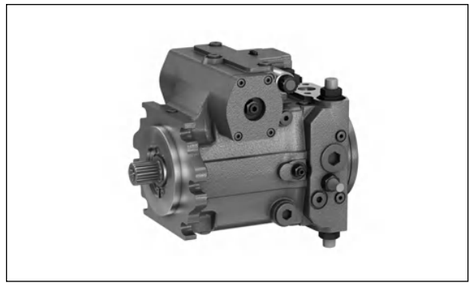
# Axial piston variable pump
# A4VG Series 32



- High-pressure pump for applications in a closed circuit
- Size 28 to 180
- Nominal pressure 400 bar
- Maximum pressure 450 bar
- Closed circuit

## Features

- Integrated auxiliary pump for boost and pilot oil supply
- Flow direction changes smoothly when the swashplate is moved through the neutral position
- High-pressure relief valves with integrated boost function
- With adjustable pressure cut-off as standard
- Boost-pressure relief valve
- Through drive for mounting of further pumps up to same nominal size
- Large variety of controls
- Swashplate design

PRANCE HYDRAULIC

## Type code

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4V | G | | | D | | | | | / | 32 | | – | N | | | | | | | | | | |

## Axial pistion unit

| | | |
|---|---|---|
| 01 | Swashplate design, variable, nominal pressure 400 bar, maximum pressure 450 bar | A4V |

## Operating mode

| | | |
|---|---|---|
| 02 | Pump, closed circuit | G |

## Size (NG)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 03 | Geometric displacement, see “Technical data” on page 8 | 28 | 40 | 56 | 71 | 90 | 125 | 180 |

## Control device

| | | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 04 | Without control module | | • | • | • | • | • | • | • | NV |
| | Proportional control, hydraulic | Pilot-pressure related p = 6 to 18 bar | • | • | • | • | • | • | • | HD3 |
| | | Mechanical servo | • | • | • | • | • | • | • | HW |
| | Proportional control, electric | U = 12 V | • | • | • | • | • | • | • | EP3 |
| | | U = 24 V | • | • | • | • | • | • | • | EP4 |
| | Two-point control, electric | U = 12 V | • | • | • | • | • | • | • | EZ1 |
| | | U = 24 V | • | • | • | • | • | • | • | EZ2 |
| | Automatic control, speed related | U = 12 V | • | • | • | • | • | • | • | DA1 |
| | | U = 24 V | • | • | • | • | • | • | • | DA2 |
| | Hydraulic control, direct operated | | • | • | • | • | • | • | • | DG |
| | Electric control, direct operated, two pressure reducing valves | U = 12 V | • | • | • | • | – | – | – | ET5 |
| | | U = 24 V | • | • | • | • | – | – | – | ET6 |

## Pressure cut-off

| | | |
|---|---|---|
| 05 | Pressure cut-off(standard) | D |

## Neutral position switch

| | | | |
|---|---|---|---|
| 06 | Without neutral position switch (without code) | • | |
| | Neutral position switch (for HW control only) | • | L |

## Mechanical stroke limiter

| | | | |
|---|---|---|---|
| 07 | Without mechanical stroke limiter (without code) | • | |
| | Mechanical stroke limiter, externally adjustable | • | M |

## Stroking chamber pressure port

| | | | |
|---|---|---|---|
| 08 | Without stroking chamber pressure port $X_3$, $X_4$ without code | • | |
| | Stroking chamber pressure port $X_3$, $X_4$ | • | T |

## DA control valve

| | | | NV | HD | HW | DG | DA | EP | EZ | |
|---|---|---|---|---|---|---|---|---|---|---|
| 09 | Without DA control valve | | • | • | • | • | – | • | • | 1 |
| | DA control valve, fixed setting | | – | • | • | • | • | • | – | 2 |
| | DA control valve, mechanically adjustable with position lever | direction of actuation, clockwise | – | • | • | • | • | • | – | 3R |
| | | direction of actuation, counter-clockwise | – | • | • | • | • | • | – | 3L |
| | DA control valve, fixed setting, ports for pilot control device | | – | • | • | – | • | • | – | 7 |
| | DA control valve, fixed setting and brake inch valve mounted, control with brake fluid | based on mineral oil | – | – | – | – | • | – | – | 8 |

• = Available ○ = On request – = Not available = Preferred program

# Axial piston on variable pump I A4VG Series 32 type code

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4V | G | | | D | | | | | / | 32 | | – | N | | | | | | | | | | |

## Series

| | | |
|---|---|---|
| 10 | Series 3, index 2 | 32 |

## Direction of rotation

| | | | |
|---|---|---|---|
| 11 | Viewed on drive shaft | clockwise | R |
| | | counter-clockwise | L |

## Sealing material

| | | |
|---|---|---|
| 12 | NBR(nitrile rubber),shaft seal in FKM (fluoroelastomer) | N |

## Drive shaft

| | | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | Splined shaft DIN 5480 | for single pump | ● | ● | ● | ● | ● | ● | ● | Z |
| | | for combination pump-1st pump | -[1] | ● | ● | ● | ● | ● | -[2] | A |
| | Splined shaft ANSI B92. 1a | for single pump | ● | ● | ● | ● | ● | ● | ● | S |
| | | for combination pump-1st pump | -[2] | -[2] | ● | ● | -[2] | ● | ● | T |
| | | for combination pump-2nd pump | - | ● | - | - | ● | - | - | U |

## Mounting flange

| | | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 | SAE J744 | 2-hole | ● | ● | ● | - | - | - | - | C |
| | | 4-hole | - | - | - | - | - | - | ● | D |
| | | 2+4-hole | - | - | - | ● | ● | ● | - | F |

## Working port

| | | | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | SAE Working port A and B, top and bottom | Suction port S bottom | | - | ● | ● | ● | ● | ● | ● | 02 |
| | SAE Working port A and B, top and bottom | Suction port S top | | - | ● | ● | ○ | ○ | ○ | ○ | 03 |
| | SAE Working port A and B, same side right[3] | Suction port S bottom | | ● | - | - | - | - | - | - | 10 |
| | SAE Working port A and B, same side left[3] | Suction port S bottom | | - | - | - | ● | ○ | ● | - | |
| | SAE Working port A and B, same side right[3] | Suction port S top | | - | - | - | ○ | ○ | ○ | - | 13 |
| | SAE Working port A and B, same side left[3] | Suction port S top | | ● | - | ● | - | - | - | - | |

## Boost pump

| | | | |
|---|---|---|---|
| 16 | Without integrated boost pump | without through drive | N |
| | | with through drive | K |
| | Integrated boost pump | with and without through drive | F |

## Through drive

| | | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 17 | Without through drive, versions N and F(no. 16) only | | ● | ● | ● | ● | ● | ● | ● | 00 |
| | Flange SAE J744[4] | Hub for splined shaft | | | | | | | | |
| | 82-2(A) | 5/8 in 9T 16/32DP[5] | ● | ● | ● | ● | ● | ● | ● | 01 |
| | 101-2(B) | 7/8 in 13T 16/32DP[5] | ● | ● | ● | ● | ● | ● | ● | 02 |
| | | 1 in 15T 16/32DP[5] | ● | ● | ● | ● | ● | ● | ● | 04 |
| | 127-2(C)[6] | 1 in 15T 16/32DP[5] | - | ● | - | - | - | - | - | 09 |
| | | 1 1/4 in 14T 12/24DP[5] | - | - | ● | ● | ● | ● | ● | 07 |
| | 152-2/4(D) | W35 2X16X9g[7] | - | - | - | - | ● | - | - | 73 |
| | | 1 3/4 in 13T 8/16DP[5] | - | - | - | - | - | ● | ● | 69 |
| | 165-4(E) | 1 3/4 in 13T 8/16DP[5] | - | - | - | - | - | - | ● | 72 |

●=Availble ○=On request – =Not available =Preferred program

1) Standard for combination pump-1st pump:Shaft Z
2) Standard for combinatin pump -1st pump:Shaft S
3) Only possible without attachment filter
4) 2=2-hole;4=4-hole
5) Hub for splined shaft to ANSI B92.1a
6) NG90 to 180 with additional 4-hole-flange (127-4)
7) Hub for splined shaft according to DIN 5480.





