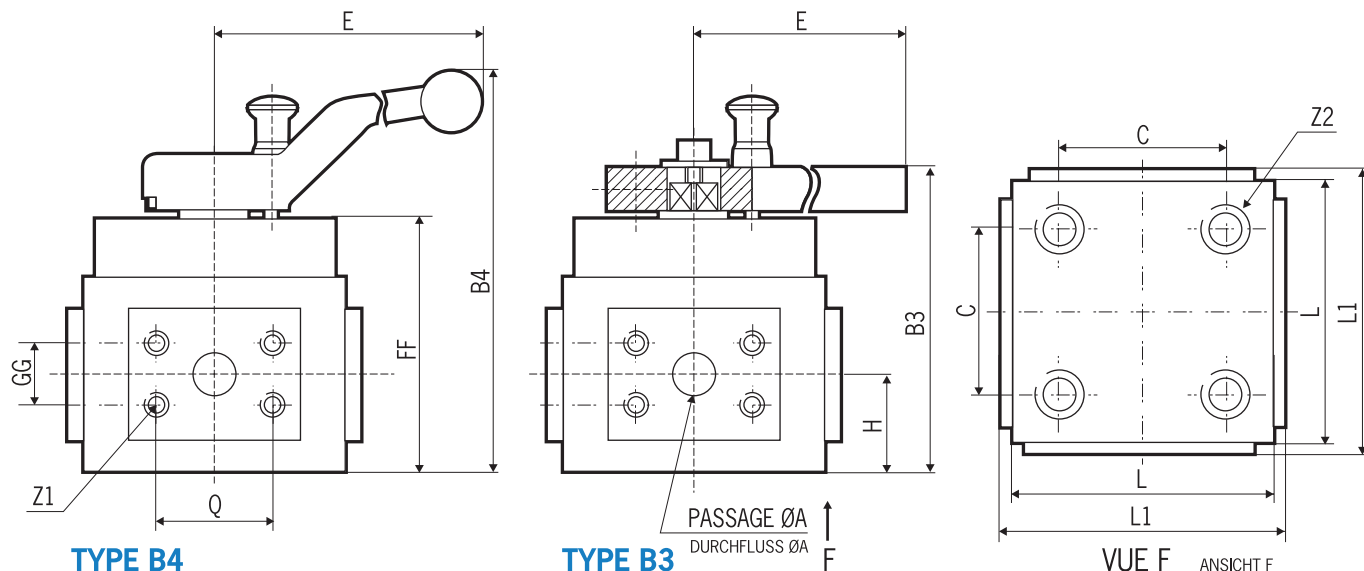
Basic valve dimensions

Abmessungen der Basiszelle

### VERSION STANDARD : MANOEUVRE SENS HORAIRE

Standard version : valve operating clockwise

Standard Ausführung : Verschuß in Uhrzeigersinn



## ISO 6162-1 (SAE 3000)

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION DE SERVICE (BAR)<br>Working pressure<br>Betriebsdruck | DIMENSIONS (mm)<br>Dimensions / Abmessungen |     |     |       |       |    |     |     |     |    |     |              |     |
|-------------------------------------|-------------------------|----------------------------------------------------------------|---------------------------------------------|-----|-----|-------|-------|----|-----|-----|-----|----|-----|--------------|-----|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                | A                                           | L   | L1  | GG    | Q     | H  | FF  | B3  | C   | B4 | E   | Z1           | Z2  |
| 25                                  | 1"                      | 250                                                            | 22                                          | 114 | 122 | 26,20 | 52,40 | 53 | 115 | 133 | 85  |    | 380 | M10          | M14 |
| 32                                  | 1" 1/4                  | 250                                                            | 28                                          | 128 | 136 | 30,20 | 58,70 | 53 | 122 | 140 | 100 |    | 380 | M10<br>M12 ■ | M14 |
| 40                                  | 1" 1/2                  | 250                                                            | 30                                          | 152 | 160 | 35,70 | 69,85 | 63 | 138 | 152 | 110 |    | 500 | M12<br>M14 ■ | M16 |
| 50                                  | 2"                      | 250                                                            | 37                                          | 172 | 180 | 42,90 | 77,80 | 80 | 159 | 179 | 130 |    | 500 | M12<br>M14 ■ | M16 |

## ISO 6162-2 (SAE 6000)

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION DE SERVICE (BAR)<br>Working pressure<br>Betriebsdruck | DIMENSIONS (mm)<br>Dimensions / Abmessungen |     |     |       |       |      |     |     |    |     |     |     |     |
|-------------------------------------|-------------------------|----------------------------------------------------------------|---------------------------------------------|-----|-----|-------|-------|------|-----|-----|----|-----|-----|-----|-----|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                | ø A                                         | L   | L1  | GG    | Q     | H    | FF  | B3  | C  | B4  | E   | Z1  | Z2  |
| 6                                   | 1/4"                    | 420                                                            | 13                                          | 90  | 98  | 18,25 | 40,50 | 33,5 | 85  |     | 60 | 14  | 175 | M8  | M10 |
| 10                                  | 3/8"                    | 420                                                            | 13                                          | 90  | 98  | 18,25 | 40,50 | 33,5 | 85  |     | 60 | 14  | 175 | M8  | M10 |
| 15                                  | 1/2"                    | 420                                                            | 13                                          | 90  | 98  | 18,25 | 40,50 | 33,0 | 85  |     | 60 | 14  | 175 | M8  | M10 |
| 20                                  | 3/4"                    | 420                                                            | 18                                          | 104 | 112 | 23,80 | 50,80 | 34,0 | 87  |     | 75 | 149 | 175 | M10 | M12 |
| 25                                  | 1"                      | 420                                                            | 22                                          | 114 | 122 | 27,75 | 57,15 | 53,0 | 115 | 133 | 85 |     | 380 | M12 | M14 |

- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

# DISTRIBUTEUR 3 OU 4 VOIES

ISO 6162-1 (SAE 3000)  
ISO 6162-2 (SAE 6000)

## SCHEMAS DE DISTRIBUTION

Distribution drawing / Verteiler Zeichnung

| 3 voies<br>3-way<br>3Weg                             | Distribution en L<br><i>Distribution in L</i><br>L-Verteilung |     |     |      |      | Distribution en T<br><i>Distribution in T</i><br>T-Verteilung |     |     |      |      |
|------------------------------------------------------|---------------------------------------------------------------|-----|-----|------|------|---------------------------------------------------------------|-----|-----|------|------|
| Angle de manœuvre<br>Operating angle<br>Betriebsseck | 0°                                                            | 45° | 90° | 135° | 180° | 0°                                                            | 45° | 90° | 135° | 180° |
| Centre fermé<br>Closed center<br>Mitte geschlossen   |                                                               |     |     |      |      |                                                               |     |     |      |      |
| Centre ouvert<br>Opened center<br>Mitte geöffnet     |                                                               |     |     |      |      |                                                               |     |     |      |      |

| 4 voies<br>4-way<br>4Weg                             | Distribution en L<br><i>Distribution in L</i><br>L-Verteilung |     |     |      |      | Distribution en T<br><i>Distribution in T</i><br>T-Verteilung |     |     |      |      | Distribution en X<br><i>Distribution in X</i><br>X-Verteilung |     |     |      |      |
|------------------------------------------------------|---------------------------------------------------------------|-----|-----|------|------|---------------------------------------------------------------|-----|-----|------|------|---------------------------------------------------------------|-----|-----|------|------|
| Angle de manœuvre<br>Operating angle<br>Betriebsseck | 0°                                                            | 45° | 90° | 135° | 180° | 0°                                                            | 45° | 90° | 135° | 180° | 0°                                                            | 45° | 90° | 135° | 180° |
| Centre fermé<br>Closed center<br>Mitte geschlossen   |                                                               |     |     |      |      |                                                               |     |     |      |      |                                                               |     |     |      |      |
| Centre ouvert<br>Opened center<br>Mitte geöffnet     |                                                               |     |     |      |      |                                                               |     |     |      |      |                                                               |     |     |      |      |

# DISTRIBUTEUR 3 OU 4 VOIES

ISO 6162-1 (SAE 3000)  
ISO 6162-2 (SAE 6000)

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?

| SERIE<br>SERIES<br>SERIE | TAILLE<br>SIZE<br>GRÖSSE | NOMBRE DE VOIES<br>NUMBER OF WAYS<br>ANZAHL WEGE | DISTRIBUTION<br>DISTRIBUTION<br>VERTEILUNG | CENTRE<br>CENTER<br>MITTE | CORPS<br>BODY<br>KÖRPER | JOINTS DE CORPS<br>BODY SEALS<br>DICHTRING | SPHERE<br>BALL<br>KUGEL | GARNITURE D'ÉTANCHEITÉ<br>SEALING DEVICE<br>DICHTUNG | MONTAGE<br>MOUNTING<br>AUFBAU | OPTIONS<br>OPTIONS<br>OPTIONEN |
|--------------------------|--------------------------|--------------------------------------------------|--------------------------------------------|---------------------------|-------------------------|--------------------------------------------|-------------------------|------------------------------------------------------|-------------------------------|--------------------------------|
| 3                        | 32                       | 3V                                               | L                                          | CF                        | 1                       | B                                          | 7                       | P                                                    | T6                            | X                              |
| 6                        | 40                       | 3V                                               | L                                          | CF                        | 1                       | B                                          | 7                       | P                                                    | TT                            | X                              |

| CODE / KODE                                                     | DESIGNATION<br>BEZEICHNUNG                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                 |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------|-------------------------|-----|----|------|-----|----|--------|-----|----|--------|-----|----|----|
| DH 3                                                            | <table border="1"> <thead> <tr> <th>Pression<br/>Nominale<br/>Nominal<br/>pressure<br/>Nominal<br/>Druck</th> <th>DN<br/>ND<br/>ND</th> <th>Taille<br/>Size<br/>Größe</th> </tr> </thead> <tbody> <tr> <td>250</td> <td>25</td> <td>1"</td> </tr> <tr> <td>250</td> <td>32</td> <td>1" 1/4</td> </tr> <tr> <td>210</td> <td>40</td> <td>1" 1/2</td> </tr> <tr> <td>100</td> <td>50</td> <td>2"</td> </tr> </tbody> </table> | Pression<br>Nominale<br>Nominal<br>pressure<br>Nominal<br>Druck | DN<br>ND<br>ND | Taille<br>Size<br>Größe | 250 | 25 | 1"   | 250 | 32 | 1" 1/4 | 210 | 40 | 1" 1/2 | 100 | 50 | 2" |
| Pression<br>Nominale<br>Nominal<br>pressure<br>Nominal<br>Druck | DN<br>ND<br>ND                                                                                                                                                                                                                                                                                                                                                                                                              | Taille<br>Size<br>Größe                                         |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 250                                                             | 25                                                                                                                                                                                                                                                                                                                                                                                                                          | 1"                                                              |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 250                                                             | 32                                                                                                                                                                                                                                                                                                                                                                                                                          | 1" 1/4                                                          |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 210                                                             | 40                                                                                                                                                                                                                                                                                                                                                                                                                          | 1" 1/2                                                          |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 100                                                             | 50                                                                                                                                                                                                                                                                                                                                                                                                                          | 2"                                                              |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| DH 6                                                            | <table border="1"> <tbody> <tr> <td>420</td> <td>6</td> <td>1/4"</td> </tr> <tr> <td>420</td> <td>10</td> <td>3/8"</td> </tr> <tr> <td>420</td> <td>15</td> <td>1/2"</td> </tr> <tr> <td>420</td> <td>20</td> <td>3/4"</td> </tr> <tr> <td>420</td> <td>25</td> <td>1"</td> </tr> </tbody> </table>                                                                                                                         | 420                                                             | 6              | 1/4"                    | 420 | 10 | 3/8" | 420 | 15 | 1/2"   | 420 | 20 | 3/4"   | 420 | 25 | 1" |
| 420                                                             | 6                                                                                                                                                                                                                                                                                                                                                                                                                           | 1/4"                                                            |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 420                                                             | 10                                                                                                                                                                                                                                                                                                                                                                                                                          | 3/8"                                                            |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 420                                                             | 15                                                                                                                                                                                                                                                                                                                                                                                                                          | 1/2"                                                            |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 420                                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                          | 3/4"                                                            |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |
| 420                                                             | 25                                                                                                                                                                                                                                                                                                                                                                                                                          | 1"                                                              |                |                         |     |    |      |     |    |        |     |    |        |     |    |    |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG |
|-----------|----------------------------|
| 3V        | L                          |
| 4V        | T                          |
|           | X                          |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG                          |
|-----------|-----------------------------------------------------|
| CF        | Centre Fermé / Closed Center /<br>Mitte geschlossen |
| CO        | Centre Ouvert / Open Center /<br>Mitte geöffnet     |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG     |
|-----------|--------------------------------|
| 1         | Acier<br>Carbon steel<br>Stahl |
| 6         | Inox 316 L<br>Nirostahl 316L   |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG |
|-----------|----------------------------|
| B         | Buna - N                   |
| V         | Viton                      |
| E         | EPDM                       |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG                  |
|-----------|---------------------------------------------|
| 7         | Inox<br>Stainless Steel<br>Rostfreier Stahl |
| p         | Polyacétal                                  |

| CODE KODE | DESIGNATION<br>BEZEICHNUNG     |
|-----------|--------------------------------|
| TT        | En ligne / In line<br>In Linie |
| T6        | En ligne / In line<br>In Linie |

| CODE KODE | REF. | DESIGNATION<br>BEZEICHNUNG                                                                       |
|-----------|------|--------------------------------------------------------------------------------------------------|
|           | PO   | Cadenassage position ouvert<br>Padlock open position<br>Vorhängeschloß geöffnet                  |
|           | PC   | Cadenassage position fermé<br>Padlock closed position<br>Vorhängeschloß geschlossen              |
|           | PB   | Cadenassage ouvert + fermé<br>Padlock closed + open<br>Vorhängeschloß geöffnet +<br>geschlossen  |
| X         | SO   | Fin de course position ouvert<br>Limit switch open position<br>Endstellung geöffnet              |
|           | SC   | Fin de course position fermé<br>Limit switch closed position<br>Endstellung geschlossen          |
|           | SB   | Fin de course ouvert + fermé<br>Limit switch closed + open<br>Endstellung geöffnet + geschlossen |
|           | DETP | Détecteur                                                                                        |

| CODE | DESIGNATION                                                                          |
|------|--------------------------------------------------------------------------------------|
| BW   | Bride à souder "Butt welding" / Butt weld flange<br>Flansch zum Schweißen BW         |
| SW   | Bride à souder "Socket welding" / Socket weld flange<br>Flansch zum Schweißen SW     |
| SWR  | Bride à souder "Socket welding réduit" / Reduced socket<br>Flansch zum Schweißen SWR |
| GA   | Bride taraudée BSPP / Female thread flange BSPP<br>Flansch mit Gewindeschneiden BSPP |
| NP   | Bride taraudée NPT / Female thread flange NPT<br>Flansch mit Gewindeschneiden NPT    |

→ T6 ISO 6162-1 (SAE 3000)  
DN 32 VIS/SCREWS M10  
DN 40 ET DN 50 VIS/SCREWS M12

BRIDES  
Flanges  
Flansche

X : Toute option est codée "X" sur la plaque signalétique : en cas de commande de rechange nous indiquer le n° Mfg..... ou le numéro de commande d'origine.

X: All options are shown with an "X" printed on the identification plate. To order replacement parts, please give us the Mfg number or your purchase order number.

X: Jeder Option ist mit „X“ auf das Betriebsanweisungsschild markiert: bei Bestellung von Ersatzteile bitte Nr. Mfg ....aufgeben oder Nummer der Originalbestellung.

EXEMPLE DE RÉFÉRENCE / Model code example / Beispiel Referenz : **DH6403VLCF1B7PTTBW**

## CARACTERISTIQUES / Features / Eigenschaften

### Matières :

Corps : acier  
Sphère : inox  
Garnitures : polyacétal  
Joints : buna - N  
Autres matières sur demande.

### Materials:

Body: steel  
Ball: stainless steel  
Packing: polyacetal  
O'ring: buna - N  
Other material on request.

### Werkstoffe:

Körper: Stahl  
Kugel: aus rostfreier Stahl  
Dichtung: Polyacetal  
Dichtring: Buna - N  
Andere Werkstoffe auf Anfrage.

### Installation :

"SOUDÉ" - pointer sur la tuyauterie puis enlever la cellule pour le soudage complet des collets.  
"RINÇAGE" - Ne pas rincer les tuyauteries avec la cellule (robinet) montée.

### Installation:

"WELDING" - tack weld the pipe, and then remove the valve body before the final welding on the necks.  
"FLUSHING" - Do not flush the pipe with the valve body in place.

### Aufbau:

Geschweißt - Auf die Röhrenleitung heften und dann die Zelle wegnehmen für die komplette Schweißung der Kragen.  
„Spülung“: Die Rohrleitung nicht spülen mit aufgebauter Zelle (Hahn).



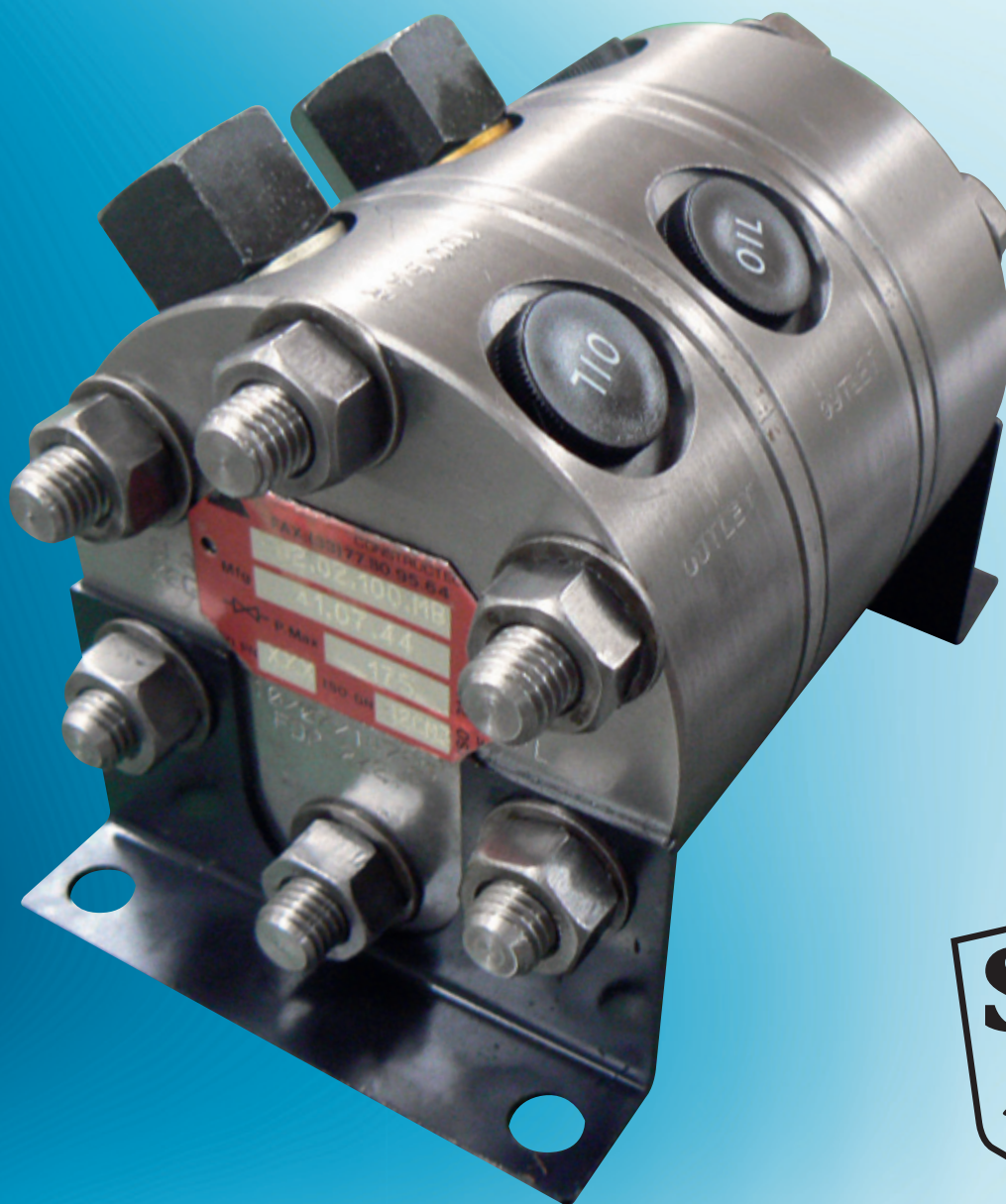
# FD

## DIVISEURS DE DÉBIT ROTATIFS

ROTARY FLOW DIVIDERS

STROMTEILERVERVENTILE

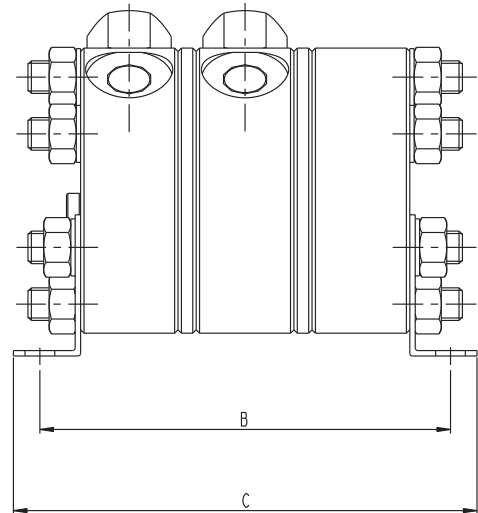
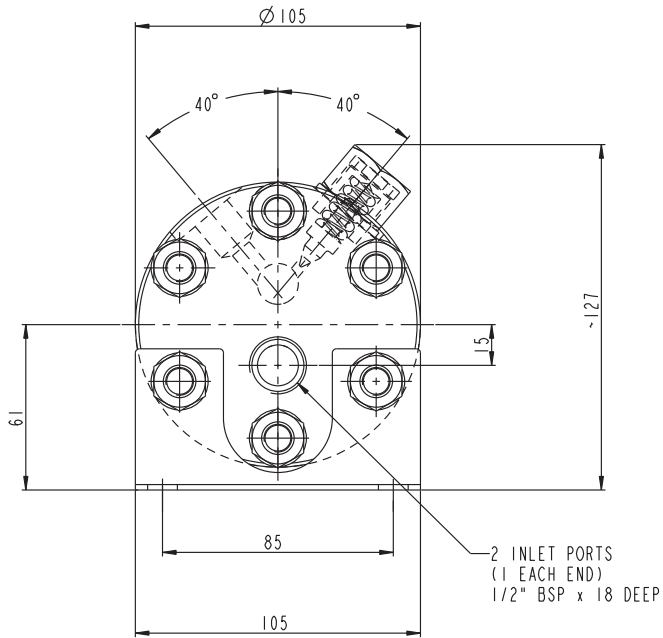
**17 bar mini  
350 bar maxi**



## DIMENSION

Dimensions

Abmessungen



| MODELE<br>Model<br>Typ | CYLINDRÉE<br>cm³/Tr<br>Element<br>capacity cm³/Tr<br>Baugröße cm³/Tr | NOMBRE DE<br>SECTION<br>Number of<br>elements<br>Anzahl<br>Durchgänge | DÉBIT D'ENTRÉE L/mn<br>Input flow L/mn<br>Eingangsdurchfluß L=m |               |               | DÉBIT PAR SECTION L/mn<br>Flow per section L/mn<br>Durchfluß per Durchgang |               |               | DIMENSIONS<br>Dimensions<br>Abmessungen |    |     |     |
|------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------|---------------|---------------|----------------------------------------------------------------------------|---------------|---------------|-----------------------------------------|----|-----|-----|
|                        |                                                                      |                                                                       | 750<br>Tr/mn                                                    | 1500<br>Tr/mn | 3000<br>Tr/mn | 750<br>Tr/mn                                                               | 1500<br>Tr/mn | 3000<br>Tr/mn | A                                       | B  | C   | D   |
| FD.2.2.*               | 2                                                                    | 2                                                                     | 3,0                                                             | 6             | 12            | 1,50                                                                       | 3,0           | 6             | 42                                      | 44 | 146 | 176 |
| FD.3.2.*               | 2                                                                    | 3                                                                     | 4,5                                                             | 9             | 18            | 1,50                                                                       | 3,0           | 6             | 42                                      | 44 | 188 | 218 |
| FD.4.2.*               | 2                                                                    | 4                                                                     | 6,0                                                             | 12            | 24            | 1,50                                                                       | 3,0           | 6             | 42                                      | 44 | 230 | 260 |
| FD.5.2.*               | 2                                                                    | 5                                                                     | 7,5                                                             | 15            | 30            | 1,50                                                                       | 3,0           | 6             | 42                                      | 44 | 272 | 302 |
| FD.6.2.*               | 2                                                                    | 6                                                                     | 9,0                                                             | 18            | 36            | 1,50                                                                       | 3,0           | 6             | 42                                      | 44 | 315 | 345 |
| FD.2.4.*               | 4                                                                    | 2                                                                     | 6,0                                                             | 12            | 24            | 3,00                                                                       | 6,0           | 12            | 48                                      | 50 | 157 | 187 |
| FD.3.4.*               | 4                                                                    | 3                                                                     | 9,0                                                             | 18            | 36            | 3,00                                                                       | 6,0           | 12            | 48                                      | 50 | 205 | 235 |
| FD.4.4.*               | 4                                                                    | 4                                                                     | 12,0                                                            | 24            | 48            | 3,00                                                                       | 6,0           | 12            | 48                                      | 50 | 253 | 283 |
| FD.5.4.*               | 4                                                                    | 5                                                                     | 15,0                                                            | 30            | 60            | 3,00                                                                       | 6,0           | 12            | 48                                      | 50 | 300 | 330 |
| FD.6.4.*               | 4                                                                    | 6                                                                     | 18,0                                                            | 36            | 72            | 3,00                                                                       | 6,0           | 12            | 48                                      | 50 | 348 | 378 |
| FD.2.6.*               | 6                                                                    | 2                                                                     | 9,0                                                             | 18            | 36            | 4,50                                                                       | 9,0           | 18            | 54                                      | 56 | 169 | 199 |
| FD.3.6.*               | 6                                                                    | 3                                                                     | 13,5                                                            | 27            | 54            | 4,50                                                                       | 9,0           | 18            | 54                                      | 56 | 222 | 252 |
| FD.4.6.*               | 6                                                                    | 4                                                                     | 18,0                                                            | 36            | 72            | 4,50                                                                       | 9,0           | 18            | 54                                      | 56 | 276 | 306 |
| FD.5.6.*               | 6                                                                    | 5                                                                     | 22,5                                                            | 45            | 90            | 4,50                                                                       | 9,0           | 18            | 54                                      | 56 | 330 | 360 |
| FD.6.6.*               | 6                                                                    | 6                                                                     | 27,0                                                            | 54            | 108           | 4,50                                                                       | 9,0           | 18            | 54                                      | 56 | 384 | 414 |
| FD.2.9.*               | 9                                                                    | 2                                                                     | 13,5                                                            | 27            | 54            | 6,75                                                                       | 13,5          | 27            | 54                                      | 56 | 169 | 199 |
| FD.3.9.*               | 9                                                                    | 3                                                                     | 20,0                                                            | 40            | 80            | 6,75                                                                       | 13,5          | 27            | 54                                      | 56 | 222 | 252 |
| FD.4.9.*               | 9                                                                    | 4                                                                     | 27,0                                                            | 54            | 108           | 6,75                                                                       | 13,5          | 27            | 54                                      | 56 | 276 | 306 |
| FD.5.9.*               | 9                                                                    | 5                                                                     | 34,0                                                            | 68            | 136           | 6,75                                                                       | 13,5          | 27            | 54                                      | 56 | 330 | 360 |
| FD.6.9.*               | 9                                                                    | 6                                                                     | 40,5                                                            | 81            | 162           | 6,75                                                                       | 13,5          | 27            | 54                                      | 56 | 384 | 414 |

Les références Flow Divider Large, L correspond au design Large.

Les références de Flow Divider Rounded, R correspond au design Rond.

Model number for a Large Flow Divider (FDL), L means "Large Design".

Model number for a Rounded Flow Divider (FDR), R means "Rounded Design".

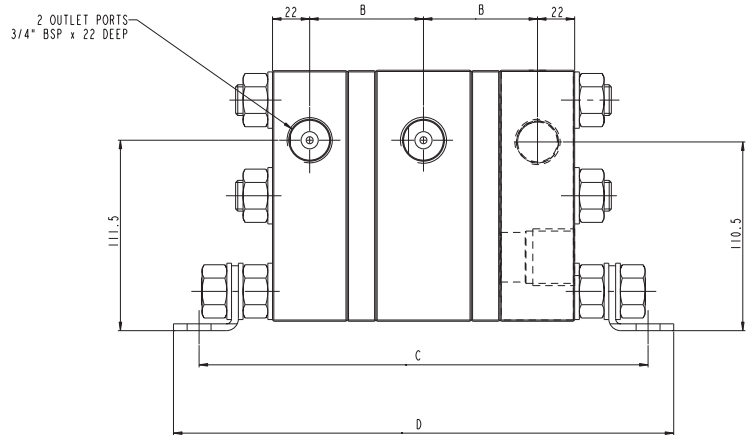
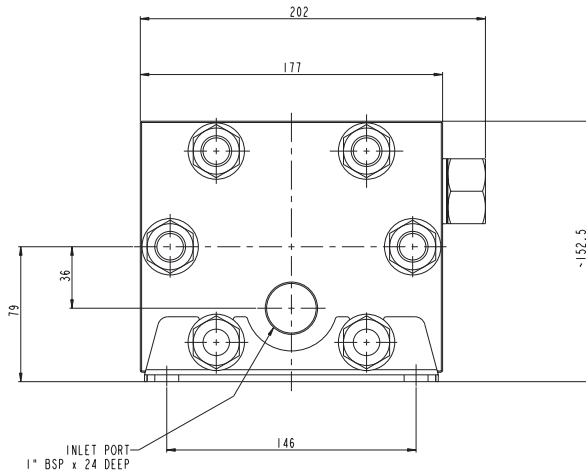
Typnummer für ein Large Flow Divider (FDL), L bedeutet "Large Design".

Typnummer für ein Rounded Flow Divider (FDR), R bedeutet "Rounded Design".

## DIMENSION

Dimensions

Abmessungen



| MODELE<br>Model<br>Typ | CYLINDRÉE<br>cm³/Tr<br>Element<br>capacity cm³/Tr<br>Baugröße cm³/Tr | NOMBRE DE<br>SECTION<br>Number of<br>elements<br>Anzahl<br>Durchgänge | DÉBIT D'ENTRÉE L/mn<br>Input flow L/mn<br>Eingangsdurchfluß L/mn |               |               | DÉBIT PAR SECTION L/mn<br>Flow per section L/mn<br>Durchfluß per Durchgang |               |               | DIMENSIONS<br>Dimensions<br>Abmessungen |    |     |     |
|------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------|---------------|---------------|----------------------------------------------------------------------------|---------------|---------------|-----------------------------------------|----|-----|-----|
|                        |                                                                      |                                                                       | 750<br>Tr/mn                                                     | 1500<br>Tr/mn | 3000<br>Tr/mn | 750<br>Tr/mn                                                               | 1500<br>Tr/mn | 3000<br>Tr/mn | A                                       | B  | C   | D   |
| FD.2.12.*              | 12                                                                   | 2                                                                     | 18,0                                                             | 36            | 72            | 9,0                                                                        | 18            | 36            | 67                                      | 61 | 204 | 250 |
| FD.3.12.*              | 12                                                                   | 3                                                                     | 27,0                                                             | 54            | 108           | 9,0                                                                        | 18            | 36            | 67                                      | 61 | 272 | 318 |
| FD.4.12.*              | 12                                                                   | 4                                                                     | 36,0                                                             | 72            | 144           | 9,0                                                                        | 18            | 36            | 67                                      | 61 | 339 | 385 |
| FD.5.12.*              | 12                                                                   | 5                                                                     | 45,0                                                             | 90            | 180           | 9,0                                                                        | 18            | 36            | 67                                      | 61 | 406 | 452 |
| FD.6.12.*              | 12                                                                   | 6                                                                     | 54,0                                                             | 108           | 216           | 9,0                                                                        | 18            | 36            | 67                                      | 61 | 473 | 519 |
| FD.2.18.*              | 18                                                                   | 2                                                                     | 27,0                                                             | 54            | 108           | 13,5                                                                       | 27            | 54            | 73                                      | 67 | 215 | 261 |
| FD.3.18.*              | 18                                                                   | 3                                                                     | 40,5                                                             | 81            | 162           | 13,5                                                                       | 27            | 54            | 73                                      | 67 | 288 | 334 |
| FD.4.18.*              | 18                                                                   | 4                                                                     | 54,0                                                             | 108           | 216           | 13,5                                                                       | 27            | 54            | 73                                      | 67 | 361 | 407 |
| FD.5.18.*              | 18                                                                   | 5                                                                     | 67,5                                                             | 135           | 270           | 13,5                                                                       | 27            | 54            | 73                                      | 67 | 433 | 479 |
| FD.6.18.*              | 18                                                                   | 6                                                                     | 81,0                                                             | 162           | 324           | 13,5                                                                       | 27            | 54            | 73                                      | 67 | 506 | 552 |
| FD.2.24.*              | 24                                                                   | 2                                                                     | 36,0                                                             | 72            | 144           | 18,0                                                                       | 36            | 72            | 78                                      | 72 | 227 | 273 |
| FD.3.24.*              | 24                                                                   | 3                                                                     | 54,0                                                             | 108           | 216           | 18,0                                                                       | 36            | 72            | 78                                      | 72 | 305 | 351 |
| FD.4.24.*              | 24                                                                   | 4                                                                     | 72,0                                                             | 144           | 288           | 18,0                                                                       | 36            | 72            | 78                                      | 72 | 383 | 429 |
| FD.5.24.*              | 24                                                                   | 5                                                                     | 90,0                                                             | 180           | 360           | 18,0                                                                       | 36            | 72            | 78                                      | 72 | 461 | 507 |
| FD.6.24.*              | 24                                                                   | 6                                                                     | 108,0                                                            | 216           | 432           | 18,0                                                                       | 36            | 72            | 78                                      | 72 | 540 | 586 |
| FD.2.30.*              | 30                                                                   | 2                                                                     | 45,0                                                             | 90            | 180           | 22,5                                                                       | 45            | 90            | 84                                      | 78 | 238 | 284 |
| FD.3.30.*              | 30                                                                   | 3                                                                     | 67,5                                                             | 135           | 270           | 22,5                                                                       | 45            | 90            | 84                                      | 78 | 322 | 368 |
| FD.4.30.*              | 30                                                                   | 4                                                                     | 90,0                                                             | 180           | 360           | 22,5                                                                       | 45            | 90            | 84                                      | 78 | 406 | 452 |
| FD.5.30.*              | 30                                                                   | 5                                                                     | 112,5                                                            | 225           | 450           | 22,5                                                                       | 45            | 90            | 84                                      | 78 | 489 | 535 |
| FD.6.30.*              | 30                                                                   | 6                                                                     | 135,0                                                            | 270           | 540           | 22,5                                                                       | 45            | 90            | 84                                      | 78 | 573 | 619 |

Les références Flow Divider Large, L correspond au design Large.

