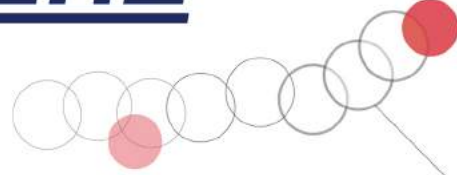




YEOSHE



Hydraulic Piston Pump PV Series



www.yeoshehydraulic.com

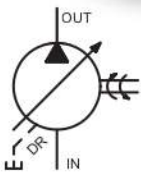
Efficient Performance
Innovative Technology
Reliable Quality and
Service

YEOSHE HYDRAULICS CO.,LTD.

PV Axial piston pump



PV Series axial piston pump



nominal pressure:350 bar
max. pressure:420 bar

1. New type of swash plate and large servo piston with strong bias spring achieves fast response, reduce the noise due to active decompression of system at down stroke.
2. Nine pistons and new precompression technology (precompression filter volume) result in unbeaten low outlet flow pulsation.
3. Complete compensator program offers multiple controls.
4. Rigid and FEM-optimized body design for lowest noise level.
5. Thru drive for 100% nominal torque.
6. Pump combinations (multiple pumps) of same size and model and mounting interface for basically all metric or SAE mounting interfaces.
7. Wide application in automobile industrial, ships, forging machines, tire machines, injection molding machines, machine tools, special-purpose machine.

Quick Reference Data Chart

| Size | Model | Pressure | | Displacement | | Pump Delivery (7 bar) 100 PSI | | | | APPROX. Noise Levels | | | Speed | | Weight KG (LB) |
|------|-------|---------------------|------------------|----------------------|----------------------|---------------------------------|----------|----------|----------|----------------------------|--------------------|--------------------|-------------|--------------|----------------------|
| | | nominal pressure | max. pressure | cm ³ /rev | in ³ /rev | 1500 RPM | | 1800 RPM | | dBA Full Flow and 1500 RPM | | | Max. RPM | Min. RPM | |
| | | | | | | LPM | U.S. GPM | LPM | U.S. GPM | 70 bar (1 KSI) | 207 bar (3 KSI) | 343 bar (5 KSI) | | | |
| 1 | PV016 | 350 | 420 | 16 | 0.98 | 24 | 6.3 | 28.8 | 7.6 | 56 | 60 | 68 | 2750 | 19 (42) | |
| | PV020 | | | 20 | 1.2 | 30 | 7.9 | 36 | 9.5 | | | | | | |
| | PV023 | | | 23 | 1.4 | 34.5 | 9.1 | 41.4 | 10.9 | | | | | | |
| | PV028 | | | 28 | 1.7 | 42 | 11 | 50.4 | 13.2 | | | | | | |
| 2 | PV032 | 350 | 420 | 32 | 1.9 | 48 | 12.7 | 57.6 | 15.2 | 59 | 62 | 69 | 2400 | 30 (66) | |
| | PV040 | | | 40 | 2.4 | 60 | 15.9 | 72 | 19 | | | | | | |
| | PV046 | | | 46 | 2.8 | 69 | 18.2 | 82.2 | 21.9 | | | | | | |
| | PV056 | 280 | 350 | 56 | 3.41 | 84 | 22.1 | 100.8 | 26.6 | | | | | | |
| | PV065 | 250 | 315 | 65 | 3.96 | 97.5 | 25.7 | 117 | 30.9 | | | | | | |
| 3 | PV063 | 350 | 420 | 63 | 3.8 | 94.5 | 25 | 113.4 | 30 | 66 | 70 | 74 | 2100 | 60 (132) | |
| | PV071 | | | 71 | 4.3 | 107 | 28.3 | 128.7 | 34 | | | | 2100 | | |
| | PV080 | | | 80 | 4.8 | 120 | 31.7 | 144 | 38 | | | | 2000 | | |
| | PV092 | | | 92 | 5.6 | 138 | 36.5 | 165.6 | 43.8 | | | | 1900 | | |
| | PV110 | 250 | 280 | 110 | 6.7 | 165 | 43.6 | 198 | 52.3 | | | | 1900 | | |
| 4 | PV125 | 350 | 420 | 125 | 7.6 | 187.5 | 49.5 | 225 | 59.4 | 70 | 74 | 76 | 2200 | 90 (198) | |
| | PV140 | | | 140 | 8.5 | 210 | 55.5 | 252.1 | 66.6 | | | | | | |
| | PV180 | | | 180 | 11 | 270 | 71.3 | 324 | 85.6 | | | | | | 71 |
| | PV210 | 250 | 280 | 210 | 12.8 | 315 | 83.1 | 378 | 99.8 | | | | 73 | | 77 |
| 5 | PV270 | 350 | 420 | 270 | 16.5 | 405 | 107 | 486 | 128.4 | 77 | 79 | 89 | 1800 | 172 (379) | |

1. Outlet port is on the top, the pipe pressure should be less than 2 bar.
 2. The usage of max. Pressure for each circle never exceed 6 seconds. Please see the General Installation Information for hydraulic oil cleanliness manual.
 3. YEOSHE offers tandem pump or other types of pump connection. The mounting has Metric and SAE dimensions.



Type code for standard program

| | | | | | | | | | | |
|-----------|-----------------------|----------------|--------------------|----------|----------|----------|-----------------------|----------|----------|------------|
| PV | 063 | GA | 3 | R | M | 1 | A | 0 | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Series | Size and displacement | Control device | Pressure adjusting | Rotation | Mounting | Threads | Thru drive & 2nd pump | Voltage | Seals | Design No. |

E
4 Horse power for horse power control ("P" prefix)

Series

| | | | |
|---|---|--|----|
| 1 | Axial piston pump variable displacement high pressure version | nominal pressure: 350 bar max. pressure : 420 bar | PV |
|---|---|--|----|

Size and displacement

| | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|----------------------|------|-----|-----|--------|-----|-----|-----|--------|------|-----|-----|--------|-----|-----|-----|--------|-----|------|------|
| 2 | Code | 016 | 020 | 023 | 028 | 032 | 040 | 046 | 056 | 065 | 063 | 071 | 080 | 092 | 110 | 125 | 140 | 180 | 210 | 270 | |
| | Size | Body 1 | | | | Body 2 | | | | Body 3 | | | | Body 4 | | | | Body 5 | | | |
| | Displacement | cm ³ /rev | 16 | 20 | 23 | 28 | 32 | 40 | 46 | 56 | 65 | 63 | 71 | 80 | 92 | 110 | 125 | 140 | 180 | 210 | 270 |
| | | in ³ /rev | 0.98 | 1.2 | 1.4 | 1.7 | 1.9 | 2.4 | 2.8 | 3.41 | 3.96 | 3.8 | 7.3 | 4.8 | 5.6 | 6.6 | 7.6 | 8.5 | 11 | 12.6 | 16.5 |

Control device

| | | | |
|---|--|----|--|
| 3 | Standard pressure compensator | A0 | |
| | None pressure compensator (fixed displacement) (pressure protection required) | LN | |
| | Electrical 2-stage flow compensator (pressure protection required) | LS | |
| | Fixed displacement 2-stage flow compensator (pressure protection required) | LC | |
| | Remote type | | |
| | Remote pressure compensator with NG6 interface | GM | |
| | Remote pressure compensator + Relief valve | GA | |
| | Remote pressure compensator + Proportional pressure valve | GJ | |
| | Electrical unloading type | | |
| | Remote pressure compensator + Electrical unloading | GR | |
| | Remote pressure compensator + 2-stage pressure control | GB | |
| | Remote pressure compensator + Electrical unloading + 2-stage pressure control | GC | |
| | Load-sensing type | | |
| | Load-sensing compensator with NG6 interface | HM | |
| | Load-sensing compensator + Relief valve | HA | |
| | Load-sensing compensator + Proportional pressure valve | HJ | |
| | Load-sensing + Electrical unloading type | | |
| | Load-sensing compensator + Electrical unloading | HR | |
| | Load-sensing compensator + 2-stage pressure control | HB | |
| | Load-sensing compensator + Electrical unloading + 2-stage pressure control | HC | |
| | Proportional pressure, flow type | | |
| | Load-sensing compensator + Proportional flow valve + Relief valve | HQ | |
| | Load-sensing compensator + Proportional pressure valve + Proportional flow valve | HK | |
| | Horse power type | | |
| | Horse power compensator with NG6 interface | PM | |
| | Horse power compensator + Relief valve | PA | |
| | Horse power compensator + Proportional pressure valve | PJ | |
| | Horse power compensator + Electrical unloading | PR | |
| | Horse power compensator + Electrical unloading+2-stage pressure control | PC | |
| | Horse power load-sensing compensator + Relief valve | PH | |
| Horse power load-sensing compensator + Proportional flow valve + Relief valve | PQ | | |
| Horse power load-sensing compensator + Proportional pressure valve | PS | | |

A

2

PV Axial piston pump

Type code for standard program

| | | | | | | | | | | |
|-----------|-----------------------|----------------|--------------------|----------|----------|----------|-----------------------|----------|----------|------------|
| PV | 063 | GA | 3 | R | M | 1 | A | 0 | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Series | Size and displacement | Control device | Pressure adjusting | Rotation | Mounting | Threads | Thru drive & 2nd pump | Voltage | Seals | Design No. |

E
4 Horse power for horse power control ("P" prefix)

Pressure adjustment

| | | |
|---|---------------------------|---|
| 4 | 10~140 bar (145~2030 PSI) | 2 |
| | 35~250bar (507~3625 PSI) | 3 |
| | 40~280bar (580~4060 PSI) | 4 |
| | 50~315bar (725~4567 PSI) | 5 |
| | 70~350bar (1015~5075 PSI) | 6 |

Pressure range for each displacement:

| | | 2 | 3 | 4 | 5 | 6 |
|---|-------------|---|---|---|---|---|
| 4 | PV016~PV023 | ■ | ■ | ■ | ■ | ■ |
| | PV028 | ■ | ■ | ■ | - | - |
| | PV032~PV046 | ■ | ■ | ■ | ■ | ■ |
| | PV056 | ■ | ■ | ■ | - | - |
| | PV065 | ■ | ■ | - | - | - |
| | PV063~PV092 | ■ | ■ | ■ | ■ | ■ |
| | PV110 | ■ | ■ | - | - | - |
| | PV125~PV180 | ■ | ■ | ■ | ■ | ■ |
| | PV210 | ■ | ■ | ■ | - | - |
| | PV270 | ■ | ■ | ■ | ■ | ■ |

Pressure range for each control device:

| | | 2 | 3 | 4 | 5 | 6 | |
|---|--|---|---|---|---|---|--|
| 4 | A0 Standard pressure compensator | ■ | ■ | ■ | ■ | ■ | |
| | LN None pressure compensator (fixed displacement) (pressure protection required) | ■ | ■ | ■ | ■ | ■ | |
| | LS Electrical 2-stage flow compensator (pressure protection required) | ■ | ■ | ■ | ■ | ■ | |
| | LC Fixed displacement 2-stage flow compensator (pressure protection required) | ■ | ■ | ■ | ■ | ■ | |
| | Remote type | | | | | | |
| | GM Remote pressure compensator with NG6 interface | ■ | ■ | ■ | ■ | ■ | |
| | GA Remote pressure compensator + Relief valve | ■ | ■ | ■ | ■ | ■ | |
| | GJ Remote pressure compensator + Proportional pressure valve | ■ | ■ | - | - | - | |
| | Electrical unloading type | | | | | | |
| | GR Remote pressure compensator + Electrical unloading | ■ | ■ | ■ | ■ | ■ | |
| | GB Remote pressure compensator + 2-stage pressure control | ■ | ■ | ■ | ■ | ■ | |
| | GC Remote pressure compensator + Electrical unloading + 2-stage pressure control | ■ | ■ | ■ | ■ | ■ | |
| | Load-sensing Type | | | | | | |
| | HM Load-sensing compensator with NG6 interface | ■ | ■ | ■ | ■ | ■ | |
| | HA Load-sensing compensator + Relief valve | ■ | ■ | ■ | ■ | ■ | |
| HJ Load-sensing compensator + Proportional pressure valve | ■ | ■ | - | - | - | | |

■ = available - = on request ※ = standard type



Type code for standard program

| | | | | | | | | | | |
|-----------|-----------------------|----------------|--------------------|----------|----------|----------|-----------------------|----------|----------|------------|
| PV | 063 | GA | 3 | R | M | 1 | A | 0 | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Series | Size and displacement | Control device | Pressure adjusting | Rotation | Mounting | Threads | Thru drive & 2nd pump | Voltage | Seals | Design No. |

| | |
|----------|---|
| E | Horse power for horse power control ("P" prefix) |
| 4 | |

Pressure range for each control device:

2 3 4 5 6

| | | | | | |
|----|---|--|-------------------------------------|-------------------------------------|-------------------------------------|
| 4 | Load-sensing + Electrical unloading type | | | | |
| | HR | Load-sensing compensator + Electrical unloading | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | HB | Load-sensing compensator + 2-stage pressure control | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | HC | Load-sensing compensator + Electrical unloading + 2-stage pressure control | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | Proportional pressure, flow type | | | | |
| | HQ | Load-sensing compensator + Proportional flow valve + Relief valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | HK | Load-sensing compensator + Proportional pressure valve + Proportional flow valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | - |
| | Horse power type | | | | |
| | PM | Horse power compensator with NG6 interface | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | PA | Horse power compensator + Relief valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | PJ | Horse power compensator + Proportional pressure valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | - |
| | PR | Horse power compensator + Relief valve + Electrical unloading | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | PC | Horse power compensator + Electrical unloading +2-stage pressure control | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | PH | Horse power load-sensing compensator + Relief valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| PQ | Horse power load-sensing compensator + Proportional flow valve + Relief valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| PS | Horse power load-sensing compensator + Proportional pressure valve | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | - | |

Pressure adjusting (Please following page A-34~36)

| Displacement | Horse power |
|-------------------|---|
| PV016~PV023,28 | <input type="checkbox"/> A 3KW <input type="checkbox"/> B 4KW <input type="checkbox"/> C 5.5KW <input type="checkbox"/> D 7.5KW <input type="checkbox"/> E 11KW |
| PV032~PV046,56,65 | <input type="checkbox"/> C 5.5KW <input type="checkbox"/> D 7.5KW <input type="checkbox"/> E 11KW <input type="checkbox"/> F 15KW <input type="checkbox"/> G 18.5KW <input type="checkbox"/> H 22KW |
| 4 PV063~PV092,110 | <input type="checkbox"/> E 11KW <input type="checkbox"/> F 15KW <input type="checkbox"/> G 18.5KW <input type="checkbox"/> H 22KW <input type="checkbox"/> I 30KW <input type="checkbox"/> J 37KW <input type="checkbox"/> K 45KW |
| PV125,140 | <input type="checkbox"/> G 18.5KW <input type="checkbox"/> H 22KW <input type="checkbox"/> I 30KW <input type="checkbox"/> J 37KW <input type="checkbox"/> K 45KW <input type="checkbox"/> L 55KW |
| PV180,210 | <input type="checkbox"/> H 22KW <input type="checkbox"/> I 30KW <input type="checkbox"/> J 37KW <input type="checkbox"/> K 45KW <input type="checkbox"/> L 55KW <input type="checkbox"/> M 75KW <input type="checkbox"/> N 90KW |
| PV270 | <input type="checkbox"/> J 37KW <input type="checkbox"/> K 45KW <input type="checkbox"/> L 55KW <input type="checkbox"/> M 75KW <input type="checkbox"/> N 90KW <input type="checkbox"/> O 110KW <input type="checkbox"/> P 132KW |

Rotation

| | | |
|---|-------------------|---|
| 5 | Clockwise | R |
| | Counter clockwise | L |

= available - = on request ※ = standard type

Type code for standard program

| | | | | | | | | | | |
|-----------|-----------------------|----------------|--------------------|----------|----------|----------|-----------------------|----------|----------|------------|
| PV | 063 | GA | 3 | R | M | 1 | A | 0 | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Series | Size and displacement | Control device | Pressure adjusting | Rotation | Mounting | Threads | Thru drive & 2nd pump | Voltage | Seals | Design No. |

| | |
|----------|---|
| E | Horse power for horse power control ("P" prefix) |
| 4 | |

Mounting

| | | | | | | | |
|---|--------|----------------|--|---|--|---|--|
| 6 | Metric | Parallel keyed | <input type="checkbox"/> M <input type="checkbox"/> R (A-44) | <input type="checkbox"/> M <input type="checkbox"/> R (A-52) | <input type="checkbox"/> M <input type="checkbox"/> R (A-60) | <input type="checkbox"/> M <input type="checkbox"/> R <input type="checkbox"/> Q (A-67) | <input type="checkbox"/> M <input type="checkbox"/> R (A-74) |
| | | Splined | <input type="checkbox"/> K <input type="checkbox"/> S (A-44) | <input type="checkbox"/> K <input type="checkbox"/> S <input type="checkbox"/> P (A-52) | <input type="checkbox"/> K <input type="checkbox"/> S (A-60) | <input type="checkbox"/> K <input type="checkbox"/> S <input type="checkbox"/> P (A-67) | <input type="checkbox"/> K <input type="checkbox"/> S (A-74) |
| | Inch | Parallel keyed | <input type="checkbox"/> N <input type="checkbox"/> J (A-46) | <input type="checkbox"/> N <input type="checkbox"/> J (A-54) | <input type="checkbox"/> N <input type="checkbox"/> J (A-62) | <input type="checkbox"/> N <input type="checkbox"/> J <input type="checkbox"/> F (A-69) | <input type="checkbox"/> N <input type="checkbox"/> J (A-76) |
| | | Splined | <input type="checkbox"/> D <input type="checkbox"/> U (A-46) | <input type="checkbox"/> D <input type="checkbox"/> U <input type="checkbox"/> G (A-54) | <input type="checkbox"/> D <input type="checkbox"/> U (A-62) | <input type="checkbox"/> D <input type="checkbox"/> U <input type="checkbox"/> G (A-69) | <input type="checkbox"/> D <input type="checkbox"/> U (A-76) |

(Dimensions refer to dimension diagram)

Threads

| | | |
|---|--------------|----------------------------|
| 7 | BSPP (G) | <input type="checkbox"/> 1 |
| | PT (RC) | <input type="checkbox"/> 2 |
| | UNF (SAE) | <input type="checkbox"/> 3 |
| | ISO 6149 (M) | <input type="checkbox"/> 7 |

Thru drive & 2nd pump

| | Displacement | Code |
|---|-------------------|---|
| 8 | PV016~PV270 | <input type="checkbox"/> A Single pump <input type="checkbox"/> B Prepared for thru drive |
| | PV016~PV023,28 | <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K |
| | PV032~PV046,56,65 | <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> L |
| | PV063~PV092,110 | <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> L <input type="checkbox"/> M |
| | PV125~PV180,210 | <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> L <input type="checkbox"/> M |
| | PV270 | <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> N |

Size

| | | |
|---|------------------|----------------------------|
| 8 | SAE AA, Ø50.8 mm | <input type="checkbox"/> C |
| | SAE A, Ø82.55 mm | <input type="checkbox"/> D |
| | SAE B, Ø101.6 mm | <input type="checkbox"/> E |
| | SAE C, Ø127 mm | <input type="checkbox"/> F |
| | SAE D, Ø152.4 mm | <input type="checkbox"/> G |
| | SAE E, Ø165.1 mm | <input type="checkbox"/> H |
| | Metric, Ø63 mm | <input type="checkbox"/> I |
| | Metric, Ø80 mm | <input type="checkbox"/> J |
| | Metric, Ø100 mm | <input type="checkbox"/> K |
| | Metric, Ø125 mm | <input type="checkbox"/> L |
| | Metric, Ø160 mm | <input type="checkbox"/> M |
| | Metric, Ø200 mm | <input type="checkbox"/> N |

Other pumps are acceptable to order



Type code for standard program

A

6

PV Axial piston pump

| | | | | | | | | | | |
|-----------|-----------------------|----------------|--------------------|----------|----------|----------|-----------------------|----------|----------|------------|
| PV | 063 | GA | 3 | R | M | 1 | A | 0 | N | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Series | Size and displacement | Control device | Pressure adjusting | Rotation | Mounting | Threads | Thru drive & 2nd pump | Voltage | Seals | Design No. |

E
4 Horse power for horse power control ("P" prefix)

Voltage

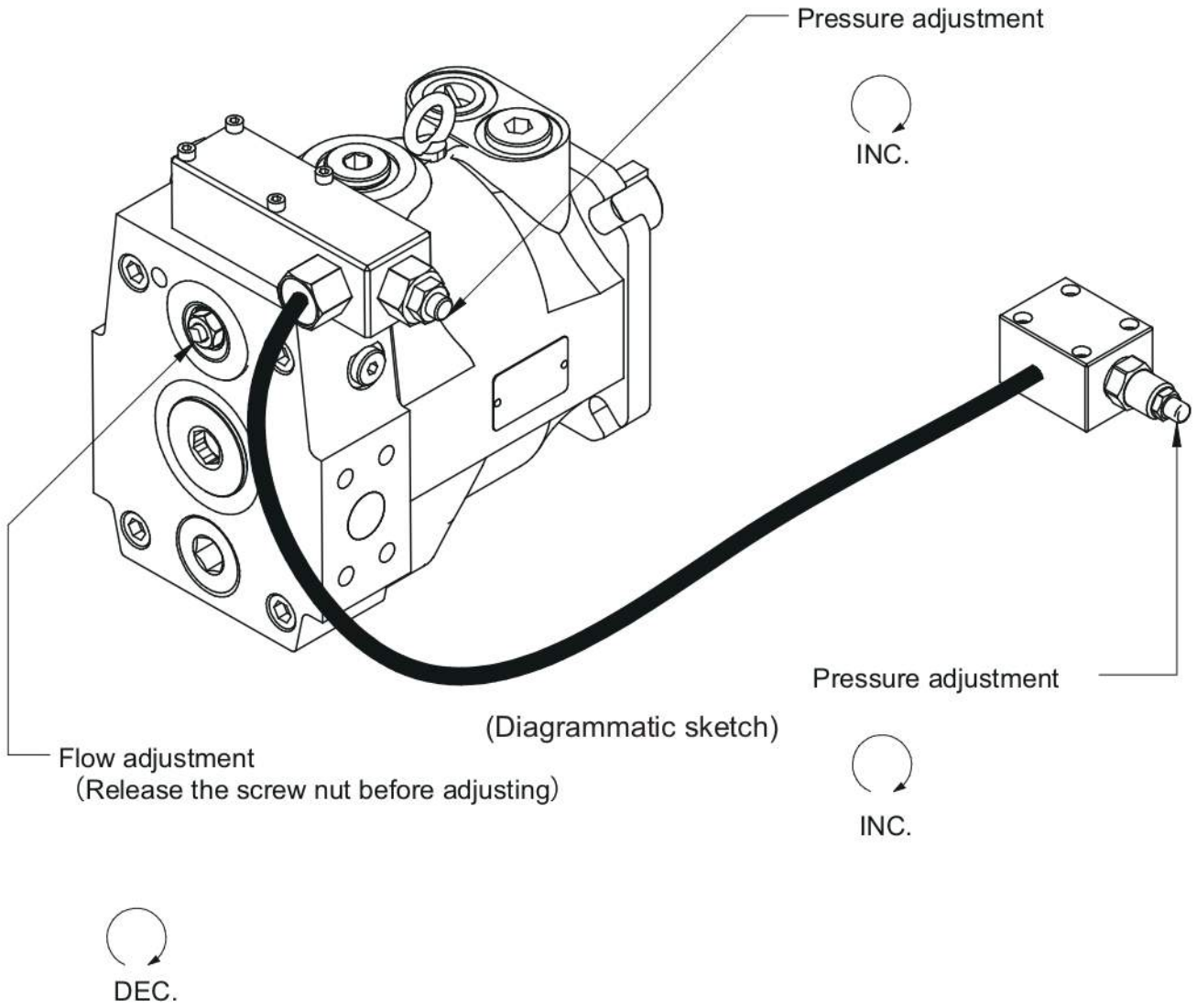
| | | |
|---|------------------|---|
| 9 | None | 0 |
| | AC100V (50/60HZ) | A |
| | AC110V (60HZ) | B |
| | AC200V (50/60HZ) | C |
| | AC220V (60HZ) | D |
| | DC 12V | E |
| | DC 24V | F |

Seals

| | | | |
|----|-------------------|---|---|
| 10 | NBR | N | ※ |
| | VITON, FKM | V | |
| | Ethylen-propylene | E | |

■ = available - = on request ※ = standard type

Pressure & Flow Adjustment



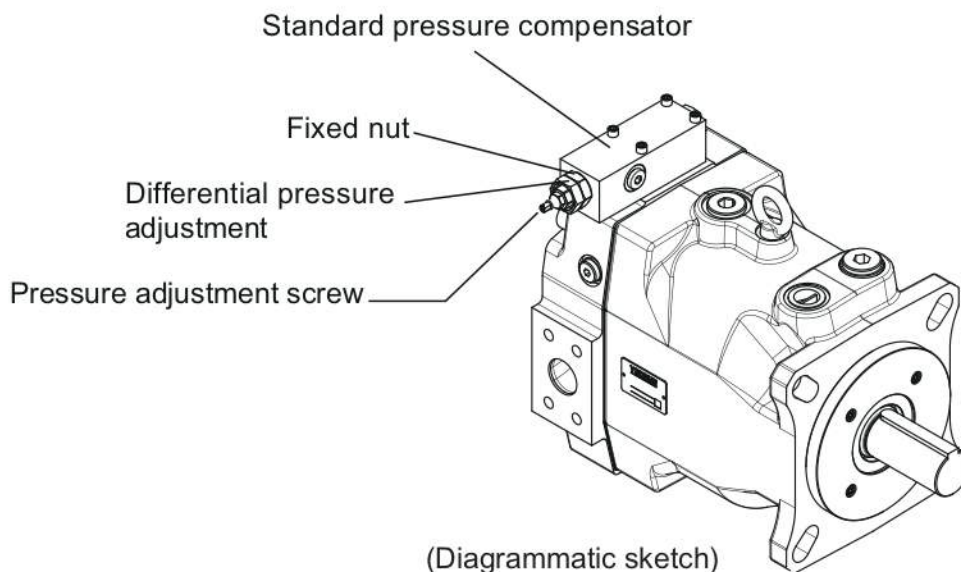


A0 Standard pressure compensator

A

8

PV Axial piston pump



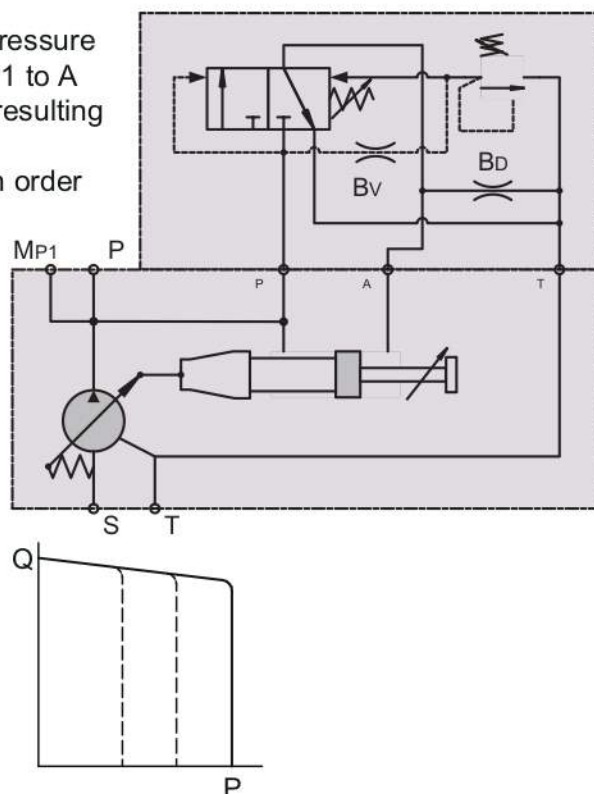
A0 Standard pressure compensator

The standard pressure compensator adjusts the pump displacement according to the actual need of the system in order to keep the pressure constant.

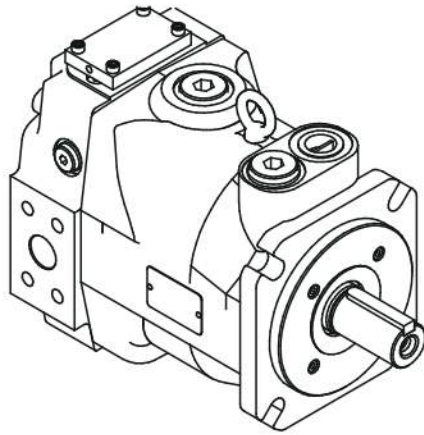
As long as the system pressure at outlet port P is lower than the set pressure (set as spring preload of the compensator spring) the working port A of the compensator valve is connected to the case drain and the piston area is unloaded. Bias spring and system pressure on the annulus area keep the pump at full displacement.

When the system pressure reaches the set pressure the compensator valve spool connects port P1 to A and builds up a pressure at the servo piston resulting in a downstroking of the pump.

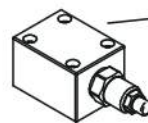
The displacement of the pump is controlled in order to match the flow requirement of the system.



LN None pressure compensator (fixed displacement) (pressure protection required)



(Diagrammatic sketch)



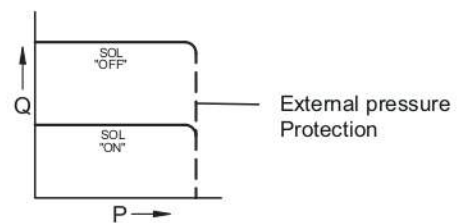
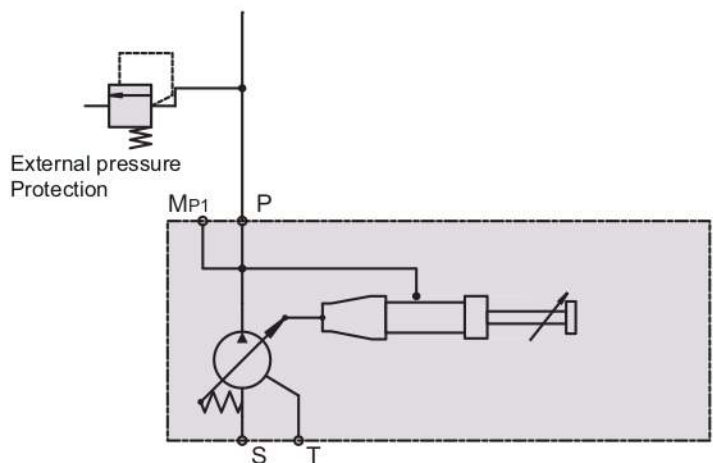
External pressure protection Relief valve(additional)

LN None pressure compensator (fixed displacement) (pressure protection required)

By using the system under stable displacement and pressure situation, standard pressure compensator can be omitted which helps cost down.

Notice:

External pressure protection is necessarily added at port PM to limit the pressure; otherwise the system pressure will be over high .



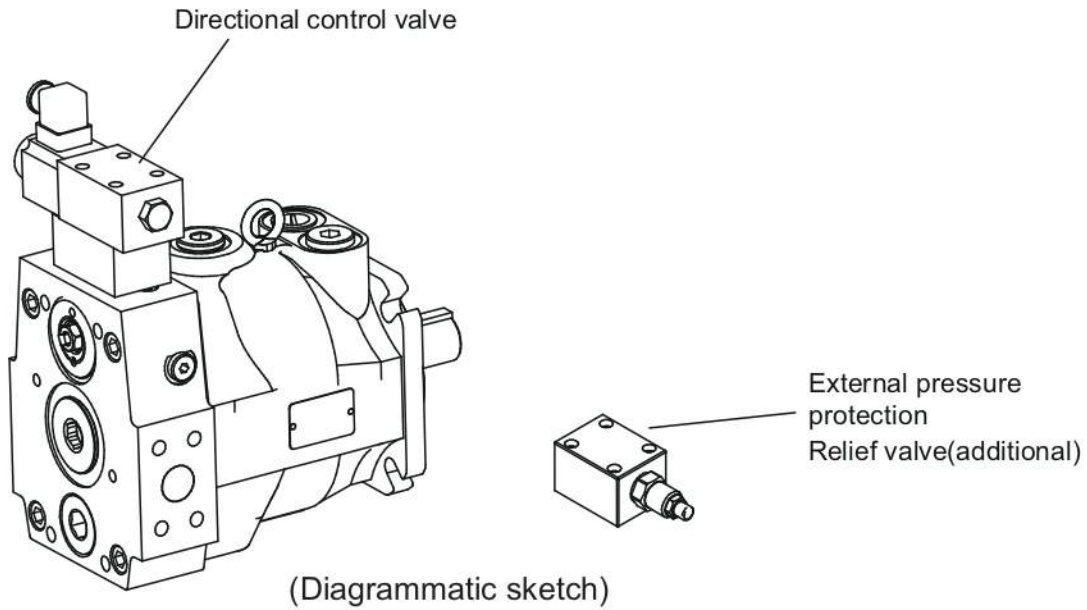


LS Electrical 2-stage flow compensator (pressure protection required)

A

10

PV Axial piston pump

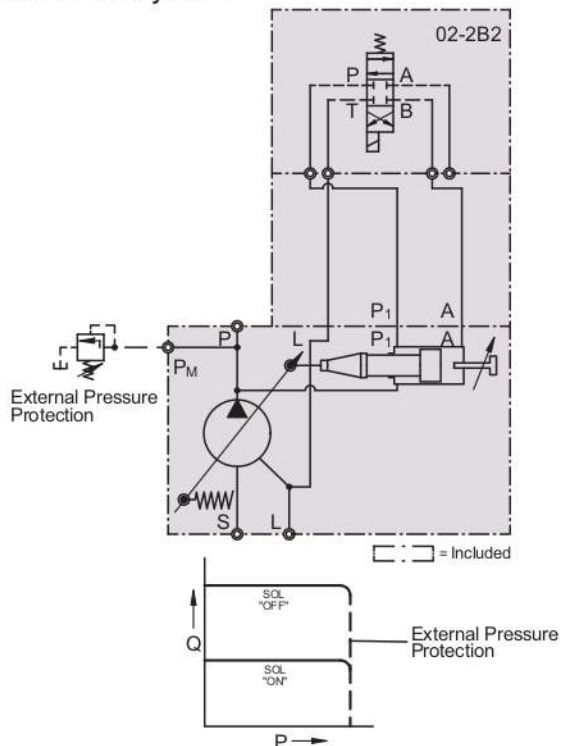


LS Electrical 2-stage flow compensator
(pressure protection required)

Control the hydraulic circuit change by using directional control valve.
LS control is applied to two-stage stroke and different speed system.

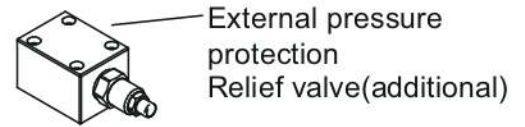
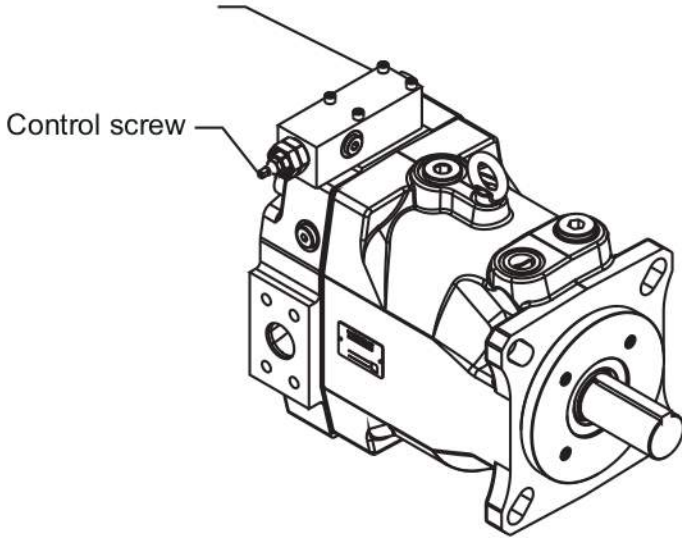
Notice:

External pressure protection is necessarily added at port PM to limit the pressure; otherwise the system pressure will be over high.



LC Fixed displacement 2-stage flow compensator **YEOSHE** (pressure protection required)

Fixed displacement 2-stage flow compensator
(pressure protection required)



(Diagrammatic sketch)

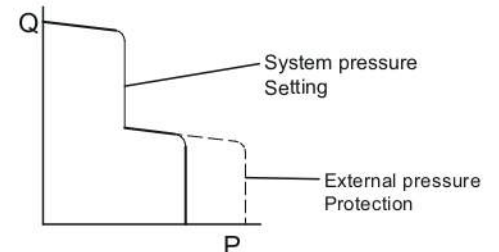
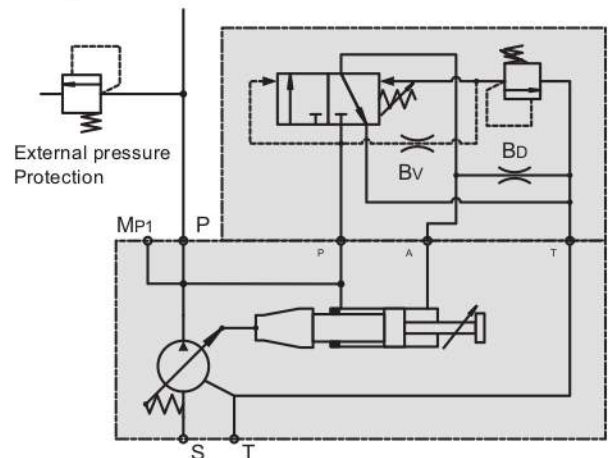
LC Fixed displacement 2-stage flow compensator
(pressure protection required)

Control the hydraulic circuit change by using the system pressure setting to achieve the switch of big and small flow.

LS control is applied to two-stage stroke and different speed system.

Notice:

External pressure protection is necessarily added at port PM to limit the pressure; otherwise the system pressure will be over high.



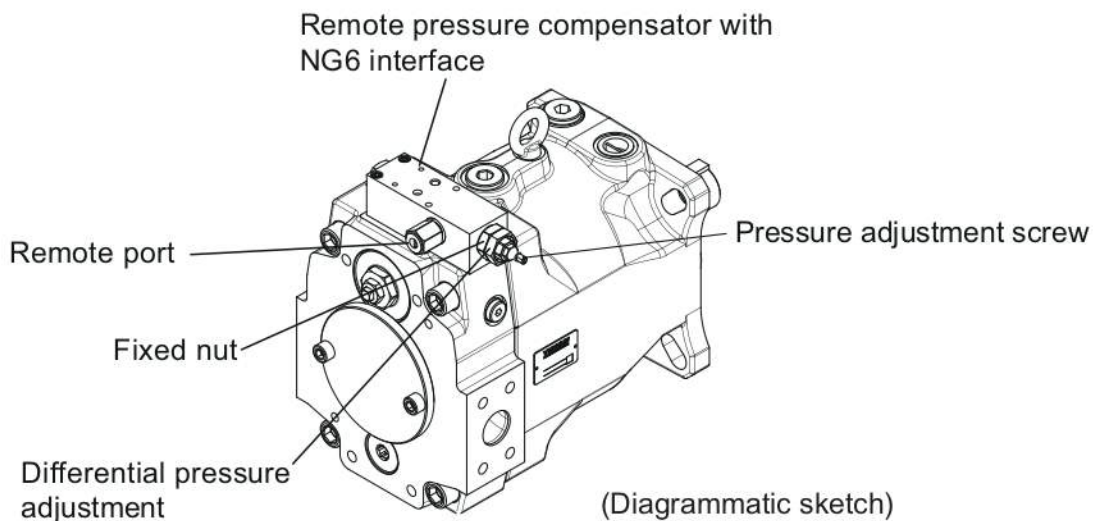


GM Remote pressure compensator with NG6 interface

A

12

PV Axial piston pump



GM Remote pressure compensator with NG6 interface

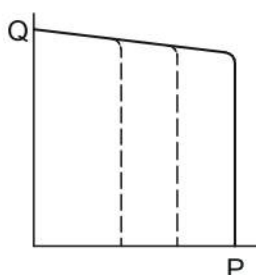
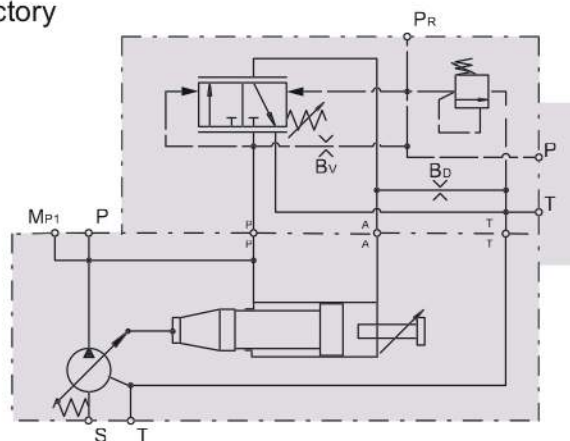
Version GM of the remote pressure compensator provides on its top side an interface NG6, DIN24340 (CETOP 03 at RP35H, NFPA D03).

This interface allows a direct mounting of a pilot valve. Beside manual or electrohydraulic operated valves, it is also possible to mount complete multiple pressure circuits directly on the compensator body.

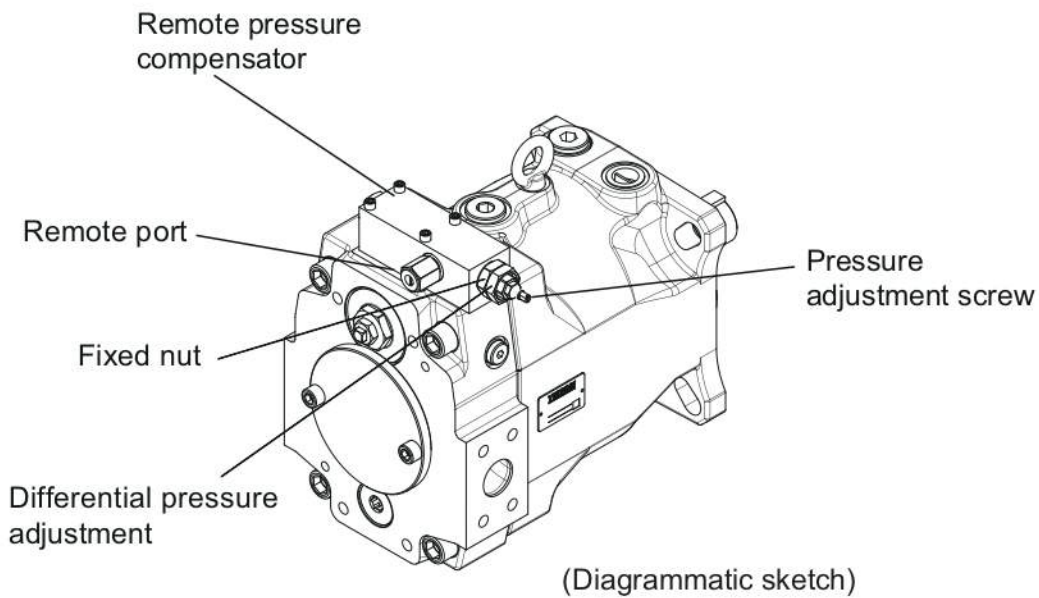
YEOSHE offers a variety of these compensator accessories ready to install.

All remote pressure compensator have a factory setting of 15 bar differential pressure.

With this setting, the controlled pressure at the pump outlet is higher than the pressure controlled by the pilot valve.