# A4VG Series 32 I Axial piston variable pump Type code

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A4V | G | | | D | | | | | / | 32 | | - | N | | | | | | | | | | |

## High-pressure relief valve

| | | Setting rabe △p | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | High-pressure relief valve,pilot operated | 100 to 420 bar | with bypass | - | - | - | ● | ● | ● | ● | 1 |
| | High-pressure relief valve,direch operated, fixed setting | 250 to 420 bar | without bypass | ● | ● | ● | - | - | - | - | 3 |
| | | | with bypass | ● | ● | ● | - | - | - | - | 5 |
| | | 100 to 250 bar | without bypass | ● | ● | ● | - | - | - | - | 4 |
| | | | with bypass | ● | ● | ● | - | - | - | - | 6 |

## Filtration boost circuit/external boost pressure supply

| | | 28 | 40 | 56 | 71 | 90 | 125 | 180 | |
|---|---|---|---|---|---|---|---|---|---|
| 19 | Filtration in the boost pump suction line | ● | ● | ● | ● | ● | ● | ● | S |
| | Filtration in the boost pump pressure line<br>Porst for external boost circuit filtration($F_e$ and $F_a$) | ● | ● | ● | ● | ● | ● | ● | D |
| | Attachment filter with cold start valve | – | ● | ● | ● | ● | ● | ● | F |
| | Attachment filter with cold start valve and visual contamation indicator | – | ● | ● | ● | ● | ● | ● | P |
| | Attachment filter with cold start valve and electric contamation indicator | – | ● | ● | ● | ● | ● | ● | B |
| | External boost pressure supply (version without integrated boost pump-N00, K...) | ● | ● | ● | ● | ● | ● | ● | E |

## Swivel angle sensor

| | | 28 to 180 | |
|---|---|---|---|
| 20 | Without swivel angle sensor (without code) | ● | |
| | Electric swivel angle sensor[8] | ● | R |

## Connector for solenoids[9]

| | | | 28 to 180 | |
|---|---|---|---|---|
| 21 | Without connector (without code),only for purely hydraulic control | | ● | |
| | DEUTSCH molded connector,2-pin | without suppressor diode | ● | P |
| | | with suppressor diode(only for EZ and DA) | ● | Q |

## Standard/special version

| | | | |
|---|---|---|---|
| 22 | Standard version | without code | |
| | | combined with attachment part or attachment pump | -K |
| | Special version | | -S |
| | | combined with attachment part or attachment pump | -SK |

●=Available ○=On request – =Not availab =Preferred program

## Notice

- In addition to the type code,please specify the relevant technical data when placing your order.

8) Please contact us if the swivel angle sensor is used for control
9) Connectors for other electric components may deviate

## Technical data

| Size | | | NG | | 28 | 40 | 56 | 71 | 90 | 125 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Displacement,geometric,per revolution | | | | | | | | | | | |
| | variable pump | | $V_{g\,max}$ | $cm^3$ | 28 | 40 | 56 | 71 | 90 | 125 | 180 |
| | boost pump (at p=20bar) | | $V_{g\,Sp}$ | $cm^3$ | 6.1 | 8.6 | 11.6 | 19.6 | 19.6 | 28.3 | 39.8 |
| Rotational speed [1] | maximum at $V_{g\,max}$ | | $n_{nom}$ | rpm | 4250 | 4000 | 3600 | 3300 | 3050 | 2850 | 2500 |
| | limted,maximum[2] | | $n_{max1}$ | rpm | 4500 | 4200 | 3900 | 3600 | 3300 | 3250 | 2900 |
| | intermittent,maximum[3] | | $n_{max2}$ | rpm | 5000 | 5000 | 4500 | 4100 | 3800 | 3450 | 3000 |
| | minimum | | $n_{min}$ | rpm | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Flow | at $n_{nom}$ and $V_{g\,max}$ | | $q_v$ | l/min | 119 | 160 | 202 | 234 | 275 | 356 | 450 |
| Power [4] | at $n_{nom}$, $V_{g\,max}$ and Δp = 400 bar | | P | kw | 79 | 107 | 134 | 156 | 183 | 238 | 300 |
| Torque [4] | at $V_{g\,max}$ and | Δp = 400 bar | T | Nm | 178 | 255 | 357 | 452 | 573 | 796 | 1146 |
| | | Δp = 100 bar | T | Nm | 45 | 64 | 89 | 113 | 143 | 199 | 286 |
| Rotary stiffness of drive shaft | | S | c | KNm/rad | 31.4 | 69 | 80.8 | 98.8 | 158.1 | 218.3 | 244.5 |
| | | T | c | KNm/rad | - | - | 95 | 120.9 | - | 252.1 | 318.4 |
| | | A | c | KNm/rad | - | 79.6 | 95.8 | 142.4 | 176.8 | 256.5 | - |
| | | Z | c | KNm/rad | 32.8 | 67.5 | 78.8 | 122.8 | 137 | 223.7 | 319.6 |
| | | U | c | KNm/rad | - | 50.8 | - | - | 107.6 | - | - |
| Moment of inertia for rotary group | | | $J_{TW}$ | $kgm^2$ | 0.0022 | 0.0038 | 0.0066 | 0.0097 | 0.0149 | 0.0232 | 0.0444 |
| Maximum angular acceleration [5] | | | α | $rad/s^2$ | 38000 | 30000 | 24000 | 21000 | 18000 | 14000 | 11000 |
| Case volume | | | V | l | 0.9 | 1.1 | 1.5 | 1.3 | 1.5 | 2.1 | 3.1 |
| Weight (without through drive) approx. | | | m | kg | 29 | 31 | 38 | 50 | 60 | 80 | 101 |

Notice

- Theoretical values, without efficiency and tolerances; values rounded
- Operation above the maximum values or below the minimum values may result in a loss of function, a reduced service life or in the destruction of the axial piston unit.

| Determining the operating characteristics | | | | | |
|---|---|---|---|---|---|
| Flow | $q_v$ | = | $\frac{V_g \times n \times \eta_v}{1000}$ | | [l/min] |
| Torque | T | = | $\frac{V_g \times \Delta p}{20 \times \pi \times \eta_{hm}}$ | | [Nm] |
| Power | P | = | $\frac{2\,\pi \times T \times n}{60000}$ | = $\frac{q_v \times \Delta p}{600 \times \eta_t}$ | [kW] |

### Key

| | |
|---|---|
| Vg | Displacement per revolution [$cm^3$] |
| △p | Differential pressure [bar] |
| n | Rotational speed [rpm] |
| $\eta_v$ | Volumetric efficiency |
| $\eta_{hm}$ | Hydraulic-mechanical efficiency |
| $\eta_t$ | Total efficiency (ηt = ηv × ηhm) |

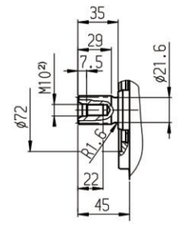
1) The values are applicable:
   - for the optimum viscosity range from $n_{opt}$ =36 to 16$mm^2/s$
   - for hydraulic fluid based on mineral oils (for HF hydraulic fluids, observe the technical data in 90225)
2) Valid at half corner power (e.g.at $V_{g\,max}$ and $p_N/2$)
3) Valid at △p=70 to 150 bar or △p < 300 bar and t < 0.1s
4) Without boost pump
5) The data are valid for values between the minimum required and maximum permissible rotational speed.
   Valid for external excitation (e.g.diesel engine 2 to 8 times rotary frequency,cardan shaft twice the rotar frequency).
   The limit value is only valid for a single pump.
   The load capacity of the connectiong parts must be considered.