Les références de Flow Divider Rounded, R correspond au design Rond.

Model number for a Large Flow Divider (FDL), L means "Large Design".

Model number for a Rounded Flow Divider (FDR), R means "Rounded Design".

Typnummer für ein Large Flow Divider (FDL), L bedeutet "Large Design".

Typnummer für ein Rounded Flow Divider (FDR), R bedeutet "Rounded Design".

## INFORMATION GÉNÉRALE

### General information

### Algemeine Informationen

#### 1 - CHOIX D'UN DIVISEUR DE DÉBIT

##### Selecting a flow divider / Ein stromteilerventil wählen

- Vitesse de rotation du diviseur de débit entre 750 et 3000 tr/mn.
- Meilleur rendement entre 1000 et 2000 tr/mn ; rendement > 98%.
- Although speed of rotation can be as low as 750 rpm and the maximum is 3000 rpm, a flow divider should be selected which will pass the required flows in the range 1000 to 2000 rpm for maximum efficiency.
- Umlaufgeschwindigkeit eines Stromteilerventils zwischen 750 und 3000 Umlauf/Min.
- Beste Leistungsfähigkeit zwischen 1000 und 2000 Umlauf/Min ; Leistung > 98%

#### 2 - DIVISEUR DE DÉBITS ÉGAUX

##### Equal flow divider / Stromteilerventil für gleichen Durchfluss

- Choisir les débits de base du diviseur aux environs de 1500 tr/mn. Dans le cas de débit variable, s'assurer que les vitesses minimales et maximales du diviseur seront bien respectées (voir tableaux).
- Having decided on the separate flow ratio the sum of which will give total input flow, refer to the table "Equal Elements Units" to select a divider which will pass these flow rates at or near to 1500 rpm. If the flow is variable, calculate speed of rotation which will occur at both maximum and minimum input and ensure that these speeds fall within 750 to 3000 rpm.
- Wählen Sie den Basisdurchfluß des Stromteilerventils bei 1500 Umlauf/Min aus. Im Falle veränderlichen Durchfluß, sollten Sie überwachen daß die minimale und maximale Geschwindigkeit des Stromteilerventils beachtet werden. (Siehe Tabelle).

#### 3 - DIVISEUR DE DÉBITS INÉGAUX

##### Unequal flow divider / Stromteilerventil für ungleichen Durchfluss

- Se référer aux tableaux des éléments individuels pour choisir les éléments correspondants approximativement aux débits souhaités, en fonction d'une vitesse unique d'environ 1500 tr/mn au diviseur. Malgré de nombreuses possibilités de montage, tous les systèmes de division de débit ne peuvent être résolus. Il suffit pour cela de trouver un compromis entre les différents éléments ou bien nous consulter.
- Refer to the table of individual elements to select those which will pass the desired flows at or near to 1500 rpm, bearing in mind that all the elements in a flow divider rotate at the same speed. Thus having calculated the speed of one of the elements according to its flow rate, select the other elements to provide their required flows at that speed. If this proves impractical repeat the process, starting with another of the required outputs. It is not always possible to obtain precisely all the required outputs as this would call for an infinite number of element sizes so some compromise is often required. However, in practical terms, any combination of outputs from 9 Lpm up to a total of 90 Lpm per section can be provided for.
- Nehmen Sie Bezug auf die Tabelle mit die individuelle Elemente und wählen Sie die Elemente die ungefähr an die gewünschte Durchflüsse beantworten aus, abhängig von einer einzelnen Geschwindigkeit von 1500 Umlauf/Min am Stromteilerventil. Da wo es viele Montagemöglichkeiten gibt, können nicht alle Stromteilersysteme gelöst werden. Ein Vergleich zwischen die verschiedene Elemente sollte gefunden worden oder sonst fragen Sie uns.

#### 4 - CALCUL DE LA PRESSION D'ENTRÉE

##### Calculation of inlet pressure / Berechnung der Vordruck

- La pression d'entrée « p » du diviseur est égale à la somme des pressions et débits de chaque élément, divisée par le débit d'Entrée « Q ». A cette pression « p » il faut ajouter une valeur "pr" de 17 bar nécessaire à la rotation du diviseur.
- PR is the pressure required to rotate the flow divider Tests have shown that PR varies slightly according to the size and number of elements, but for practical purposes it can be assumed to be 17 bar (250 psi).
- Der Vordruck „P“ des Stromteilerventils ist gleich an der Summe der Drucke und Durchflüsse jedes Element zerteilt bei Eingangsdurchfluß „Q“. Am Vordruck „P“ sollte einer Wert von 17 Bar zugefügt werden die benötigt ist für den Umlauf des Stromteilerventils.

#### EXEMPLE / Example / Beispiel :

\*

p  $\frac{25,5 \text{ L/mn}}{Q}$  = pression d'entrée / inlet pressure / Vordruck  
 Q \_\_\_\_\_ = débit d'entrée / inlet flow / Eingangsdurchfluß  
 p1 à p4 \_\_\_\_\_ = pression de sortie / outlet pressure / Ausgangsdruck  
 Q1 à Q4 \_\_\_\_\_ = débit de sortie / outlet flow / Ausgangsdurchfluß  
 pr 17 bar \_\_\_\_\_ = pression de rotation (des engrenages) / pressure rotate flow divider / Umlaufdruck

#### Diviseur / Stromteilerventil FD4.02.02.04.09. \*\*\*

|         |           |                       |   |        |                 |
|---------|-----------|-----------------------|---|--------|-----------------|
| ELEMENT | N° / Nr 1 | section / Teilstrecke | 2 | 3 L/mn | à / bei 60 bar  |
|         | N° / Nr 2 | section / Teilstrecke | 2 | 3 L/mn | à / bei 120 bar |
|         | N° / Nr 3 | section / Teilstrecke | 4 | 6 L/mn | à / bei 25 bar  |
|         | N° / Nr 4 | section / Teilstrecke | 9 | 9 L/mn | à / bei 50 bar  |

$$* p = \frac{(60 \times 3) + (120 \times 3) + (25 \times 6) + (50 \times 13,5) + 17}{Q \text{ 25,5 L/mn}} = 70,5 \text{ bar}$$

## 5 - FUITES INTERNES

### Slip losses / Innere Undichtigkeiten

- L'utilisation du diviseur de débit dans les conditions définies au paragraphe 1 permet un rendement de 98%
- Using the flow dividers according to the conditions stated in paragraph 1 allows an efficiency of 98%
- Die Anwendung des Stromteilerventils im Zustand wie im Abschnitt 1 bestimmt ermöglicht eine Leistungsfähigkeit  $\geq 98\%$

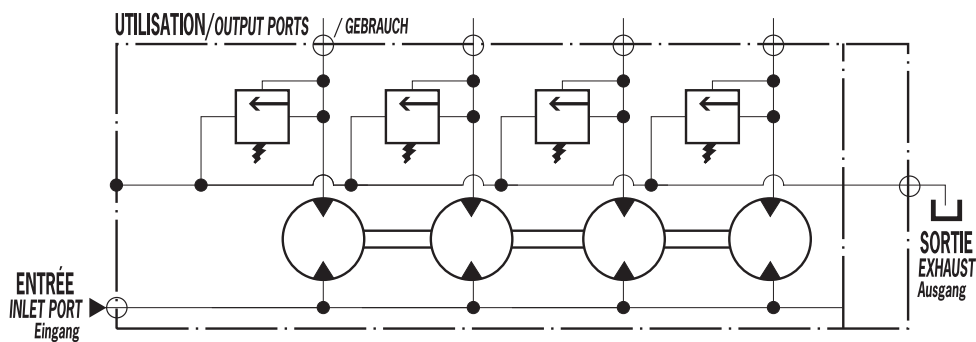
## 6 - DIVISEURS A SECTIONS MULTIPLES

### Dividers of multiple sections / Stromteilerventile mit verschiedene Teilstrecke

- Réalisation du diviseur en standard : 6 sections, au delà nous consulter
- Standard flow dividers may have up to 6 elements, more elements on request
- Standardstromteilerventil: 6 Teilstrecken . Mehrere Teilstrecken : auf Anfrage

## 7 - SCHÉMA HYDRAULIQUE DU DIVISEUR «FD»

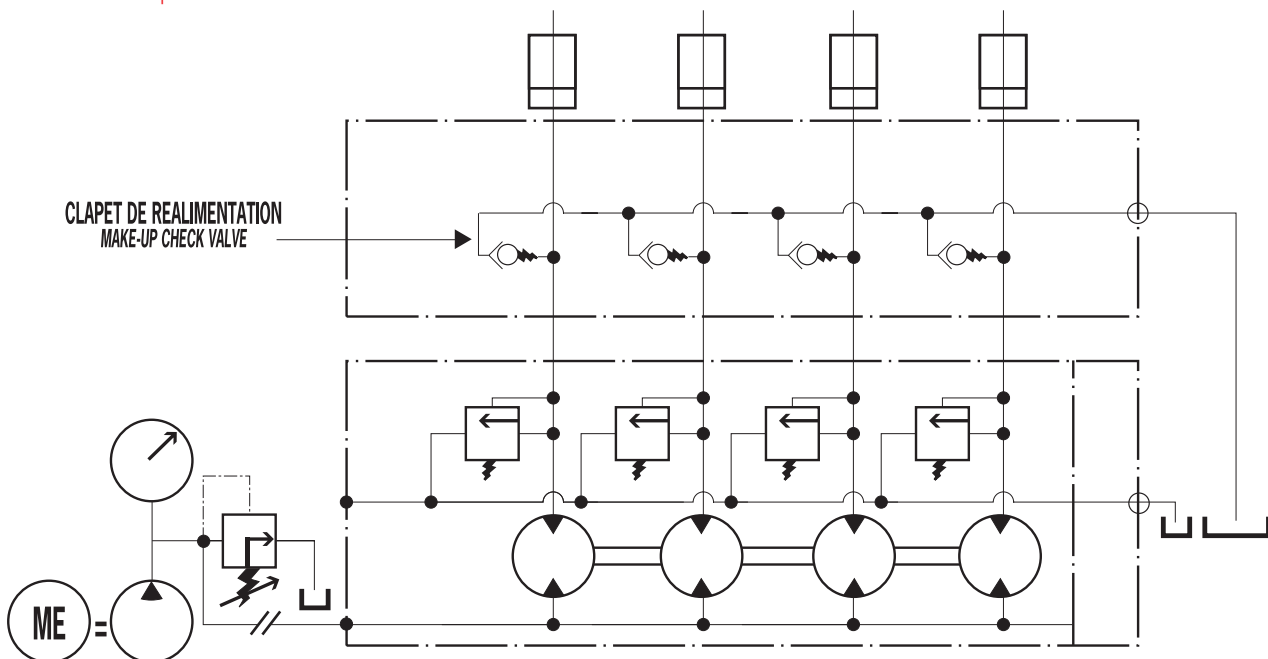
### Hydraulic drawing of the flow divider «fd» / Hydraulikplan des Stromteilerventils FD



## 8 - EXEMPLE D'UTILISATION

### Example of use / Anwendungsbeispiel

- Avec clapet de réalimentation, en option
- With make-up check valve, as option
- Mit Ventil in Option



## INFORMATION GÉNÉRALE

### General information

### Allgemeine Informationen

#### 9 - COMMENT COMMANDER UN DIVISEUR DE DÉBIT

How to order a flow divider / Wie bestellen

| FD                       | 2                                                                                                        | 06                                                                  | ***                                                                                            | M                                                     | B                           |
|--------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------|
| SÉRIE<br>SERIES<br>SERIE | NOMBRE DE SECTION<br>NUMBER OF ELEMENTS<br>ANZAHL TEILSTRECKE                                            | CYLINDRÉE PAR cm³/Tr<br>ELEMENT CAPACITY cm³/Tr<br>BAUGRÖSSE CM³/TR | TARAGE<br>RATING<br>TARIERUNG                                                                  | FLUIDE<br>FLUID<br>MEDIUM                             | JOINTS<br>SEALS<br>DICHRING |
| CODE<br>KODE             | CODE<br>KODE                                                                                             | CODE<br>KODE                                                        | CODE<br>KODE                                                                                   | CODE<br>KODE                                          | CODE<br>KODE                |
| FD                       | NB. ELEMENTS<br>OUTLETS<br>Anzahl Teilstrecke                                                            | DESIGNATION<br>BEZEICHNUNG                                          | TARAGE STANDARD<br>175 bar<br>STANDARD RATING<br>175 bar<br>STANDARD<br>ABGLEICH 175 bar       | DESIGNATION<br>BEZEICHNUNG                            | DESIGNATION<br>BEZEICHNUNG  |
|                          | 2 2 SECTIONS /<br>TEILSTRECKE                                                                            | 02 2 cm³/R                                                          |                                                                                                | M HUILES<br>MINÉRALES<br>MINERAL<br>OILS<br>MINERALÖL | B NITRILE<br>BUNA<br>NITRIL |
|                          | 3 3 SECTIONS /<br>TEILSTRECKE                                                                            | 04 4 cm³/R                                                          |                                                                                                | V EAU<br>GLYCOL<br>WASSER                             | V VITON<br>VITON<br>VITON   |
|                          | 4 4 SECTIONS /<br>TEILSTRECKE                                                                            | 06 6 cm³/R                                                          |                                                                                                |                                                       |                             |
|                          | 5 5 SECTIONS /<br>TEILSTRECKE                                                                            | 09 9 cm³/R                                                          |                                                                                                |                                                       |                             |
|                          | 6 6 SECTIONS /<br>TEILSTRECKE                                                                            | 12 12 cm³/R                                                         |                                                                                                |                                                       |                             |
|                          | AUTRES SECTIONS<br>SUR CONSULTATION<br>Other elements<br>on request<br>Andere Teilstrecke<br>Auf Anfrage | 18 18 cm³/R                                                         | AUTRE TARAGES<br>SUR DEMANDE<br>OTHER RATINGS<br>ON REQUEST<br>Andere Abgleiche<br>Auf Anfrage |                                                       |                             |
|                          |                                                                                                          | 24 24 cm³/R                                                         |                                                                                                |                                                       |                             |
|                          |                                                                                                          | 30 30 cm³/R                                                         |                                                                                                |                                                       |                             |
|                          |                                                                                                          | PRESSION MAXI<br>Maxi pressure<br>maximal Druck<br>350 BAR          | MINI. 40 BAR<br>MAXI. 350 BAR                                                                  |                                                       |                             |

#### 10 - MULTIPLICATEUR DE PRESSION

Use a flow divider as a pressure intensifier / Druckverstärker

- Les diviseurs de la série FD peuvent être utilisés comme multiplicateur de pression, nous consulter (pression maxi 350 bar)
- Flow dividers serie FD may be used as pressure intensifiers (max pressure 350 bar) on request
- Die Stromteilverventile FD können als Druckverstärker angewendet werden. Auf Anfrage (maximal Druck 350 Bar)

#### 11 - ELEMENTS TECHNIQUES POUR DEFINIR UN MULTIPLICATEUR DE PRESSION

Technical elements to define pressure intensifier / Technische Elemente um ein Druckverstärker zu bestimmen

- Type de fluide
- Fluid type
- Medium
- Débit d'entrée en L/mm
- Inlet flow in L/mm
- Eingangsfluß in L/mm
- Pression de sortie du multiplicateur
- Outlet pressure of intensifier
- Ausgangsdruck des Druckverstärkers
- Pression d'entrée du multiplicateur
- Inlet pressure of intensifier
- Eingangsdruck vom Druckverstärker
- Température du fluide
- Fluid temperature
- Temperatur des Mediums
- Débit de sortie du multiplicateur
- Outlet flow of intensifier
- Ausgangsfluß des Druckverstärkers.



## ROBINETS À TOURNANT CYLINDRIQUE

CYLINDRICAL PLUG VALVE

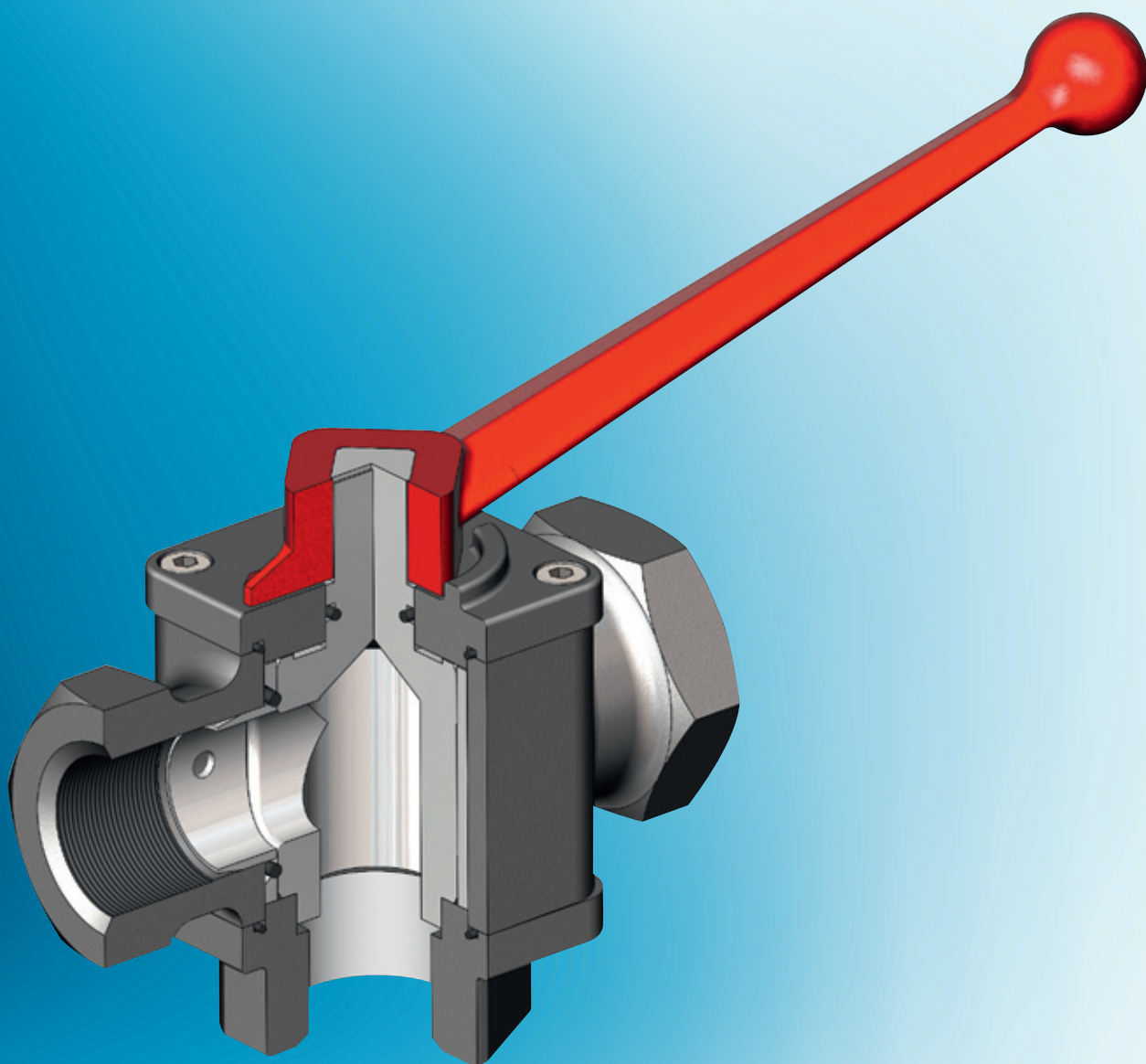
ZYLINDRISCHE DREHVENTIL

AUXIM™ S20

AUXIM™ HP40

AUXIM™ 3X

SÉRIE  
AUXIRÉGLAGE



## APPLICATIONS / Applications / Anwendungen

- **OXYGENE**
  - joints non graissés
- **OXYGENE SIDERURGIQUE 90°C et +**
  - joints VITON non graissés
- **ACETYLENE** de soudage diméthylformamide / acétone
- **SKYDROL\*** fluide aviation liquide LOCKHEED eau + éthylène-glycol (antigel)
- avec joints **VITON\*** air et gaz comprimés 200°C solvants chlorés
- **PYDRAUL\*** fluide ininflammable
- **ORONITE\*** fluide aviation
- **NH3 / LIQUIDES ALCALINS** viscosité tous types acier ou FGS
- **TRAVAUX SOUS-MARINS** eau de mer / atmosphère saline
- **PATE A PAPIER EAU DEMINERALISÉE**
  - protection par nickelage chimique KANIGEN\* 50 µ
- **AIR COMPRIMÉ**, gaz comprimés
- **HUILES** de graissage / lubrifiants
- **VIDE INDUSTRIEL** primaire □ standard
- **GAZ COMBUSTIBLES** gaz naturel / gaz manufacturé air propane / butane / propane gazeux
- **PETROL** gas-oil / fuel jusqu'à 90°C essence et ternaires
- **GAZ DE PETROL LIQUEFIES** exécution pour Centres GPL
- **FUEL LOURD N° 2 130° C et +** (brûleurs de fours / moteurs DIESEL)
- **OXYGEN**
  - o'ring not greased
- **OXYGEN for iron and steel industry 90°C and +**
  - VITON o'ring not greased
- **Welding ACETYLENE** diméthylformamid / acetone
- **SKYDROL\*** LOCKHEED fluid water + ethylene-glycol
- with **VITON\*** o'ring compressed air and gas 200°C chlorinated solvents
- **PYDRAUL\*** non flam
- **ORONITE\*** aviation fluid
- **NH3 / ALCALINE FLUIDS** viscosité all steel types or Spheroidal graphite iron
- **SUBMARINE SITES** sea water / salt environment
- **PAPER PULP DEMINERALIZED WATER**
  - chemical nickel plating KANIGEN\* 50 µ
- **COMPRESSED AIR**, compressed gas
- **LUBRICATING OILS** / cooling lubricant
- **LOW VACUUM** □ standard
- **FUEL GAS** natural gas / manufactured gas propane / butane / gas propane
- **FUEL OIL** gas oil up to 90°C petrol and ternary
- **LIQUEFIED PETROLEUM GAS** for LPG centers
- **HEAVY FUEL N° 2 130° C and more** (furnace burners / diesel engines)
- **SAUERSTOFF**
  - Dichtungsring ohne Fett
- **SAUERSTOFF für Eisen und Stahlindustrie 90°C Grad C. und mehr**
  - Viton Dichtungsringe ohne Fett
- **Schweißen mit AZETYLEN** Dimethylformamid / Aceton
- **SKYDROL\*** LOCKHEED flüssig Wasser + Äthylenglykol
- mit **VITON O'Ringe** \* gespresste Luft und Gaz 200°C Grad C. Chlorierte Lösungsmittel
- **PYDRAUL** flammwidriges Flüssig
- **ORONITE** Flugtechnik Flüssig
- **NH3 / ALKALISCH Flüssigkeit** Viskose alle Stahl Typen oder Kugelgraphitguss
- **UNTERSEE BAUSTELLEN** Meerwasser / Salziges Umfeld
- **PAPIERBREI DEMINERALISIERTES WASSER**
  - Chemische Vernicklung Schutz KANIGEN\* 50 µ
- **KOMPRIMIERTE LUFT**, komprimiertes Gas
- **ÖLE**: Getriebeöle, Schmierung
- **LUFTEINSCHLUSS** □ primär, Standard
- **TREIBGAS** : Erdgas / fertiggas Propan / Butan / Propangas
- **PETROLEUM** Dieselbenzin / Öl bis 90° Grad Celsius Benzin und ternär
- **FLÜSSIGGASE** Ausführung für LPG-Zentrum
- **SCHWERES HEIZÖL** n°2 130° Grad Celsius + (Brenner Öfen / Dieselantriebe)

\* (R) ■ Exécution spécifique sur demande / On request / Spezifische Ausführung auf Anfrage

## AUTRES APPLICATIONS DES ROBINETS AUXIM /

### Other applications of AUXIM valves / Andere Anwendungen mit AUXIM Ventile

- Acétate de butyle
- Acétate de propyle
- Acide acétique
- Acide borique
- Air jusqu'à 200°C
- Alcool butylique
- Alcool éthylique
- Aldéhyde formique
- Ammoniac gaz
- Ammoniaque
- Anhydride sulfureux
- Benzène
- Butadiène
- Butylglycol
- Diéthylène glycol
- Diméthylformamide
- Essences aromatiques
- Fréons 11 et 12
- Fréons 113 et 114
- Furfural
- Gaz carbonique (basse pression) (CO2 liquide)
- Hexane
- Hydrogène
- Kérosène
- Perchloréthylène
- Potasse
- Pydraul F9 - 150 A200
- Pyralènes
- Skydrol 500 A
- Soude concentrée
- Teepol
- Toluène
- Trichloréthylène
- Butyl acetate
- Propyl acetate
- Acetic acid
- Boric acid
- Air up to 200°C
- Butanol
- Ethyl alcohol
- Formaldehyde
- Ammonia gas
- Liquid ammonia
- Sulphur dioxide
- Benzene
- Butadiene
- Butyl glycol
- Diethylene glycol
- Dimethyl formamid
- Aromatic essences
- Freon 11 and 12
- Freon 113 and 114
- Furfural
- Carbon dioxide (low pressure) (liquid CO2)
- n-hexane
- Hydrogen
- Kerosene
- Perchlorethylene
- Potash
- Pydraul F9 - 150 A200
- Pyralene
- Skydrol 500 A
- Concentrated sodium
- Teepol
- Toluene
- Trichlorethylene
- Butylacetat
- Propylacetat
- Essigsäure
- Borsäure
- Luft bis 200°Cgr.
- Butylalkohol
- Äthylalkohol
- Formaldehyd
- Ammoniakgas
- Ammoniakflüssigkeit
- Schwefeldioxid
- Benzen
- Butadien
- Butylglykol
- Diäthylenglykol
- Dimethylformamid
- Aromatische Essenze
- Freon 11 und 12
- Freon 113 und 114
- Furfural
- Kohlendioxid (niederdruck / Flüssige CO2)
- Hexan
- Wasserstoff
- Kerosin
- Perchloräthylen
- Pottasche
- Pydraul F9-150 A200
- Pyralen
- Skydrol 500 A
- Konzentrierte Soda
- Teepol
- Toluol (Methylbenzol)
- Trichloräthylen.

Les exécutions ci-dessus correspondent à une préconisation générale pour les différents fluides. Les conditions particulières d'emploi pouvant apporter une modification éventuelle, nous consulter.

These are general applications for different fluids. The specific use may require a corresponding modification. Please consult us.

Die obengenannte Ausführungen sind für eine allgemeine Anpreisung für die verschiedenen Flüssigkeiten geeignet. Die besonderen Anwendungen Bedingungen können eine mögliche Änderung verursachen, bitte befragen Sie uns.

## DIMENSIONS

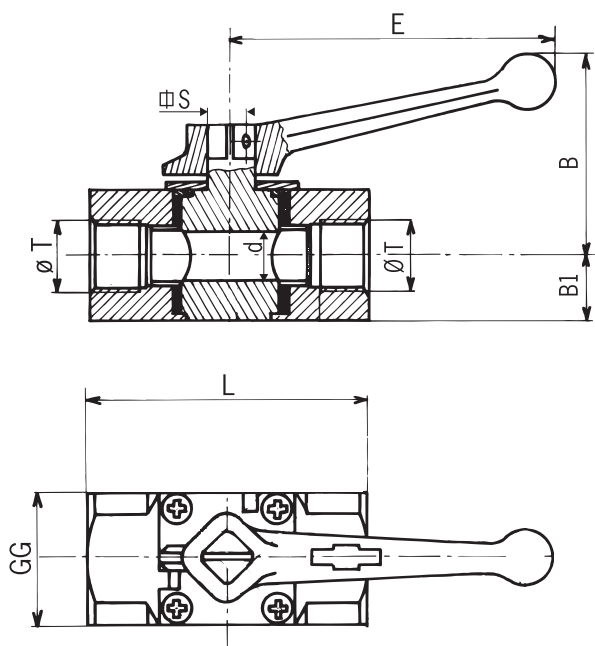
Dimensions

Dimensionen

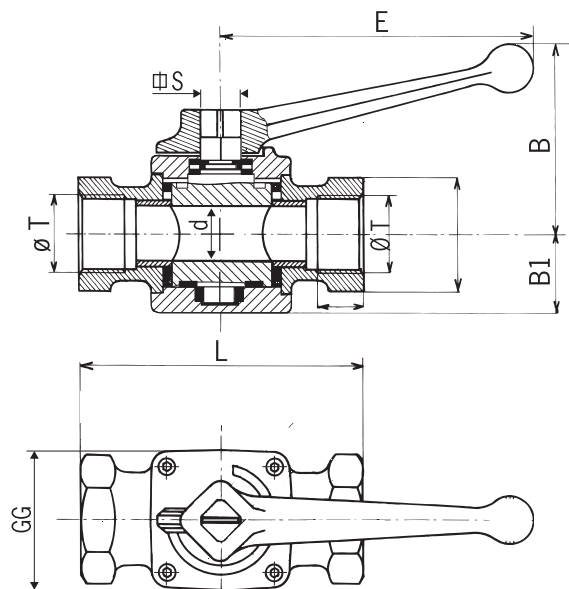
## VERSION STANDARD : FERMETURE DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standard Ausführung: Verschluß in Uhrzeigersinn



EXECUTION : DN8 à 15  
ORIFICE : BSPP - PORTS : BSPP  
NPT - PORTS : NPT



EXECUTION : DN20 à 50  
ORIFICE : BSPP - PORTS : BSPP  
NPT - PORTS : NPT

## S20

| Ø NOMINAL<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck | DIMENSIONS (mm)<br>Dimensions / Abmessungen (mm) |       |     |             |       |      |       |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|------------------------|-------------------------|------------------------------------------------------------------------|--------------------------------------------------|-------|-----|-------------|-------|------|-------|-----|--------------------------------------------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe |                                                                        | Ø d                                              | GG    | L   | Ø T<br>BSPP | B     | B1   | E     | Ø S |                                            |
| 8                      | 1/4"                    | 20                                                                     | 8                                                | 30,0  | 63  | 1/4"        | 49,0  | 15,0 | 80,0  | 8   | 0,450                                      |
| 12                     | 3/8"                    | 20                                                                     | 12                                               | 35,0  | 76  | 3/8"        | 57,5  | 17,5 | 95,0  | 10  | 0,600                                      |
| 15                     | 1/2"                    | 20                                                                     | 15                                               | 40,0  | 84  | 1/2"        | 60,0  | 20,0 | 95,0  | 12  | 1,000                                      |
| 20                     | 3/4"                    | 20                                                                     | 20                                               | 55,5  | 114 | 3/4"        | 69,0  | 26,0 | 115,0 | 12  | 1,600                                      |
| 25                     | 1"                      | 20                                                                     | 25                                               | 61,0  | 124 | 1"          | 83,0  | 34,0 | 135,0 | 14  | 2,500                                      |
| 32                     | 1 1/4"                  | 20                                                                     | 32                                               | 81,0  | 140 | 1 1/4"      | 96,5  | 40,5 | 160,0 | 18  | 3,600                                      |
| 40                     | 1 1/2"                  | 20                                                                     | 40                                               | 94,0  | 164 | 1 1/2"      | 115,0 | 47,5 | 190,0 | 22  | 5,000                                      |
| 50                     | 2"                      | 20                                                                     | 50                                               | 112,0 | 190 | 2"          | 128,0 | 52,5 | 220,0 | 22  | 7,000                                      |