GA Remote pressure compensator + Relief valve **YEOSHE**

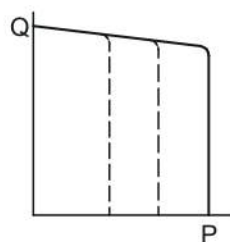
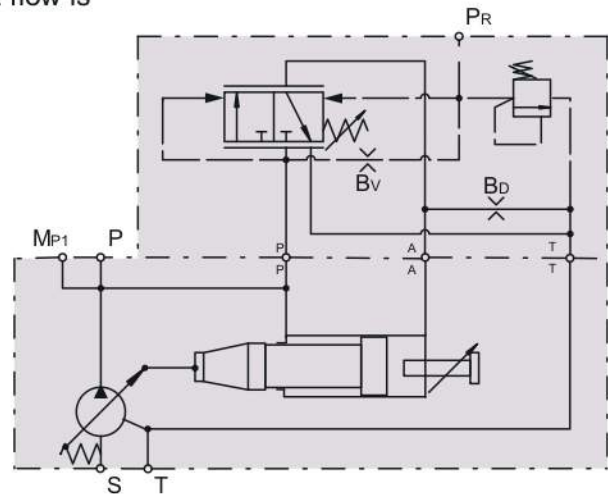


GA Remote pressure compensator + Relief valve

The pressure is set directly at the compensator spring, and the setting of remote pressure compensator can be achieved by any suitable pilot pressure valve connected to pilot port PP.

The pilot valve can be installed remote from the pump in some distance.

That allows pressure setting, e.g. from the control panel of the machine. The pilot flow supply is internal through the valve spool, and the pilot flow is 1~1.5 L/min.



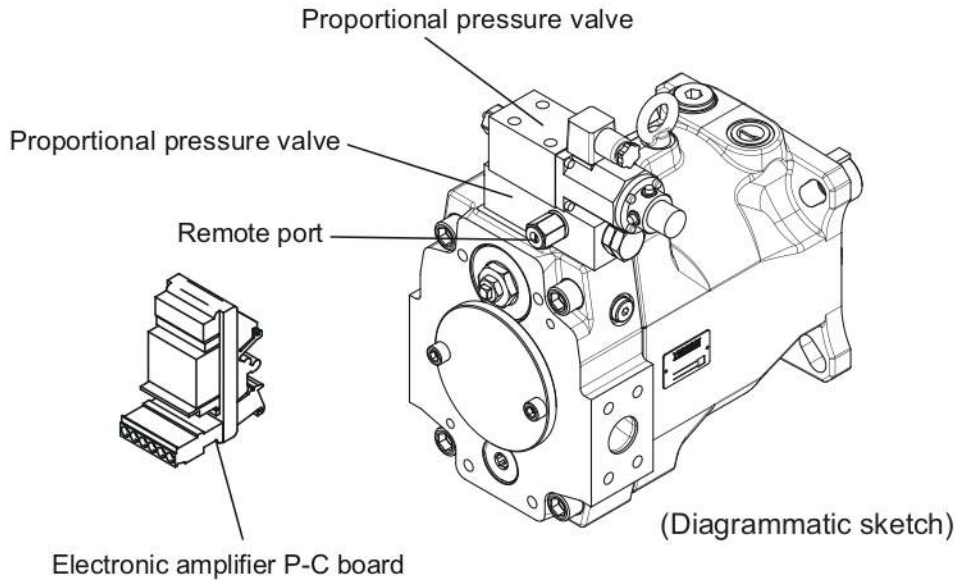


GJ Remote pressure compensator + Proportional pressure valve

A

14

PV Axial piston pump

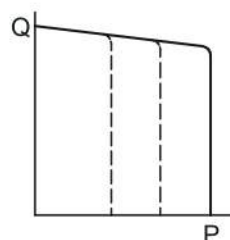
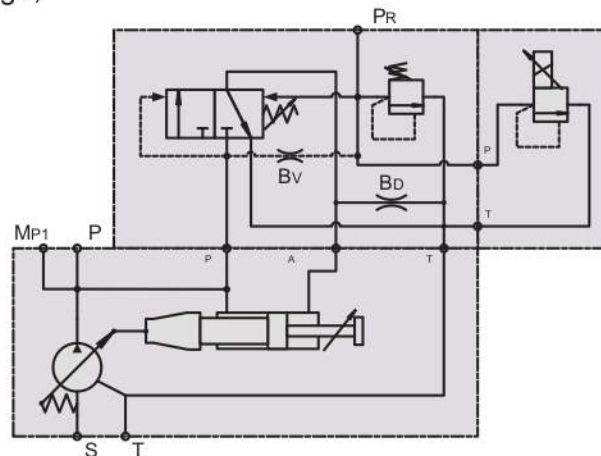


GJ Remote pressure compensator + Proportional pressure valve

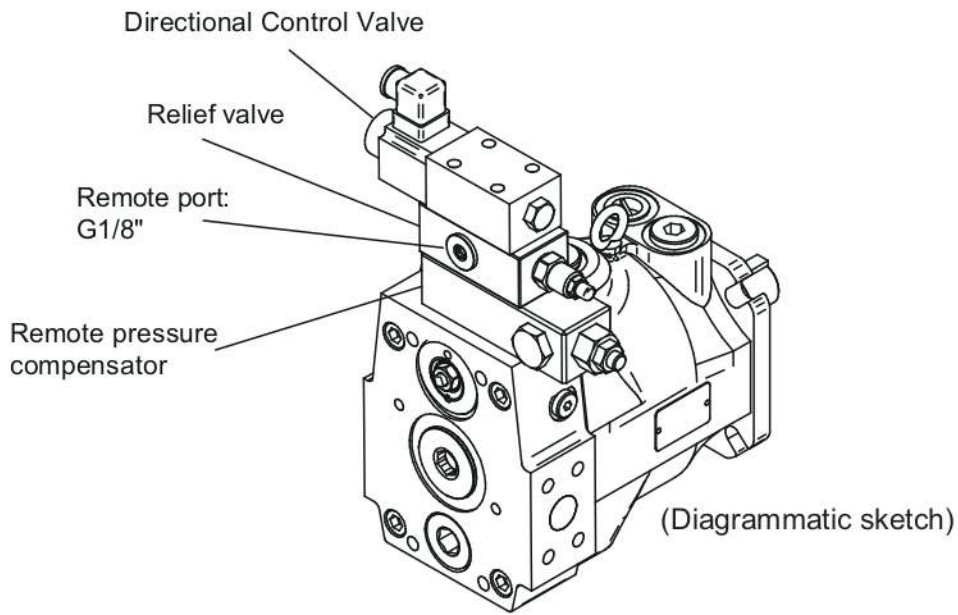
Fulfill the actual displacement and maintain the preset system pressure.

By adding YEOSHE proportional pressure valve, electrical proportional pressure control is available.

- ※ Proportional pressure max.250 bar.
If needing any other pressure range, please contact YEOSHE.

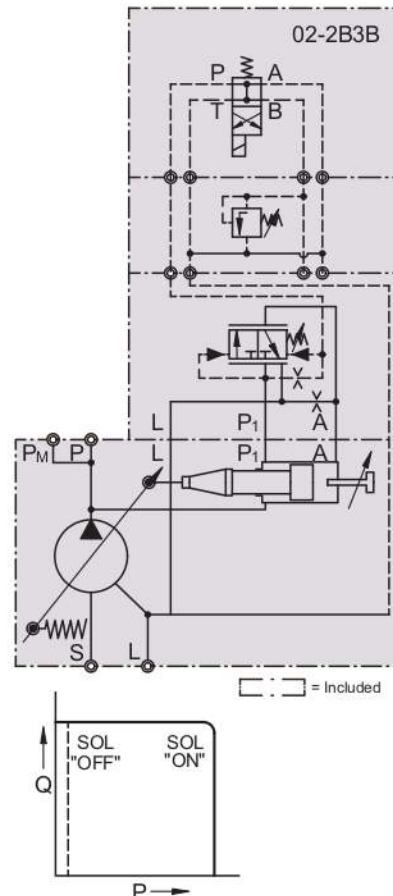


GR Remote pressure compensator + Electrical unloading



GR Remote pressure compensator + Electrical unloading

By adding a relief valve and a directional control valve on the compensator makes the pump have both function. GR control is for long unloading situation. When the system stops, oil temperature and noise maintain low level while being through the unloading.



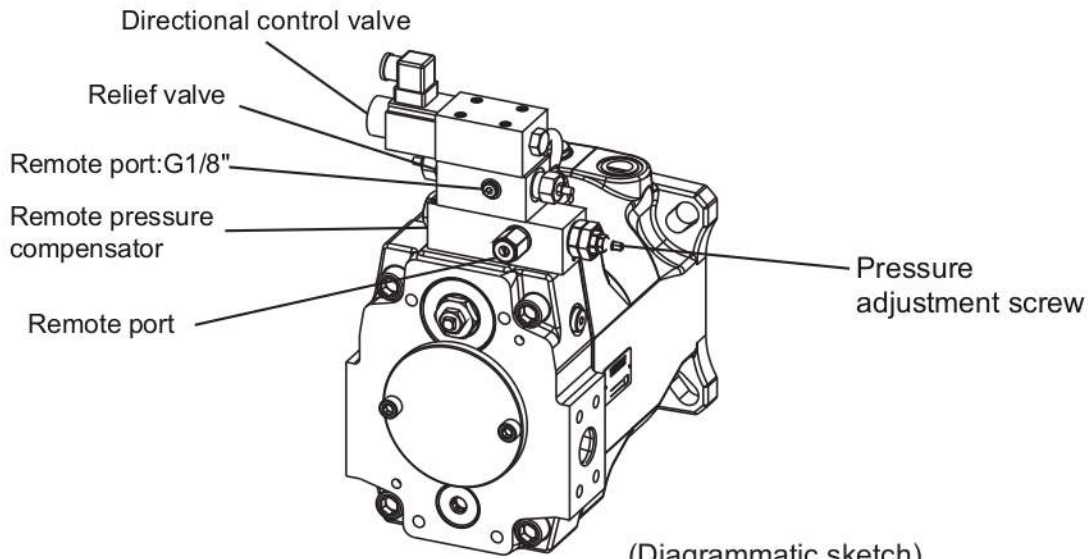


GB Remote pressure compensator + 2-stage pressure control

A

16

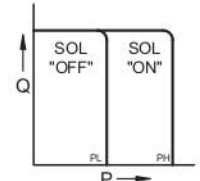
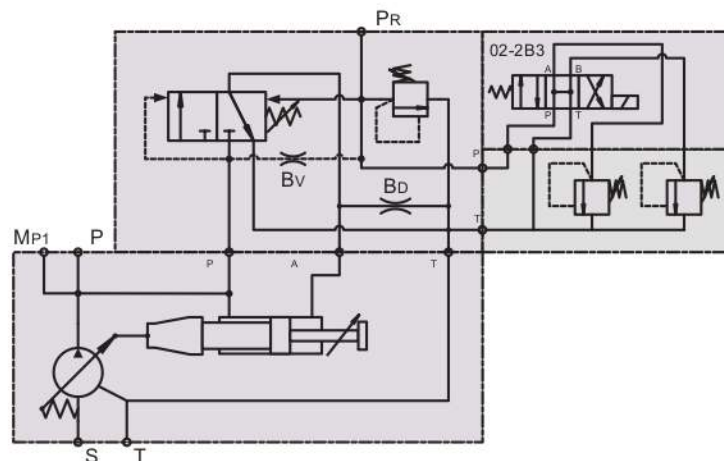
PV Axial piston pump



GB Remote pressure compensator + 2-stage pressure control

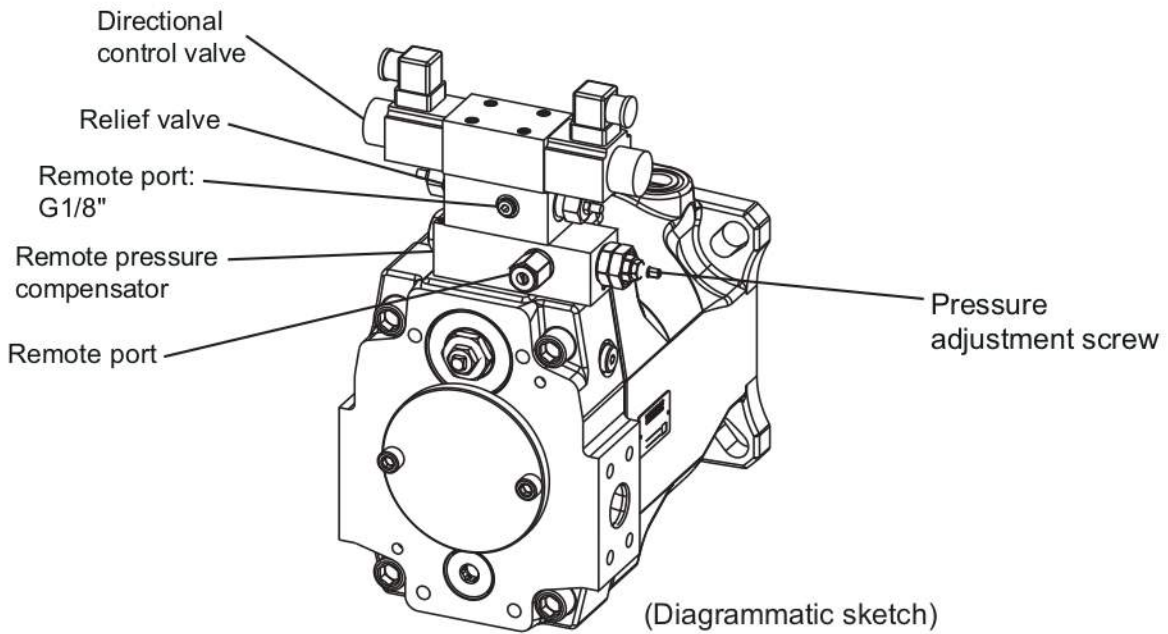
By adding a relief valve and directional control valve on the compensator makes it adjust two different stage limited pressure.

GB control is for two-stage working pressure under the constant cylinder speed.



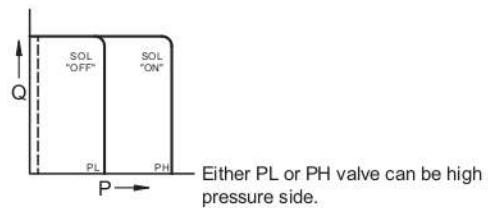
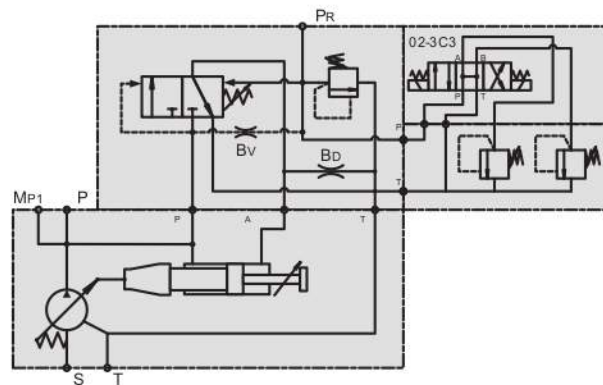
Either PL or PH valve can be high pressure side.

GC Remote pressure compensator + Electrical unloading + 2-stage pressure control



GC Remote pressure compensator + Electrical unloading + 2-stage pressure control

Control two different-stage limited pressure by adding directional control valve, and unloading function. When the system stops, oil temperature and noise maintain low level by unloading function. Usable for stable cylinder speed, two-stage pressure, and long unloading situation.



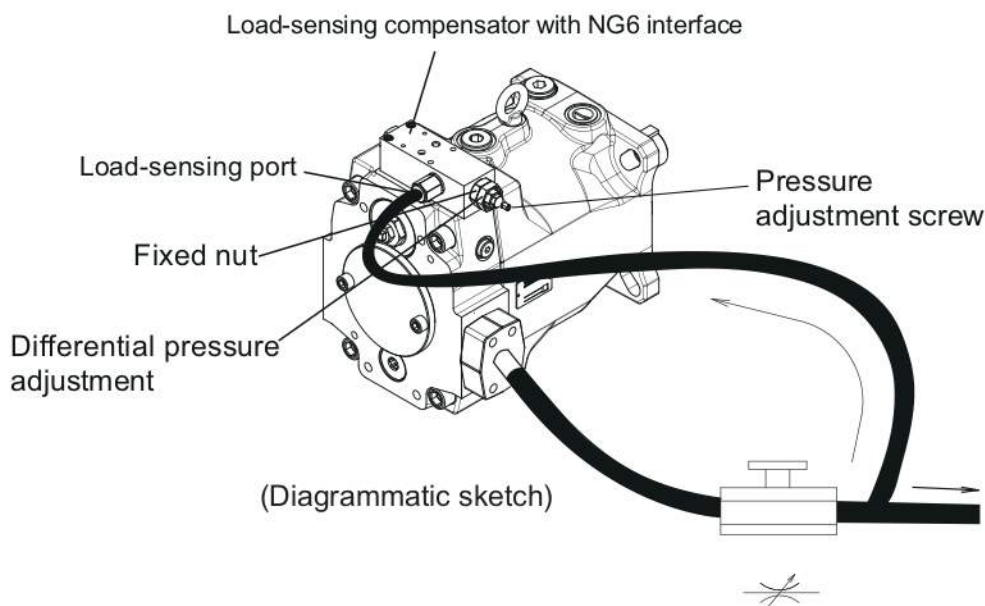


HM Load-sensing compensator with NG6 interface

A

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PV Axial piston pump



HM Load-sensing compensator with NG6 interface

Version HM of remote pressure compensator provides an interface NG6 on its top side.

The load-sensing compensator has an external pilot pressure supply.

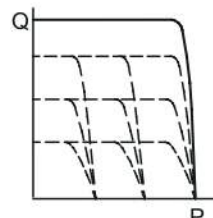
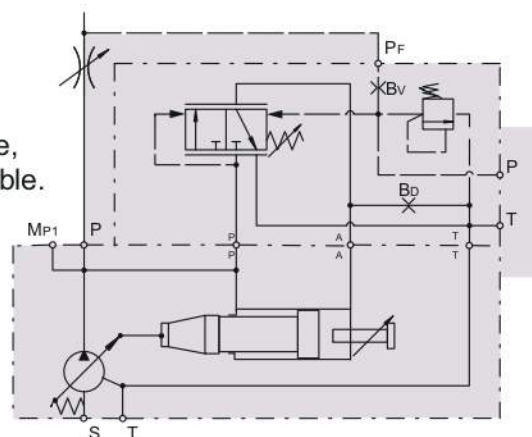
Factory setting for the differential pressure is 10 bar.

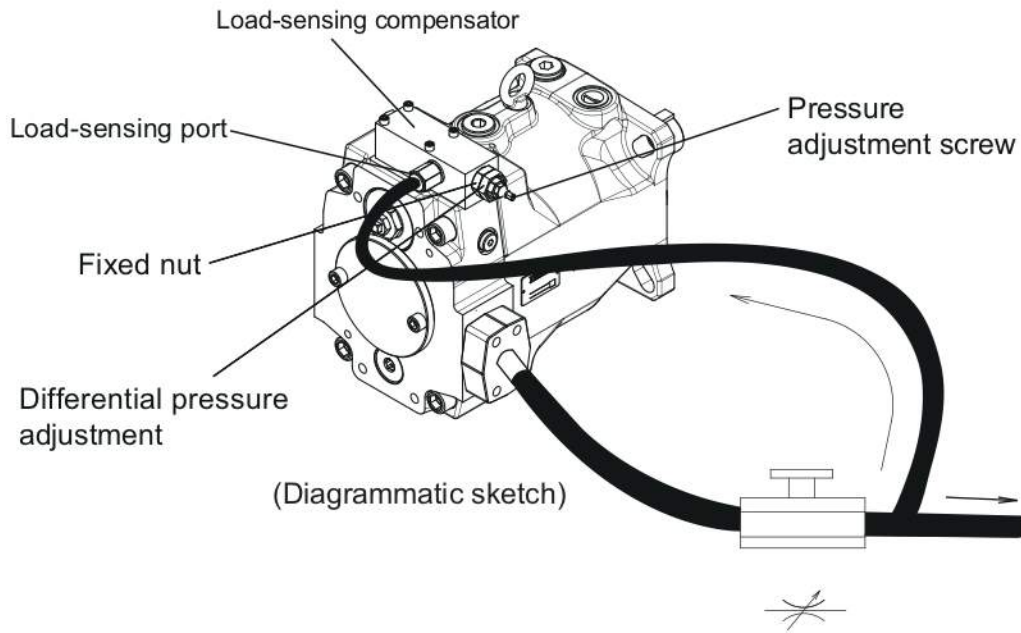
The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

A variable input speed or a varying load (-pressure) has consequently no influence on the output flow of the pump and the speed of the actuator.

By adding YEOSHE proportional pressure valve, electrical proportional pressure control is available.





HA Load-sensing compensator + Relief valve

The load-sensing compensator has an external pilot pressure supply.

Factory setting for the differential pressure is 10bar.

The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

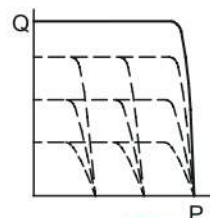
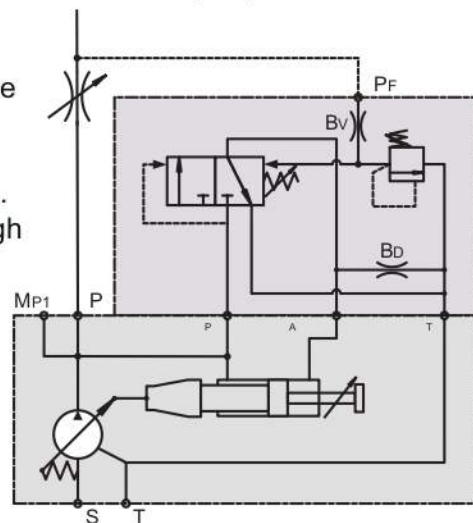
A variable input speed or a varying load(-pressure) has consequent no influence on the output flow of the pump and the speed of the actuator.

Relief valve has adjustment function.

The pilot valve can be installed remote from the pump in some distance.

That allows pressure setting, e.g. from the control panel of the machine.

The pilot flow supply is internal through the valve spool, and the pilot flow is 1-1.5 L/min.



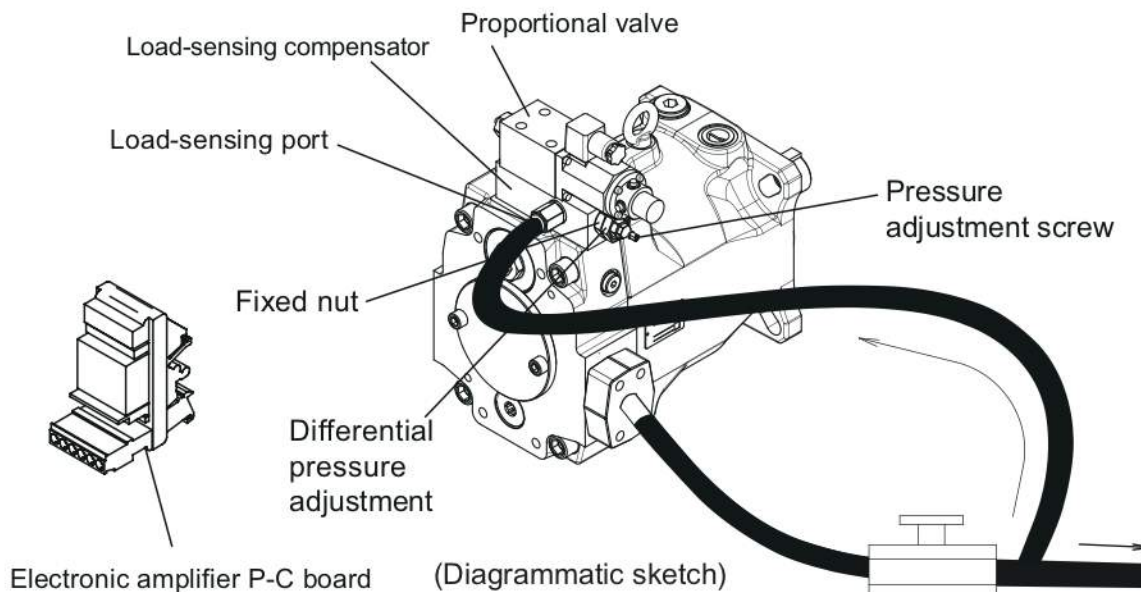
HJ Load-sensing compensator + Proportional pressure valve



A

20

PV Axial piston pump



HJ Load-sensing compensator + Proportional pressure valve

The load-sensing compensator has an external pilot pressure supply.

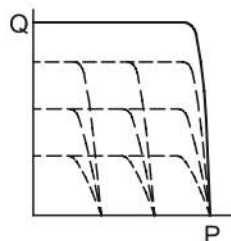
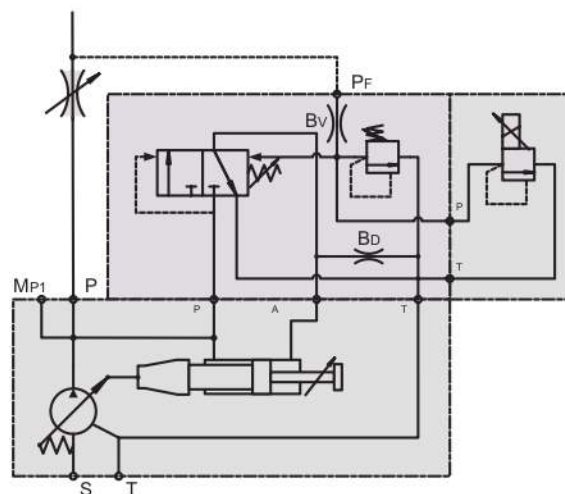
Factory setting for the differential pressure is 10bar.

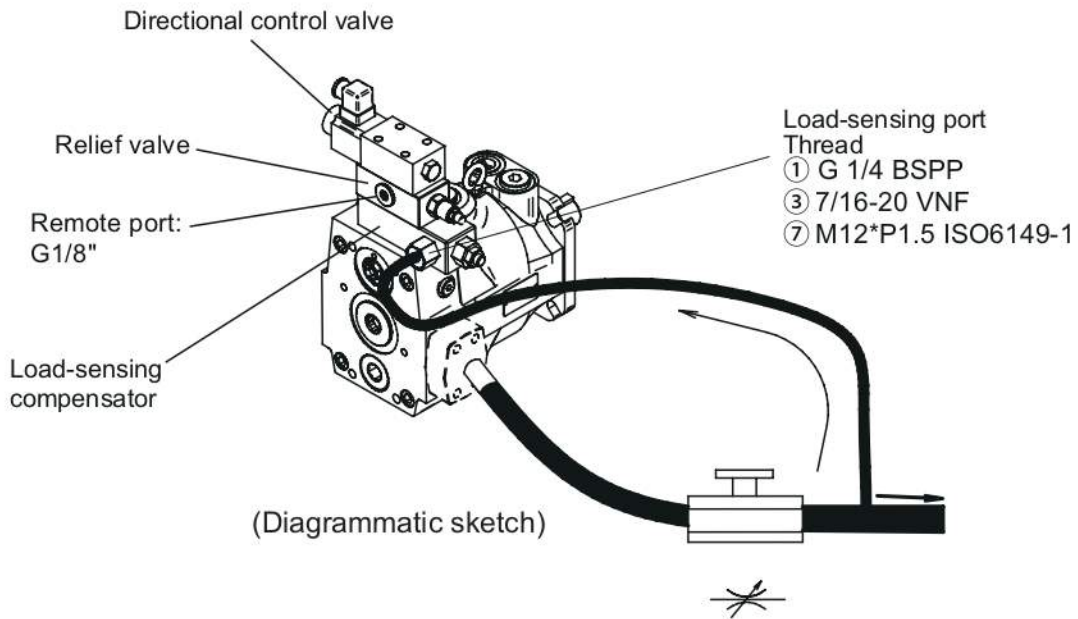
The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow and the speed of the actuator.

Proportional pressure valve is for electrical proportional pressure control.

- ※ Proportional pressure max.250 bar.
If needing any other pressure range, please contact YEOSHE.





HR Load-sensing compensator + Electrical unloading

The load-sensing compensator has all external pilot pressure supply.

Factory setting for the differential pressure is 10bar.

The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

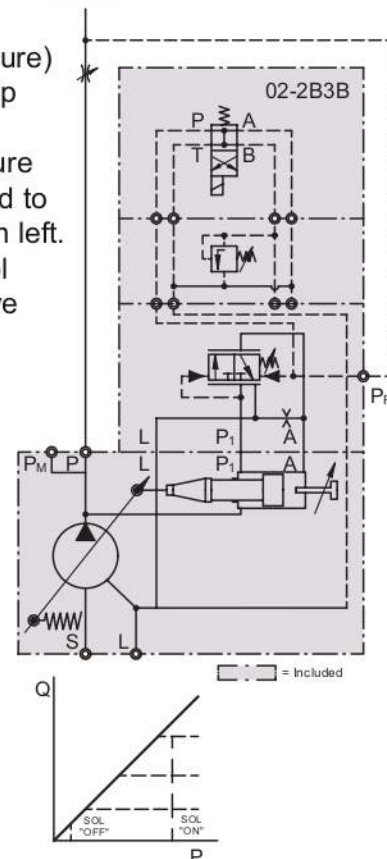
A variable input speed or a varying (load -pressure) has consequently on the output flow of the pump and speed of the actuator.

By adding a pilot orifice ($\Phi 0.8\text{mm}$) and a pressure pilot valve pressure compensation can be added to the flow control function. See the circuit diagram left.

By adding a relief valve and a directional control valve on the compensator makes the pump have both function.

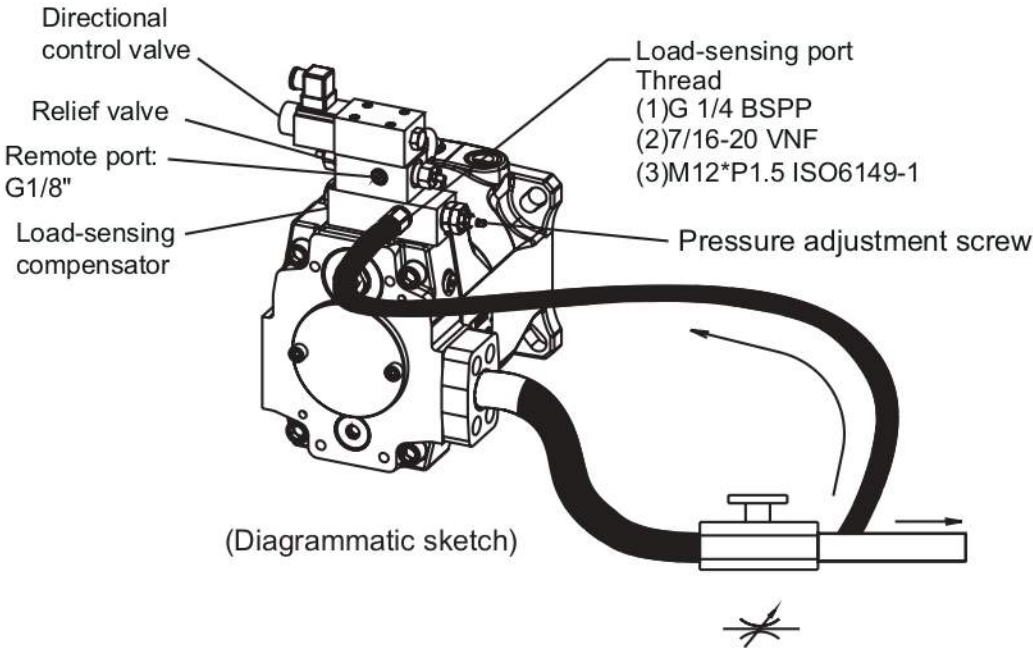
HR control is for long unloading situation.

When the system stops, oil temperature and noise maintain low level while being through the unloading.





HB Load-sensing compensator + 2-stage pressure control



HB Load-sensing compensator
+ 2-stage pressure control

The load-sensing compensator has an external pilot pressure supply.

Factory setting for the differential pressure is 10bar.

The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

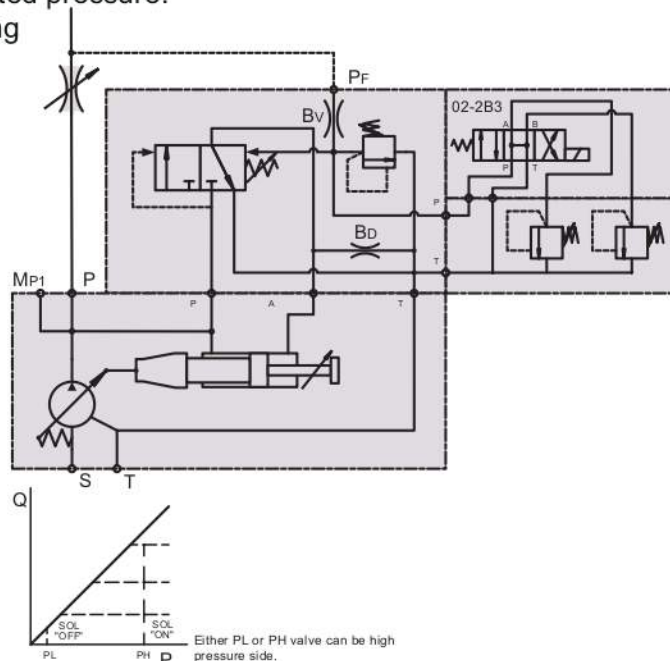
A variable input speed or a varying (load -pressure) has consequently on the output flow of the pump and speed of the actuator.

By adding a pilot orifice ($\Phi 0.8\text{mm}$) and a pressure pilot valve pressure compensation can be added to the flow control function.

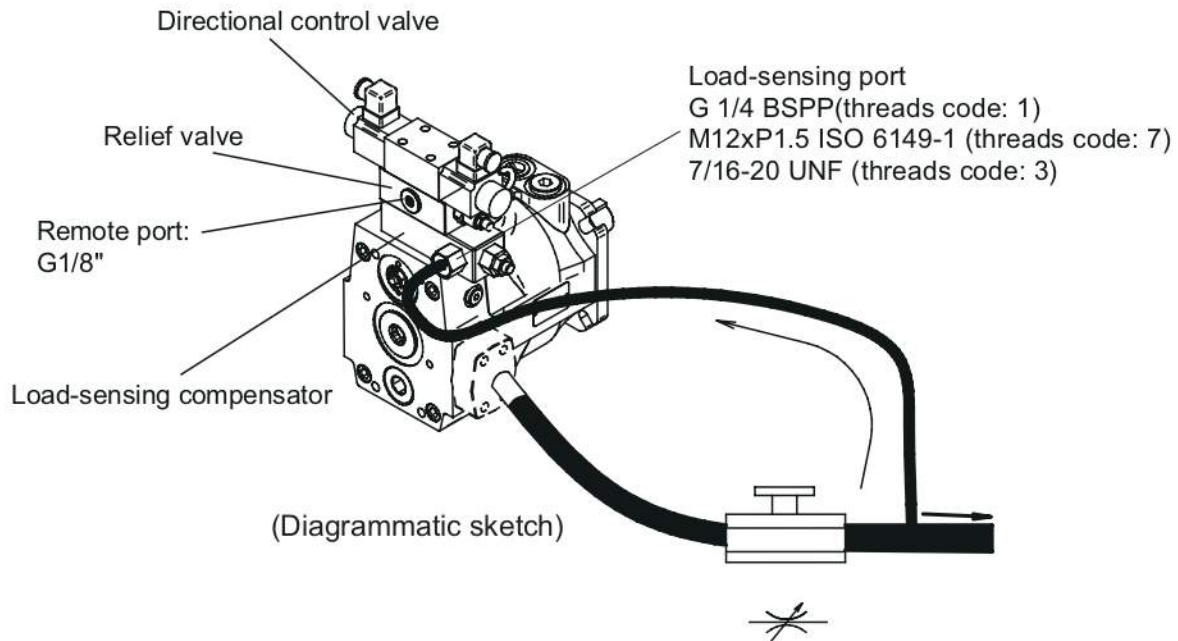
See the circuit diagram left.

By adding a relief valve and directional control valve on the compensator makes it adjust two different stage limited pressure.

HB control is for two-stage working pressure under the constant cylinder.



HC Load-sensing compensator + Electrical unloading + 2-stage pressure control



HC Load-sensing compensator + Electrical unloading + 2-stage pressure control

The load-sensing compensator has an external pilot pressure supply. Factory setting for the differential pressure is 10bar.

The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.

A variable input speed or a varying (load -pressure) has consequently on the output flow of the pump and speed of the actuator.

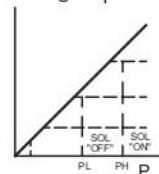
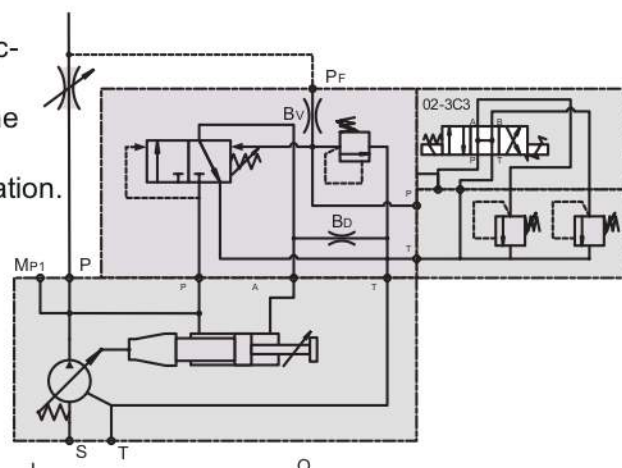
By adding a pilot orifice ($\Phi 0.8\text{mm}$) and a pressure pilot valve pressure compensation can be added to the flow control function.

See the circuit diagram left.

By adding a relief valve and a directional control valve on the compensator makes the pump have both function.

HC control is for long unloading situation.

When the system stops, oil temperature and noise maintain low level while being through the unloading.

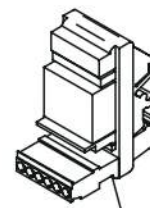
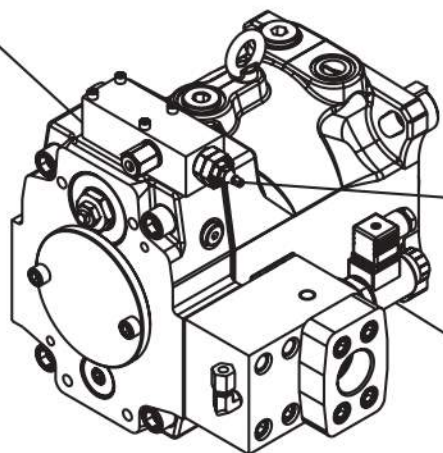


Either PL or PH valve can be high pressure side.

HQ Load-sensing compensator + Proportional flow valve + Relief valve



Load-sensing compensator

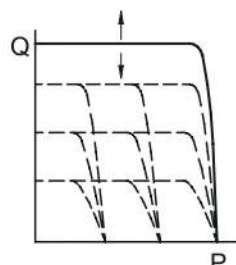
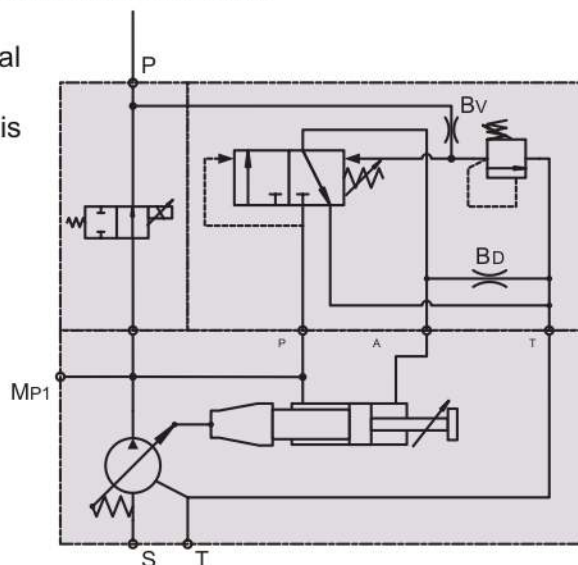


Electronic amplifier P-C board compensator

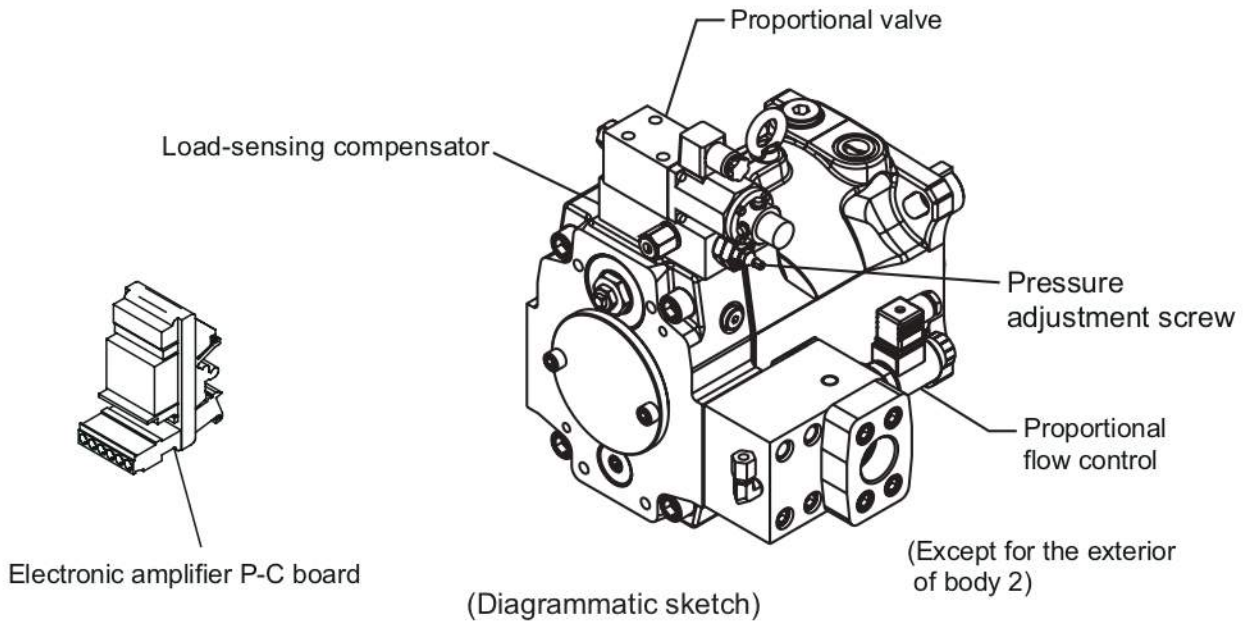
(Diagrammatic sketch)

HQ Load-sensing compensator + Proportional flow valve + Relief valve

The load-sensing compensator has an external pilot pressure supply.
 Factory setting for the differential pressure is 10bar.
 The input signal to the compensator is the differential pressure at the main stream resistor.
 A load-sensing compensator represents mainly a flow control for the pump output flow, because the compensator keeps the pressure drop at the main stream resistor constant.
 By adding YEOSHE proportional flow valve, electrical proportional flow control is available.



HK Load-sensing compensator + Proportional pressure valve + Proportional flow valve **YEOSHE**



HK Load-sensing compensator + Proportional pressure valve + Proportional flow valve

HK is for saving energy.

It offers the smallest pressure and flow according to the different requirement.

The displacement is nearly zero when the system stands by, and the motor output is also nearly zero.

When the system reaches setting pressure, the pump displacement will reduce by itself.

It only needs to add the system required flow, and the pressure remains the same which control the oil temperature.

Compared with vane pump, gear pump + PQ valve can save 30%-50% energy.

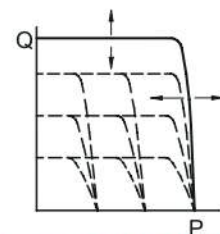
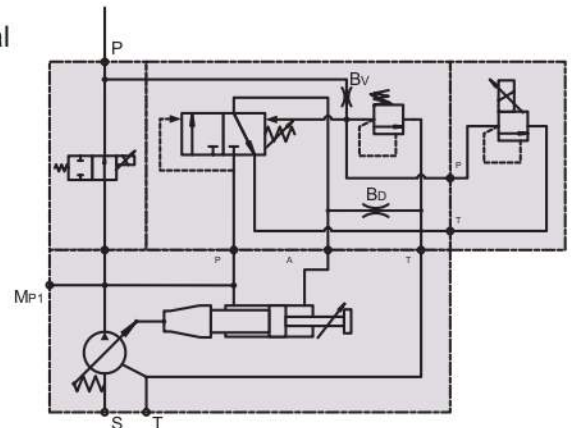
The load-sensing compensator + proportional flow valve has all external pilot pressure supply. Factory setting for the differential pressure is 10 bar.