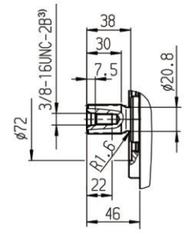
## Splined shaft DIN 5480

Z-W25×1.25×18×9g




## Splined shaft ANSI B921a

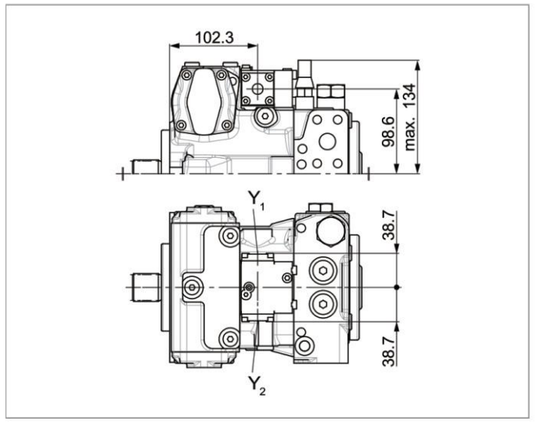
S-1 in 15T 16/32DP[1]



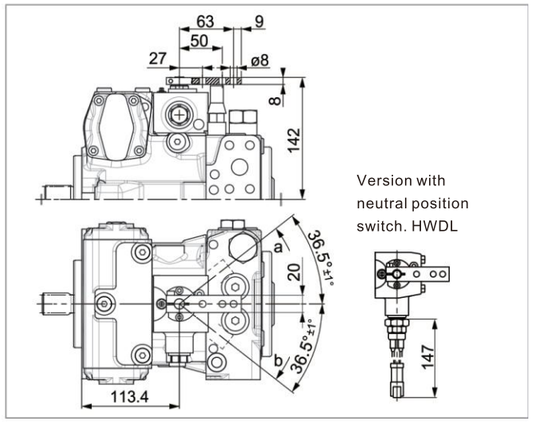

| Ports | | Standard | Size | $p_{max}$ [bar][4] | State [10] |
|---|---|---|---|---|---|
| A,B | Workinng port | SAEJ518[5] | 3/4 in | 450 | O |
| | Fastening thread | DIN 13 | M10 × 1.5; 17 deep | | |
| S | Suction port | DIN3852 [8] | M33× 2; 18 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN3852 [8] | M22 × 1.5; 14 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN3852 [8] | M22 × 1.5; 14 deep | 3 | X[7] |
| R | Air bleed port | DIN3852 [8] | M12 × 1.5; 12 deep | 3 | X |
| $X_1$,$X_2$ | Control pressure port(upstream of orifice) | DIN3852 [8] | M12 × 1.5; 12 deep | 40 | X |
| $X_1$,$X_2$ | Control pressure port (upstream of orifice, DG only) | DIN3852 [8] | M12 × 1.5; 12 deep | 40 | O |
| $X_3$X4[9] | Stroking chamber pressure port | DIN3852 [8] | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN3852 [8] | M12 × 1.5; 12 deep | 40 | X |
| $P_s$ | Pilot pressure port | DIN3852 [8] | M14 × 1.5; 12 deep | 40 | X |
| $P_s$ | Pilot pressure port(DA..7 only) | DIN3852 [8] | M14 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN3852 [8] | M14 × 1.5; 12 deep | 40 | O |
| $M_A$,$M_B$ | Measuring port pressure A, B | DIN3852 [8] | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port,high pressure | DIN3852 [8] | M12 × 1.5;12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN3852 [8] | M18 × 1.5; 12 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN3852 [8] | M12 × 1.5;12 deep | 40 | X |
| $Y_1$,$Y_2$ | Pilot pressure port(pilot signal HD only) | DIN3852 [8] | M14 × 1.5; 12 deep | 40 | O |
| Z | Pilot pressure port (inch signal DA..8 only) | DIN3852 [8] | M10 × 1; 8 deep | 40 | X |

1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Center bore according to DIN 332(thread according to DIN 13)
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings
5) Only dimensions according to SAE J518, metric fastening thread is a deviation from the standard
6) Plugged at external boost pressure supply
7) Depending on installation position, $T_1$ or $T_2$ must be connected
8) The countersink can be deeper than as specified in the standard
9) Optional
10) O=Must be connected (plugged when delivered)
    X=Plugged (observe installation instructions)

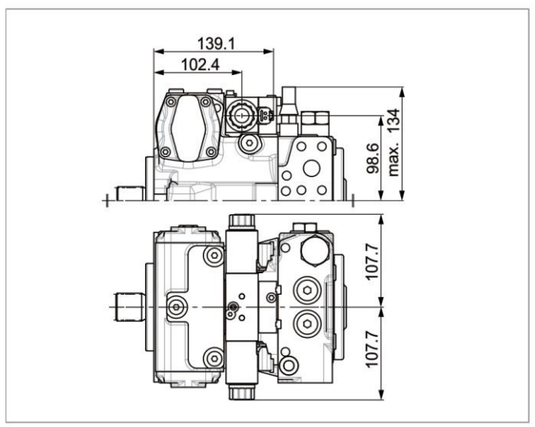
HD -Proportional control, hydraulic, pilot-pressure related



