C Overview of Elements

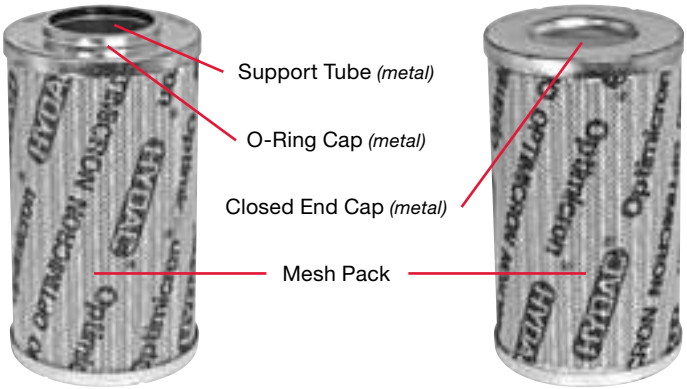
Overview of Elements

Optimicron® Elements

- ON - code designation
- Glass fiber, multi-layered with support
- Collapse rating - 290 psid (20 bar)
- 1, 3, 5, 10, 15, 20 micron
- Filtration Rating $\beta_{x(c)} \geq 1000$
- Depth Filtration
- Pressure and Return elements available
- Disposable - single use element
- Plastic outerwrap

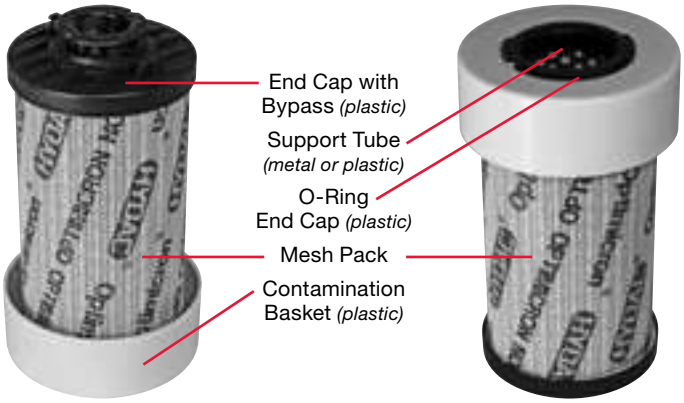


Optimicron® Pressure Element

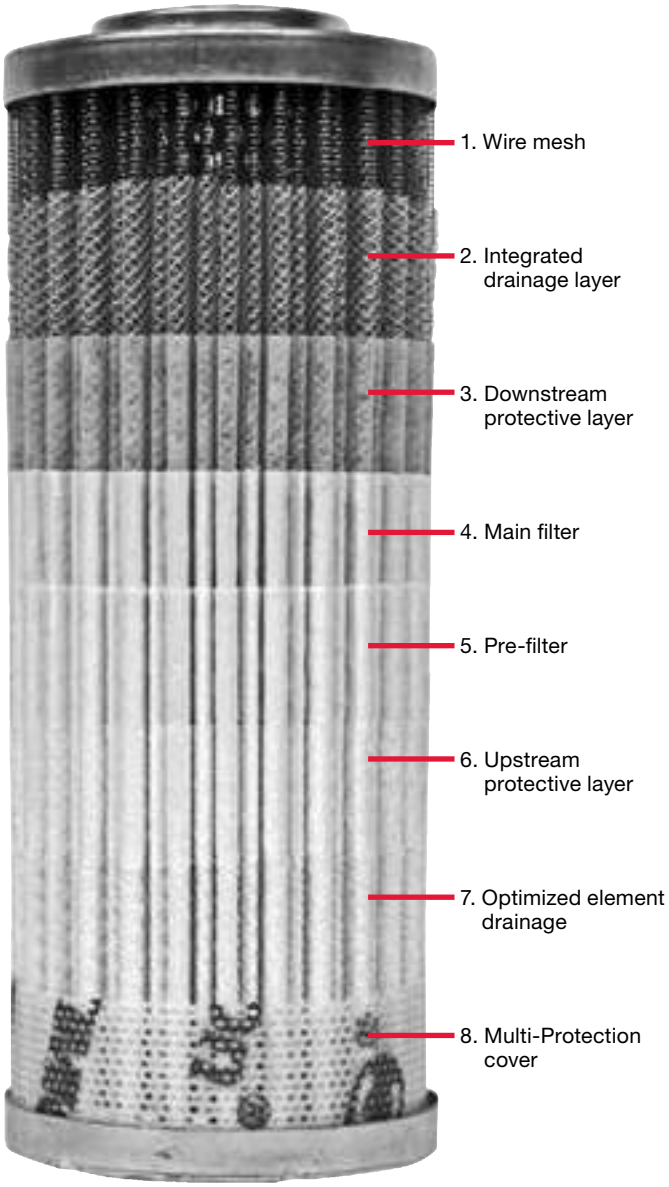


Optimicron® Return Element

Return filters include Bypass in the endcap - insures proper bypass operation at all times.



Element Construction

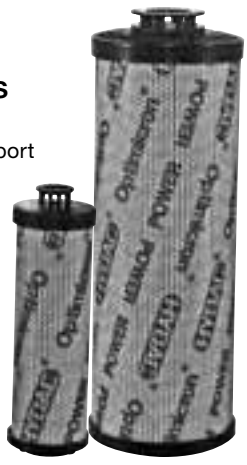


Optimicron®

Optimicron® Power

Optimicron® Power Elements

- ON/PO - code designation
- Synthetic Fiber, multi-layered with support
- All Plastic Construction
- Collapse Rating - 145 psid
- 3, 5, 10, 20 micron
- Stat-Free Technology included
- Depth Filtration
- Disposable - single use element
- Plastic outerwrap
- API 614 Approved



PN#02081318 / 03.16 / FIL1505-1696

Betamicron® Elements

- BN4HC - Low Collapse (290 psid)
- BH4HC - High Collapse (3045 psid)

- code designation

- Fiberglass, Non-Woven
- 1, 3, 5, 10, & 20 micron
- Filtration Rating $ß_{x(c)} \geq 1000$
- High Beta Stability
- Structurally Designed for Dynamic Flow Conditions
- Collapse Rating 290 psid
- Depth Filtration
- Disposable



Betamicron® / Aquamicron® Combination Elements

- BN4AM - code designation
- Collapse Rating - 145 psid
- Undissolved (free) **Water Removal ONLY!**
- 3 & 10 micron
- Filtration Rating $ß_{x(c)} > 200$
- Depth Filtration
- Disposable



ECOmicron® Elements

- ECON2 - code designation
- Fiberglass
- All Plastic Construction
- Collapse Rating - 145 psid
- 3, 5, 10, & 20 micron
- Filtration Rating $ß_{x(c)} \geq 1000$
- Depth Filtration
- Disposable



Aquamicron® Elements

- AM - code designation
- Collapse Rating - 145 psid
- Undissolved (free) **Water Removal ONLY!**
- 40 micron
- Surface filtration
- Disposable



Wire Mesh Elements

- W/HC - code designation
- Wire Mesh
- Collapse Rating - 290 psid
- 25, 50, 74, 100, 149, 200 micron
- Surface Filtration
- Cleanable
- Corrosion protection - Stainless Steel filter media and Tin/Nickel plated hardware



Polyester Elements

- P/HC - code designation
- Polyester media - plastic coating eliminates swelling
- Collapse Rating - 145 psid
- 10 & 20 micron
- Surface Filtration
- Disposable
- Higher contamination retention than cellulose
- Low flow resistance = low ΔP/Q
- Media supported by wire mesh



Metal Fiber Elements

- V - code designation
- Stainless Steel media; Tin plated steel hardware
- Collapse Rating - 3045 psid
- 3, 5, 10, & 20 micron
- High Efficiency Rated available on request 1, 3, 5, 10, & 20 micron *(Depth filtration optional)*
- Surface Filtration *(standard)*
- Cleanable
- High filtration efficiency curve even under extreme dynamic loads
- Low flow resistance = low ΔP/Q



Mobilemicron Elements

- MM - code designation
- Melt blown - Fiberglass
- Extremely low clean element ΔP / flow rate for cold start applications
- Filtration Efficiency Rating $ß_{x(c)} \geq 200$
- 8, 10, 15 micron
- Good Beta Stability
- Good Dirt Holding Capacity
- Collapse Rating - 145 psid
- Depth Filtration
- Disposable



Optimicron® Series

Energy efficient filtration



Optimicron®

Description

The Optimicron filter elements have been optimized with respect to filtration performance and energy efficiency. These elements offer the best optimization of separation efficiency, service life and differential pressure versus flow rate.

As a complete element package, the innovative characteristics of the HYDAC technology has a very positive impact on the differential pressure of the elements and high degree of filtration efficiency and performance.

Features

- Unique HELIOS pleat geometry – optimizes media area open to flow to calm the flow in areas between pleats reducing ΔP.
- Outer wrap perforations insure optimized flow onto the filter pleats and help to minimize pressure losses.
- Outer wrap perforations also help to distribute the fluid incidence stresses evenly in the axial and radial directions and thus increase tear resistance.

