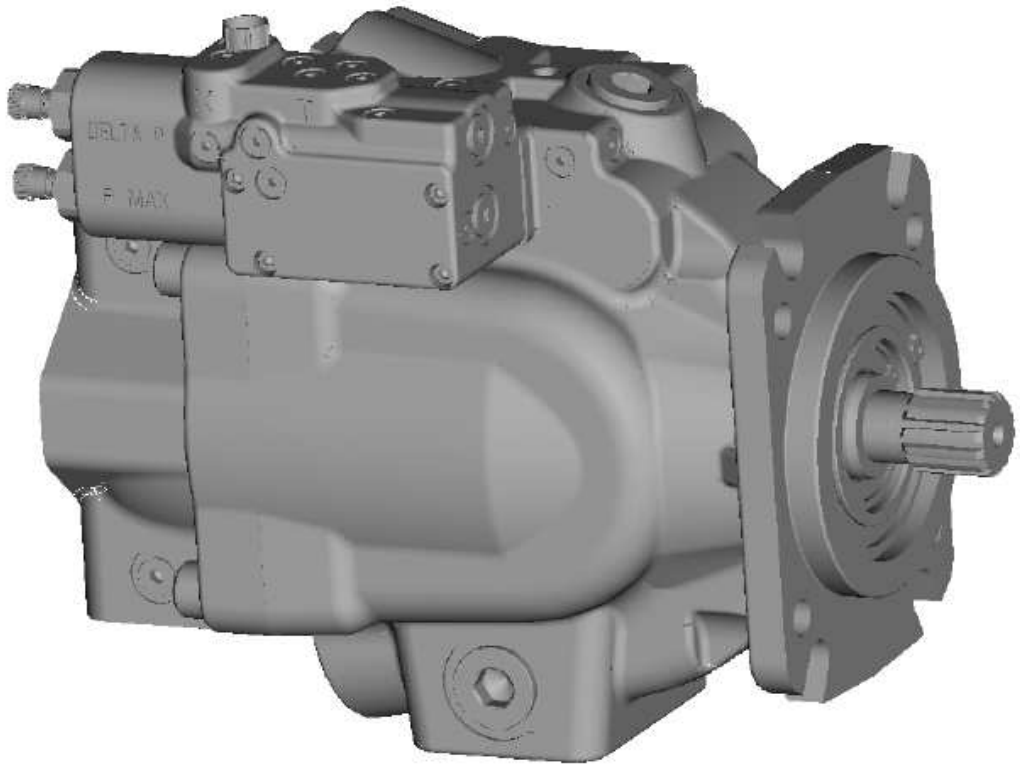
INSTALLATION MANUAL

SERIES P2 and P3

MOBILE PISTON PUMP



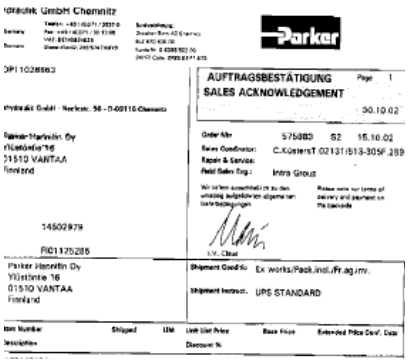
PUMP AND MOTOR DIVISION

Neefestraße 96

09116 Chemnitz, Germany

1 Check model code / compare with your paper work

Nameplate of the pump



Ordering / Sales Acknowledgement

2 Check rotation of the pump

Clockwise rotation (right) - side ported P2

Counter clockwise rotation (right) - side ported P2

Clockwise rotation (right) – thru drive P3

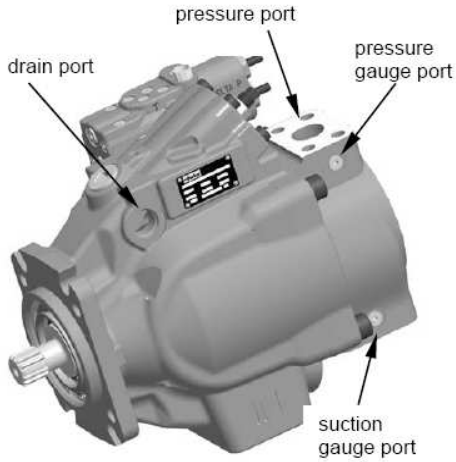
Counter clockwise rotation (right) – thru drive P3