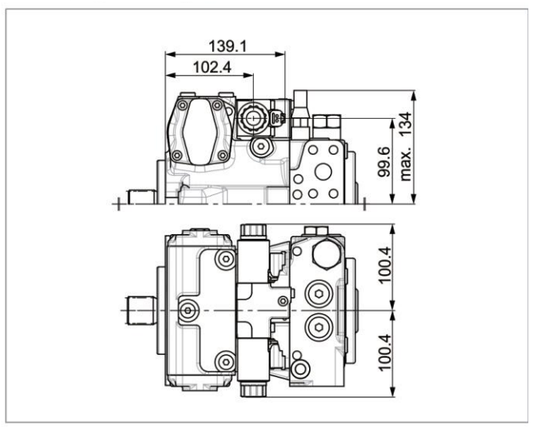

HW-Proportional control, hydraulic, mechanical servo



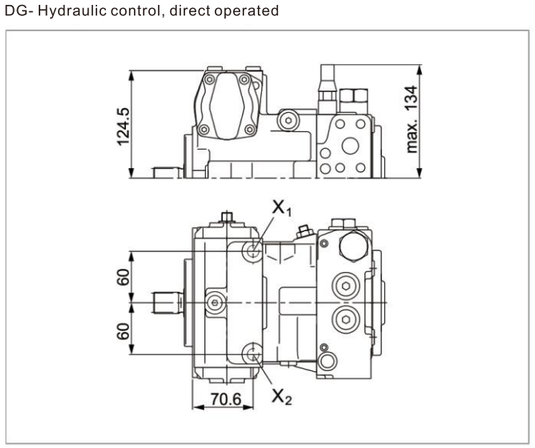

EP-Proportional control, electric




EZ-Two-point control, electric




DG- Hydraulic control, direct operated

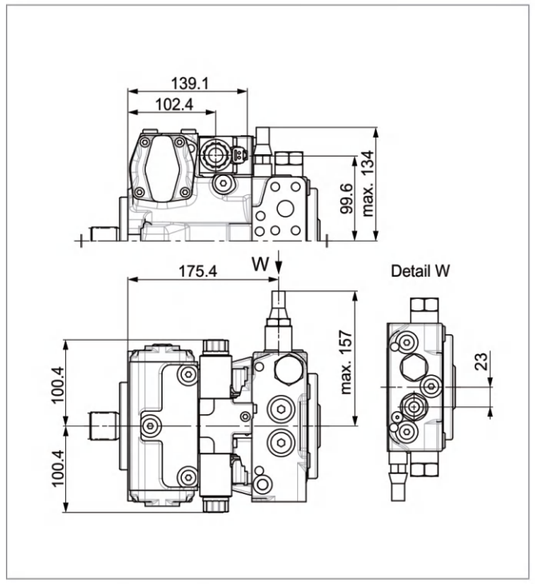




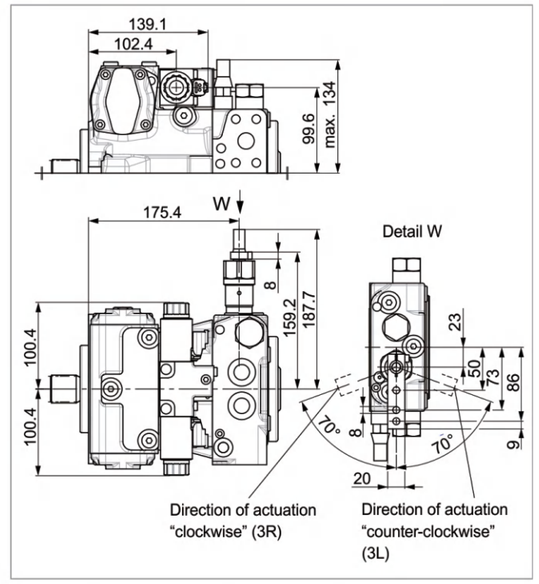



## DA control valve

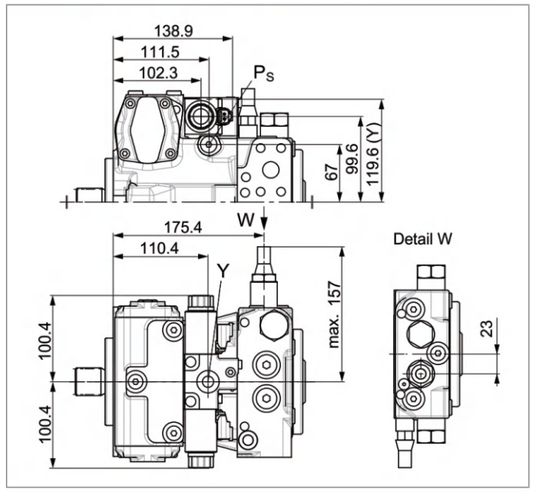
DA..2-fixed setting



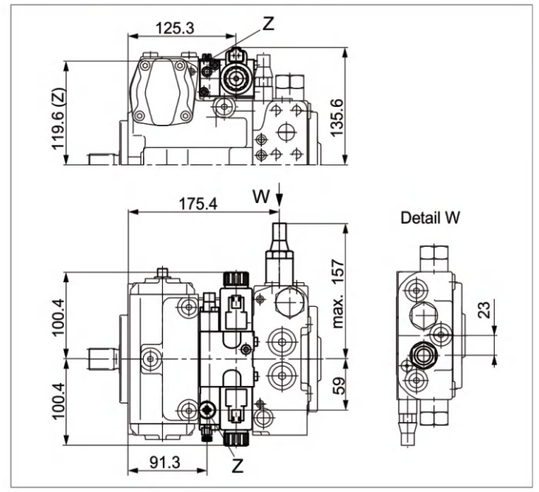

DA..3-Mechanically adjustable with position lever



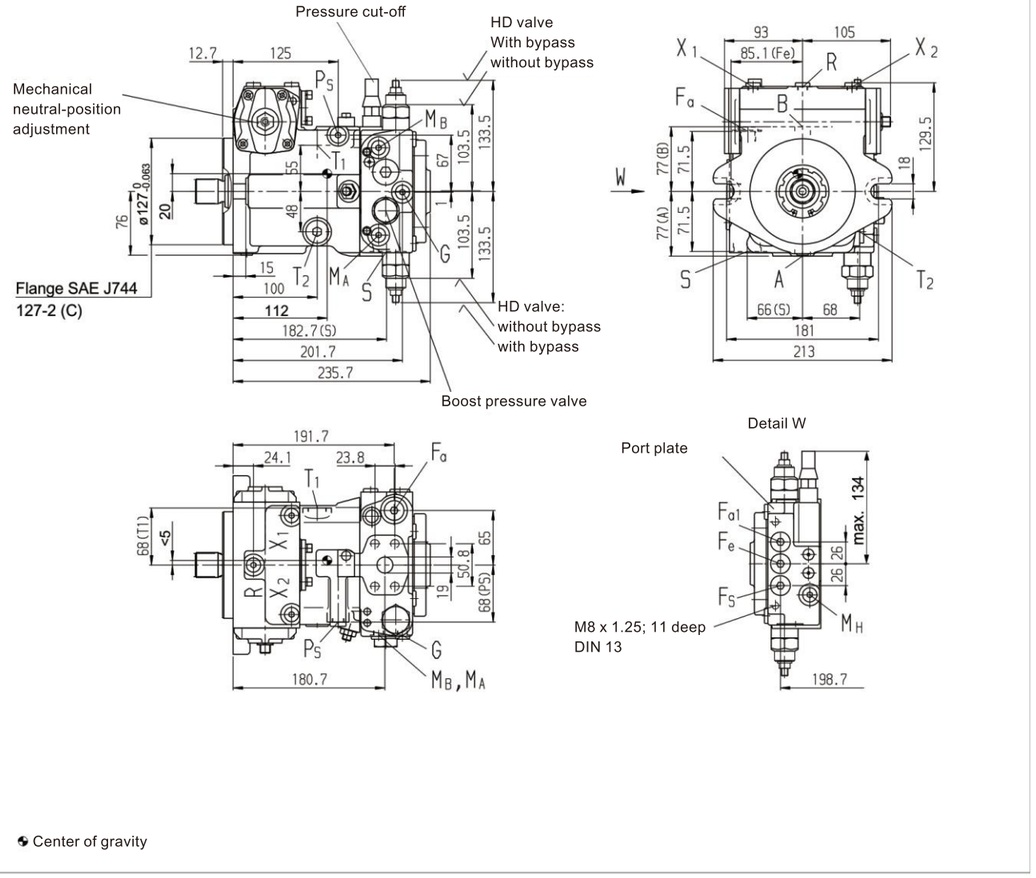

DA..7-fixed setting and ports for pilot control device




DA..8 - fixed setting and inch valve mounted



## NV-Version without control module
## Standar:SAE working port A and B top and bottom, suction port S bottom (02)




Notice

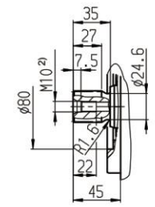
Option SAE working port A and B top and bottom,
suction port S top (03), port plate (02) rotated through
180°, installation drawing on request.