Technical Specifications

Collapse Rating	290 psid (20 bar)
Temperature range	-22°F to 212°F (-30°C to 100°C)
Flow direction	outside to inside
Category	Disposable - single use
Bypass Cracking Pressure R *(only)* = 43 psid (3 bar) *(standard, others available)*	

“D” Pressure Elements Model Code

0660 D 010 ON / V SFREE

Size
0030, 0035, 0055, 0060, 0075, 0095, 0110, 0140, 0160, 0240, 0260, 0280, 0300, 0330, 0450, 0500, 0650, 0660, 0900, 0990, 1320, 1500

Type
D = Pressure line element

Filtration Rating *(microns)*
1, 3, 5, 10, 15, 20

Element Media
ON = Optimicron®

Seal
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)
EPR = Ethylene propylene rubber (EPR)

Supplementary Details
SO263 = Modification of ON & W/HC elements for Skydrol or HYJET phosphate ester fluids
SFREE = Element specially designed to minimize electrostatic charge generation

“R” Return Elements Model Code

0330 R 005 ON / V B6 SFREE

Size
0030, 0060, 0075, 0090, 0110, 0150, 0160, 0165, 0185, 0195, 0210, 0240, 0270, 0280, 0330, 0450, 0500, 0580, 0600, 0606, 0750, 0850, 0950, 1300, 1700, 2600

Type
R = Return line element

Filtration Rating *(microns)*
1, 3, 5, 10, 15, 20

Element Media
ON = Optimicron®

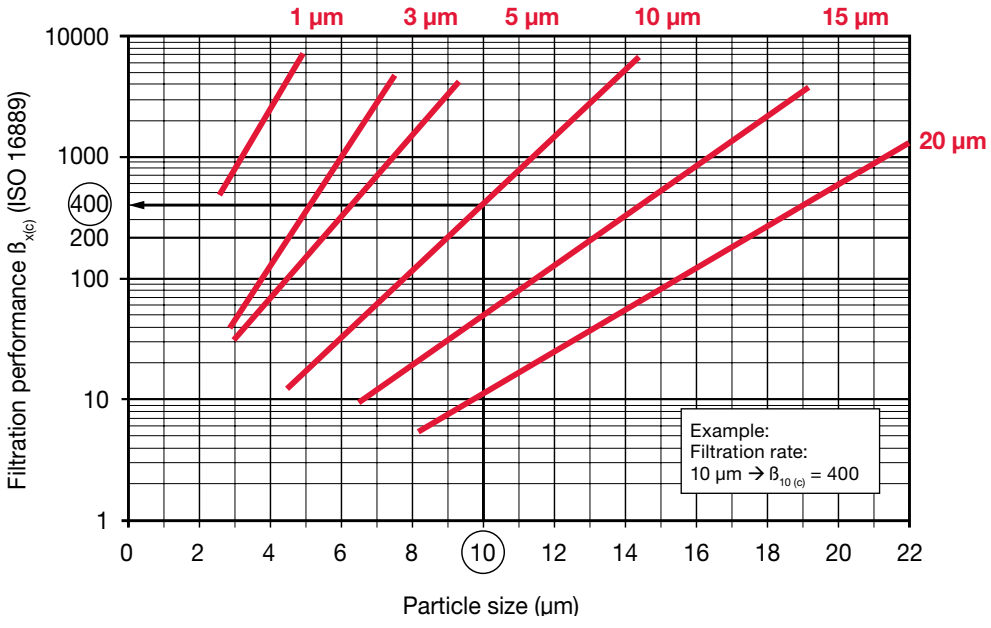
Seal
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)
EPR = Ethylene propylene rubber (EPR)

Bypass Valve
(omit) = 43 psid (3 bar) *(standard)*
B1 = 14.5 psid (1 bar) *(lube or coolant)*
B2 = 29 psid (2 bar) *(HYDAC optional return)*
B6 = 87 psid (6 bar) *(return line extended life)*
KB = No bypass *(flushing systems)*

Supplementary Details
SO263 = Modification of ON & W/HC elements for Skydrol or HYJET phosphate ester fluids
SFREE = Element specially designed to minimize electrostatic charge generation

Model Codes Containing Red are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Beta Ratio (ß) Values for Optimicron



Optimicron® Power Series

Optimized Elements in Power Stations



Optimicron® Power

Description

Optimicron Power elements have been developed to both meet the heavy demands of power plant applications and comply with API-614 specifications. The elements are designed to meet stringent requirements of applications such as turbine lubrication, hydraulic turbine lift systems, and rotary compressors. Key considerations for this type of filtration are low resistance to flow (low differential pressures through the elements) and safety with regard to electrostatic discharge. This element incorporates Stat-Free® technology which safeguards and inhibits the dangerous generation of static electricity (ESD) which can cause fires and destroy sensitive electronic components and sensors.

As a complete element package, the innovative characteristics of this new technology provide low energy losses, and the compact nature of the element assures better conditioning of the flow. This homogenous flow results in better access to the contaminates and more efficient usage of the surface areas to better filter the contamination.

Features

- API 614 compliant
- Glass fiber media, single-layer with support
- Innovative outer wrap with increased strength & better diffuser effect = homogenous flow
- Integrated Stat-Free® technology
- Low collapse only - 145 psid (10 bar)

Technical Specifications

Collapse Rating	145 psi (10 bar)
Temperature range	-22°F to 212°F (-30°C to 100°C)
Flow direction	outside to inside
Filtration Rating	5, 10, 20 µm
Category	Disposable - single use
Compatibility with hydraulic fluids Mineral oils: Test criteria to ISO 2943 Lubricating oils: Test criteria to ISO 2943	
Bypass Cracking Pressure No bypass *(standard per API 614)* 43 psid (3 bar) *(optional)* - Others available for non-API applications	

Model Code

2600 A 010 ON/PO / _ _

Size
0110, 0120, 0230, 0240, 0330, 0500, 0540, 0880, 1400, 2600, 2700 = A
0110, 0240, 0330, 0500, 0660, 0850, 0950, 1300, 1700, 2600, 2700 = R

Type
A = API-614 compliant (10 µm ≥ 10)
R = Return line power (5, 10, 20 µm)

Filtration Rating *(microns)*
5, 10, 20

Element Media
ON/PO = Optimicron® Power

Seal
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Bypass Valve
(omit) = No bypass *(standard per API 614)*
B3 = 43 psid (3 bar) *(non-compliant to API-614)*
B6 = 87 psid (6 bar)
KB = No bypass
R element only

Supplementary Details
Optimicron® Power was developed including integrated Stat-Free® technology. It will replace all elements labeled with G/HC/-SFREE. This change also applies to filter housings currently using G/HC/-SFREE elements.

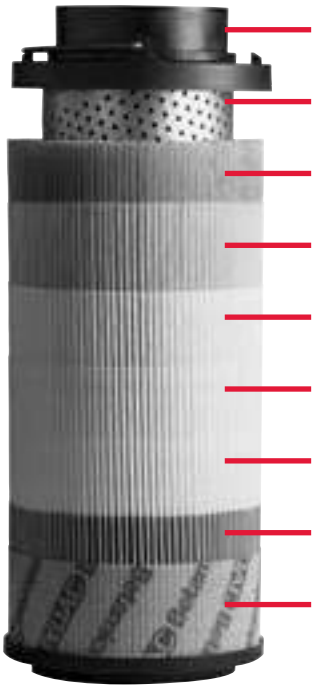
Model Codes Containing Red are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Betamicron® Series

High Pressure and Return Filter Elements



Element Construction



1. Conductive plastic end caps
2. Seam support tube
3. Inner screen to stabilize deep pleats
4. Support layer to back up active media layers
5. Final active depth layer to remove fine particles
6. Pre-filter depth layer to remove coarse particles
7. Diffusion layer to equalize flow across surface
8. Outer screen to stabilize pleats *(under cover)*
9. Multi-protection cover *(for high pressure elements)*

Description

Betamicron® filter elements have been optimized with respect to filtration performance, in fluid cleanliness, lower ΔP/Q, pleat and element protection while handling and operating, and high stability level throughout its life. These elements offer a superior level of optimization of separation efficiency, service life and differential pressure versus flow rate.

As a complete element package, the innovative characteristics of this technology have a very positive impact on the differential pressure of the elements and a high degree of filtration efficiency and performance.

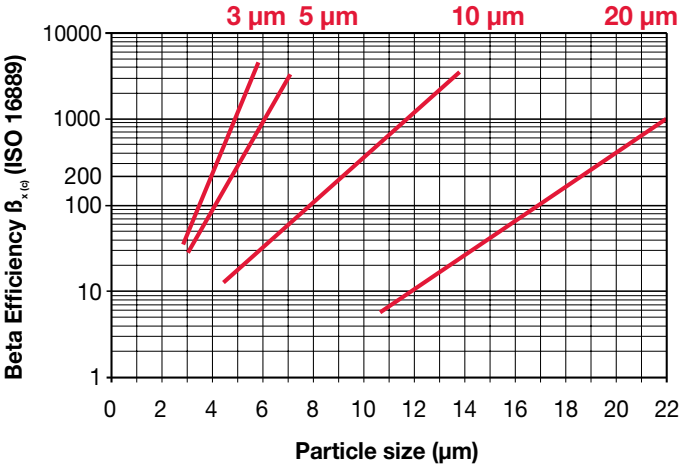
Features

- Optimized mesh pack structure maximizes the media area available to capture dirt particles and minimizes resistance to fluid flow. Optional SFREE mesh pack insures that static electricity will not be generated to dangerous levels where arcing can result.
- Improved performance *(optimized Beta efficiency, contamination retention, ΔP/Q characteristics and Beta stability)* and lowered weight due to plastic spiral lock seam support tubes.
- All plastic end caps and support tubes are carbon impregnated to conduct electricity, which ensures that static electricity will not be generated to levels high enough to arc.
- Element outer wraps are made of plastic (polyester) to reduce environment a impact and improve fatigue resistance.
- Zinc-free construction prevents zinc soaping.