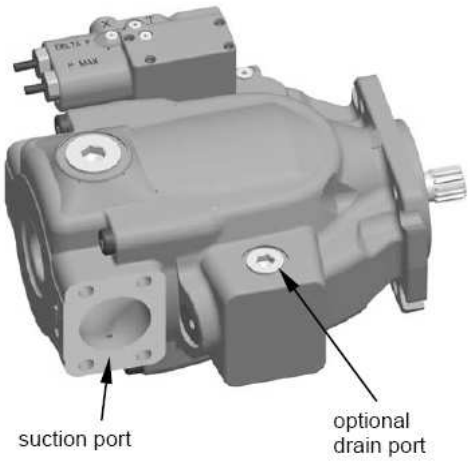
3 Suction, pressure and drain line connection

3.1 Connection P2

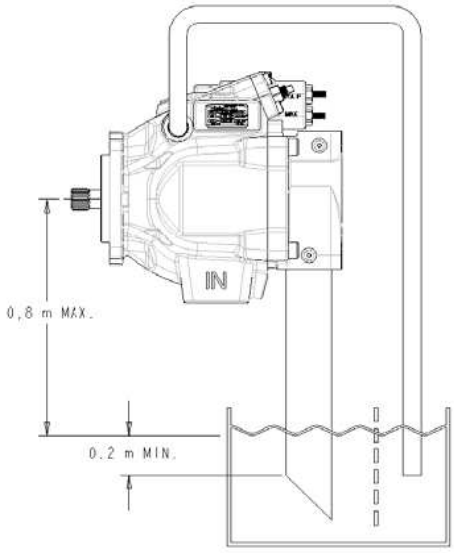
Minimum pump inlet pressure under static and dynamic load: **$p_{in\ min}$ = 0,8 bar absolute**

Maximum pump inlet pressure: **$p_{in\ max}$ = 10 bar**

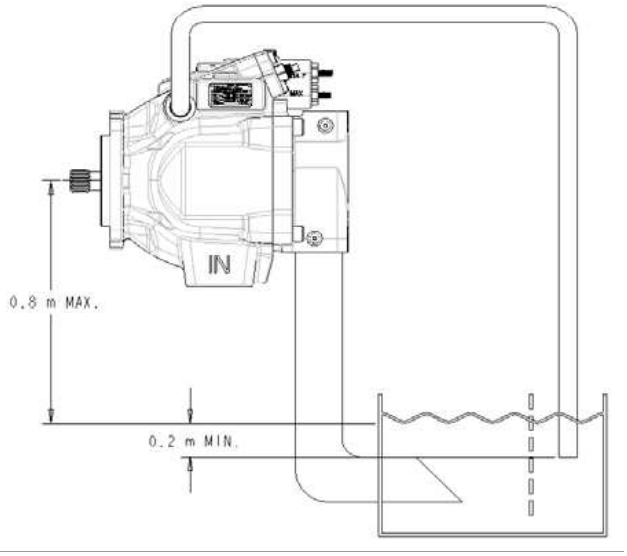




3.1.1 Arrangements P2



Arrangement outside tank.
Fill pump case with oil before start.
Do not restrict suction line.