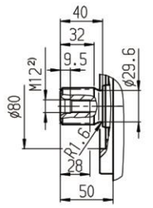
Splined shaft DIN 5480

Z-W30×2×14×9 g



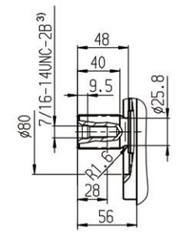
Splined shaft DIN 5480

A-W35×2×16×9 g



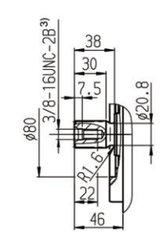
Splined shaft ANSI B92.1a

S - 1 1/4 in 14T 12/24DP[1]



Splined shaft ANSI B92.1a

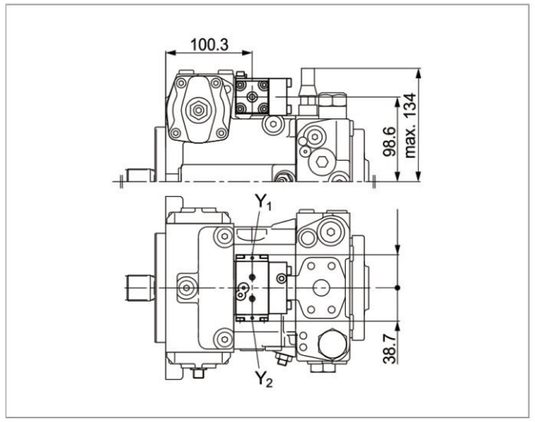
U - 1 in15T 16/32DP[1]



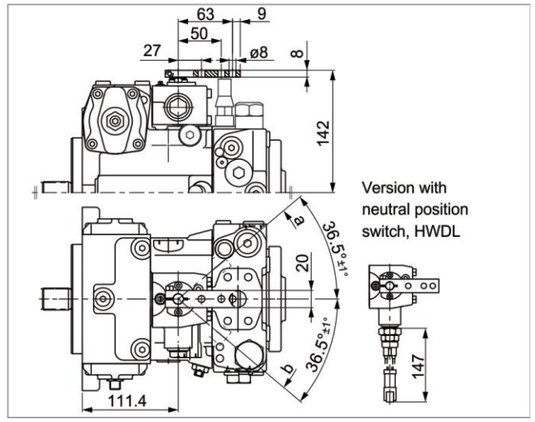
| Ports | | Standard | Size | $P_{max}$ [bar][4] | State [10] |
|---|---|---|---|---|---|
| A,B | Working port<br>Fastening thread | SAEJ518[5]<br>DIN13 | 3/4 in<br>M10 × 1.5; 17 deep | 450 | O |
| S | Suction port | DIN 3852[8] | M33 × 2; 18 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN 3852[8] | M22 × 1.5; 14 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN 3852[8] | M22 × 1.5; 14 deep | 3 | X[7] |
| R | Air bleed port | DIN 3852[8] | M12 × 1.5; 12 deep | 3 | X |
| $X_1$,$X_2$ | Control pressure port (upstream of orifice) | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| $X_1$,$X_2$ | Control pressure port (upstream of orifice, DG only) | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | O |
| $X_3$,$X_4$[9] | Stroking chamber pressure port | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| $P_S$ | pilot pressure port | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | X |
| $P_S$ | Pilot pressure port (DA..7 only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| $M_A$,$M_B$ | Measuring port pressure A,B | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port, high pressure | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filter) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $F_s$ | Line from filter to suction port (cold start) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $Y_1$,$Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| Z | Pilot pressure port (inch signal DA..8 only) | DIN 3852[8] | M10 × 1; 8 deep | 40 | X |

1) Involute spline according to ANSI B92.1, 30° pressure angle,
flat root, side fit, tolerance class 5
2)Center bore according to DIN 332(thread according to DIN 13)
3) Thread according to ASME B1.1
4)Depending on the application, momentary pressure peaks can occur.
Keep this in mind when selecting measuring devices and fittings
5)Only dimensions according to SAE J518, metric fastening thread
is a deviation from the standard
6)Plugged at external boost pressure supply
7)Depending on installation position, $T_1$ or $T_2$ must be connected
8)The countersink can be deeper than as specified in the standard
9)Optional
10)O= Must be connected (plugged when delivered)
X= Plugged (in normal operation)

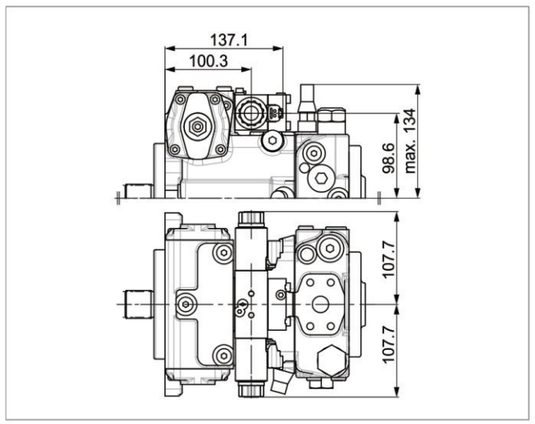
▼ HD- Proportional control, hydraulic, pilot-pressure related