## HP40

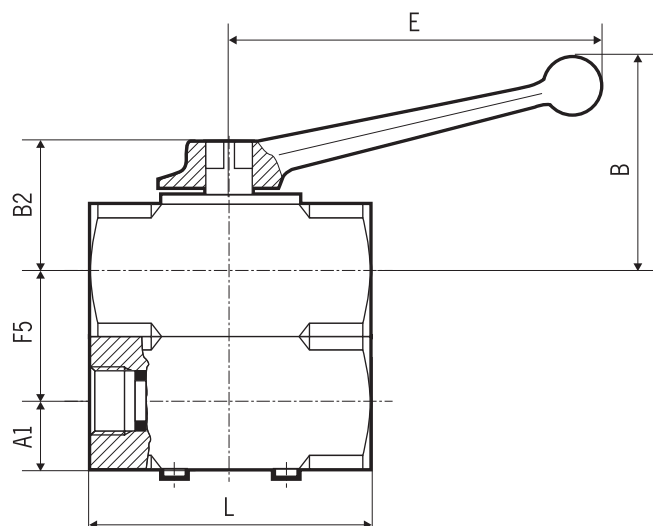
| Ø NOMINAL<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck | DIMENSIONS (mm)<br>Dimensions / Abmessungen (mm) |       |     |             |       |      |       |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|------------------------|-------------------------|------------------------------------------------------------------------|--------------------------------------------------|-------|-----|-------------|-------|------|-------|-----|--------------------------------------------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe |                                                                        | Ø d                                              | GG    | L   | Ø T<br>BSPP | B     | B1   | E     | Ø S |                                            |
| 8                      | 1/4"                    | 40                                                                     | 8                                                | 30,0  | 63  | 1/4"        | 49,0  | 15,0 | 80,0  | 8   | 0,450                                      |
| 12                     | 3/8"                    | 40                                                                     | 12                                               | 35,0  | 76  | 3/8"        | 57,5  | 17,5 | 95,0  | 10  | 0,600                                      |
| 15                     | 1/2"                    | 40                                                                     | 15                                               | 40,0  | 84  | 1/2"        | 68,0  | 20,0 | 120,0 | 12  | 1,000                                      |
| 20                     | 3/4"                    | 40                                                                     | 20                                               | 55,5  | 114 | 3/4"        | 83,0  | 26,0 | 175,0 | 12  | 1,600                                      |
| 25                     | 1"                      | 40                                                                     | 25                                               | 61,0  | 124 | 1"          | 92,0  | 34,0 | 175,0 | 14  | 2,500                                      |
| 32                     | 1 1/4"                  | 40                                                                     | 32                                               | 81,0  | 140 | 1 1/4"      | 96,5  | 40,5 | 160,0 | 18  | 3,600                                      |
| 40                     | 1 1/2"                  | 40                                                                     | 40                                               | 94,0  | 164 | 1 1/2"      | 174,0 | 47,5 | 260,0 | 22  | 5,000                                      |
| 50                     | 2"                      | 40                                                                     | 50                                               | 112,0 | 190 | 2"          | 196,0 | 52,5 | 305,0 | 22  | 7,000                                      |

# AUXIM™ S20 - AUXIM™ HP40

## ENSEMBLE JUMELE

Twin assembly

Schnappbefestigung



## VERSION STANDARD : FERMETURE DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

Standard Ausführung: Verschluß in Uhrzeigersinn

## ORIFICES : BSPP OU NPT

PORTS : BSPP ou NPT

ÖFFNUNGEN: BSPP oder NPT

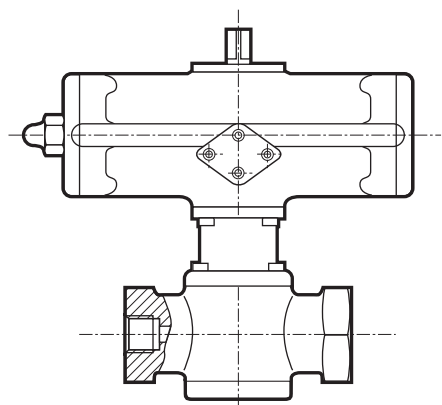
## S20-HP40

| DN<br>ND<br>ND          | 8    | 12   | 15   | 20   | 25  | 32     | 40     | 50  |
|-------------------------|------|------|------|------|-----|--------|--------|-----|
| TAILLE<br>Size<br>Größe | 1/4" | 3/8" | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  |
| L                       | 63   | 68   | 84   | 114  | 124 | 140    | 164,0  | 190 |
| A1                      | 15   | 15   | 20   | 23   | 26  | 31     | 36,0   | 41  |
| F5                      | 30   | 35   | 40   | 50   | 56  | 69     | 79,0   | 89  |
| B2                      | 31   | 38   | 45   | 51   | 58  | 66     | 77,0   | 82  |
| B                       | 49   | 68   | 74   | 90   | 95  | 146    | 176,0  | 199 |
| E                       | 80   | 120  | 120  | 175  | 175 | 220    | 260,0  | 305 |

## OPTIONS : S20-HP40-3X

Options: S20-HP40-3X

Optionen: S20-HP40-3X



## AUTOMATISATION : TOUS TYPES D'OPÉRATEURS

All kinds of actuators

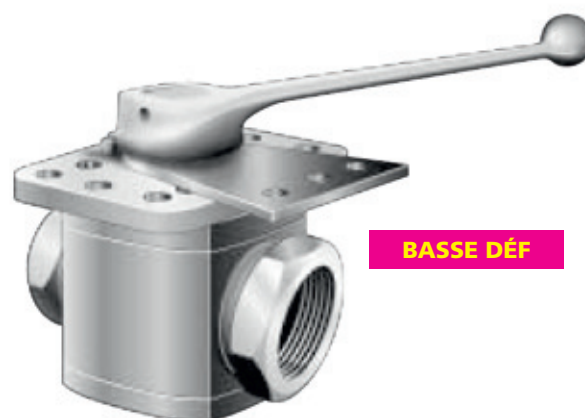
Automatisierung: alle Typen von Antriebe



## VERROUILLAGE PAR DOIGT ET RESSORT O/F

Locking device o/c

Auf/Zu Finger und Spring Verriegelung



## CADENASSAGE O/F

Padlock device o/c

Auf / Zu Vorhängeschloss Absperung



## CONTACT FIN DE COURSE O/F

LIMIT SWITCH O/C

Auf/Zu Endstellungschalter

# INVERSEURS SÉRIE 3X

## DIMENSIONS

Dimensions

Dimensionen

ORIFICES : BSPP OU NPT

PORTS : BSPP ou NPT

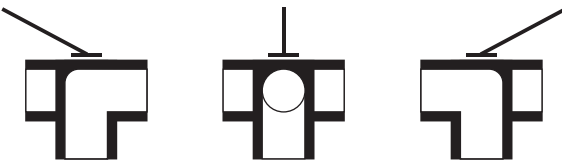
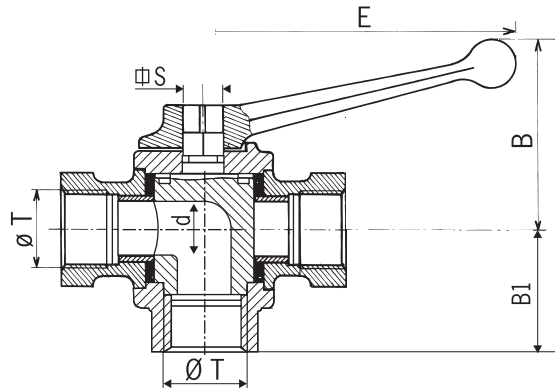
öffnungen: BSPP oder NPT

VERSION STANDARD : FERMETURE

DU ROBINET SENS HORAIRE

Standard version: clockwise valve closing

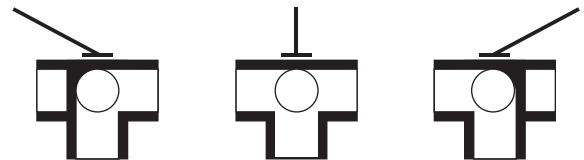
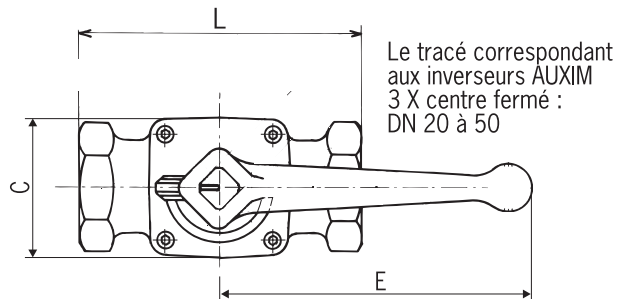
Standard Ausführung: Verschuß in Uhrzeigersinn



DISTRIBUTION CENTRE FERMÉ

Closed center

Geschlossene Mitte Verteilung



DISTRIBUTION CENTRE OUVERT

Open center

Geöffnete Mitte Verteilung

## PRESSION / Pressure 20 bar / 20 Bar Betriebsdruck

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck (Bar) | DIMENSIONS (mm)<br>Dimensions / Abmessungen (mm) |       |     |        |     |    |     |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|-------------------------------------|-------------------------|------------------------------------------------------------------------------|--------------------------------------------------|-------|-----|--------|-----|----|-----|-----|--------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                              | ø d                                              | C     | L   | Ø T    | B   | B1 | E   | Ø S |                                            |
| 8                                   | 1/4"                    | 20                                                                           | 8                                                | 30,0  | 56  | 1/4"   | 57  | 30 | 100 | 8   | 0,450                                      |
| 12                                  | 3/8"                    | 20                                                                           | 12                                               | 30,0  | 68  | 3/8"   | 58  | 36 | 100 | 10  | 0,500                                      |
| 15                                  | 1/2"                    | 20                                                                           | 15                                               | 40,0  | 84  | 1/2"   | 68  | 42 | 120 | 12  | 1,000                                      |
| 20                                  | 3/4"                    | 20                                                                           | 20                                               | 56,0  | 114 | 3/4"   | 83  | 47 | 175 | 12  | 1,700                                      |
| 25                                  | 1"                      | 20                                                                           | 25                                               | 61,0  | 124 | 1"     | 91  | 53 | 175 | 14  | 2,100                                      |
| 32                                  | 1 1/4"                  | 20                                                                           | 32                                               | 81,0  | 140 | 1 1/4" | 142 | 60 | 220 | 18  | 3,700                                      |
| 40                                  | 1 1/2"                  | 20                                                                           | 40                                               | 94,0  | 164 | 1 1/2" | 174 | 70 | 260 | 22  | 5,600                                      |
| 50                                  | 2"                      | 20                                                                           | 50                                               | 112,0 | 190 | 2"     | 196 | 80 | 305 | 22  | 7,900                                      |

## PRESSION / Pressure 40 bar / 40 Bar Betriebsdruck

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck (Bar) | DIMENSIONS (mm)<br>Dimensions / Abmessungen (mm) |      |     |      |    |    |     |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|-------------------------------------|-------------------------|------------------------------------------------------------------------------|--------------------------------------------------|------|-----|------|----|----|-----|-----|--------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                              | ø d                                              | C    | L   | Ø T  | B  | B1 | E   | Ø S |                                            |
| 8                                   | 1/4"                    | 40                                                                           | 8                                                | 30,0 | 56  | 1/4" | 58 | 30 | 100 | 8   | 0,450                                      |
| 12                                  | 3/8"                    | 40                                                                           | 12                                               | 30,0 | 68  | 3/8" | 60 | 36 | 100 | 10  | 0,500                                      |
| 15                                  | 1/2"                    | 40                                                                           | 15                                               | 40,0 | 84  | 1/2" | 69 | 42 | 120 | 12  | 1,000                                      |
| 20                                  | 3/4"                    | 40                                                                           | 20                                               | 56,0 | 114 | 3/4" | 83 | 47 | 175 | 12  | 1,700                                      |
| 25                                  | 1"                      | 40                                                                           | 25                                               | 61,0 | 124 | 1"   | 91 | 53 | 175 | 14  | 2,100                                      |



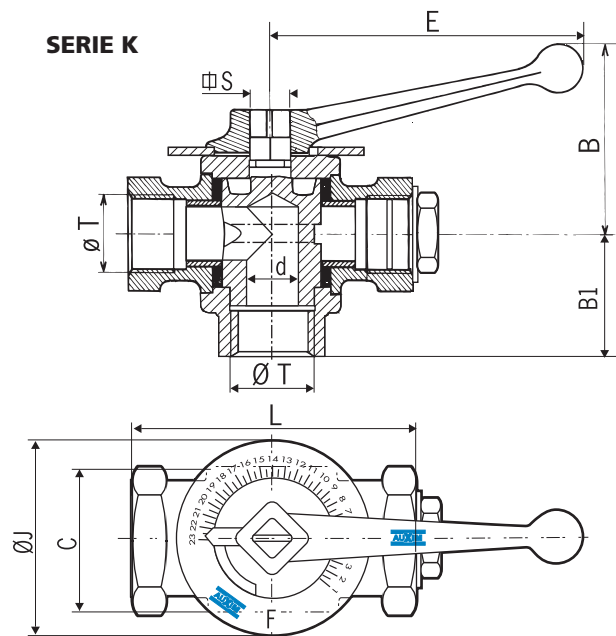
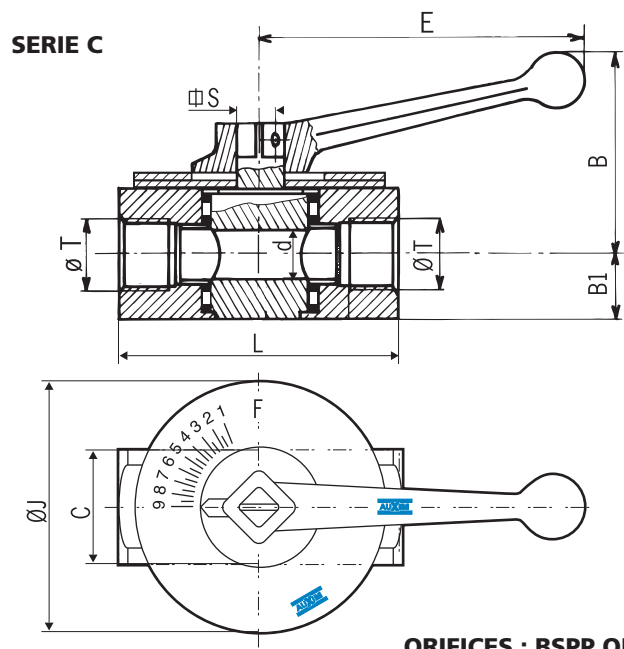
# AUXIM™ - AUXIRÉGLAGE™ SÉRIE C - AUXIRÉGLAGE™ SÉRIE K

## VERSION STANDARD : MANOEUVRE SENS HORAIRE

Standard version: clockwise operating

Standard Ausführung: Uhrzeigersinn Betätigung

## DIMENSION / Dimensions / Abmessungen



ORIFICES : BSPP OU NPT

PORTS : BSPP ou NPT

Öffnungen: BSPP oder NPT

### SÉRIE-C

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck (Bar) | REPERAGE DU DEBIT / Flow identification / Flussbezeichnung<br>MANOEUVRE SUR 90° / Operation at 90° / 90° Betätigung |       |     |             |       |      |     |     |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|-------------------------------------|-------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------|-----|-------------|-------|------|-----|-----|-----|--------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                              | ø d                                                                                                                 | C     | L   | Ø T<br>BSPP | B     | B1   | E   | Ø S | Ø J |                                            |
| 8                                   | 1/4"                    | 20                                                                           | 7                                                                                                                   | 30,0  | 63  | 1/4"        | 49,0  | 15,0 | 80  | 8   | 60  | 0,450                                      |
| 12                                  | 3/8"                    | 20                                                                           | 9                                                                                                                   | 35,0  | 76  | 3/8"        | 57,5  | 17,5 | 95  | 10  | 60  | 0,600                                      |
| 15                                  | 1/2"                    | 20                                                                           | 15                                                                                                                  | 40,0  | 84  | 1/2"        | 60,0  | 20,0 | 95  | 12  | 73  | 1,000                                      |
| 20                                  | 3/4"                    | 20                                                                           | 20                                                                                                                  | 55,5  | 114 | 3/4"        | 69,0  | 26,0 | 115 | 12  | 73  | 1,600                                      |
| 25                                  | 1"                      | 20                                                                           | 25                                                                                                                  | 61,0  | 124 | 1"          | 83,0  | 34,0 | 135 | 14  | 80  | 2,500                                      |
| 32                                  | 1" 1/4                  | 20                                                                           | 32                                                                                                                  | 81,0  | 140 | 1" 1/4      | 96,5  | 40,5 | 160 | 18  | 93  | 3,600                                      |
| 40                                  | 1" 1/2                  | 20                                                                           | 40                                                                                                                  | 94,0  | 164 | 1" 1/2      | 115,0 | 47,5 | 190 | 22  | 93  | 5,000                                      |
| 50                                  | 2"                      | 20                                                                           | 50                                                                                                                  | 112,0 | 190 | 2"          | 128,0 | 52,5 | 220 | 22  | 93  | 7,000                                      |

### SÉRIE-K

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>MAXI (bar)<br>Maxi<br>pressure<br>Maximal<br>Betriebsdruck (Bar) | REGLAGE PROGRESSIF DU DEBIT / Flow progressive regulation / Durchflussregelung<br>MANOEUVRE A 270° / Operation at 270° / 270° Betätigung |       |     |        |     |    |     |     |     | MASSE<br>(kg)<br>Weight<br>Gewicht<br>(Kg) |
|-------------------------------------|-------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|--------|-----|----|-----|-----|-----|--------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                              | ø d                                                                                                                                      | C     | L   | Ø T    | B   | B1 | E   | Ø S | Ø J |                                            |
| 8                                   | 1/4"                    | 20                                                                           | 7                                                                                                                                        | 30,0  | 56  | 1/4"   | 58  | 30 | 100 | 8   | 60  | 0,450                                      |
| 12                                  | 3/8"                    | 20                                                                           | 9                                                                                                                                        | 30,0  | 68  | 3/8"   | 60  | 36 | 100 | 10  | 60  | 0,500                                      |
| 15                                  | 1/2"                    | 20                                                                           | 15                                                                                                                                       | 40,0  | 84  | 1/2"   | 69  | 42 | 120 | 12  | 73  | 1,000                                      |
| 20                                  | 3/4"                    | 20                                                                           | 20                                                                                                                                       | 56,0  | 114 | 3/4"   | 83  | 47 | 175 | 12  | 73  | 1,700                                      |
| 25                                  | 1"                      | 20                                                                           | 25                                                                                                                                       | 61,0  | 124 | 1"     | 91  | 53 | 175 | 14  | 80  | 2,100                                      |
| 32                                  | 1" 1/4                  | 20                                                                           | 32                                                                                                                                       | 81,0  | 140 | 1" 1/4 | 142 | 60 | 220 | 18  | 93  | 3,700                                      |
| 40                                  | 1" 1/2                  | 20                                                                           | 40                                                                                                                                       | 94,0  | 164 | 1" 1/2 | 174 | 70 | 260 | 22  | 93  | 5,600                                      |
| 50                                  | 2"                      | 20                                                                           | 50                                                                                                                                       | 112,0 | 190 | 2"     | 196 | 80 | 305 | 22  | 93  | 7,900                                      |



### COMMENT COMMANDER ? / How to order? / Wie Bestellen?

|                                                                                                                        |                                                                                                                         |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S20</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>S20</b>   | <b>HP40</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>HP 40</b> | <b>15</b><br>TAILLE / SIZE / GRÖSSE<br>MM INCH<br>08 1/4"<br>12 3/8"<br>15 1/2"<br>20 3/4"<br>25 1"<br>32 1" 1/4<br>40 1" 1/2<br>50 2" | <b>1</b><br>CLE / HANDLE / SCHLÜSSEL<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>Y Avec / With / Mit<br>N Sans / Without / Ohne<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>R Droite (horaire) / Right (cw) / Rechtslauf (Uhrzeigersinn)<br>L Gauche (anti-horaire) / Left (c.cw) / Linkslauf (gegen Uhrzeigersinn) | <b>R</b><br>ROTATION / ROTATION / UMDREHUNG<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>Y Avec / With / Mit<br>N Sans / Without / Ohne<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>R Droite (horaire) / Right (cw) / Rechtslauf (Uhrzeigersinn)<br>L Gauche (anti-horaire) / Left (c.cw) / Linkslauf (gegen Uhrzeigersinn) | <b>V</b><br>ECHAPPEMENT / VENTING / ABFLIESSEN<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>S Sans / Without / Ohne<br>V Avec / With / Mit<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>0,5 BSPP<br>N NPT                                                             | <b>G</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>S Sans / Without / Ohne<br>V Avec / With / Mit<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>0,5 BSPP<br>N NPT                                                         | <b>SB</b><br>OPTIONS / OPTIONS / OPTIONEN<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>SO Fin de course position ouvert / Limit switch open position / Endstellung geöffnete Position<br>SC Fin de course position fermé / Limit switch closed position / Endstellung geschlossene Position<br>SB Fin de course ouvert + fermé / Limit switch closed + open / Endstellung geöffnet + geschlossen<br>PB Cadenassage ouvert + fermé / Padlock closed + open / Verhängeschloss geöffnet und geschlossen<br>LB Verrouillage ouvert + fermé / Locking closed + open / Verriegelung geöffnet + geschlossen<br>TW Montage jumelé / Twin mounted / Schnappbefestigung |
| <b>3X20</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>3X20</b> | <b>3X40</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>3X40</b>  | <b>15</b><br>TAILLE / SIZE / GRÖSSE<br>MM INCH<br>08 1/4"<br>12 3/8"<br>15 1/2"<br>20 3/4"<br>25 1"<br>32 1" 1/4<br>40 1" 1/2<br>50 2" | <b>Y</b><br>CLE / HANDLE / SCHLÜSSEL<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>Y Avec / With / Mit<br>N Sans / Without / Ohne<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>R Droite (horaire) / Right (cw) / Rechtslauf (Uhrzeigersinn)<br>L Gauche (anti-horaire) / Left (c.cw) / Linkslauf (gegen Uhrzeigersinn) | <b>R</b><br>ROTATION / ROTATION / UMDREHUNG<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>Y Avec / With / Mit<br>N Sans / Without / Ohne<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>R Droite (horaire) / Right (cw) / Rechtslauf (Uhrzeigersinn)<br>L Gauche (anti-horaire) / Left (c.cw) / Linkslauf (gegen Uhrzeigersinn) | <b>CF</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>CF Centre fermé / closed center / Geschlossene Mitte<br>CO Centre ouvert / open center / Geöffnete Mitte<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>G BSPP<br>N NPT | <b>G</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>CF Centre fermé / closed center / Geschlossene Mitte<br>CO Centre ouvert / open center / Geöffnete Mitte<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>G BSPP<br>N NPT | <b>SB</b><br>OPTIONS / OPTIONS / OPTIONEN<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>SO Fin de course position ouvert / Limit switch open position / Endstellung geöffnet<br>SC Fin de course position fermé / Limit switch closed position / Endstellung geschlossen<br>SB Fin de course ouvert + fermé / Limit switch closed + open / Endstellung geöffnet + geschlossen<br>PB Cadenassage ouvert + fermé / Padlock closed + open / Auf / Zu Vorhängeschloss Absperung<br>LB Verrouillage ouvert + fermé / Locking closed + open / Verriegelung geöffnet + geschlossen<br>TW Montage jumelé / Twin mounted / Schnappbefestigung                           |
| <b>AUXI</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>AUXI</b> | <b>C</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>C</b>        | <b>K</b><br>SERIE / SERIES / SERIE<br>MODELE / MODEL / TYP<br>CLASSE / CLASS / KLASSE<br>CODE / KODE<br><b>K</b>                       | <b>15</b><br>TAILLE / SIZE / GRÖSSE<br>MM INCH<br>08 1/4"<br>12 3/8"<br>15 1/2"<br>20 3/4"<br>25 1"<br>32 1" 1/4<br>40 1" 1/2<br>50 2"                                                                                                                                                                              | <b>R</b><br>ROTATION / ROTATION / UMDREHUNG<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>R Droite (horaire) / Right (cw) / Rechtslauf (Uhrzeigersinn)<br>L Gauche (anti-horaire) / Left (c.cw) / Linkslauf (gegen Uhrzeigersinn)                                                                                            | <b>G</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>G BSPP<br>N NPT                                                                                                                                                       | <b>G</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>G BSPP<br>N NPT                                                                                                                                                      | <b>G</b><br>RACCORDEMENT / CONNECTION / ANSCHLUSS<br>CODE / KODE DESIGNATION / BEZEICHNUNG<br>G BSPP<br>N NPT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

### CARACTERISTIQUES / Features / Eigenschaften

#### Montages :

- en ligne
- orifices taraudés BSPP
- joint toriques : NITRILE

#### Matières :

- corps (DN 8 - 15) acier - (DN20 - 50) fonte GS
- tournant (DN 8 - 25) laiton - (DN 32 - 50) fonte

#### Mounting:

- in line
- ports thread BSPP
- o-ring seals: NITRILE

#### Material:

- body (ND 8 - 15) steel - (ND 20 - 50) GS cast iron
- plug (ND 8 - 25) brass - (ND 32 - 50) cast iron

#### Montage:

- Linie Aufbau
- Innengewinde Öffnungen BSPP
- Dichtringe : NITRIL

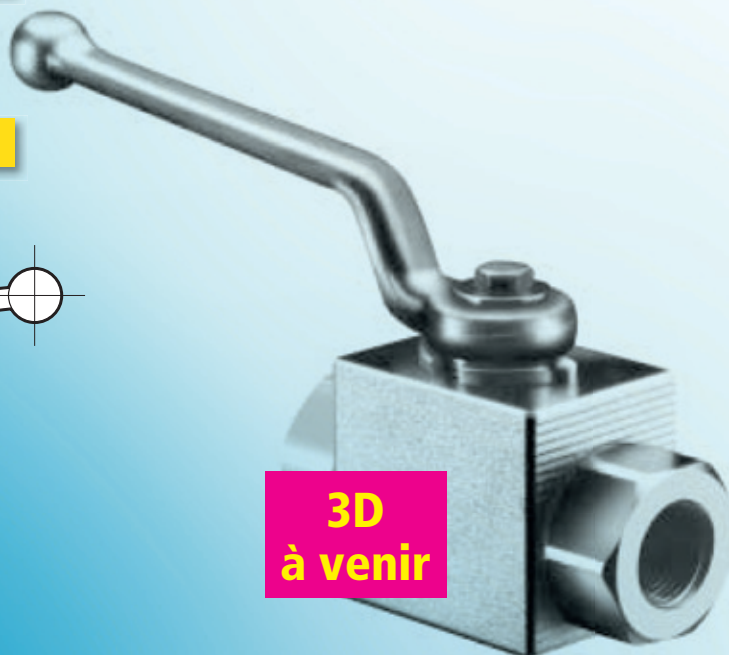
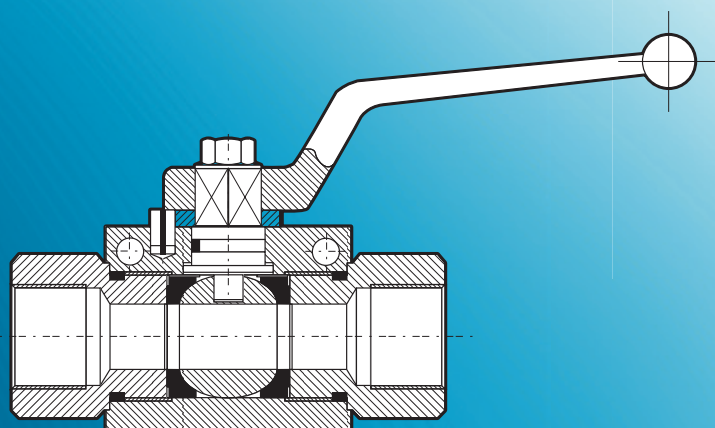
#### Material :

- Körper : (ND 8-15) Stahl - (ND 20-50) GS Guss
- Drehung (ND 8-25) Messing - (ND 32-50) Guss

## ROBINETS 2 OU 3 VOIES

BALL VALVES 2 OR 3 WAYS

2 ODER 3 WEGE KUGELHÄHNE



**3D  
à venir**

## EXECUTION STANDARD

Standard execution

Standard Ausführung

Corps et raccord acier zingué  
Sphère acier chromé  
Garniture polyacetal  
Joint : NBR  
Fermeture du Robinet : sens anti-horaire

Body and connection: zinc-plated steel  
Ball: thick-chromed steel  
Ball gaskets: polyacetal resin (DELIN)  
Pin gaskets: NBR  
Counter clockwise valve closing

Körper und Anschluss: verzinkte Stahl  
Kugel Chromstahl  
Fugendichtung: Polyacetal  
Dichtung: NBR  
Hahnverschluss: Gegenuhzeigersinn

## COMMENT COMMANDER ? / How to order? / Wie Bestellen?

| BKH            |                | BH3         |  | 10             |  | L                           |  | 1                       |  | B                               |  | 1                       |  | P                                     |  | G                              |  |                            |  |      |  |
|----------------|----------------|-------------|--|----------------|--|-----------------------------|--|-------------------------|--|---------------------------------|--|-------------------------|--|---------------------------------------|--|--------------------------------|--|----------------------------|--|------|--|
| SERIE          |                | SERIE       |  | TAILLE<br>SIZE |  | 3 VOIES<br>3 ways<br>3-WEGE |  | CORPS<br>BODY<br>KÖRPER |  | JOINTS<br>SEAL<br>DICHTUNGSRING |  | SPHERE<br>BALL<br>KUGEL |  | GARNITURE<br>SEALING<br>FUGENDICHTUNG |  | MONTAGE<br>MOUNTING<br>MONTAGE |  |                            |  |      |  |
| CODE / KODE    |                | CODE / KODE |  | 2 VOIES        |  | 3 VOIES                     |  | CODE<br>KODE            |  | DESIGNATION<br>BEZEICHNUNG      |  | CODE<br>KODE            |  | DESIGNATION<br>BEZEICHNUNG            |  | CODE<br>KODE                   |  | DESIGNATION<br>BEZEICHNUNG |  |      |  |
| BKH<br>2 VOIES | BH3<br>3 VOIES | 4           |  | 4 L            |  | 6                           |  | 6 L                     |  | 10                              |  | 10 L                    |  | 15                                    |  | 15 L                           |  | 20                         |  | 20 L |  |
|                |                | 25          |  | 25 L           |  | 32                          |  | 32 L                    |  | 40                              |  | 40 L                    |  | 50                                    |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  |                         |  |                                       |  |                                |  |                            |  |      |  |
|                |                |             |  |                |  |                             |  |                         |  |                                 |  | </                      |  |                                       |  |                                |  |                            |  |      |  |

## ROBINETS 2 VOIES

Ball valves two ways

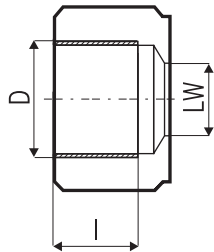
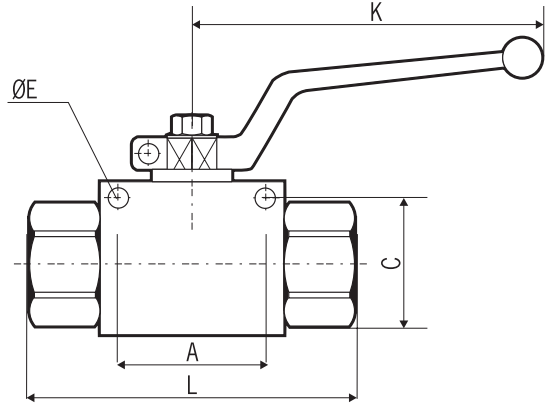
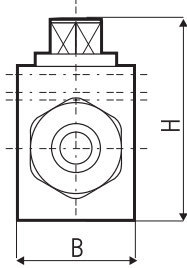
2-Weg Kugelhähne

FERMETURE DU ROBINET :

SENS ANTI-HORAIRE

Counter clockwise valve closing

Hahnverschluss : Gegen-Uhrzeigersinn



| DN<br>ND<br>ND | LW | PN<br>bar | D<br>BSPP | D<br>NPTF       | L   | B   | H     | I  | K   | A  | C    | E   |
|----------------|----|-----------|-----------|-----------------|-----|-----|-------|----|-----|----|------|-----|
| 4              | 5  | 500       | G 1/8"    |                 | 71  | 26  | 44,5  | 14 | 115 | 29 | 27,5 | 4,5 |
| 6              | 6  | 500       | G 1/4"    | 1/4" - 18 NPT   | 71  | 26  | 44,5  | 14 | 115 | 29 | 27,5 | 4,5 |
| 10             | 10 | 500       | G 3/8"    | 3/8" - 18 NPT   | 72  | 33  | 50,0  | 14 | 115 | 35 | 35,0 | 5,5 |
| 13             | 13 | 500       | G 1/2"    | 1/2" - 14 NPT   | 85  | 35  | 51,0  | 16 | 115 | 39 | 35,5 | 6,5 |
| 20             | 20 | 320       | G 3/4"    | 3/4" - 14 NPT   | 97  | 49  | 71,5  | 18 | 160 | 50 | 49,5 | 6,5 |
| 25             | 24 | 320       | G 1"      | 1" - 11,5 NPT   | 113 | 60  | 76,0  | 20 | 160 | 54 | 54,0 | 6,5 |
| 32             | 24 | 320       | G 1" 1/4  | 1" 1/4 - 11 NPT | 121 | 60  | 76,0  | 22 | 160 | 54 | 54,0 | 6,5 |
| 40             | 24 | 320       | G 1" 1/2  |                 | 124 | 60  | 76,0  | 24 | 160 | 54 | 54,0 | 6,5 |
| 50             | 48 | 350       | G 2"      |                 | 140 | 100 | 132,0 | 28 | 200 |    |      |     |

## ROBINETS 3 VOIES

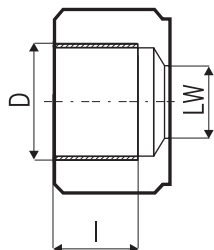
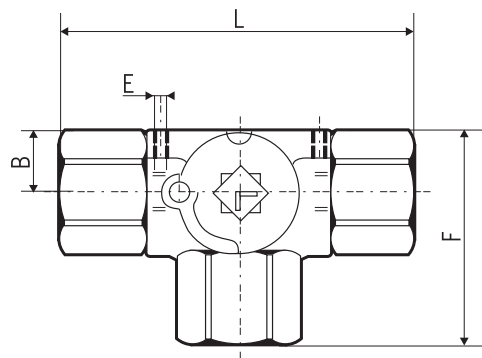
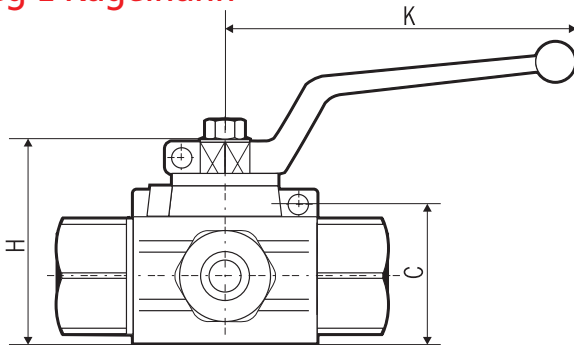
Ball valves three ways L

3-Weg L Kugelhahn

MANOEUVRE SENS ANTI-HORAIRE

operating counter clockwise

Gegen-Uhrzeigersinn Betätigung



| DN<br>ND<br>ND | LW | PN<br>bar | D<br>BSPP | D<br>NPTF       | L   | B    | H    | I  | K   | E  | C    | F    |
|----------------|----|-----------|-----------|-----------------|-----|------|------|----|-----|----|------|------|
| 4              | 5  | 500       | G 1/8"    |                 | 71  | 13,0 | 44,5 | 14 | 115 | M4 | 27,5 | 44,0 |
| 6              | 7  | 500       | G 1/4"    | 1/4" - 18 NPT   | 71  | 13,0 | 44,5 | 14 | 115 | M4 | 27,5 | 44,0 |
| 10             | 10 | 500       | G 3/8"    | 3/8" - 18 NPT   | 72  | 16,5 | 50,0 | 14 | 115 | M4 | 35,0 | 51,5 |
| 13             | 13 | 500       | G 1/2"    | 1/2" - 14 NPT   | 85  | 17,5 | 51,5 | 16 | 115 | M5 | 36,0 | 55,0 |
| 20             | 20 | 320       | G 3/4"    | 3/4" - 14 NPT   | 97  | 24,5 | 72,0 | 18 | 160 | M6 | 49,5 | 70,0 |
| 25             | 24 | 320       | G 1"      | 1" - 11,5 NPT   | 113 | 30,0 | 79,5 | 20 | 160 | M6 | 54,0 | 87,5 |
| 32             | 24 | 320       | G 1" 1/4  | 1" 1/4 - 11 NPT | 124 | 30,0 | 79,5 | 22 | 160 | M6 | 54,0 | 87,5 |
| 40             | 24 | 320       | G 1" 1/2  |                 | 124 | 30,0 | 79,5 | 24 | 160 | M6 | 54,0 | 87,5 |

## BRIDES HYDRAULIQUES

HYDRAULIC FLANGES

HYDRAULISCHE FLANSCH

ISO 6162-1 (SAE 3000)

ISO 6162-2 (SAE 6000)

ISO 6164-1 PN 250 / CETOP

ISO 6164-2 PN 400 / CETOP

ISO 6162-1 / 6164-1 (SAE 3000)  
PN 250 / CETOP

ISO 6162-2 / 6164-2 (SAE 6000)  
PN 400 / CETOP



photos  
ok ?