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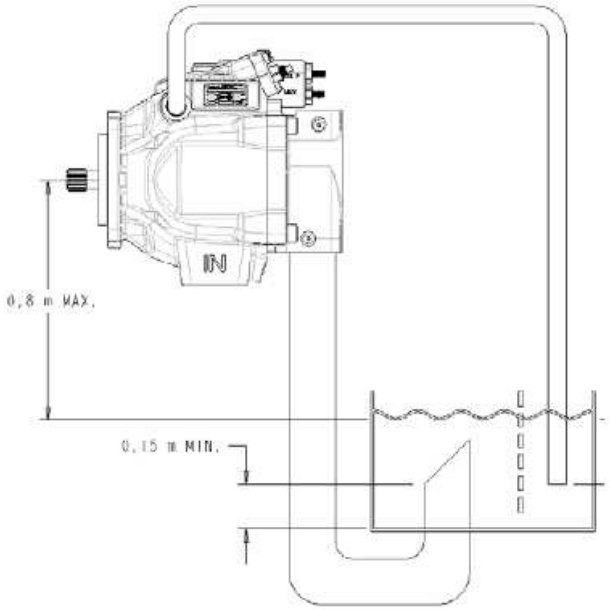
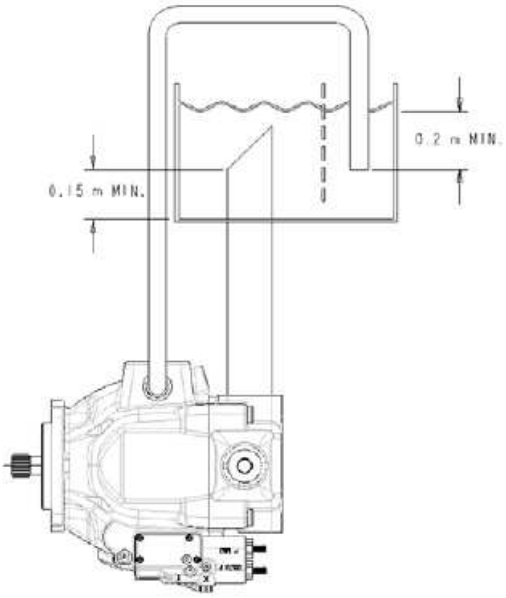
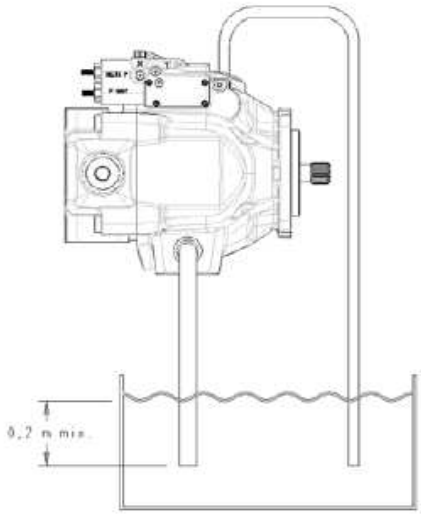


Arrangement outside tank.
Fill pump case with oil before start.
Do not restrict suction line.



Arrangement outside tank.
Fill pump case with oil before start.
Do not restrict suction line.
Preferred arrangement for best suction characteristics + low noise level operation

3.1.2 Drain line connection P2

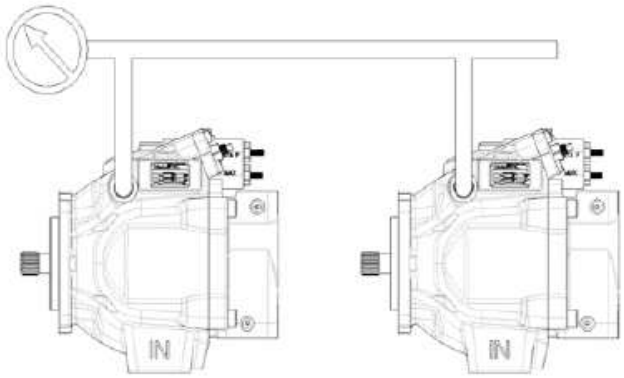


OPTION!

Connect highest drain port with a separate line reduced in size for purging the air out of the case

AND

secondary drain port has to be connected as main drain line.



WARNING!

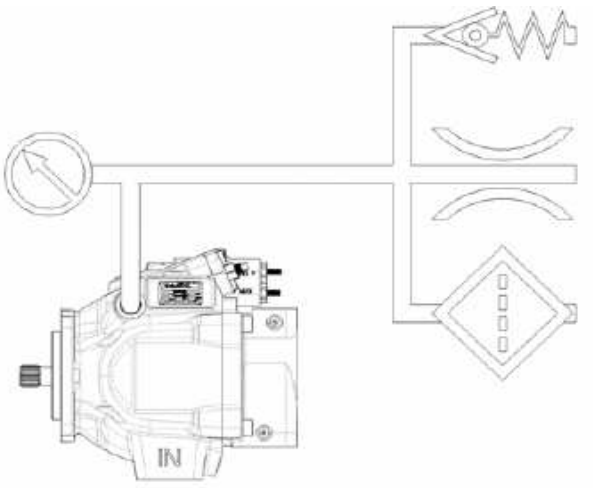
Don not combine drain lines.