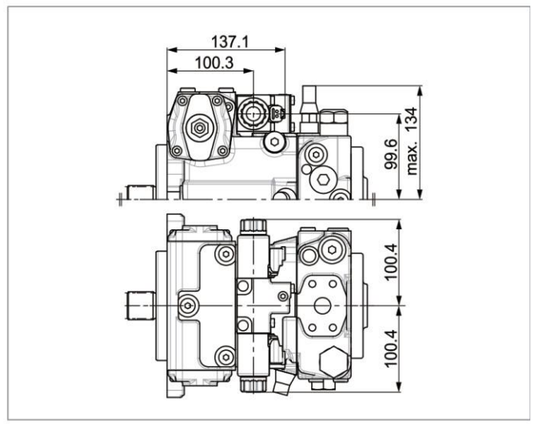

▼ HW-Proportional control, hydraulic, mechanical servo



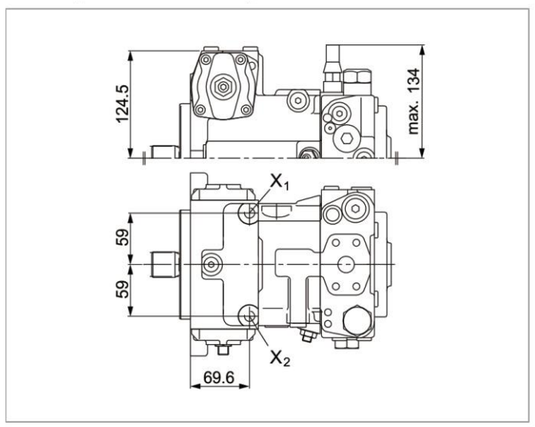

▼ EP-Proportional control, electric




▼ EZ-Two-point control, electric




▼ DG- Hydraulic control, direct operated

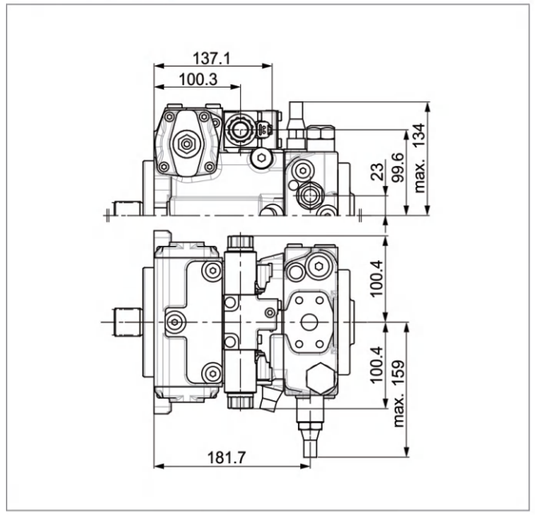




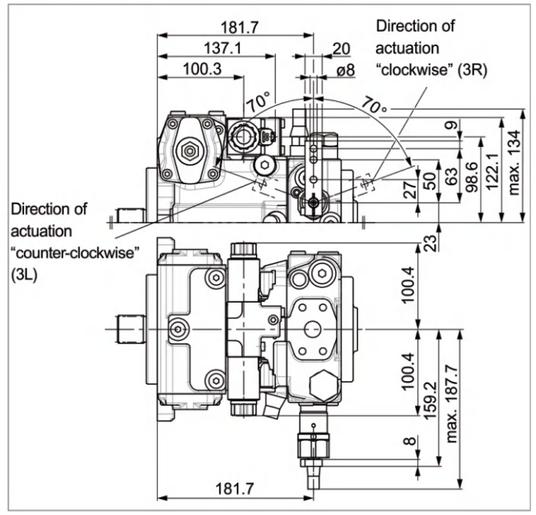



## DA control valve

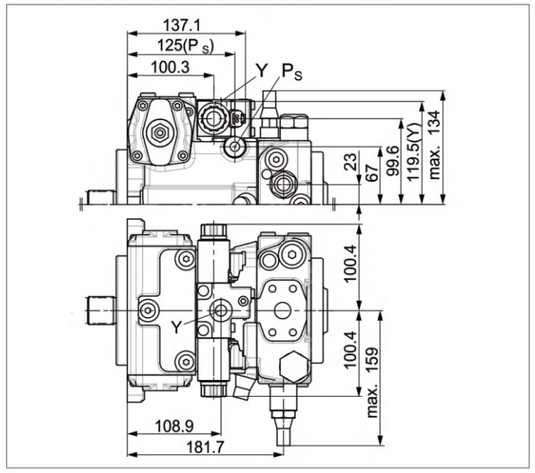
▼ DA..2-Fixed setting



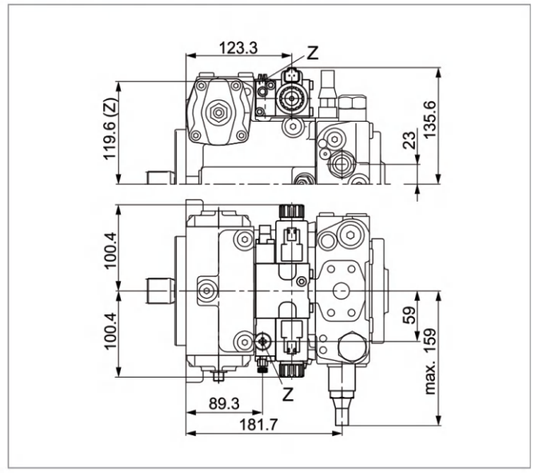

▼ DA..3-Mechanically adjustable with position lever




▼ DA..7-Fixed setting and ports for pilot control device

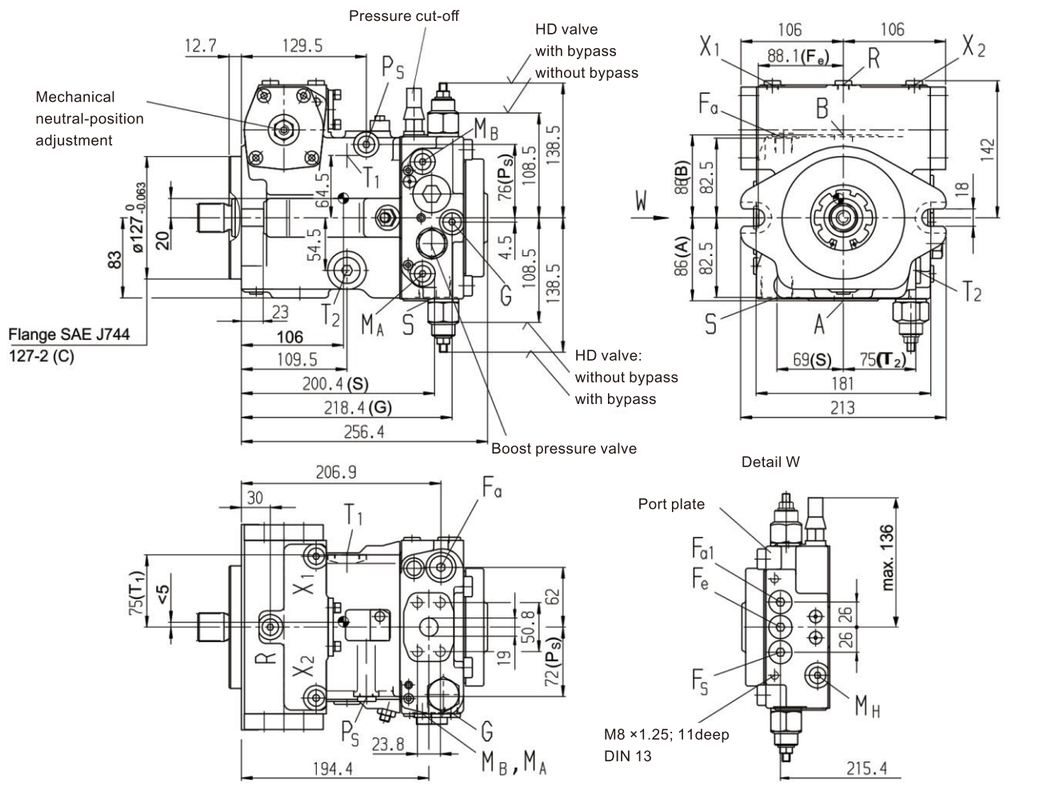



▼ DA..8-Fixed setting and inch valve mounted



NV - Version without control module

Standard: SAE working port A and B top and bottom, suction port S bottom(02)




Notice

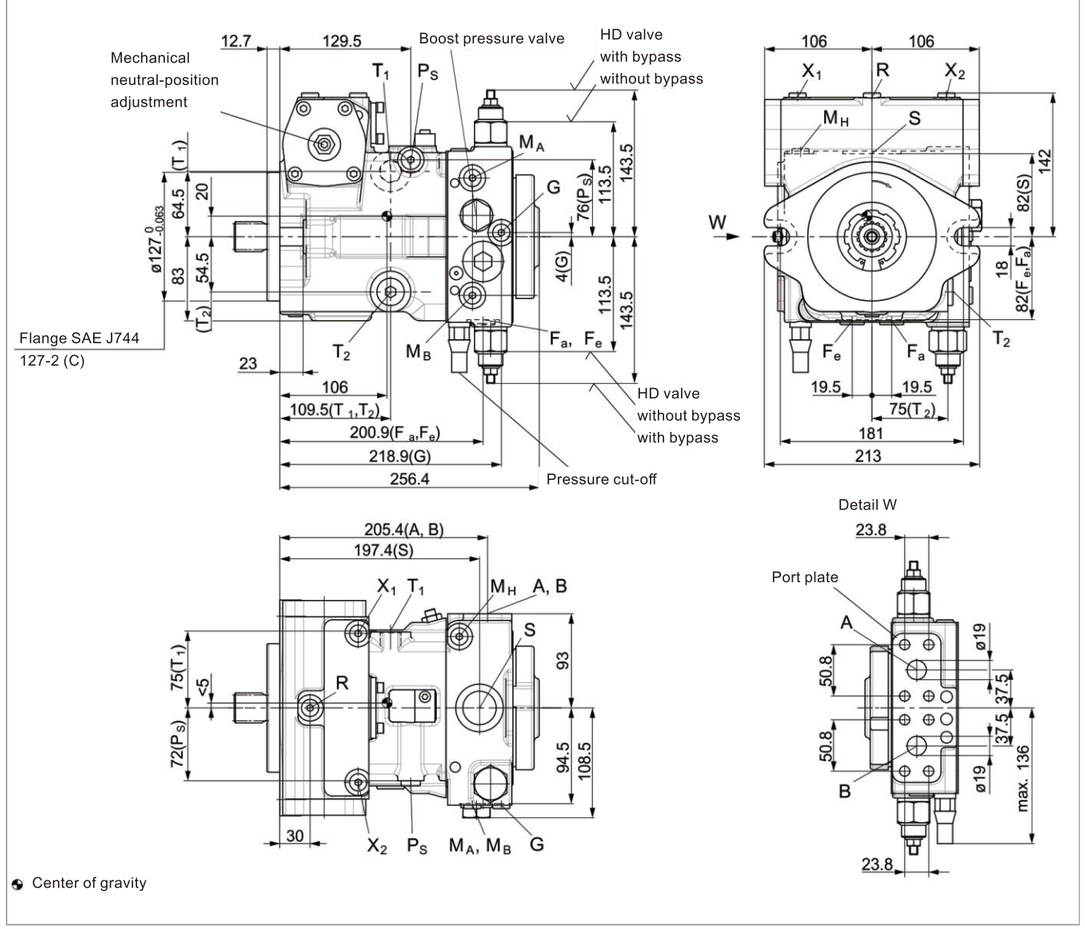
Option SAE working port A and B top and bottom,
suction port S top(03), port plate(02)rotated through
180°, installation drawing on request