Technical Specifications

Collapse Rating	290 psid (20 bar) *(R/RN, BN4HC, D/DN, BN4HC)* 3045 psid (210 bar) *(D, BH/HC)*
Temp. range	-22°F to 212°F (-30°C to 100°C)
Flow direction	outside to inside
Filtration Rating	3, 5, 10, 20 µm
Category	Disposable - single use
Bypass Cracking Pressure R *(only)* = 43 psid (3 bar) *(standard, others available)* D…BN = 87 psid (6 bar) *(standard, others available)* D…BH = No bypass *(standard)*	

Beta Ratio (ß) Values for Betamicron



PN#02081318 / 03.16 / FIL1505-1696

“D / DN” Pressure Elements Model Code

0660 D 005 BH4HC / V SO263

Size
- D = 0030, 0035, 0055, 0060, 0075, 0095, 0110, 0140, 0160, 0240, 0280, 0330, 0500, 0660, 0990, 1320, 1500
- DN = 0040, 0063, 0100, 0160, 0250, 0400, 0630, 1000

Pressure Element Type
- D = HYDAC pressure element
- DN = DIN Spec. 24550 pressure element

Filtration Rating *(micron)*
- 3, 6, 10, 25 = BN4/HC *(DN only)*
- 3, 5, 10, 20 = BH4HC

Element Media
- BN4HC = Betamicron®-N element *(Low Collapse)*
- BH4HC = Betamicron®-H element *(High Collapse)*

Seals
- *(omit)* = Nitrile rubber (NBR) *(standard)*
- V = Fluorocarbon elastomer (FKM)
- EPR = Ethylene propylene rubber (EPR)

Supplementary Details
- SO263 = Modification of ON & W/HC elements for Skydrol or HYJET phosphate ester fluids
- SFREE = Element specially designed to minimize electrostatic charge generation

“R / RN” Return Elements Model Code

1300 R 005 BN4HC / _ B6 SO263

Size
- R = 0030, 0060, 0050, 0075, 0090, 0110, 0150, 0160, 0165, 0185, 0210, 0240, 0270, 0330, 0500, 0660, 0850, 0950, 1300, 1700, 2600, 2700
- RN = 0040, 0063, 0100, 0160, 0250, 0400, 0630, 1000

Return Element Type
- R = HYDAC low pressure return element
- RN = DIN Spec. 24550 return element

Filtration Rating *(micron)*
- 3, 5, 10, 20 = BN4HC

Element Media
- BN4HC = Betamicron® *(Low Collapse)* high efficiency depth element

Seals
- *(omit)* = Nitrile rubber (NBR) *(standard)*
- V = Fluorocarbon elastomer (FKM)
- EPR = Ethylene propylene rubber (EPR)

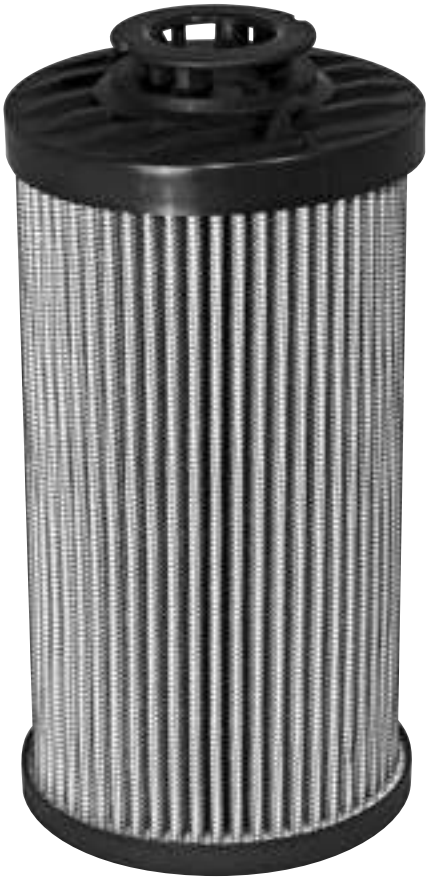
Bypass Cracking Pressure
- *(omit)* = 43 psid (3 bar) *(standard)*
- B1 = 14.5 psid (1 bar) *(lube or coolant)*
- B2 = 29 psid (2 bar) *(HYDAC optional return)*
- B6 =87 psid (6 bar) *(return line extended life)*
- KB = No bypass *(flushing systems)*

Supplementary Details
- SO263 = Modification of ON & W/HC elements for Skydrol or HYJET phosphate ester fluids
- SFREE = Element specially designed to minimize electrostatic charge generation

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Betamicron® / Aquamicron® Series

Combination Filter Elements



Description

BN/AM filter elements are specifically designed to absorb water and achieve high efficiency filtration of solid particles from mineral oils, HFD-R oils, and rapidly biodegradable oils. A super absorber reacts with the water present in the fluid and expands to form a gel from which the water can no longer be extracted, even by increasing the system pressure. These filter elements do not remove dissolved water below the saturation level of the hydraulic fluid. Solid particle filtration *(3 µm, 10 µm absolute)* is achieved due to the Betamicron® element construction.

Features

- High water retention capacity
- High dirt holding capacity
- Filtration rating $\beta_{x(c)} \geq 200$
- Stable β_x values over a wide differential pressure range *(high Beta stability)*

General

The presence of water in a hydraulic system causes many problems, such as the jamming of valves and rod components in fluid power systems. These problems are often incorrectly attributed to excessive levels of solid particle contamination. Sometimes these problems are caused by the build-up of rust and the reduction of the lubrication required for proper operation of bearings and slides. This can cause considerable degradation in the functioning of fluid power systems. In other words, along with solid particles, water is a serious "contaminant" in hydraulic systems.

Since methods usually employed to extract water often prove to be uneconomical when compared to the purchase price of a water removal system, HYDAC BN4AM technology has been developed to provide an economically sound and effective method of separating free water from hydraulic fluid. At the same time, these elements provide absolute filtration of solid particles down to 3 or 10 micron levels.

Technical Specifications

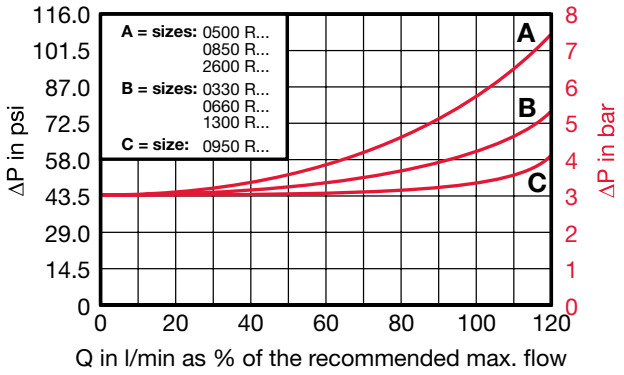
Collapse Pressure Rating	145 psid/10 bar
Temperature range:	32°F to 160°F (0°C to 71°C)
Compatibility with hydraulic media	Test criteria to ISO 2943
Flow fatigue resistance to ISO 3724	High fatigue resistance due to solid filter material supports on both sides and high inherent stability of the filter materials.
Opening pressure of bypass valve	ΔP0 = 43 psid + 10% (3 bar + 10%)

Principles of the BN4AM combined filter elements.

- BN4AM disposable elements are designed with inorganic and water-absorbent fibers
- Highly efficient absorption of free water from mineral oils with the aid of a "super absorber" embedded in the filter material
- Excellent adsorption of fine contamination particles over a wide differential pressure range *(3 µm, 10 µm absolute)*
- Excellent Beta stability over a wide differential pressure range
- High balanced dirt holding and water retention capacities
- Excellent fluid compatibility due to the use of epoxy resins for impregnation and bonding
- Dynamic Element integrity as a result of a high burst pressure resistance design *(e.g. during cold starts and dynamic differential pressure surges)*

Bypass Valve Curves

The bypass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.



PN#02081318 / 03.16 / FIL1505-1696

Model Code

0660 R 010 BN4AM / V

Size
0160, 0240, 0270, 0330, 0500, 0660, 0750, 0850, 0950, 1300, 1700, 2600

Type
R

Filtration Rating *(microns)*
003
010

Element Media
BN4AM = combined Betamicron®/Aquamicron®

Seals
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Bypass Valve
(omit) = 43 psid (3 bar) *(standard)*
B6 = 87 psid (6 bar)
KB = no bypass

Supplementary Details
SFREE = Element specially designed to minimize electrostatic charge generation

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Water retention - Quick sizing table

Size	Recommended Filter flow rate in gpm / lpm	Water retention capacity* cm3 / qt
0330	3.4 / 13	190 / 0.2008
0660	7.4 / 28	400 / 0.4227
0950	10.3 / 39	560 / 0.5918
1300	14.3 / 54	790 / 0.8349
2600	28.8 / 109	1570 / 1.6592

*in cm3/qt when Δp = 2.5 bar / 36 psid and viscosity = 30 mm2 /s / 141 SUS

Filtration rating	Specification	Typical measured results *(when Δp = 2.5 bar / 36 psid)*
3 µm	ß3(c) ≥ 100	ß3(c) ≥ 500
10 µm	ß10(c) ≥ 100	ß10(c) ≥ 500

ECOmicron® Series

Environmentally Compatible



Features

- All plastic construction
  Note: Bypass valve in the end cap contains a metal spring for efficient operation. The spring can be removed if the element is crushed.
- Standard HYDAC elements sizes 1300R and 2600R with absolute ratings of 3 and 10 micron are available
- (Light weight) for ease of handling during shipment and maintenance
- 43 psi (3 bar) bypass valve setting
- 145 psi (10 bar) element collapse rating

Benefits

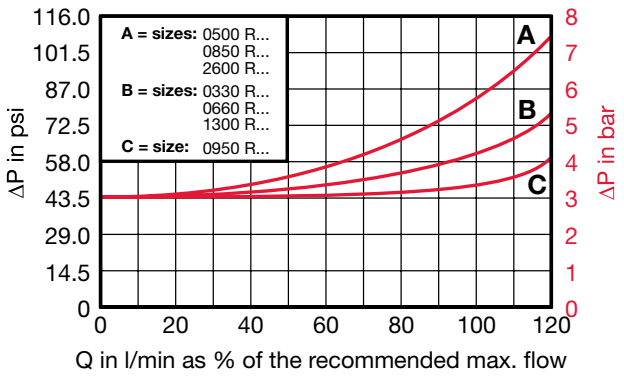
- Compatible with most hydraulic and lubrication fluids. Please consult factory for synthetic fluid use.
- Compatible for high water based fluid application use.
- Media seam welded with patented HYDAC ultrasonic welding process, which prevents media migration.
- $B_{x(c)} \geq 1000$ absolute filtration rating

Technical Specifications

Collapse Pressure Rating	145 psid (10 bar)
Temperature Range	-22°F to 212°F (-30°C to 100°C)
Flow fatigue stability to ISO 3724/76	High fatigue resistance due to solid filter material supports on both sides and high inherent stability of filter materials.
Opening Pressure of Bypass Valve	ΔP0 = 43 psid ± 7 psi (3 bar ± 0.5 bar)

Bypass Valve Curves

The by-pass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.