The input signal to the compensator is the differential pressure at the main stream resistor.

A load-sensing compensator represents mainly a flow control for the pump output flow of the pump and the speed of the actuator.

Proportional pressure valve is for electrical proportional pressure control.

- ※ Proportional pressure max.250 bar.
- If needing any other pressure range, please contact YEOSHE.



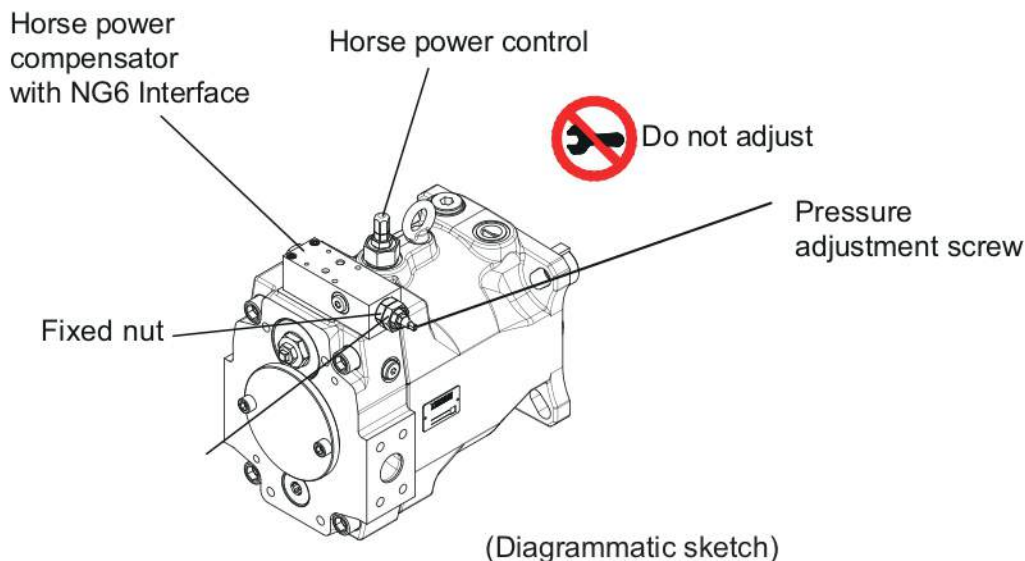


PM Horse power compensator with NG6 interface

A

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PV Axial piston pump



PM Horse power compensator with NG6 interface

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

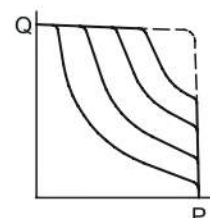
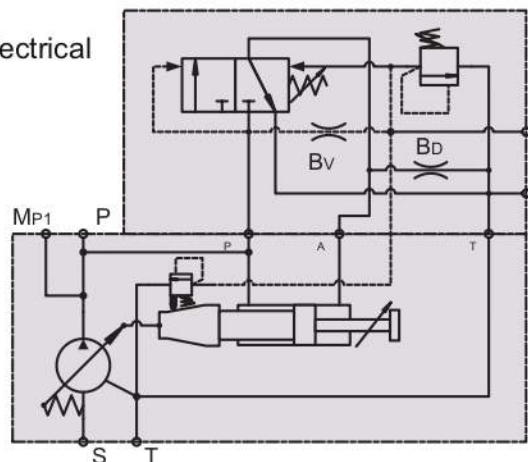
This makes the pump compensate along a constant horse power (torque) curve.

Horse power is optional when order.

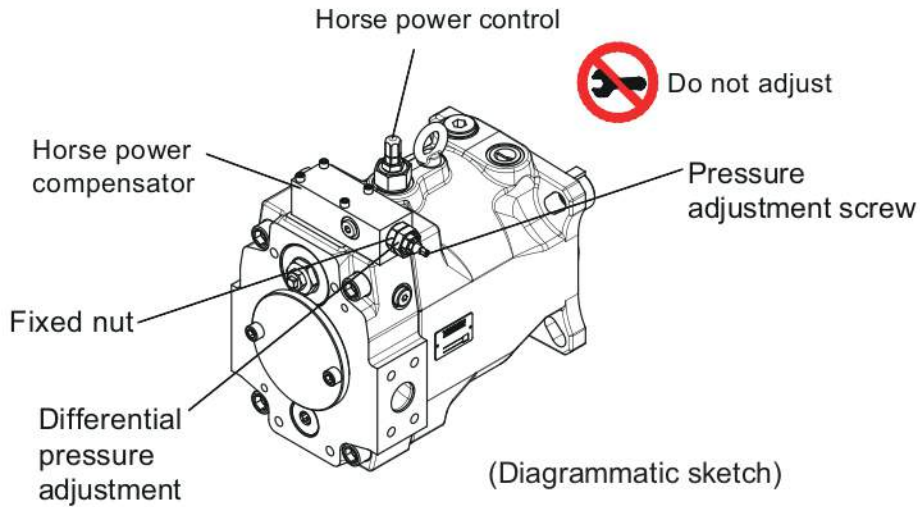
Working pressure can be adjusted by adding YEOSHE pressure leading valve.

Adding the proportional pressure valve achieves the electrical proportional pressure control.

※ Horse power setting, please following type code.



PA Horse power compensator + Relief valve



PA Horse power compensator + Relief valve

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

This makes the pump compensate along a constant horse power (torque) curve.

Horse power is optional when order.

Working pressure can be adjusted by adding YEOSHE pressure leading valve.

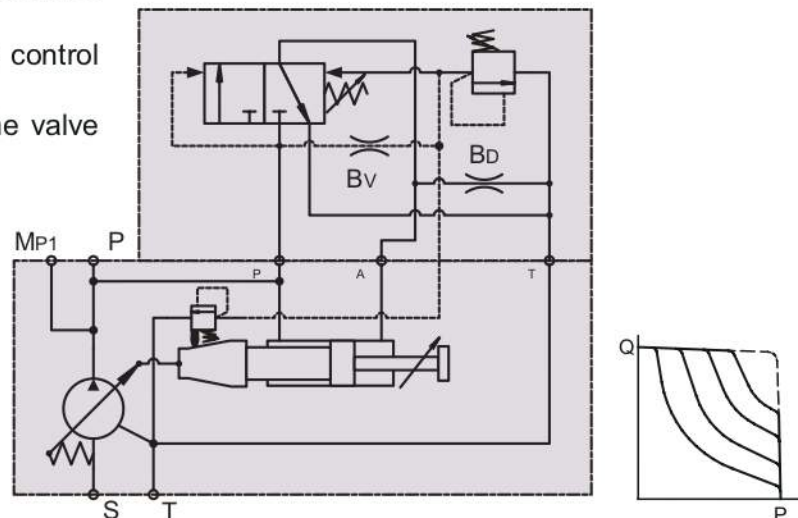
Adding the proportional pressure valve achieves the electrical proportional pressure control.

The pilot valve can be installed remote from the pump in some distance.

That allows pressure setting e.g. from the control panel of the machine.

The pilot flow supply is internal through the valve spool and the pilot flow is 1-1.5 L/min.

※ Horse power setting, please following type code.



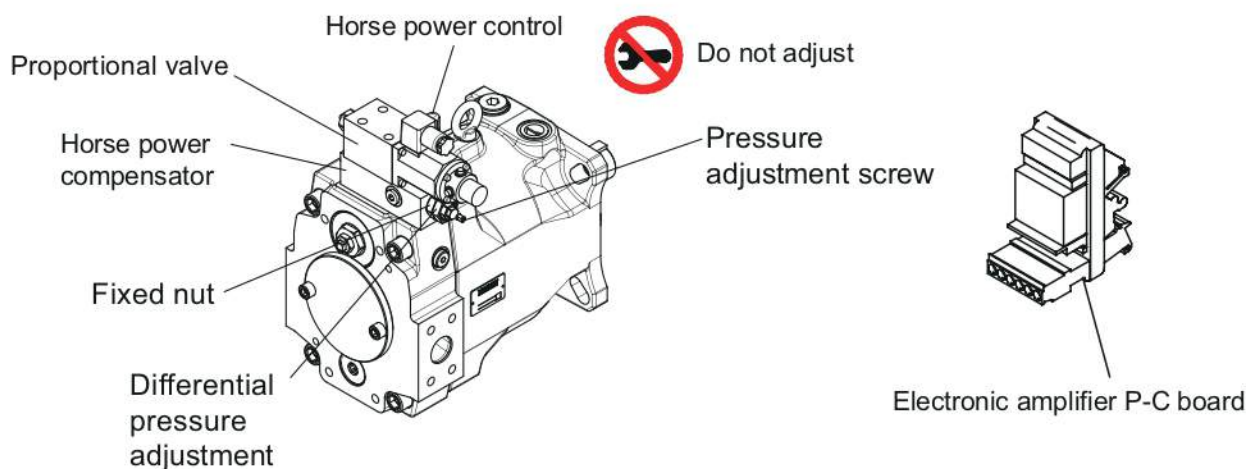
PJ Horse power compensator + Proportional pressure valve



A

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PV Axial piston pump



(Diagrammatic sketch)

PJ Horse power compensator + Proportional pressure valve

The hydraulic- mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

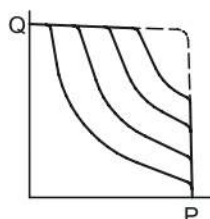
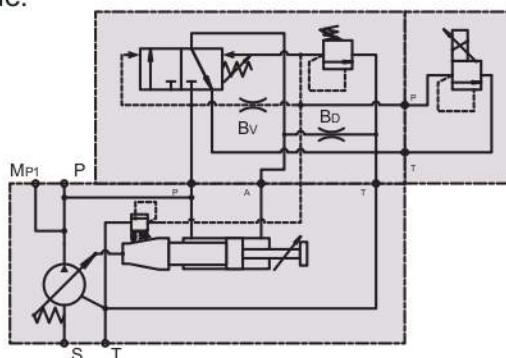
This makes the pump compensate along a constant horse power (torque) curve.

Pressure-adjusted function is optional by adding a leading proportional pressure valve.

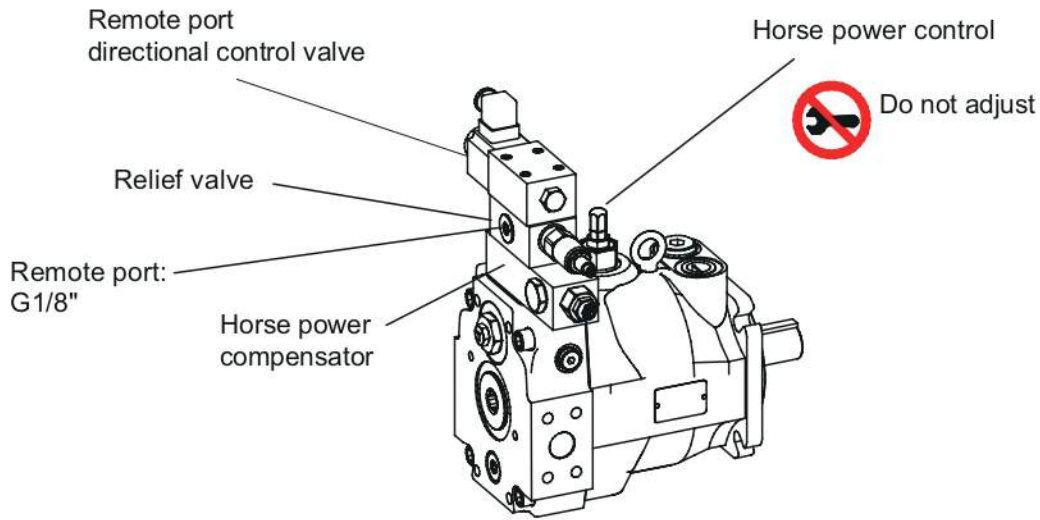
※ Horse power setting, please following type code.

※ Proportional pressure max.250 bar.

If needing any other pressure range, please contact YEOSHE.



PR Horse power compensator + Electrical unloading



(Diagrammatic sketch)

PR Horse power compensator + Electrical unloading

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

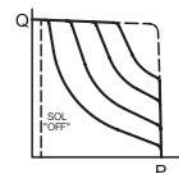
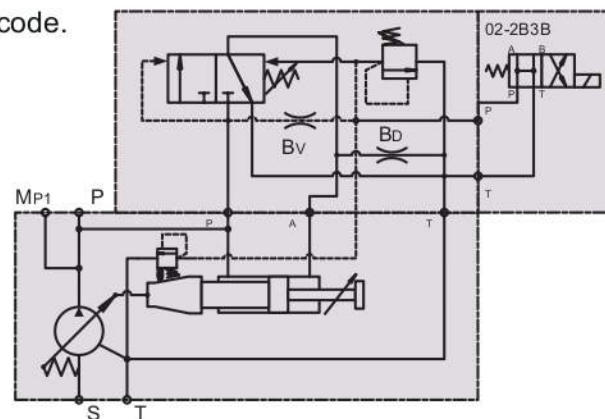
This makes the pump compensate along a constant horse power (torque) curve.

Electrical unloading function is optional by adding an electric directional control valve.

This control is suitable for long period of unloading.

Oil temperature and noise remain low level through out the electrical unloading function when the system stops working.

※ Horse power setting, please following type code.



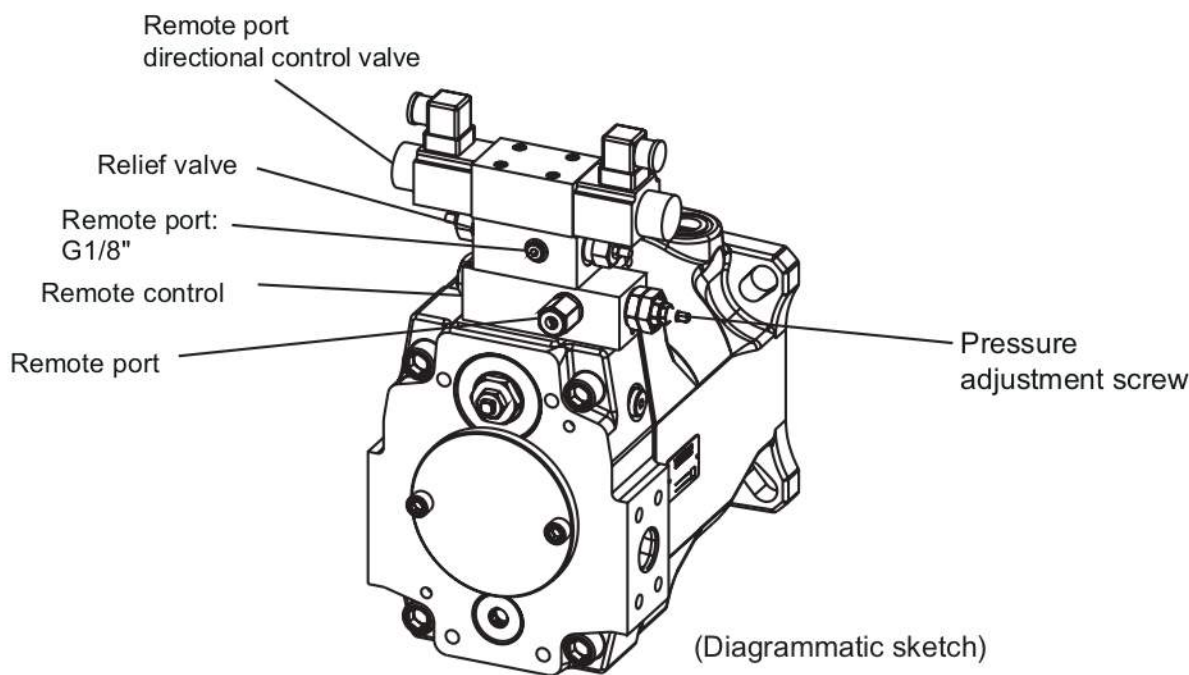
PC Horse power compensator + Electrical unloading +2-stage pressure control



A

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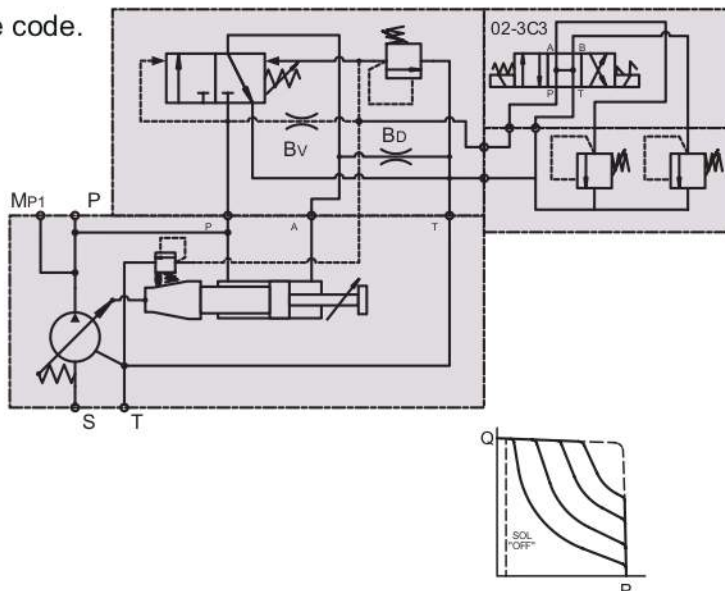
PV Axial piston pump



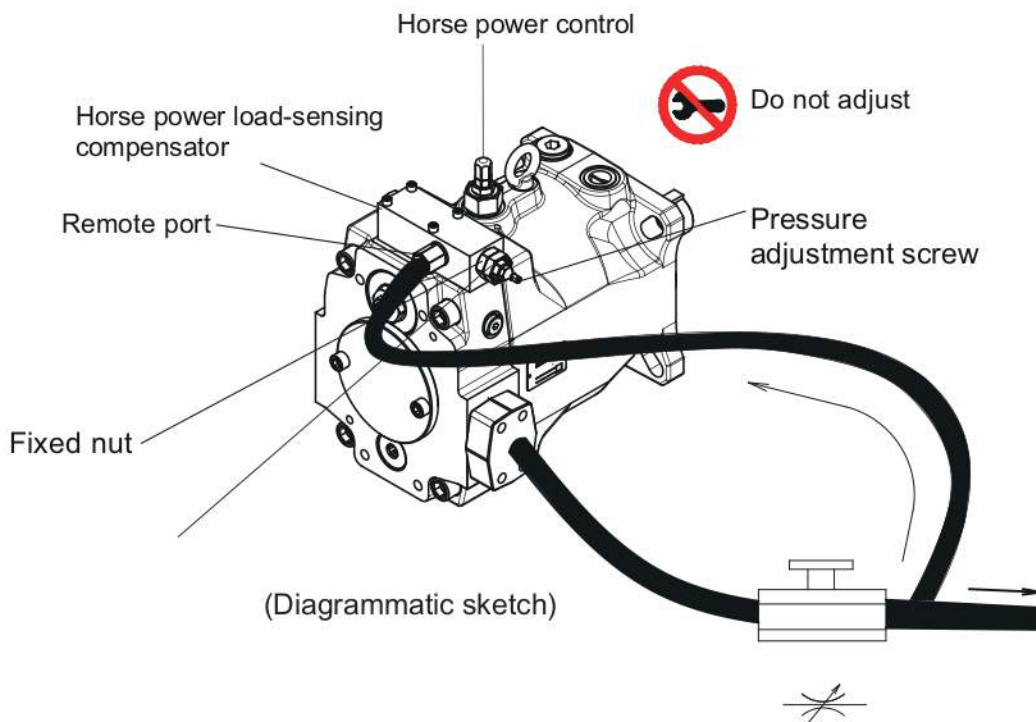
PC Horse power compensator + Electrical unloading+2-stage pressure control

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve. This pilot valve is integrated into the pump and is adjusted by a cam sleeve. The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting. At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements. Control two different-stage limited pressure by adding directional control valve, and unloading function. When the system stops, oil temperature and noise maintain low level by unloading function. Usable for stable cylinder speed, two-stage pressure, and long unloading situation.

※ Horse power setting, please following type code.



PH Horse power load-sensing compensator + Relief valve



PH Horse power load-sensing compensator + Relief valve

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

This makes the pump compensate along a constant horse power (torque) curve.

Horse power is optional when order.

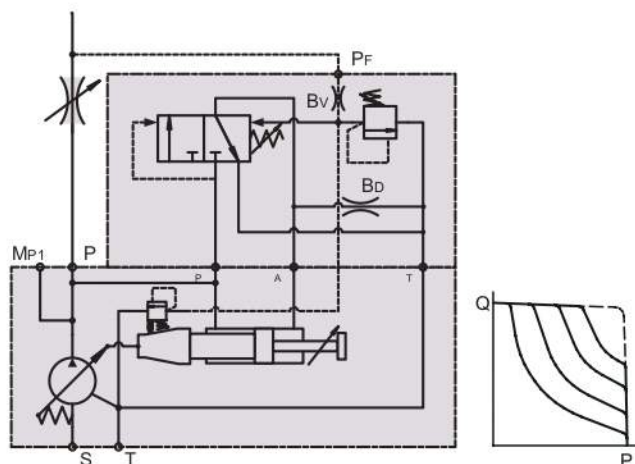
Working pressure can be adjusted by adding a leading valve on the compensator, and pump flow can also be adjusted on the first pipe by adding an external feedback on the PF port as a control signal on the main stream.

The pilot valve can be installed remote from the pump in some distance.

That allows pressure setting, e.g. from the control panel of the machine.

The pilot flow supply is internal through the valve spool, and the pilot flow is 1~1.5 L/min.

※Horse power setting, please following type code.



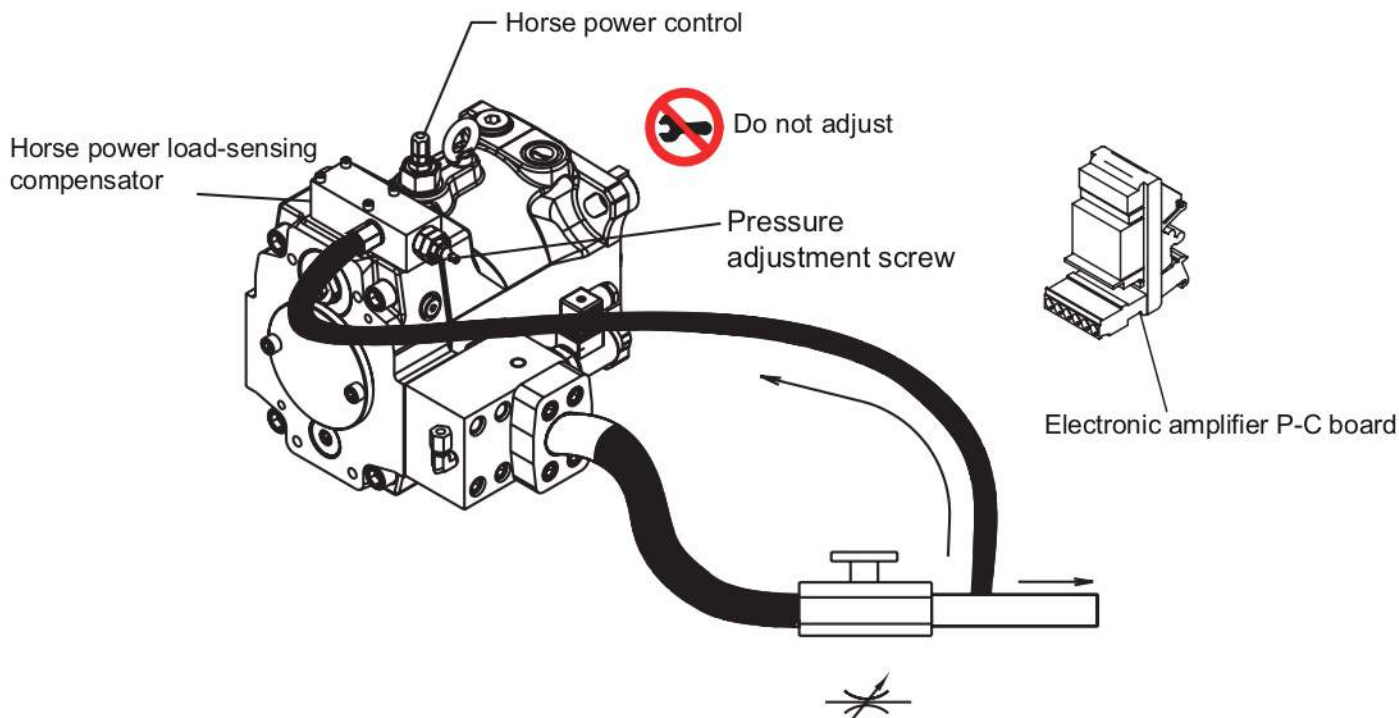


PQ Horse power load-sensing compensator + Proportional flow valve + Relief valve

A

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PV Axial piston pump



PQ Horse power load-sensing compensator + Proportional flow valve + Relief valve

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve.

This pilot valve is integrated into the pump and is adjusted by a cam sleeve.

The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting.

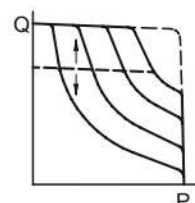
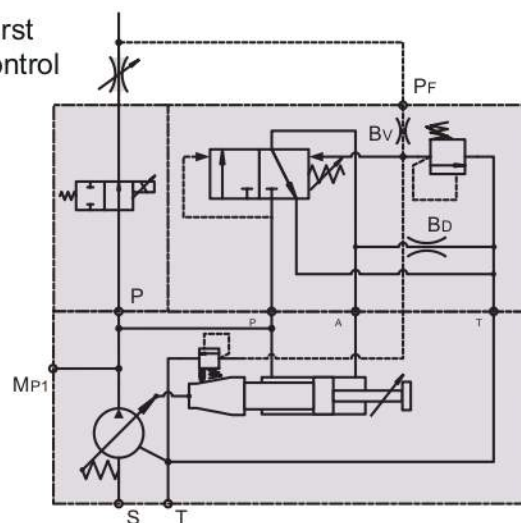
At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements.

This makes the pump compensate along a constant horse power (torque) curve.

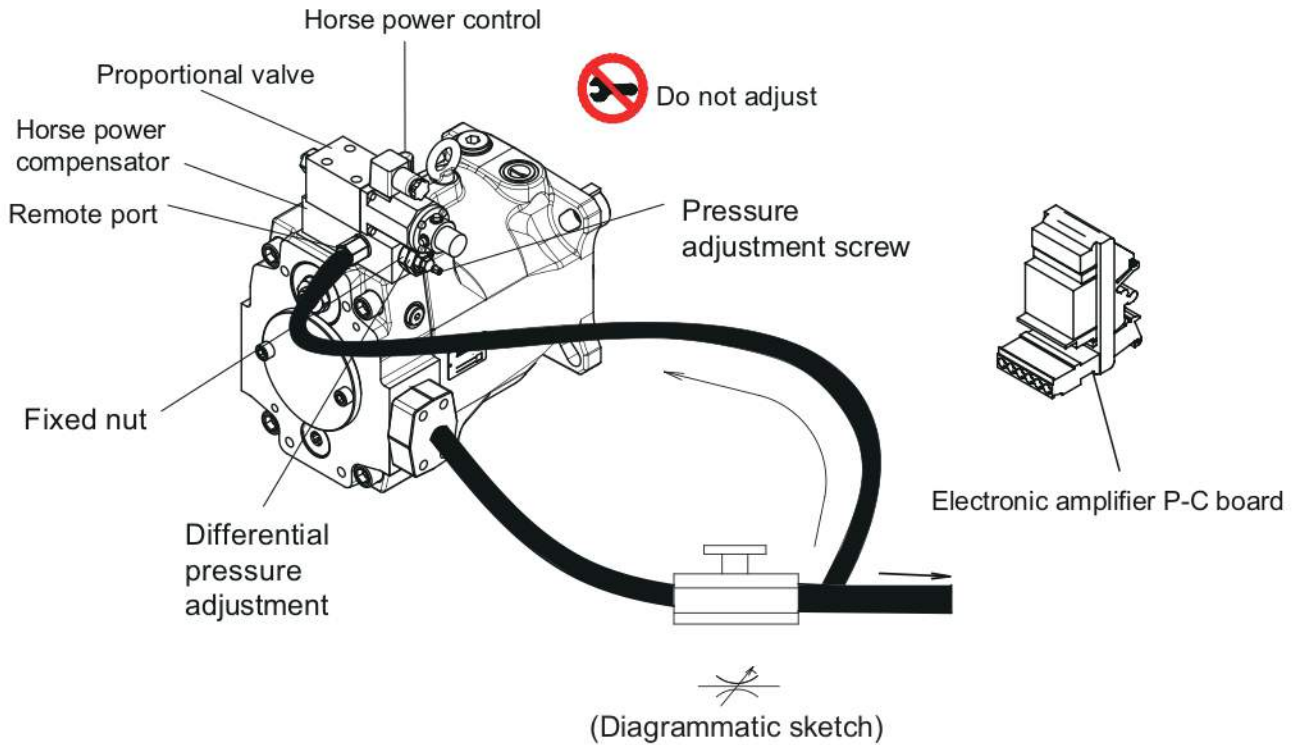
Pressure can be adjusted by adding a leading valve in the compensator, and pump flow can also be adjusted on the first pipe by adding an external feedback on the PF port as a control signal on the main stream.

Adding a proportional flow control valve on the P port achieves electrical proportional flow control.

※ Horse power setting, please following type code.



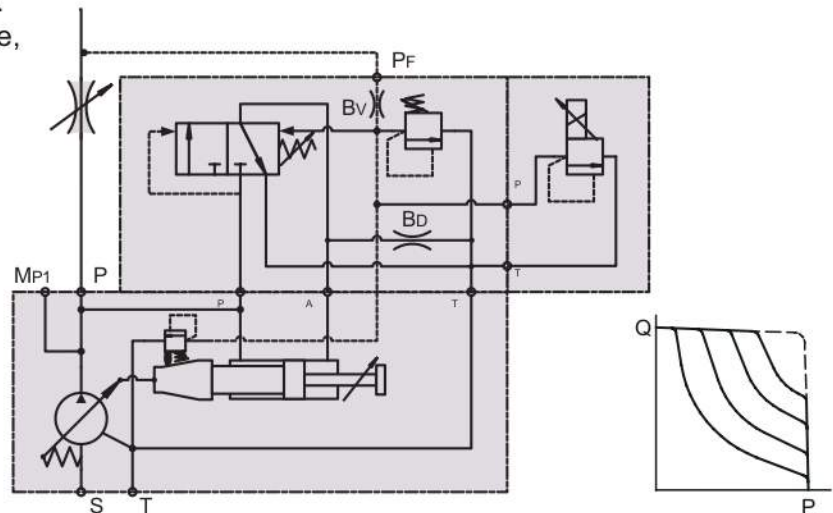
PS Horse power load-sensing compensator + Proportional pressure valve



PS Horse power load-sensing compensator + Proportional pressure valve

The hydraulic-mechanical horse power compensator consists of a modified remote pressure compensator or of a modified load-sensing compensator and a pilot valve. This pilot valve is integrated into the pump and is adjusted by a cam sleeve. The cam sleeve has a contour that is designed and machined for the individual displacement and the nominal horse power setting. At a large displacement the opening pressure (given by the cam sleeve diameter) is lower than at small displacements. This makes the pump compensate along a constant horse power (torque) curve. Electrical pressure-adjusted function is optional by adding a leading proportional pressure valve, and pump flow can also be adjusted on the first pipe by adding an external feedback on the PF port as a control signal on the main stream.

- ※ Horse power setting, please following type code.
- ※ Proportional pressure max.250 bar.
If needing any other pressure range, please contact YEOSHE.



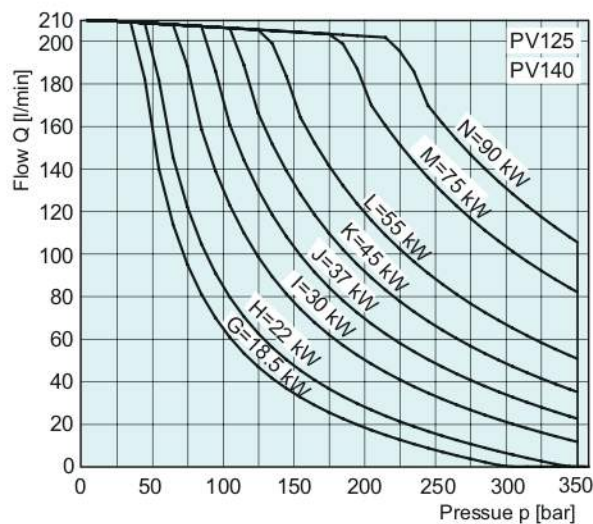
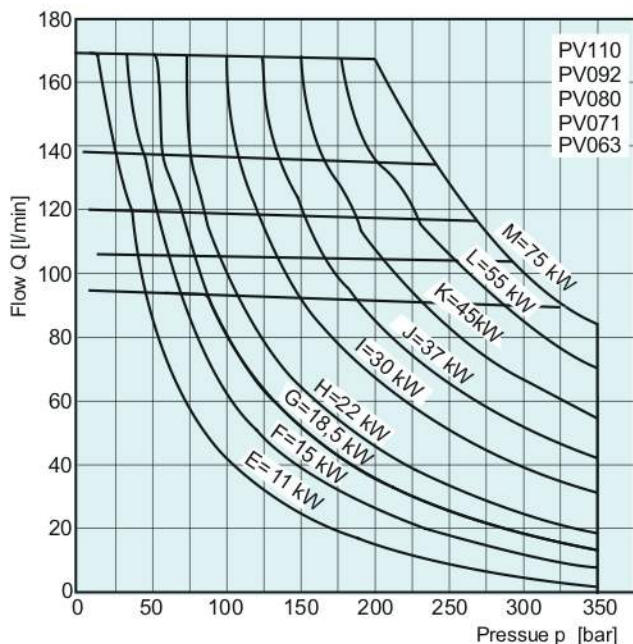
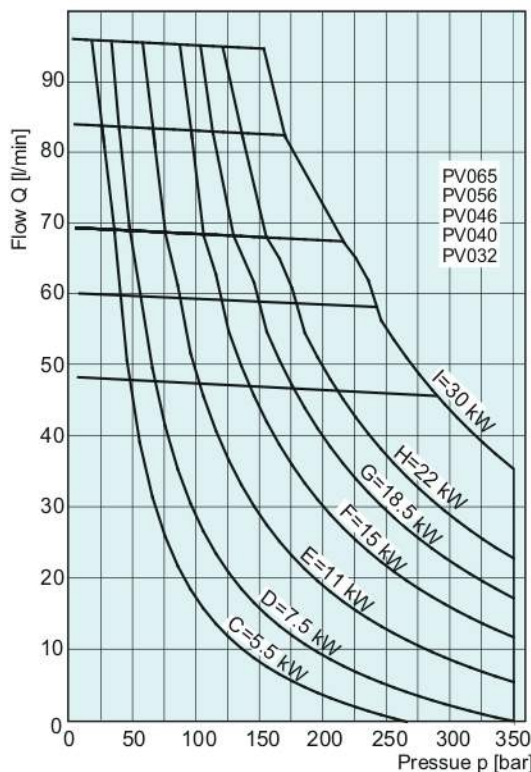
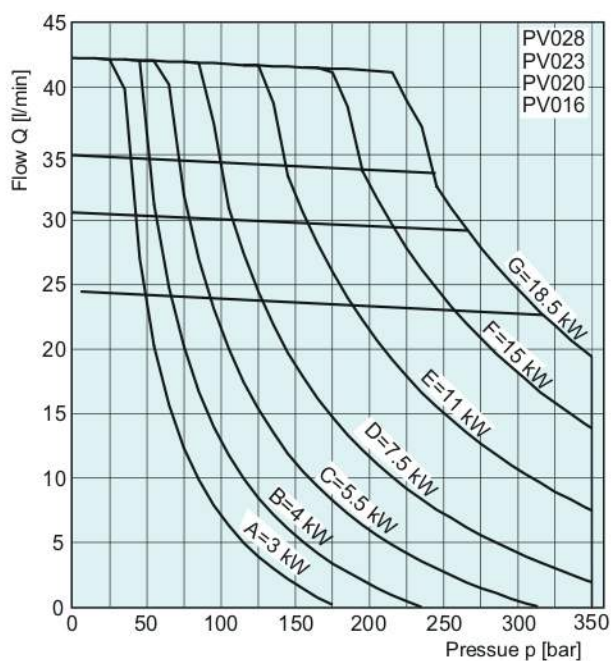


Horse power compensator, diagrams

A

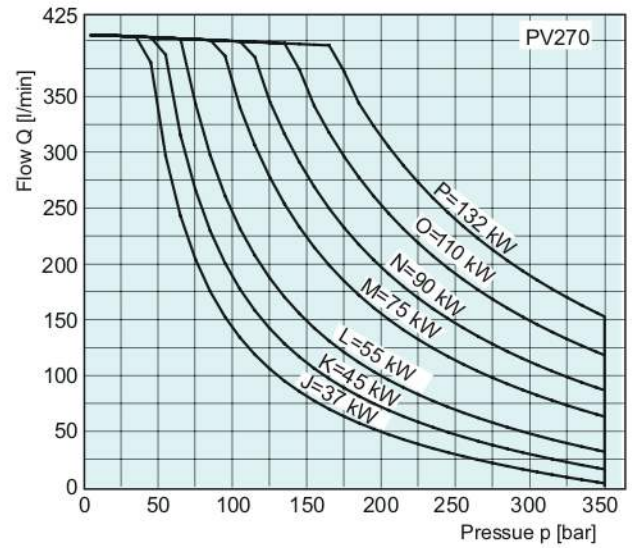
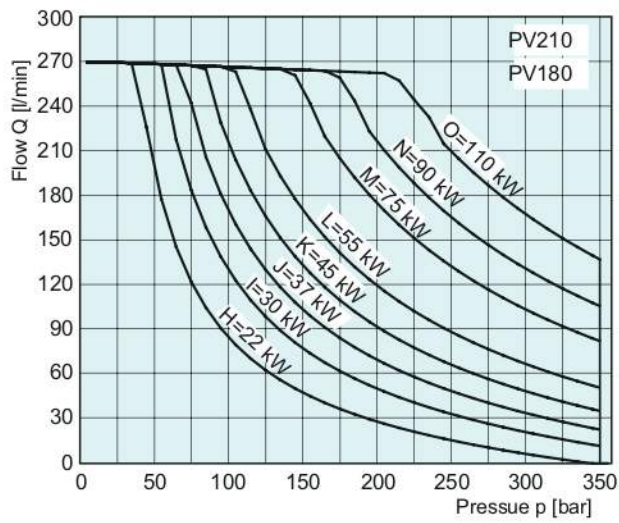
34

PV Axial piston pump



The diagrams are only valid for the following working conditions:
 speed: $n=1500$ (---) and 1800 (---) rev/min
 temperature: $t=50^{\circ}\text{C}$
 fluid: mineral oil HLP, ISO VG46
 viscosity: $\nu=46$ mm²/s at 40°C

Horse power compensator, diagrams



The diagrams are only valid for the following working conditions:
 speed: $n=1500$ (---) and 1800 (---) rev/min
 temperature: $t=50^{\circ}\text{C}$
 fluid: mineral oil HLP, ISO VG46
 viscosity: $v=46$ mm²/s at 40°C

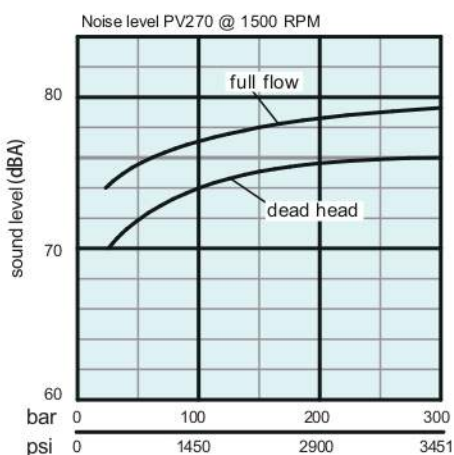
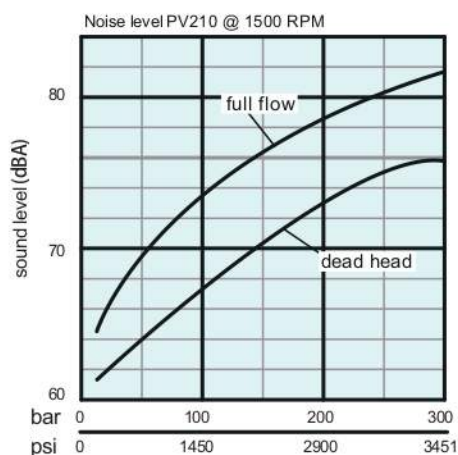
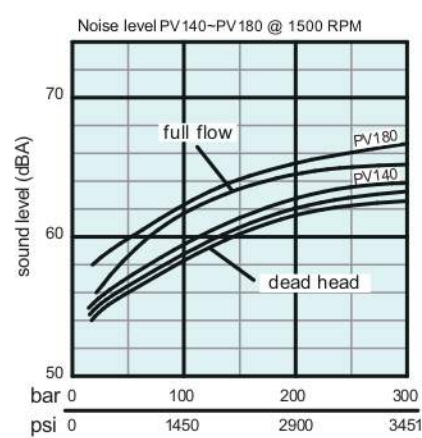
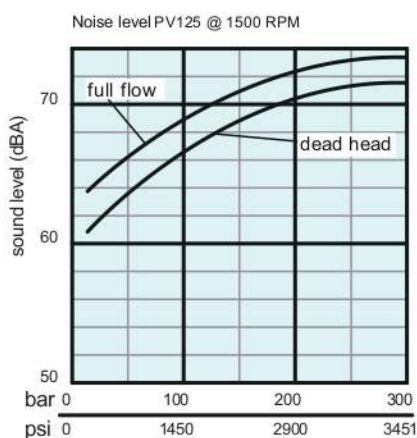
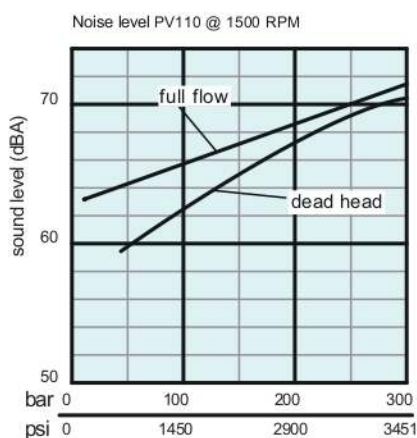
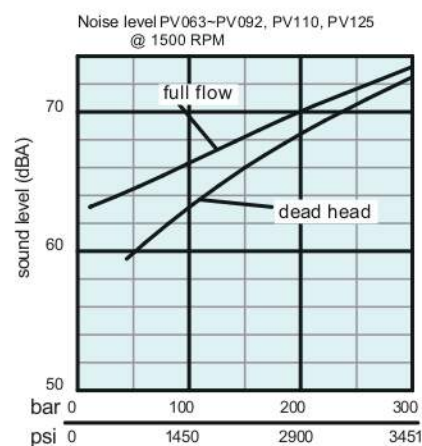
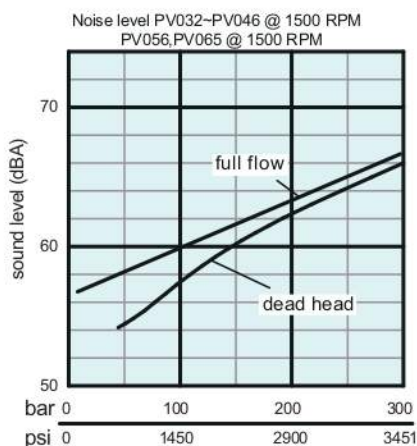
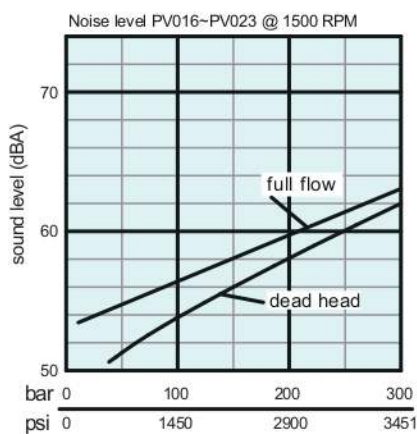


