# Pascal pump

**Air-driven, Compact, High performance Hydraulic pump**

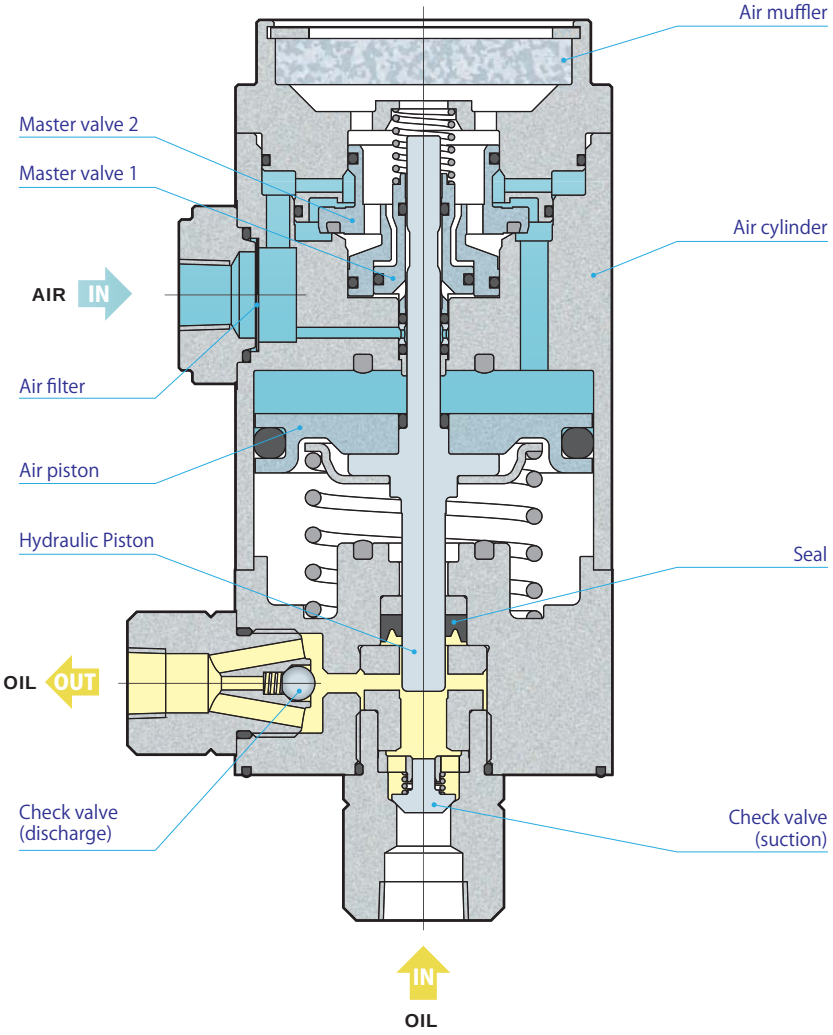



model X63

www.pascaleng.co.jp

# Pascal pump

## Super compact and high performance Air-driven hydraulic pump. Durable and reliable even under the hot and humid environment.




## Functions

- Pascal pump is a compact but reliable hydraulic pump, which converts a compressed air force into high-pressure hydraulic power.
- Boosting ratio can be selected from 9.4 to 95 times in 6 models.
- Secure and high speed reciprocation of air and hydraulic piston generates a repetitive suction and discharge of air and oil. As the hydraulic pressure becomes close to the designated level, the reciprocation becomes slower. At the designated hydraulic pressure, the driving air force and hydraulic force become balanced to maintain the pressure.
- At the balanced condition, there is no air consumption so that there is no power loss or temperature rise compared to an electric pump.
- If there is a decrease in the downstream holding pressure, the pump immediately reacts to start reciprocating to recover the pressure loss.

## Features

- Air Driven & Super Compact

  Unique air driving design enables a smaller and lighter body.

- Mobility with High Performance

  Due to the high durability and impact-resistance for its size, it can be easily installed in a narrow or limited space.

- Highly Reliable Mechanism

  In order to secure stable reciprocating movement ranging from 1 cycle / hour to 2000 cycle / minute, various technical know-how are incorporated.

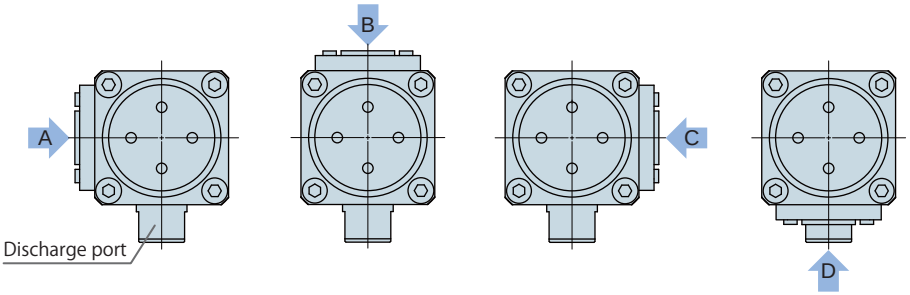
## Model designation

X63①②③④-⑤ [EX : X6310PGN-B]