# CARACTERISTIQUES TECHNIQUES DES CONNECTEURS A BRIDES

## Flanged connections technical specifications

## Verbindungsflansche technische Spezifikation

### MATIERE / Materials / Materialien

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                  | AFNOR                                                         | EN.10027-2       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
| <ul style="list-style-type: none"><li>- Brides et 1/2 brides de raccordement ISO 6162 (SAE 3000/6000) Ø 1/2" à 3"</li><li>- Connecting flanges and 1/2 flanges, ISO 6162 (SAE 3000/6000) Ø 1/2" to 3"</li><li>- Verbindungsflansche und 1/2-Flansche, ISO6162 (SAE 3000/6000) Ø 1/2" bis 3"</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                  | AF.60.C40                                                     |                  |
| <ul style="list-style-type: none"><li>- Brides et 1/2 brides de raccordement ISO 6162 (SAE 3000) Ø 3/8" (fig. B1)</li><li>- Connecting flanges and split flanges ISO 6162 (SAE 3000) Ø 3/8" (fig. B1)</li><li>- Verbindungsflansche und spalt-Flansche ISO 6162 (SAE 3000) Ø 3/8" (fig. B1)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                  | XC 38 H1                                                      | 1.1181           |
| <ul style="list-style-type: none"><li>- Brides embouts SW, type "V" - ISO 6162-1 (SAE 3000)</li><li>- Flanges with SW ends, "V" type ISO 6162-1 (SAE 3000)</li><li>- Flansche mit SW Ende, "V" Typ ISO 6162-1 (SAE 3000)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                  | XC 18                                                         | 1.1151           |
| <ul style="list-style-type: none"><li>- Brides taraudées - Tous standards (fig. B3)</li><li>- Tapped flanges - all standards (fig. B3)</li><li>- Innengewinde Flansche - Alle standard (Fig. B3)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                  | XC 38 H1                                                      | 1.1181           |
| <ul style="list-style-type: none"><li>- Brides pleines - Tous standards</li><li>- Blank flanges - all standards</li><li>- Voll Flansche - alle Standard</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                  | XC 38 H1                                                      | 1.1181           |
| <ul style="list-style-type: none"><li>- Blocs de raccordements - Tous standards</li><li>- Connecting blocks - all standards</li><li>- Anschlussblock - Alle Standard</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                  | XC 38 H1<br>XC 48 H1                                          | 1.1181<br>1.1191 |
| <ul style="list-style-type: none"><li>- Brides carrées - Standards ISO 6164 PN 250 et 400 (fig. B2) Cetop/"S"</li><li>- Square flanges - Standards ISO 6164 PN 250 and 400 (fig. B2) Cetop "S"</li><li>- Viereckige Flansche - Standard ISO 6164 PN 250 und 400 (fig. B2) Cetop "S"</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                  | XC 38 H1                                                      | 1.1181           |
| <ul style="list-style-type: none"><li>- Collets à souder Butt Welding Integral ou Réduit</li><li>- Flanged head BW or Reducing Flanged head BW</li><li>- Schweiss Stutzen BW Integrale oder reduzierte Stutzen BW</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                  | E 24.3                                                        | 1.0114           |
| <ul style="list-style-type: none"><li>- Socket Welding Integral type "C", Socket Welding réduit type "D"</li><li>- Flanged head integral Socket Welding type "C", Reducing Flanged head Socket Welding type "D"</li><li>- Typ "C", reduzierte Typ "D"</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                  | E 24.3                                                        | 1.0114           |
| <ul style="list-style-type: none"><li>- Adaptateur Socket Welding, Collet ébauche (fig. C1 à C5) - Tous standards</li><li>- Adapters, blank Flanged head.</li><li>- Adapter Socket Welding, rohr Kragen (Fig. C1 bis C5) - Alle Standard</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                  | E 24.3                                                        | 1.0114           |
| <ul style="list-style-type: none"><li>- Collets filetés - Tous standards</li><li>- Treaded Flanged head - all Standards</li><li>- Stutzen mit gewinde - Alle Standard</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                  | E 24.3                                                        | 1.0114           |
| <ul style="list-style-type: none"><li>- Obturateurs - Tous standards</li><li>- Plugs - all Standards</li><li>- Dichtungskragen - Alle Standard</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                  | E 24.3                                                        | 1.0114           |
| <ul style="list-style-type: none"><li>- Vis CHC suivant norme NF E - 25-125 - DIN.912</li><li>- Screws, CHC, To Standard NF E - 25-125 - DIN.912</li><li>- Schraube, CHC, nach Norm NF E 25-125 - DIN.912</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                  | ACIER TRAITÉ (classe 12.9)<br>Behandelter Stahl (Klasse 12.9) |                  |
| <ul style="list-style-type: none"><li>- Vis UNC suivant norme ANSI B 18-3</li><li>- Screws, UNC To Standard ANSI B 18-3</li><li>- UNC Schraube nach ANSI B 18-3 Norme</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                  | ACIER TRAITÉ (classe 12.9)<br>Behandelter Stahl (Klasse 12.9) |                  |
| <ul style="list-style-type: none"><li>- Joints standards (voir paragraphe Etanchéité)</li><li>- Standard gaskets (see seals section)</li><li>- Standard Dichtungsringe (siehe Siegel Sektion)</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"><li>Joint CARRÉ FLS™ - Viton 90 shore - Perbunan 90 shore</li><li>Square "o" ring FLS™ - Viton 90 shore - Buna 90 shore</li><li>Viereckige FLS Dichtungsringe - Viton 90 Shores - Perbunan 90 Shores</li></ul> |                                                               |                  |
| <ul style="list-style-type: none"><li>- Ces matières sont données à titre indicatif, nous nous réservons la possibilité de les remplacer par des matières ayant des caractéristiques mécaniques équivalentes. Nous pouvons réaliser ces différentes pièces en tout autre matière sur demande (inox, cupro - alliage etc.)</li><li>- These materials are specified for information only. We reserve the right to replace them by other materials with similar mechanical specifications. We can manufacture these parts in other materials, on request (e.g. stainless steel, cupro alloys, etc.)</li><li>- Diese Stoffe sind zur Information gegeben, wir behalten uns die Möglichkeit vor, sie durch gleichwertigen Materialien die ähnlichen technischen Besonderheiten habenden zu ersetzen. Wir können diese unterschiedlichen Stücke in jedem anderem Stoff auf Anfrage realisieren (Edelstahl, Cupro - Legierungen, usw.).</li></ul> |                                                                                                                                                                                                                                                  |                                                               |                  |

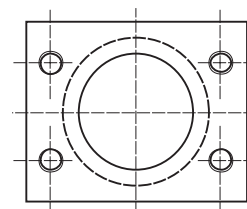


fig.B1

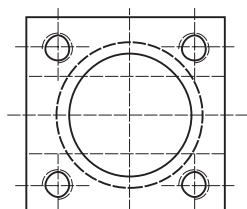


fig.B2

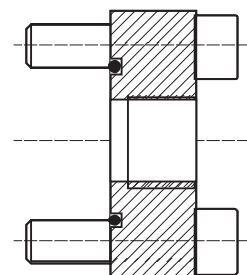


fig.B3

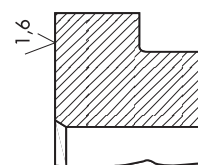
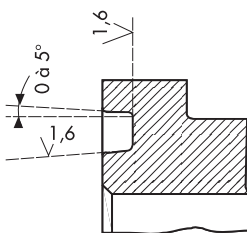


fig.B4

### USINAGE - ETAT DE SURFACE

#### Machining - surface finishes

#### Formgebung - Zustand von Oberfläsche

- **Brides :**  
faces extérieures brutes  
face interne Ra = 6,3  
Alésage Ra = 6,3
- **Collets :**  
Tous profils extérieurs Ra= 6,3  
Passage Ra = 3,2  
Portées de joint et gorges Ra = 1,6 (fig. C6)

- **Flanges:**  
unmachined external faces  
Internal faces Ra = 6,3  
Bores Ra = 6,3
- **Flanged head:**  
All external profiles Ra = 6,3  
Bores Ra = 3,2  
Gasket faces and seal grooves Ra = 1,6 (fig. C6)

- **Flansche:**  
Unbearbeitete äußerliche Oberfläche  
Interne Oberfläche Ra = 6,3  
Bohrung Ra = 6,3
- **Stutzen:**  
Alle aussen Profile Ra = 6,3  
Bohrung Ra = 3,2  
Gelenktragweite und Hals Ra = 1,6 (Fig. C6)

# CARACTERISTIQUES TECHNIQUES DES CONNECTEURS A BRIDES

## Flanged connections technical specifications

## Verbindungsflansche technische Spezifikationen

### COUPLES DE SERRAGE VISSERIE / Screw tightening torques / Schrauben Kupplungsdrehmoment

| VIS METRIQUE<br>Screws<br>Metrik Schrauben |                         | "RECTANGULAIRE"<br>rectangular<br>Rechteckförmig |                       | STANDARDS "CARRÉ"<br>Square<br>"Viereckige" Standard |                   |             |                | VIS UNC<br>Screws<br>UNC-Schrauben |                         | STANDARDS<br>Standards<br>Standard |                       |
|--------------------------------------------|-------------------------|--------------------------------------------------|-----------------------|------------------------------------------------------|-------------------|-------------|----------------|------------------------------------|-------------------------|------------------------------------|-----------------------|
| Ø VIS<br>métrique                          | COUPLE<br>MAXI<br>mda N | SAE<br>3000<br>6162-1                            | SAE<br>6000<br>6162-2 | PN 250<br>6164-1                                     | PN 400<br>6164-2  | CETOP       | "S"            | Ø VIS<br>UNC                       | COUPLE<br>MAXI<br>mda N | SAE<br>3000<br>6162-1              | SAE<br>6000<br>6162-2 |
| M6                                         | 1,1                     | 3/8"                                             |                       | 3/8"                                                 | 3/8"              | 3/8"        | 1/2"           |                                    |                         |                                    |                       |
| M8                                         | 2,8                     | 1/2"                                             | 1/2"                  | 1/2"                                                 | 1/2"              | 1/2"        | 3/4"           | 5/16"-18                           | 2,5                     | 1/2"                               | 1/2"                  |
| M10                                        | 5,4                     | 3/4"                                             | 3/4"                  | 1"                                                   | 1"                | 1"          | 1"             | 3/8"-16                            | 4,4                     | 3/4"-1"                            | 3/4"                  |
| M12                                        | 10,3                    | 1"1/4-<br>1"1/2<br>2"-2"1/2                      | 1"<br>1"1/4           | 1"1/4                                                | 1"1/4             | 1"1/4       | 1"1/4<br>1"1/2 | 7/16"-14                           | 6,6                     | 1"1/4                              | 1"                    |
| M14                                        | 14,9                    | 1"1/2<br>2"<br>2"1/2                             | 1"1/4                 | 1"1/2                                                | 1"1/2             | 1"1/2       | 2"             | 1/2"-13                            | 10,0                    | 1"1/2<br>2"<br>2"1/2               | 1"1/4                 |
| M16                                        | 23,0                    | 3"-3"1/2<br>4"                                   | 1"1/2                 | 2"<br>1"1/2                                          | 1"1/2-2"<br>3"1/2 | 2"<br>1"1/2 |                | 5/8"-11                            | 20,0                    | 3"-3"1/2<br>4"                     | 1"1/2                 |
| M18                                        | 32,0                    |                                                  |                       |                                                      |                   |             | 2"1/2          | 3/4"-10                            | 30,0                    |                                    | 2"                    |
| M20                                        | 45,0                    |                                                  | 2"                    | 2"1/2<br>3"                                          | 2"1/2-3"<br>3"1/2 | 2"1/2<br>3" |                |                                    |                         |                                    |                       |
| M22                                        | 61,0                    |                                                  |                       |                                                      |                   |             | 3"             |                                    |                         |                                    |                       |
| M24                                        | 77,0                    |                                                  |                       |                                                      | 3"3"1/2<br>4"     | 3"1/2<br>4" |                |                                    |                         |                                    |                       |
| M27                                        | 110,0                   |                                                  |                       |                                                      |                   |             | 4"             |                                    |                         |                                    |                       |
| M30                                        | 151,0                   |                                                  |                       |                                                      | 4"                | 4"          |                |                                    |                         |                                    |                       |

■ COUPLES DE SERRAGE VISSERIE (donné à titre indicatif)

VIS CHC CLASSE 12,9  
VIS UNC CLASSE 12,9

■ SCREW TIGHTENING TORQUES (for information only)

SCREWS CHC CL. 12,9  
SCREWS UNC CL. 12,9

■ SCHRAUBEN KUPPLUNGSDREHMOMENT (nur für Information)

Schrauben CHC CL. 12,9  
Schrauben UNC CL. 12,9

### STANDARDS / Normalisations / Normung

| Standard "Rectangulaire"<br>"Rectangular" Standards<br>Standard Rechteckförmig | SAE 3000 (PN 250)/SAE 6000 (PN 400)              | SAE J - 518 C, ISO/6162 (1985)<br>NFE 48 055, ISO/6162-1 (1998)<br>(1986) ISO/6162-2 (1998) |
|--------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------|
| Standards "Carré"<br>"Square"<br>Standard "Vierkant"                           | PN250 - PN400                                    | NFE 48 054, ISO/CD 6164-1 (1996)<br>(1998) ISO/CD 6164-2 (1996)                             |
| Collets à souder<br>Flanged head connection<br>Schweiss Flansche               | Tous standards<br>All standards<br>Alle Standard | recommandation RP 63H                                                                       |
| joints "o" ring<br>O'Dichtungsringe                                            | Tous standards<br>All standards<br>Alle Standard | NFE 48 055                                                                                  |
| Vis UNC<br>UNC Screws<br>UNC-Schrauben                                         | SAE 3000 et SAE 6000                             | suivant SAE                                                                                 |
| Vis CHC métrique<br>CHC Screws<br>CHC-Schrauben                                | Tous standards<br>All standards<br>Alle Standard | ANSI B 18-3                                                                                 |
| Ecrous<br>Nuts<br>Schraubenmutter                                              | Tous standards<br>All standards<br>Alle Standard | NFE 25-125<br>DIN 912                                                                       |
| Brise jet                                                                      | CETOP                                            | NFE 27411                                                                                   |
|                                                                                |                                                  | Recommandation RU-H/6<br>Empfehlung RU-H/6                                                  |



# CARACTERISTIQUES TECHNIQUES DES CONNECTEURS A BRIDES

## Flanged connections technical specifications

## Verbindungsflansche technische Spezifikationen

### ÉTANCHÉITÉ / Sealing / Abdichtung

- Les pressions nominales sont prévues avec un coefficient de sécurité de 4 ans dans des conditions d'utilisation normales à des températures entre - 20°C et + 100°C. L'étanchéité des raccords DELTA DELAGE™ est assurée en version standard par des joints thoriques en perbunan 90 shore. A chaque fluide un joint adapté :
- The nominal pressures indicated above allow for a safety factor of 4 under normal operating conditions at temperatures between minus 20°C and + 100°C. Standard versions of DELTA DELAGE™ connections are sealed by "O" rings made from perbunan with a hardness of 90 shore. There is a suitable seal for each type of fluide :
- Der obengenannter nominelle Druck zeigt an, dass einen Sicherheitsfaktor 4 unter normalen Betriebsbedingungen an Temperaturen zwischen minus 20°C und + 100°C berücksichtigt. Die Abdichtung von Standardversionen DELTA DELAGE™ Flanschen wird durch perbunan "O"-Ringe gesichert, mit einer Härte von 90 Shores gesiegelt. Es gibt eine passende Dichtung für jeden Typ von Fluid.

| FLUIDES<br>Fluides<br>Fluids                                                                                                                                                                                                                                      | TEMPERATURE°C<br>Temperature°C<br>Temperaturen °Grad Celsius | QUALITÉ<br>Grade<br>Qualität                                      | INDICATIF DE REF.<br>Ref. letter<br>Referenzierung                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Huile minérale, eau additionnée d'huile soluble.</li> <li>Mineral oils water plus soluble oil.</li> <li>Mineraleöle, Wasser mit lösliches Öl</li> </ul>                                                                    | -30° + 110°                                                  | Perbunan                                                          | <ul style="list-style-type: none"> <li>Sans indicatif (exécution standard)</li> <li>No reference letter (standard seal)</li> <li>Ohne Kennzahl (Standard Ausführung)</li> </ul> |
| <ul style="list-style-type: none"> <li>Pydraul et fluides hydrauliques ininflammables. Huiles à haute température</li> <li>Pydraul and non inflammable hydraulic fluids High temperature fluids</li> <li>Pydraul und hydraulisches flammwidriges Fluid</li> </ul> | -20° + 200°                                                  | "Viton"<br>Elastomère<br>Elastomer<br>Fluoré<br>Fluoride<br>Fluor | V                                                                                                                                                                               |

- Pour autres fluides ou autres températures, nous consulter.  
Pour des applications particulières, nous pouvons fournir des ensembles équipés de joints spéciaux, (en particulier de joints métalliques).
- Consult us for other fluids or other temperature ranges.  
For special applications, we can supply assemblies fitted with special seals or gaskets (in particular metal seals).
- Befragen Sie uns für andere Flüssigkeiten oder andere Temperaturreihen (Temperaturabstände).  
Für spezielle Anwendungen, können wir sonder Einheiten mit speziellen Dichtungen liefern (in besonderen metallenen Dichtungen).

### MONTAGE / Methods of assembly / Montage

- Après le choix du type de raccordement et du standard de référence, il est recommandé, de suivre les indications suivantes :
- After selecting the type of connection and reference standard, the following are our recommendations:
- Nach der Auswahl des Typs von Verbindung und vom standard Referenz ist es empfohlen, den folgenden Anweisungen zu folgen:

#### COLLETS À SOUDER BUTT WELDING (FIG. C8)

#### Flanged head Butt Welding (fig. C8) / Schweißse Flansche Butt Welding (Fig. C8)

- Chanfreiner le tube à 45°, après l'avoir coupé bien d'équerre
- Ebavurer soigneusement l'intérieur et l'extérieur.
- Chamfer the tube at 45°, after first ensuring that it has been cut square.
- Carefully deburr the inside and outside of the tube end.
- Abschrägen das Rohr in 45°, nachdem ihn rechtwinklig schneiden
- Entgraten sorgfältig das Innere und das Äußere.

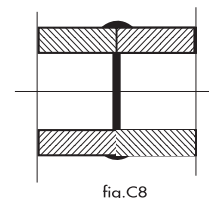


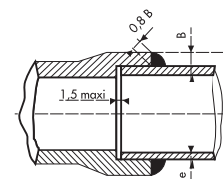
fig. C8

#### COLLETS À SOUDER SOCKET WELDING (TYPE "C" - "D" - "V" ET ADAPTATEUR) (FIG. C10)

#### Socket Welding connections (types "C" - "D" - "V", plus adapters) (fig. C10) /

#### Schweißse Flansche Socket Welding (Typ "C" - "D" - "V", plus Adapter) (-Fig. C10)

- Couper le tube d'équerre et ébavurer soigneusement
- Conserver un écartement de 1 à 1,5 mm entre l'extrémité du tube et le fond du logement Socket Welding, pour palier aux dilatations dues à la soudure.
- Cut the tube, square, and carefully deburr it.
- Ensure that there is a gap of 1 to 1,5 millimeters between the end of the tube and bottom of the welding socket, to allow for any expansion that takes place during welding.
- Schneiden Sie die Röhre, Quadrat, und vorsichtig entgraten.
- Stellen Sie sicher, dass es eine Lücke von 1 zu 1,5 Millimetern zwischen dem Ende der Röhre und Bodens der Schweißfassung Socket Welding gibt.



# CARACTERISTIQUES TECHNIQUES DES CONNECTEURS A BRIDES

## Flanged connections technical specifications

## Verbindungsflansche technische Spezifikationen

### TOUS LES COLLETS À SOUDER / All flanged head / Alle Schweisse Stutzen :

- Utiliser de préférence des électrodes basiques
- Fixer impérativement le fil de masse sur la tuyauterie et non sur la bride ou le collet, afin d'éviter la détérioration des portées de joint.
- Monter la bride sur l'embout, et non sur le tube, avant la soudure.
- Use, preferably, basic electrodes.
- It is essential that the earth cable should be secured to the pipe and not to the flange or the neck, to avoid any possibility of damaging the seal or gasket areas.
- Fit the flange to the end fitting and not to the tube, prior to welding.
- Lieber basische Elektroden benutzen
- Unbedingt die Erdleitung am Rohrnetz befestigen und nicht auf der Flansche oder den Stutzen, um eine Verschlechterung der Tragweiten von Gelenk zu vermeiden.
- Die Flansche auf die Kappe montieren, und nicht auf das Rohr heben, vor der Schweißung.

### COLLETS FILETÉS OU BRIDES TARAUDÉES / Screwed flanged head or tapped flanges / Stutzen mit Gewinde oder Flansche :

- Monter de préférence la bride sur son support avant de monter le raccord.
- It is preferable to fit the flanges to its support before making the connection.
- Lieber den Flansche auf seinen Lagerbock heben, bevor die Verschraubung zu heben.

### TOUS LES RACCORDEMENTS / All types of connection / Alle Verbindungstypen :

- 1) Nettoyer et rincer les parties de tuyauterie équipées.
- 2) Présenter ces tuyauteries et vérifier le parallélisme des faces d'appui.
- 3) Monter le joint dans son logement en prenant soin de le graisser.
- 4) Pour la mise en place définitive de la canalisation, il est indispensable que les brides soient bien parallèles et que lors du serrage des boulons, elles ne subissent aucune contrainte mécanique due à un mauvais alignement ou à un trop gros écartement.
- 5) Les boulons / vis doivent être serrés deux par deux, diamétralement opposés.
- 1) Clean and flush out the pipe assemblies
- 2) Place the pipe assemblies in position and check that the sealing and locating faces are parallel
- 3) Place the seal or gasket in its location after first lubricating it
- 4) When finally fitting the pipe, it is essential for the flanges to be absolutely parallel and not to be subjected to any mechanical stresses caused by poor alignment or too large a gap, when the bolts are tightened
- 5) The bolts or screws are to be tightened evenly, two by two, on diametrically opposed sides of the assembly.
- 1) Reinigen und die ausgerüsteten Teile von Rohrnetz abspülen.
- 2) Diese Rohrnetze vorstellen und den Parallelität der Stütz-Oberfläche überprüfen.
- 3) Das Gelenk in seine Unterkunft heben, und vorab ihn fettig zu machen.
- 4) Für die endgültige Bereitstellung der Kanalisation, es ist unentbehrlich, daß die Flansche sehr parallel sind und während des Klemmung der Bolzen, Sie ertragen keinen mechanischen Vorspannung durch eine schlechte Ausrichtung oder durch eine zu große Entfernung bedingten.
- 5) Die Bolzen / Schrauben sollen zwei von zwei gepresst sein, diametral gegenübergestellt.

# CARACTERISTIQUES TECHNIQUES DES CONNECTEURS A BRIDES

## Flanged connections technical specifications Verbindungsflansche technische Spezifikationen

COMMENT COMMANDER ? / How to order? / Wie Bestellen?

### BRIDES DE FIXATION ET LIAISON

Port assembly flanges/union assembly / Verbindungsflansche und Verknüpfung

| <b>1</b>     | <b>11</b><br>BRIDE<br>FLANGE<br>FLANSCH                             | <b>53</b>    | <b>0251</b>                                                        | /            | <b>1</b><br>MATIERE<br>MATERIAL<br>MATERIAL             | <b>A</b><br>VISserie<br>SCREW<br>SCHRAUBEN | <b>B</b><br>JOINT<br>"O" RING<br>DICHTUNGSRINGE             |
|--------------|---------------------------------------------------------------------|--------------|--------------------------------------------------------------------|--------------|---------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------|
| CODE<br>KODE | DESIGNATION<br>BEZEICHNUNG                                          | CODE<br>KODE | DESIGNATION<br>BEZEICHNUNG                                         | CODE<br>KODE | DESIGNATION<br>BEZEICHNUNG                              | CODE<br>KODE                               | DESIGNATION<br>BEZEICHNUNG                                  |
| 10           | 1/2 BRIDES / SPLIT FLANGES /<br>HALB-FLANSCH SAE 3000               | 1            | TOUT ACIER / CARBON STEEL /<br>KOHLENSTOFFSTAHL                    | A            | METRIQUE ACIER / CARBON<br>STEEL / METRISCHSTAHL        | B                                          | BUNA N                                                      |
| 60           | 1/2 BRIDES / SPLIT FLANGES /<br>HALB-FLANSCH SAE 3000<br>ISO 6162-1 | 3            | TOUT INOX 316 L / STAINLESS<br>STEEL / EDELSTAHL 316 L             | I            | METRIQUE INOX / STAINLESS<br>STEEL / METRISCH EDELSTAHL | V                                          | VITON                                                       |
| 12           | 1/2 BRIDES / SPLIT FLANGES /<br>HALB-FLANSCH SAE 3000<br>SAE 6000   | 6            | COLLET INOX 316 L / STAINLESS<br>STEEL / EDELSTAHL KRAGEN<br>316 L | U            | UNC ACIER / CARBON STEEL /<br>UNC KOHLENSTOFFSTAHL      | E                                          | EPDM                                                        |
| 62           | 1/2 BRIDES / SPLIT FLANGES /<br>HALB-FLANSCH SAE 3000<br>ISO 6162-2 |              |                                                                    | M            | UNC INOX / STAINLESS STEEL /<br>EDELSTAHL               | F                                          | FLS™                                                        |
| 19           | BRIDES "S" SIDERURGIE /<br>FLANGES / FLANSCH "S"<br>STAHLINDUSTRIE  |              |                                                                    |              |                                                         | S                                          | COLLET SANS GORGE<br>/ WITHOUT GROOVE /<br>KRAGEN OHNE HALS |

Exemple de référence / Model code example / Richtbeispiel : 2.11.53.0251/6 UF

- Bride de liaison avec : collet inox BW 316L, joint FLS™, visserie UNC acier.
- Union assembly flange for: stainless steel flanged head BW 316L, "O" ring FLS™, UNC screw carbon steel.
- Verbindungsflansche mit: Edelstahl Stutzen BW 316L, FLS Dichtungsringe, UNC Stahl Schrauben.

### BLOCS / Blocks / Blöcke

|              |                                                   |              |                                                  |                                             |                                                         |                                                     |                            |
|--------------|---------------------------------------------------|--------------|--------------------------------------------------|---------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|----------------------------|
| <b>E</b>     | <b>10</b><br>TYPE<br>TYPE<br>TYP                  | <b>0251</b>  | /                                                | <b>1</b><br>MATIERE<br>MATERIAL<br>MATERIAL | <b>A</b><br>VISserie<br>SCREW<br>SCHRAUBEN              | <b>B</b><br>JOINT<br>"O" RING<br>"O" DICHTUNGSRINGE |                            |
| CODE<br>KODE | DESIGNATION<br>BEZEICHNUNG                        | CODE<br>KODE | DESIGNATION<br>BEZEICHNUNG                       | CODE<br>KODE                                | DESIGNATION<br>BEZEICHNUNG                              | CODE<br>KODE                                        | DESIGNATION<br>BEZEICHNUNG |
| 19           | BLOCS "S" SIDERURGIE<br>BLÖCKE "S" STAHLINDUSTRIE | 1            | ACIER<br>CARBON STEEL<br>KOHLENSTOFFSTAHL        | A                                           | METRIQUE ACIER / CARBON<br>STEEL / METRISCHSTAHL        | B                                                   | BUNA N                     |
|              |                                                   | 6            | INOX 316 L<br>STAINLESS STEEL<br>EDELSTAHL 316 L | I                                           | METRIQUE INOX / STAINLESS<br>STEEL / METRISCH EDELSTAHL | V                                                   | VITON                      |
|              |                                                   |              |                                                  | U                                           | UNC ACIER / CARBON STEEL /<br>UNC KOHLENSTOFFSTAHL      | E                                                   | EPDM                       |
|              |                                                   |              |                                                  | M                                           | UNC INOX / STAINLESS STEEL /<br>EDELSTAHL               | F                                                   | FLS™                       |

Exemple de référence / Model code example / Richtbeispiel : T.10.0251/6 IV

- Bloc en T, inox 316L, visserie inox métrique, joint viton.
- Block "T" Stainless steel 316L Stainless steel screw, "O" ring viton.
- T Block, 316 L Edelstahl, metrisches edelstahl Schrauben, Viton Dichtungsring.

### COMPOSANTS / Components / Komponente

|                                     |              |               |                 |   |                                              |  |                          |                                                        |
|-------------------------------------|--------------|---------------|-----------------|---|----------------------------------------------|--|--------------------------|--------------------------------------------------------|
| <div><div>N</div><div>P</div></div> | <div>6</div> | <div>21</div> | <div>0251</div> | / | <div>1</div>                                 |  | <div>CODE<br/>KODE</div> | <div>DESIGNATION BEZEICHNUNG</div>                     |
|                                     |              |               |                 |   |                                              |  | N                        | COLLET AVEC GORGE / ARE GROOVED / Stutzen mit Hals     |
| <div>A</div>                        | <div>1</div> |               | <div>0251</div> | / | <div>MATIERE<br/>MATERIAL<br/>MATERIAL</div> |  | P                        | COLLET SANS GORGE / WITHOUT GROOVE / Stutzen ohne Hals |
|                                     |              |               |                 |   |                                              |  | 1                        | ACIER / CARBON STEEL / Kohlenstoffstahl                |
|                                     |              |               |                 |   |                                              |  | 6                        | INOX 316 L / STAINLESS STEEL / Edelstahl 316 L         |

Exemple de référence / Model code example / Richtbeispiel :  
N.13.21.0251/6

- Obturateur inox 316L.
- Plugs Stainless steel.
- Dichtungskragen 316 L Edelstahl.

Exemple de référence / Model code example / Richtbeispiel :  
A.1.0251/6

- Bride inox 316L.
- Stainless steel flange.
- Edelstahl Flansche 316 L.