PN#02081318 / 03.16 / FIL1505-1696

Model Code

1300 R 03 ECON2 / V

Element Size
0040, 0090, 0110, 0150, 0160, 0165, 0185, 0240, 0330, 0660, 0850, 0950, 1300, 1700, 2600

Type
R

Filtration Rating *(micron)*
03 = 3 µm
05 = 5 µm
10 = 10 µm
20 = 20 µm

Element Media
ECON2 = ECOmicron®

Seals
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Element Construction



1. Bypass Valve with Metal Spring *(can be easily removed when crushed)*
2. Plastic Endcap
3. Plastic Support Tube
4. Fiberglass Media
5. Plastic Outer Wrap
6. Plastic End Cap

Aquamicron® Series

Water Removal Elements



Description

Aquamicron® filter elements are specially designed to separate free water from mineral oils. They are only supplied in the dimensions of HYDAC return line filter elements from size 330 and larger. This means that they can be installed in all HYDAC filter housings from size 330 which are fitted with return line filter elements.

The increasing pressure drop in a filter element which is being saturated with water indicates, by means of standard clogging indicators, that it is time to change the element. When the Aquamicron® technique is employed, particle contaminants are also separated from the hydraulic medium as a by-product. This means that the Aquamicron® element doubles as a safety filter.

In order to guarantee the greatest efficiency, it is recommended that these elements be installed in an off-line recirculation loop configuration.

Note: All Aquamicron® elements are disposable.

How Water Damages Systems and Components

The presence of water in hydraulic systems causes many problems. Examples would be the saturation of very fine filters or the jamming of valves and rod components. These problems are often wrongly attributed to high levels of particle contamination. Added to this, the build-up of rust and the reduction in lubricating properties on bearings and slides can lead to considerable impairment in the effective functioning of a system. This shows that water, too, represents a serious “contaminant” in a hydraulic system.

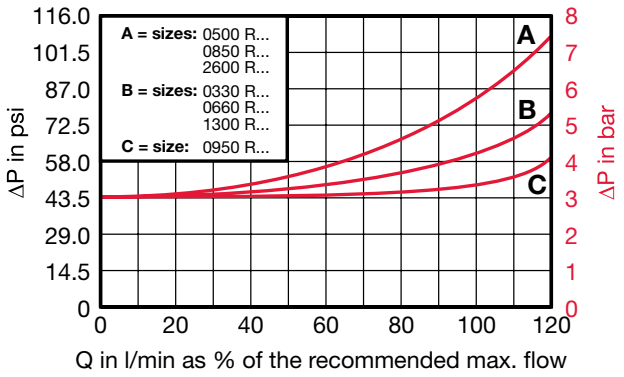
Previously, methods commonly used for extraction of water have proven to be uneconomical in relation to the purchase price of a water removal system. The HYDAC Aquamicron® technique offers an economically sound and yet an effective method of separating free water from hydraulic fluids.

Technical Specifications

Collapse Rating	145 psid (10 bar)
Temperature range	32°F to 212°F (0°C to 100°C)
Compatibility with hydraulic media	Mineral oils: Test criteria to ISO 2943 Lubricating oils: Test criteria to ISO 2943 Other media available on request
Opening pressure of by-pass valves	ΔP0 = 43 psid ±7 psi (3 bar ±0.5 bar)
Bypass valve curves	The bypass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.

Bypass Valve Curves

The bypass valve curves apply to mineral oils with a specific gravity of 0.86. The differential pressure of the valve changes proportionally with the specific gravity.



PN#02081318 / 03.16 / FIL1505-1696

Model Code

0330 R 040 AM / __

Size
0330, 0500, 0660, 0850, 0950, 1300, 2600

Type
R = Return Line Element

Filtration Rating *(microns)*
040

Element Media
AM = Aquamicron® water removal

Seal
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Model Codes Containing Red are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Aquamicron® Element Size Recommendations

Size	Recommended Flow rate	Water retention capacity Cw at ΔP = 36 psi (2.5 bar) with an oil viscosity of 141 SUS (30mm2/sec)	Part No.
0330	3.4 gpm (13 l/min) advised 26.4 gpm (100 l/min) max.	0.27 quarts (260cm³) 0.19 quarts (180cm³)	00315268
0500	5 gpm (19 l/min) advised 40.9 gpm (155 l/min) max.	0.42 quarts (400cm³) 0.30 quarts (280cm³)	00315355
0660	7.4 gpm (28 l/min) advised 67.4 gpm (255 l/min) max.	0.60 quarts (570cm³) 0.42 quarts (400cm³)	00315356
0850	9.2 gpm (35 l/min) advised 75.6 gpm (286 l/min) max.	0.77 quarts (730cm³) 0.55 quarts (520cm³)	00315357
0950	10.3 gpm (39 l/min) advised 83 gpm (314 l/min) max.	0.85 quarts (800cm³) 0.60 quarts (570cm³)	00315358
1300	14.3 gpm (54 l/min) advised 115.4 gpm (437 l/min) max.	1.18 quarts (1120cm³) 0.83 quarts (790cm³)	00315269
2600	28.2 gpm (109 l/min) advised 229.9 gpm (870 l/min) max.	2.36 quarts (2230cm³) 1.66 quarts (1570cm³)	00316102

Mobilemicron® Series

Mobile filtration - low cold start ΔP



Description

The HYDAC Mobilemicron® filter elements are designed to efficiently handle applications in the demanding mobile industry. Applications utilizing these elements will experience safe, reliable operation of the mobile device.

The Mobilemicron® is characterized by an especially low pressure drop which makes them particularly suitable for use wherever high viscosity fluids are employed, especially at low temperatures producing cold start behavior. Under these conditions, this element exhibits far lower pressure drops then competitive depth elements resulting in lower energy requirements to operate the hydraulic systems.

This filter element is also a prime candidate for gear lubrication systems using high viscosity oils with high temperature variations during operations.

Features

- Unique filter media has a very low resistance to fluid flow – thus, reducing element ΔP.
- Synthetic fiber media, multi-layered with support
- Low collapse – 10 bar (145 psid)
- For use in HYDAC RF, RFD, RFL, RFLD, RFM, RKM, MFX Filters

Technical Specifications

Collapse Rating	145 psid (10 bar) *(...R...MM)*
Temperature range	-22°F to 212°F (-30°C to 100°C)
Flow direction	outside to inside
Filtration Rating	8, 10, 15 µm
Category	Disposable - single use
Bypass Cracking Pressure R = 43 psid (3 bar) *(standard)* RK = 50.75 psid (3.5 bar) MX = 50.75 psid (3.5 bar)	

“R” Return Elements Model Code

0210 R 015 MM / V _ _

Size
0075, 0090, 0150, 0165, 0185, 0195, 0210, 0270, 0330, 0500, 0660, 0850

Filtration Rating *(microns)*
8, 10, 15

Element Media
MM = Mobilemicron® 145 psid (10 bar) *(Low collapse)*

Seal
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Bypass Valve
(omit) = 43 psid (3 bar) *(standard)*
B6 = 87 psid (6 bar) *(return line extended life)*

Supplementary Details
SFREE = Element specially designed to minimize electrostatic charge generation

“RK” RKM Element Model Code

0300 RK 015 MM / V _

Size
0080, 0100, 0120, 0151, 0201, 0251, 0300, 0350, 0400, 0800

Filtration Rating *(micron)*
8, 10, 15

Element Media
MM = Mobilemicron 145 psid (10 bar) *(Low collapse)*

Seals
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Supplementary Details
SFREE = Element specially designed to minimize electrostatic charge generation

“MX” Element Model Code

0200 MX 015 MM / V _ _

Size
0100, 0200

Filtration Rating *(micron)*
8, 10, 15

Element Media
MM = Mobilemicron 290 psid (20 bar) *(Low collapse)*

Seals
(omit) = Nitrile rubber (NBR) *(standard)*
V = Fluorocarbon elastomer (FKM)

Bypass Valve
B3.5 = 50.75 psid (3.5 bar) *(standard)*
B1.7 = 25 psid (1.7 bar) *(optional)*

Supplementary Details
SFREE = Element specially designed to minimize electrostatic charge generation

Model Codes Containing Red are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

MA & MG Series

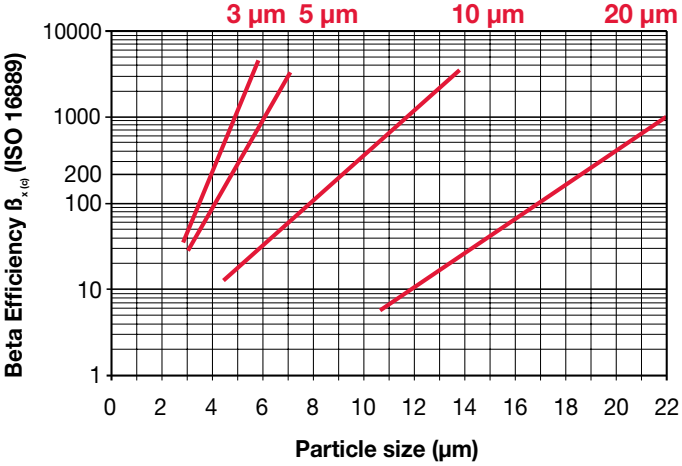
Spin-On Elements



Features

- HYDAC Betamicron® elements are available with Multi-Layer Betamicron® media with absolute ratings of 3, 5, 10, and 20 microns.
- Proper support of the filter media provides high Beta Ratio values (particle removal efficiency) even at high differential pressures. The efficiency of many competitive elements drastically deteriorates as the element clogs and differential pressure increases.
- Betamicron® filter media is firmly supported to achieve flow fatigue resistance during significant pressure flow pulsations.
- High quality adhesive is used to bond the seam of the media and the endcaps to the media.
- Heavy gauge perforated support tubes are used to provide proper flow distribution and protection against element collapse.