| X63 | ① Hydraulic piston diameter | | ② Type of Discharge port | | ③ Type of Working fluid | | ④ Type of Tapered pipe thread (Discharge port/Suction port/Air supply port) | | — | ⑤ Direction of Air supply port |
|---|---|---|---|---|---|---|---|---|---|---|
| | 06 | 6.3 mm | S | Tapered pipe thread Rc | Blank | Mineral oil | Blank | BSPT(Rc) : British pipe thread (JIS B 0203) | | A |
| | 08 | 8 mm | P | Manifold mount (except X6320) | G | Water-glycol oil | N | NPT : US pipe thread (except X63**U) | | B |
| | 10 | 10 mm | U | Parallel pipe thread G (ISO1179) | | | | | | C |
| | 12 | 12.5 mm | | | | | | | | D |
| | 16 | 16 mm | | | | | | | | |
| | 20 | 20 mm | | | | | | | | |

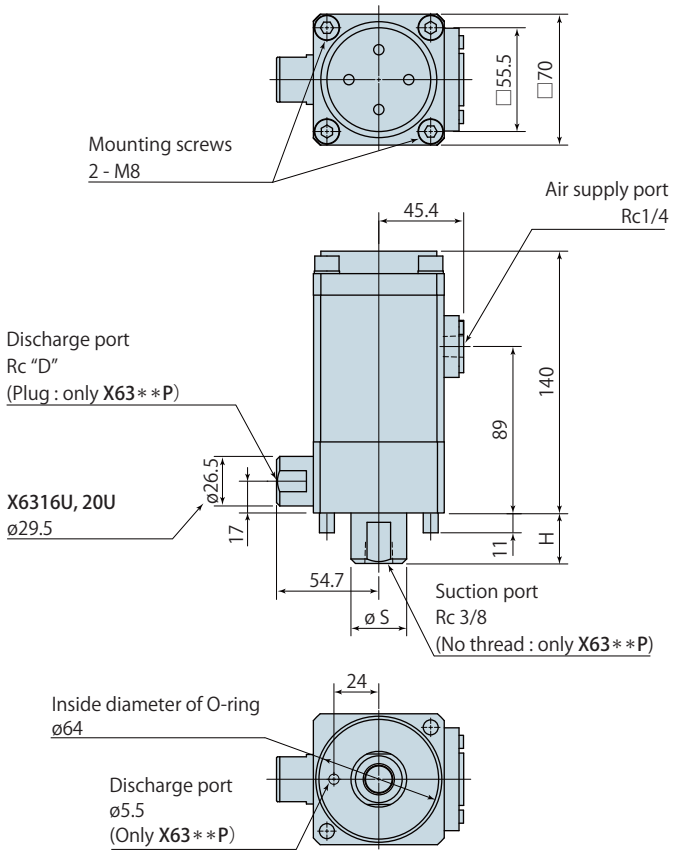
④ Direction of Air supply port

The direction of air supply port against the oil discharge port can be selected among A, B, C, D. (90 degrees pitch)



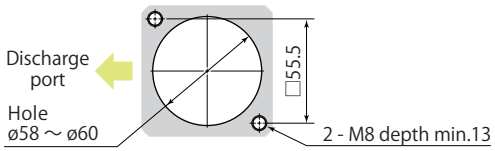

## Dimensions

[This figure shows X63＊＊-B]

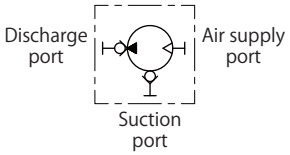



| | X6306 | X6308 | X6310 | X6312 | X6316 | X6320 |
|---|---|---|---|---|---|---|
| D | 1/4 | | | | 3/8 | |
| S | 29.8 | | | 35.5 | | 42 |
| H | 27 (13 : X6306P, 08P, 10P) | | | 27 (16 : X6312P, 16P) | | 27 |

## Mounting Dimensions

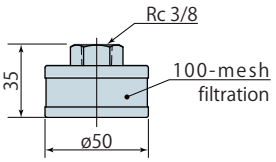



## Symbol




## Suction Filter (option)

model : WSB03




## Caution in use

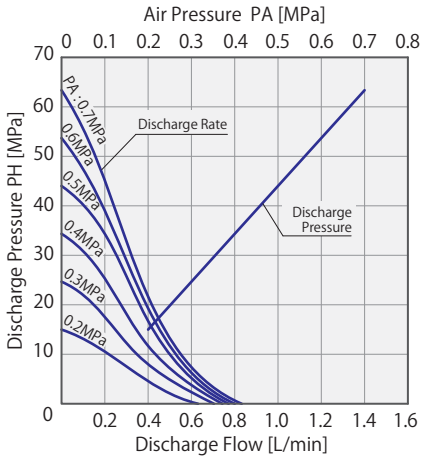
1. Be sure to mount an air filter. Non-drain, oilless air should be supplied to the pump.
2. Be sure to mount a suction filter. 100-mesh filtration and outer max. ø57 is recommended in case other brand of filter selected.
3. Air bleeding must be performed when it is initially installed.