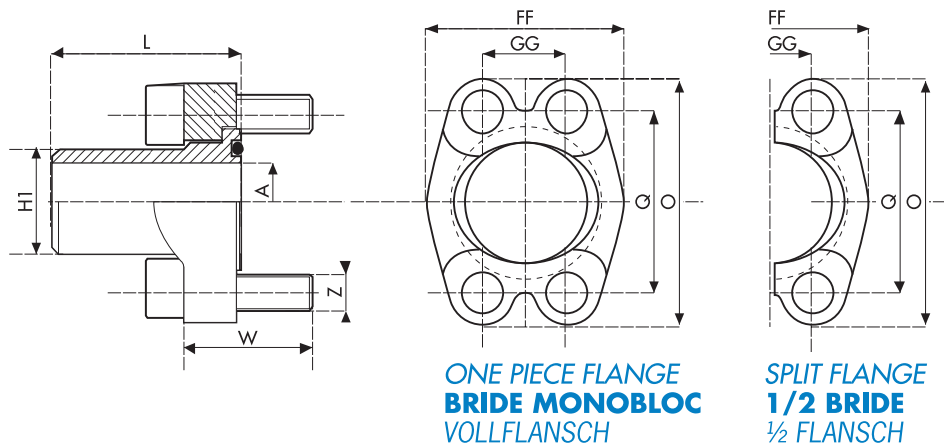
# BRIDES

## Flanges / Flansche

### ISO 6162-1 (SAE 3000)

#### CODE 61

Kode 61



#### BRIDES DE FIXATION BW

#### Port assembly flanges BW / Verbindungsflanschen BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><br>Working<br>pressure<br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |     |     |     |                 |                |     |     | VISSERIE<br>Screws<br>Schrauben |          |               |           | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>BRIDE<br>MONOBLOC<br>One<br>piece flange<br>Referenz<br>Vollflansch |
|-------------------------------------|-------------------------|----------------------------------------------------------------------------------|----------------------------------------------------|-----|-----|-----|-----------------|----------------|-----|-----|---------------------------------|----------|---------------|-----------|----------------------------------|----------------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                  | MM, GAZ,<br>SCHD,                                  | H1  | L   | A   | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | TYPE 1<br>métrique<br>Metrisch  |          | TYPE 2<br>UNC |           |                                  |                                                                                  |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | Z                               | W        | Z             | W         |                                  |                                                                                  |
| 10                                  | 3/8"                    | 350 bars                                                                         | 14 à 17,14                                         | 18  | 40  | 12  | 16,5            | 35,0           | 40  | 50  | M8                              | 30       |               |           | 0,3                              | 111530101                                                                        |
| 13                                  | 1/2"                    | 350 bars                                                                         | 18 à 22                                            | 22  | 45  | 13  | 17,5            | 38,1           | 46  | 54  | M8                              | 25       | 5/16"         | 1"        | 0,3                              | 111530151                                                                        |
| 19                                  | 3/4"                    | 350 bars                                                                         | 25 à 28                                            | 28  | 50  | 19  | 22,3            | 47,6           | 52  | 65  | M10                             | 30       | 3/8"          | 1"1/4     | 0,5                              | 111530201                                                                        |
| 25                                  | 1"                      | 350 bars                                                                         | 30 à 35                                            | 35  | 55  | 25  | 26,2            | 52,4           | 59  | 70  | M10                             | 30       | 3/8"          | 1"1/4     | 0,6                              | 111530251                                                                        |
| 32                                  | 1"1/4                   | 250 bars                                                                         | 38 à 42,4                                          | 43  | 60  | 32  | 30,2            | 58,7           | 73  | 79  | M12<br>M10                      | 35<br>30 | <br>7/16"     | <br>1"1/2 | 0,8                              | ■ 111530321<br>161530321                                                         |
| 38                                  | 1"1/2                   | 200 bars                                                                         | 48 à 50                                            | 50  | 65  | 38  | 35,7            | 69,9           | 83  | 94  | M14<br>M12                      | 40<br>35 | <br>1/2"      | <br>1"1/2 | 1,2                              | ■ 111530401<br>161530401                                                         |
| 51                                  | 2"                      | 200 bars                                                                         | 60 à 63                                            | 62  | 70  | 47  | 42,9            | 77,8           | 97  | 102 | M14<br>M12                      | 40<br>35 | <br>1/2"      | <br>1"1/2 | 1,5                              | ■ 111530501<br>161530501                                                         |
| 64                                  | 2"1/2                   | 160 bars                                                                         | 73 à 76                                            | 74  | 75  | 58  | 50,8            | 88,9           | 109 | 114 | M14<br>M12                      | 45<br>40 | <br>1/2"      | <br>1"3/4 | 1,8                              | ■ 111530651<br>161530651                                                         |
| 76                                  | 3"                      | 100 bars                                                                         | 88 à 90                                            | 90  | 85  | 70  | 61,9            | 106,4          | 131 | 135 | M16                             | 50       | 5/8"          | 1"3/4     | 3,6                              | 111530801                                                                        |
| 89                                  | 3"1/2                   | 35 bars                                                                          | 100 à 102                                          | 102 | 90  | 89  | 69,9            | 120,7          | 140 | 152 | M16                             | 50       | 5/8"          | 2"        | 3,2                              | 111530901                                                                        |
| 102                                 | 4"                      | 35 bars                                                                          | 114,3                                              | 114 | 100 | 102 | 77,8            | 130,2          | 152 | 162 | M16                             | 50       | 5/8"          | 2"        | 3,8                              | 111531001                                                                        |

- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

La bride DN 10 (3/8) est livrée en acier étiré.  
Brides standard livrées avec visserie métrique,  
joints Perbunan 90 shores.

Pour des ensembles avec :

- collets sans gorge
- brides inox
- collets inox
- visserie UNC
- joints FLS™
- joints viton
- joints EPDM
- 1/2 brides.

The ND 10 (3/8) flange is made from drawn steel.

Standard flanges delivered with metric screws, buna  
90 shore o'rings.

For flanges composed with:

- flanged head without groove
- stainless steel flanges
- stainless steel flanged head
- UNC screws
- FLS™ o'rings
- viton o'rings
- EPDM o'rings
- split flanges.

Der Flansch ND 10 (3/8) ist aus Silberstahl.

Standard Flansche werden mit metrische Schrauben  
angeliefert  
Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Stutzen ohne Nut
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- UNC Schrauben
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe
- 1/2 Flansch.

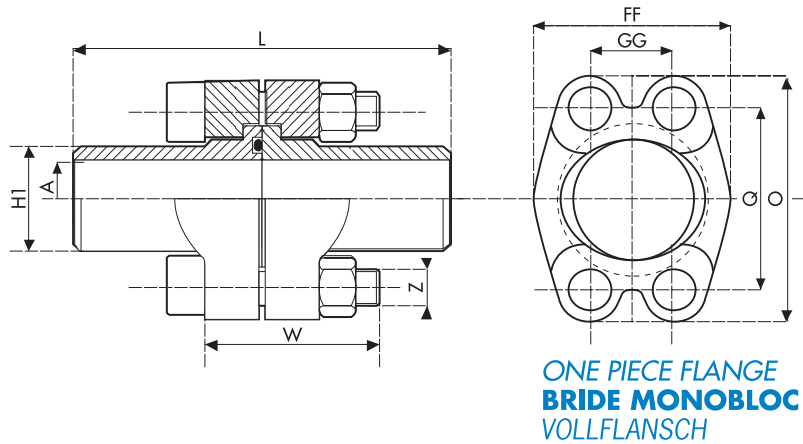
# BRIDES

## Flanges / Flansche

### ISO 6162-1 (SAE 3000)

#### CODE 61

Kode 61



#### BRIDES DE LIAISON BW

Union assembly flanges BW / Verbindungsflansche BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><br>Working<br>pressure<br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |     |     |     |                 |                |     |     | VISSERIE<br>Screws<br>Schrauben |    |               |       | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>BRIDE<br>MONOBLOC<br>One<br>piece flange<br>Referenz<br>Vollflansch |
|-------------------------------------|-------------------------|----------------------------------------------------------------------------------|----------------------------------------------------|-----|-----|-----|-----------------|----------------|-----|-----|---------------------------------|----|---------------|-------|----------------------------------|----------------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                  | MM, GAZ,<br>SCHD,                                  | H1  | L   | A   | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | TYPE 1<br>métrique<br>Metrisch  |    | TYPE 2<br>UNC |       |                                  |                                                                                  |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | Z                               | W  | Z             | W     |                                  |                                                                                  |
| 10                                  | 3/8"                    | 350 bars                                                                         | 14 à 17,14                                         | 18  | 80  | 12  | 16,5            | 35,0           | 40  | 50  | M8                              | 45 |               |       | 0,5                              | 211530101                                                                        |
| 13                                  | 1/2"                    | 350 bars                                                                         | 18 à 22                                            | 22  | 90  | 13  | 17,5            | 38,1           | 46  | 54  | M8                              | 35 | 1"1/2         | 1"    | 0,5                              | 211530151                                                                        |
| 19                                  | 3/4"                    | 350 bars                                                                         | 25 à 28                                            | 28  | 100 | 19  | 22,3            | 47,6           | 52  | 65  | M10                             | 40 | 1"1/2         | 1"1/4 | 0,8                              | 211530201                                                                        |
| 25                                  | 1"                      | 350 bars                                                                         | 30 à 35                                            | 35  | 110 | 25  | 26,2            | 52,4           | 59  | 70  | M10                             | 45 | 1"3/4         | 1"1/4 | 1,1                              | 211530251                                                                        |
| 32                                  | 1"1/4                   | 250 bars                                                                         | 38 à 42,4                                          | 43  | 120 | 32  | 30,2            | 58,7           | 73  | 79  | M12                             | 45 |               |       | 1,5                              | ■ 211530321                                                                      |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | M10                             | 45 | 7/16"         | 1"3/4 |                                  | 261530321                                                                        |
| 38                                  | 1"1/2                   | 200 bars                                                                         | 48 à 50                                            | 50  | 130 | 38  | 35,7            | 69,9           | 83  | 94  | M14                             | 50 |               |       | 2,2                              | ■ 211530401                                                                      |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | M12                             | 50 | 1/2"          | 2"    |                                  | 261530401                                                                        |
| 51                                  | 2"                      | 200 bars                                                                         | 60 à 63                                            | 62  | 140 | 47  | 42,9            | 77,8           | 97  | 102 | M14                             | 50 |               |       | 2,9                              | ■ 211530501                                                                      |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | M12                             | 50 | 1/2"          | 2"    |                                  | 261530501                                                                        |
| 64                                  | 2"1/2                   | 160 bars                                                                         | 73 à 76                                            | 74  | 150 | 58  | 50,8            | 88,9           | 109 | 114 | M14                             | 55 |               |       | 3,7                              | ■ 211530651                                                                      |
|                                     |                         |                                                                                  |                                                    |     |     |     |                 |                |     |     | M12                             | 55 | 1/2"          | 2"1/4 |                                  | 261530651                                                                        |
| 76                                  | 3"                      | 100 bars                                                                         | 88 à 90                                            | 90  | 170 | 70  | 61,9            | 106,4          | 131 | 135 | M16                             | 65 | 5/8"          | 2"1/2 | 6,8                              | 211530801                                                                        |
| 89                                  | 3"1/2                   | 35 bars                                                                          | 100 à 102                                          | 102 | 180 | 89  | 69,9            | 120,7          | 140 | 152 | M16                             | 65 | 5/8"          | 2"1/2 | 6                                | 211530901                                                                        |
| 102                                 | 4"                      | 35 bars                                                                          | 114,3                                              | 114 | 200 | 102 | 77,8            | 130,2          | 152 | 162 | M16                             | 70 | 5/8"          | 2"3/4 | 7,2                              | 211531001                                                                        |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

La bride DN 10 (3/8) est livrée en acier étiré.

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- collets réduit
- brides inox
- collets inox
- visserie UNC
- joints FLS™
- joints viton
- joints EPDM.

The ND 10 (3/8) flange is made from drawn steel.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- reducing flanged head
- stainless steel flanges
- stainless steel flanged head
- UNC screws
- FLS™ o'rings
- viton o'rings
- EPDM o'rings.

Der Flansch ND 10 (3/8) ist aus Silberstahl.

Standard Flansche werden mit metrische Schrauben angeliefert  
Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Reduzierte Stutzen
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- UNC Schrauben
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe.

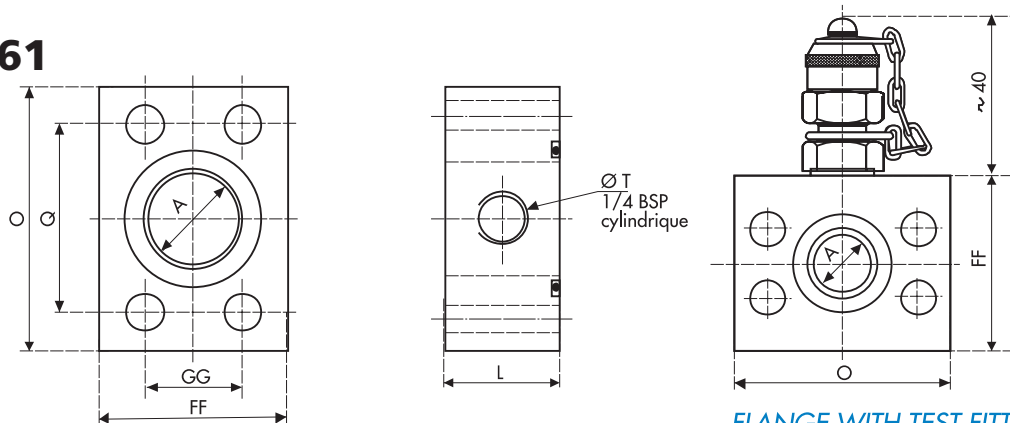
# BRIDES

## Flanges / Flansche

### ISO 6162-1 (SAE 3000)

#### CODE 61

Kode 61



FLANGE WITH TEST FITTING  
BRIDE AVEC PRISE DE PRESSION  
FLANSCH MIT DRUCKANSCHLUßSTELLE

#### BRIDES PRISE DE PRESSION

Test port flanges / Flansche mit Druckanschlußstelle

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><i>Working<br/>pressure</i><br>Betriebs-<br>druck |    |    |      |       |     |     | VISSERIE<br><i>Screws</i><br>Schrauben |               |       |   | MASSE<br>kg<br><i>Weight</i><br>Gewicht | REFERENCE<br>BRIDE SEULE<br><i>Ref. for<br/>flange only</i><br>Referenz<br>Flansch | REFERENCE<br>AVEC PRISE<br>DE PRESSION<br><i>Ref. for<br/>flange equipped</i><br>Referenz Flansch<br>mit Druck-<br>anschlußstelle |
|-------------------------------------|-------------------------|--------------------------------------------------------------------------------------|----|----|------|-------|-----|-----|----------------------------------------|---------------|-------|---|-----------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                      |    |    |      |       |     |     | TYPE 1<br>métrique<br>Metrisch         | TYPE 2<br>UNC |       |   |                                         |                                                                                    |                                                                                                                                   |
|                                     |                         |                                                                                      |    |    |      |       |     |     |                                        | Z             | W     | Z |                                         |                                                                                    |                                                                                                                                   |
| 13                                  | 1/2"                    | 350 bars                                                                             | 25 | 15 | 17,5 | 38,1  | 45  | 54  | M8                                     |               | 5/16" |   | 0,2                                     | N11660153                                                                          | 140110151                                                                                                                         |
| 19                                  | 3/4"                    | 350 bars                                                                             | 28 | 20 | 22,2 | 47,6  | 50  | 65  | M10                                    |               | 3/8"  |   | 0,4                                     | N11660203                                                                          | 140110201                                                                                                                         |
| 25                                  | 1"                      | 350 bars                                                                             | 29 | 25 | 26,2 | 52,4  | 50  | 70  | M10                                    |               | 3/8"  |   | 0,6                                     | N11660253                                                                          | 140110251                                                                                                                         |
| 32                                  | 1" 1/4                  | 250 bars                                                                             | 34 | 32 | 30,2 | 58,7  | 60  | 80  | M12<br>M10                             |               | 7/16" |   | 0,8                                     | N11660323<br>N61660323                                                             | ■ 140110321<br>140610321                                                                                                          |
| 38                                  | 1" 1/2                  | 200 bars                                                                             | 34 | 38 | 35,7 | 69,9  | 80  | 94  | M14<br>M12                             |               | 1/2"  |   | 1,4                                     | N11660403<br>N61660403                                                             | ■ 140110401<br>140610401                                                                                                          |
| 51                                  | 2"                      | 200 bars                                                                             | 38 | 47 | 42,9 | 77,8  | 100 | 100 | M14<br>M12                             |               | 1/2"  |   | 2,8                                     | N11660503<br>N61660503                                                             | ■ 140110501<br>140610501                                                                                                          |
| 64                                  | 2" 1/2                  | 160 bars                                                                             | 40 | 58 | 50,8 | 88,9  | 110 | 114 | M14<br>M12                             |               | 1/2"  |   | 3,6                                     | N11660653<br>N61660653                                                             | ■ 140110651<br>140610651                                                                                                          |
| 76                                  | 3"                      | 100 bars                                                                             | 45 | 70 | 61,9 | 106,4 | 130 | 135 | M16                                    |               | 5/8"  |   | 4,6                                     | N11660803                                                                          | 140110801                                                                                                                         |
| 89                                  | 3" 1/2                  | 35 bars                                                                              | 45 | 89 | 69,9 | 120,7 | 140 | 152 | M16                                    |               | 5/8"  |   | 6,6                                     | N11660903                                                                          | 140110903                                                                                                                         |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- prise de pression taraudée NPT
- brides inox
- Prise à clapet (sur demande).

Standard flanges delivered with metric screws, buna 90 shore o-rings.

For flanges composed with:

- test point fitting ball type : NPT
- stainless steel flanges
- test point fitting poppet type (on request)

Standard Flansche werden mit metrische Schrauben angeliefert

Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Druckanschlußstelle NPT
- Flansche aus Edelstahl
- Anschluß mit Rückschlagventil (Auf Anfrage)



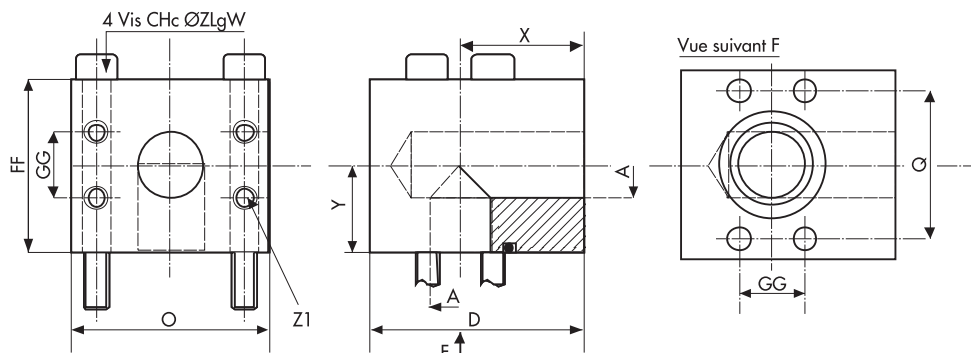
# BLOCS

Blocks / Blöcke

## ISO 6162-1 (SAE 3000)

### CODE 61

Kode 61

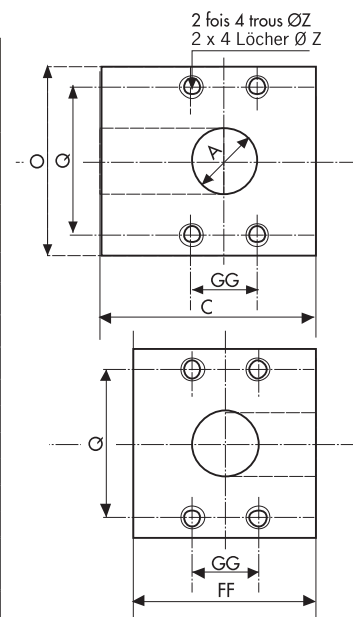


### BLOCS EQUERRES / Port elbow / Winkel-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |                 |                |     |     |      |      | VISSERIE<br>Screws<br>Schrauben |     |               |       | TARAUDAGE<br>Tapping<br>Gewindeschnei-<br>den |           | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>BRIDE<br>MONOBLOC<br>One<br>piece flange<br>Referenz Vollflansch |
|------------------------|-------------------------|----|-----|-----------------|----------------|-----|-----|------|------|---------------------------------|-----|---------------|-------|-----------------------------------------------|-----------|----------------------------------|-------------------------------------------------------------------------------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | D   | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | X    | Y    | TYPE 1<br>métrique<br>Metrisch  |     | TYPE 2<br>UNC |       | métrique<br>Z1                                | UNC<br>Z1 |                                  |                                                                               |
|                        |                         |    |     |                 |                |     |     |      |      | Z                               | W   | Z             | W     |                                               |           |                                  |                                                                               |
| 10                     | 3/8"                    | 12 | 50  | 16,5            | 35,0           | 40  | 58  | 31,0 | 22,0 | M8                              | 55  |               |       | M8                                            |           |                                  |                                                                               |
| 13                     | 1/2"                    | 15 | 56  | 17,5            | 38,1           | 46  | 58  | 32,0 | 26,5 | M8                              | 60  | 5/16"         | 2"1/4 | M8                                            | 5/16"     | 1,1                              | E100151                                                                       |
| 19                     | 3/4"                    | 20 | 66  | 22,2            | 47,6           | 53  | 73  | 39,0 | 30,0 | M10                             | 70  | 3/8"          | 2"3/4 | M10                                           | 3/8"      | 1,9                              | E100201                                                                       |
| 25                     | 1"                      | 25 | 80  | 26,2            | 52,4           | 72  | 78  | 49,0 | 36,0 | M10                             | 75  | 3/8"          | 3"    | M10                                           | 3/8"      | 2,6                              | E100251                                                                       |
| 32                     | 1"1/4                   | 32 | 95  | 30,2            | 58,7           | 82  | 88  | 57,0 | 41,0 | M12<br>M10                      | 90  | 7/16"         | 3"1/2 | M12<br>M10                                    | 7/16"     | 4,1                              | ■ E100321<br>E600321                                                          |
| 38                     | 1"1/2                   | 38 | 110 | 35,7            | 69,85          | 92  | 100 | 67,0 | 46,0 | M14<br>M12                      | 110 | 1/2"          | 4"1/2 | M14<br>M12                                    | 1/2"      | 5,9                              | ■ E100401<br>E600401                                                          |
| 51                     | 2"                      | 47 | 110 | 42,9            | 77,8           | 110 | 110 | 66,5 | 55,0 | M14<br>M12                      | 130 | 1/2"          | 5"    | M14<br>M12                                    | 1/2"      | 7,5                              | ■ E100501<br>E600501                                                          |
| 64                     | 2"1/2                   | 58 | 125 | 50,8            | 88,9           | 132 | 118 | 70,0 | 66,0 | M14<br>M12                      | 150 | 1/2"          | 5"    | M14<br>M12                                    | 1/2"      | 8,0                              | ■ E100651<br>E600651                                                          |
| 76                     | 3"                      | 70 | 150 | 61,9            | 106,4          | 131 | 138 | 83,0 | 77,5 | M16                             | 160 | 5/8"          | 6"1/2 | M16                                           | 5/8"      | 16,7                             | E100801                                                                       |

### BLOCS "L" / "L" blocks / L-Blöcke

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |     |     |     |                |                 | VISSERIE<br>Screws<br>Schrauben |               | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|----|-----|-----|-----|----------------|-----------------|---------------------------------|---------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | O   | C   | FF  | Q<br>±<br>0,25 | GG<br>±<br>0,25 | TYPE 1<br>métrique<br>Metrisch  | TYPE 2<br>UNC |                                  |                                    |
|                                     |                         |    |     |     |     |                |                 | Z                               | Z             |                                  |                                    |
| 10                                  | 3/8"                    | 12 | 52  | 50  | 41  | 35,00          | 16,50           | M8                              |               | 0,8                              | L100101                            |
| 13                                  | 1/2"                    | 15 | 54  | 56  | 46  | 38,10          | 17,50           | M8                              | 5/16"         | 1,0                              | L100151                            |
| 19                                  | 3/4"                    | 19 | 70  | 68  | 54  | 47,60          | 22,20           | M10                             | 3/8"          | 1,5                              | L100201                            |
| 25                                  | 1"                      | 25 | 70  | 80  | 60  | 52,40          | 26,20           | M10                             | 3/8"          | 2,1                              | L100251                            |
| 32                                  | 1"1/4                   | 32 | 80  | 95  | 73  | 58,70          | 30,20           | M12<br>M10                      | 7/16"         | 3,4                              | ■ L100321<br>L600321               |
| 38                                  | 1"1/2                   | 38 | 100 | 110 | 84  | 69,85          | 35,70           | M14<br>M12                      | 1/2"          | 5,5                              | ■ L100401<br>L600401               |
| 51                                  | 2"                      | 47 | 110 | 110 | 100 | 77,80          | 42,90           | M14<br>M12                      | 1/2"          | 7,2                              | ■ L100501<br>L600501               |
| 64                                  | 2"1/2                   | 58 | 120 | 125 | 110 | 88,90          | 50,80           | M14<br>M12                      | 1/2"          | 13,0                             | ■ L100651<br>L600651               |
| 76                                  | 3"                      | 70 | 140 | 150 | 131 | 106,40         | 61,90           | M16                             | 5/8"          | 21,0                             | L100801                            |



■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions ■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :  
- visserie métrique - visserie UNC - joint PERBUNAN - joint VITON - joints FLS™ - blocs inox.  
Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped with :  
- metric screws - UNC screws - BUNA o-rings - VITON o-rings - FLS™ o-rings - stainless steel blocks.  
Blocks with different outlets (use reduced flanges).

Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrischen Schrauben - UNC Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgängen, reduzierte Flanschen benutzen.

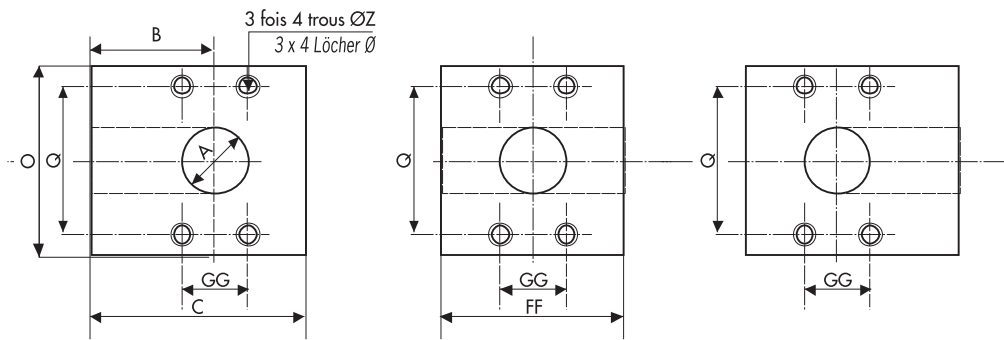
# BLOCS

## Blocks / Blöcke

### ISO 6162-1 (SAE 3000)

#### CODE 61

#### Kode 61

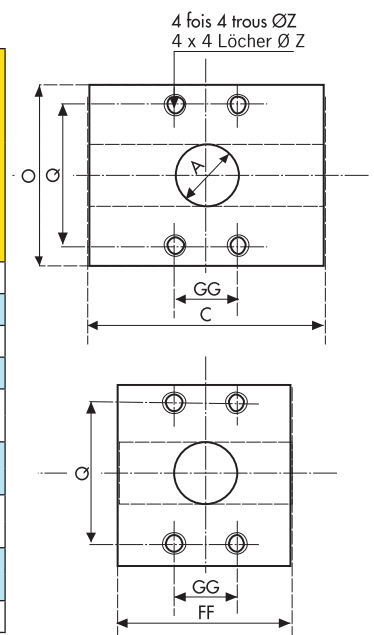


#### BLOCS "T" / "T" blocks / T-BLÖCKE

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |    |     |      |     |                |                 | VISSERIE<br>Screws<br>Schrauben |               | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|----|----|-----|------|-----|----------------|-----------------|---------------------------------|---------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | B  | O   | C    | FF  | Q<br>±<br>0,25 | GG<br>±<br>0,25 | TYPE 1<br>métrique<br>Metrisch  | TYPE 2<br>UNC |                                  |                                    |
|                                     |                         |    |    |     |      |     |                |                 | Z                               | Z             |                                  |                                    |
| 10                                  | 3/8"                    | 12 | 28 | 52  | 50   | 41  | 35,00          | 16,50           | M8                              |               | 0,7                              | T100101                            |
| 13                                  | 1/2"                    | 15 | 32 | 54  | 56   | 46  | 38,10          | 17,50           | M8                              | 5/16"         | 0,9                              | T100151                            |
| 19                                  | 3/4"                    | 19 | 38 | 70  | 68,5 | 54  | 47,60          | 22,20           | M10                             | 3/8"          | 1,5                              | T100201                            |
| 25                                  | 1"                      | 25 | 48 | 70  | 80   | 60  | 52,40          | 26,20           | M10                             | 3/8"          | 2,1                              | T100251                            |
| 32                                  | 1"1/4                   | 32 | 57 | 80  | 95   | 73  | 58,70          | 30,20           | M12<br>M10                      |               |                                  | ■T100321<br>T600321                |
| 38                                  | 1"1/2                   | 38 | 67 | 95  | 110  | 83  | 69,85          | 35,70           | M14<br>M12                      | 7/16"         | 3,3                              | ■T100401<br>T600401                |
| 51                                  | 2"                      | 47 | 58 | 110 | 110  | 100 | 77,80          | 42,90           | M14<br>M12                      | 1/2"          | 5,1                              | ■T100501<br>T600501                |
| 64                                  | 2"1/2                   | 58 | 68 | 120 | 123  | 110 | 88,90          | 50,80           | M14<br>M12                      | 1/2"          | 6,9                              | ■T100651<br>T600651                |
| 76                                  | 3"                      | 70 | 83 | 140 | 150  | 131 | 106,40         | 61,90           | M16                             | 5/8"          | 8,8                              | T100801                            |

#### BLOCS "X" / "X" blocks / X-Blöcke

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |     |     |     |                |                 | VISSERIE<br>Screws<br>Schrauben     |                    | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|----|-----|-----|-----|----------------|-----------------|-------------------------------------|--------------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | O   | C   | FF  | Q<br>±<br>0,25 | GG<br>±<br>0,25 | TYPE 1<br>métrique<br>Metrisch<br>Z | TYPE 2<br>UNC<br>Z |                                  |                                    |
|                                     |                         |    |     |     |     |                |                 |                                     |                    |                                  |                                    |
| 10                                  | 3/8"                    | 12 | 52  | 60  | 41  | 35,00          | 16,50           | M8                                  |                    | 0,9                              | C100101                            |
| 13                                  | 1/2"                    | 15 | 54  | 68  | 46  | 38,10          | 17,50           | M10                                 | 5/16"              | 1,2                              | C100151                            |
| 19                                  | 3/4"                    | 19 | 66  | 82  | 53  | 47,60          | 22,20           | M10                                 | 3/8"               | 1,8                              | C100201                            |
| 25                                  | 1"                      | 25 | 70  | 95  | 60  | 52,40          | 26,20           | M12                                 | 3/8"               | 2,4                              | C100251                            |
| 32                                  | 1 1/4"                  | 32 | 80  | 110 | 73  | 58,70          | 30,20           | M10                                 |                    |                                  | ■ C100321                          |
|                                     |                         |    |     |     |     |                |                 | M14                                 | 7/16"              | 3,8                              | C600321                            |
| 38                                  | 1 1/2"                  | 38 | 95  | 120 | 83  | 69,85          | 35,70           | M12                                 |                    |                                  | ■ C100401                          |
|                                     |                         |    |     |     |     |                |                 | M14                                 | 1/2"               | 6,4                              | C600401                            |
| 51                                  | 2"                      | 47 | 110 | 120 | 100 | 77,80          | 42,90           | M12                                 |                    |                                  | ■ C100501                          |
|                                     |                         |    |     |     |     |                |                 | M14                                 | 1/2"               | 7,0                              | C600501                            |
| 64                                  | 2 1/2"                  | 58 | 120 | 130 | 110 | 88,90          | 50,80           | M12                                 |                    |                                  | ■ C100651                          |
|                                     |                         |    |     |     |     |                |                 | M16                                 | 1/2"               | 7,6                              | C600651                            |
| 76                                  | 3"                      | 70 | 140 | 160 | 131 | 106,40         | 61,90           | M16                                 | 5/8"               | 14,0                             | C100801                            |



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■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :  
- visserie métrique - visserie UNC - joint PERBUNAN - joint VITON - joints FLS™ - blocs inox.  
Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped with :  
- metric screws - UNC screws - BUNA o-rings - VITON o-rings - FLS™ o-rings - stainless steel blocks).  
Blocks with different outlets (use reduced flanges).