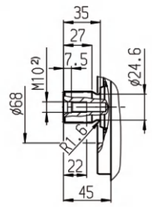
NV-Version without control module

Option: SAE working port A and B, same side left, suction port S top(13)



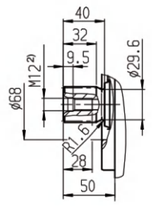
▼ Splined shaft DIN 5480

Z-W30×2×14×9g



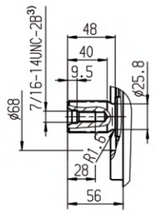

▼ Splined shaft DIN 5480

A-W35×2×16×9g



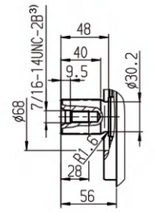

▼ Splined shaft ANSI B92.1a

S - 1 1/4 in 14T 12/24DP[1]




▼ Splined shaft ANSI B92.1a

T - 1 3/8 in 21T 16/32DP[1]



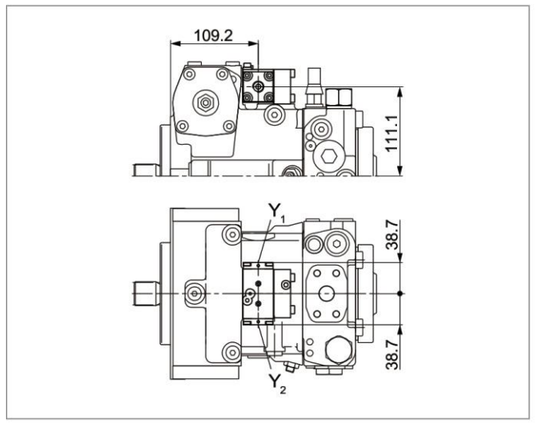

| Ports | | Standard | Size | $p_{max}$ [bar][4] | State[10] |
|---|---|---|---|---|---|
| A, B | Working port<br>Fastening thread | SAEJ518[5]<br>DIN 13 | 3/4 in<br>M10 ×1.5 ; 17 deep | 450 | O |
| S | Suction port | DIN 3852[8] | M33 × 2 ;18 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN 3852[8] | M22 × 1.5 ;14 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN 3852[8] | M22 × 1.5 ;14 deep | 3 | X[7] |
| R | Air bleed port | DIN 3852[8] | M12 × 1.5 ;12 deep | 3 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice) | DIN 3852[8] | M12 × 1.5 ;12 deep | 40 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice, DG only) | DIN 3852[8] | M12 × 1.5 ;12 deep | 40 | O |
| $X_3$, $X_4$[9] | Stroking chamber pressure port | DIN 3852[8] | M12 × 1.5 ;12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852[8] | M14 × 1.5 ;12 deep | 40 | X |
| Ps | Pilot pressure port | DIN 3852[8] | M14 × 1.5 ;12 deep | 40 | X |
| Ps | Pilot pressure port (DA..7 only) | DIN 3852[8] | M14 × 1.5 ;12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852[8] | M14 × 1.5 ;12 deep | 40 | O |
| $M_A$, $M_B$ | Measuring port pressure A, B | DIN 3852[8] | M12 × 1.5 ;12 deep | 450 | X |
| $M_H$ | Measuring port, high pressure | DIN 3852[8] | M12 × 1.5 ;12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852[8] | M18 × 1.5 ;12 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filter) | DIN 3852[8] | M18 × 1.5 ;12 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN 3852[8] | M18 × 1.5 ;12 deep | 40 | X |
| $F_S$ | Line from filter to signal HD port (cold start) | DIN 3852[8] | M18 × 1.5 ;12 deep | 40 | X |
| $Y_1$, $Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852[8] | M14 × 1.5 ;12 deep | 40 | O |
| Z | Pilot pressure port (inch signal DA..8 only) | DIN 3852[8] | M10 × 1; 8 deep | 40 | X |

1) Involute spline according to ANSI B92.1a, 30 pressure angle flat root side fit tolerance class 5
2)Center bore according to DIN 332(thread according to DIN 13)
3) Thread according to ASME B1. 1
4) Depending on the application, momentary pressure peaks can occur Keep this in mind when selecting measuring devices and fittings
5) Only dimensions according to SAE J518, metric fastening thread is a deviation from the standard.
6) Plugged at external boost pressure supply
7) Depending on installation position, $T_1$ or $T_2$ must be connected
8) The countersink can be deeper than as specified in the standard
9) Optional
10)O= Must be connected (plugged when delivered)
X= Plugged (in normal operation)

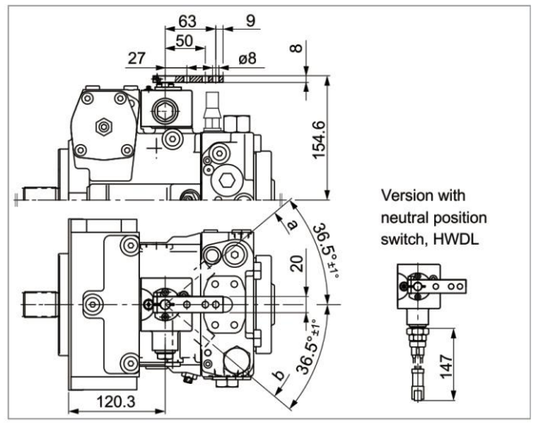




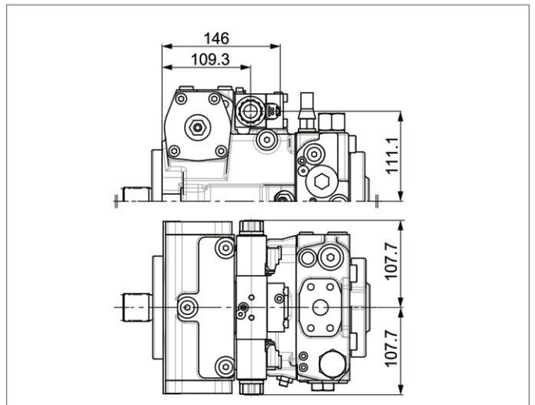
▼ HD-Proportional control, hydraulic, pilot-pressure related