Noise diagrams

A

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PV Axial piston pump



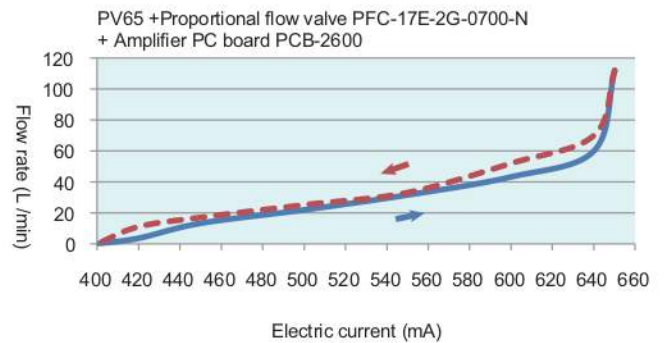
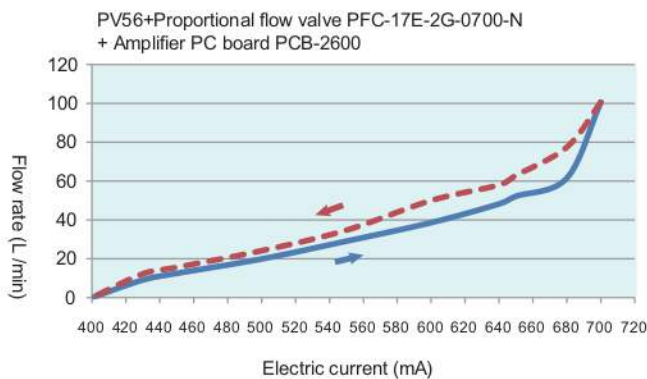
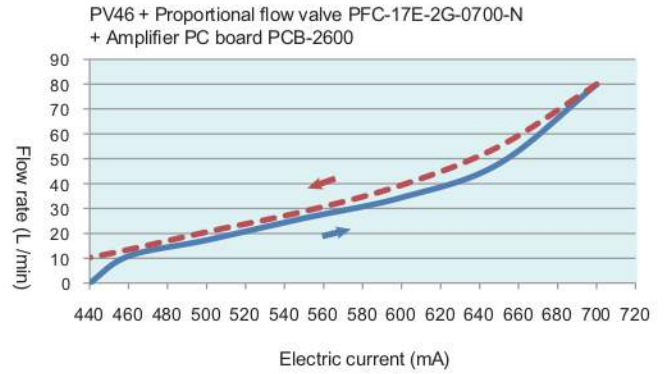
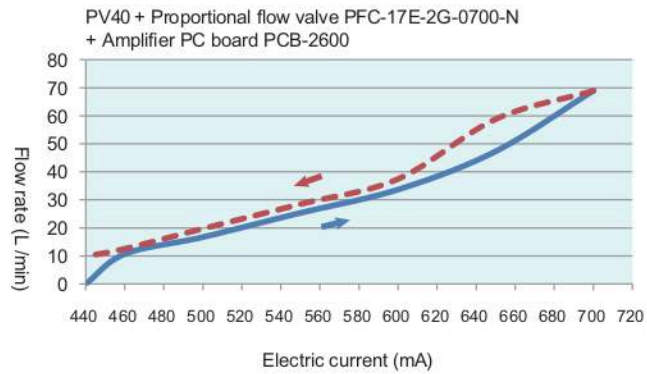
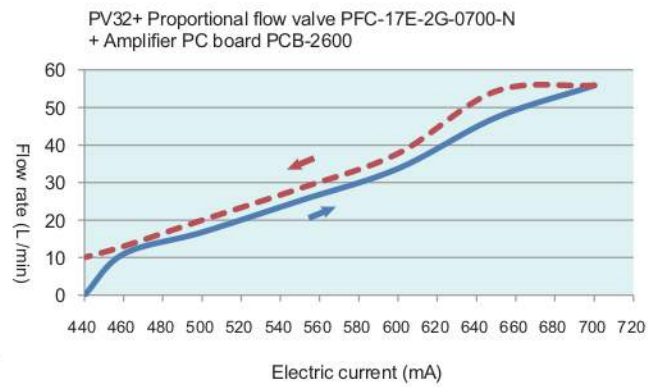
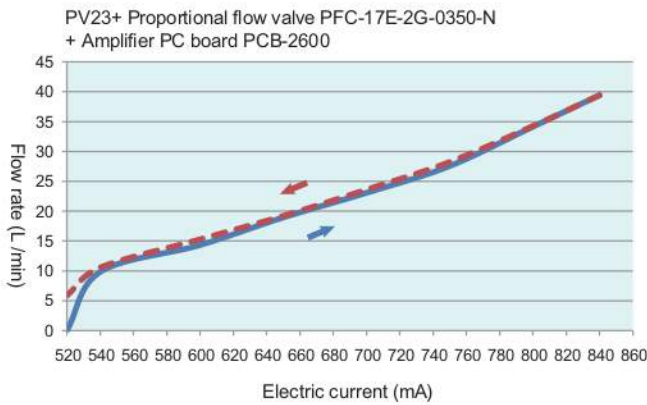
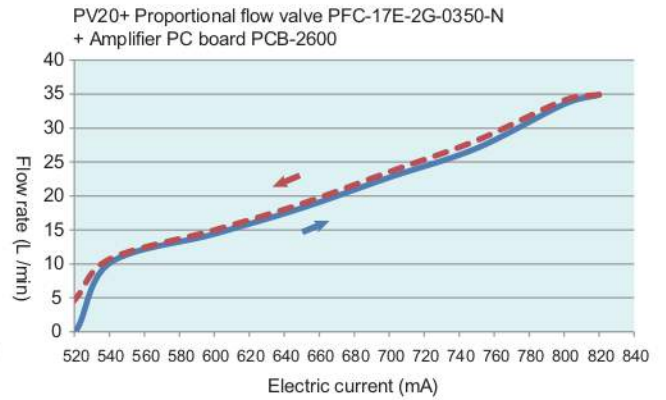
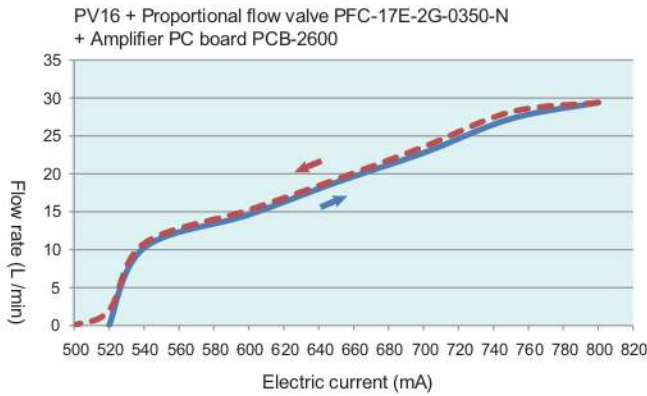
Test condition:

The noise of the single pump is according to the standard of DIN 45635, the rule of 1and26, at low echo measurement laboratory, measuring that the distance of microphone is 1m and 1500rpm.

Notice:

At the best time to install, the volume noise of hydraulic equipment is always 6 ~ 10 dBA higher than measuring at low echo measurement laboratory.

Proportional flow performance curves





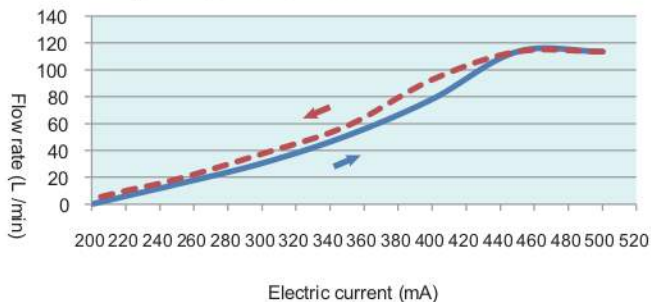
Proportional flow performance curves

A

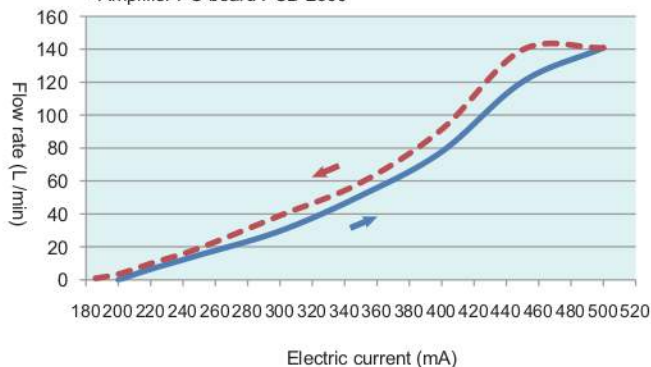
38

PV Axial piston pump

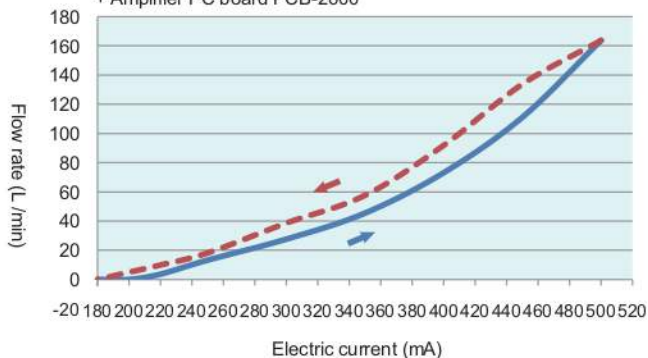
PV63 + Proportional flow valve PFC-17E-2G-0700-N
+ Amplifier PC board PCB-2600



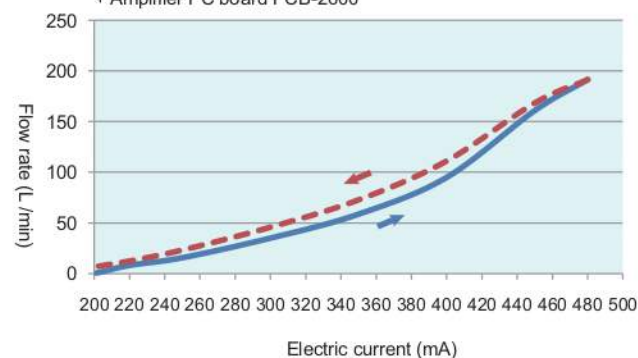
PV80 + Proportional flow valve PEV-16A-2D-09-N-1600
+ Amplifier PC board PCB-2600



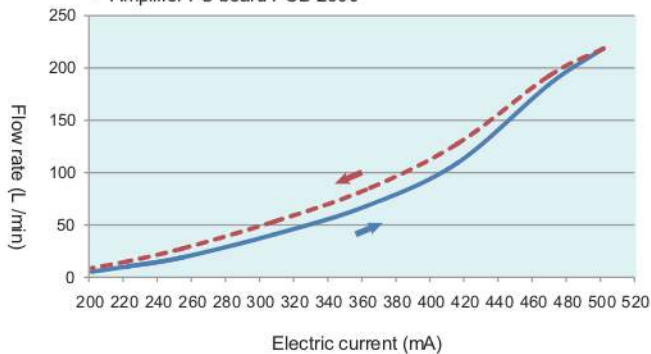
PV92 + Proportional flow valve PEV - 16A-2D-09-N-1600
+ Amplifier PC board PCB-2600



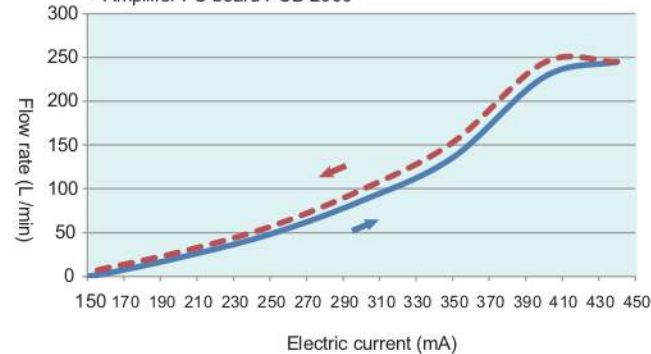
PV110 + Proportional flow valve PEV-16A-2D-09-N-1600
+ Amplifier PC board PCB-2600



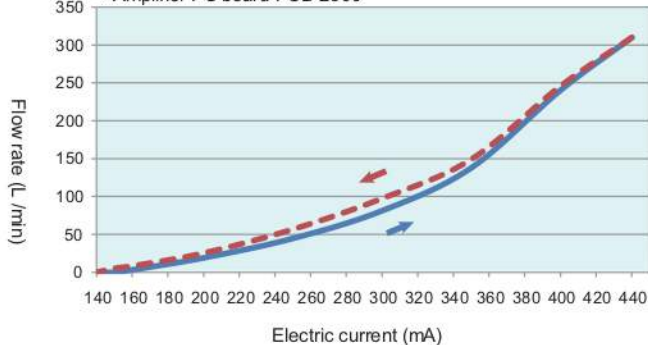
PV125 + Proportional flow valve PEV-16A-2D-09-N-1600
+ Amplifier PC board PCB-2600



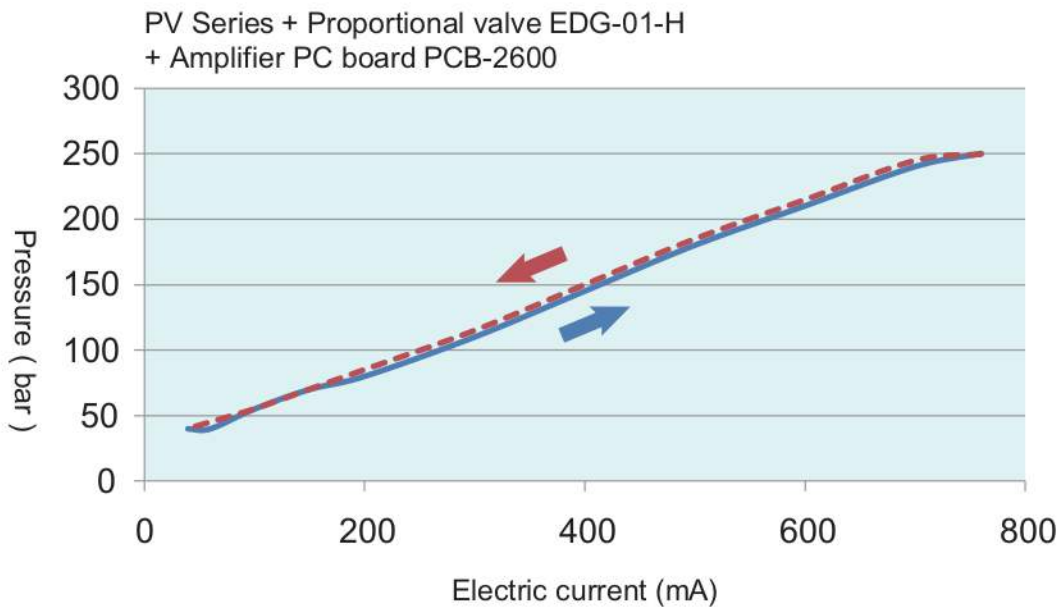
PV140 + Proportional flow valve PEV-18A-2D-09-N-3200
+ Amplifier PC board PCB-2600



PV180 + Proportional flow valve PEV-18A-2D-09-N-3200
+ Amplifier PC board PCB-2600



Proportional pressure performance curves





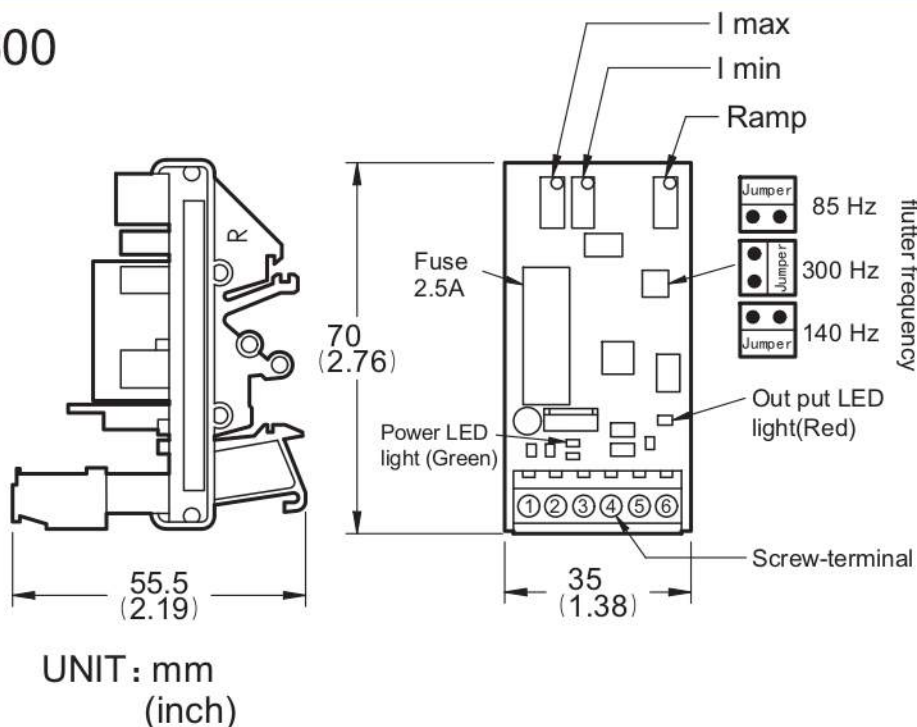
Proportional amplifier

PCB-2600

A

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PV Axial piston pump



UNIT : mm
(inch)

Instructions for setting

Supply: green LED

RAMP: ramping up/down time adjustment.
For long ramping times, turn potentiometers clockwise,
for short ramping times, turn potentiometers counter-clockwise.

MAX/MIN:

I max / I min
There are multi-course potentiometers for adjustment of min-max and also ramp time.

Frequency ADJ.:

The dither frequency can be set with a jumper to 85, 140, or 300 Hz.

Technical data

Supply voltage: 10-35 VDC

Max. current: 0-2600 mA adjustable for 12 and 24 VDC
(Output is a PWM-DC)

Min. current: 0-600 mA adjustable

Ramp adjustment: 0~5 Sec.

Dither frequency: 85, 140, 300 Hz to be set by jumper(Standard 140 Hz)

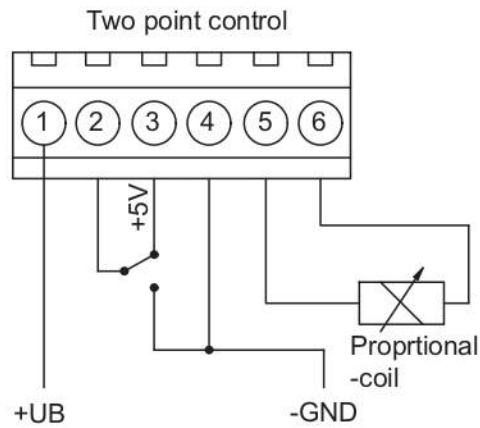
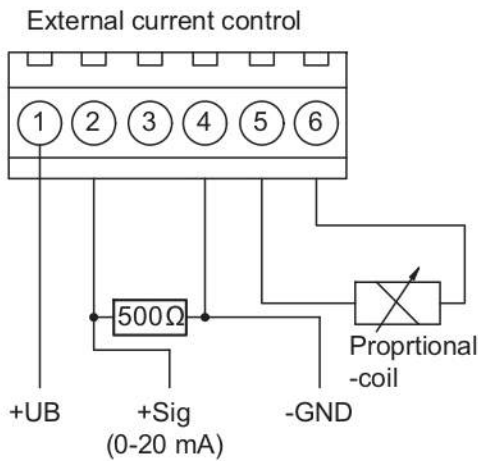
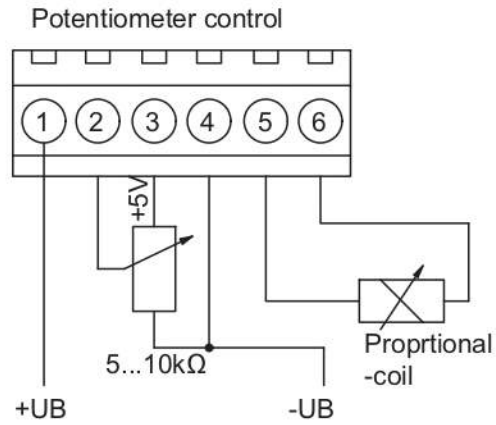
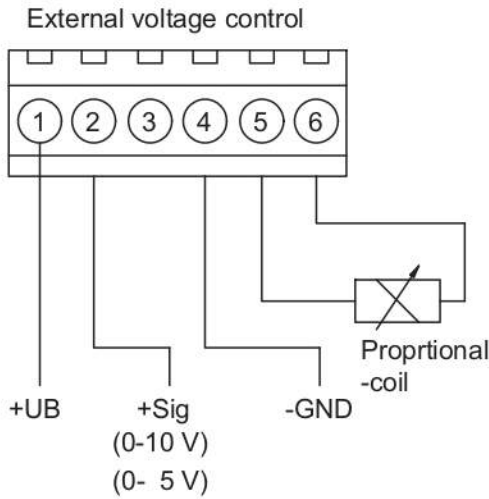
Ambient operating temperature: -15~140°F
-10~60°C

Weight: 0.05kg

NOTICE

Do not remove the amplifier from the coil while the power is on.
This will cause a failure in the internal circuits of the amplifier, resulting in loss of output to the coil.

Proportional amplifier



- . Clamp connections plug in connector
- Pin 1 =+ UB; supply voltage (10-35 VDC)
- Pin 2 = Control voltage (+ Sig)
- Pin 3 = Auxiliary voltage (+ 5 VDC)
- Pin 4 = Ground (GND)
- Pin 5 = Solenoid (-)
- Pin 6 = Solenoid (+)

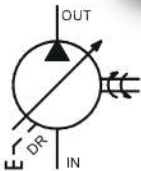
- . Potentiometer
- Turn clockwise means increasing current or Extension of ramp time
- App. 10 turns for complete range

- .Fuse
- Standard 20 mm Glass fuse 2.5 A T

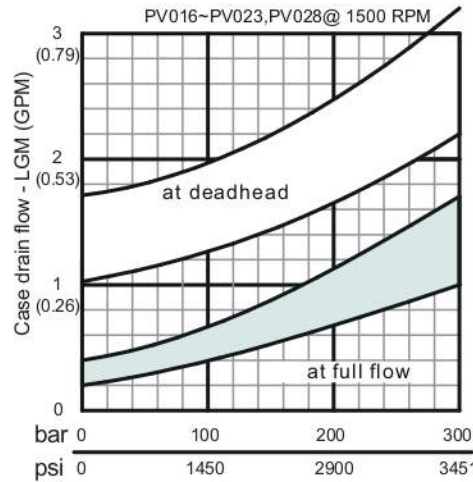
- .LED's
- LED +VS (green) = lights, when voltage supply and fuse are in order
- LED1 (red) = lights, if there is an output to the solenoid



Efficiency and case drain flows



PV016 ~ PV023
PV028 (Body1)



A

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PV Axial piston pump

The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

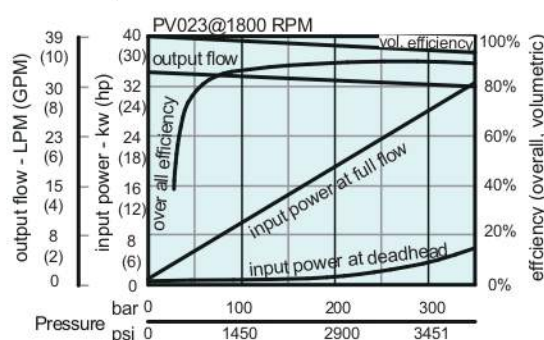
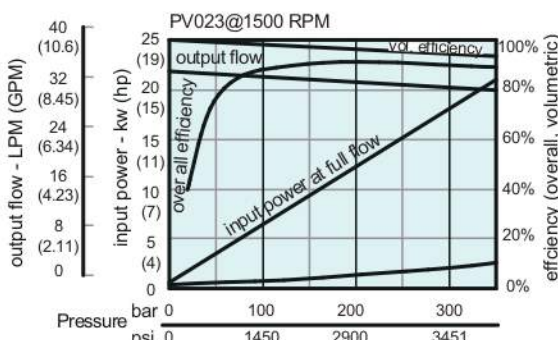
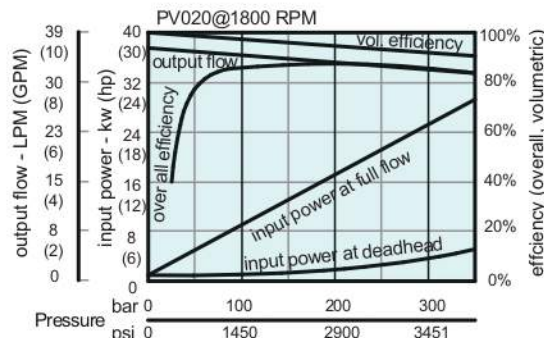
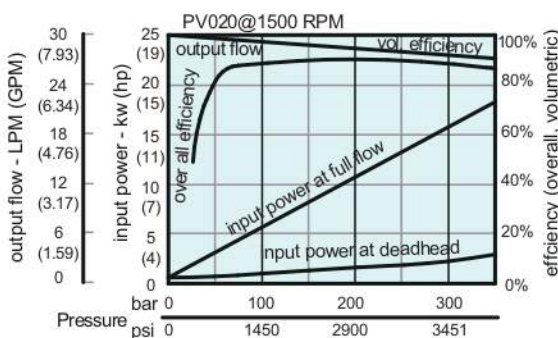
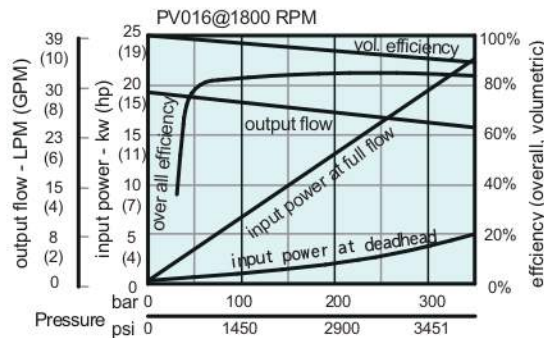
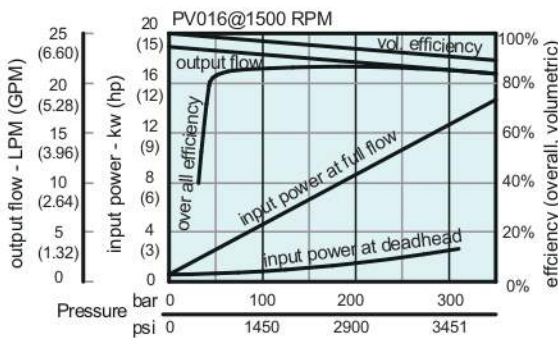
Case drain flow and compensator control flow leave via the drain port of the pump.

To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation.

Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 40 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.



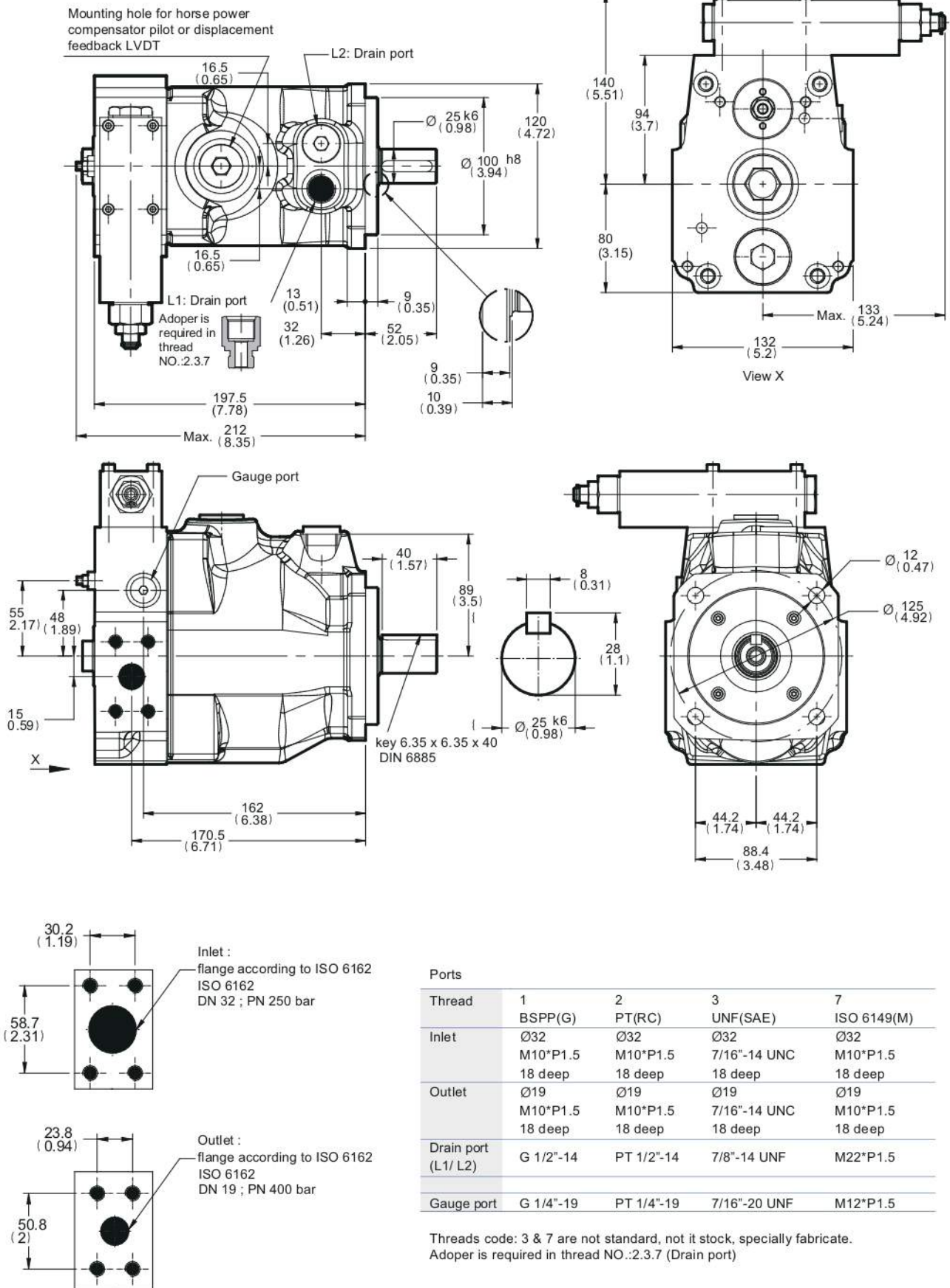
Dimensions

PV016 ~ PV023,PV028(Body 1)
Metric version(Motor Mounting Ø100)

A

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PV Axial piston pump





Dimensions

PV016 ~ PV023, PV028 (Body 1)

Metric version (Motor Mounting $\varnothing 100$)

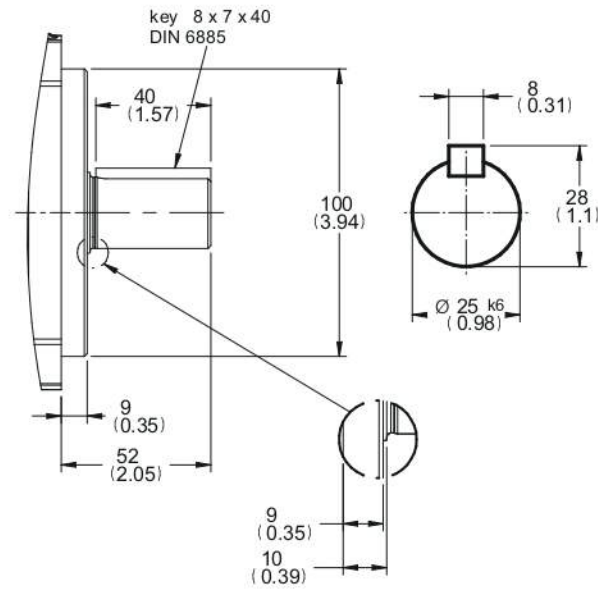
Shaft type

A

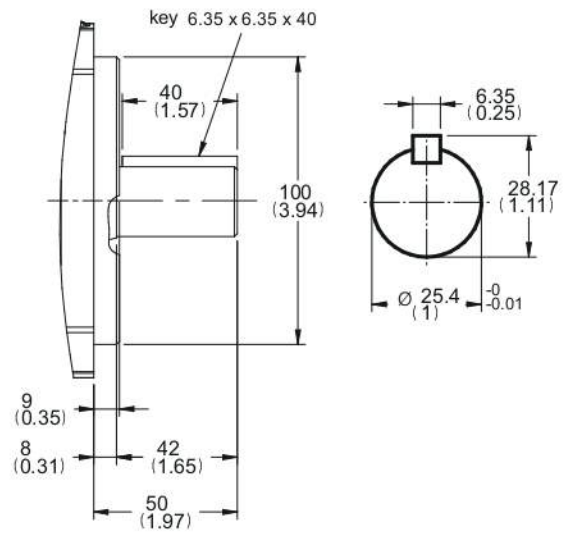
44

PV Axial piston pump

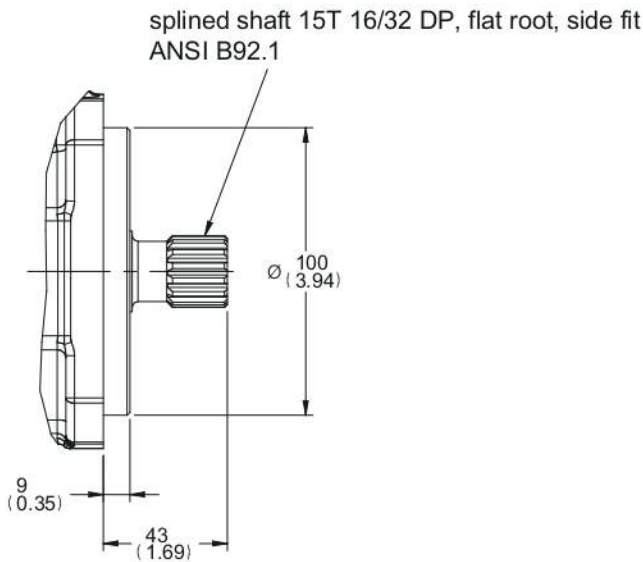
Mounting code: **M**



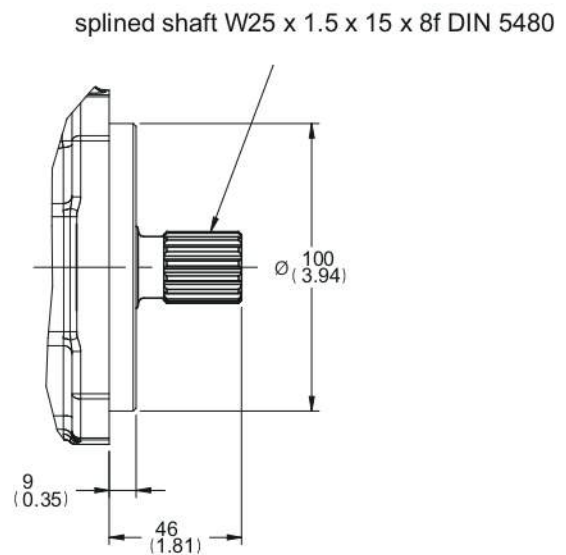
Mounting code: **R**



Mounting code: **K**



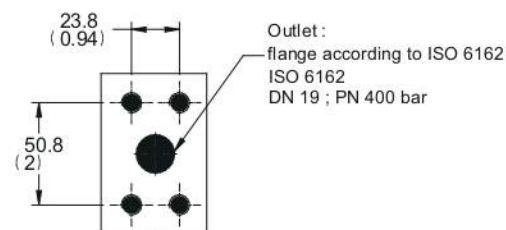
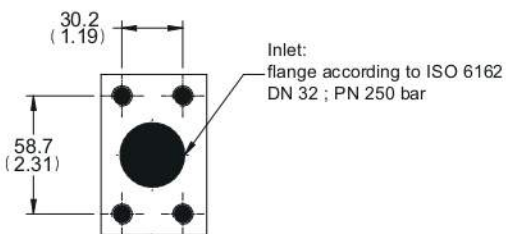
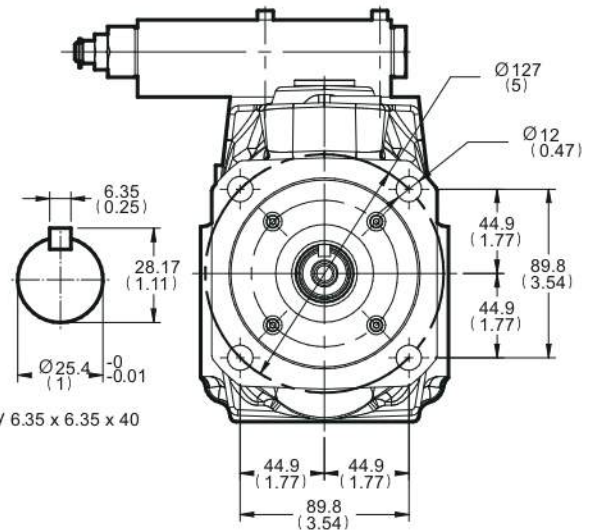
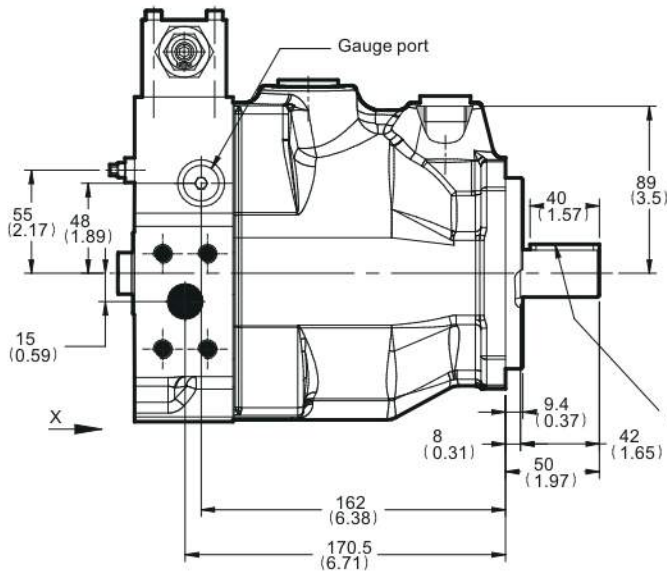
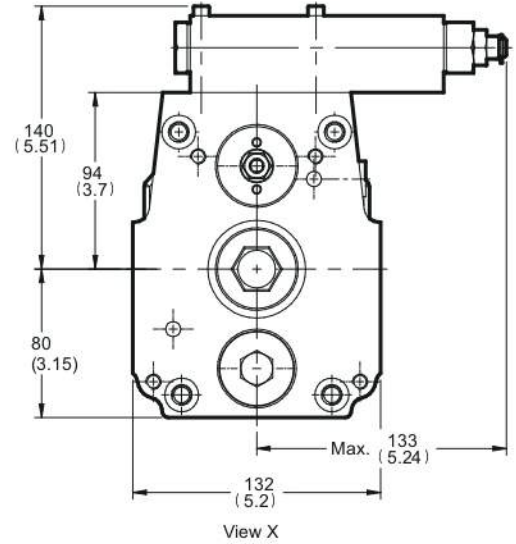
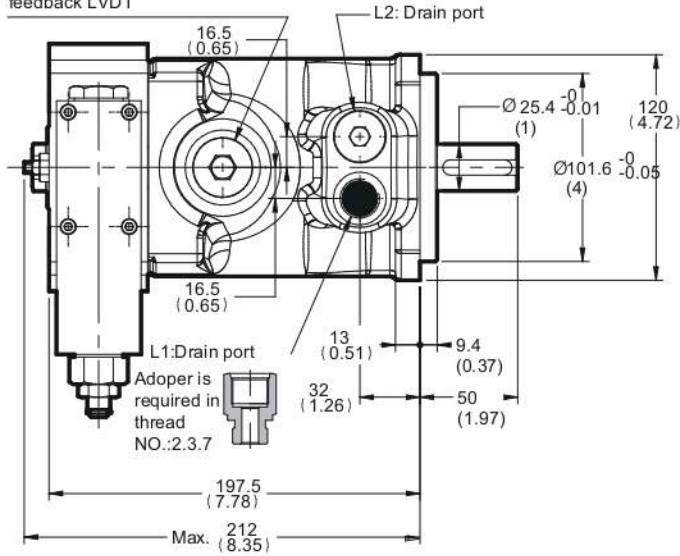
Mounting code: **S**



Dimensions

PV016 ~ PV023,PV028(Body 1) SAE version(motor mounting Ø101.6)

Mounting hole for horse power compensator pilot or displacement feedback LVDT



Ports

| Thread | 3 UNF(SAE) | 1 BSPP(G) | 2 PT(RC) | 7 ISO 6149(M) |
|--------------------|------------------------|----------------------------|----------------------------|----------------------------|
| Inlet | Ø32 7/16"-14 UNC | Ø32 M10*P1.5 18 deep | Ø32 M10*P1.5 18 deep | Ø32 M10*P1.5 18 deep |
| Outlet | Ø19 7/16"-14 UNC | Ø19 M10*P1.5 18 deep | Ø19 M10*P1.5 18 deep | Ø19 M10*P1.5 18 deep |
| Drain port (L1/L2) | 7/8"-14 UNF | G 1/2"-14 | PT 1/2"-14 | M22*P1.5 |
| Gauge port | 7/16"-20 UNF | G 1/4"-19 | PT 1/4"-19 | M12*P1.5 |

Threads code: 3 & 7 are not standard, not it stock, specially fabricate.
Adoper is required in thread NO.:2.3.7 (Drain port)





Dimensions

PV016 ~ PV023, PV028 (Body 1)

SAE version (motor mounting $\varnothing 101.6$)

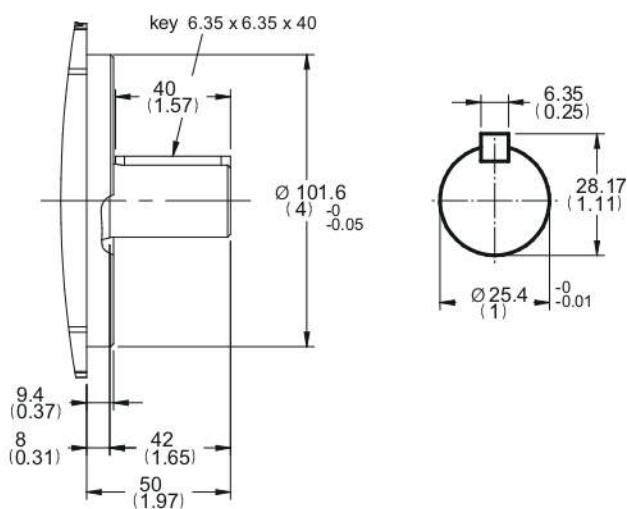
Shaft type

A

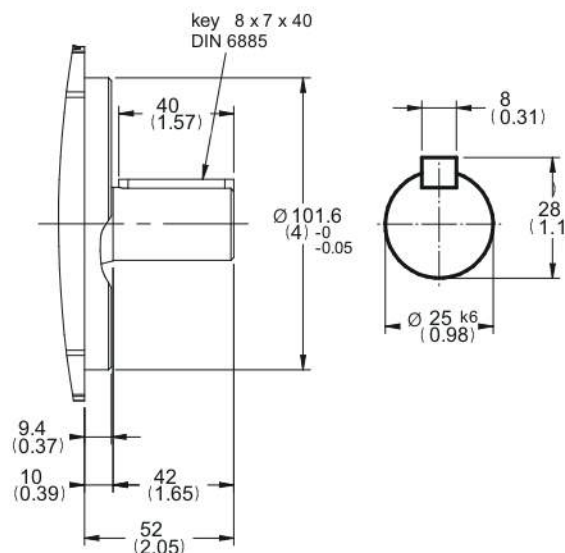
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PV Axial piston pump

Mounting code: **N**

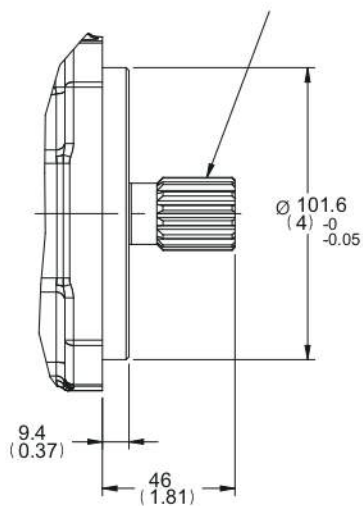


Mounting code: **J**



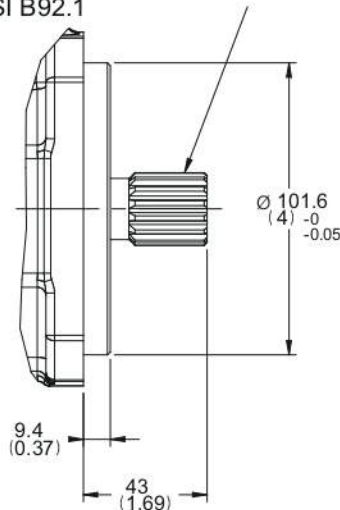
Mounting code: **D**

splined shaft W25 x 1.5 x 15 x 8f DIN 5480



Mounting code: **U**

splined shaft 15T 16/32 DP, flat root, side fit ANSI B92.1



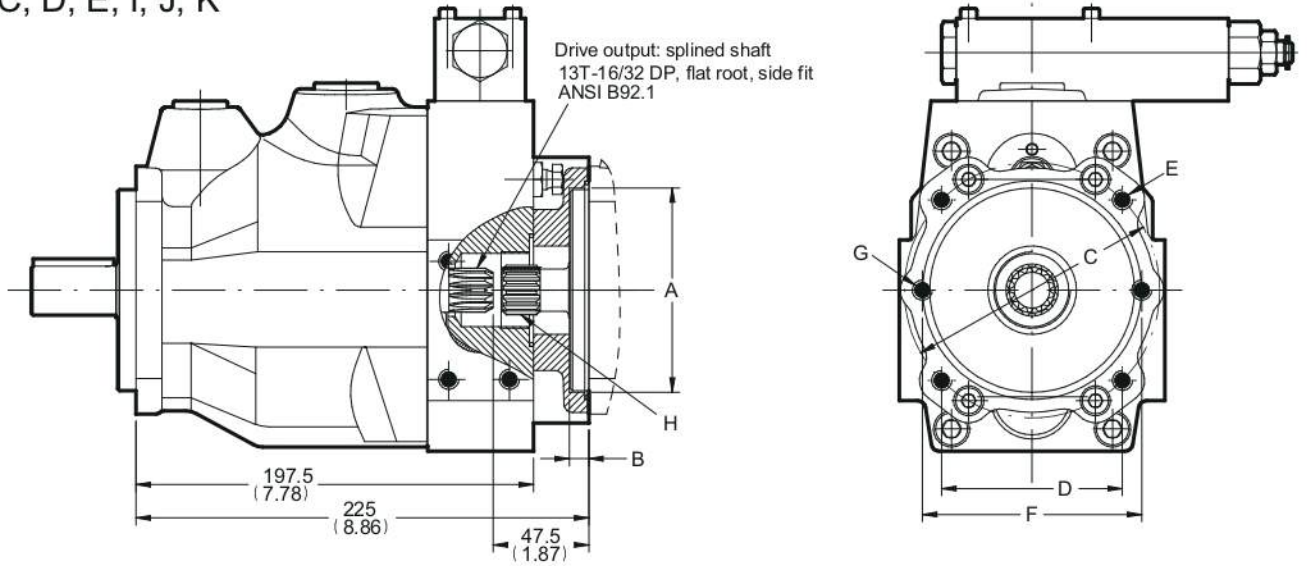
Dimensions

PV016 ~ PV023, PV028 (Body 1)

Thru drive

Thru drive:

C, D, E, I, J, K



A

47

PV Axial piston pump

| Thru shaft adaptors are available with the following dimensions | | | | | | | |
|---|-------|------|-----|------|-----|-----------|-----------|
| thru code | A | B | C | D | E | F | G |
| I | 63 | 10 | 85 | - | M8 | 100 | M8 |
| J | 80 | 10 | 103 | - | M8 | 109 | M10 |
| K | 100 | 10.5 | 125 | - | M10 | n. avail. | n. avail. |
| C | 50.8 | 10 | - | - | - | 82 | M8 |
| D | 82.55 | 10 | - | - | - | 106 | M10 |
| E | 101.6 | 10.5 | - | 89.8 | M10 | n. avail. | n. avail. |

Thread codes are 3 and 7, the dimensions E and G are UNC-2B threads

threads code: 3 and 7 Not standard, not in stock, require special requests.