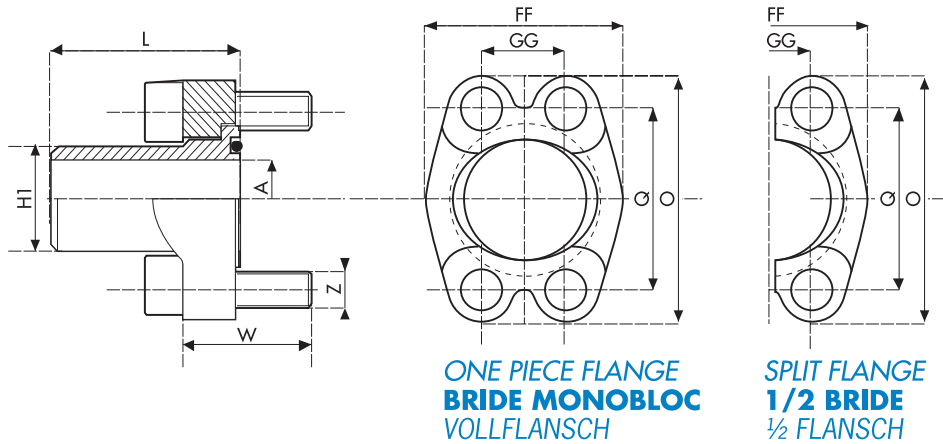
Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrischen Schrauben - UNC Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgängen, reduzierte Flanschen benutzen.

# BRIDES

## Flanges / Flansche

### ISO 6162-2 (SAE 6000)

**CODE 62**  
**Kode 62**



## BRIDES DE FIXATION BW

Port assembly flanges BW / Verbindungsflansche BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                                | PRESSION<br>DE SERVICE<br>(BAR)<br><i>Working<br/>pressure</i><br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br><i>Tube od</i><br>Aussen Ø Rohr |    |    |    |                 |                |     |     | VISSERIE<br><i>Screws</i><br>Schrauben |    |               |       | MASSE<br>kg<br><i>Weight</i><br>Gewicht | REFERENCE<br>BRIDE<br>MONOBLOC<br><i>One<br/>piece flange</i><br>Referenz<br>Vollflansch |
|-------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------|----|----|----|-----------------|----------------|-----|-----|----------------------------------------|----|---------------|-------|-----------------------------------------|------------------------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br><i>Size</i><br>Größe |                                                                                      | MM, GAZ,<br>SCHD,                                         | H1 | L  | A  | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | TYPE 1<br><i>métrique</i>              |    | TYPE 2<br>UNC |       |                                         |                                                                                          |
|                                     |                                |                                                                                      |                                                           |    |    |    |                 |                |     |     | Z                                      | W  | Z             | W     |                                         |                                                                                          |
| 13                                  | 1/2"                           | 400 bars                                                                             | 20 à 22                                                   | 22 | 45 | 13 | 18,2            | 40,5           | 48  | 56  | M8                                     | 30 | 5/16"         | 1"1/4 | 0,4                                     | 113530151                                                                                |
| 19                                  | 3/4"                           | 400 bars                                                                             | 25 à 28                                                   | 28 | 50 | 18 | 23,8            | 50,8           | 60  | 71  | M10                                    | 35 | 3/8"          | 1"1/2 | 0,7                                     | 113530201                                                                                |
| 25                                  | 1"                             | 400 bars                                                                             | 30 à 35                                                   | 35 | 55 | 22 | 27,8            | 57,2           | 70  | 81  | M12                                    | 45 | 7/16"         | 1"3/4 | 1,0                                     | 113530251                                                                                |
| 32                                  | 1"1/4                          | 400 bars                                                                             | 38 à 45                                                   | 44 | 60 | 29 | 31,8            | 66,6           | 78  | 95  | M14                                    | 50 |               |       | 1,6                                     | ■ 113530321                                                                              |
|                                     |                                |                                                                                      |                                                           |    |    |    |                 |                |     |     | M12                                    | 45 | 1/2"          | 1"3/4 |                                         | 163530321                                                                                |
| 38                                  | 1"1/2                          | 400 bars                                                                             | 48 à 52                                                   | 51 | 65 | 35 | 36,5            | 79,3           | 95  | 113 | M16                                    | 55 | 5/8"          | 2"1/4 | 2,4                                     | 113530401                                                                                |
| 51                                  | 2"                             | 400 bars                                                                             | 60 à 65                                                   | 65 | 70 | 43 | 44,5            | 96,8           | 114 | 133 | M20                                    | 70 | 3/4"          | 2"3/4 | 4,1                                     | 113530501                                                                                |

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■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- collets réduit
- collets sans gorge
- brides inox
- collets inox
- visserie UNC
- joints FLS™
- joints viton
- joints EPDM
- 1/2 brides.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- reducing necks
- flanged head without groove
- stainless steel flanges
- stainless steel flanged head
- UNC screws
- FLS™ o'rings
- viton o'rings
- EPDM o'rings
- split flanges.

Standard Flansche werden mit metrische Schrauben angeliefert

Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Reduzierte Stutzen
- Stutzen ohne Nut
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- UNC Schrauben
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe
- 1/2 Flansche

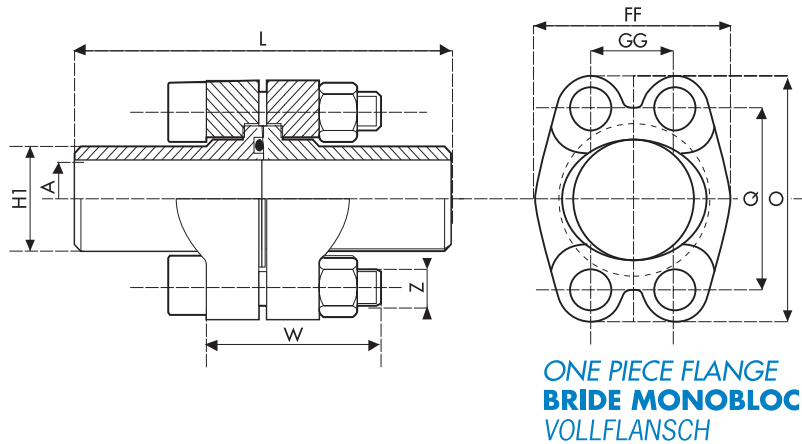
# BRIDES

## Flanges / Flansche

### ISO 6162-2 (SAE 6000)

#### CODE 62

Kode 62



#### BRIDES DE LIAISON BW

Union assembly flanges bw / Anschlussflanschen BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                                | PRESSION<br>DE SERVICE<br>(BAR)<br><i>Working<br/>pressure</i><br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br><i>Tube od</i><br>Aussen Ø Rohr |    |     |    |                 |                |     |     | VISSERIE<br><i>Screws</i><br>Schrauben |          |               |       | MASSE<br>kg<br><i>Weight</i><br>Gewicht | REFERENCE<br>BRIDE<br>MONOBLOC<br><i>One<br/>piece flange</i><br>Referenz<br>Vollflansch |
|-------------------------------------|--------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------|----|-----|----|-----------------|----------------|-----|-----|----------------------------------------|----------|---------------|-------|-----------------------------------------|------------------------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br><i>Size</i><br>Größe |                                                                                      | MM, GAZ,<br>SCHD,                                         | H1 | L   | A  | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | TYPE 1<br><i>métrique</i>              |          | TYPE 2<br>UNC |       |                                         |                                                                                          |
|                                     |                                |                                                                                      |                                                           |    |     |    |                 |                |     |     | Z                                      | W        | Z             | W     |                                         |                                                                                          |
| 13                                  | 1/2"                           | 400 bars                                                                             | 20 à 22                                                   | 22 | 90  | 13 | 18,2            | 40,5           | 48  | 56  | M8                                     | 45       | 5/16"         | 1"3/4 | 0,7                                     | 213530151                                                                                |
| 19                                  | 3/4"                           | 400 bars                                                                             | 25 à 28                                                   | 28 | 100 | 18 | 23,8            | 50,8           | 60  | 71  | M10                                    | 50       | 3/8"          | 2"    | 1,3                                     | 213530201                                                                                |
| 25                                  | 1"                             | 400 bars                                                                             | 30 à 35                                                   | 35 | 110 | 22 | 27,8            | 57,2           | 70  | 81  | M12                                    | 65       | 7/16"         | 2"1/2 | 2,0                                     | 213530251                                                                                |
| 32                                  | 1"1/4                          | 400 bars                                                                             | 38 à 45                                                   | 44 | 120 | 29 | 31,8            | 66,6           | 78  | 95  | M14<br>M12                             | 70<br>70 | 1/2"          | 2"3/4 | 3,0                                     | ■ 213530321<br>263530321                                                                 |
| 38                                  | 1"1/2                          | 400 bars                                                                             | 48 à 52                                                   | 51 | 130 | 35 | 36,5            | 79,3           | 95  | 113 | M16                                    | 80       | 5/8"          | 3"1/4 | 4,7                                     | 213530401                                                                                |
| 51                                  | 2"                             | 400 bars                                                                             | 60 à 65                                                   | 65 | 140 | 43 | 44,5            | 96,8           | 114 | 133 | M20                                    | 100      | 3/4"          | 4"    | 9,1                                     | 213530501                                                                                |

■ Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions

■ Do not use this male metric thread for new constructions

■ Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- collets réduit
- brides inox
- collets inox
- visserie UNC
- joints FLS™
- joints viton
- joints EPDM
- 1/2 brides.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- reducing flanged head
- stainless steel flanges
- stainless steel flanged head
- UNC screws
- FLS™ o'rings
- viton o'rings
- EPDM o'rings
- split flanges.

Standard Flansche werden mit metrische Schrauben angeliefert

Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Reduzierte Stutzen
- Stutzen ohne Nut
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- UNC Schrauben
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe
- 1/2 Flansche

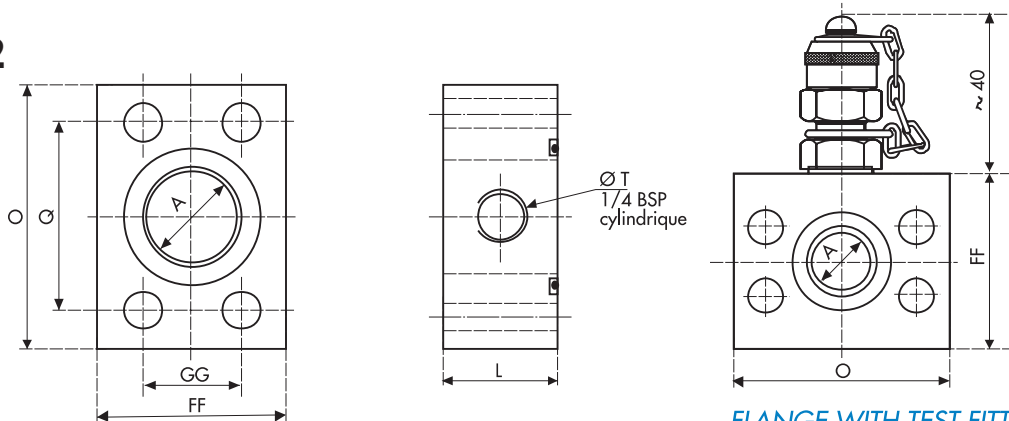
# BRIDES

## Flanges / Flansche

### ISO 6162-2 (SAE 6000)

#### CODE 62

Kode 62



FLANGE WITH TEST FITTING  
BRIDE AVEC PRISE DE PRESSION  
Flansche mit Druckanschlußstelle

#### BRIDES PRISE DE PRESSION

Test port flanges / Flansche mit Druckanschlußstelle

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br><i>Working<br/>pressure<br/>Betriebs-<br/>druck</i> |    |    |      |      |     |     | VISSERIE<br><i>Screws<br/>Schrauben</i> |   |                 |                | MASSE<br>kg<br><i>Weight<br/>Gewicht</i> | REFERENCE<br>BRIDE<br>SEULE<br><i>Ref. for<br/>flange only<br/>Referenz<br/>Flansch</i> | REFERENCE<br>AVEC PRISE<br>DE PRESSION<br><i>Ref. for<br/>flange equipped<br/>Referenz Flansch<br/>mit Druck-<br/>anschlußstelle</i> |    |   |                                |   |               |   |
|-------------------------------------|-------------------------|----------------------------------------------------------------------------------------|----|----|------|------|-----|-----|-----------------------------------------|---|-----------------|----------------|------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----|---|--------------------------------|---|---------------|---|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe |                                                                                        |    |    |      |      |     |     | L                                       | A | GG<br>±<br>0,25 | Q<br>±<br>0,25 |                                          |                                                                                         |                                                                                                                                      | FF | O | TYPE 1<br>métrique<br>Metrisch |   | TYPE 2<br>UNC |   |
|                                     |                         |                                                                                        |    |    |      |      |     |     |                                         |   |                 |                |                                          |                                                                                         |                                                                                                                                      |    |   | Z                              | W | Z             | W |
| 13                                  | 1/2"                    | 400 bars                                                                               | 24 | 14 | 18,2 | 40,5 | 50  | 56  | M8                                      |   | 5/16"           |                | 0,6                                      | N13660153                                                                               | 140130151                                                                                                                            |    |   |                                |   |               |   |
| 19                                  | 3/4"                    | 400 bars                                                                               | 30 | 19 | 23,8 | 50,8 | 60  | 71  | M10                                     |   | 3/8"            |                | 0,8                                      | N13660203                                                                               | 140130201                                                                                                                            |    |   |                                |   |               |   |
| 25                                  | 1"                      | 400 bars                                                                               | 30 | 22 | 27,8 | 57,2 | 70  | 81  | M12                                     |   | 7/16"           |                | 1,0                                      | N13660253                                                                               | 140130251                                                                                                                            |    |   |                                |   |               |   |
| 32                                  | 1"1/4                   | 400 bars                                                                               | 34 | 29 | 31,8 | 66,6 | 80  | 95  | M14<br>M12                              |   | 1/2"            |                | 1,6                                      | N13660323<br>N63660323                                                                  | ■ 140130321<br>140630321                                                                                                             |    |   |                                |   |               |   |
| 38                                  | 1"1/2                   | 400 bars                                                                               | 35 | 35 | 36,5 | 79,3 | 95  | 113 | M16                                     |   | 5/8"            |                | 2,8                                      | N13660403                                                                               | 140130401                                                                                                                            |    |   |                                |   |               |   |
| 51                                  | 2"                      | 400 bars                                                                               | 40 | 43 | 44,5 | 96,8 | 114 | 133 | M20                                     |   | 3/4"            |                | 4,6                                      | N13660503                                                                               | 140130501                                                                                                                            |    |   |                                |   |               |   |

- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

- Pour des ensembles avec :
- prise de pression taraudée NPT
  - brides inox
  - Prise à clapet (sur demande).

Standard flanges delivered with metric screws, buna 90 shore o'rings.

- For flanges composed with:
- test point fitting ball type: NPT
  - stainless steel flanges
  - test point fitting poppet type (on request).

Standard Flansche werden mit metrische Schrauben angeliefert  
Perbunan Dichtringe 90 Shores.

- Für Aufbau mit:
- Druckanschlußstelle NPT
  - Flansche aus Edelstahl
  - Anschluß mit Rückschlagventil (Auf Anfrage).

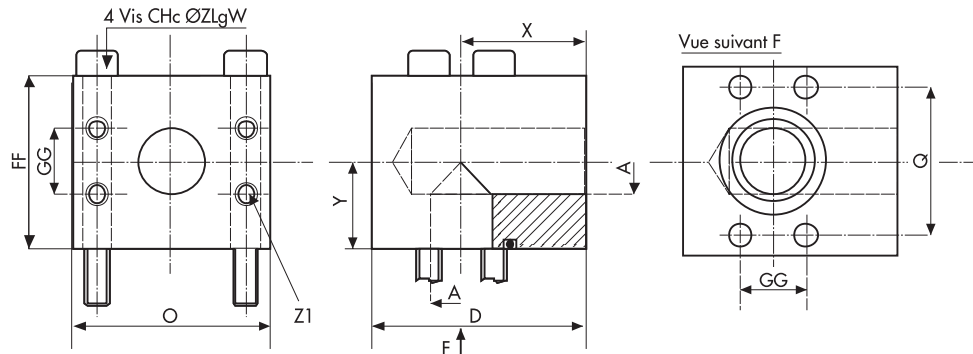
# BLOCS

Blocks / Blöcke

## ISO 6162-2 (SAE 6000)

### CODE 62

Kode 62

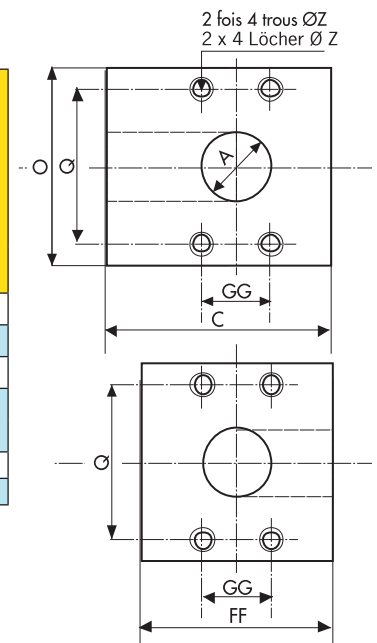


### BLOCS EQUERRES / Port elbow / Winkel-Blöcke

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |      |                 |                |     |     |    |      | VISSERIE<br>Screws<br>Schrauben |     |               |       | TARAUDAGE<br>Tapping<br>Gewindeschneiden |       | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|----|------|-----------------|----------------|-----|-----|----|------|---------------------------------|-----|---------------|-------|------------------------------------------|-------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | D    | GG<br>±<br>0,25 | Q<br>±<br>0,25 | FF  | O   | X  | Y    | TYPE 1<br>métrique<br>Metrisch  |     | TYPE 2<br>UNC |       | métrique                                 | UNC   |                                  |                                    |
|                                     |                         |    |      |                 |                |     |     |    |      | Z                               | W   | Z             | W     |                                          |       |                                  |                                    |
| 13                                  | 1/2"                    | 14 | 56   | 18,25           | 40,50          | 50  | 58  | 31 | 30,0 | M8                              | 65  | 5/16"         | 2"1/2 | M8                                       | 5/16" | 1,1                              | E130151                            |
| 19                                  | 3/4"                    | 19 | 68,5 | 23,80           | 50,80          | 65  | 70  | 35 | 32,5 | M10                             | 80  | 3/8"          | 3"1/4 | M10                                      | 3/8"  | 2,2                              | E130201                            |
| 25                                  | 1"                      | 22 | 80   | 27,75           | 57,15          | 72  | 83  | 44 | 40,0 | M12                             | 90  | 7/16"         | 3"1/2 | M12                                      | 7/16" | 3,4                              | E130251                            |
| 32                                  | 1"1/4                   | 29 | 95   | 31,75           | 66,70          | 98  | 98  | 55 | 49,0 | M14<br>M12                      | 100 | 1/2"          | 4"    | M14<br>M12                               | 1/2"  | 5,2                              | ■ E130321<br>E630321               |
| 38                                  | 1"1/2                   | 35 | 110  | 36,50           | 79,40          | 98  | 115 | 61 | 49,5 | M16                             | 130 | 5/8"          | 5"    | M16                                      | 5/8"  | 8,5                              | E130401                            |
| 51                                  | 2"                      | 43 | 135  | 44,45           | 96,80          | 116 | 135 | 80 | 64,0 | M20                             | 150 | 3/4"          | 6"    | M20                                      | 3/4"  | 14,2                             | E130501                            |

### BLOCS "L" / "L" blocks / L-Blöcke

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |     |     |     |                 |                | VISSERIE<br>Screws<br>Schrauben |               | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|----|-----|-----|-----|-----------------|----------------|---------------------------------|---------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | O   | C   | FF  | GG<br>±<br>0,25 | Q<br>±<br>0,25 | TYPE 1<br>métrique<br>Metrisch  | TYPE 2<br>UNC |                                  |                                    |
|                                     |                         |    |     |     |     |                 |                | Z                               | Z             |                                  |                                    |
| 13                                  | 1/2"                    | 14 | 58  | 56  | 50  | 18,25           | 40,50          | M8                              | 5/16"         |                                  |                                    |
| 19                                  | 3/4"                    | 19 | 73  | 66  | 62  | 23,80           | 50,80          | M10                             | 3/8"          | 2,1                              | L130201                            |
| 25                                  | 1"                      | 22 | 83  | 80  | 72  | 27,75           | 57,15          | M12                             | 7/16"         | 3,2                              | L130251                            |
| 32                                  | 1"1/4                   | 29 | 98  | 95  | 80  | 31,75           | 66,70          | M14<br>M12                      | 1/2"          | 5,2                              | ■ L130321<br>L630321               |
| 38                                  | 1"1/2                   | 35 | 115 | 110 | 98  | 36,50           | 79,40          | M16                             | 5/8"          | 8,3                              | L130401                            |
| 51                                  | 2"                      | 43 | 130 | 135 | 116 | 44,45           | 96,80          | M20                             |               | 12,5                             | L130501                            |



- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- visserie UNC
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped :

- metric screws
- UNC screws
- BUNA o-rings
- VITON o-rings
- FLS™ o-rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe. Für Lieferungen mit metrische Schrauben - UNC Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke. Bei Blöcke mit unterschiedlichen Ausgänge, reduzierte Flanschen benutzen.



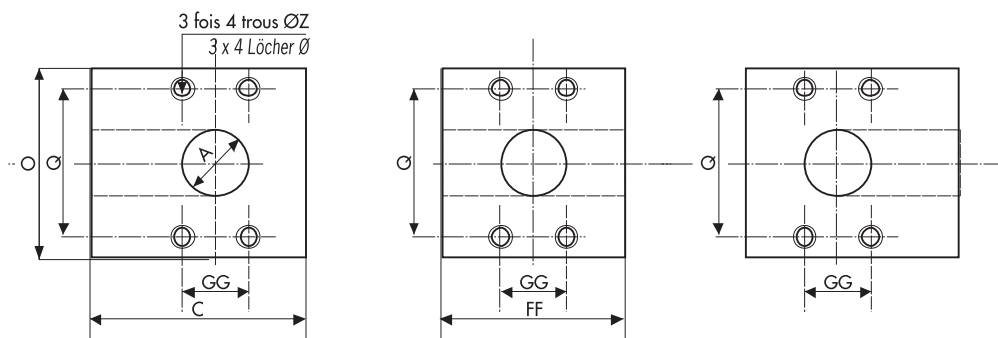
# BLOCS

Blocks / Blöcke

## ISO 6162-2 (SAE 6000)

### CODE 62

Kode 62

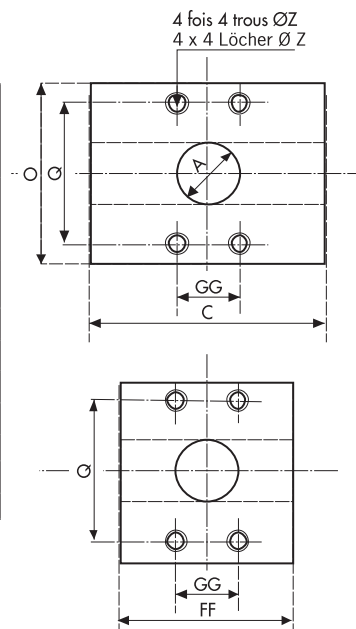


### BLOCS "T" / "T" blocks / T-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |       |     |              |             | VISserie<br>Screws<br>Schrauben |               | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|------------------------|-------------------------|----|-----|-------|-----|--------------|-------------|---------------------------------|---------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C     | FF  | GG<br>± 0,25 | Q<br>± 0,25 | TYPE 1<br>métrique<br>Metrisch  | TYPE 2<br>UNC |                                  |                                    |
|                        |                         |    |     |       |     |              |             | Z                               | Z             |                                  |                                    |
| 13                     | 1/2"                    | 14 | 58  | 56    | 50  | 18,25        | 40,50       | M8                              | 5/16"         | 1,1                              | T130151                            |
| 19                     | 3/4"                    | 19 | 70  | 68    | 63  | 23,80        | 50,80       | M10                             | 3/8"          | 1,9                              | T130201                            |
| 25                     | 1"                      | 25 | 80  | 88    | 73  | 27,75        | 57,15       | M12                             | 7/16"         | 3,1                              | T130251                            |
| 32                     | 1 1/4"                  | 29 | 98  | 95    | 80  | 31,75        | 66,70       | M14                             |               |                                  | ■ T130321                          |
|                        |                         |    |     |       |     |              |             | M12                             | 1/2"          | 4,8                              | T630321                            |
| 38                     | 1 1/2"                  | 35 | 115 | 110   | 98  | 36,50        | 79,40       | M16                             | 5/8"          | 7,8                              | T130401                            |
| 51                     | 2"                      | 44 | 130 | 128,5 | 117 | 44,45        | 96,80       | M20                             | 3/4"          | 12,0                             | T130501                            |

### BLOCS "X" / "X" blocks / X-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |    |     |     |     |                |                 | VISSERIE<br>Screws<br>Schrauben |               | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |
|------------------------|-------------------------|----|----|-----|-----|-----|----------------|-----------------|---------------------------------|---------------|----------------------------------|------------------------------------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | B  | O   | C   | FF  | Q<br>±<br>0,25 | GG<br>±<br>0,25 | TYPE 1<br>métrique<br>Metrisch  | TYPE 2<br>UNC |                                  |                                    |
|                        |                         |    |    |     |     |     |                |                 | Z                               | Z             |                                  |                                    |
| 13                     | 1/2"                    | 14 |    | 58  | 68  | 50  | 40,50          | 18,25           | M8                              | 5/16"         | 1,2                              | C130151                            |
| 19                     | 3/4"                    | 19 |    | 73  | 82  | 62  | 50,80          | 23,80           | M10                             | 3/8"          | 2,4                              | C130201                            |
| 25                     | 1"                      | 22 |    | 83  | 94  | 72  | 57,15          | 27,75           | M12                             | 7/16"         | 3,7                              | C130251                            |
| 32                     | 1"1/4                   | 29 |    | 98  | 110 | 80  | 66,70          | 31,75           | M14<br>M12                      |               |                                  | ■ C130321<br>C630321               |
| 38                     | 1"1/2                   | 35 |    | 115 | 130 | 98  | 79,40          | 36,50           | M16                             | 5/8"          | 9,0                              | C130401                            |
| 51                     | 2"                      | 43 | 72 | 135 | 140 | 116 | 96,80          | 44,45           | M20                             | 3/4"          | 12,0                             | C130501                            |



- Ce filetage métrique ne doit pas être utilisé pour de nouvelles conceptions
- Do not use this male metric thread for new constructions
- Dieses metrisches Gewinde nicht anwenden für neue Bauarten

Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- visserie UNC
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped:

- metric screws
- UNC screws
- BUNA o-rings
- VITON o-rings
- FLS™ o-rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

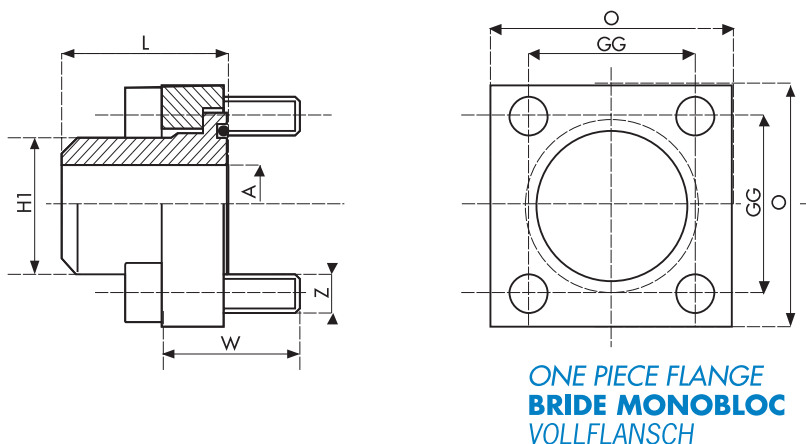
Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe. Für Lieferungen mit metrische Schrauben - UNC Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke. Bei Blöcke mit unterschiedlichen Ausgängen, reduzierte Flanschen benutzen.

# BRIDES

## Flanges / Flansche

### ISO 6164-1

### PN 250 / CETOP



## BRIDES DE FIXATION BW

Port assembly flanges BW / Verbindungsflanschen BW

| Ø NOMINAL<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br>Working<br>pressure<br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |     |     |    |                                                                                       |       |     | VISSERIE<br>Screws<br>Schrauben |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE BRIDE<br>MONOBLOC<br>One piece flange<br>Referenz Vollflansch               |           |
|------------------------|-------------------------|------------------------------------------------------------------------------|----------------------------------------------------|-----|-----|----|---------------------------------------------------------------------------------------|-------|-----|---------------------------------|-----|----------------------------------|---------------------------------------------------------------------------------------|-----------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe |                                                                              | MM, GAZ,<br>SCHD,                                  | H1  | L   | A  | GG ± 0,25                                                                             |       | O   | PN 250/<br>CETOP                |     |                                  | PN 250                                                                                | CETOP     |
|                        |                         |                                                                              |                                                    |     |     |    | PN 250                                                                                | CETOP |     | Z                               | W   |                                  |                                                                                       |           |
| 10                     | 3/8"                    | 250 bars                                                                     | 14 à 17,14                                         | 18  | 40  | 12 | 24,7                                                                                  | 24,7  | 40  | M6                              | 25  | 0,2                              | 114530101                                                                             | 121530101 |
| 13                     | 1/2"                    | 250 bars                                                                     | 18 à 22                                            | 22  | 45  | 13 | 29,7                                                                                  | 29,7  | 45  | M8                              | 30  | 0,3                              | 114530151                                                                             | 121530151 |
| 19                     | 3/4"                    | 250 bars                                                                     | 25 à 28                                            | 28  | 50  | 19 | 35,3                                                                                  | 35,4  | 50  | M8                              | 30  | 0,4                              | 114530201                                                                             | 121530201 |
| 25                     | 1"                      | 250 bars                                                                     | 30 à 35                                            | 35  | 55  | 25 | 43,8                                                                                  | 43,8  | 65  | M10                             | 35  | 0,7                              | 114530251                                                                             | 121530251 |
| 32                     | 1" 1/4                  | 250 bars                                                                     | 38 à 42,25                                         | 43  | 60  | 32 | 51,6                                                                                  | 51,6  | 75  | M12                             | 45  | 1,1                              | 114530321                                                                             | 121530321 |
| 38                     | 1" 1/2                  | 250 bars                                                                     | 48 à 50                                            | 50  | 65  | 38 | 60,0                                                                                  | 60,1  | 85  | M14                             | 50  | 1,6                              | 114530401                                                                             | 121530401 |
| 51                     | 2"                      | 250 bars                                                                     | 60 à 63                                            | 62  | 70  | 47 | 69,4                                                                                  | 69,3  | 100 | M16                             | 55  | 2,4                              | 114530501                                                                             | 121530501 |
| 56                     | 2" 1/2                  | 250 bars                                                                     | 75 à 80                                            | 76  | 75  | 58 | 83,4                                                                                  | 83,4  | 120 | M20                             | 70  | 4,2                              | 114530651                                                                             | 121530651 |
| 63                     | 3"                      | 250 bars                                                                     | 88 à 90                                            | 90  | 85  | 70 | 102,5                                                                                 | 102,5 | 140 | M20                             | 75  | 6,1                              | 114530801                                                                             | 121530801 |
| 70                     | 3" 1/2                  | 250 bars                                                                     | 95 à 101,60                                        | 102 | 90  | 77 |  | 113,1 | 160 | M24                             | 90  | 10,4                             |  | 121530901 |
| 80                     | 4"                      | 250 bars                                                                     | 113 à 120                                          | 118 | 100 | 90 |  | 123,7 | 170 | M24                             | 100 | 13,0                             |  | 121531001 |

Brides standard livrées avec visserie métrique, joints Perbunan 90 shors.

Pour des ensembles avec :

- collets sans gorge
- collets réduits
- brides inox
- collets inox
- joints FLS™
- joints viton
- joints EPDM.

Pour les brides sidérurgie "S", sur demande.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- flanged head without groove
- reducing flanged head
- stainless steel flanges
- stainless steel flanged head
- FLS™ o'rings
- viton o'rings
- EPDM o'rings.

For "S" flanges, on request.

Standard Flansche werden mit metrische Schrauben angeliefert

Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Stutzen ohne Nut
- Reduzierte Stutzen
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe

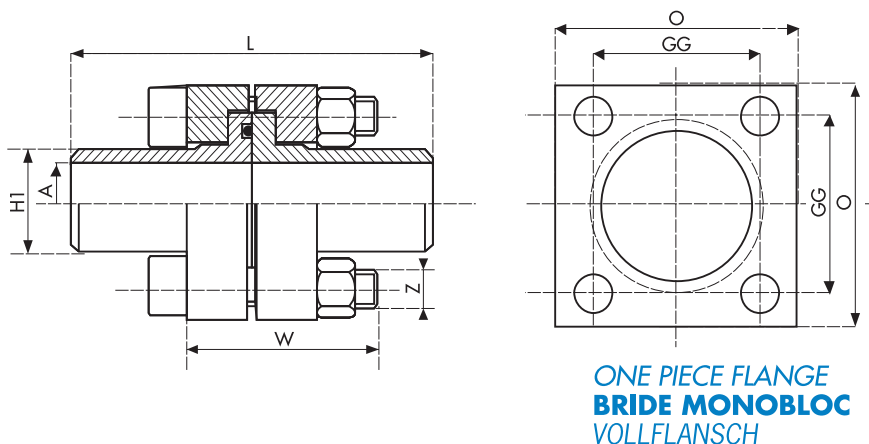
Flansche für Stahlindustrie "S" auf Anfrage.