Maximum continuous case pressure:

p_{case} = 0,5 bar

Maximum intermittent peak case pressure:

p_{case} = 2 bar



WARNING!

Don not restrict drain line.

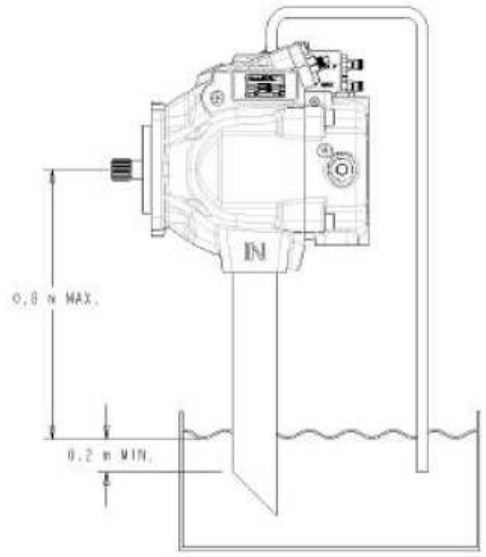
A restricted drain line can damage the pump.

3.2 Connection P3

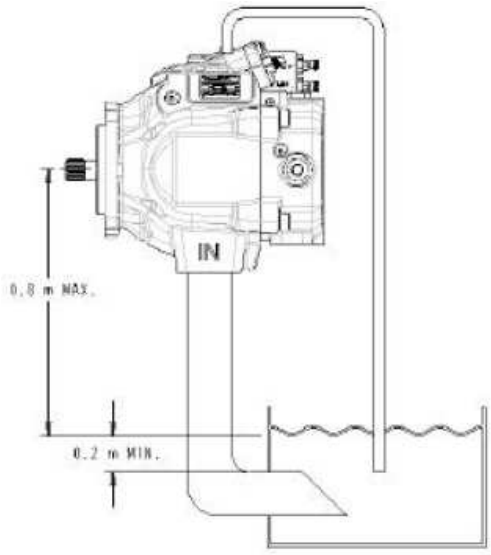
Minimum pump inlet pressure under static and dynamic load: **$p_{in\ min}$ = 0,8 bar absolute**

Maximum pump inlet pressure: **$p_{in\ max}$ = 1 bar**

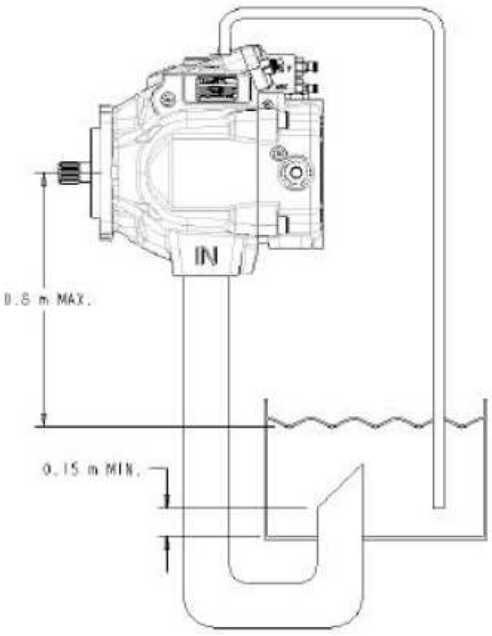
3.2.1 Arrangements P3



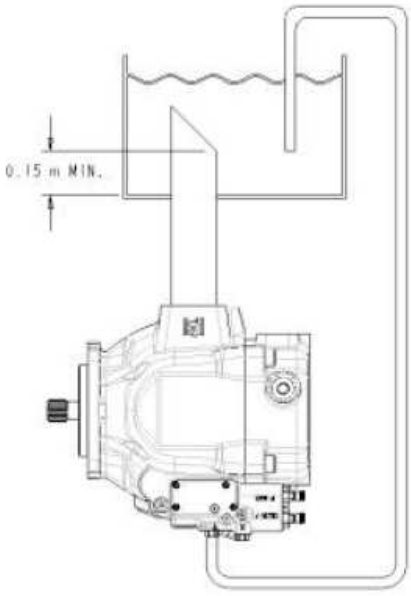
Arrangement outside tank.
Fill pump case with 0.5 l of fluid prior to start up.
Do not restrict suction line.