Beta Ratio (ß) Values for Betamicron



Technical Specifications

Construction Materials	Steel
Flow Capacity	
40	7 gpm (26 lpm)
80	15 gpm (57 lpm)
85	25 gpm (95 lpm)
90	15 gpm (57 lpm)
95	25 gpm (95 lpm)
160/190	30 gpm (114 lpm)
180/195	60 gpm (227 lpm)
Housing Pressure Rating	
Max. Operating Pressure	120 psi (8 bar)/250 psi (17 bar) (MF90/95)
Proof Pressure	180 psi (12.4 bar)/375 psi (25.8 bar) (MF90/95)
Fatigue Pressure	Contact HYDAC
Burst Pressure	Contact HYDAC
Element Collapse Pressure Rating	
BN, P, AM	80 psid (5.5 bar)
Fluid Temperature Range	-22°F to 212°F (-30°C to 100°C)
Consult HYDAC for applications below 14°F (-10°C)	
Fluid Compatibility	
Compatible with all petroleum oils rated for use with Nitrile rubber (NBR) seals.	
Bypass Valve Cracking Pressure	
ΔP = 3 psid (0.2 bar) + 10% *(for suction applications)*	
ΔP = 25 psid (1.7 bar) + 10% *(standard for nominal filters)*	
ΔP = 43 psid (3 bar) + 10% *(standard for absolute [BN] filters)*	
ΔP = 50 psid (3.4 bar) + 10% *(standard for absolute [BN] filters, MF 90/95/190/195)*	

PN#02081318 / 03.16 / FIL1505-1696

Model Code

0080 MA 005 BN

Size

0040, 0080, 0090 = Standard Length Elements *(not available with 3 µm BN elements)*

0085 *(not available with BN or AM elements)*
0095 *(not available with 20 µm BN elements)*
0160
0180

Extended Length Elements

Type

MA = UN Tap Plate Thread *(standard)*

Size	Thread
0040	3/4" - 16 UN-2B
0080/0085	1"-12 UN-2B
0090/0095	1 1/2"-16UN-2B
0160/0180	1 1/2"-16UN-2B

MG = BSPP Tap Plate Thread *(special)*

Size	Thread
0080	3/4" BSPP
0160	1 1/4" BSPP

Not required for BSPP ported heads produced in the USA, MA elements used on USA port codes "1.0"

Filtration Rating *(microns)*

3, 5, 10, 20 = BN Filtration Rating ($\beta_{x(c)} \geq 200$)
040 = AM

3, 10, 25 = P

Element Media

BN = Betamicron® *(Low Collapse)*
P = Paper
AM = Aquamicron® Water Removal *(not available 0085)*

Supplementary Details

Bypass size 0040 only *(bypass in element)*
B1.3 = 18 PSID Bypass
B1.7 = 25 PSID Bypass

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

Element K-Factors

K-Factors (gradient coefficients) for Filter Elements: These K-factors in (psi/gpm) apply to hydraulic and lubricating fluids with kinematic viscosity of 141 SSU/(30mm2/S). The pressure drop changes proportionally to the change in viscosity.

Optimicron® "D…ON" Pressure Elements



Optimicron	...D...ON (Pressure Element)						
Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm	Wgt. (lbs.)
0030 D XXX ON	4.27	3.507	2.376	1.251	0.768	0.62	0.19
0035 D XXX ON	2.755	1.169	0.938	0.752	0.549	0.408	0.26
0055 D XXX ON	1.427	0.675	0.543	0.434	0.284	0.211	0.37
0060 D XXX ON	2.936	1.427	1.004	0.664	0.537	0.347	0.23
0075 D XXX ON	0.916	0.461	0.37	0.296	0.183	0.136	0.49
0095 D XXX ON	0.724	0.37	0.296	0.238	0.144	0.105	0.59
0110 D XXX ON	1.416	0.735	0.527	0.333	0.254	0.164	0.54
0140 D XXX ON	1.092	0.631	0.406	0.24	0.194	0.126	0.44
0160 D XXX ON	1.015	0.604	0.423	0.225	0.204	0.175	0.58
0240 D XXX ON	0.631	0.379	0.293	0.175	0.134	0.115	0.78
0260 D XXX ON	0.449	0.272	0.212	0.127	0.1	0.079	0.71
0280 D XXX ON	0.304	0.185	0.15	0.082	0.075	0.064	1.75
0300 D XXX ON	0.801	0.488	0.391	0.268	0.154	0.143	0.66
0330 D XXX ON	0.452	0.23	0.185	0.135	0.085	0.067	1.13
0450 D XXX ON	0.401	0.244	0.193	0.131	0.077	0.069	1.36
0500 D XXX ON	0.277	0.141	0.114	0.068	0.052	0.041	1.50
0650 D XXX ON	0.245	0.148	0.121	0.081	0.047	0.044	2.04
0660 D XXX ON	0.207	0.106	0.086	0.051	0.039	0.031	2.53
0900 D XXX ON	0.185	0.115	0.092	0.06	0.036	0.035	2.56
0990 D XXX ON	0.138	0.07	0.057	0.033	0.026	0.02	3.29
1320 D XXX ON	0.102	0.053	0.042	0.025	0.019	0.015	8.39
1500 D XXX ON	0.09	0.053	0.038	0.026	0.02	0.015	10.44

Optimicron® "R…ON" Return Elements



Optimicron	...R...ON (Return Element - Low Pressure)						
Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm	Wgt. (lbs.)
0030 R XXX ON	4.928	3.754	2.409	1.471	0.922	0.807	0.142
0060 R XXX ON	2.59	1.295	0.944	0.539	0.494	0.376	0.286
0075 R XXX ON	1.405	1.065	0.735	0.401	0.263	0.241	0.508
0090 R XXX ON	1.235	0.719	0.521	0.333	0.236	0.176	0.364
0110 R XXX ON	1.224	0.719	0.487	0.296	0.234	0.178	0.46
0150 R XXX ON	0.735	0.428	0.31	0.198	0.14	0.105	0.502
0160 R XXX ON	0.878	0.439	0.312	0.177	0.148	0.182	0.682
0165 R XXX ON	0.774	0.518	0.404	0.221	0.123	0.133	0.77
0185 R XXX ON	0.571	0.408	0.315	0.161	0.091	0.077	0.873
0195 R XXX ON	0.42	0.301	0.232	0.119	0.067	0.057	1.115
0210 R XXX ON	0.311	0.18	0.14	0.084	0.055	0.048	1.684
0240 R XXX ON	0.571	0.284	0.201	0.125	0.101	0.077	0.848
0270 R XXX ON	0.201	0.116	0.091	0.054	0.036	0.031	2.358
0280 R XXX ON	0.28	0.141	0.114	0.078	0.058	0.044	1.763
0330 R XXX ON	0.444	0.204	0.15	0.081	0.07	0.056	1.54
0450 R XXX ON	0.347	0.174	0.126	0.077	0.055	0.047	1.798
0500 R XXX ON	0.289	0.143	0.104	0.06	0.046	0.038	2.28
0580 R XXX ON	0.137	0.068	0.049	0.029	0.022	0.019	3.975
0600 R XXX ON	0.129	0.068	0.06	0.033	0.023	0.019	3.321
0660 R XXX ON	0.196	0.093	0.066	0.037	0.031	0.025	3.488
0750 R XXX ON	0.116	0.061	0.05	0.029	0.019	0.018	4.764
0850 R XXX ON	0.152	0.072	0.055	0.032	0.024	0.020	4.328
0950 R XXX ON	0.131	0.057	0.043	0.026	0.021	0.017	5.076
1300 R XXX ON	0.094	0.04	0.032	0.019	0.018	0.012	9.188
1700 R XXX ON	0.074	0.035	0.029	0.015	0.014	0.010	7.564
2600 R XXX ON	0.046	0.02	0.016	0.01	0.009	0.006	11.964

Optimicron® Power "ON/PO" Elements



Optimicron Power	...A...ON			
Size	5 µm	10 µm	20 µm	Wgt. (lbs.)
0110 R XXX ON/PO	0.199	0.169	0.111	0.562
0240 R XXX ON/PO	0.072	0.061	0.040	0.873
0330 R XXX ON/PO	0.044	0.038	0.024	2.12
0500 R XXX ON/PO	0.029	0.025	0.016	2.372
0660 R XXX ON/PO	0.019	0.016	0.010	3.697
0850 R XXX ON/PO	0.015	0.013	0.009	5.357
0950 R XXX ON/PO	0.010	0.012	0.008	7.317
1300 R XXX ON/PO	0.010	0.008	0.005	7.848
1700 R XXX ON/PO	0.007	0.006	0.004	10.02
2600 R XXX ON/PO	0.004	0.004	0.003	15.18
2700 R XXX ON/PO	0.004	0.004	0.003	21.94

Optimicron Power	API Compliant	
Size	10 µm	Wgt. (lbs.)
0110 A XXX ON/PO	0.169	0.259
0120 A XXX ON/PO	0.075	0.937
0230 A XXX ON/PO	0.037	2.731
0240 A XXX ON/PO	0.061	1.011
0330 A XXX ON/PO	0.038	1.671
0500 A XXX ON/PO	0.025	2.447
0540 A XXX ON/PO	0.018	6.15
0880 A XXX ON/PO	0.008	9.034
1400 A XXX ON/PO	0.005	16.18
2600 R XXX ON/PO	0.004	16.73
2700 A XXX ON/PO	0.004	20.61