# BRIDES

## Flanges / Flansche

### ISO 6164-1

### PN 250 / CETOP



## BRIDES DE LIAISON BW

Union assembly flanges BW / Anschlussflanschen BW

| Ø NOMINAL<br>Nominal Ø |                                | PRESSION<br>DE SERVICE<br>(BAR)<br><i>Working<br/>pressure</i><br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br><i>Tube od</i><br>Aussen Ø Rohr |     |     |    |                                                                                       |       |     | VISSERIE<br><i>Screws</i><br>Schrauben |     | MASSE<br>kg<br><i>Weight</i><br>Gewicht | REFERENCE BRIDE<br>MONOBLOC<br><i>One piece flange</i><br>Referenz Vollflansch        |           |
|------------------------|--------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------|-----|-----|----|---------------------------------------------------------------------------------------|-------|-----|----------------------------------------|-----|-----------------------------------------|---------------------------------------------------------------------------------------|-----------|
| DN<br>ND<br>ND         | TAILLE<br><i>Size</i><br>Größe |                                                                                      | MM, GAZ,<br>SCHD,                                         | H1  | L   | A  | GG ± 0,25                                                                             |       | O   | PN 250/<br>CETOP                       |     |                                         | PN 250                                                                                | CETOP     |
|                        |                                |                                                                                      |                                                           |     |     |    | PN 250                                                                                | CETOP |     | Z                                      | W   |                                         |                                                                                       |           |
| 10                     | 3/8"                           | 250 bars                                                                             | 14 à 17,14                                                | 18  | 80  | 12 | 24,7                                                                                  | 24,7  | 40  | M6                                     | 35  | 0,4                                     | 214530101                                                                             | 221530101 |
| 13                     | 1/2"                           | 250 bars                                                                             | 18 à 22                                                   | 22  | 90  | 13 | 29,7                                                                                  | 29,7  | 45  | M8                                     | 40  | 0,5                                     | 214530151                                                                             | 221530151 |
| 19                     | 3/4"                           | 250 bars                                                                             | 25 à 28                                                   | 28  | 100 | 19 | 35,3                                                                                  | 35,4  | 50  | M8                                     | 45  | 0,7                                     | 214530201                                                                             | 221530201 |
| 25                     | 1"                             | 250 bars                                                                             | 30 à 35                                                   | 35  | 110 | 25 | 43,8                                                                                  | 43,8  | 65  | M10                                    | 50  | 1,4                                     | 214530251                                                                             | 221530251 |
| 32                     | 1" 1/4                         | 250 bars                                                                             | 38 à 42,25                                                | 43  | 120 | 32 | 51,6                                                                                  | 51,6  | 75  | M12                                    | 60  | 2,1                                     | 214530321                                                                             | 221530321 |
| 38                     | 1" 1/2                         | 250 bars                                                                             | 48 à 50                                                   | 50  | 130 | 38 | 60,0                                                                                  | 60,1  | 85  | M14                                    | 70  | 3,1                                     | 214530401                                                                             | 221530401 |
| 51                     | 2"                             | 250 bars                                                                             | 60 à 63                                                   | 62  | 140 | 47 | 69,4                                                                                  | 69,3  | 100 | M16                                    | 75  | 4,7                                     | 214530501                                                                             | 221530501 |
| 56                     | 2" 1/2                         | 250 bars                                                                             | 75 à 80                                                   | 76  | 150 | 58 | 83,4                                                                                  | 83,4  | 120 | M20                                    | 100 | 8,0                                     | 214530651                                                                             | 221530651 |
| 63                     | 3"                             | 250 bars                                                                             | 88 à 90                                                   | 90  | 170 | 70 | 102,5                                                                                 | 102,5 | 140 | M20                                    | 110 | 12,3                                    | 214530801                                                                             | 221530801 |
| 70                     | 3" 1/2                         | 250 bars                                                                             | 95 à 101,60                                               | 102 | 180 | 77 |  | 113,1 | 160 | M24                                    | 130 | 20,1                                    |  | 221530901 |
| 80                     | 4"                             | 250 bars                                                                             | 113 à 120                                                 | 118 | 200 | 90 |  | 123,7 | 170 | M24                                    | 130 | 25,5                                    |  | 221531001 |

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- collets réduits
- brides inox
- collets inox
- joints FLS™
- joints viton
- joints EPDM.

Pour les brides sidérurgie "S", sur demande  
brides "brise jet" BW, sur demande.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- reducing flanged head
- stainless steel flanges
- stainless steel flanged head
- FLS™ o'rings
- viton o'rings
- EPDM o'rings.

For "S" flanges, on request.

Standard Flansche werden mit metrische Schrauben angeliefert  
Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Reduzierte Stutzen
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe

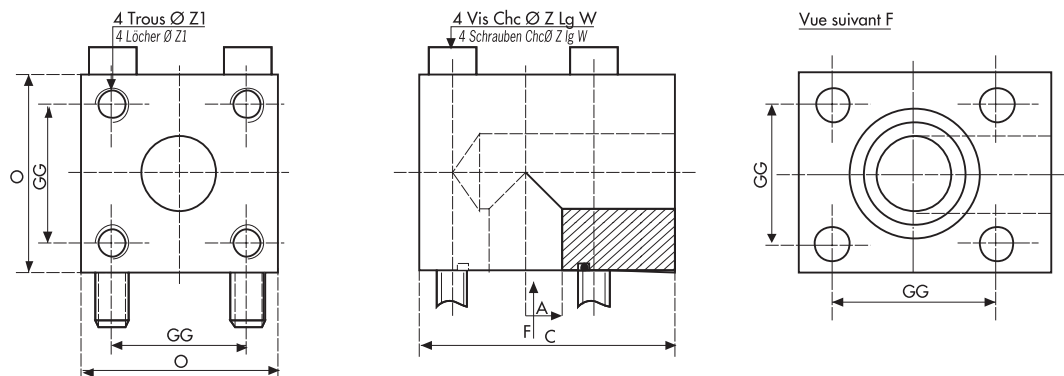
Flansche für Stahlindustrie "S" auf Anfrage.

# BLOCS

Blocks / Blöcke

## ISO 6164-1

### PN 250 / CETOP



## BLOCS EQUERRES / Port elbow blocks / Winkel-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |           |       | VISSERIE<br>Screws<br>Schrauben |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |         |
|------------------------|-------------------------|----|-----|-----|-----------|-------|---------------------------------|-----|----------------------------------|------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25 |       | PN 250/<br>CETOP                |     |                                  | PN 250                             | CETOP   |
|                        |                         |    |     |     | PN 250    | CETOP | Z/Z1                            | W   |                                  |                                    |         |
| 13                     | 1/2"                    | 15 | 45  | 60  | 29,7      | 29,7  | M8                              | 60  | 0,9                              | E140151                            | E210151 |
| 19                     | 3/4"                    | 20 | 50  | 70  | 35,3      | 35,4  | M8                              | 65  | 1,1                              | E140201                            | E210201 |
| 25                     | 1"                      | 25 | 65  | 85  | 43,8      | 43,8  | M10                             | 80  | 1,6                              | E140251                            | E210251 |
| 32                     | 1"1/4                   | 32 | 75  | 100 | 51,6      | 51,6  | M12                             | 90  | 3,6                              | E140321                            | E210321 |
| 38                     | 1"1/2                   | 38 | 85  | 115 | 60,0      | 60,1  | M14                             | 110 | 3,5                              | E140401                            | E210401 |
| 51                     | 2"                      | 47 | 100 | 130 | 69,4      | 69,3  | M16                             | 130 | 5,1                              | E140501                            | E210501 |
| 56                     | 2"1/2                   | 60 | 120 | 170 | 83,4      | 83,4  | M20                             | 150 | 14,5                             | E140651                            | E210651 |
| 63                     | 3"                      | 71 | 140 | 190 | 102,5     | 102,5 | M20                             | 170 | 13,4                             | E140801                            | E210801 |

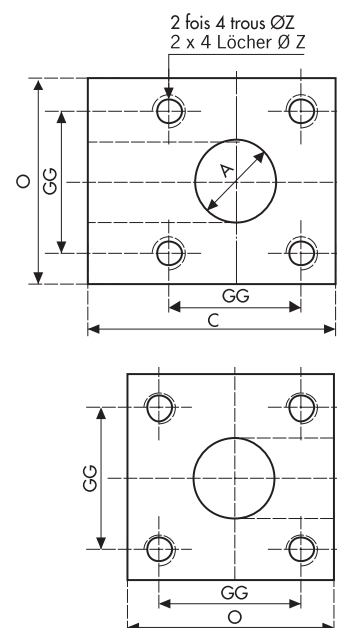
Pour les blocs L, équerres  
Sidérurgie "S" sur demande.

For "S" blocks, on request.

Winkelblöcke "S" auf Anfrage.

## BLOCS "L" / "L" blocks / L-Blöcke

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |    |     |     |                                                                                     |       | VISSERIE<br>Screws<br>Schrauben                                                     |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz                                                   |         |
|-------------------------------------|-------------------------|----|-----|-----|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-----|----------------------------------|--------------------------------------------------------------------------------------|---------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25                                                                           |       | PN 250/<br>CETOP                                                                    |     |                                  | PN 250                                                                               | CETOP   |
|                                     |                         |    |     |     | PN 250                                                                              | CETOP | Z                                                                                   | Z   |                                  |                                                                                      |         |
| 13                                  | 1/2"                    | 15 | 45  | 56  | 35,3                                                                                | 29,7  | M8                                                                                  | M8  | 0,8                              | L140151                                                                              | L210151 |
| 19                                  | 3/4"                    | 20 | 50  | 66  | 43,8                                                                                | 35,4  | M10                                                                                 | M8  | 1,1                              | L140201                                                                              | L210201 |
| 25                                  | 1"                      | 25 | 65  | 80  | 51,6                                                                                | 43,8  | M12                                                                                 | M10 | 2,1                              | L140251                                                                              | L210251 |
| 32                                  | 1"1/4                   | 32 | 75  | 95  | 60,0                                                                                | 51,6  | M14                                                                                 | M12 | 3,3                              | L140321                                                                              | L210321 |
| 38                                  | 1"1/2                   | 38 | 85  | 110 | 69,4                                                                                | 60,1  | M16                                                                                 | M14 | 4,8                              | L140401                                                                              | L210401 |
| 51                                  | 2"                      | 47 | 100 | 125 | 83,4                                                                                | 69,3  | M20                                                                                 | M16 | 7,3                              | L140501                                                                              | L210501 |
| 56                                  | 2"1/2                   | 60 | 120 | 160 | 102,5                                                                               | 83,4  | M20                                                                                 | M20 | 13,0                             | L140651                                                                              | L210651 |
| 63                                  | 3"                      | 71 | 140 | 180 | 102,5                                                                               | 102,5 | M20                                                                                 | M20 | 22,0                             | L140801                                                                              | L210801 |
| 70                                  | 3"1/2                   | 77 | 160 | 205 |  | 113,1 |  | M24 | 32,0                             |  | L210901 |
| 80                                  | 4"                      | 90 | 170 | 225 |  | 123,7 |  | M24 | 38,0                             |  | L211001 |



Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped:

- metric screws
- BUNA o-rings
- VITON o-rings
- FLS™ o-rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

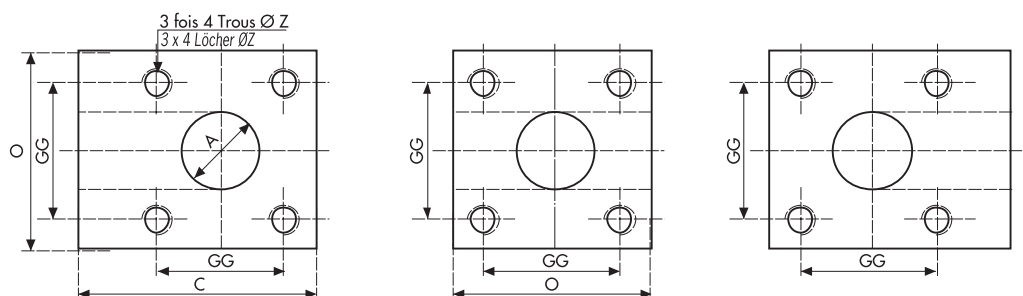
Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrischen Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgängen, reduzierte Flanschen benutzen.

# BLOCS

Blocks / Blöcke

## ISO 6164-1

### PN 250 / CETOP



### BLOCS "T" / "T" blocks / T-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |                                                                                     |       | VISSERIE<br>Screws<br>Schrauben                                                     |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz                                                  |         |
|------------------------|-------------------------|----|-----|-----|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-----|----------------------------------|-------------------------------------------------------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25                                                                           |       | PN 250/<br>CETOP                                                                    |     |                                  | PN 250                                                                              | CETOP   |
|                        |                         |    |     |     | PN 250                                                                              | CETOP | Z                                                                                   | Z   |                                  |                                                                                     |         |
| 13                     | 1/2"                    | 15 | 45  | 56  | 29,7                                                                                | 29,7  | M8                                                                                  | M8  | 0,7                              | T140151                                                                             | T210151 |
| 19                     | 3/4"                    | 20 | 50  | 66  | 35,3                                                                                | 35,4  | M8                                                                                  | M8  | 1,0                              | T140201                                                                             | T210201 |
| 25                     | 1"                      | 25 | 65  | 80  | 43,8                                                                                | 43,8  | M10                                                                                 | M10 | 2,2                              | T140251                                                                             | T210251 |
| 32                     | 1"1/4                   | 32 | 75  | 95  | 51,6                                                                                | 51,6  | M12                                                                                 | M12 | 3,1                              | T140321                                                                             | T210321 |
| 38                     | 1"1/2                   | 38 | 85  | 110 | 60,0                                                                                | 60,1  | M14                                                                                 | M14 | 4,5                              | T140401                                                                             | T210401 |
| 51                     | 2"                      | 47 | 100 | 125 | 69,4                                                                                | 69,3  | M16                                                                                 | M16 | 7,0                              | T140501                                                                             | T210501 |
| 56                     | 2"1/2                   | 60 | 120 | 160 | 83,4                                                                                | 83,4  | M20                                                                                 | M20 | 12,0                             | T140651                                                                             | T210651 |
| 63                     | 3"                      | 71 | 140 | 180 | 102,5                                                                               | 102,5 | M20                                                                                 | M20 | 19,0                             | T140801                                                                             | T210801 |
| 70                     | 3"1/2                   | 77 | 160 | 205 |  | 113,1 |  | M24 | 30,0                             |  | T210901 |
| 80                     | 4"                      | 90 | 170 | 225 |  | 123,7 |  | M24 | 35,0                             |  | T211001 |

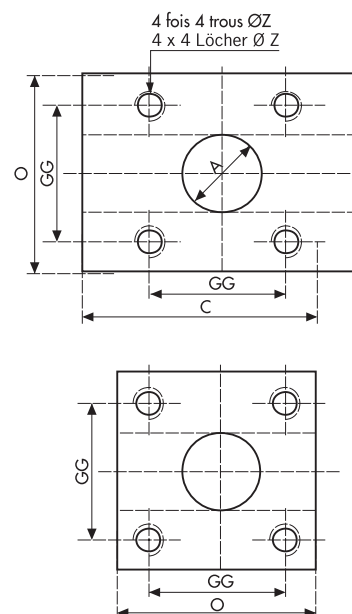
Pour les blocs X,T  
Sidérurgie "S" sur demande.

For "S" blocks, on request.

T-Blöcke "S" auf Anfrage.

### BLOCS "X" / "X" blocks / X-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |                                                                                     |       | VISSERIE<br>Screws<br>Schrauben                                                     |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz                                                   |         |
|------------------------|-------------------------|----|-----|-----|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-----|----------------------------------|--------------------------------------------------------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25                                                                           |       | PN 250/<br>CETOP                                                                    |     |                                  | PN 250                                                                               | CETOP   |
|                        |                         |    |     |     | PN 250                                                                              | CETOP | Z                                                                                   | Z   |                                  |                                                                                      |         |
| 13                     | 1/2"                    | 15 | 45  | 67  | 29,7                                                                                | 29,7  | M8                                                                                  | M8  | 0,8                              | C140151                                                                              | C210151 |
| 19                     | 3/4"                    | 20 | 50  | 82  | 35,3                                                                                | 35,4  | M8                                                                                  | M8  | 1,1                              | C140201                                                                              | C210201 |
| 25                     | 1"                      | 25 | 65  | 94  | 43,8                                                                                | 43,8  | M10                                                                                 | M10 | 2,3                              | C140251                                                                              | C210251 |
| 32                     | 1"1/4                   | 32 | 75  | 110 | 51,6                                                                                | 51,6  | M12                                                                                 | M12 | 3,6                              | C140321                                                                              | C210321 |
| 38                     | 1"1/2                   | 38 | 85  | 130 | 60,0                                                                                | 60,1  | M14                                                                                 | M14 | 5,2                              | C140401                                                                              | C210401 |
| 51                     | 2"                      | 47 | 100 | 150 | 69,4                                                                                | 69,3  | M16                                                                                 | M16 | 8,3                              | C140501                                                                              | C210501 |
| 56                     | 2"1/2                   | 60 | 120 | 200 | 83,4                                                                                | 83,4  | M20                                                                                 | M20 | 15,0                             | C140651                                                                              | C210651 |
| 63                     | 3"                      | 71 | 140 | 220 | 102,5                                                                               | 102,5 | M20                                                                                 | M20 | 19,0                             | C140801                                                                              | C210801 |
| 70                     | 3"1/2                   | 77 | 160 | 250 |  | 113,1 |  | M24 | 36,0                             |  | C210901 |
| 80                     | 4"                      | 90 | 170 | 270 |  | 123,7 |  | M24 | 40,0                             |  | C211001 |



Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped :

- metric screws
- BUNA o'rings
- VITON o'rings
- FLS™ o'rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

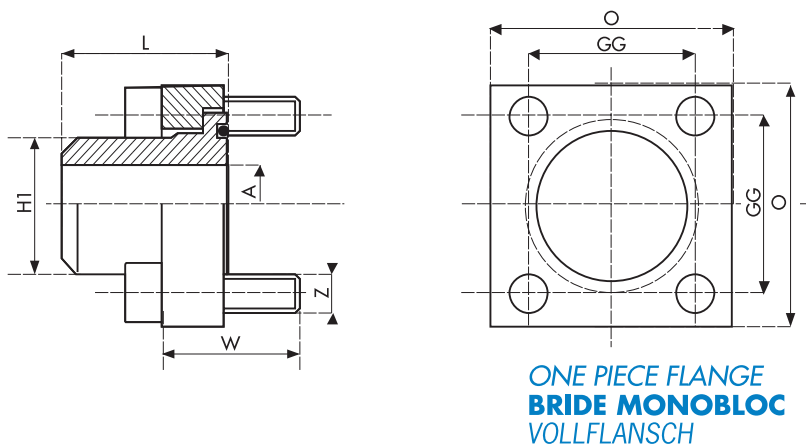
Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrische Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgänge, reduzierte Flanschen benutzen.

# BRIDES

## Flanges / Flansche

### ISO 6164-2

### PN 400 / CETOP



## BRIDES DE FIXATION BW

Port assembly flanges BW / Verbindungsflanschen BW

| Ø NOMINAL<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br>Working<br>pressure<br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |       |     |    |           |       |     | VISSERIE<br>Screws<br>Schrauben |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE BRIDE<br>MONOBLOC<br>One piece flange<br>Referenz Vollflansch |           |
|------------------------|-------------------------|------------------------------------------------------------------------------|----------------------------------------------------|-------|-----|----|-----------|-------|-----|---------------------------------|-----|----------------------------------|-------------------------------------------------------------------------|-----------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe |                                                                              | MM, GAZ,<br>SCHD,                                  | H1    | L   | A  | GG ± 0,25 |       | O   | PN 250/<br>CETOP                |     |                                  | PN 250                                                                  | CETOP     |
|                        |                         |                                                                              |                                                    |       |     |    | PN 250    | CETOP |     | Z                               | W   |                                  |                                                                         |           |
| 10                     | 3/8"                    | 400 bars                                                                     | 16 à 18                                            | 17,5  | 40  | 11 | 24,7      | 24,7  | 40  | M6                              | 25  | 0,2                              | 116530101                                                               | 124530101 |
| 13                     | 1/2"                    | 400 bars                                                                     | 20 à 22                                            | 22,0  | 45  | 13 | 29,7      | 29,7  | 45  | M8                              | 30  | 0,4                              | 116530151                                                               | 124530151 |
| 19                     | 3/4"                    | 400 bars                                                                     | 25 à 28                                            | 28,0  | 50  | 18 | 35,3      | 35,4  | 50  | M8                              | 35  | 0,5                              | 116530201                                                               | 124530201 |
| 25                     | 1"                      | 400 bars                                                                     | 30 à 35                                            | 35,0  | 55  | 22 | 43,8      | 43,8  | 65  | M10                             | 40  | 0,9                              | 116530251                                                               | 124530251 |
| 32                     | 1" 1/4                  | 400 bars                                                                     | 38 à 45                                            | 44,0  | 60  | 29 | 51,6      | 51,6  | 75  | M12                             | 50  | 1,3                              | 116530321                                                               | 124530321 |
| 38                     | 1" 1/2                  | 400 bars                                                                     | 48 à 52                                            | 51,0  | 65  | 35 | 60,0      | 60,1  | 85  | M14                             | 60  | 2,0                              | 116530401                                                               | 124530401 |
| 51                     | 2"                      | 400 bars                                                                     | 60 à 65                                            | 65,0  | 70  | 43 | 69,4      |       | 100 | M16                             | 65  | 3,2                              | 116530501                                                               |           |
| 56                     | 2" 1/2                  | 400 bars                                                                     | 75 à 80                                            | 80,0  | 80  | 53 | 83,4      |       | 120 | M20                             | 80  | 5,4                              | 116530651                                                               |           |
| 63                     | 3"                      | 400 bars                                                                     | 88 à 90                                            | 90,0  | 90  | 58 | 102,5     |       | 140 | M20                             | 90  | 8,6                              | 116530801                                                               |           |
| 70                     | 3" 1/2                  | 400 bars                                                                     | 90 à 102                                           | 102,0 | 90  | 63 | 102,5     |       | 140 | M20                             | 90  | 10,7                             | 116530901                                                               |           |
| 80                     | 4"                      | 400 bars                                                                     | 110 à 120                                          | 114,0 | 110 | 74 | 123,7     |       | 160 | M24                             | 110 | 12,8                             | 116531001                                                               |           |

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- collets sans gorge

- collets réduits

- brides inox

- collets inox

- joints FLS™

- joints viton

- joints EPDM.

Pour les brides sidérurgie "S", sur demande

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- flanged head without groove

- reducing flanged head

- stainless steel flanges

- stainless steel flanged head

- FLS™ o'rings

- viton o'rings

- EPDM o'rings.

For "S" flanges, on request

Standard Flansche werden mit metrische Schrauben angeliefert

Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

- Stutzen ohne Nut

- Reduzierte Stutzen

- Flansche aus Edelstahl

- Stutzen aus Edelstahl

- FLS™ Dichtringe

- Viton Dichtringe

- EPDM Dichtringe

Flansche für Stahlindustrie "S" auf Anfrage.

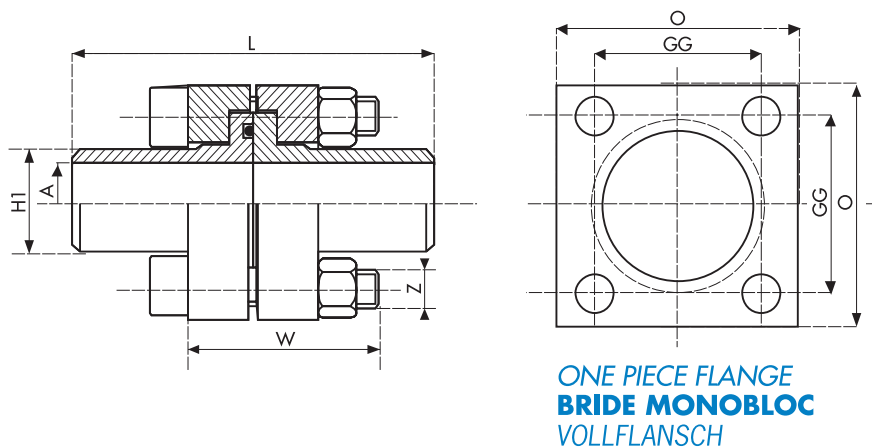


# BRIDES

## Flanges / Flansche

### ISO 6164-2

### PN 400 / CETOP



## BRIDES DE LIAISON BW

Union assembly flanges BW / Anschlussflanschen BW

| Ø NOMINAL<br>Nominal Ø |                         | PRESSION<br>DE SERVICE<br>(BAR)<br>Working<br>pressure<br>Betriebs-<br>druck | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |      |     |    |                   |      |     | VISSERIE<br>Screws<br>Schrauben |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE BRIDE<br>MONOBLOC<br>One piece flange<br>Referenz Vollflansch |           |   |                  |   |        |       |
|------------------------|-------------------------|------------------------------------------------------------------------------|----------------------------------------------------|------|-----|----|-------------------|------|-----|---------------------------------|-----|----------------------------------|-------------------------------------------------------------------------|-----------|---|------------------|---|--------|-------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe |                                                                              |                                                    |      |     |    | MM, GAZ,<br>SCHD, | H1   |     | L                               | A   |                                  | GG ± 0,25                                                               |           | O | PN 400/<br>CETOP |   | PN 400 | CETOP |
|                        |                         |                                                                              |                                                    |      |     |    |                   |      |     |                                 |     |                                  | PN 400                                                                  | CETOP     |   | Z                | W |        |       |
| 10                     | 3/8"                    | 400 bars                                                                     | 16 à 18                                            | 17,5 | 80  | 11 | 24,7              | 24,7 | 40  | M6                              | 45  | 0,4                              | 216530101                                                               | 224530101 |   |                  |   |        |       |
| 13                     | 1/2"                    | 400 bars                                                                     | 20 à 22                                            | 22   | 90  | 13 | 29,7              | 29,7 | 45  | M8                              | 50  | 0,6                              | 216530151                                                               | 224530151 |   |                  |   |        |       |
| 19                     | 3/4"                    | 400 bars                                                                     | 25 à 28                                            | 28   | 100 | 18 | 35,3              | 35,4 | 50  | M8                              | 55  | 1,0                              | 216530201                                                               | 224530201 |   |                  |   |        |       |
| 25                     | 1"                      | 400 bars                                                                     | 30 à 35                                            | 35   | 110 | 22 | 43,8              | 43,8 | 65  | M10                             | 60  | 1,7                              | 216530251                                                               | 224530251 |   |                  |   |        |       |
| 32                     | 1" 1/4                  | 400 bars                                                                     | 38 à 45                                            | 44   | 120 | 29 | 51,6              | 51,6 | 75  | M12                             | 75  | 2,5                              | 216530321                                                               | 224530321 |   |                  |   |        |       |
| 38                     | 1" 1/2                  | 400 bars                                                                     | 48 à 52                                            | 51   | 130 | 35 | 60,0              | 60,0 | 85  | M14                             | 80  | 3,8                              | 216530401                                                               | 224530401 |   |                  |   |        |       |
| 51                     | 2"                      | 400 bars                                                                     | 60 à 65                                            | 65   | 140 | 43 | 69,4              |      | 100 | M16                             | 110 | 6,2                              | 216530501                                                               |           |   |                  |   |        |       |
| 56                     | 2" 1/2                  | 400 bars                                                                     | 75 à 80                                            | 80   | 160 | 53 | 83,4              |      | 120 | M20                             | 110 | 10,3                             | 216530651                                                               |           |   |                  |   |        |       |
| 63                     | 3"                      | 400 bars                                                                     | 88 à 90                                            | 90   | 180 | 58 | 102,5             |      | 140 | M20                             | 150 | 16,6                             | 216530801                                                               |           |   |                  |   |        |       |
| 70                     | 3" 1/2                  | 400 bars                                                                     | 90 à 102                                           | 102  | 180 | 63 | 102,5             |      | 140 | M20                             | 150 | 24,3                             | 216530901                                                               |           |   |                  |   |        |       |
| 80                     | 4"                      | 400 bars                                                                     | 110 à 120                                          | 114  | 220 | 74 | 113,2             |      | 160 | M24                             | 150 | 26,3                             | 216531001                                                               |           |   |                  |   |        |       |

Brides standard livrées avec visserie métrique, joints Perbunan 90 shores.

Pour des ensembles avec :

- brides inox
- collets réduits
- collets inox
- joints FLS™
- joints viton
- joints EPDM

Brides "brise jet" BW sur demande.

Standard flanges delivered with metric screws, buna 90 shore o'rings.

For flanges composed with:

- stainless steel flanges
- reducing flanged head
- stainless steel flanged head
- FLS™ o'rings
- viton o'rings
- EPDM o'rings.

For "deflector flange" BW on request.

Standard Flansche werden mit metrische Schrauben angeliefert  
Perbunan Dichtringe 90 Shores.

Für Aufbau mit:

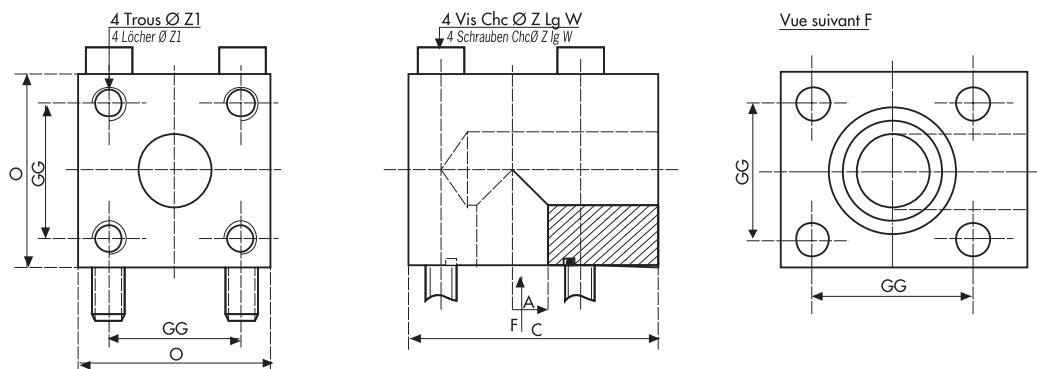
- Reduzierte Stutzen
- Flansche aus Edelstahl
- Stutzen aus Edelstahl
- FLS™ Dichtringe
- Viton Dichtringe
- EPDM Dichtringe.

# BLOCS

Blocks / Blöcke

## ISO 6164-2

### PN 400 / CETOP

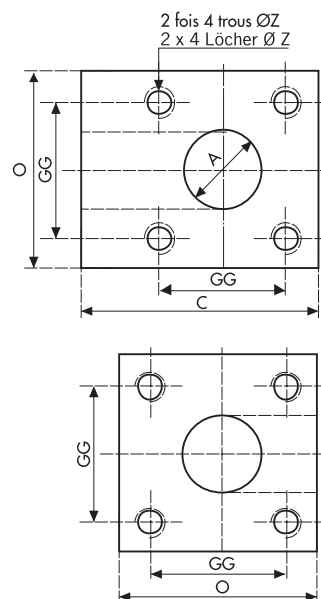


## BLOCS EQUERRES / Port elbow blocks / Winkel-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |           |       | VISSERIE<br>Screws<br>Schrauben |     |       |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |         |
|------------------------|-------------------------|----|-----|-----|-----------|-------|---------------------------------|-----|-------|-----|----------------------------------|------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25 |       | PN 400                          |     | CETOP |     |                                  | PN 400                             | CETOP   |
|                        |                         |    |     |     | PN 400    | CETOP | Z1/Z                            | W   | Z1/Z  | W   |                                  |                                    |         |
| 10                     | 3/8"                    | 11 | 40  | 55  | 24,7      | 24,7  | M6                              | 50  | M6    | 50  | 0,6                              | E160101                            | E240101 |
| 13                     | 1/2"                    | 14 | 45  | 60  | 29,7      | 29,7  | M8                              | 60  | M8    | 60  | 0,8                              | E160151                            | E240151 |
| 19                     | 3/4"                    | 18 | 50  | 66  | 35,3      | 35,4  | M8                              | 65  | M8    | 65  | 1,1                              | E160201                            | E240201 |
| 25                     | 1"                      | 22 | 65  | 80  | 43,8      | 43,8  | M10                             | 80  | M10   | 80  | 2,3                              | E160251                            | E240251 |
| 32                     | 1"1/4                   | 29 | 75  | 95  | 51,6      | 51,6  | M12                             | 100 | M12   | 100 | 3,6                              | E160321                            | E240321 |
| 38                     | 1"1/2                   | 35 | 85  | 110 | 60,0      | 60,1  | M14                             | 110 | M14   | 110 | 5,0                              | E160401                            | E240401 |
| 51                     | 2"                      | 43 | 100 | 125 | 69,4      |       | M16                             | 130 |       |     | 7,9                              | E160501                            |         |
| 56                     | 2"1/2                   | 53 | 120 | 150 | 83,4      |       | M20                             | 150 |       |     | 14,2                             | E160651                            |         |
| 63                     | 3"                      | 58 | 140 | 170 | 102,5     |       | M20                             | 170 |       |     | 22,0                             | E160801                            |         |

## BLOCS "L" / "L" blocks / L-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |           |       | VISSERIE<br>Screws<br>Schrauben |     | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |         |
|------------------------|-------------------------|----|-----|-----|-----------|-------|---------------------------------|-----|----------------------------------|------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25 |       | PN 400/<br>CETOP                |     |                                  | PN 400                             | CETOP   |
|                        |                         |    |     |     | PN 400    | CETOP | Z                               | Z   |                                  |                                    |         |
| 10                     | 3/8"                    | 11 | 40  | 55  | 24,7      | 24,7  | M6                              | M6  | 0,7                              | L160101                            | L240101 |
| 13                     | 1/2"                    | 14 | 45  | 60  | 29,7      | 29,7  | M8                              | M8  | 0,8                              | L160151                            | L240151 |
| 19                     | 3/4"                    | 18 | 50  | 66  | 35,3      | 35,4  | M8                              | M8  | 1,1                              | L160201                            | L240201 |
| 25                     | 1"                      | 22 | 65  | 80  | 43,8      | 43,8  | M10                             | M10 | 2,1                              | L160251                            | L240251 |
| 32                     | 1"1/4                   | 29 | 75  | 95  | 51,6      | 51,6  | M12                             | M12 | 3,3                              | L160321                            | L240321 |
| 38                     | 1"1/2                   | 35 | 85  | 110 | 60,0      | 60,1  | M14                             | M14 | 4,8                              | L160401                            | L240401 |
| 51                     | 2"                      | 43 | 100 | 125 | 69,4      |       | M16                             |     | 7,3                              | L160501                            |         |
| 56                     | 2"1/2                   | 53 | 120 | 150 | 83,4      |       | M20                             |     | 13,0                             | L160651                            |         |
| 63                     | 3"                      | 58 | 140 | 170 | 102,5     |       | M20                             |     | 21,0                             | L160801                            |         |



Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped :

- metric screws
- BUNA o'rings
- VITON o'rings
- FLS™ o'rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

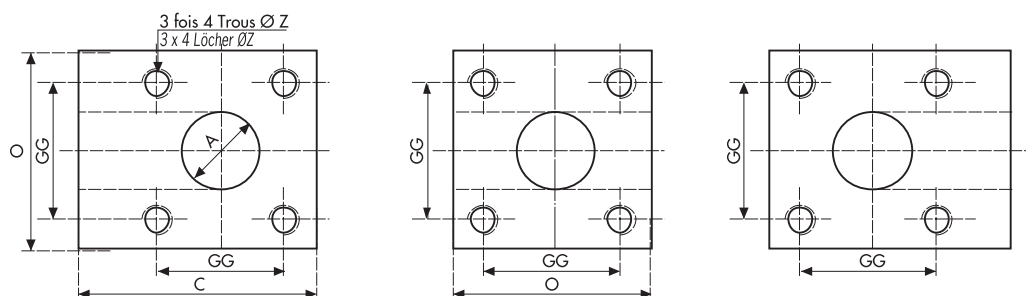
Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrische Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgänge, reduzierte Flanschen benutzen.