Arrangement outside tank.
Fill pump case with 0.5 l of fluid prior to start up.
Do not restrict suction line.

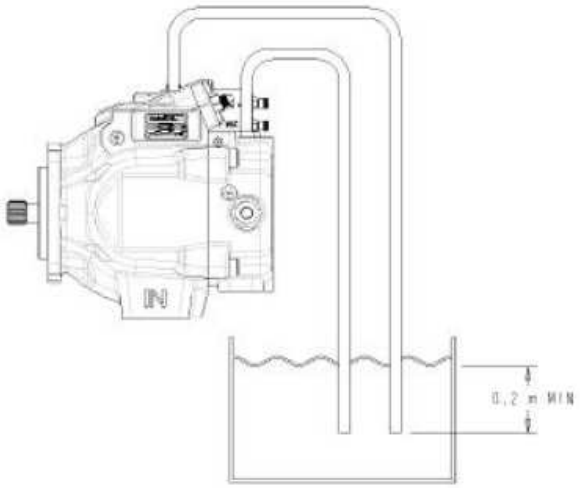


Arrangement outside tank.
Fill pump case with 0.5 l of fluid prior to start up.
Do not restrict suction line.



Arrangement outside tank.
Fill pump case with 0.5 l of fluid prior to start up.
Do not restrict suction line.
Preferred arrangement for best suction characteristics + low noise level operation

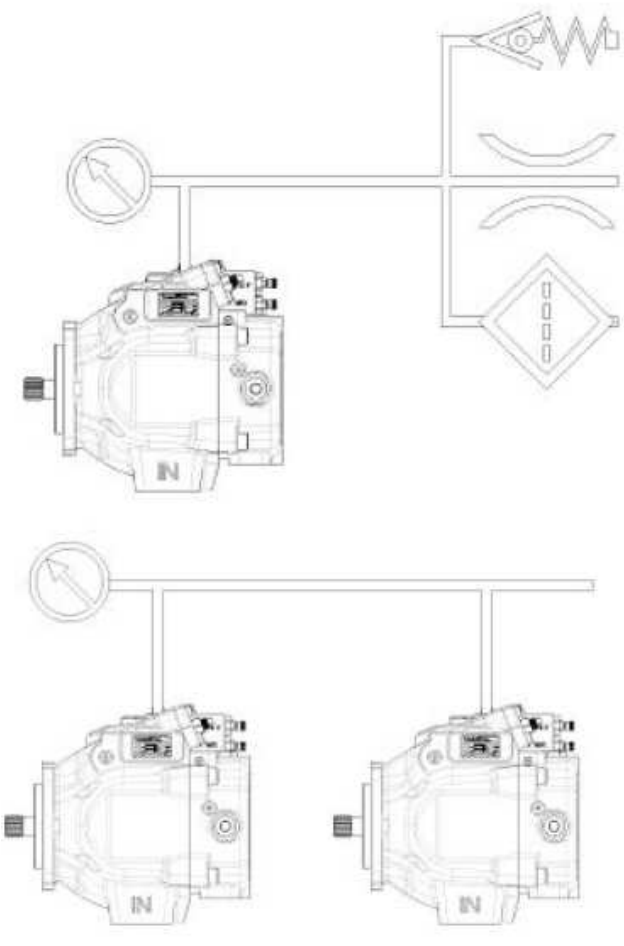
3.2.2 Drain line connection P3



OPTIONAL AIRBLEED CONNECTION

Connect compensator drain line with the reservoir.

Keep inlet and drain line separate (hot loop).



ATTENTION!