Element K-Factors

Betamicron® “D…BN4HC” Pressure Elements



Betamicron	...D...BN4HC (Low Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030 D XXX BN4HC	3.507	2.376	1.251	0.620	0.19
0035 D XXX BN4HC	1.295	1.043	0.812	0.510	0.26
0055 D XXX BN4HC	0.752	0.604	0.444	0.263	0.37
0060 D XXX BN4HC	1.586	1.119	0.724	0.433	0.23
0075 D XXX BN4HC	0.510	0.411	0.290	0.170	0.49
0095 D XXX BN4HC	0.411	0.329	0.225	0.132	0.59
0110 D XXX BN4HC	0.818	0.587	0.362	0.203	0.54
0140 D XXX BN4HC	0.702	0.450	0.263	0.159	0.44
0160 D XXX BN4HC	0.719	0.483	0.252	0.192	0.58
0240 D XXX BN4HC	0.450	0.335	0.198	0.126	0.78
0280 D XXX BN4HC	0.220	0.170	0.093	0.071	1.75
0300 D XXX BN4HC	0.582	0.445	0.291	0.159	0.66
1.11.04DXXBN					
0330 D XXX BN4HC	0.296	0.214	0.165	0.093	1.13
0450 D XXX BN4HC	0.291	0.220	0.143	0.077	1.36
1.11.08DXXBN					
0500 D XXX BN4HC	0.181	0.132	0.082	0.060	1.50
0650 D XXX BN4HC	0.176	0.137	0.088	0.049	2.04
1.11.13DXXBN					
0660 D XXX BN4HC	0.137	0.099	0.060	0.044	2.53
0900 D XXX BN4HC	0.137	0.104	0.066	0.038	2.56
1.11.16DXXBN					
0990 D XXX BN4HC	0.088	0.066	0.038	0.027	3.29
1320 D XXX BN4HC	0.066	0.049	0.027	0.022	8.39
1500 D XXX BN4HC	0.060	0.044	0.033	0.022	10.44

Betamicron® “D…BH4HC” Pressure Elements

Betamicron	...D...BH4HC (High Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030 D XXX BH4HC	5.005	2.782	1.992	1.043	0.30
0060 D XXX BH4HC	3.216	1.789	0.993	0.670	0.58
0110 D XXX BH4HC	1.394	0.818	0.489	0.307	0.76
0140 D XXX BH4HC	1.092	0.620	0.445	0.236	0.79
0160 D XXX BH4HC	0.922	0.571	0.324	0.241	1.23
0240 D XXX BH4HC	0.582	0.373	0.214	0.159	1.82
0280 D XXX BH4HC	0.313	0.187	0.099	0.088	2.55
0300 D XXX BH4HC	0.878	0.488	0.390	0.181	1.83
1.11.04DXXBH					
0330 D XXX BH4HC	0.423	0.247	0.154	0.110	2.26
0450 D XXX BH4HC	0.428	0.236	0.187	0.088	2.61
1.11.08DXXBH					
0500 D XXX BH4HC	0.230	0.143	0.082	0.066	3.60
0650 D XXX BH4HC	0.258	0.143	0.115	0.055	3.64
1.11.13DXXBH					
0660 D XXX BH4HC	0.181	0.104	0.055	0.049	4.05
0900 D XXX BH4HC	0.192	0.110	0.088	0.038	4.66
1.11.16DXXBH					
0990 D XXX BH4HC	0.120	0.071	0.044	0.033	7.38
1320 D XXX BH4HC	0.088	0.055	0.033	0.022	9.82
1500 D XXX BH4HC	0.077	0.044	0.033	0.027	11.56

Indicates PALL 9600 geometry element.

All Element K Factors in psi / gpm.

Element K-Factors

"D…W/HC" Pressure Elements



Wire Mesh	…D…W/HC	
Size	25, 50, 74, 100, 149, 200 µm	Wgt. (lbs.)
0030 D XXX W/HC	0.166	0.32
0060 D XXX W/HC	0.042	0.53
0110 D XXX W/HC	0.230	0.83
0140 D XXX W/HC	0.040	0.69
0160 D XXX W/HC	0.016	1.22
0240 D XXX W/HC	0.010	1.17
0280 D XXX W/HC	0.009	2.37
0330 D XXX W/HC	0.008	2.40
0500 D XXX W/HC	0.011	2.20
0660 D XXX W/HC	0.004	3.50
0990 D XXX W/HC	0.006	5.19
1320 D XXX W/HC	0.002	6.03

"D…V" Pressure Elements



Metal Fiber	…D…V				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030 D XXX V	1.011	0.740	0.411	0.200	0.18
0060 D XXX V	0.877	0.511	0.296	0.183	0.25
0110 D XXX V	0.452	0.304	0.182	0.118	0.40
0140 D XXX V	0.320	0.261	0.172	0.126	1.08
0160 D XXX V	0.251	0.177	0.123	0.079	0.73
0240 D XXX V	0.169	0.137	0.093	0.062	1.16
0280 D XXX V	0.126	0.093	0.064	0.041	1.65
0330 D XXX V	0.121	0.097	0.065	0.043	2.37
0500 D XXX V	0.081	0.065	0.044	0.028	4.38
0660 D XXX V	0.063	0.050	0.034	0.021	4.69
0990 D XXX V	0.043	0.034	0.023	0.015	8.81
1320 D XXX V	0.032	0.026	0.018	0.012	6.77
1500 D XXX V	0.016	0.011	0.011	0.005	7.97

All Element K Factors in psi / gpm.

Element K-Factors

"DN" Pressure Elements



Betamicron	...DN...BN/HC (Low Collapse)				
Size	3 µm	6 µm	10 µm	25 µm	Wgt. (lbs.)
0040 DN XXX BN4HC	1.312	0.818	0.472	0.362	2.161
0063 DN XXX BN4HC	0.895	0.543	0.330	0.252	0.331
0100 DN XXX BN4HC	0.653	0.362	0.220	0.176	0.507
0160 DN XXX BN4HC	0.434	0.280	0.187	0.143	N/A*
0250 DN XXX BN4HC	0.280	0.176	0.115	0.099	1.411
0400 DN XXX BN4HC	0.176	0.110	0.071	0.055	2.161

Wire Mesh	...DN...W/HC (Low Collapse)				
Size	3 µm	6 µm	10 µm	25 µm	Wgt. (lbs.)
0160 DN XXX W/HC	0.009	0.009	0.009	0.009	1.26
0250 DN XXX W/HC	0.006	0.006	0.006	0.006	1.41
0400 DN XXX W/HC	0.004	0.004	0.004	0.004	2.16

Betamicron	...DN...BH/HC (High Collapse)				
Size	3 µm	6 µm	10 µm	25 µm	Wgt. (lbs.)
0040 DN XXX BH4HC	2.217	1.361	0.900	0.598	0.57
0063 DN XXX BH4HC	1.591	0.999	0.642	0.417	0.84
0100 DN XXX BH4HC	1.043	0.642	0.423	0.291	1.01
0160 DN XXX BH4HC	0.439	0.280	0.209	0.137	1.86
0250 DN XXX BH4HC	0.296	0.187	0.154	0.104	2.90
0400 DN XXX BH4HC	0.187	0.115	0.093	0.060	4.28

Pressure Elements for the Automotive Industry

Autospec HF4	5.03.XXDXXBN (Low Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
5.03.09DXXBN	0.168	0.141	0.079	0.044	1.67
5.03.18DXXBN	0.080	0.067	0.038	0.021	3.03
5.03.27DXXBN	0.052	0.043	0.024	0.014	4.50

Autospec HF4	5.03.XXDXXBH (High Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
5.03.09DXXBH	0.207	0.146	0.089	0.047	4.57
5.03.18DXXBH	0.097	0.068	0.041	0.022	8.19
5.03.27DXXBH	0.063	0.044	0.027	0.014	12.16

Autospec HF4 Wire Mesh	5.03.XXDXXW	
Size	25, 50, 74, 100, 149, 200 µm	Wgt. (lbs.)
5.03.09DXXW	0.007	1.71
5.03.18DXXW	0.004	3.29
5.03.27DXXW	0.002	N/A*

Autospec HF3	1.11.08DXXBN (Low Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
1.11.04DXXBN	0.590	0.500	0.266	0.153	0.69
1.11.08DXXBN	0.289	0.241	0.135	0.076	1.02
1.11.13DXXBN	0.175	0.146	0.082	0.046	1.51
1.11.16DXXBN	0.132	0.110	0.062	0.035	1.89

Autospec HF3	1.11.08DXXBH (High Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
1.11.04DXXBH	0.937	0.660	0.401	0.210	1.83
1.11.08DXXBH	0.460	0.321	0.195	0.102	2.61
1.11.13DXXBH	0.274	0.193	0.117	0.615	3.64
1.11.16DXXBH	0.206	0.145	0.089	0.046	4.66

Autospec HF2	1.07.08DXXBN (Low Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
1.07.04DXXBN	2.046	1.735	0.925	0.531	0.26
1.07.08DXXBN	0.975	0.815	0.457	0.257	0.39

Autospec HF2	1.07.08DXXBH (High Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
1.07.04DXXBH	2.400	1.690	1.027	0.538	0.51
1.07.08DXXBH	1.165	0.820	0.499	0.262	0.85

* Not Available at the time of publication. Please contact HYDAC for latest information.

All Element K Factors in psi / gpm.