# BLOCS

Blocks / Blöcke

## ISO 6164-2

### PN 400 / CETOP

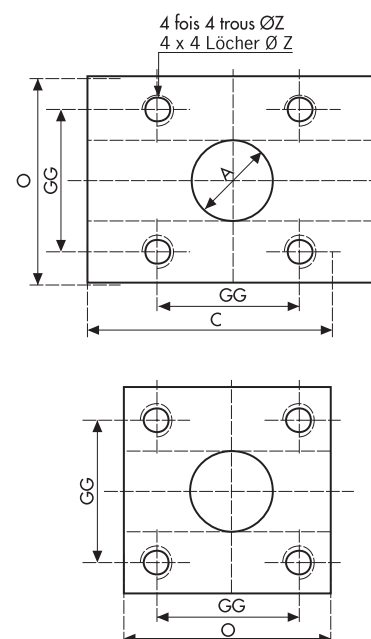


### BLOCS "T" / "T" blocks / T-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |           |       | VISSERIE<br>Screws<br>Schrauben |       | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |         |
|------------------------|-------------------------|----|-----|-----|-----------|-------|---------------------------------|-------|----------------------------------|------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25 |       | Z                               |       |                                  | PN 400                             | CETOP   |
|                        |                         |    |     |     | PN 400    | CETOP | PN 400                          | CETOP |                                  |                                    |         |
| 10                     | 3/8"                    | 11 | 40  | 55  | 24,7      | 24,7  | M6                              | M8    | 0,6                              | T160101                            | T240101 |
| 13                     | 1/2"                    | 14 | 45  | 60  | 29,7      | 29,7  | M8                              | M8    | 0,7                              | T160151                            | T240151 |
| 19                     | 3/4"                    | 18 | 50  | 66  | 35,3      | 35,4  | M8                              | M10   | 1,0                              | T160201                            | T240201 |
| 25                     | 1"                      | 22 | 65  | 80  | 43,8      | 43,8  | M10                             | M12   | 2,1                              | T160251                            | T240251 |
| 32                     | 1"1/4                   | 29 | 75  | 95  | 51,6      | 51,6  | M12                             | M14   | 3,5                              | T160321                            | T240321 |
| 38                     | 1"1/2                   | 35 | 85  | 110 | 60,0      | 60,1  | M14                             | M16   | 4,6                              | T160401                            | T240401 |
| 51                     | 2"                      | 43 | 100 | 125 | 69,4      |       | M16                             |       | 7,3                              | T160501                            |         |
| 56                     | 2"1/2                   | 53 | 120 | 150 | 83,4      |       | M20                             |       | 12,4                             | T160651                            |         |
| 63                     | 3"                      | 58 | 140 | 170 | 102,5     |       | M20                             |       | 26,0                             | T160801                            |         |

### BLOCS "X" / "X" blocks / X-Blöcke

| Ø NOMINAL<br>Nominal Ø |                         |    |     |     |           |       | VISSERIE<br>Screws<br>Schrauben |       | MASSE<br>kg<br>Weight<br>Gewicht | REFERENCE<br>Reference<br>Referenz |         |
|------------------------|-------------------------|----|-----|-----|-----------|-------|---------------------------------|-------|----------------------------------|------------------------------------|---------|
| DN<br>ND<br>ND         | TAILLE<br>Size<br>Größe | A  | O   | C   | GG ± 0,25 |       | Z                               |       |                                  | PN 400                             | CETOP   |
|                        |                         |    |     |     | PN 400    | CETOP | PN 400                          | CETOP |                                  |                                    |         |
| 10                     | 3/8"                    | 11 | 40  | 60  | 24,7      | 24,7  | M6                              | M6    | 0,6                              | C160101                            | C240101 |
| 13                     | 1/2"                    | 14 | 45  | 67  | 29,7      | 29,7  | M8                              | M8    | 0,8                              | C160151                            | C240151 |
| 19                     | 3/4"                    | 18 | 50  | 82  | 35,3      | 35,4  | M8                              | M8    | 1,2                              | C160201                            | C240201 |
| 25                     | 1"                      | 22 | 65  | 94  | 43,8      | 43,8  | M10                             | M10   | 2,5                              | C160251                            | C240251 |
| 32                     | 1"1/4                   | 29 | 75  | 110 | 51,6      | 51,6  | M12                             | M12   | 3,6                              | C160321                            | C240321 |
| 38                     | 1"1/2                   | 35 | 85  | 130 | 60,0      | 60,1  | M14                             | M14   | 5,3                              | C160401                            | C240401 |
| 51                     | 2"                      | 43 | 100 | 150 | 69,4      |       | M16                             |       | 9,0                              | C160451                            |         |
| 56                     | 2"1/2                   | 53 | 120 | 200 | 83,4      |       | M20                             |       | 16,0                             | C160501                            |         |
| 63                     | 3"                      | 58 | 140 | 220 | 102,5     |       | M20                             |       | 22,0                             | C160651                            |         |



Les références s'entendent pour des blocs nus en acier, sans vis et sans joint, pour des livraisons avec :

- visserie métrique
- joint PERBUNAN
- joint VITON
- joints FLS™
- blocs inox.

Blocs à sorties différentes (utiliser des brides réduites).

The references refer to the blocks alone without gaskets. To obtain blocks equipped :

- metric screws
- BUNA o-rings
- VITON o-rings
- FLS™ o-rings
- stainless steel blocks.

Blocks with different outlets (use reduced flanges).

Die Referenzen sind für Blöcke in Stahl, ohne Schrauben und ohne Dichtringe.  
Für Lieferungen mit metrische Schrauben - Perbunan Dichtringe - Viton Dichtringe - FLS™ Dichtringe - rostfreie Blöcke.  
Bei Blöcke mit unterschiedlichen Ausgänge, reduzierte Flanschen benutzen.

# COMPOSANTS COMMUNS

Common components / Gemeinsame Bestandteile

ISO 6162-1 / 6164-1 (SAE 3000)

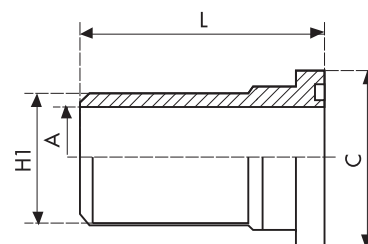
PN 250 / CETOP

CODE 61 / Kode 61

## COLLET BW

Flanged head BW / Stutzen BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |     |    |       |     | REFERENCE<br>AVEC GORGE<br>Are grooved<br>Referenz mit Nut | REFERENCE<br>SANS GORGE<br>Without<br>groove<br>Referenz ohne<br>Nut |
|-------------------------------------|-------------------------|----------------------------------------------------|-----|----|-------|-----|------------------------------------------------------------|----------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | MM, GAZ,<br>SCHD,                                  | H1  | A  | C     | L   |                                                            |                                                                      |
| 10                                  | 3/8"                    | 14 à 17,14                                         | 18  | 12 | 24,5  | 40  | N6210101                                                   | P6210101                                                             |
| 13                                  | 1/2"                    | 18 à 22                                            | 22  | 13 | 30,2  | 45  | N6210151                                                   | P6210151                                                             |
| 19                                  | 3/4"                    | 25 à 28                                            | 28  | 19 | 38,1  | 50  | N6210201                                                   | P6210201                                                             |
| 25                                  | 1"                      | 30 à 35                                            | 35  | 25 | 44,5  | 55  | N6210251                                                   | P6210251                                                             |
| 32                                  | 1"1/4                   | 38 à 42,4                                          | 43  | 32 | 50,8  | 60  | N6210321                                                   | P6210321                                                             |
| 38                                  | 1"1/2                   | 48 à 50                                            | 50  | 38 | 60,4  | 65  | N6210401                                                   | P6210401                                                             |
| 51                                  | 2"                      | 60 à 63                                            | 62  | 47 | 71,4  | 70  | N6210501                                                   | P6210501                                                             |
| 64                                  | 2"1/2                   | 73 à 76                                            | 74  | 58 | 84,1  | 75  | N6210651                                                   | P6210651                                                             |
|                                     |                         |                                                    | 76  |    | 87,2  |     | N6210653                                                   | ■ P6210653                                                           |
| 76                                  | 3"                      | 88 à 90                                            | 90  | 70 | 101,6 | 85  | N6210801                                                   | P6210801                                                             |
| 89                                  | 3"1/2                   | 100 à 102                                          | 102 | 89 | 114,3 | 90  | N6210901                                                   | P6210901                                                             |
|                                     |                         |                                                    |     | 90 |       |     | N6210902                                                   | ■ P6210902                                                           |
| 102                                 | 4"                      | 113 à 120,00                                       | 114 |    | 131,0 | 100 | N6211001                                                   | P6211001                                                             |
|                                     |                         |                                                    |     |    |       |     | N6211002                                                   | ■ P6211002                                                           |

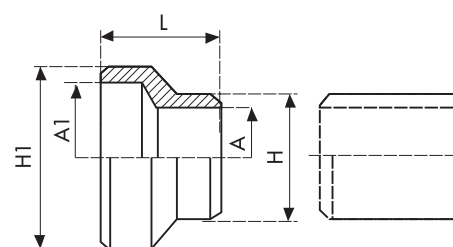


FLANGED HEAD BW  
COLLET BW  
Stutzen BW

## ADAPTEUR BW

BW adaptor / Adapter BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |     |    |     |    |    | REFERENCE<br>Reference<br>Referenz |
|-------------------------------------|-------------------------|-----|----|-----|----|----|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | H1  | A1 | H   | A  | L  |                                    |
| 13                                  | 1/2" x 3/8"             | 22  | 15 | 18  | 12 | 20 | N16210101                          |
| 19                                  | 3/4" x 1/2"             | 28  | 20 | 22  | 15 | 30 | N16210151                          |
| 25                                  | 1" x 3/4"               | 35  | 25 | 28  | 20 | 35 | N16210201                          |
| 32                                  | 1"1/4 x 1"              | 43  | 32 | 35  | 25 | 45 | N16210251                          |
| 38                                  | 1"1/2 x 1"1/4           | 50  | 38 | 43  | 32 | 50 | N16210321                          |
| 51                                  | 2" x 1"1/2              | 62  | 47 | 50  | 38 | 55 | N16210401                          |
| 64                                  | 2"1/2 x 2"              | 74  | 58 | 62  | 47 | 60 | N16210501                          |
| 76                                  | 3" x 2"1/2              | 90  | 70 | 74  | 58 | 65 | N16210651                          |
| 89                                  | 3"1/2 x 3"              | 102 | 77 | 90  | 70 | 70 | N16210801                          |
| 102                                 | 4" x 3"1/2              | 114 | 90 | 102 | 77 | 70 | N16210901                          |



BW ADAPTOR  
ADAPTEUR BW  
Adapter BW

- Ce collet se monte sur la bride carrée PN 250  
Pour des composants en inox.
- This stud could be used with the square flange PN 250  
For stainless steel components.
- Dieser Stutz kann auf den Viereckige Flansch PN 250 aufgebaut werden.

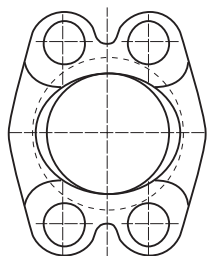
# COMPOSANTS COMMUNS

Common components / Gemeinsame Bestandteile

ISO 6162-1 / 6164-1 (SAE 3000)

PN 250 / CETOP

## CODE 61 / Kode 61

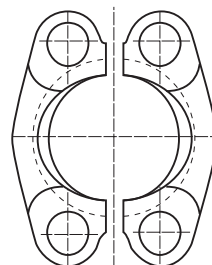


### BRIDES MONOBLOC SAE

Monobloc flange

Vollflansch SAE

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | VISserie<br>Screws<br>Schrauben |           | REFERENCE<br>MONOBLOC<br>One piece<br>flange<br>Referenz<br>Vollflansch |
|-------------------------------------|-------------------------|---------------------------------|-----------|-------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | TYPE<br>1                       | TYPE<br>2 |                                                                         |
| 10                                  | 3/8"                    | M8                              |           | A10101                                                                  |
| 13                                  | 1/2"                    | M8                              | 5/16"     | A10151                                                                  |
| 19                                  | 3/4"                    | M10                             | 3/8"      | A10201                                                                  |
| 25                                  | 1"                      | M10                             | 3/8"      | A10251                                                                  |
| 32                                  | 1" 1/4                  | M12                             |           | A10321                                                                  |
|                                     |                         |                                 | 7/16"     | A10322                                                                  |
|                                     |                         | M10                             |           | A10323                                                                  |
| 38                                  | 1" 1/2                  | M14                             |           | A10401                                                                  |
|                                     |                         | M12                             | 1/2"      | A10402                                                                  |
| 51                                  | 2"                      | M14                             |           | A10501                                                                  |
|                                     |                         | M12                             | 1/2"      | A10502                                                                  |
| 64                                  | 2" 1/2                  | M14                             |           | A10651                                                                  |
|                                     |                         | M12                             | 1/2"      | A10652                                                                  |
| 76                                  | 3"                      | M16                             | 5/8"      | A10801                                                                  |
| 89                                  | 3" 1/2                  | M16                             | 5/8"      | A10901                                                                  |
| 102                                 | 4"                      | M16                             | 5/8"      | A11001                                                                  |



### 1/2 BRIDES

Split flange

1/2 Flansch

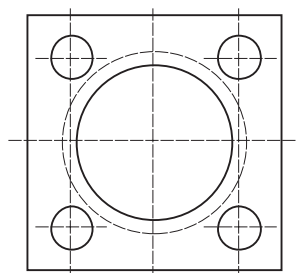
| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | VISserie<br>Screws<br>Schrauben |           | REFERENCE<br>1/2 BRIDE<br>Split<br>flange<br>Referenz<br>1/2 Flansch |
|-------------------------------------|-------------------------|---------------------------------|-----------|----------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | TYPE<br>1                       | TYPE<br>2 |                                                                      |
| 13                                  | 1/2"                    | M8                              | 5/16"     | B10151                                                               |
| 19                                  | 3/4"                    | M10                             | 3/8"      | B10201                                                               |
| 25                                  | 1"                      | M10                             | 3/8"      | B10251                                                               |
| 32                                  | 1" 1/4                  | M12                             |           | B10321                                                               |
|                                     |                         |                                 | 7/16"     | B10322                                                               |
|                                     |                         | M10                             |           | B10323                                                               |
| 38                                  | 1" 1/2                  | M14                             |           | B10401                                                               |
|                                     |                         | M12                             | 1/2"      | B10402                                                               |
| 51                                  | 2"                      | M14                             |           | B10501                                                               |
|                                     |                         | M12                             | 1/2"      | B10502                                                               |
| 64                                  | 2" 1/2                  | M14                             |           | B10651                                                               |
|                                     |                         | M12                             | 1/2"      | B10652                                                               |
| 76                                  | 3"                      | M16                             | 5/8"      | B10801                                                               |
| 89                                  | 3" 1/2                  | M16                             | 5/8"      | B10901                                                               |
| 102                                 | 4"                      | M16                             | 5/8"      | B11001                                                               |

## CARREE PN 250/CETOP/"S"

Square flange

Viereckige Flansch PN 250

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | BRIDES CARREES REFERENCE<br>Square flange<br>Referenz Viereckige Flansch |        |        |
|-------------------------------------|-------------------------|--------------------------------------------------------------------------|--------|--------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | PN 250                                                                   | CETOP  | "S"    |
| 10                                  | 3/8"                    | A50101                                                                   | A30101 | A70101 |
| 13                                  | 1/2"                    | A50151                                                                   | A30151 | A70151 |
| 19                                  | 3/4"                    | A50201                                                                   | A30201 | A70201 |
| 25                                  | 1"                      | A50251                                                                   | A30251 | A70251 |
| 32                                  | 1" 1/4                  | A50321                                                                   | A30321 | A70321 |
| 38                                  | 1" 1/2                  | A50401                                                                   | A30401 | A70401 |
| 51                                  | 2"                      | A50501                                                                   | A30501 | A70501 |
| 64                                  | 2" 1/2                  | A50651                                                                   | A30651 | A70651 |
| 76                                  | 3"                      | A50801                                                                   | A30801 | A70801 |
| 89                                  | 3" 1/2                  |                                                                          | A30901 |        |
| 102                                 | 4"                      |                                                                          | A31001 | A71001 |



# COMPOSANTS COMMUNS

Common components / Gemeinsame Bestandteile

ISO 6162-2 / 6164-2 (SAE 6000)

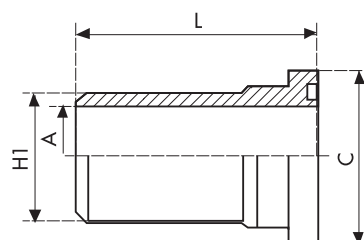
PN 400 / CETOP

CODE 62 / Kode 62

## COLLET BW

Flanged head BW / Stutzen BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |       |    |              |     | REFERENCE<br>AVEC GORGE<br>Are grooved<br>Referenz mit Nut | REFERENCE<br>SANS GORGE<br>Without<br>groove<br>Referenz ohne<br>Nut |
|-------------------------------------|-------------------------|----------------------------------------------------|-------|----|--------------|-----|------------------------------------------------------------|----------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | MM, GAZ,<br>SCHD,                                  | H1    | A  | C            | L   |                                                            |                                                                      |
| 10                                  | 3/8"                    | 16 à 18                                            | 17,5  | 11 | 26,0         | 40  | N6220101                                                   | P6220101                                                             |
| 13                                  | 1/2"                    | 20 à 22                                            | 22,0  | 13 | 31,8         | 45  | N6220151                                                   | P6220151                                                             |
| 19                                  | 3/4"                    | 25 à 28                                            | 28,0  | 18 | 39,5<br>41,3 | 50  | N6220201<br>N6220202                                       | ■ P6220201<br>P6220202                                               |
| 25                                  | 1"                      | 30 à 35                                            | 35,0  | 22 | 47,6         | 55  | N6220251                                                   | P6220251                                                             |
| 32                                  | 1"1/4                   | 38 à 45                                            | 44,0  | 29 | 54,0         | 60  | N6220321                                                   | P6220321                                                             |
| 38                                  | 1"1/2                   | 48 à 52                                            | 51,0  | 35 | 63,5         | 65  | N6220401                                                   | P6220401                                                             |
| 51                                  | 2"                      | 60 à 65                                            | 65,0  | 43 | 79,4         | 70  | N6220501                                                   | P6220501                                                             |
| 64                                  | 2"1/2                   | 75 à 80                                            | 80,0  | 53 | 94,2         | 80  | N6220651                                                   | ■ P6220651                                                           |
| 76                                  | 3"                      | 88 à 90                                            | 90,0  | 58 | 104,0        | 90  | N6220801                                                   | ■ P6220801                                                           |
| 89                                  | 3"1/2                   | 90 à 102                                           | 102,0 | 63 | 119,0        | 90  | N6220901                                                   | ■ P6220901                                                           |
| 102                                 | 4"                      | 110 à 120                                          | 114,0 | 74 | 131,0        | 110 | N6221001                                                   | ■ P6221001                                                           |

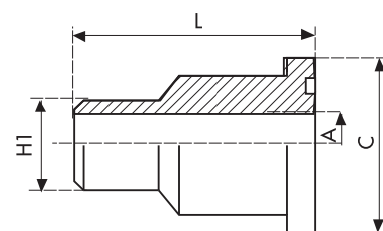


FLANGED HEAD BW  
COLLET BW  
Stutzen BW

## COLLET REDUIT D'UN Ø BW

Reducing flanged head BW / Reduzierte Stutzen BW

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | Ø EXTERIEUR<br>DU TUBE<br>Tube od<br>Aussen Ø Rohr |      |    |              |     | REFERENCE<br>AVEC GORGE<br>Are grooved<br>Referenz mit Nut | REFERENCE<br>SANS GORGE<br>Without<br>groove<br>Referenz ohne<br>Nut |
|-------------------------------------|-------------------------|----------------------------------------------------|------|----|--------------|-----|------------------------------------------------------------|----------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | MM, GAZ,<br>SCHD,                                  | H1   | A  | C            | L   |                                                            |                                                                      |
| 13                                  | 1/2"                    | 16 à 18                                            | 17,5 | 11 | 31,8         | 45  | N14220151                                                  | P14220151                                                            |
| 19                                  | 3/4"                    | 20 à 22                                            | 22   | 13 | 39,5<br>41,3 | 50  | N14220201<br>N14220202                                     | ■ P14220201<br>P14220202                                             |
| 25                                  | 1"                      | 25 à 28                                            | 28   | 18 | 47,6         | 55  | N14220251                                                  | P14220251                                                            |
| 32                                  | 1"1/4                   | 30 à 35                                            | 35   | 22 | 54,0         | 60  | N14220321                                                  | P14220321                                                            |
| 38                                  | 1"1/2                   | 38 à 45                                            | 44   | 29 | 63,5         | 65  | N14220401                                                  | P14220401                                                            |
| 51                                  | 2"                      | 48 à 52                                            | 51   | 35 | 79,4         | 70  | N14220501                                                  | P14220501                                                            |
| 64                                  | 2"1/2                   | 60 à 65                                            | 65   | 43 | 94,2         | 80  | N14220651                                                  | ■ P14220651                                                          |
| 76                                  | 3"                      | 75 à 80                                            | 80   | 53 | 104,0        | 90  | N14220801                                                  | ■ P14220801                                                          |
| 89                                  | 3"1/2                   | 88 à 90                                            | 90   | 58 | 119,0        | 90  | N14220901                                                  | ■ P14220901                                                          |
| 102                                 | 4"                      | 90 à 102                                           | 102  | 63 | 131,0        | 110 | N14221001                                                  | ■ P14221001                                                          |



REDUCING FLANGED HEAD BW  
COLLET REDUIT BW  
Reduzierte Stutzen BW

- Ce collet se monte sur la bride carrée PN 400.  
Pour des composants en inox.
- This stud could be used with the square flange PN 400.  
For stainless steel components.
- Dieser Stutz kann auf den Viereckige Flansch PN 400 aufgebaut werden.



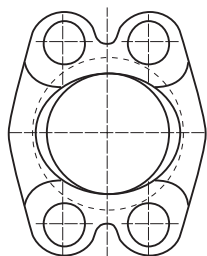
# COMPOSANTS COMMUNS

Common components / Gemeinsame Bestandteile

ISO 6162-2 / 6164-2 (SAE 6000)

PN 400 / CETOP

## CODE 62 / Kode 62

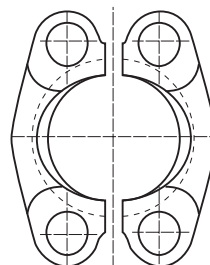


### BRIDES MONOBLOC

Monobloc flange

Vollflansch

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | VISserie<br>Screws<br>Schrauben |           | REFERENCE<br>MONOBLOC<br>One piece<br>flange<br>Referenz<br>Vollflansch |
|-------------------------------------|-------------------------|---------------------------------|-----------|-------------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | TYPE<br>1                       | TYPE<br>2 |                                                                         |
| 13                                  | 1/2"                    | M8                              | 5/16"     | A20151                                                                  |
| 19                                  | 3/4"                    | M10                             | 3/8"      | A20201                                                                  |
| 25                                  | 1"                      | M12                             | 7/16"     | A20251                                                                  |
| 32                                  | 1" 1/4                  | M14                             |           | A20321                                                                  |
|                                     |                         | M12                             | 1/2"      | A20322                                                                  |
| 38                                  | 1" 1/2                  | M16                             | 5/8"      | A20401                                                                  |
| 51                                  | 2"                      | M20                             | 3/4"      | A20501                                                                  |



### 1/2 BRIDES

Split flange

1/2 Flansch

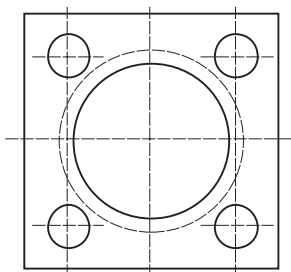
| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | VISserie<br>Screws<br>Schrauben |           | REFERENCE<br>1/2 BRIDE<br>Split<br>flange<br>Referenz<br>1/2 Flansch |
|-------------------------------------|-------------------------|---------------------------------|-----------|----------------------------------------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | TYPE<br>1                       | TYPE<br>2 |                                                                      |
| 13                                  | 1/2"                    | M8                              | 5/16"     | B20151                                                               |
| 19                                  | 3/4"                    | M10                             | 3/8"      | B20201                                                               |
| 25                                  | 1"                      | M12                             | 7/16"     | B20251                                                               |
| 32                                  | 1" 1/4                  | M14                             |           | B20321                                                               |
|                                     |                         | M12                             | 1/2"      | B20322                                                               |
| 38                                  | 1" 1/2                  | M16                             | 3/8"      | B20401                                                               |
| 51                                  | 2"                      | M20                             | 3/4"      | B20501                                                               |

## CARREE PN 400 / CETOP

Square flange

Viereckige Flansch PN 400

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         | BRIDES CARREES<br>REFERENCE<br>Square flange<br>Referenz Viereckige<br>Flansch |        |
|-------------------------------------|-------------------------|--------------------------------------------------------------------------------|--------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | PN 400                                                                         | CETOP  |
| 10                                  | 3/8"                    | A60101                                                                         | A30102 |
| 13                                  | 1/2"                    | A60151                                                                         | A30152 |
| 19                                  | 3/4"                    | A60201                                                                         | A30202 |
| 25                                  | 1"                      | A60251                                                                         | A30252 |
| 32                                  | 1" 1/4                  | A60321                                                                         | A30322 |
| 38                                  | 1" 1/2                  | A60401                                                                         | A30402 |
| 51                                  | 2"                      | A60501                                                                         |        |
| 64                                  | 2" 1/2                  | A60651                                                                         |        |
| 76                                  | 3"                      | A60801                                                                         |        |
| 89                                  | 3" 1/2                  | A60901                                                                         |        |
| 102                                 | 4"                      | A61001                                                                         |        |



# COMPOSANTS COMMUNS

Common components / Gemeinsame Bestandteile

## JOINTS "FLS™" / joints toriques 90 shore

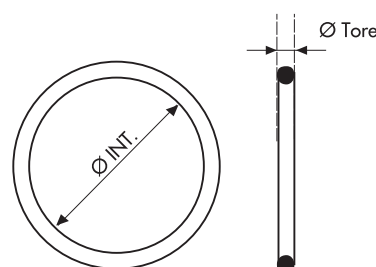
O-rings 90 shore / Dichtringe 90 shore

- Nous proposons également notre joint de bride unique FLS™ pour remplacer les joints toriques norme SAE (J518c) sans aucune modification des brides. Cette combinaison unique d'une couche externe résistante à l'extrusion et d'une couche intérieure plus souple permet d'améliorer les performances d'étanchéité lors des variations de pression dans le circuit permettant un allongement de la durée de vie et une réduction des fréquences de maintenance.
- We also propose our unique FLS™ Flange Seals to replace standard SAE (J518c) O-rings without any modification of the flanges. This unique combination of an outer extrusion resistant lamina to an inner pressure responsive sealing lamina provides improved sealing performance and longer service life which reduces maintenance frequencies.
- Ausserdem schlagen wir unsere einzigartige FLS™ Flanschedichtung vor, um die torische Dichtungen (laut SAE - J518c Norm) ohne Veränderung der Flanschen zu ersetzen. Diese einzige Verbindungsbildung einer strangpressenden haltbaren Aussenschicht und einer flexibleren Innenschicht ermöglicht, die Dichtungsleistungsfähigkeiten während die Drucksveränderungen im Umlauf zu verbessern. Dies garantiert eine zunehmende Lebensdauer und eine Reduzierung der Instandhaltungsfrequenz.

## JOINTS TORIQUES 90 SHORE

O-rings 90 shore / Dichtringe 90 shore

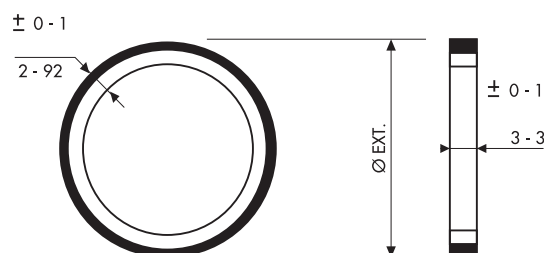
| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |                                             | BUNA                                          |                                      |
|-------------------------------------|-------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | Ø INTERIEUR<br>x Ø TORE<br>Innen Ø x Ø Tore | REFERENCE<br>PERBUNAN<br>Referenz<br>Perbunan | REFERENCE<br>VITON<br>Referenz Viton |
| 10                                  | 3/8"                    | 17,12 x 2,62                                | ANBR9K01712                                   | AFPM9K01712                          |
| 13                                  | 1/2"                    | 18,64 x 3,53                                | ANBR9N01864                                   | AFPM9N01864                          |
| 19                                  | 3/4"                    | 24,99 x 3,53                                | ANBR9N02499                                   | AFPM9N02499                          |
| 25                                  | 1"                      | 32,92 x 3,53                                | ANBR9N03292                                   | AFPM9N03292                          |
| 32                                  | 1" 1/4                  | 37,69 x 3,53                                | ANBR9N03769                                   | AFPM9N03769                          |
| 38                                  | 1" 1/2                  | 47,22 x 3,53                                | ANBR9N04722                                   | AFPM9N04722                          |
| 51                                  | 2"                      | 56,74 x 3,53                                | ANBR9N05674                                   | AFPM9N05674                          |
| 64                                  | 2" 1/2                  | 69,44 x 3,53                                | ANBR9N06944                                   | AFPM9N06944                          |
| 76                                  | 3"                      | 85,32 x 3,53                                | ANBR9N08532                                   | AFPM9N08532                          |
| 89                                  | 3" 1/2                  | 98,02 x 3,53                                | ANBR9N09802                                   | AFPM9N09802                          |
| 102                                 | 4"                      | 110,72 x 3,53                               | ANBR9N11072                                   | AFPM9N11072                          |



## JOINTS TYPES "FLS™"

O-rings type FLS™ / FLS™ Dichtringe

| Ø NOMINAL<br>Nominal Ø<br>Nominal Ø |                         |                   |                   |                                                                    |                                    |
|-------------------------------------|-------------------------|-------------------|-------------------|--------------------------------------------------------------------|------------------------------------|
| DN<br>ND<br>ND                      | TAILLE<br>Size<br>Größe | Ø INT.<br>Innen Ø | Ø EXT.<br>Außen Ø | JOINT<br>TORIQUE<br>EQUIVALENT<br>PERBUNAN<br>Referenz<br>Perbunan | REFERENCE<br>FLS™<br>Referenz FLS™ |
| 13                                  | 1/2"                    | 19,68             | 25,52             | ANBR9N01864                                                        | FLS 0151                           |
| 19                                  | 3/4"                    | 26,03             | 31,87             | ANBR9N02499                                                        | FLS 0201                           |
| 25                                  | 1"                      | 33,91             | 39,75             | ANBR9N03292                                                        | FLS 0251                           |
| 32                                  | 1" 1/4                  | 38,73             | 44,57             | ANBR9N03769                                                        | FLS 0321                           |
| 38                                  | 1" 1/2                  | 48,13             | 53,97             | ANBR9N04722                                                        | FLS 0401                           |
| 51                                  | 2"                      | 57,66             | 63,50             | ANBR9N05674                                                        | FLS 0501                           |
| 64                                  | 2" 1/2                  | 70,48             | 76,32             | ANBR9N06944                                                        | FLS 0651                           |
| 76                                  | 3"                      | 86,23             | 92,07             | ANBR9N08532                                                        | FLS 0801                           |
| 89                                  | 3" 1/2                  | 96,68             | 104,52            | ANBR9N09802                                                        | FLS 0901                           |
| 102                                 | 4"                      | 111,38            | 117,22            | ANBR9N11072                                                        | FLS 1001                           |





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