Dimensions

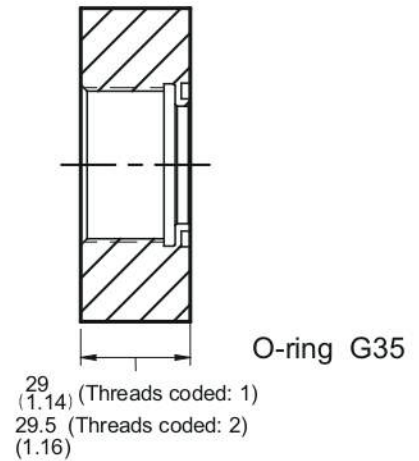
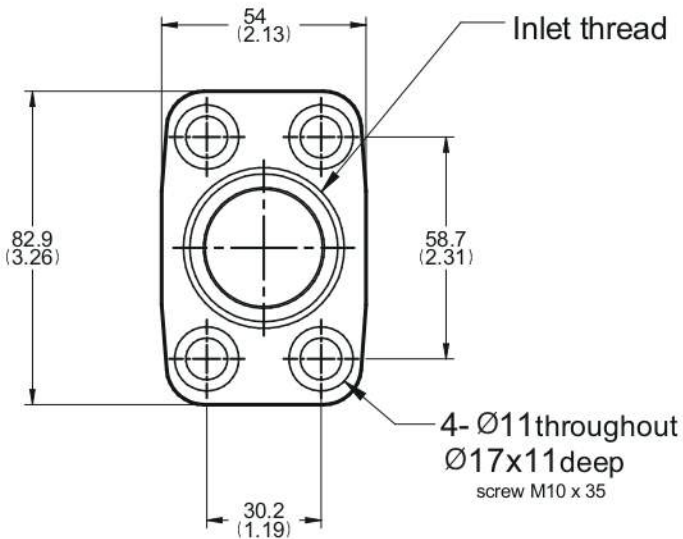
PV016 ~ PV023,PV028(Body 1) Inlet / Outlet Flange

A

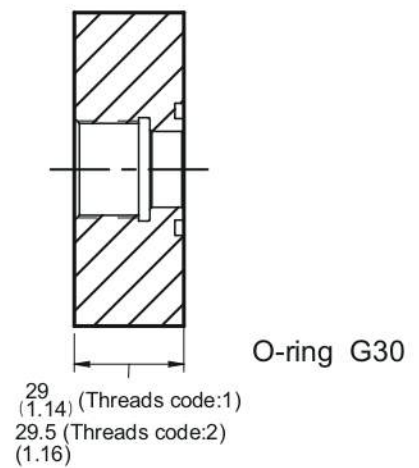
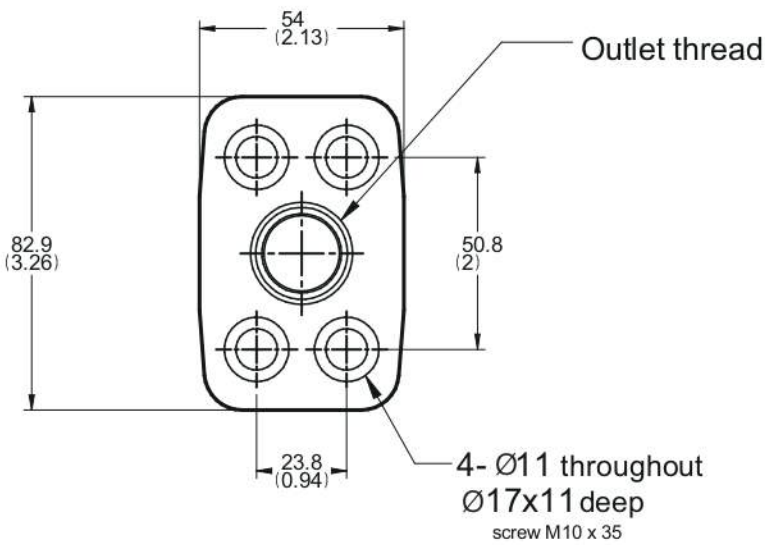
48

PV Axial piston pump

Inlet Flange



Outlet Flange

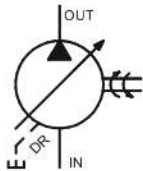


Ports

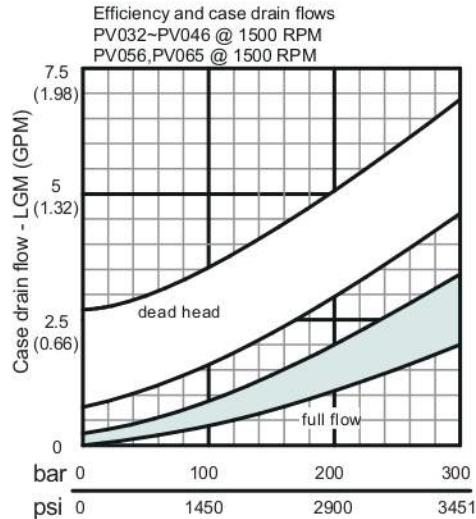
| Thread code | 3 UNF(SAE) | 1 BSPP(G) | 2 PT(RC) | 7 ISO 6149(M) |
|-------------|---------------|--------------|--------------|------------------|
| Inlet | 1 5/8"-12 UN | G 1 1/4"-11 | PT 1 1/4"-11 | M42*P2.0 |
| Outlet | 1 1/16"-12 UN | G 3/4"-14 | PT3/4"-14 | M27*P2.0 |

Threads code: 3 & 7 are not standard, not it stock, specially fabricate.

Efficiency and case drain flows



**PV032 ~ PV046
PV056, PV065
(Body2)**



The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

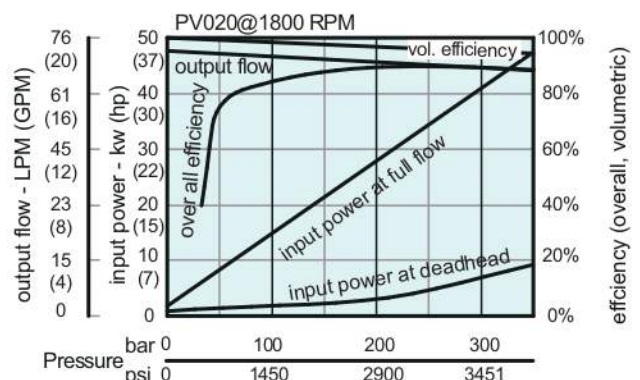
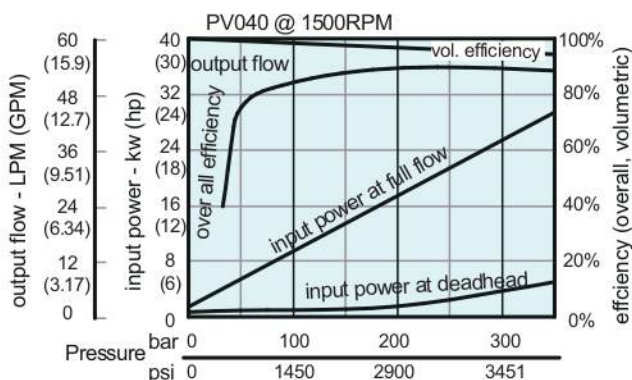
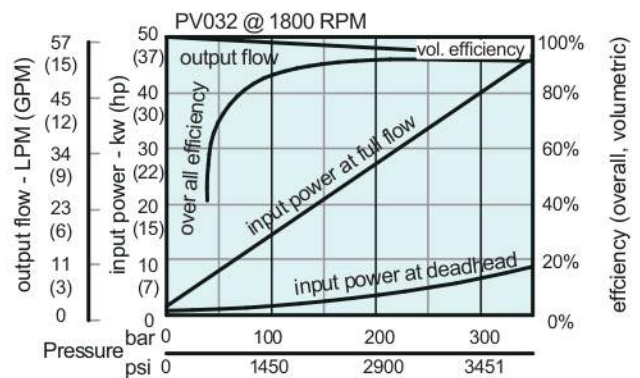
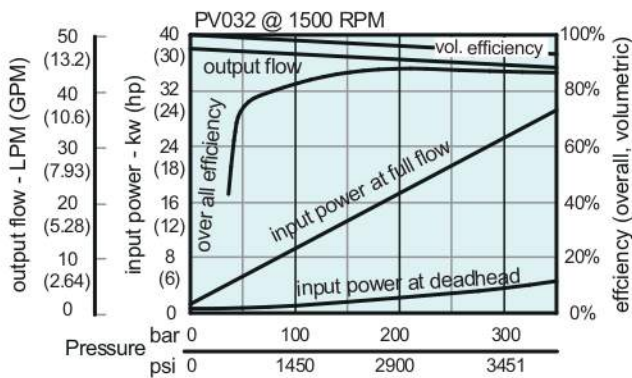
Case drain flow and compensator control flow leave via the drain port of the pump.

To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation.

Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 60 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.





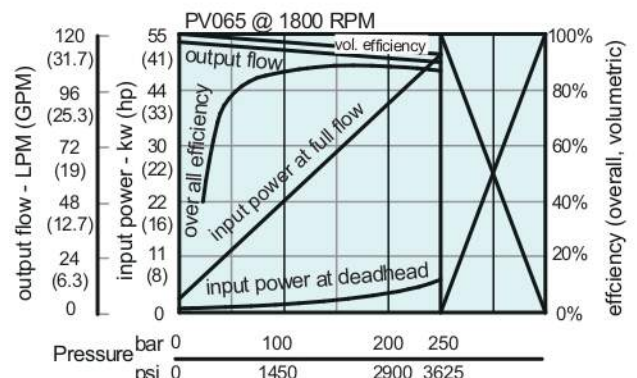
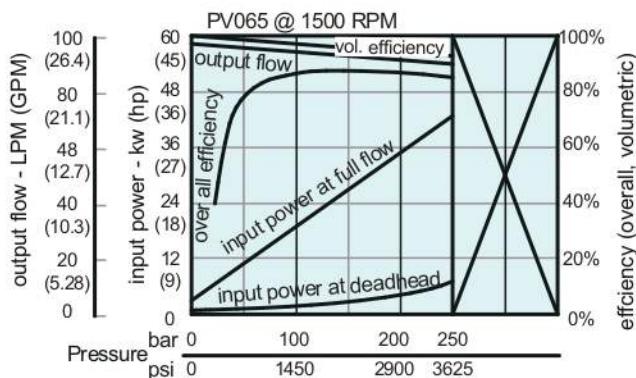
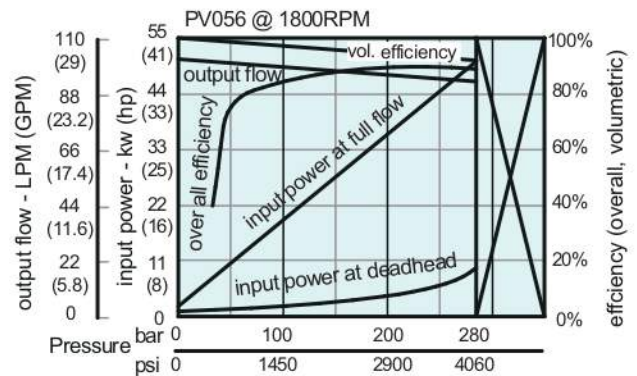
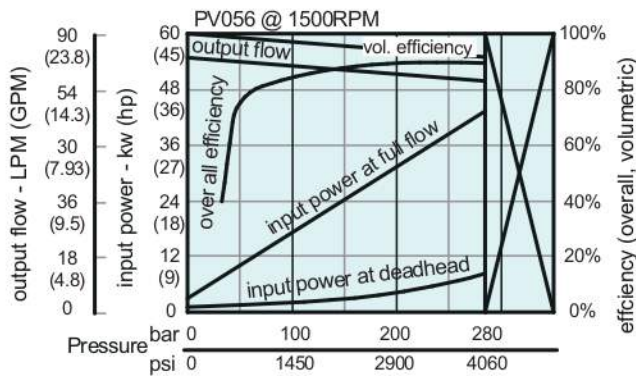
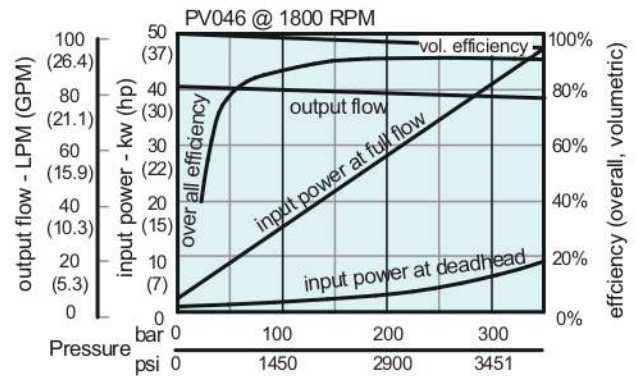
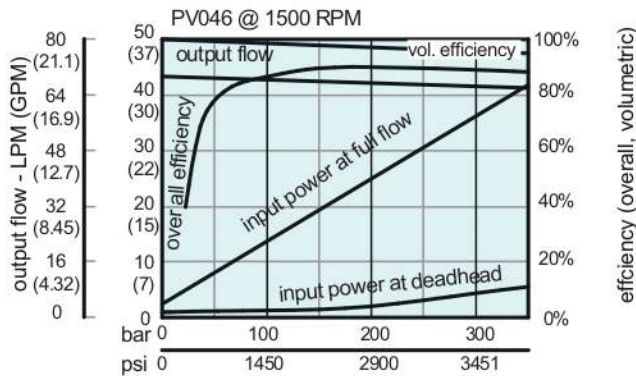
Efficiency and case drain flows

A

PV032 ~ PV046, PV056, PV065 (Body2)

PV Axial piston pump

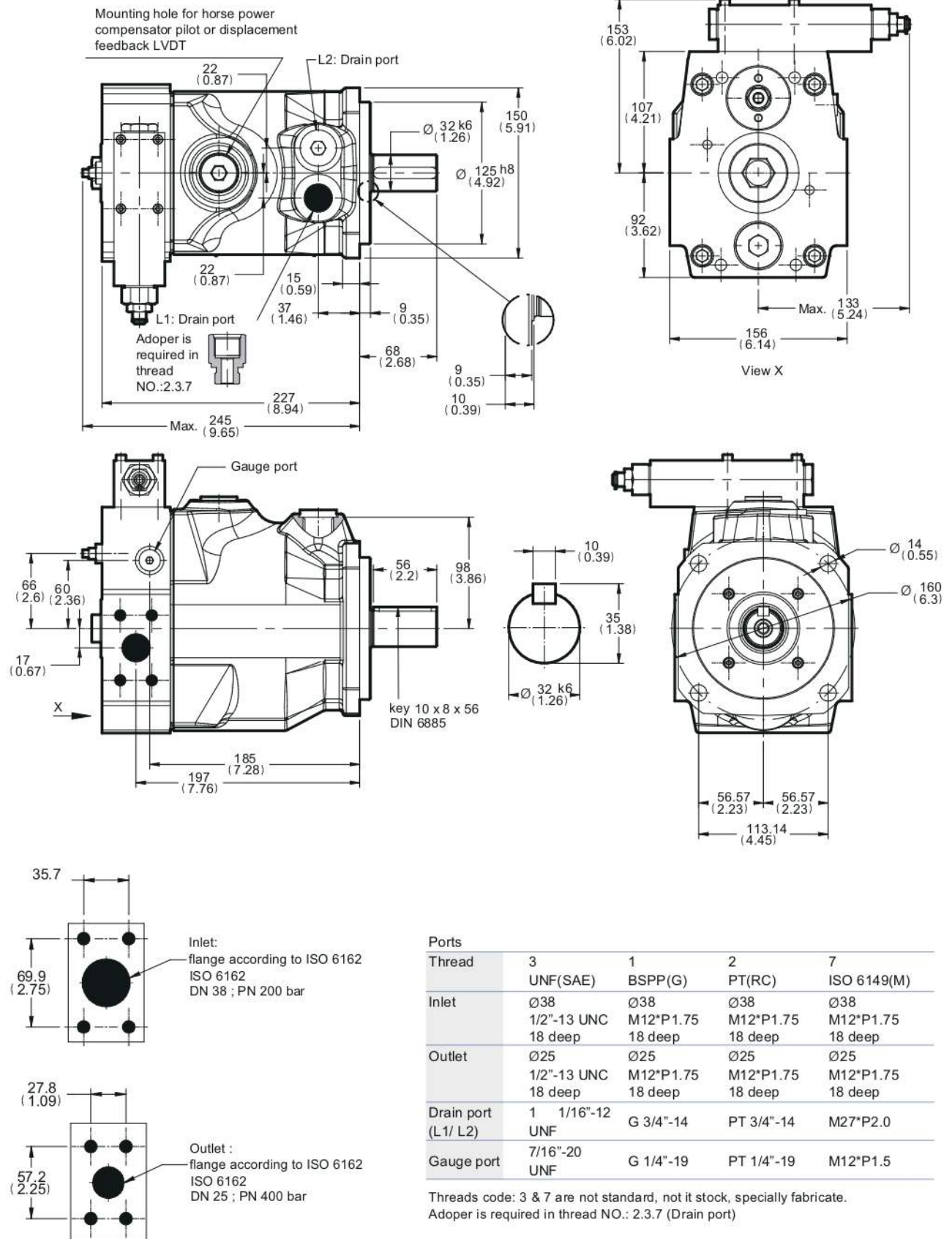
50



Dimension

PV032 ~ PV046, PV056, PV065 (Body 2)
Metric version (motor mounting Ø125)

A
51
PV Axial piston pump





Dimension

PV032 ~ PV046, PV056, PV065 (Body 2)

Metric version (motor mounting Ø125)

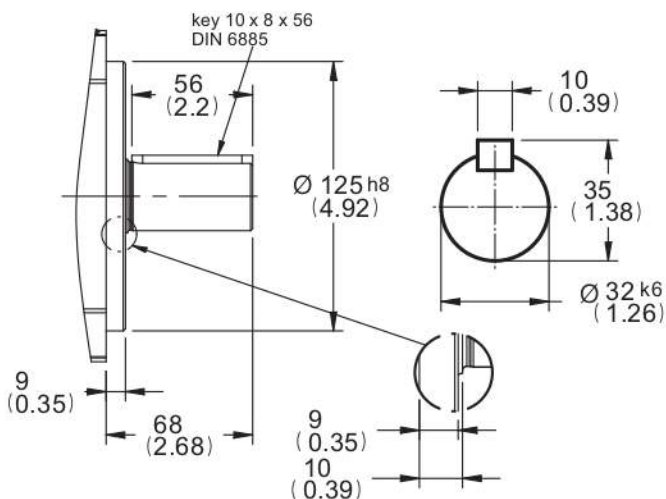
Shaft type

A

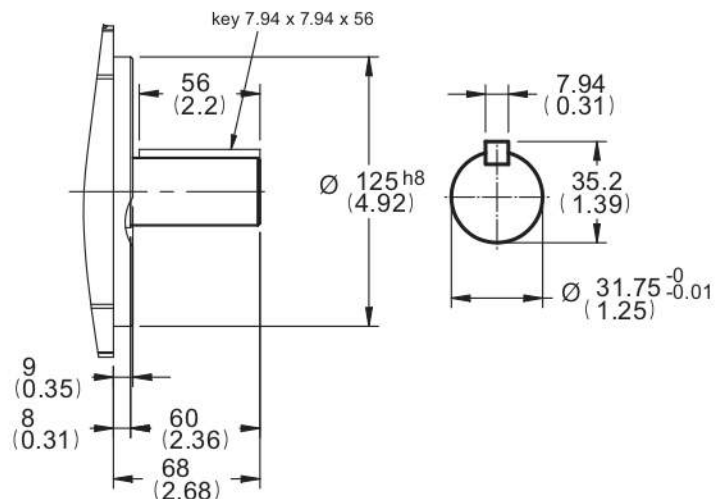
52

PV Axial piston pump

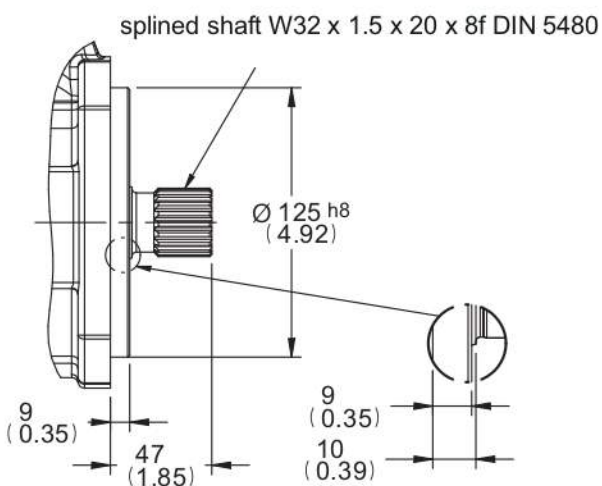
Mounting code: **M**



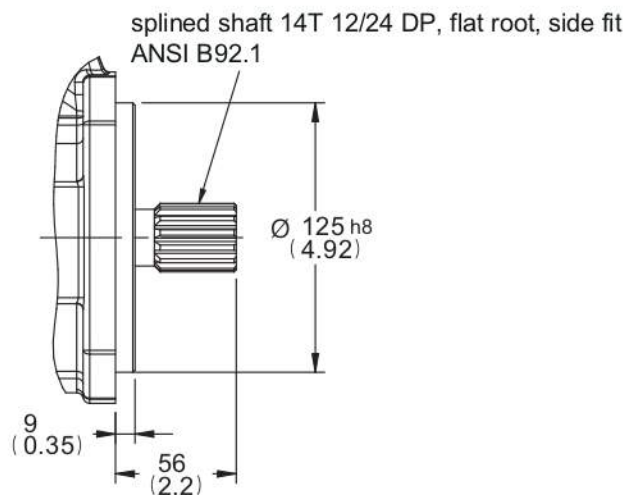
Mounting code: **R**



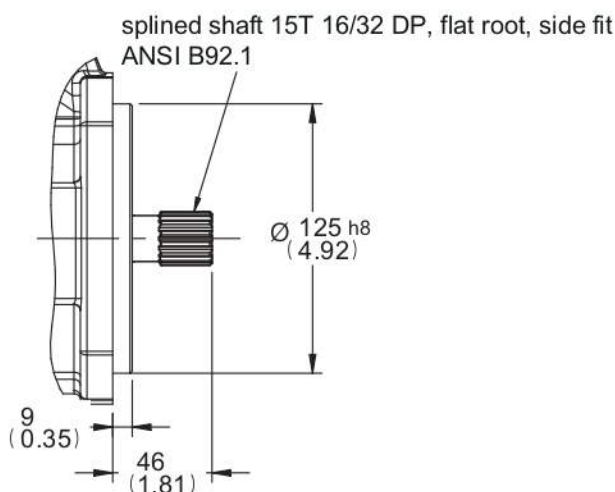
Mounting code: **K**



Mounting code: **S**



Mounting code: **P**



Dimension

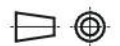
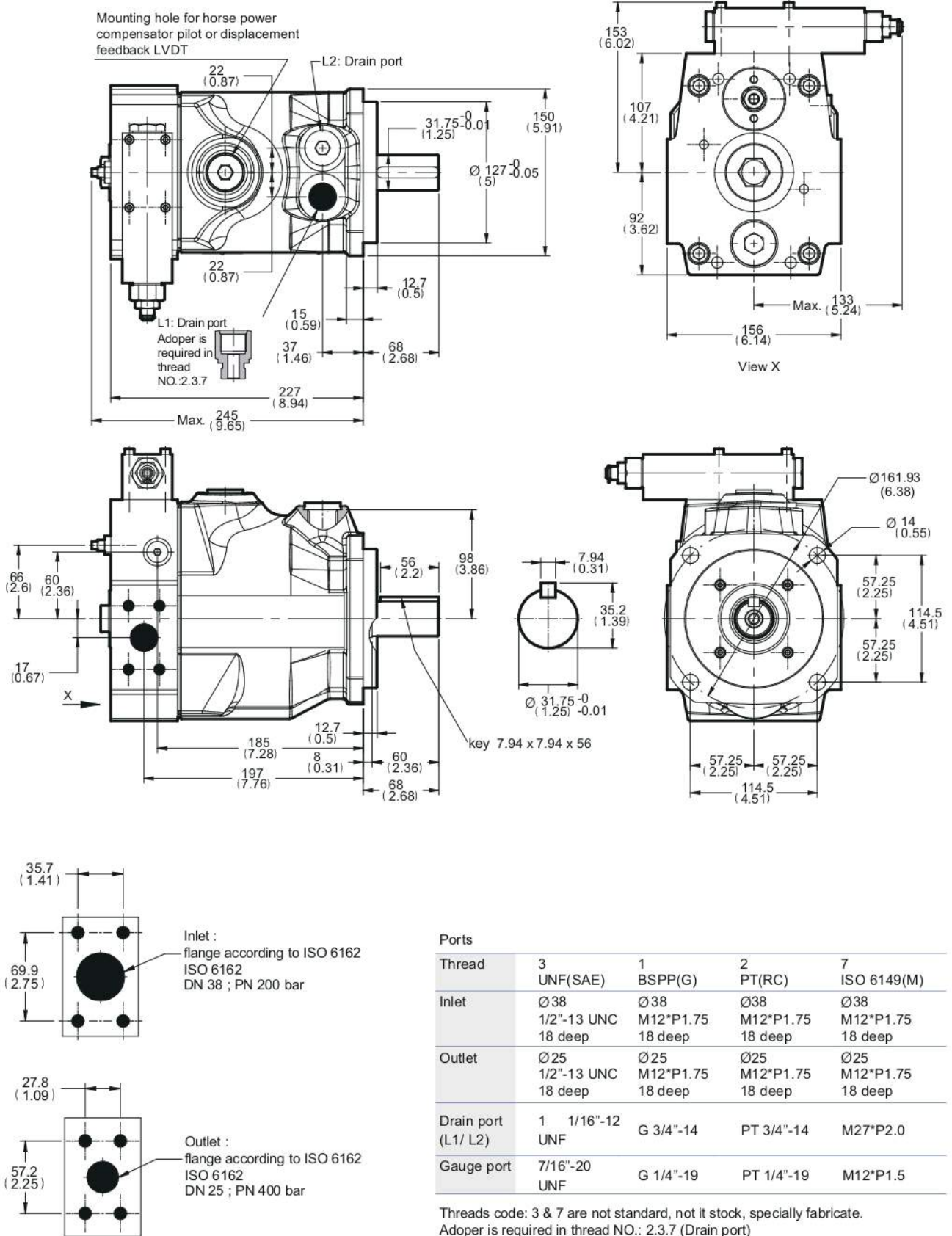
PV032 ~ PV046, PV056, PV065 (Body 2)

SAE version (motor mounting $\varnothing 127$)

A

53

PV Axial piston pump





Dimension

PV032 ~ PV046, PV056, PV065 (Body 2)

SAE version (motor mounting Ø127)

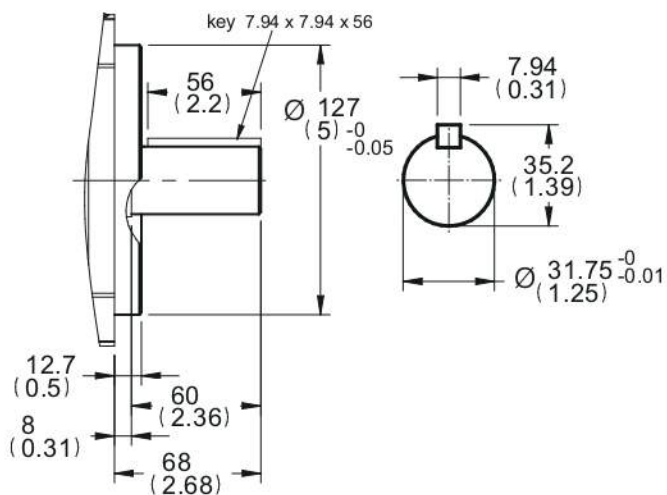
Shaft type

A

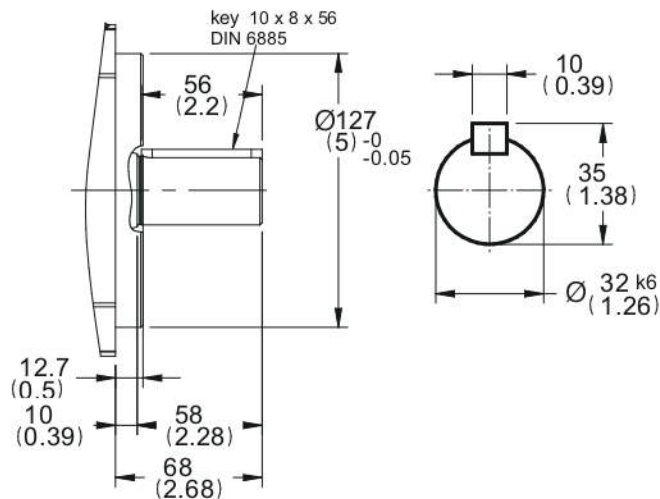
54

PV Axial piston pump

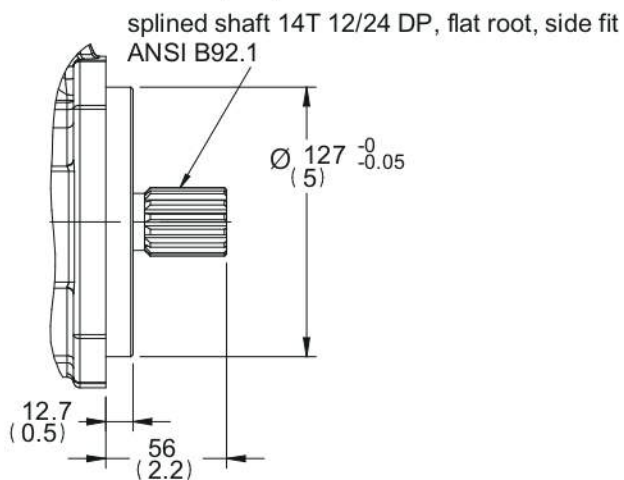
Mounting code: **N**



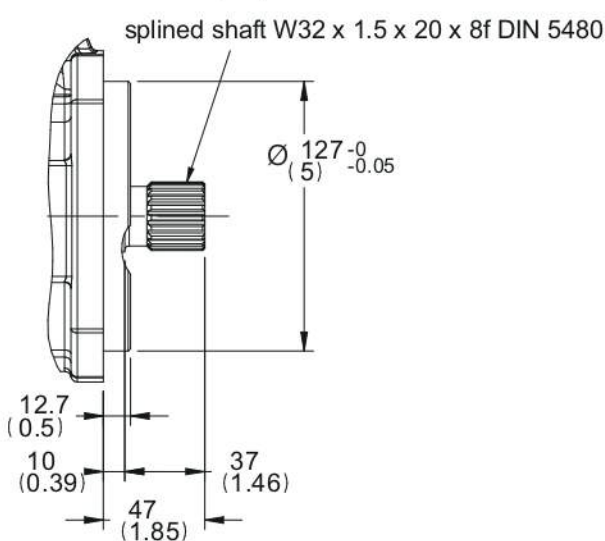
Mounting code: **J**



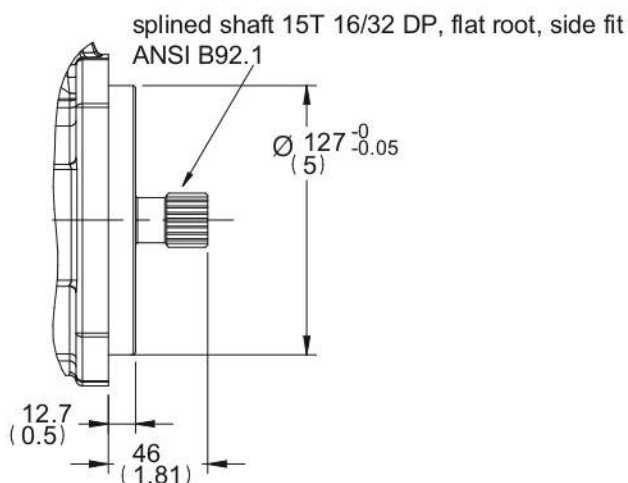
Mounting code: **D**



Mounting code: **U**



Mounting code: **G**

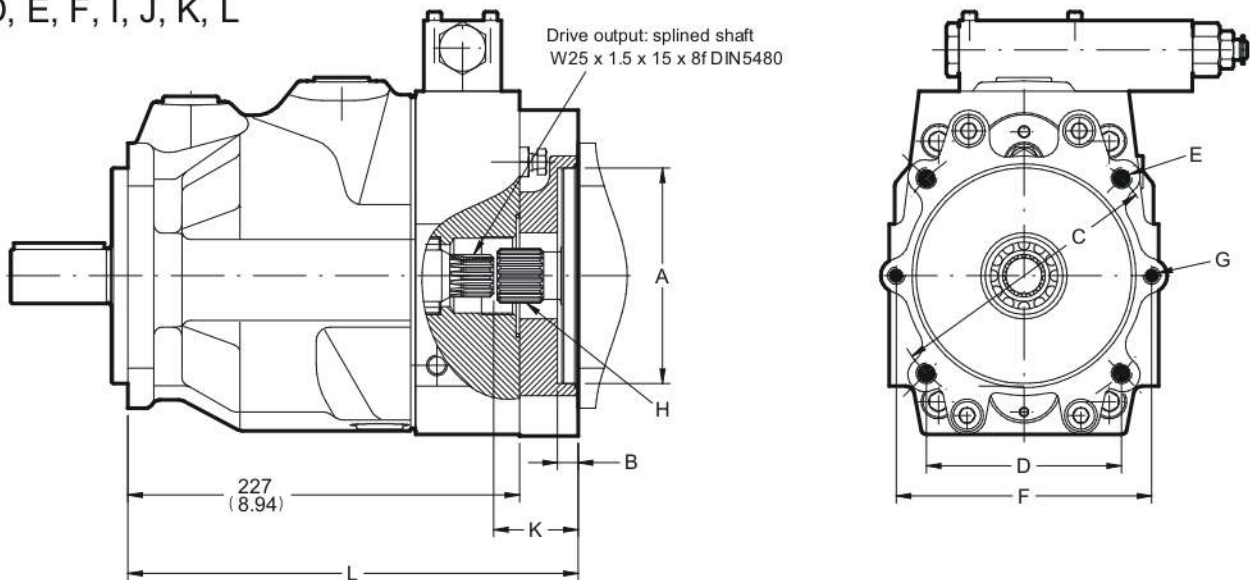


Dimension

PV032 ~ PV046, PV056, PV065 (Body 2)

Thru drive

thru drive:
D, E, F, I, J, K, L



Thru shaft adaptors are available with the following dimensions:

| thru code | A | B | C | D | E | F | G | K | L |
|-----------|-------|------|-----|-------|-----|-----------|-----------|----|-----|
| I | 63 | 8.5 | 85 | - | M8 | 100 | M8 | 49 | 261 |
| J | 80 | 8.5 | 103 | - | M8 | 109 | M10 | 49 | 261 |
| K | 100 | 10.5 | 125 | - | M10 | 140 | M12 | 49 | 261 |
| L | 125 | 12 | 160 | - | M12 | n. avail. | n. avail. | 49 | 261 |
| D | 82.55 | 8 | - | - | - | 106 | M10 | 49 | 261 |
| E | 101.6 | 11 | - | 89.8 | M10 | 146 | M12 | 49 | 261 |
| F | 127 | 13.5 | - | 114.5 | M12 | n. avail. | n. avail. | 64 | 276 |

Thread codes are 3 and 7
the dimensions E and G are
UNC-2B threads

threads code: 3 and 7 Not
standard, not in stock
require special requests





Dimension

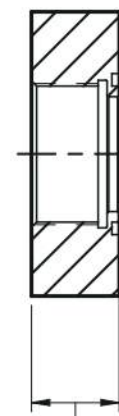
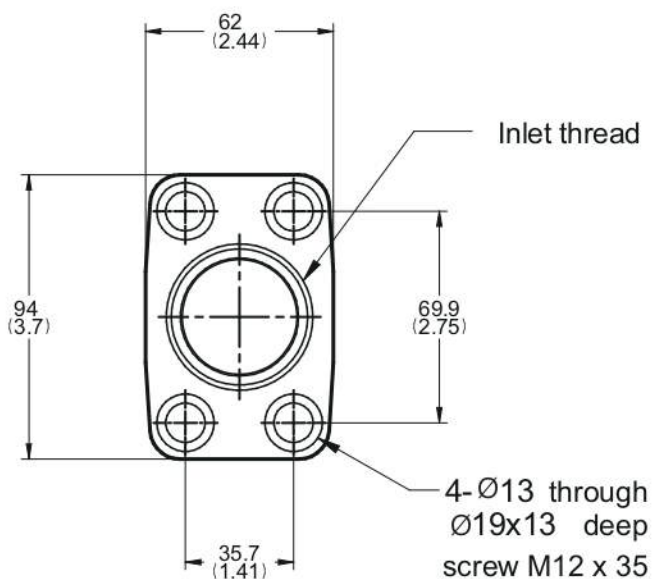
PV032 ~ PV046, PV056, PV065 (Body 2) Inlet / Outlet Flange

A

56

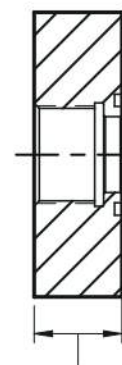
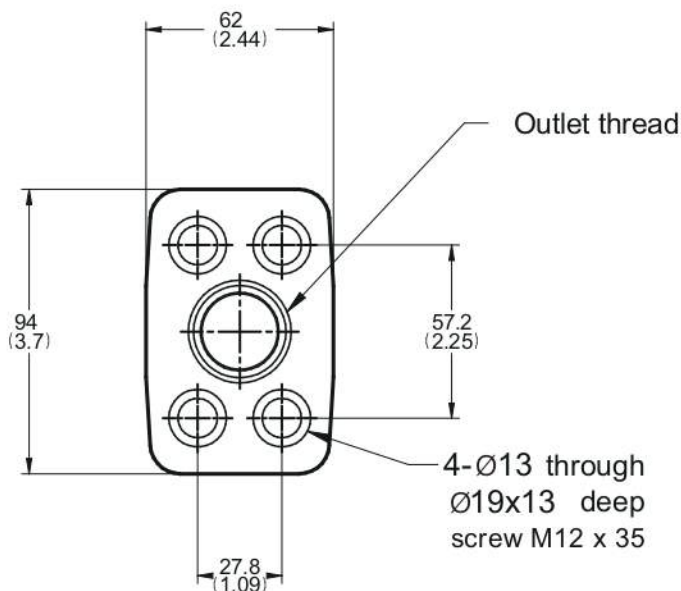
PV Axial piston pump

Inlet Flange



29 (1.14) (Threads code:1)
29.5 (1.16) (Threads code:2)

Outlet Flange



29 (1.14) (Threads code:1)
29.5 (1.16) (Threads code:2)

Ports

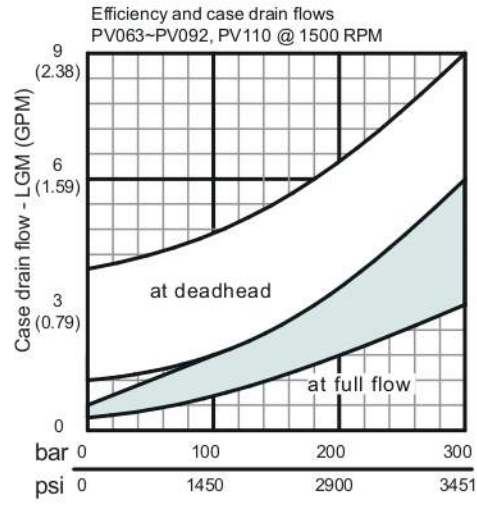
| Thread code | 3 | 1 | 2 | 7 |
|-------------|---------------|-------------|--------------|-------------|
| | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | 1 7/8"-12 UN | G 1 1/2"-11 | PT 1 1/2"-11 | M48*P2.0 |
| Outlet | 1 5/16"-12 UN | G 1"-11 | PT 1"-11 | M33*P2.0 |

threads code: 3 & 7 are not standard, not it stock, specially fabricate.