Element K-Factors

Betamicron® "R…BN4HC" Return Elements



Betamicron	...R...BN4HC (Low Collapse)				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030 R XXX BN4HC	3.754	2.409	1.471	0.807	0.142
0060 R XXX BN4HC	1.471	1.004	0.598	0.379	0.286
0075 R XXX BN4HC	1.207	0.779	0.445	0.241	0.508
0110 R XXX BN4HC	0.818	0.516	3.293	0.176	0.46
0150 R XXX BN4HC	0.489	0.329	0.220	0.104	0.68
0160 R XXX BN4HC	0.521	0.324	0.209	0.159	0.682
0165 R XXX BN4HC	0.615	0.428	0.247	0.132	0.77
0185 R XXX BN4HC	0.488	0.335	0.181	0.099	0.882
0210 R XXX BN4HC	0.214	0.143	0.099	0.060	1.684
0240 R XXX BN4HC	0.340	0.209	0.143	0.099	0.848
0270 R XXX BN4HC	0.137	0.093	0.060	0.038	2.358
0280 R XXX BN4HC	0.170	0.121	0.088	0.055	1.76
0330 R XXX BN4HC	0.232	0.150	0.093	0.066	1.54
0500 R XXX BN4HC	0.164	0.104	0.071	0.044	2.28
0660 R XXX BN4HC	0.104	0.066	0.044	0.027	3.488
0750 R XXX BN4HC	0.071	0.049	0.033	0.022	4.764
0850 R XXX BN4HC	0.082	0.055	0.038	0.022	4.328
0950 R XXX BN4HC	0.066	0.044	0.027	0.022	5.076
1300 R XXX BN4HC	0.044	0.033	0.022	0.016	9.188
1700 R XXX BN4HC	0.038	0.027	0.016	0.011	7.564
2600 R XXX BN4HC	0.022	0.016	0.011	0.005	11.964
2700 R XXX BN4HC	0.022	0.016	0.011	0.005	16.5

Betamicron®/Aquamicron® "R…BN4AM"



Betamicron/ Aquamicron	...R...BN4AM		
Size	3 µm	10 µm	Wgt. (lbs.)
0330 R XXX BN4AM	0.477	0.165	1.596
0500 R XXX BN4AM	0.313	0.11	2.266
0660 R XXX BN4AM	0.192	0.066	1.991
0750 R XXX BN4AM	0.126	0.044	4.760
0850 R XXX BN4AM	0.154	0.049	5.225
0950 R XXX BN4AM	0.132	0.044	5.85
1300 R XXX BN4AM	0.088	0.033	6.946
1700 R XXX BN4AM	0.071	0.027	7.452
2600 R XXX BN4AM	0.055	0.016	10.211
2700 R XXX BN4AM	0.055	0.016	16.445

Aquamicron "AM"



Aquamicron	...AM	
Size	40 µm	Wgt. (lbs.)
0330 R XXX AM	0.115	0.740
0500 R XXX AM	0.076	1.023
0660 R XXX AM	0.051	1.580
0750 R XXX AM	0.030	1.855
0850 R XXX AM	0.040	1.990
0950 R XXX AM	0.036	2.900
1300 R XXX AM	0.026	3.550
1700 R XXX AM	0.020	5.661
2600 R XXX AM	0.013	6.210
2700 R XXX AM	0.014	6.356

All Element K Factors in psi / gpm.

Element K-Factors

ECOmicron® "R…ECON2" Return Elements



ECOmicron	...R...ECON2				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0075 R XXX ECON2	1.207	0.779	0.445	0.241	0.115
0090 R XXX ECON2	0.818	0.554	0.368	0.176	0.126
0110 R XXX ECON2	0.818	0.516	0.329	0.176	0.332
0150 R XXX ECON2	0.488	0.329	0.220	0.104	0.385
0160 R XXX ECON2	0.521	0.324	0.209	0.159	0.398
0165 R XXX ECON2	0.615	0.428	0.247	0.132	0.422
0185 R XXX ECON2	0.488	0.335	0.181	0.099	0.586
0195 R XXX ECON2	0.362	0.247	0.132	0.071	0.702
0240 R XXX ECON2	0.340	0.209	0.143	0.099	0.711
0280 R XXX ECON2	0.170	0.121	0.088	0.055	0.954
0330 R XXX ECON2	0.230	0.148	0.093	0.066	1.069
0500 R XXX ECON2	0.165	0.104	0.071	0.044	2.118
0660 R XXX ECON2	0.104	0.066	0.044	0.027	4.389
0750 R XXX ECON2	0.071	0.049	0.033	0.022	4.855
0850 R XXX ECON2	0.082	0.055	0.038	0.022	5.211
0950 R XXX ECON2	0.066	0.044	0.027	0.022	4.400
1300 R XXX ECON2	0.044	0.033	0.022	0.016	5.290
1700 R XXX ECON2	0.038	0.027	0.016	0.011	11.31
2600 R XXX ECON2	0.022	0.016	0.011	0.005	9.544

ECOmicron Fit	1.14.XXDXXECO/N			
SIZE	3 µm	6 µm	12 µm	25 µm
1.14.16DXXECO/N	0.046	0.041	0.022	0.015
1.14.39DXXECO/N	0.017	0.016	0.008	0.006

Wire Mesh "R…W/HC" Return Elements



Wire Mesh	...R...W/HC	
Size	25, 50, 74, 100, 149, 200 µm	Wgt. (lbs.)
0030 R XXX W/HC	0.110	0.08
0060 R XXX W/HC	0.055	0.328
0075 R XXX W/HC	0.043	0.687
0110 R XXX W/HC	0.030	0.588
0160 R XXX W/HC	0.021	0.86
0165 R XXX W/HC	0.020	0.52
0240 R XXX W/HC	0.015	1.174
0330 R XXX W/HC	0.010	1.844
0500 R XXX W/HC	0.007	1.876
0660 R XXX W/HC	0.005	4.138
0850 R XXX W/HC	0.004	2.535
0950 R XXX W/HC	0.003	5.674
1300 R XXX W/HC	0.003	4.61
1700 R XXX W/HC	0.002	11
2600 R XXX W/HC	0.001	8.3

Polyester "R…P/HC" Return Elements



Polyester	...R...P/HC		
Size	10 µm	20 µm	Wgt. (lbs.)
0030 R XXX P/HC	0.458	0.458	0.154
0060 R XXX P/HC	0.255	0.255	0.308
0075 R XXX P/HC	0.156	0.156	0.701
0110 R XXX P/HC	0.128	0.128	0.488
0160 R XXX P/HC	0.077	0.077	0.692
0165 R XXX P/HC	0.086	0.086	0.816
0240 R XXX P/HC	0.049	0.049	0.978
0330 R XXX P/HC	0.037	0.037	1.536
0500 R XXX P/HC	0.024	0.024	2.142
0660 R XXX P/HC	0.016	0.016	3.278
0850 R XXX P/HC	0.012	0.012	4.320
0950 R XXX P/HC	0.010	0.010	5.838
1300 R XXX P/HC	0.007	0.007	6.944
1700 R XXX P/HC	0.006	0.006	8.721
2600 R XXX P/HC	0.003	0.003	12.166

All Element K Factors in psi / gpm.

Element K-Factors

Mobilemicron® "R…MM" Return Elements



Mobilemicron R	...RK...MM	
Size	10 µm	Wgt. (lbs.)
0060 R XXX MM	0.420	N/A*
0075 R XXX MM	0.265	N/A*
0090 R XXX MM	0.252	N/A*
0110 R XXX MM	0.199	N/A*
0150 R XXX MM	0.114	N/A*
0160 R XXX MM	0.149	N/A*
0165 R XXX MM	0.146	N/A*
0185 R XXX MM	0.108	N/A*
0210 R XXX MM	0.052	N/A*
0240 R XXX MM	0.095	N/A*
0270 R XXX MM	0.032	N/A*
0330 R XXX MM	0.078	N/A*
0500 R XXX MM	0.052	N/A*
0660 R XXX MM	0.030	N/A*
0850 R XXX MM	0.023	N/A*
0950 R XXX MM	0.023	N/A*
1300 R XXX MM	0.016	N/A*
1700 R XXX MM	0.010	N/A*
2600 R XXX MM	0.008	N/A*

Mobilemicron® "RK" Return Elements



Mobilemicron RK	...RK...MM			
Size	8 µm	10 µm	15 µm	Wgt. (lbs.)
0080 RK XXX MM	0.136	0.136	0.087	0.588
0100 RK XXX MM	0.095	0.095	0.061	0.624
0120 RK XXX MM	0.077	0.077	0.049	0.658
0151 RK XXX MM	0.054	0.054	0.036	0.892
0201 RK XXX MM	0.041	0.041	0.026	1.820
0251 RK XXX MM	0.032	0.032	0.020	1.986
0300 RK XXX MM	0.034	0.034	0.021	2.020
0350 RK XXX MM	0.016	0.016	0.011	2.211
0400 RK XXX MM	0.031	0.031	0.019	2.496
0800 RK XXX MM	0.024	0.024	0.015	4.122

* Not Available at the time of publication. Please contact HYDAC for latest information.

All Element K Factors in psi / gpm.

Element K-Factors

Stainless Steel Wire Mesh “R…V”



SS Wire Mesh	...R...V				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0030 R XXX V	1.065	0.779	0.434	0.209	N/A*
0060 R XXX V	0.873	0.510	0.296	0.181	N/A*
0110 R XXX V	0.417	0.280	0.165	0.110	N/A*
0160 R XXX V	0.269	0.192	0.132	0.082	N/A*
0240 R XXX V	0.176	0.143	0.093	0.066	N/A*
0280 R XXX V	0.077	0.060	0.038	0.027	N/A*
0330 R XXX V	0.115	0.093	0.060	0.044	N/A*
0450 R XXX V	0.093	0.071	0.049	0.033	N/A*
0500 R XXX V	0.082	0.066	0.044	0.027	N/A*
0580 R XXX V	0.038	0.027	0.016	0.016	N/A*
0660 R XXX V	0.055	0.044	0.033	0.022	N/A*
0750 R XXX V	0.033	0.027	0.016	0.011	N/A*
0850 R XXX V	0.044	0.033	0.022	0.016	N/A*
0950 R XXX V	0.038	0.033	0.022	0.011	N/A*
1300 R XXX V	0.027	0.022	0.016	0.011	N/A*
1700 R XXX V	0.022	0.016	0.011	0.005	N/A*
2600 R XXX V	0.016	0.011	0.005	0.005	N/A*
2700 R XXX V	0.011	0.005	0.005	0.005	N/A*

Suction “RS…W” Elements

Suction	...RS...W		
Size	75 µm	125 µm	Wgt. (lbs.)
0060 RS XXX W	0.057	0.030	N/A*
0110 RS XXX W	0.029	0.014	N/A*
0160 RS XXX W	0.020	0.010	N/A*
0240 RS XXX W	0.014	0.007	N/A*
0330 RS XXX W	0.010	0.005	N/A*
0400 RS XXX W	0.011	0.009	N/A*
0500 RS XXX W	0.011	0.009	N/A*
0950 RS XXX W	0.003	0.002	N/A*
1300 RS XXX W	0.003	0.002	N/A*

“RN” Return Elements



Betamicron	...RN...BN4HC				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0040 RN XXX BN4HC	0.779	0.428	0.263	0.143	0.298
0063 RN XXX BN4HC	0.521	0.285	0.187	0.099	0.398
0100 RN XXX BN4HC	0.373	0.181	0.126	0.066	0.606
0160 RN XXX BN4HC	0.198	0.099	0.066	0.027	0.895
0250 RN XXX BN4HC	0.154	0.077	0.049	0.022	2.085
0400 RN XXX BN4HC	0.121	0.088	0.071	0.055	3.122
0630 RN XXX BN4HC	0.115	0.066	0.049	0.038	3.728
1000 RN XXX BN4HC	0.038	0.027	0.022	0.016	6.104

* Not Available at the time of publication. Please contact HYDAC for latest information.