## Specifications

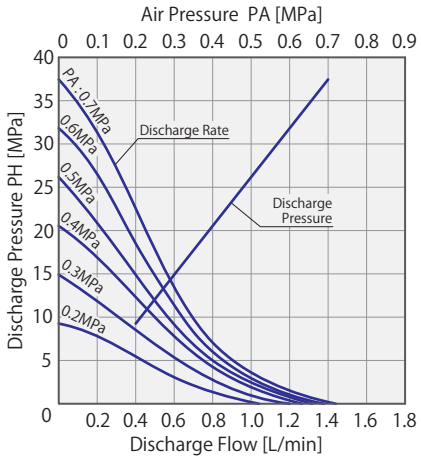
| model | X6306 | X6308 | X6310 | X6312 | X6316 | X6320 |
|---|---|---|---|---|---|---|
| Boosting ratio | 97 | 58 | 37 | 24 | 15 | 9.2 |
| Discharge pressure | Refer to "Performance Diagrams" | | | | | |
| Discharge flow | | | | | | |
| Air pressure range | 0.2 ～ 0.7 MPa | | | | | |
| Air consumption | 0.4Nm³/min | | | | | |
| Operating noise | 78±1db(A) | | | | | |
| Operating temperature | 0～70℃（No frozen） | | | | | |
| Mass | 2.5 kg | | | 2.6 kg | | 2.7 kg |

## Performance Diagrams [Measured with operating oil ISO VG32 at 20℃]

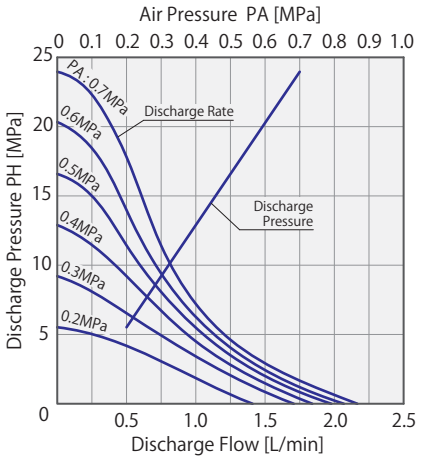
**X6306** PH = 97 (PA-0.05)



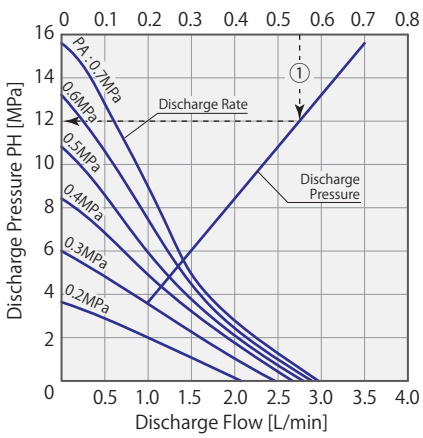

**X6308** PH = 58 (PA-0.05)



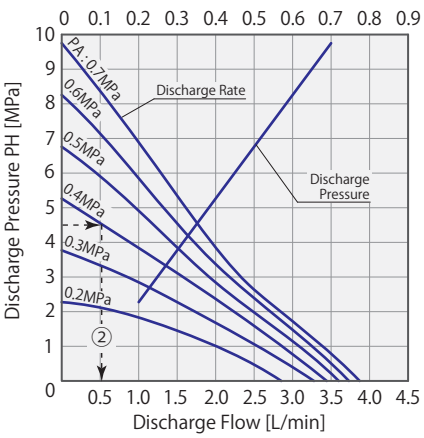

**X6310** PH = 37 (PA-0.05)



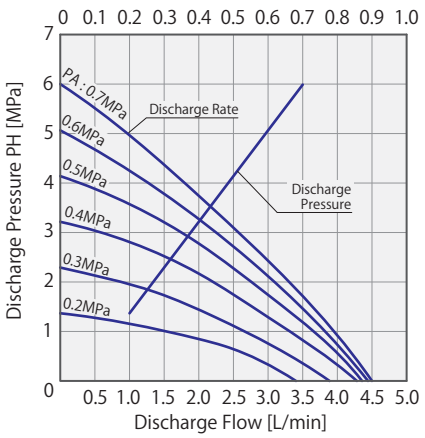

**X6312** PH = 24 (PA-0.05)




**X6316** PH = 15 (PA-0.05)




**X6320** PH = 9.2 (PA-0.05)




### How to read the graph

1. To find discharge pressure PH [ex : X6312]

At air pressure PA=0.55MPa, see above broken line ① showing PH = 12 MPa
Calculation : PH=24 x (0.55 - 0.05)=12MPa

2. To find discharge flow [ex:X6316]

At PA=0.4MPa and discharge pressure PH = 4.5MPa, see above broken line ② showing 0.5L/min


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CERTIFICATE OF APPROVAL ISO9001


Specifications are subject to change without prior notice.