Efficiency and case drain flows



PV063 ~ PV092
PV110 (Body 3)

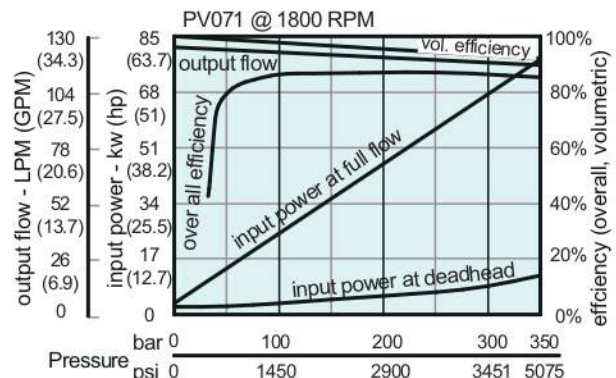
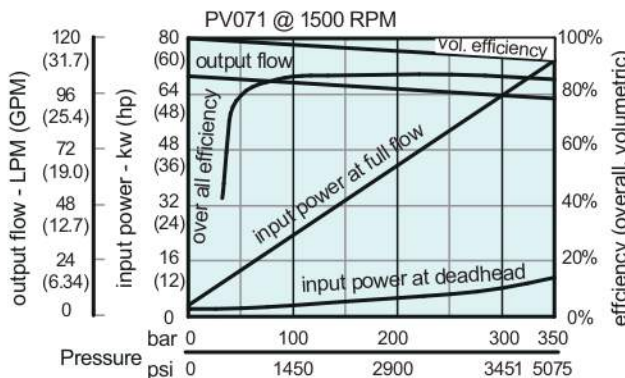
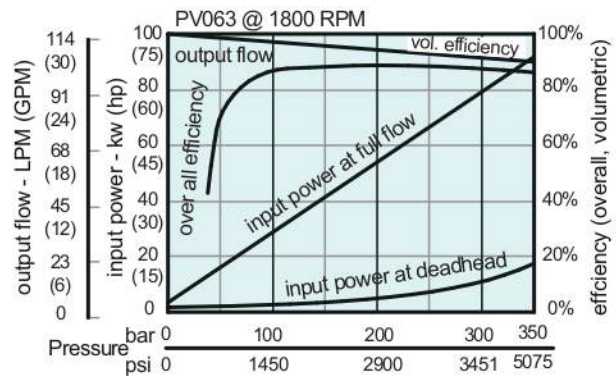
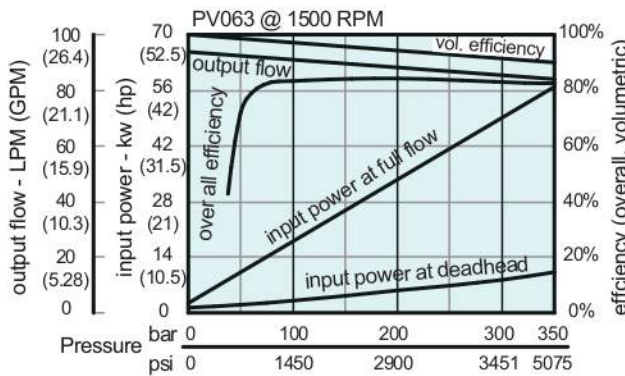


The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

Case drain flow and compensator control flow leave via the drain port of the pump. To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q-control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation. Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 80 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.



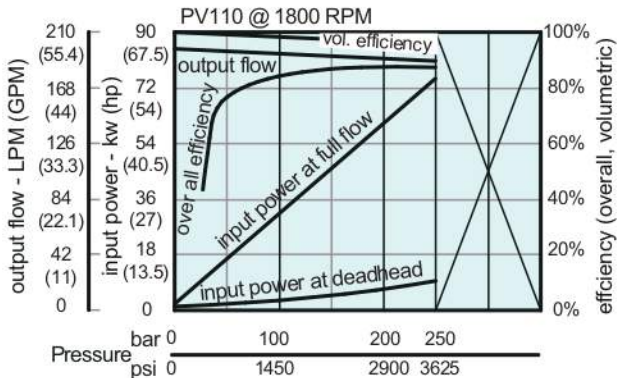
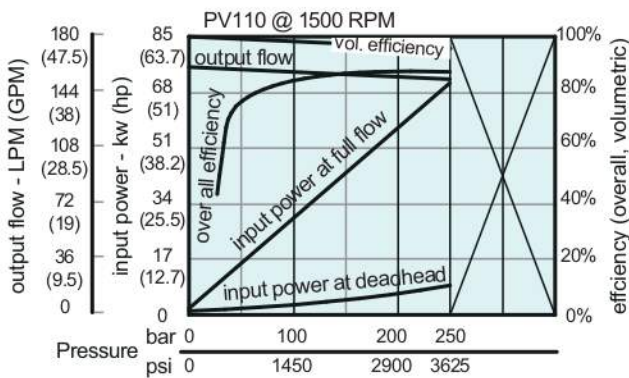
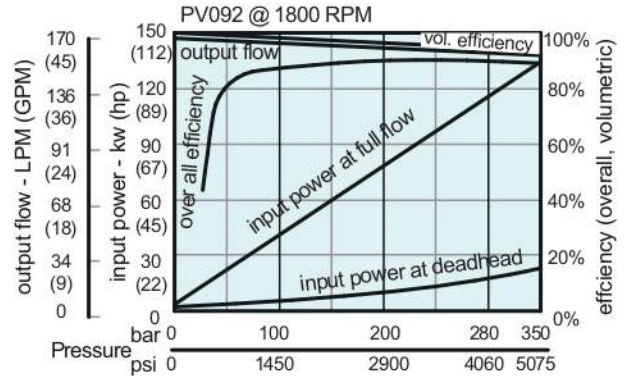
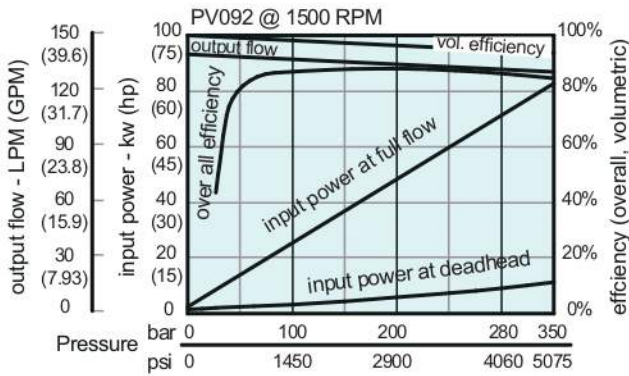
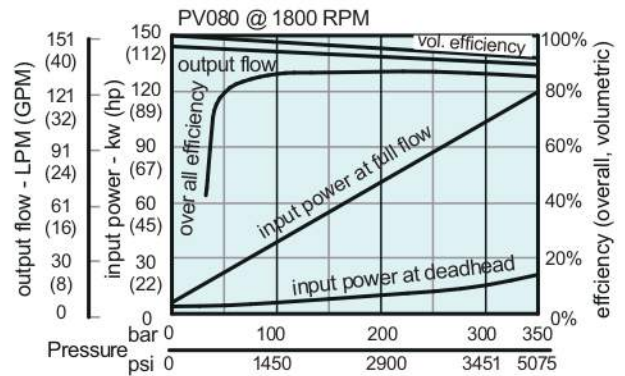
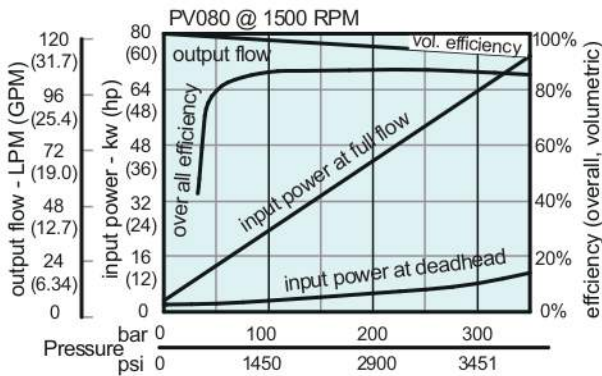


Efficiency and case drain flows

A

PV063 ~ PV092, PV110 (Body 3)

PV Axial piston pump



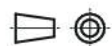
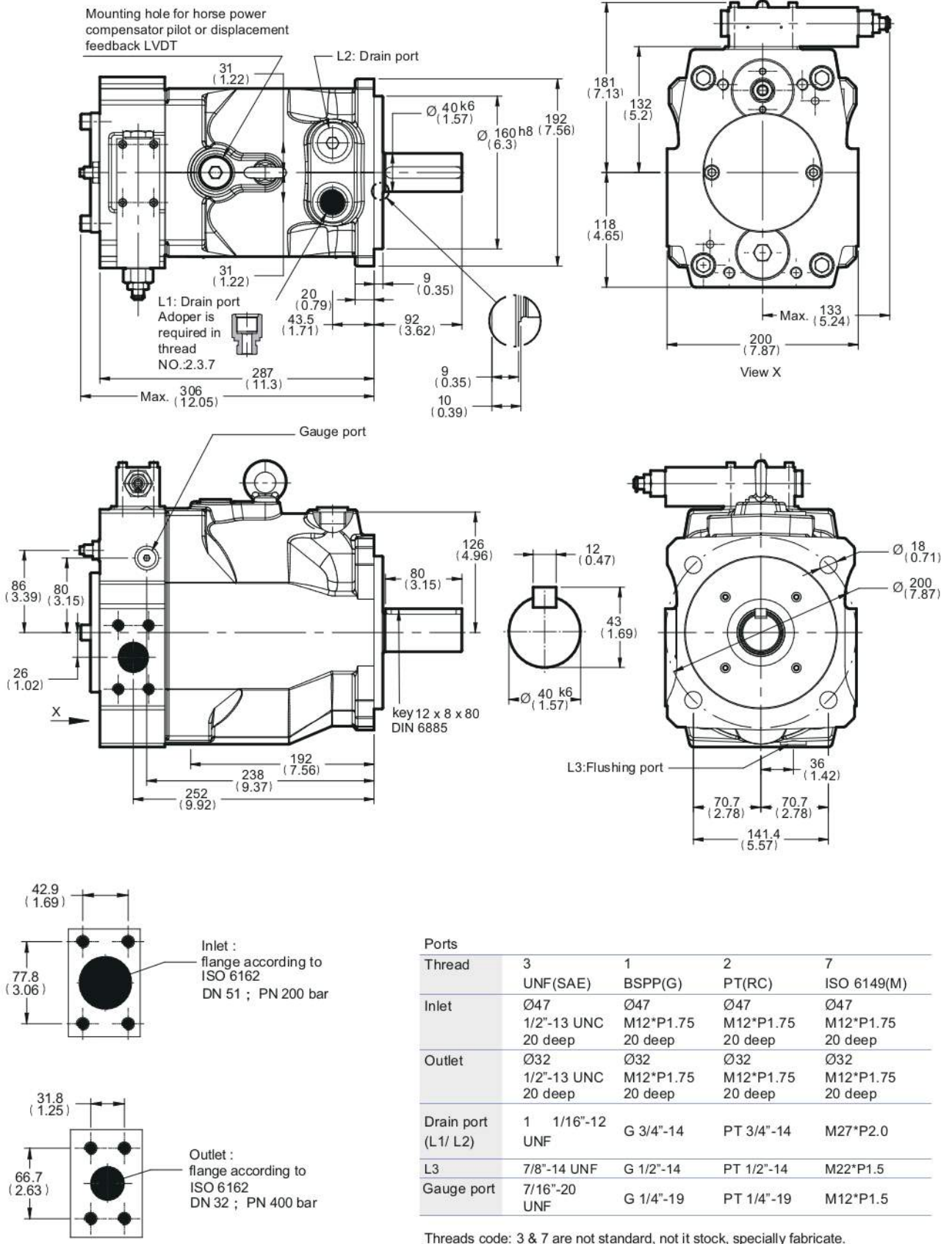
Dimension

PV063 ~ PV092, PV110 (Body 3)
Metric version (motor mounting $\varnothing 160$)

A

59

PV Axial piston pump





Dimension

PV063 ~ PV092, PV110 (Body3)

Metric version (motor mounting Ø160)

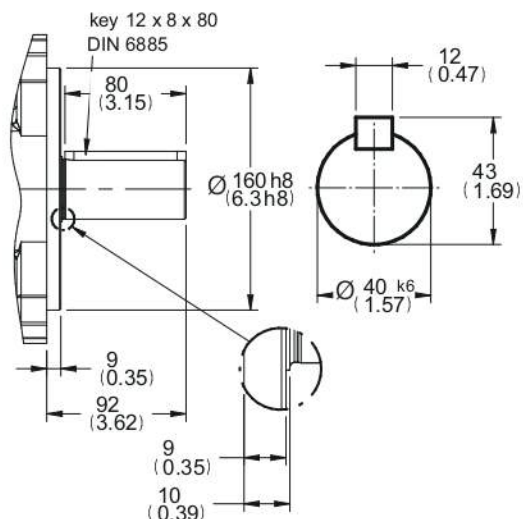
Shaft type

A

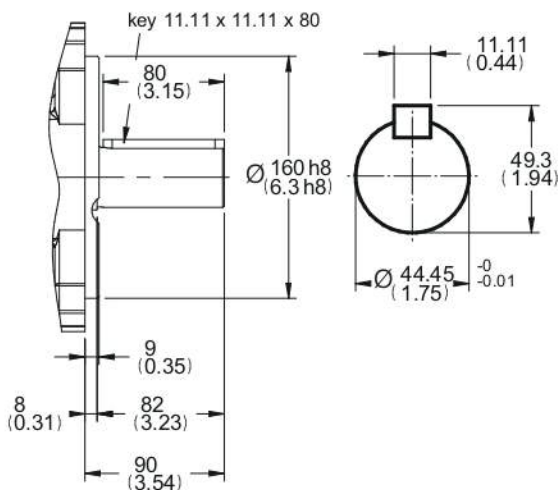
60

PV Axial piston pump

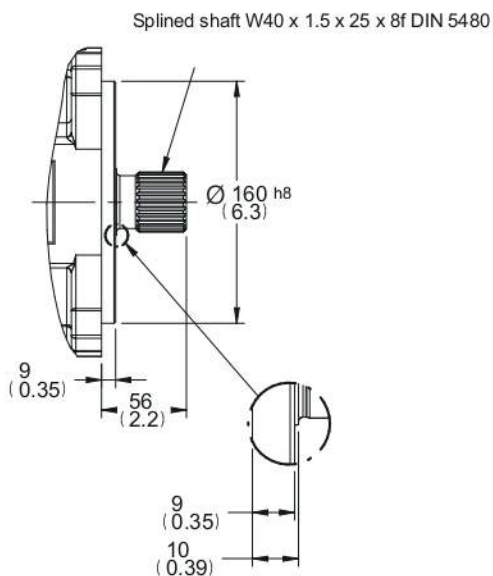
Mounting code: **M**



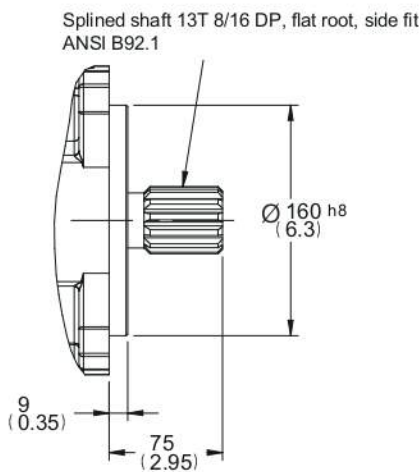
Mounting code: **R**



Mounting code: **K**



Mounting code: **S**

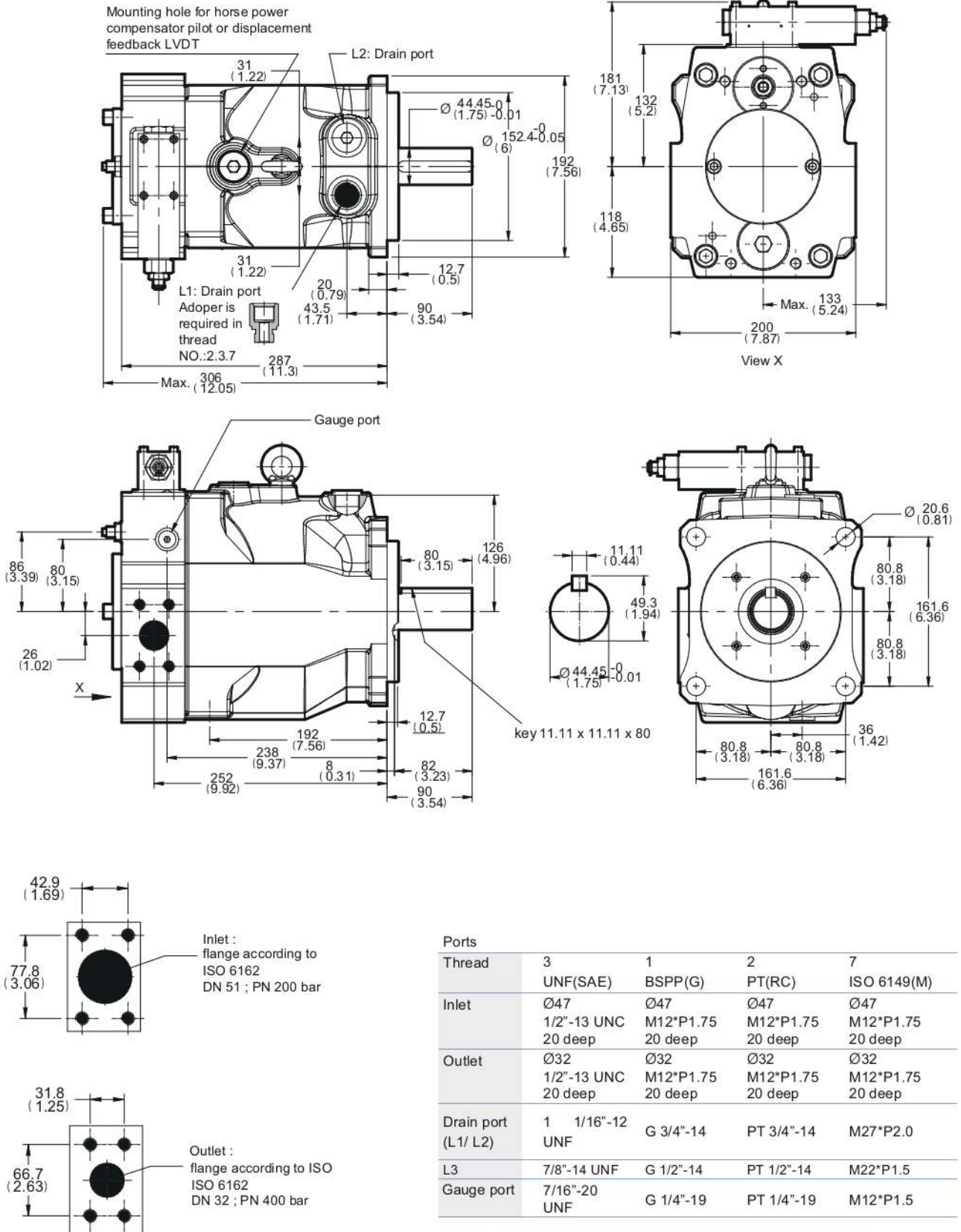


Dimension

PV063 ~ PV092, PV110 (Body 3)
SAE version (motor mounting Ø152.4)

A
61

PV Axial piston pump



Threads code: 3 & 7 are not standard, not it stock, specially fabricate.
Adoper is required in thread NO.:2.3.7 (Drain port)





Dimension

PV063 ~ PV092, PV110 (Body 3)

SAE version(motor mounting $\text{Ø}152.4$)

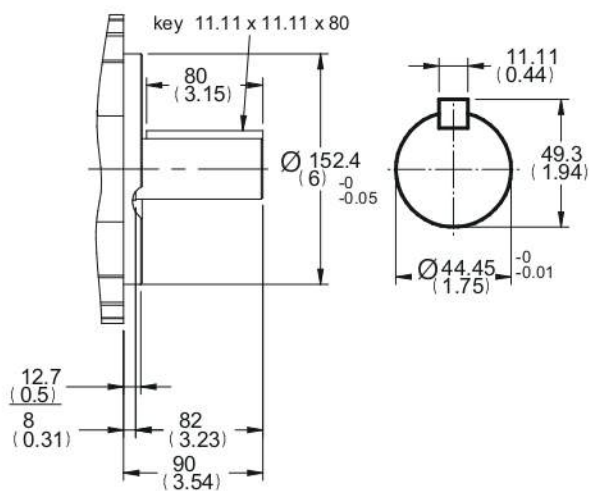
Shaft type

A

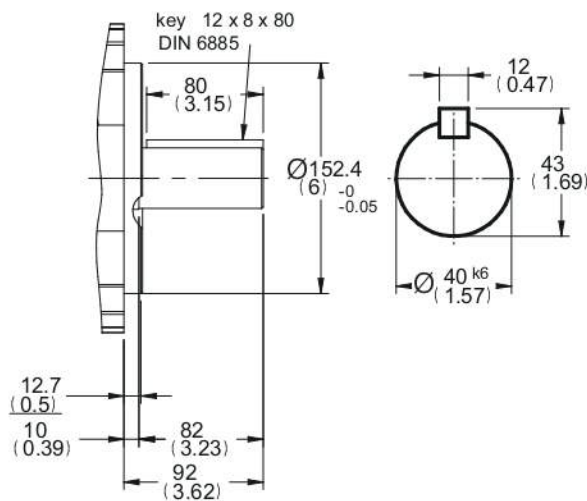
62

PV Axial piston pump

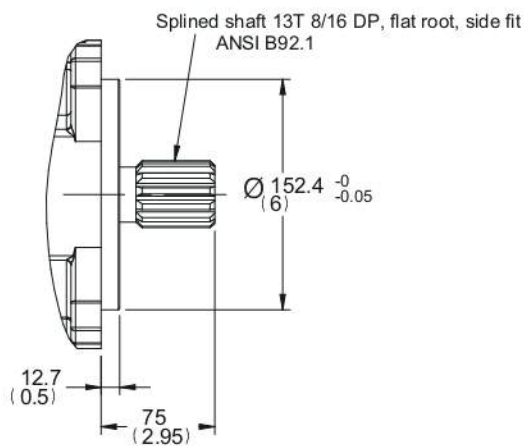
Mounting: **N**



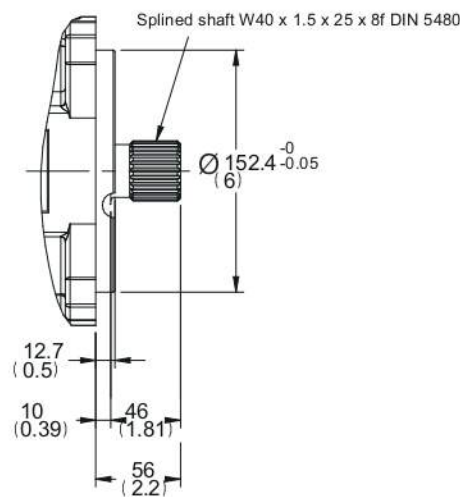
Mounting: **J**



Mounting: **D**



Mounting: **U**



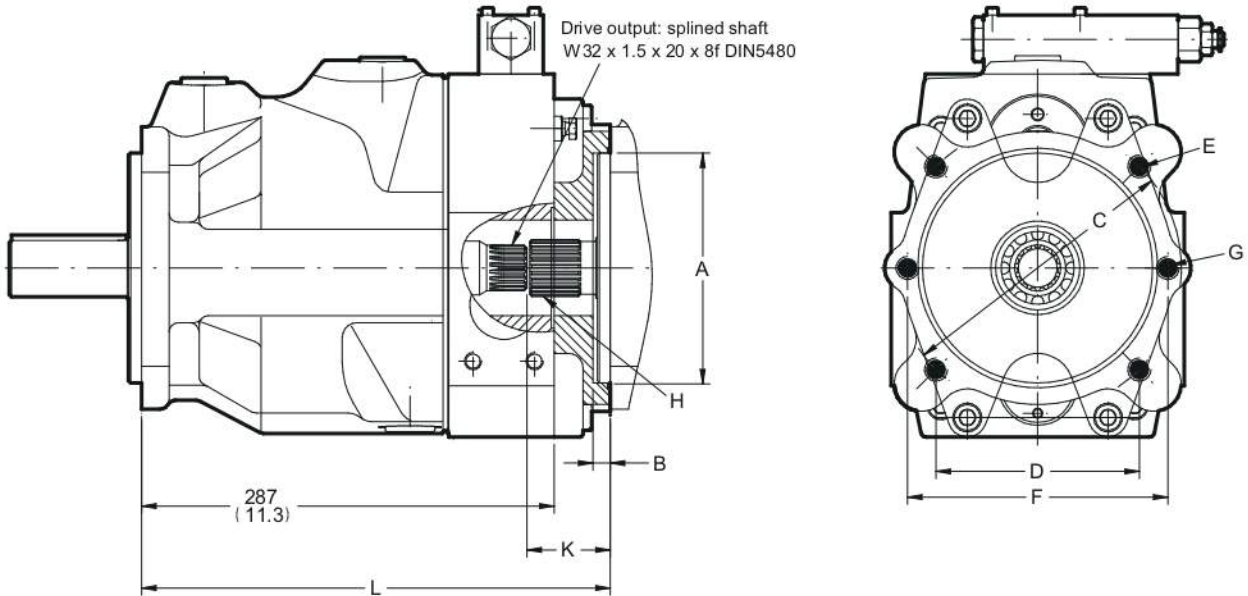
Dimension

PV063 ~ PV092, PV110 (Body 3)

Thru drive

thru drive:

D, E, F, G, I, J, K, L, M



Thru shaft adaptors are available with the following dimensions:

| Thru code | A | B | C | D | E | F | G | K | L |
|-----------|-------|----|-----|-------|-----|-----------|-----------|----|-----|
| I | 63 | 10 | 85 | - | M8 | 100 | M8 | 58 | 326 |
| J | 80 | 10 | 103 | - | M8 | 109 | M10 | 58 | 326 |
| K | 100 | 12 | 125 | - | M10 | 140 | M12 | 58 | 326 |
| L | 125 | 12 | 160 | - | M12 | 180 | M16 | 58 | 326 |
| M | 160 | 12 | 200 | - | M16 | n. avail. | n. avail. | 58 | 326 |
| D | 82.55 | 10 | - | - | - | 106 | M10 | 58 | 326 |
| E | 101.6 | 12 | - | 89.8 | M10 | 146 | M12 | 58 | 326 |
| F | 127 | 14 | - | 114.5 | M12 | 181 | M16 | 58 | 326 |
| G | 152.4 | 14 | - | 161.6 | M16 | n. avail. | n. avail. | 78 | 346 |

Thread codes are 3 and 7 the dimensions E and G are UNC-2B threads

threads code: 3 and 7 Not standard, not in stock require special requests.





Dimension

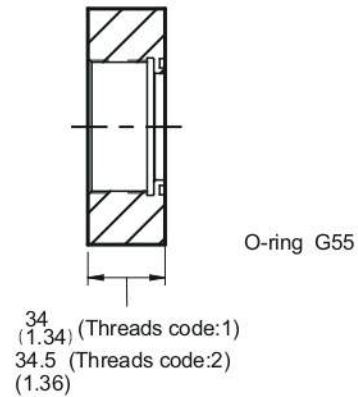
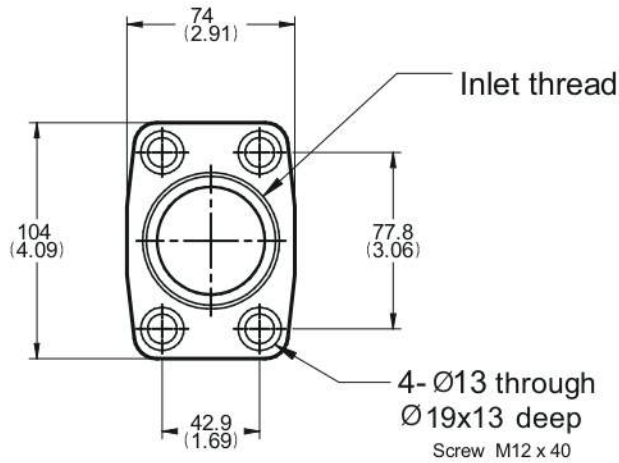
PV063 ~ PV092, PV110 (Body 3) Inlet / Outlet Flange

A

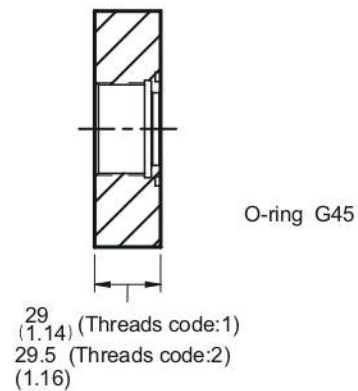
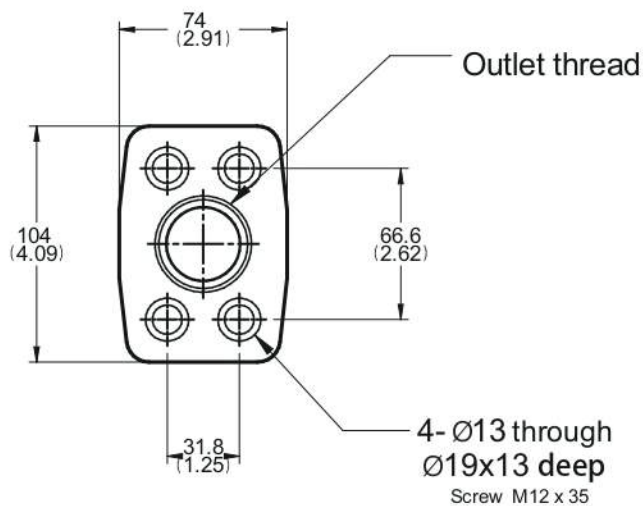
64

PV Axial piston pump

Inlet Flange



Outlet Flange



Ports

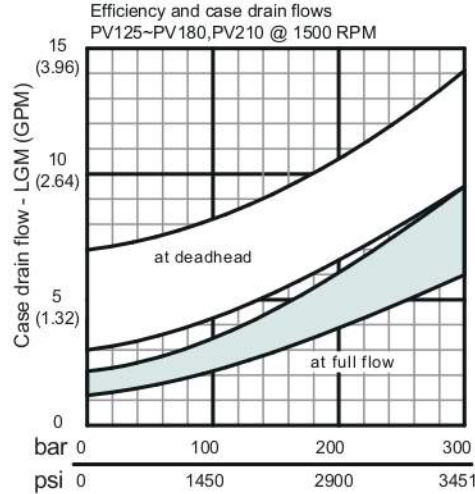
| Thread code | 3 | 1 | 2 | 7 |
|-------------|--------------|-------------|-------------|-------------|
| | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | 2 1/2"-12 UN | G 2"-11 | PT 2"-11 | M33*P2.0 |
| Outlet | 1 5/8"-12 UN | G 1 1/4"-11 | PT1 1/4"-11 | M42*P2.0 |

Threads code: 3 & 7 are not standard, not it stock, specially fabricate.

Efficiency and case drain flows



**PV125 ~ PV180
PV210 (Body 4)**



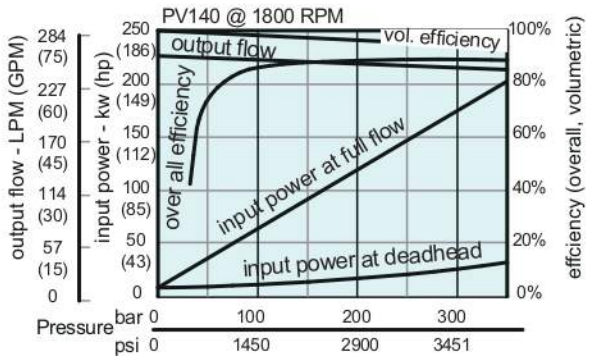
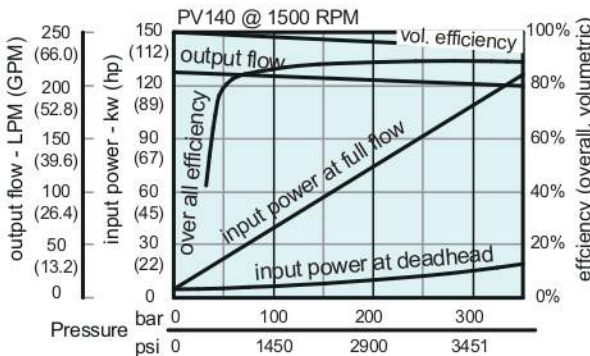
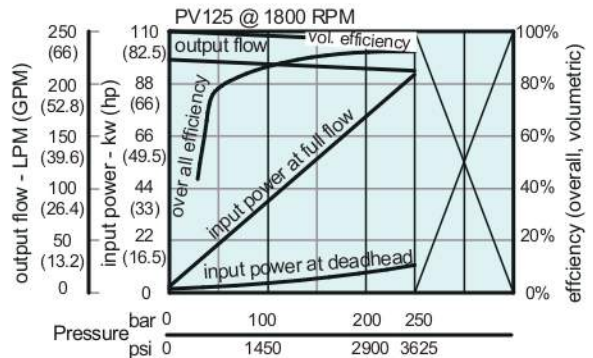
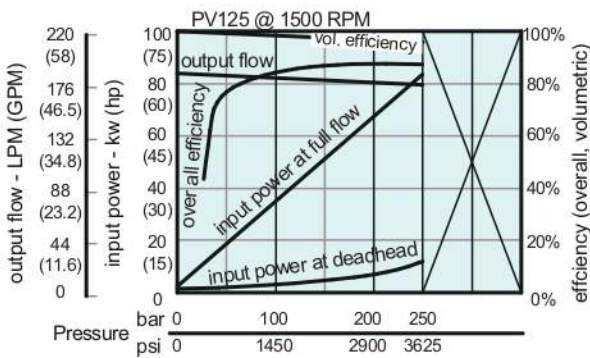
The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

Case drain flow and compensator control flow leave via the drain port of the pump.

To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q*control) the control flow of the pressure pilot valve also goes through the pump. Please note: The values shown below are only valid for static operation.

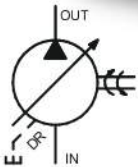
Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 40 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.

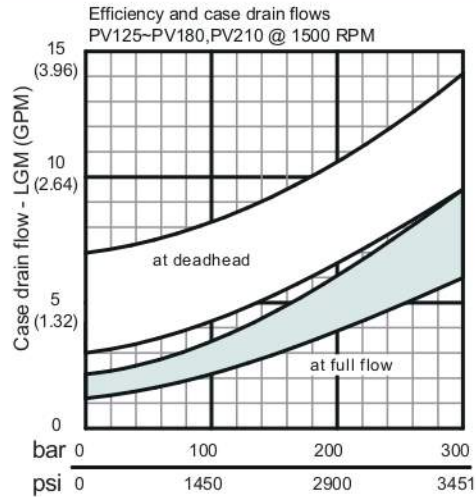




Efficiency and case drain flows



PV125 ~ PV180
PV210 (Body 4)



The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

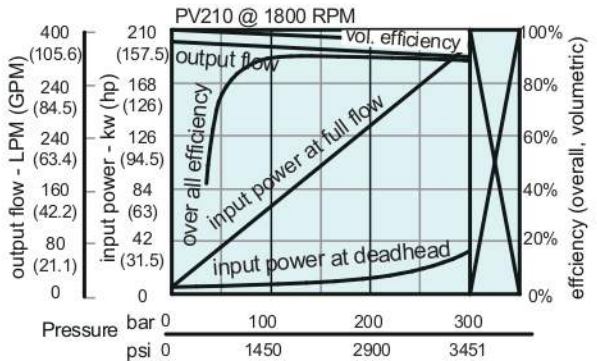
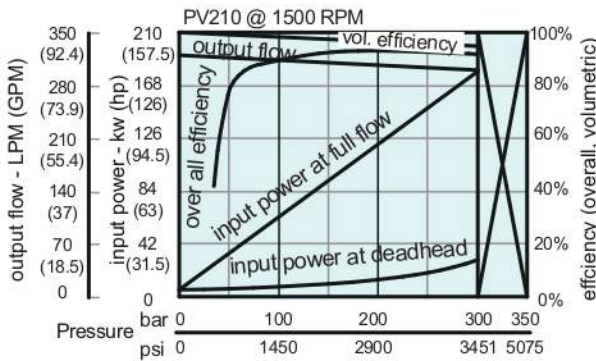
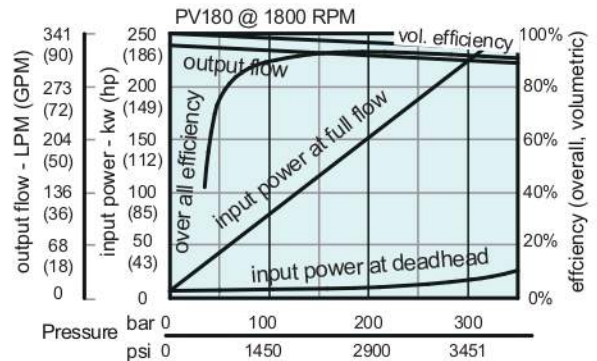
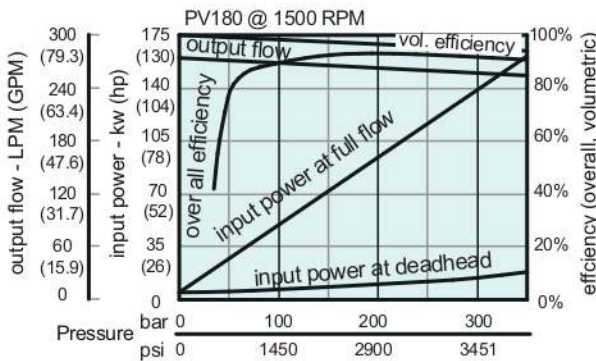
Case drain flow and compensator control flow leave via the drain port of the pump.

To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q* control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation.

Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 40 l/min! Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.

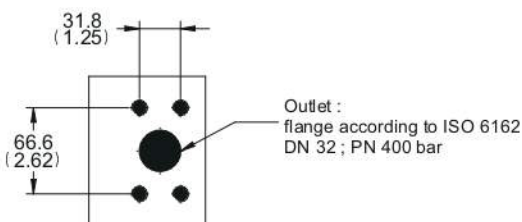
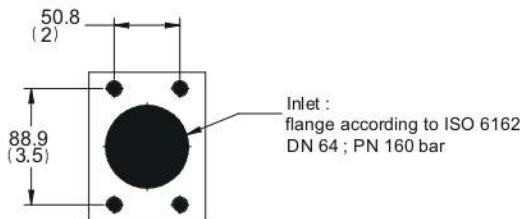
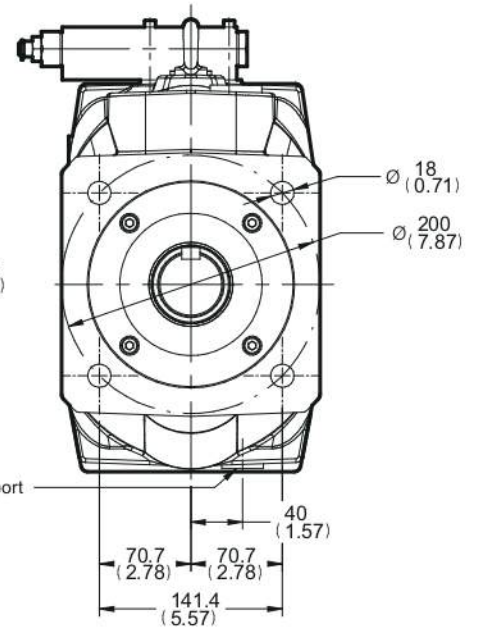
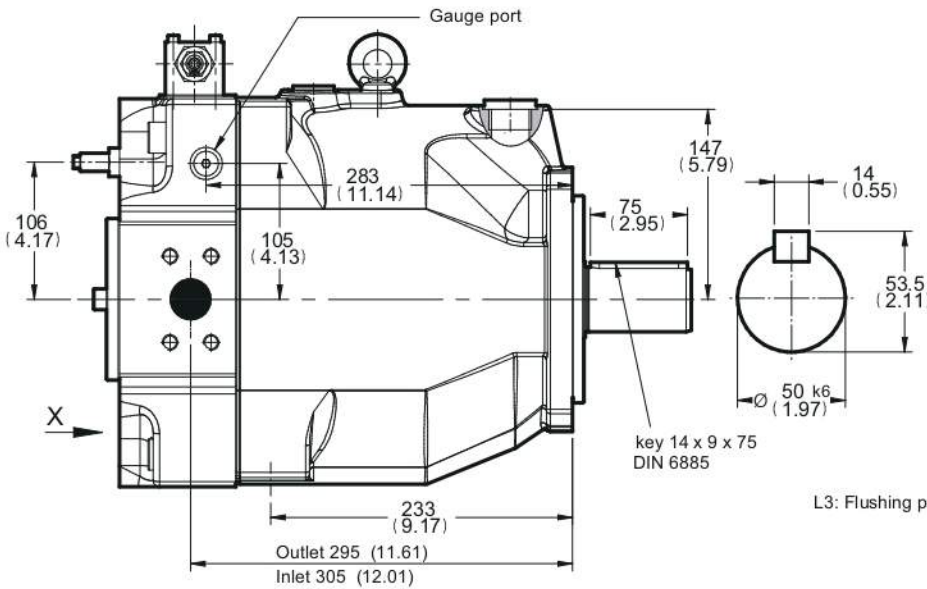
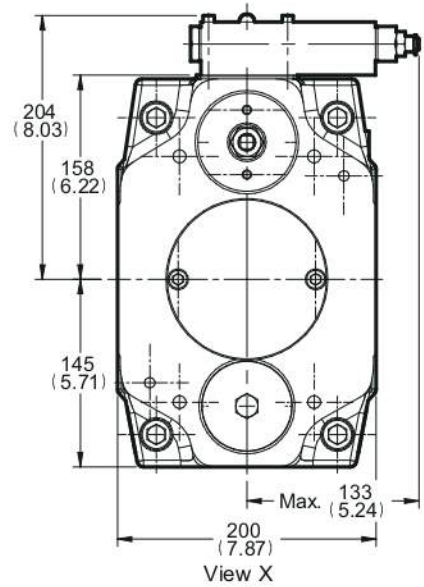
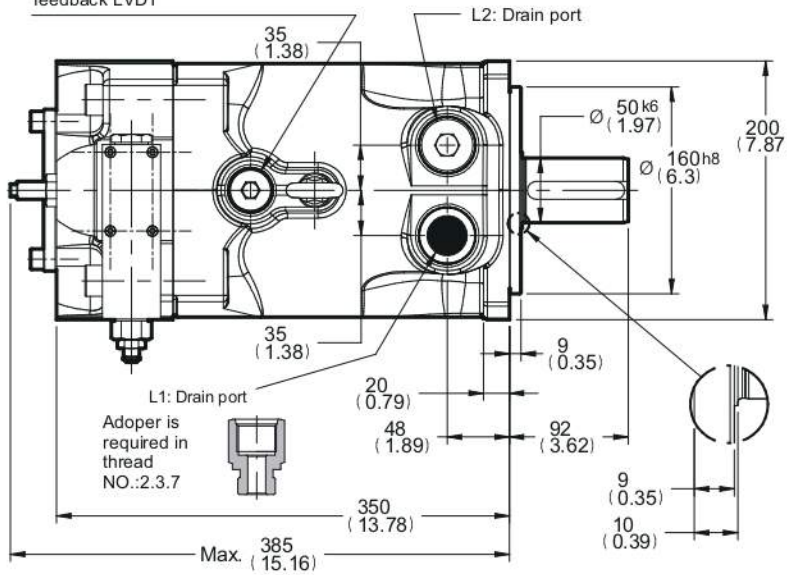


Dimension

PV125 ~ PV180, PV210 (Body 4)

Metric version (motor mounting Ø160)

Mounting hole for horse power compensator pilot or displacement feedback LVDT



Ports

| Thread | 3 | 1 | 2 | 7 |
|---------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | Ø64 1/2"-13 UNC 20 deep | Ø64 M12*P1.75 20 deep | Ø64 M12*P1.75 20 deep | Ø64 M12*P1.75 20 deep |
| Outlet | Ø32 1/2"-13 UNC 20 deep | Ø32 M12*P1.75 20 deep | Ø32 M12*P1.75 20 deep | Ø32 M12*P1.75 20 deep |
| Drain port (L1/ L2) | 1 5/16"-12 UNF | G 1"-11 | PT 1"-11 | M33*P2.0 |
| L3 | 1 1/16"-12 UNF | G 3/4"-14 | PT 3/4"-14 | M27*P2.0 |
| Gauge port | 7/16"-20 UNF | G 1/4"-19 | PT 1/4"-19 | M12*P1.5 |

threads code: 3 & 7 are not standard, not it stock, specially fabricate.