All Element K Factors in psi / gpm.

Element K-Factors

ECOmicron®-fit “R…ECO/N”



ECOmicron-fit	1.14.XXDXXECO/N					
Size	1µm	3 µm	6 µm	12 µm	25 µm	Wgt. (lbs.)
1.14.16DXXECO/N	0.084	0.046	0.041	0.022	0.015	N/A*
1.14.39DXXECO/N	0.032	0.017	0.016	0.008	0.006	N/A*

“MA” Spin-on Elements



Spin-on	…MA…BN				
Size	3 µm	5 µm	10 µm	20 µm	Wgt. (lbs.)
0040 MA XXX BN	1.391	1.780	0.629	0.361	0.73
0080 MA XXX BN	0.522	0.442	0.236	0.135	1.35
0085 MA XXX BN	N/A*	N/A*	N/A*	N/A*	N/A*
0090 MA XXX BN	0.484	0.37	0.345	0.191	1.5
0095 MA XXX BN	0.276	0.211	0.197	0.109	2.04
0160 MA XXX BN	0.237	0.198	0.111	0.063	2.56
0180 MA XXX BN	0.123	0.103	0.058	0.033	3.69

Spin-on	…MA…P			
Size	3 µm	10 µm	25 µm	Wgt. (lbs.)
0040 MA XXX P	7.763	2.348	1.516	0.6
0080 MA XXX P	1.606	0.486	0.314	1.08
0085 MA XXX P	1.161	0.351	0.227	1.42
0090 MA XXX P	1.594	0.482	0.311	1.29
0095 MA XXX P	0.894	0.270	0.174	1.47
0160 MA XXX P	0.839	0.192	0.145	2.15
0180 MA XXX P	0.443	0.134	0.087	2.68

Spin-on	…MA…AM		
Size	10 µm	40 µm	Wgt. (lbs.)
0080 MA XXX AM	0.513	N/A*	1.35
0085 MA XXX AM	N/A*	N/A*	N/A*
0090 MA XXX AM	0.507	N/A*	1.50
0095 MA XXX AM	0.284	N/A*	2.00
0160 MA XXX AM	N/A*	0.233	2.50
0180 MA XXX AM	N/A*	0.136	3.60

* Not Available at the time of publication. Please contact HYDAC for latest information.

All Element K Factors in psi / gpm.

Element Hydraulic Data

Permissible ΔP across element

- Optimicron® (ON) - 290 psid (20 bar)
- Optimicron® Power (ON/PO) - 145 psid (10 bar)
- Betamicron®-H *(high collapse)* (BH4HC) - 3045 psid (210 bar)
- Betamicron®-N *(low collapse)* (BN4HC) - 290 psid (20 bar)
- Betamicron®/Aquamicron® (BN4AM) - 145 psid (10 bar)
- ECOmicron® (ECON2) - 145 psid (10 bar)
- Aquamicron® (AM) - 145 psid (10 bar)
- Wire Mesh (W/HC) - 290 psid (20 bar)
- Polyester (P/HC) - 145 psid (10 bar)
- Metal Fiber (V) - return (R…V) - 435 psid (30 bar); pressure (D…V) - 3045 psid (210 bar)
- Mobilemicron (MM/RK) - 145 psid (10 bar)

Temperature Range

- -22°F to 212°F (-30°C to 100°C)
  Note: Consult HYDAC for applications below 14°F (-10°C)

Compatibility with Hydraulic Media

- Suitable for use with mineral oils, lubrication oils, non-flammable fluids, synthetic and rapidly biodegradable oils.
  Note: For use with water, please contact HYDAC.

Flow Fatigue Stability to ISO 3724

- High fatigue resistance due to solid filter media supports on upstream and downstream sides and high inherent stability of filter elements.

Cracking Pressure of Bypass Valve *(…R only)*

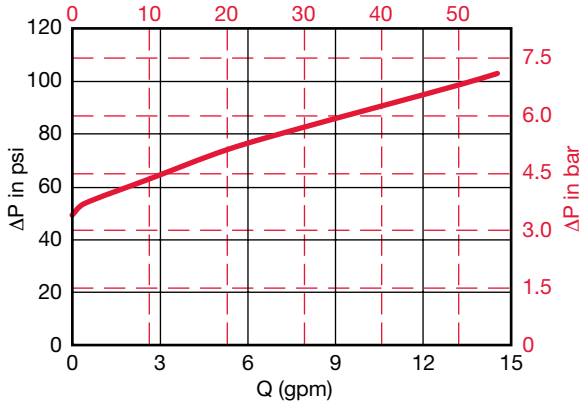
- ΔP = 3 bar + 0.5 bar

Bypass Valve Curves *(…R…ON / …R…BN only)*

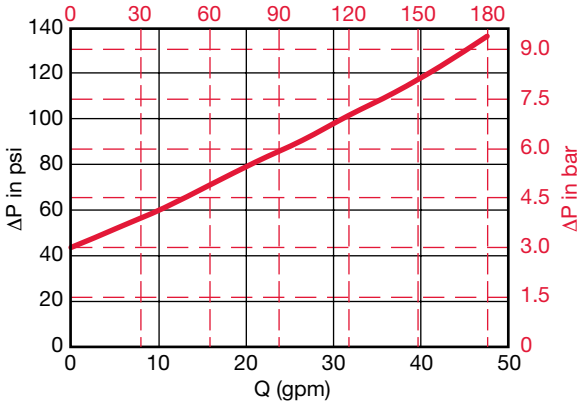
- The bypass valve graphs apply to mineral oils with a density of 0.86 kg/dm³. The differential pressure of the valves changes proportionally to the density. **See graphs below.**

Bypass Valve Curves *(…R…ON / …R…BN only)*

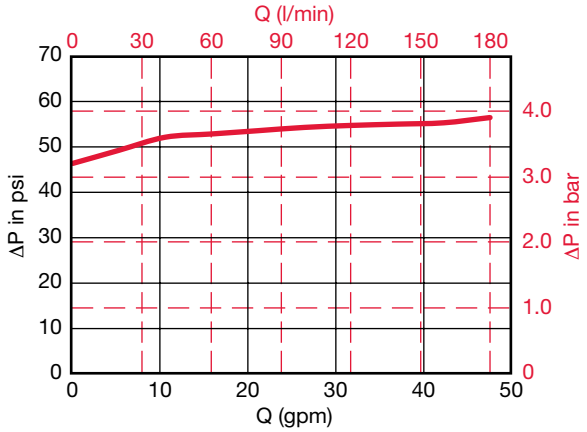
…R…ON / …R…BN
Size 30



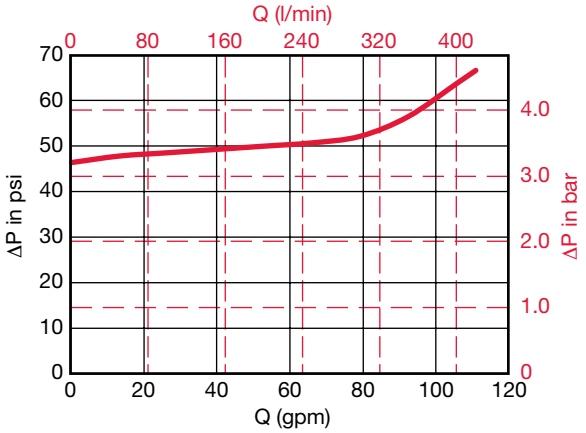
…R…ON / …R…BN
Size 60, 90, 110, 140, 150



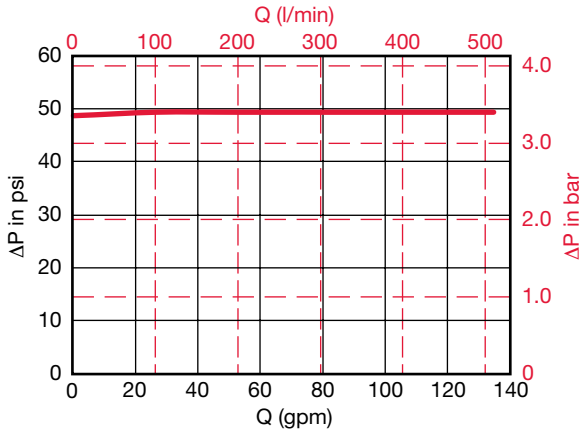
…R…ON / …R…BN
Size 75, 160, 165, 185, 240, 280



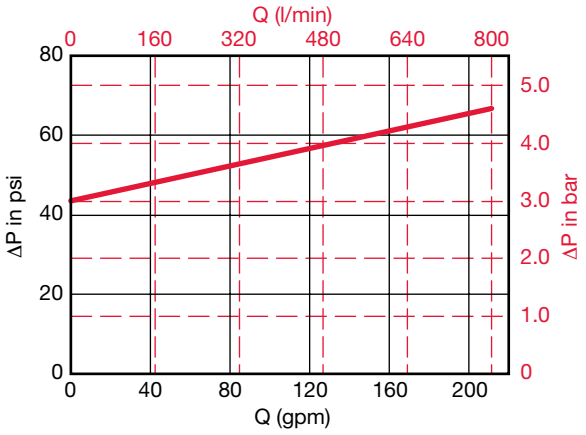
…R…ON / …R…BN
Size 210, 270, 330, 500, 750



…R…ON / …R…BN
Size 660, 850, 1700



…R…ON / …R…BN
Size 950, 1300, 2600



Notes