Combination and restriction of compensator drain line may result an back pressure.

Maximum continuous drain line pressure:

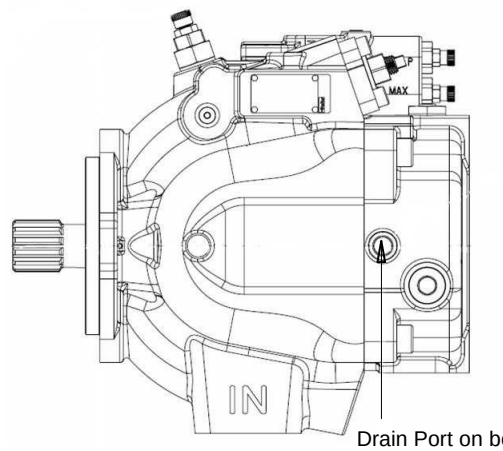
p_{drain} = 2 bar

Maximum intermittent peak drain line pressure:

p_{drain} = 4 bar

3.2.3 P3 pumps with drain port in the rear cover

The main benefit of this version is a continuous cooling flow through the case. Thus a better volumetric efficiency is provided. Flow out of the drain port can be up to ~ 50 l/min and is depending on back pressure in the drain line as well as drive speed.

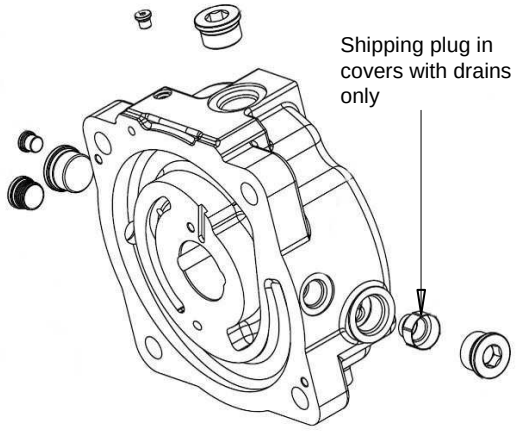


Drain Port on both sides available

Beneath the design itself pumps with inlet drain port configuration can be identified by the last (25th) digit of the order code.

If this one is **D** or **E** drain line has to be connected to the drain port in rearcover.

In case of **U** or **P** the pump still features a compensator with drain port (see installation manual, pages 3 and 4).



Shipping plug in covers with drains only

Drain line has to be connected directly to the tank.

Max. drain line pressure:

p_{drain} = 0,5 bar

4 Start up

Prior to start up, the pump case must be filled with hydraulic fluid (use case drain port). Initial start up should be at zero pressure with an open circuit to enable the pump to prime. Pressure should only be increased once the pump has been fully primed.

5 Hydraulic fluid

5.1 Recommended Fluids

- Normal mineral oil
- Premium hydraulic fluid / HLP oil
- Biodegradable hydraulic fluid
- Synthetic hydraulic fluid
- Fire resistant fluids

Remark:
Maximum system pressure reduced to 210 bar for water based fluids.
Bearing life time reduced to 25 % by using water based fluids.

5.2 Cleanliness level

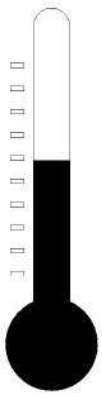
Recommendation for maximized component life and reliability:

Class 21 / 18 / 14 according to ISO 4406

5.3 Viscosity range

Minimum viscosity for short periods:	10 mm²/s (cSt)
Normal operating viscosity:	15 – 40 mm²/s (cSt)
Maximum viscosity for short periods:	1000 mm²/s (cSt)

6 Temperature



6.1 Check hydraulic fluid specification for chemical resistance of seal material!

6.2 Check temparture range of seal material and compare with maximum system and ambient temperature!

N – Nitrile, single shaft seal	- 40℃ to + 90℃
D – Nitrile, double shaft seal	- 40℃ to + 90℃
V – Fluorocarbon, single shaft seal	- 15℃ to + 150℃
T – Fluorocarbon, double shaft seal	- 15℃ to + 150℃

Remark:
The highest fluid temperature will be at the drain port of the pump, up to 20℃ higher than in the reservoir.