Adoper is required in thread NO.:2.3.7 (Drain port)





Dimension

PV125 ~ PV180, PV210 (Body 4)

Metric version (motor mounting $\varnothing 160$)

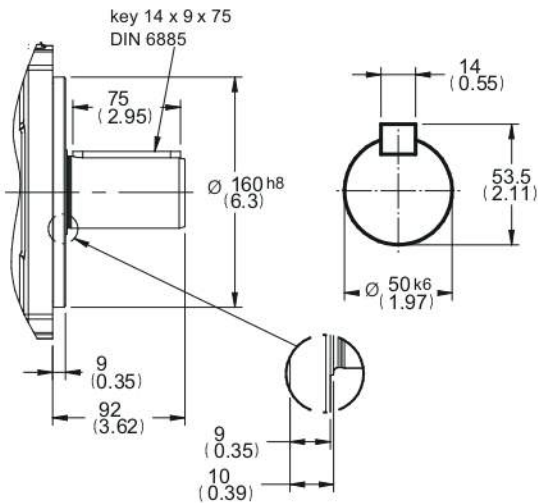
Shaft type

A

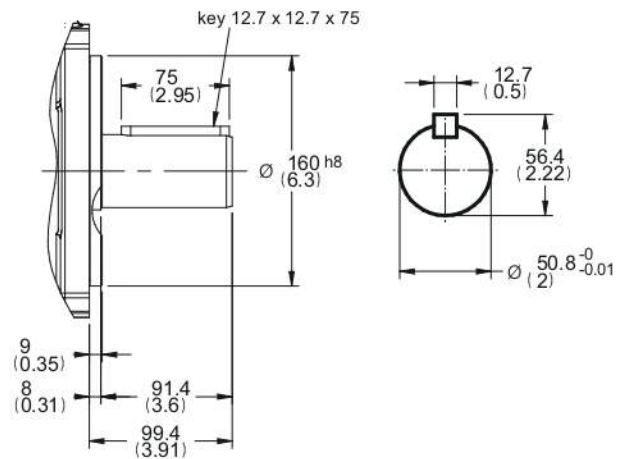
68

PV Axial piston pump

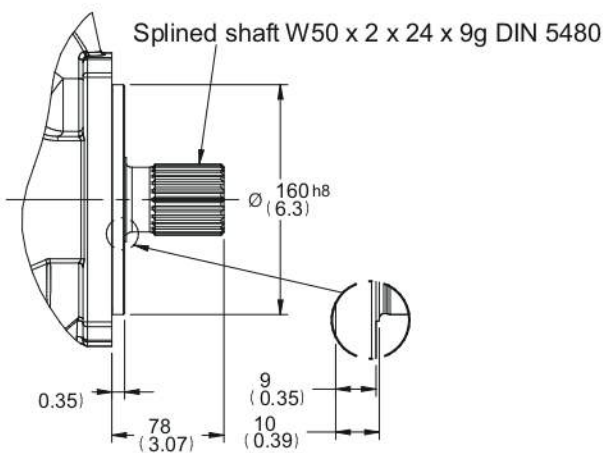
Mounting code: **M**



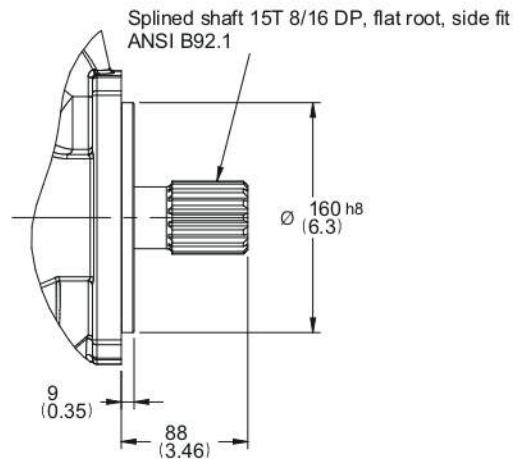
Mounting code: **R**



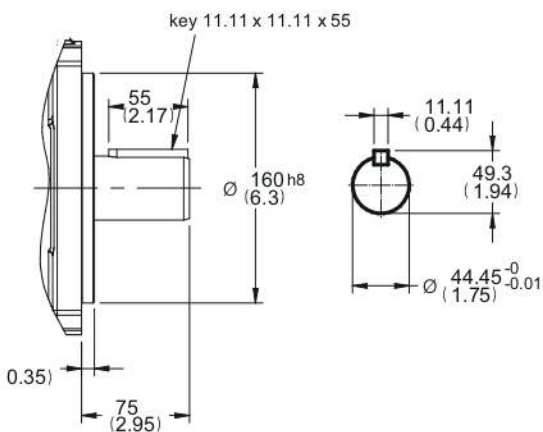
Mounting code: **K**



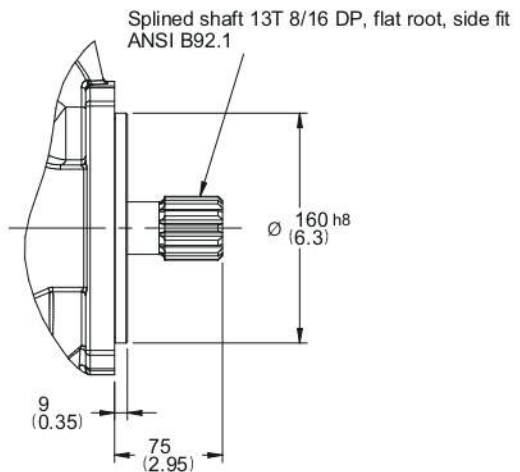
Mounting code: **S**



Mounting code: **Q**



Mounting code: **P**



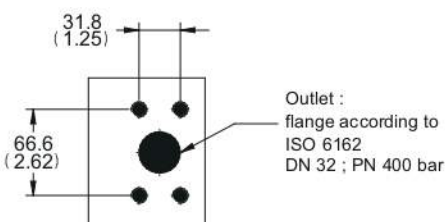
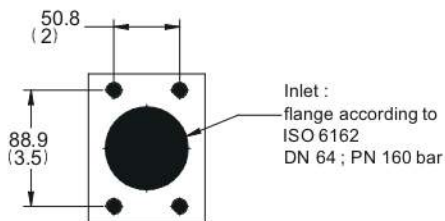
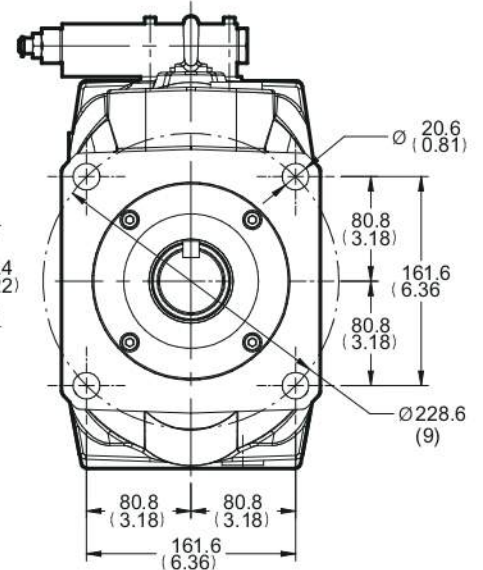
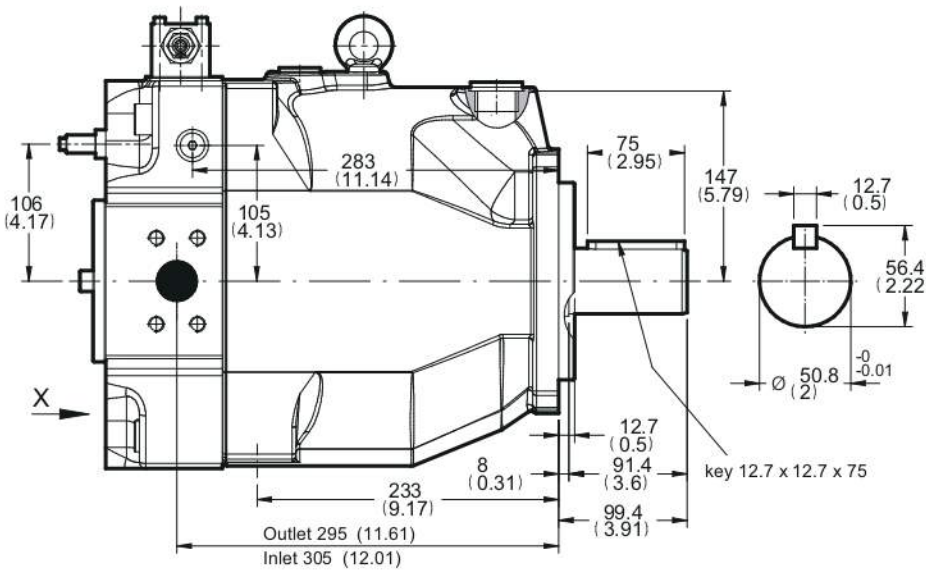
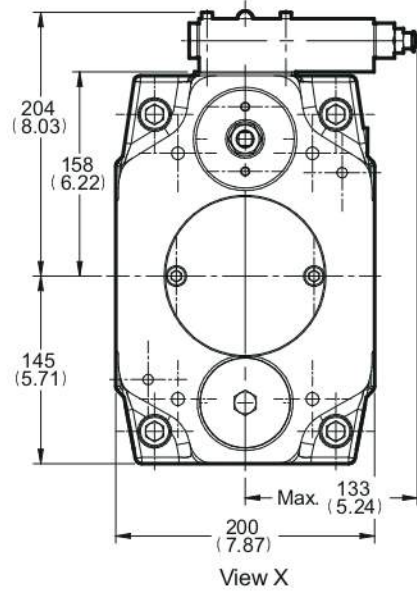
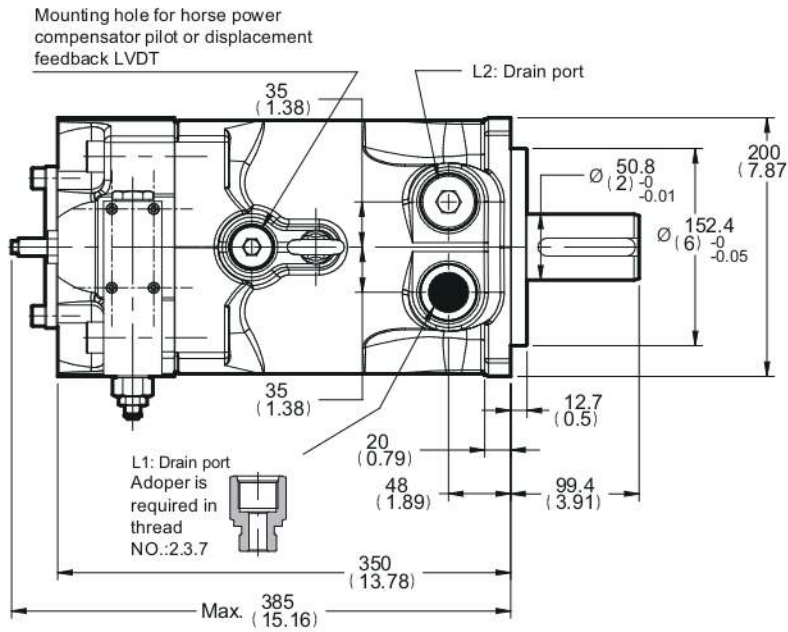
Dimension

PV125 ~ PV180, PV210 (Body 4)
SAE version (motor mounting Ø152.4)

A

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PV Axial piston pump



Ports

| Thread | 1 | 2 | 3 | 7 |
|---------------------|-----------------------------|-----------------------------|-------------------------------|-----------------------------|
| | BSPP(G) | PT(RC) | UNF(SAE) | ISO 6149(M) |
| Inlet | Ø64 M12*P1.75 20 deep | Ø64 M12*P1.75 20 deep | Ø64 1/2"-13 UNC 20 deep | Ø64 M12*P1.75 20 deep |
| Outlet | Ø32 M12*P1.75 20 deep | Ø32 M12*P1.75 20 deep | Ø32 1/2"-13 UNC 20 deep | Ø32 M12*P1.75 20 deep |
| Drain port (L1/ L2) | G 1"-11 | PT 1"-11 | 1 5/16"-12 UNF | M33*P2.0 |
| L3 | G 3/4"-14 | PT 3/4"-14 | 1 1/16"-12 UNF | M27*P2.0 |
| Gauge port | G 1/4"-19 | PT 1/4"-19 | 7/16"-20 UNF | M12*P1.5 |

threads code: 3 & 7 are not standard, not it stock, specially fabricate.
Adoper is required in thread NO.:2.3.7 (Drain port)





Dimension

PV125 ~ PV180, PV210 (Body 4)

SAE version(motor mounting Ø152.4)

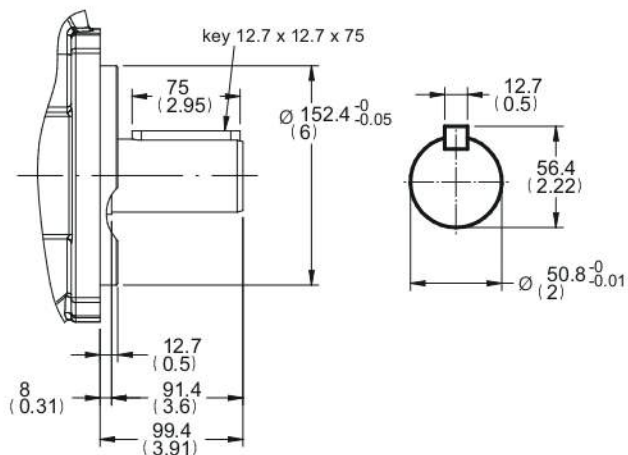
Shaft type

A

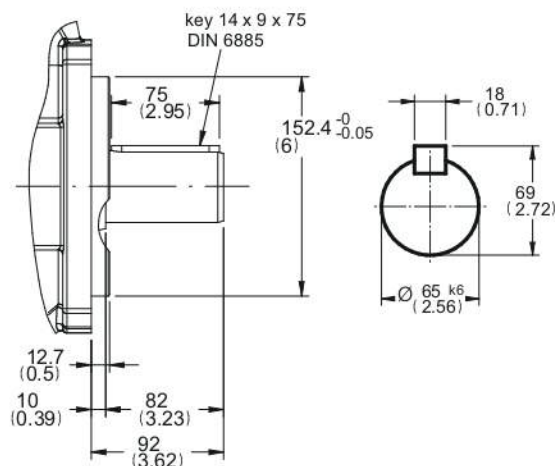
70

PV Axial piston pump

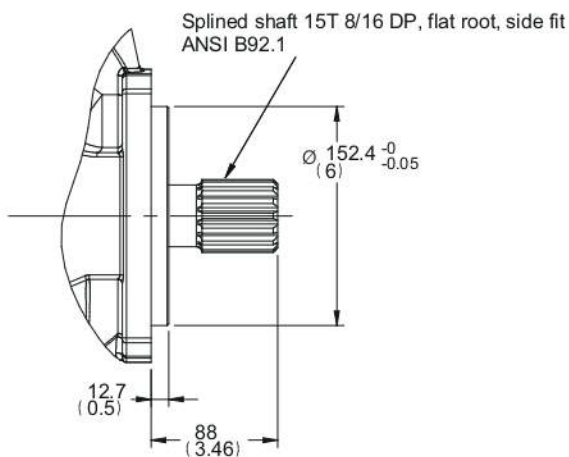
Mounting code: **N**



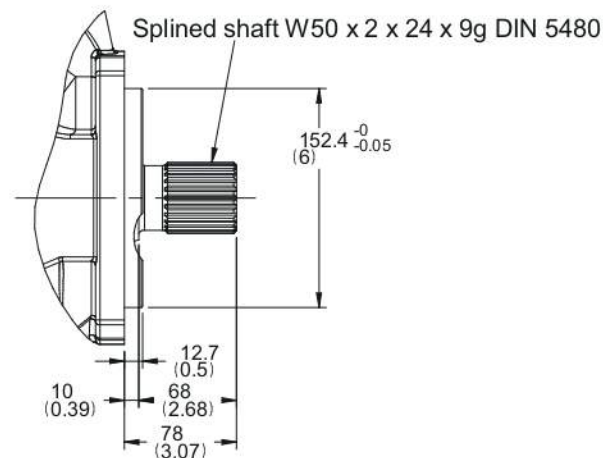
Mounting code: **J**



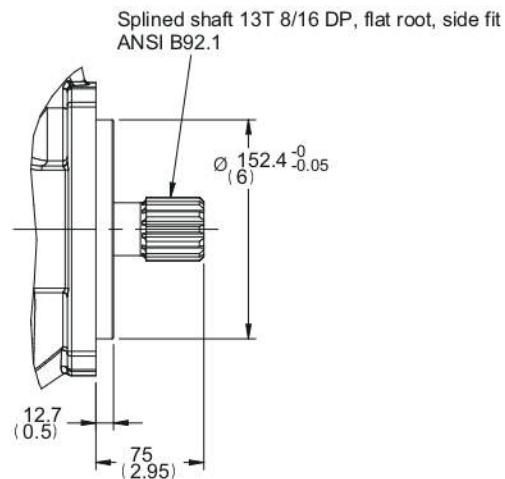
Mounting code: **D**



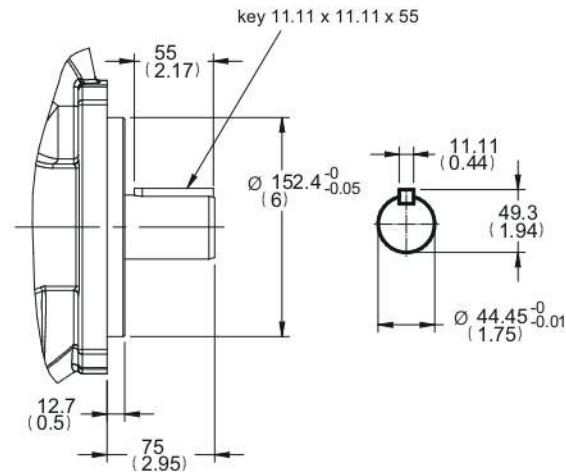
Mounting code: **U**



Mounting code: **G**



Mounting code: **F**



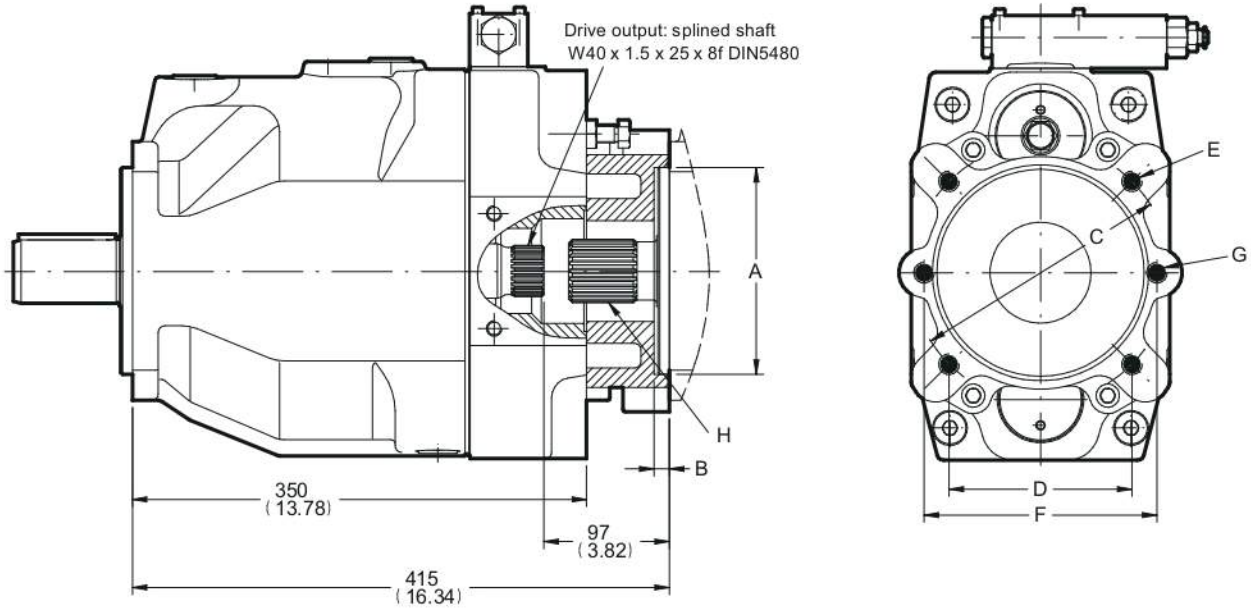
Dimension

PV125 ~ PV180, PV210 (Body 4)

Thru drive

Thru drive:

D, E, F, G, J, K, L, M



A

71

PV Axial piston pump

Thru shaft adaptors are available with the following dimensions:

| thru code | A | B | C | D | E | F | G |
|-----------|-------|----|-----|-------|-----|-----------|-----------|
| J | 80 | 10 | 103 | - | M8 | 109 | M10 |
| K | 100 | 12 | 125 | - | M10 | 140 | M12 |
| L | 125 | 12 | 160 | - | M12 | 180 | M16 |
| M | 160 | 12 | 200 | - | M16 | n. avail. | n. avail. |
| D | 82.55 | 10 | - | - | - | 106 | M10 |
| E | 101.6 | 12 | - | 89.8 | M10 | 146 | M12 |
| F | 127 | 14 | - | 114.5 | M12 | 181 | M16 |
| G | 152.4 | 14 | - | 161.6 | M16 | n. avail. | n. avail. |

Thread codes are 3 and 7 the dimensions E and G are UNC-2B threads

threads code: 3 and 7 Not standard, not in stock require special requests.





Dimension

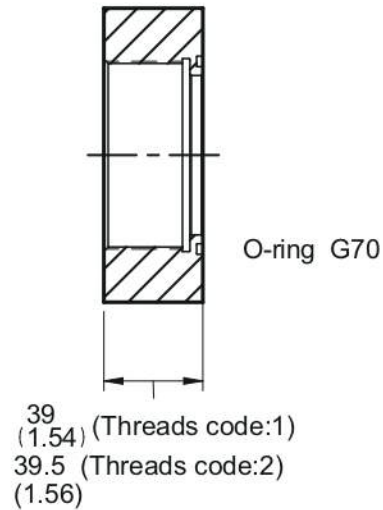
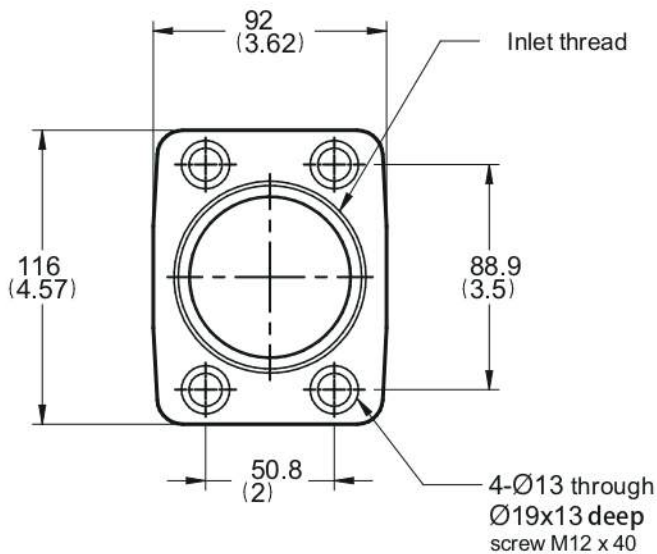
PV125 ~ PV180, PV210 (Body 4) Inlet / Outlet Flange

A

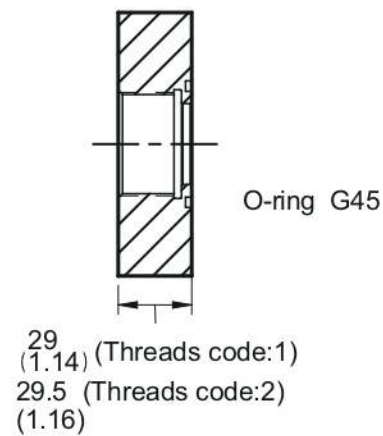
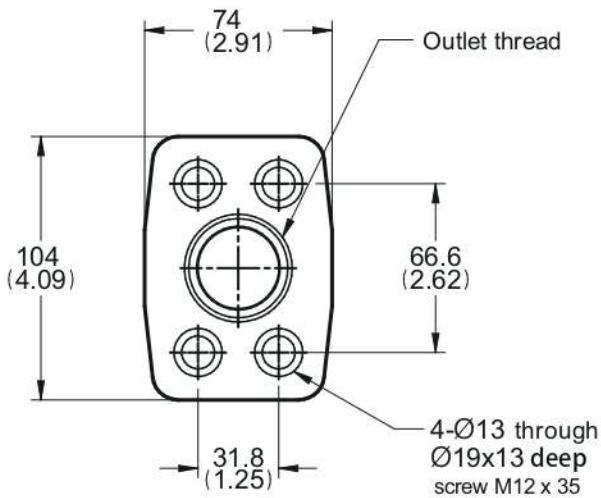
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PV Axial piston pump

Inlet Flange



Outlet Flange

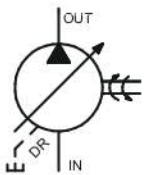


Ports

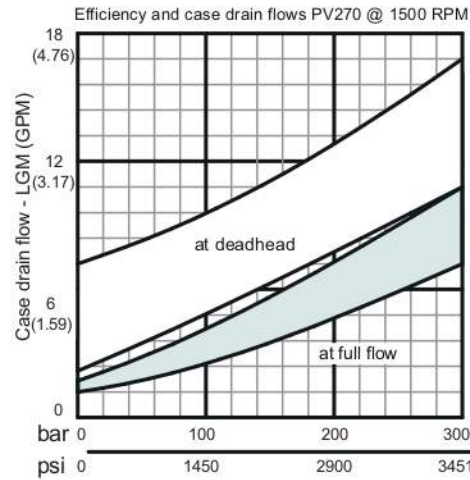
| Thread code | 3 | 1 | 2 | 7 |
|-------------|--------------|-------------|--------------|-------------|
| | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | Welding | G 2 1/2"-11 | PT 2 1/2"-11 | Welding |
| Outlet | 1 5/8"-12 UN | G 1 1/4"-11 | PT 1 1/4"-11 | M42*P2.0 |

threads code: 3 & 7 are not standard, not it stock, specially fabricate.

Efficiency and case drain flows



PV270 (Body 5)



The efficiency and power graphs are measured at an input speed of $n = 1500$ RPM, a temperature of 40°C and a fluid viscosity of $46 \text{ mm}^2/\text{s}$.

Case drain flow and compensator control flow leave via the drain port of the pump.

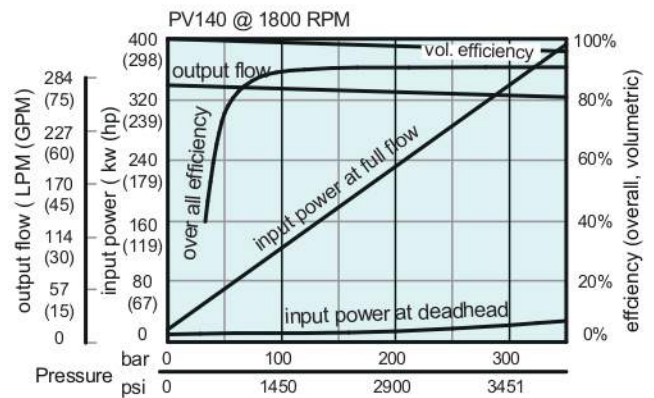
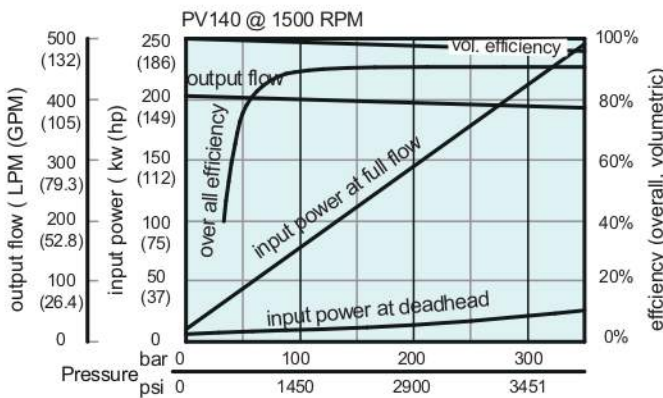
To the values shown are to be added 1 to 1.2 l/min, if at pilot operated compensators (codes G*, H*, P*, horse power compensator and p/Q(control) the control flow of the pressure pilot valve also goes through the pump.

Please note: The values shown below are only valid for static operation.

Under dynamic conditions and at rapid compensation of the pump the volume displaced by the servo piston also leaves the case drain port.

This dynamic control flow can reach up to 120 l/min!

Therefore the case drain line is to lead to the reservoir at full size and without restrictions as short and direct as possible.





Dimension

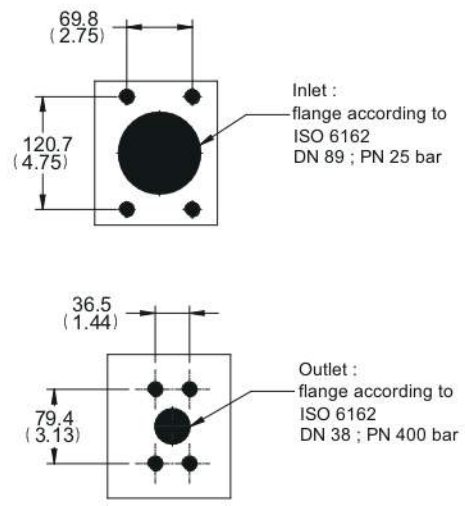
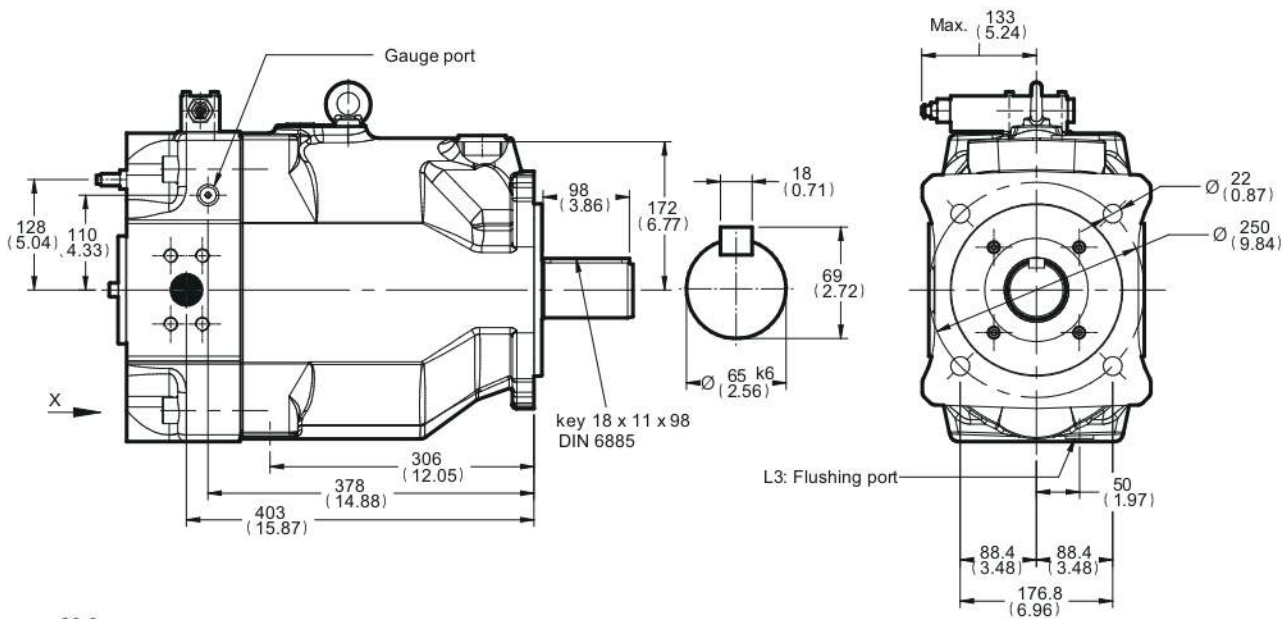
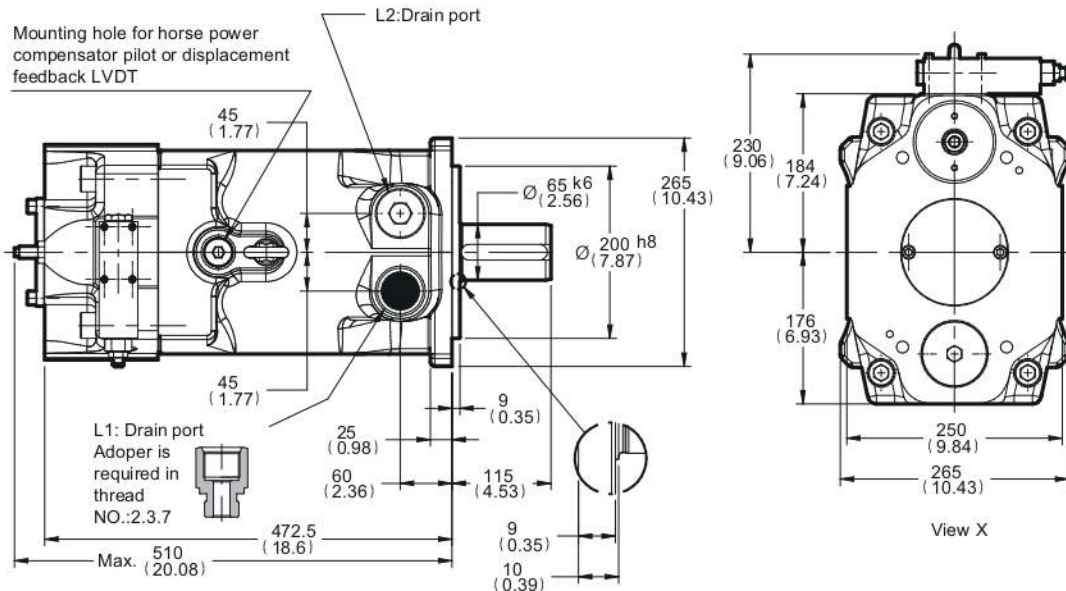
PV270 (Body5)

Metric version (motor mounting Ø200)

A

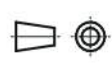
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PV Axial piston pump



| Ports | 3 | 1 | 2 | 7 |
|---------------------|-------------------------------|----------------------------|----------------------------|----------------------------|
| Thread | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | Ø88 5/8"-11 UNC 32 deep | Ø88 M16*P2.0 32 deep | Ø88 M16*P2.0 32 deep | Ø88 M16*P2.0 32 deep |
| Outlet | Ø38 5/8"-11 UNC 32 deep | Ø38 M16*P2.0 32 deep | Ø38 M16*P2.0 32 deep | Ø38 M16*P2.0 32 deep |
| Drain port (L1/ L2) | 1 5/8"-12 UNF | G 1 1/4"-11 | PT 1 1/4"-11 | M42*P2.0 |
| L3 | 1 1/16"-12 UNF | G 3/4"-14 | PT 3/4"-14 | M27*P2.0 |
| Gauge port | 7/16"-20 UNF | G 1/4"-19 | PT 1/4"-19 | M12*P1.5 |

threads code: 3 & 7 are not standard, not it stock, specially fabricate.
Adoper is required in thread NO.:2.3.7 (Drain port)



Dimension

PV270 (Body 5)

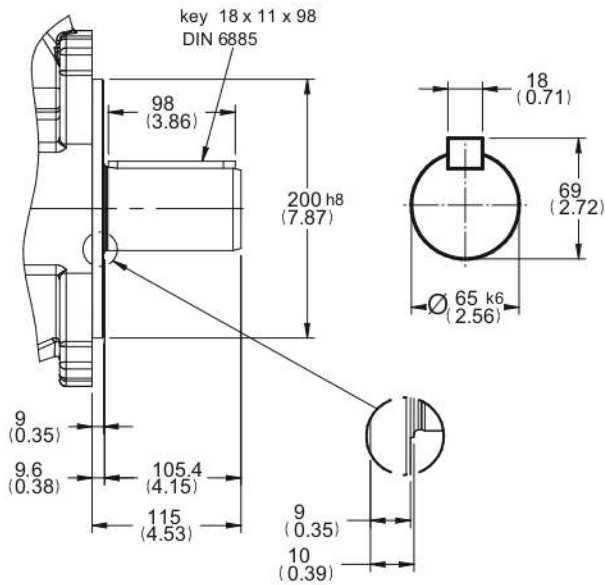
Metric version (motor mounting Ø200)

Shaft type

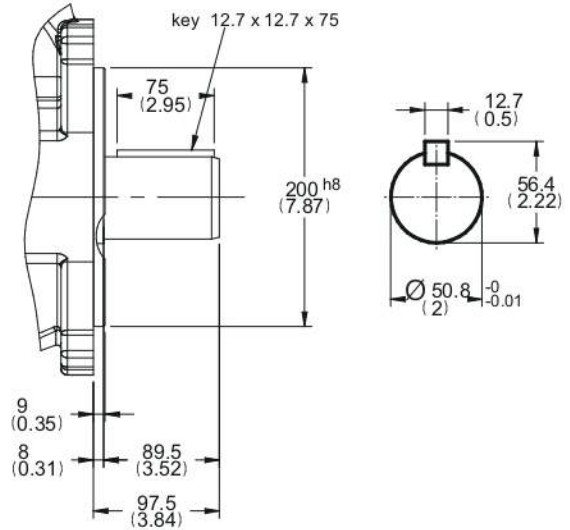
A
75

PV Axial piston pump

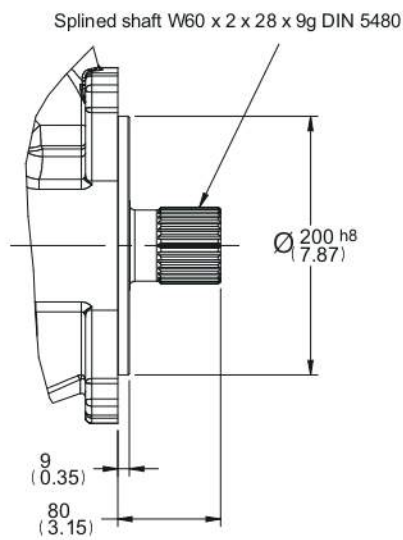
Mounting code: **M**



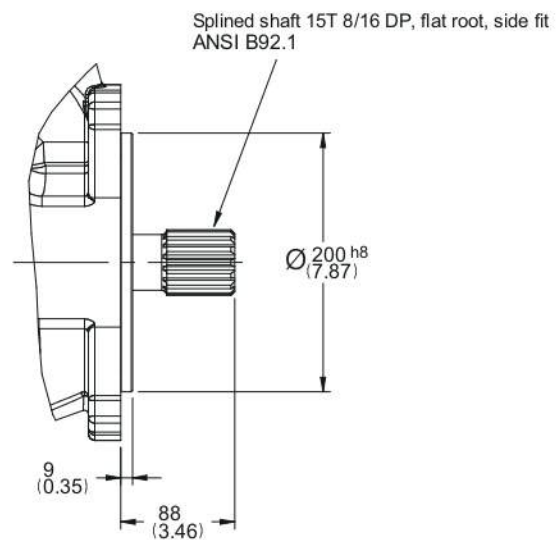
Mounting code: **R**



Mounting code: **K**



Mounting code: **S**





Dimension

PV270 (Body 5)

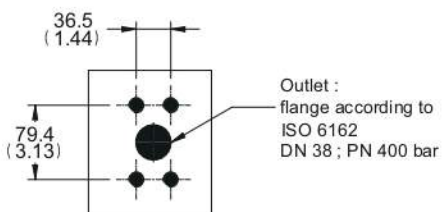
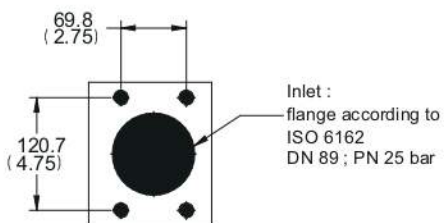
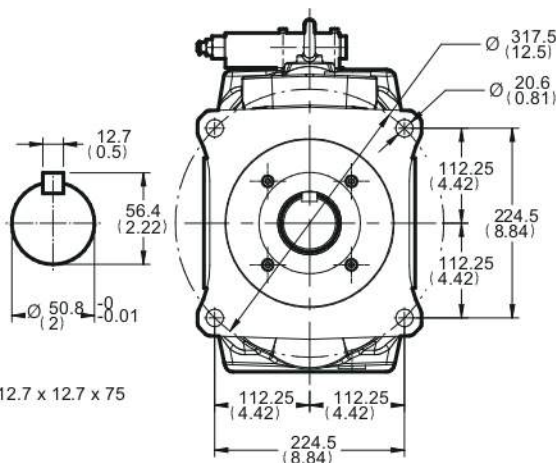
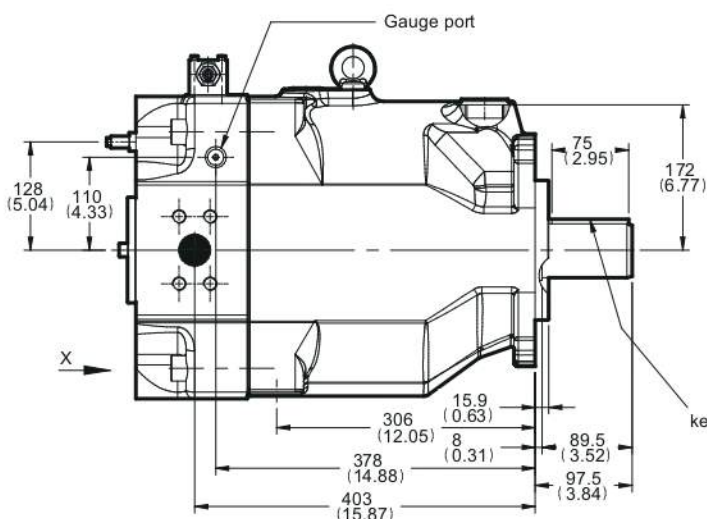
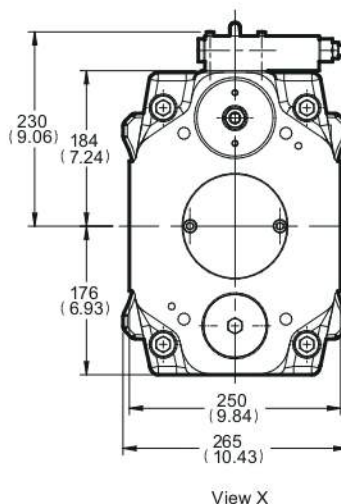
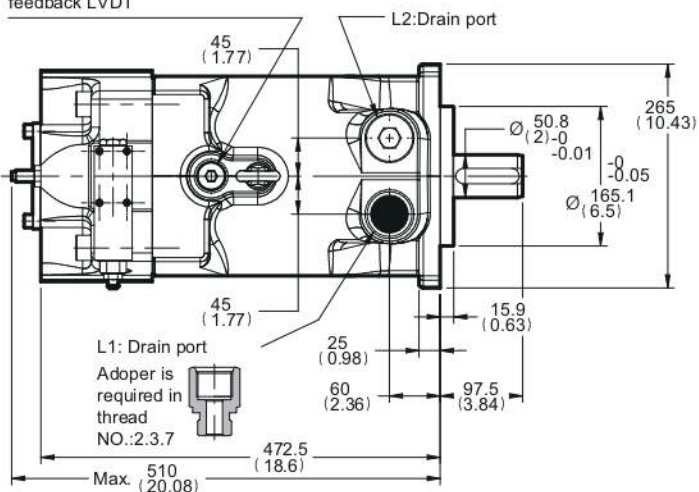
SAE version (motor mounting Ø165.1)

A

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PV Axial piston pump

Mounting hole for horse power compensator pilot or displacement feedback LVDT



Ports

| Thread | 3 | 1 | 2 | 7 |
|---------------------|-------------------------------|----------------------------|----------------------------|----------------------------|
| Thread | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | Ø88 5/8"-11 UNC | Ø88 M16*P2.0 | Ø88 M16*P2.0 | Ø88 M16*P2.0 |
| Outlet | 32 deep Ø38 5/8"-11 UNC | 32 deep Ø38 M16*P2.0 | 32 deep Ø38 M16*P2.0 | 32 deep Ø38 M16*P2.0 |
| Drain port (L1/ L2) | 1 5/8"-12 UNF | G 1 1/4"-11 | PT 1 1/4"-11 | M42*P2.0 |
| L3 | 1 1/16"-12 UNF | G 3/4"-14 | PT 3/4"-14 | M27*P2.0 |
| Gauge port | 7/16"-20 UNF | G 1/4"-19 | PT 1/4"-19 | M12*P1.5 |

Threads code: 3 & 7 are not standard, not it stock, specially fabricate.
Adoper is required in thread NO.:2.3.7 (Drain port)



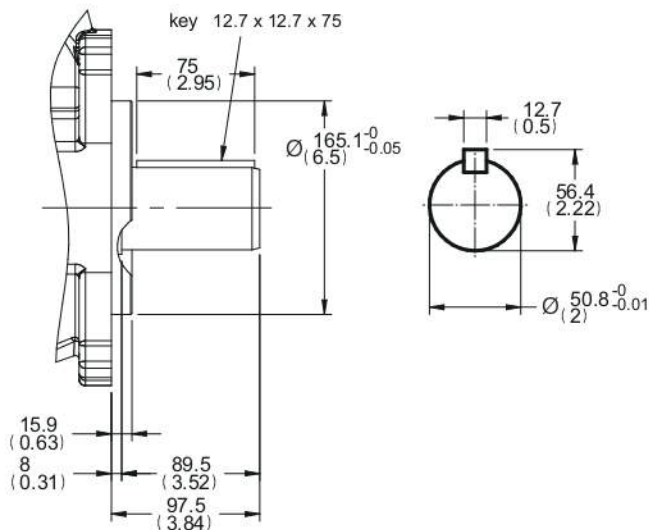
Dimension

PV270 (Body 5)

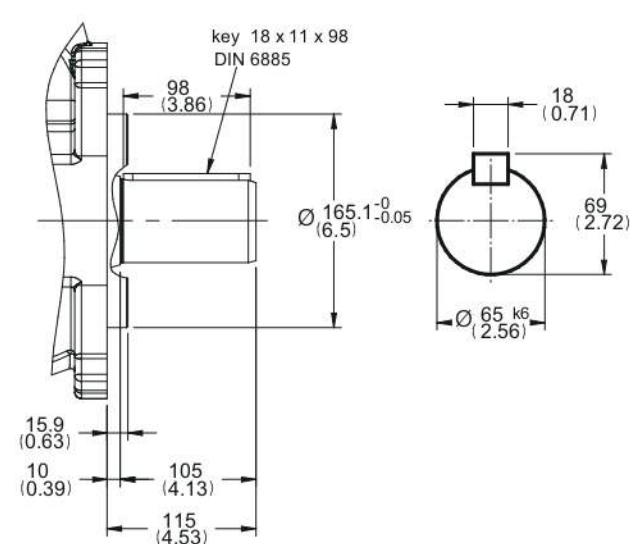
SAE version(motor mounting $\text{Ø}165.1$)

Shaft type

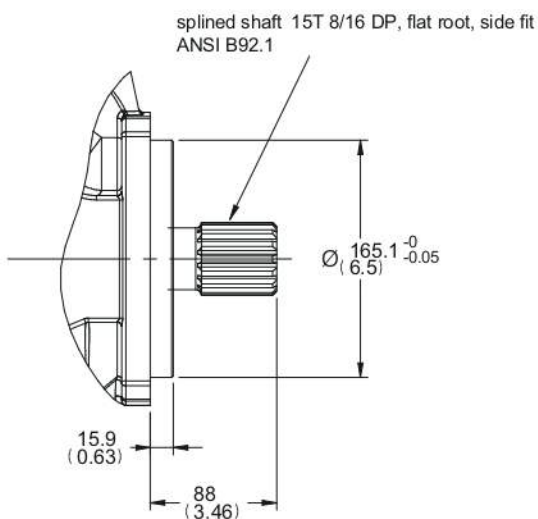
Mounting code: **N**



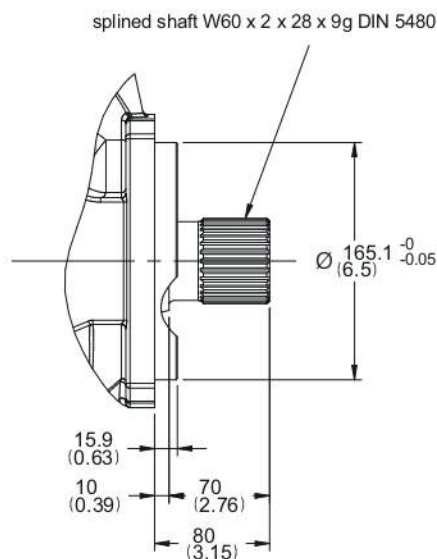
Mounting code: **J**



Mounting code: **D**



Mounting code: **U**





Dimension

PV270 (Body 5)

Thru drive

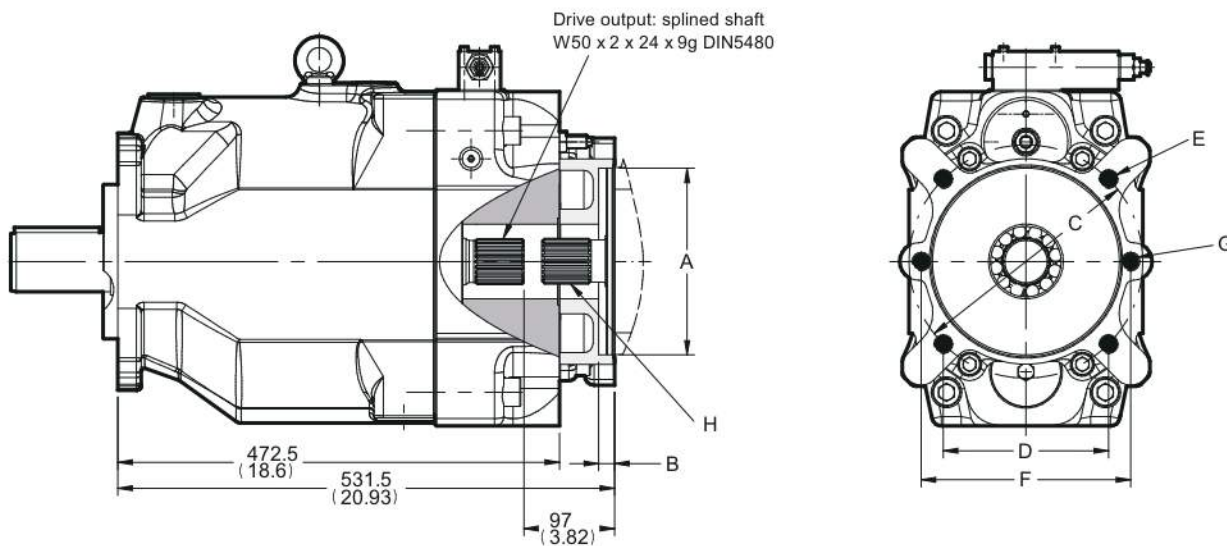
A

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PV Axial piston pump

thru drive:

D, E, F, G, H, J, K, L, M, N



Thru shaft adaptors are available with the following dimensions:

| thru code | A | B | C | D | E | F | G |
|-----------|-------|------|-----|-------|-----|-----------|-----------|
| J | 80 | 8.5 | 103 | - | M8 | 109 | M10 |
| K | 100 | 10.5 | 125 | - | M10 | 140 | M12 |
| L | 125 | 10.5 | 160 | - | M12 | 180 | M16 |
| M | 160 | 13.5 | 200 | - | M16 | 224 | M20 |
| N | 200 | 13.5 | 250 | - | M20 | n. avail. | n. avail. |
| D | 82.55 | 8 | - | - | - | 106 | M10 |
| E | 101.6 | 11 | - | 89.8 | M10 | 146 | M12 |
| F | 127 | 13.5 | - | 114.5 | M12 | 181 | M16 |
| G | 152.4 | 13.5 | - | 161.6 | M16 | 229 | M20 |
| H | 165.1 | 17 | - | 224.5 | M20 | n. avail. | n. avail. |

Thread codes are 3 and 7 the dimensions E and G are UNC-2B threads

threads code: 3 and 7 Not standard, not in stock require special requests.

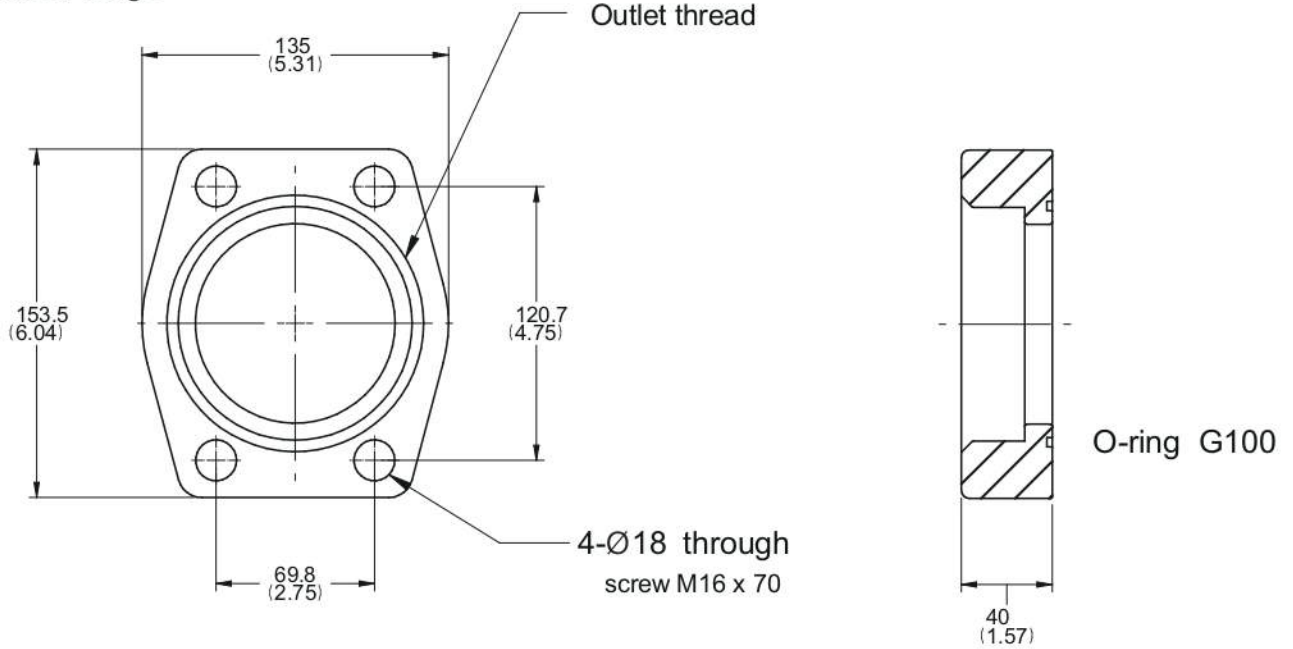


Dimension

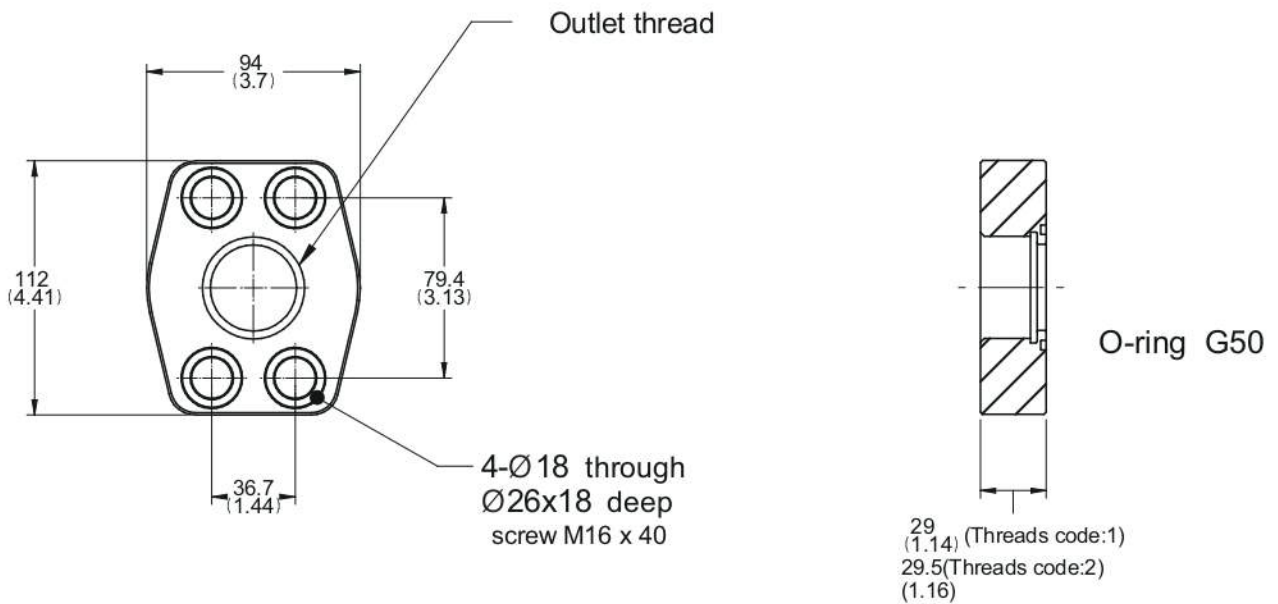
PV270 (Body 5) Inlet / outlet Flange

Thru drive

Inlet Flange



Outlet Flange



Ports

| Thread code | 3 | 1 | 2 | 7 |
|-------------|----------------|-------------|--------------|-------------|
| | UNF(SAE) | BSPP(G) | PT(RC) | ISO 6149(M) |
| Inlet | welding 3 1/2" | | | |
| Outlet | 1 7/8"-12 UN | G 1 1/2"-11 | PT 1 1/2"-11 | M48*P2.0 |

Threads code: 3 & 7 are not standard, not it stock, specially fabricate.

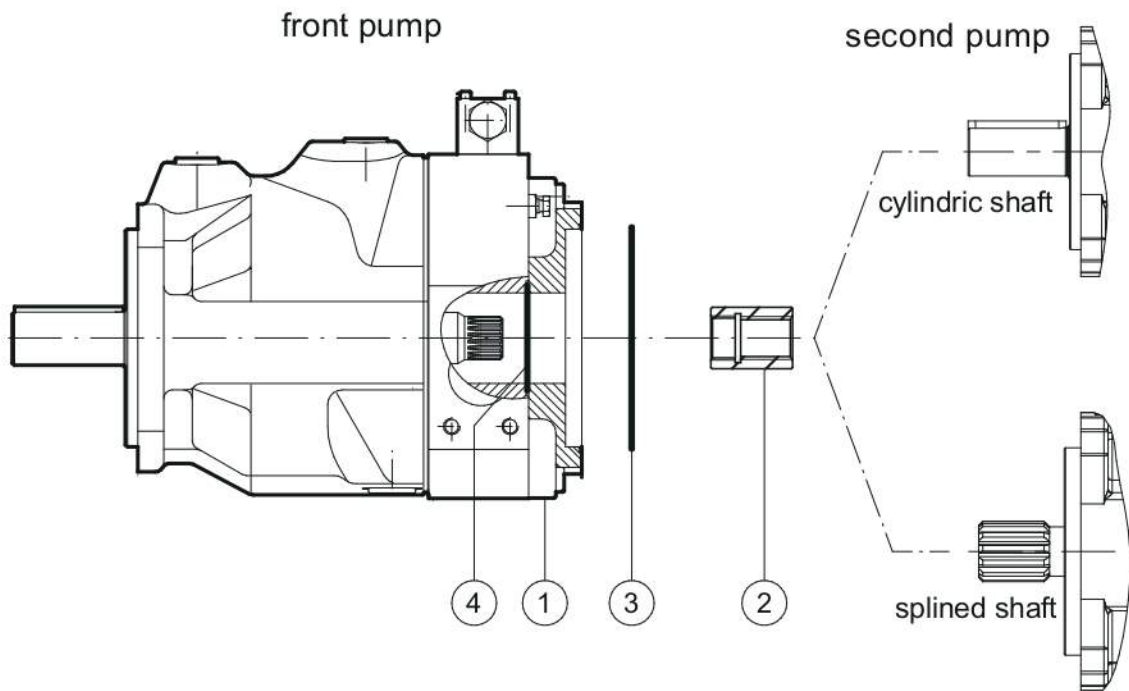


Pump combination

A

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PV Axial piston pump



| NO. | Name |
|-----|--------------------|
| 1 | adapter |
| 2 | coupling |
| 3 | front pump o-ring |
| 4 | second pump o-ring |

Order code refers to next page

② coupling
order no.

A

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| second pump | | fornt pump Size | | | | |
|------------------------|--|--------------------------------|------------------------------------|--------------------------------|--------------------------------|-------------------|
| second pump shaft | model | Body 1 (PV016~023, 028) | Body 2 (PV032~046, 056,065) | Body 3 (PV063~092, 110) | Body 4 (PV125~180, 210) | Body 5 (PV270) |
| SAE splined shaft | | | | | | |
| 9T 16/32 DP | | 4A505032 | 4A505037 | 4A505051 | 4A505058 | 4A505069 |
| 11T 16/32 DP | | -- | -- | -- | -- | -- |
| 13T 16/32 DP | | 4A505033 | 4A505034 | 4A505047 | 4A505059 | 4A505070 |
| 15T 16/32 DP | (PV016~023,PV028) (PV032~046,056,065) | -- | 4A505040 | 4A505120 | 4A505060 | 4A505071 |
| 14T 12/24 DP | (PV032~046,056,065) | -- | 4A505036 | 4A505052 | 4A505061 | 4A505072 |
| 17T 12/24 DP | | -- | -- | -- | -- | -- |
| 13T 8/16 DP | (PV063~092,110) (PV125~180,210) | -- | -- | -- | 4A505062 | 4A505073 |
| 15T 8/16 DP | (PV125~180,210) (PV270) | -- | -- | -- | 4A505063 | 4A505074 |
| splined shaft DIN 5480 | | | | | | |
| 15T W25x1.5x15 | (PV016~023,PV028) | 4A505031 | 4A505038 | 4A505049 | 4A505057 | 4A505068 |
| 20T W32x1.5x20 | (PV032~046,056,065) | -- | 4A505039 | 4A505048 | 4A505056 | 4A505067 |
| 25T W40x1.5x25 | (PV063~092,110) | -- | -- | 4A505050 | 4A505055 | 4A505066 |
| 24T W50x2.0x24 | (PV125~180,210) | -- | -- | -- | 4A505054 | 4A505065 |
| 28T W60x2.0x28 | (PV270) | -- | -- | -- | -- | 4A505075 |
| cylindric shaft | | | | | | |
| Ø19.05*4.76 | | -- | -- | -- | -- | -- |
| Ø22.22*4.76 | | -- | 4A505042 | 4A505043 | 4A505053 | 4A505064 |
| Ø22.22*6.35 | | -- | 4A505042 | 4A505043 | 4A505053 | 4A505064 |
| Ø25.4*6.35 | (PV016~023,PV028) | -- | 4A505041 | -- | -- | -- |
| Ø31.75*7.94 | (PV032~046,056,065) | -- | -- | -- | -- | -- |
| Ø44.45*11.11 | (PV063~092,110) (PV125~180,210) | -- | -- | -- | -- | -- |
| Ø50.8*12.7 | (PV125~180,210) (PV270) | -- | -- | -- | -- | -- |
| cylindric shaft | | | | | | |
| Ø25*8 | (PV016~023,028) | -- | 4A505035 | -- | -- | -- |
| Ø32*10 | (PV032~046,056,065) | -- | -- | -- | -- | -- |
| Ø40*12 | (PV063~092,110) | -- | -- | -- | -- | -- |
| Ø50*14 | (PV125~180,210) | -- | -- | -- | -- | -- |
| Ø65*18 | (PV270) | -- | -- | -- | -- | -- |

PV Axial piston pump



Pump combination

A

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PV Axial piston pump

order no.

| Fornt pump | Thru drive code | ① | ③ | ④ |
|-------------------------------|------------------------------|------------|-------------------|--------------------|
| | | Adapter | Fornt pump o-ring | Second pump o-ring |
| Body 1 (PV016~023,028) | I \varnothing 63 | 4A504012 | 3AAA1BA134 | 3AAC1AA065 |
| | J \varnothing 80 | 4A504013 | 3AAA1BA134 | 3AAC1AA085 |
| | K \varnothing 100 | 4A504014 | 3AAA1BA134 | 3AAC1AA105 |
| | C \varnothing 50.8 | 4A504015 | 3AAA1BA134 | 3AAC1AA055 |
| | D \varnothing 82.55 | 4A504016 | 3AAA1BA134 | 3AAC1AA085 |
| | E \varnothing 101.6 | 4A504017 | 3AAA1BA134 | 3AAC1AA105 |
| Body 2 (PV032~046,056,065) | I \varnothing 63 (261L) | -- | 3AAA1BA146 | -- |
| | J \varnothing 80 (261L) | -- | 3AAA1BA146 | 3AAD1AA080 |
| | K \varnothing 100 (261L) | 4A504023 | 3AAA1BA146 | 3AAD1AA100 |
| | L \varnothing 125 (261L) | 4A504024 | 3AAA1BA146 | 3AAD1AA125 |
| | D \varnothing 82.55 (261L) | 4A504020 | 3AAA1BA146 | 3AAD1AA085 |
| | E \varnothing 101.6 (261L) | 4A504021 | 3AAA1BA146 | 3AAD1AA100 |
| | S \varnothing 101.6 (276L) | 4A504018 | 3AAA1BA146 | 3AAD1AA100 |
| F \varnothing 127 (276L) | 4A504019 | 3AAA1BA146 | 3AAD1AA130 | |
| Body 3 (PV063~092,110) | I \varnothing 63 | -- | 3AAA1BA146 | -- |
| | J \varnothing 80 | 4A504030 | 3AAA1BA146 | 3AAD1AA080 |
| | K \varnothing 100 | 4A504031 | 3AAA1BA146 | 3AAD1AA100 |
| | L \varnothing 125 | 4A504032 | 3AAA1BA146 | 3AAD1AA125 |
| | M \varnothing 160 | 4A504033 | 3AAA1BA146 | 3AAF1AA316 |
| | D \varnothing 82.55 | 4A504025 | 3AAA1BA146 | 3AAD1AA085 |
| | E \varnothing 101.6 | 4A504026 | 3AAA1BA146 | 3AAD1AA100 |
| | F \varnothing 127 | 4A504027 | 3AAA1BA146 | 3AAD1AA130 |
| | G \varnothing 152.4 | 4A504028 | 3AAA1BA146 | 3AAA1AA163 |
| Body 4 (PV125~180,210) | J \varnothing 80 | 4A504039 | 3AAA1BA153 | 3AAD1AA080 |
| | K \varnothing 100 | 4A504040 | 3AAA1BA153 | 3AAD1AA100 |
| | L \varnothing 125 | 4A504041 | 3AAA1BA153 | 3AAD1AA125 |
| | M \varnothing 160 | 4A504042 | 3AAA1BA153 | 3AAF1AA316 |
| | D \varnothing 82.55 | 4A504035 | 3AAA1BA153 | 3AAD1AA085 |
| | E \varnothing 101.6 | 4A504036 | 3AAA1BA153 | 3AAD1AA100 |
| | F \varnothing 127 | 4A504037 | 3AAA1BA153 | 3AAD1AA130 |
| G \varnothing 152.4 | 4A504038 | 3AAA1BA153 | 3AAA1AA163 | |
| Body 5 (PV270) | J \varnothing 80 | 4A504049 | 3AAA1BA153 | 3AAD1AA080 |
| | K \varnothing 100 | 4A504050 | 3AAA1BA153 | 3AAD1AA100 |
| | L \varnothing 125 | 4A504051 | 3AAA1BA153 | 3AAD1AA125 |
| | M \varnothing 160 | 4A504052 | 3AAA1BA153 | 3AAF1AA316 |
| | N \varnothing 200 | 4A504053 | 3AAA1BA153 | 3AAF1AA320 |
| | D \varnothing 82.55 | 4A504044 | 3AAA1BA153 | 3AAD1AA085 |

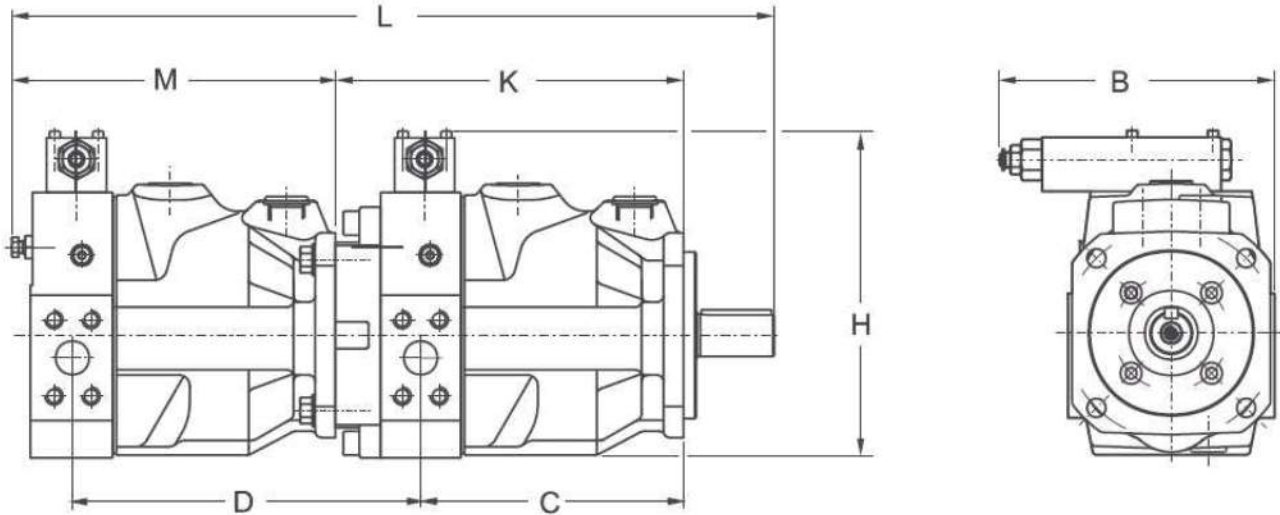
Dimensions

Double pump dimensions

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PV Axial piston pump



| Main pump | Second pump | Interface main pump | L | B | C | D | H | K | M |
|-----------------------|---|---------------------|------|-----|-------|-------|-----|-------|-----|
| PV016,020,023,028 | PV016,020,023,028 | 100 B4 HW | 489 | 196 | 170.5 | 225 | 220 | 225 | 212 |
| PV032,040,046,056,065 | PV016,020,023,028 PV032,040,046,056,065 | 125 B4 HW | 541 | 208 | 197 | 235.5 | 245 | 261 | 212 |
| | | | 574 | 208 | 197 | 261 | 245 | 261 | 245 |
| PV063,071,080,092,110 | PV016,020,023,028 PV032,040,046,056,065 PV063,071,080,092,110 | 160 B4 HW | 630 | 232 | 252 | 244.5 | 299 | 326 | 212 |
| | | | 663 | 232 | 252 | 271 | 299 | 326 | 245 |
| | | | 724 | 232 | 252 | 326 | 299 | 326 | 306 |
| PV125,140,180,210 | PV016,020,023,028 PV032,040,046,056,065 PV063,071,080,092,110 PV125,140,180,210 | 160 B4 HW | 719 | 230 | 305 | 208.5 | 349 | 415 | 212 |
| | | | 752 | 230 | 305 | 307 | 349 | 415 | 245 |
| | | | 813 | 230 | 305 | 362 | 349 | 415 | 306 |
| | | | 878 | 230 | 305 | 415 | 349 | 415 | 385 |
| PV270 | PV016,020,023,028 PV032,040,046,056,065 PV063,071,080,092,110 PV125,140,180,210 PV270 | 200 B4 HW | 860 | 255 | 403 | 299 | 406 | 531.5 | 212 |
| | | | 893 | 255 | 403 | 325.5 | 406 | 531.5 | 245 |
| | | | 954 | 255 | 403 | 380.5 | 406 | 531.5 | 306 |
| | | | 1033 | 255 | 403 | 433.5 | 406 | 531.5 | 385 |
| | | | 1134 | 255 | 403 | 531.5 | 406 | 531.5 | 510 |



PV Axial Piston Pump

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Thru drive, shaft load limitations

The max. Transferable torque in Nm for the different shafts options are:

| Shaft code | PV016-023 PV028 | PV032-046 PV056,065 | PV063-092 PV110 | PV125-PV180 PV210 | PV270 |
|------------|--------------------|------------------------|--------------------|----------------------|-------|
| N | 300 | 550 | 1320 | 2000 | 2000 |
| D | 300 | 610 | 1218 | 2680 | 2680 |
| F | - | - | - | 1320 | - |
| G | - | - | - | 1640 | - |
| M | 300 | 570 | 1150 | 1900 | 2850 |
| K | 405 | 675 | 1400 | 2650 | 3980 |

Important notice

The max. allowable torque of the individual shaft must not be exceeded.

For 2-pump combinations, there is no problem because PV series offers 100% thru torque.

For 3-pump combinations (or more), the limit torque will be reached or exceeded.

Therefore, it is necessary to calculate the torque factor and compare with the allowed torque limit factor in the table.

Requirement: calculated torque factor < torque factor

To make the necessary calculations easier and more user friendly it is not required to calculate actual torque requirements in Nm and compare them with the shaft limitations. The table on the right shows limit factors that include material specification, safety factors and conversion factors.

The total torque factor is represented by the sum of the individual torque factors of all pumps in the complete pump combination.

The torque factor of each individual pump is calculated by multiplying the max. operating pressure p of the pump (in bar) with the max. displacement V_g of the pump (in cm^3/rev).

| pump | shaft | torque limit factor |
|------------------------|-------|---------------------|
| PV016-023 PV028 | N | 17700 |
| | D | 17700 |
| | M | 17700 |
| | K | 20130 |
| PV032-046 PV056,065 | N | 32680 |
| | D | 36380 |
| | M | 33810 |
| PV063-092 PV110 | K | 40250 |
| | N | 77280 |
| | D | 72450 |
| PV125-180 PV210 | M | 67620 |
| | K | 83720 |
| | N | 118400 |
| | D | 158760 |
| | F | 78750 |
| PV270 | G | 97650 |
| | M | 113400 |
| | K | 157500 |
| | N | 119000 |
| | D | 159700 |
| | M | 170100 |
| | K | 236250 |

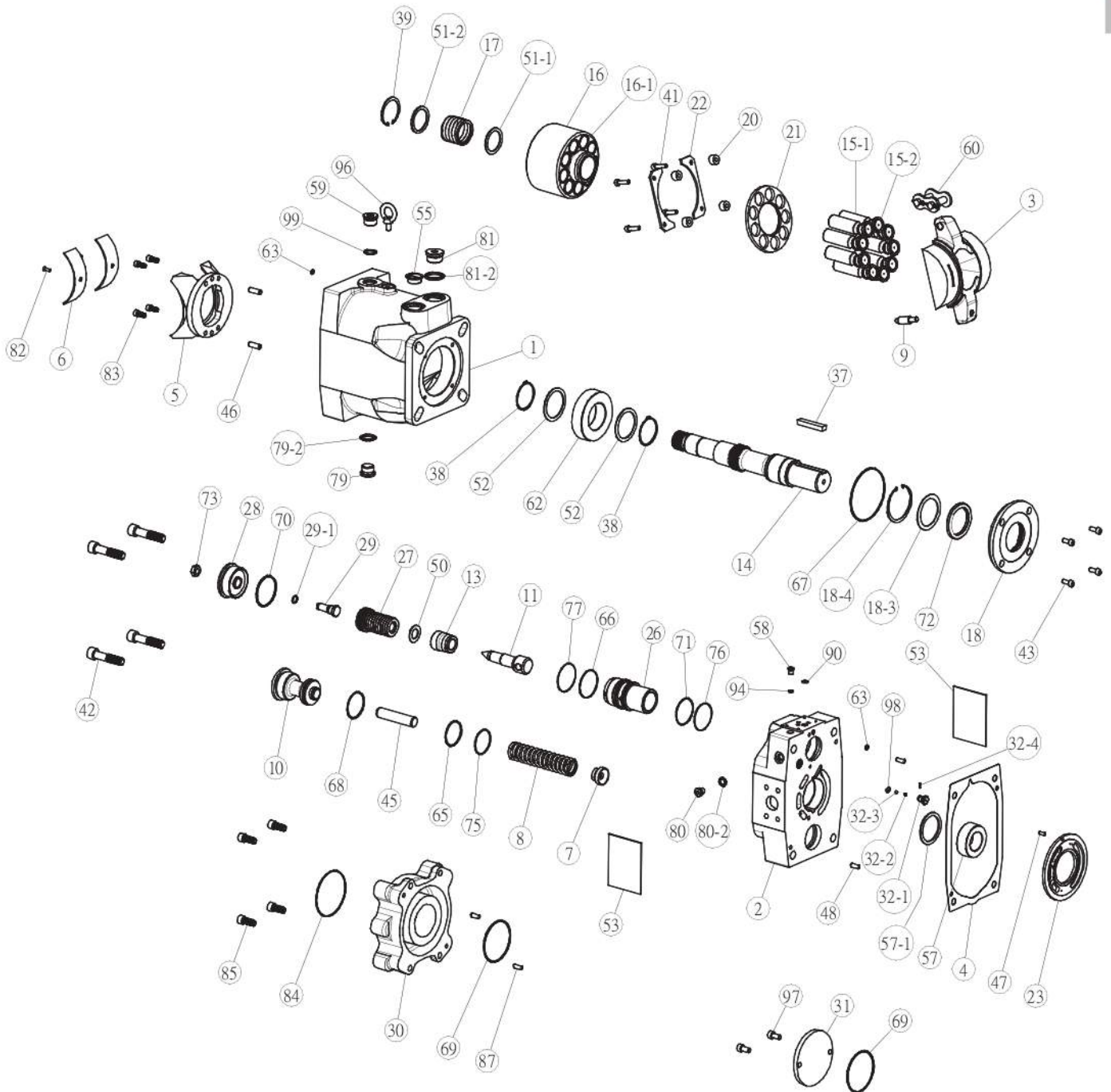
Total torque factor of the combination = sum of individual torque factors of all pumps

Torque factor of any pump = $p \times V_g$ (pressure in bar x displacement in cm^3/rev)

PV Axial piston pump

PV Axial piston pump exploded view

(E.g.Body 4)



Remark: Body1 without (16-1)
 Body1~3 without (18-3)
 Body1~3,5 without (57-1)

※YEOSHE product specifications are subject to change without prior notice.



PV Axial piston pump exploded view

A

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PV Axial piston pump

| NO | Item | NO | Item |
|------|-----------------------|------|-----------------------|
| 1 | Pump body | 51-1 | Washer-cylinder block |
| 2 | Pump cover | 51-2 | Washer-cylinder block |
| 3 | Swash plate | 52 | Washer-shaft |
| 4 | Body seal | 53 | Seal |
| 5 | Trunnion carrier | 55 | Plug |
| 6 | Trunnion bearing | 57 | Needle bearing |
| 7 | Guide-servo spring | 57-1 | Washer |
| 8 | Servo spring | 58 | Plug-comp.interface |
| 9 | Locator-servo spring | 59 | Plug-feedback |
| 10 | Plug-servo spring | 60 | Chain link |
| 11 | Connector-swash plate | 62 | Roller bearing |
| 13 | Contour sleeve | 63 | O-ring |
| 14 | Shaft | 65 | O-ring |
| 15-1 | Piston assembly | 66 | O-ring |
| 15-2 | Piston shose | 67 | O-ring |
| 16 | Cylinder block | 68 | O-ring |
| 16-1 | Cylinder block washer | 69 | O-ring |
| 17 | Spring-cylinder block | 70 | O-ring |
| 18 | Pilot cover | 71 | O-ring |
| 18-3 | Pilot cover washer | 72 | Shaft-seal |
| 18-4 | Snap ring | 73 | Lock nut with seal |
| 20 | Distance washer | 75 | B/U ring |
| 21 | Slipper retainer | 76 | B/U ring |
| 22 | Retainer segment | 77 | B/U ring |
| 23 | Valve plate | 79 | Plug |
| 26 | Servo piston sleeve | 79-2 | Washer |
| 27 | Servo piston | 80 | Plug |
| 28 | Servo piston cover | 80-2 | Washer |
| 29 | Spindle | 81 | Plug |
| 29-1 | O-ring | 81-2 | Washer |
| 30 | Adaptor | 82 | Screw |
| 31 | Cover plate | 83 | Screw |
| 32-1 | Air bleed valve | 84 | O-ring |
| 32-2 | Spring | 85 | Adaptor-screw |
| 32-3 | Ball | 87 | Adaptor-pin |
| 32-4 | Pin | 90 | O-ring |
| 37 | Key | 94 | O-ring |
| 38 | Snap ring-shaft | 96 | Lift eye |
| 39 | Snap ring-cyl.block | 97 | Screw |
| 41 | Retainer screw | 98 | O-ring |
| 42 | Screw | 99 | O-ring |
| 43 | Head cap screw | | |
| 45 | Guide pin-servo | | |
| 46 | Loc.pin-cradle | | |
| 47 | Loc.pin-valve plate | | |
| 50 | Washer-servo piston | | |

General installation information

A. Fluid recommendations

Premium quality hydraulic mineral oil fluids are recommended, like H-LP oils to DIN 51524, part2. The viscosity range should be 25 to 50 mm²/s (cSt) at 50° C. Operating temperatures –10 to +70°C. For other fluids such as phosphoric acid esters or for other operating conditions, please consult with YEOSHE for assistance.

B. Seals

NBR (Nitrile) seals are used for operation with hydraulic fluids based on mineral oil. For synthetic fluid, as perhaps phosphoric acid esters, Fluorocarbon seals are required. Please consult with YEOSHE for assistance.

C. Filtration

For maximum pump and system component functionality and life, the system should be protected from contamination by effective filtration.

Fluid cleanliness should be in accordance with ISO classification ISO 4406.

The quality of filter elements should be in accordance with ISO standards.

(1) Minimum requirement for filtration rate \times (mm):

General hydraulic systems for satisfactory operation:

Class 19/15, to ISO 4406 X=25 μ m ($\beta_{25} \geq 75$) to ISO 4572

(2) Hydraulic systems with maximum component life and functionality:

Class 16/13, to ISO 4406 X=10 μ m ($\beta_{10} \geq 75$) to ISO 4572

It is recommended to use return line or pressure filters.

YEOSHE Filter Division offers a wide range of these filters for all common applications and mounting styles.

The use of suction filters should be avoided, especially with fast response pumps.

Bypass filtration is a good choice for best filter efficiency.

D. Installation and mounting

Horizontal mounting:

Outlet port-side or top. Inlet port-side or bottom, drain port always uppermost.

Vertical mounting: Shaft pointing upwards.

Install pump and suction line in such way that the maximum inlet vacuum never exceeds 0.8 bar absolute.

The inlet line should be as short and as straight as possible.

A short suction line cut to 45° is recommended when the pump is mounted inside the reservoir, to improve the inlet conditions. All connections should be leak-free, otherwise the air in the suction line will cause cavitations, noise, and damage to the pump.

E. Shaft rotation and alignment

Pump and motor shafts must be aligned within 0.25mm T.I.R. maximum. A floating coupling must be used.

Bellhousings and couplings can be ordered at manufacturers listed in this catalog.

Please follow the coupling manufacturer's installation instructions.

Please consult with YEOSHE for assistance on radial load type drives.

F. 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.

Attention: Check motor rotation direction.

G. Operating noise of pumps

The normal operating noise of a pump and constantly-operation noise of the entire hydraulic system is largely determined by where and how the pump is mounted and how it is connected to the down stream hydraulic system. Besides, size, style, and installation of hydraulic tube are the major influence on the overall noise emitted by a hydraulic system.



General installation information

H. Noise reduction measures

Flexible elements help to prevent pump body vibration from being transmitted to other construction elements, where amplification may occur. Such elements can be:

Bell housing with elastic dampening flange with vulcanized labyrinth

- (1) Floating and flexible coupling
- (2) Damping rails
- (3) Or silent blocks for mounting the electric motor or the foot mounting flange
- (4) Flexible tube connections (compensators) or hoses on inlet, outlet, and drain port of the pump.
- (5) Exclusive use of gas tight tube fittings for inlet connections to avoid ingress of air causing cavitations and excessive noise.

I. Drain line

The drain line must lead directly to the reservoir without restriction. The drain line must not be connected to any other return line.

The end of the drain line must be below the lowest fluid level in the reservoir and as far away as possible from the pump inlet line. This ensures that the pump is not empty itself when it's not in operation and the hot airtreated oil will not be recirculated.

For the same reason, when the pump is mounted inside the reservoir, the drain line should be arranged in such a way that a siphon is created. This ensures that the pump is always filled with fluid.

The drain pressure must not exceed 1 bar.

Drain line length should not exceed 2 meters.

Minimum diameter should be selected according to the port size and a straight low pressure fitting with maximized bore should be used.

| | PV016~PV023 PV028 | PV032~PV046 PV056/PV065 | PV063~092 PV110 | PV125~180 PV210 | PV270 |
|---------------------|----------------------|----------------------------|--------------------|--------------------|----------|
| Size of pipe joints | 3/8" | 1/2" | 3/4" | 1" | 1-1/4" |
| I.D. of pipes | Ø12 more | Ø15 more | Ø19 more | Ø25 more | Ø32 more |
| Length of drain | Under 1m | Under 1m | Under 1m | Under 1m | Under 1m |



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