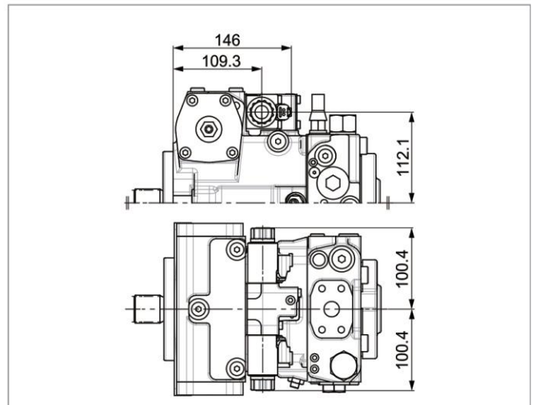

▼ HW-Proportional control, hydraulic, mechanical servo



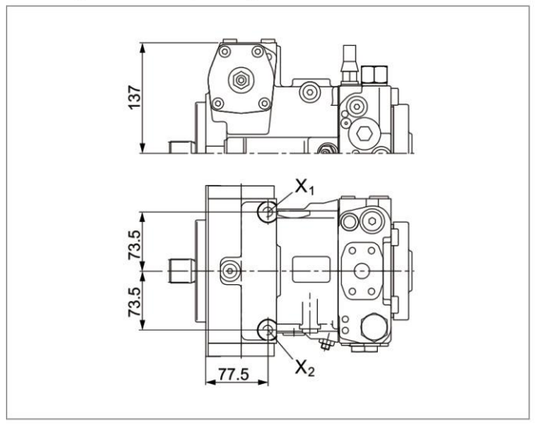

▼ EP-Proportional control, electric




▼ EZ-Two-point control, electric

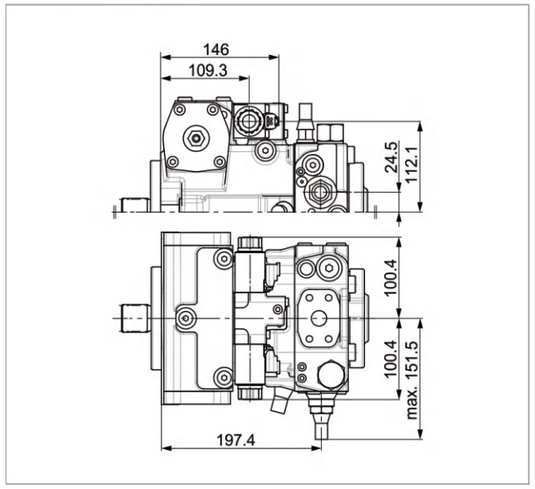



▼ DG-Hydrauli control, direct operated

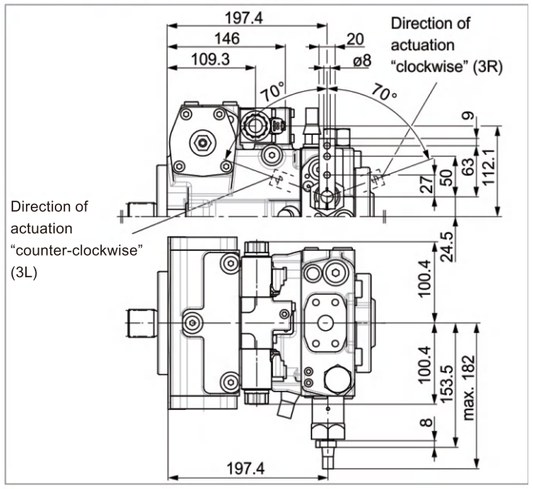


## DA control valve

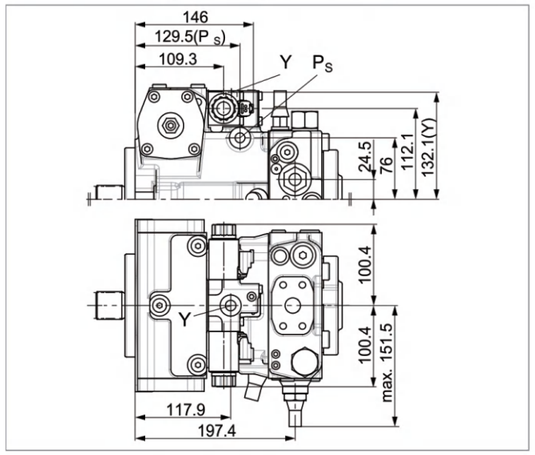
▼ DA..2 - Fixed setting



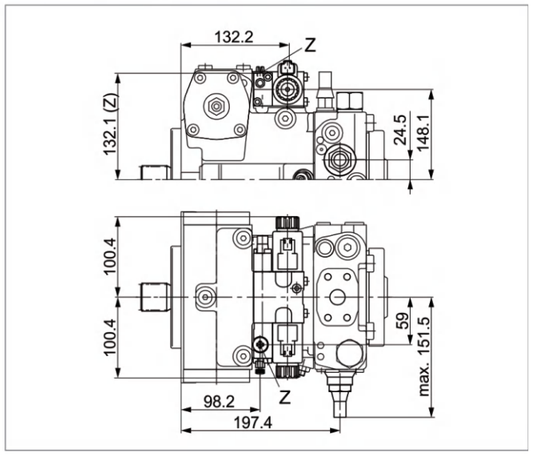

▼ DA..3 - Mechanically adjustable with position lever




▼ DA..7 - Fixed setting and ports for pilot control device




▼ DA..8 - Fixed setting and inch valve mounted

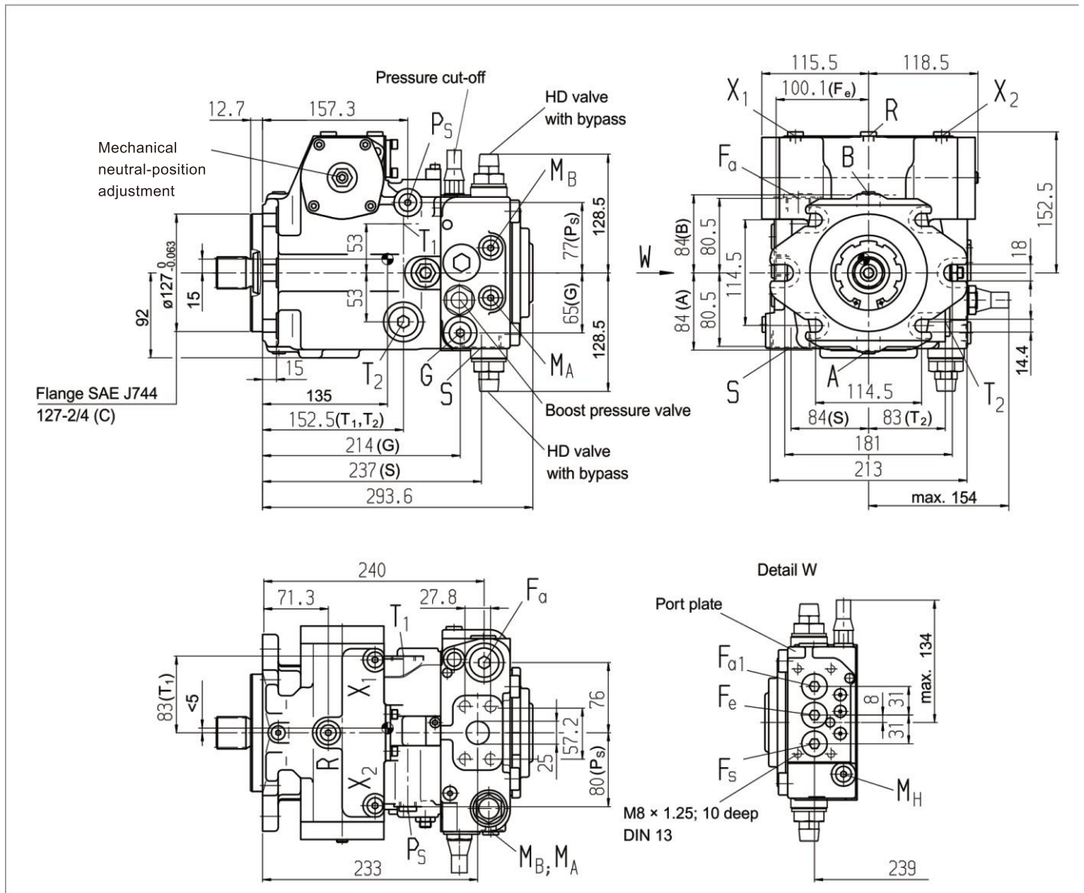







NV-Version without control module

Standard: SAE working port A and B top and bottom, suction port S bottom (02)

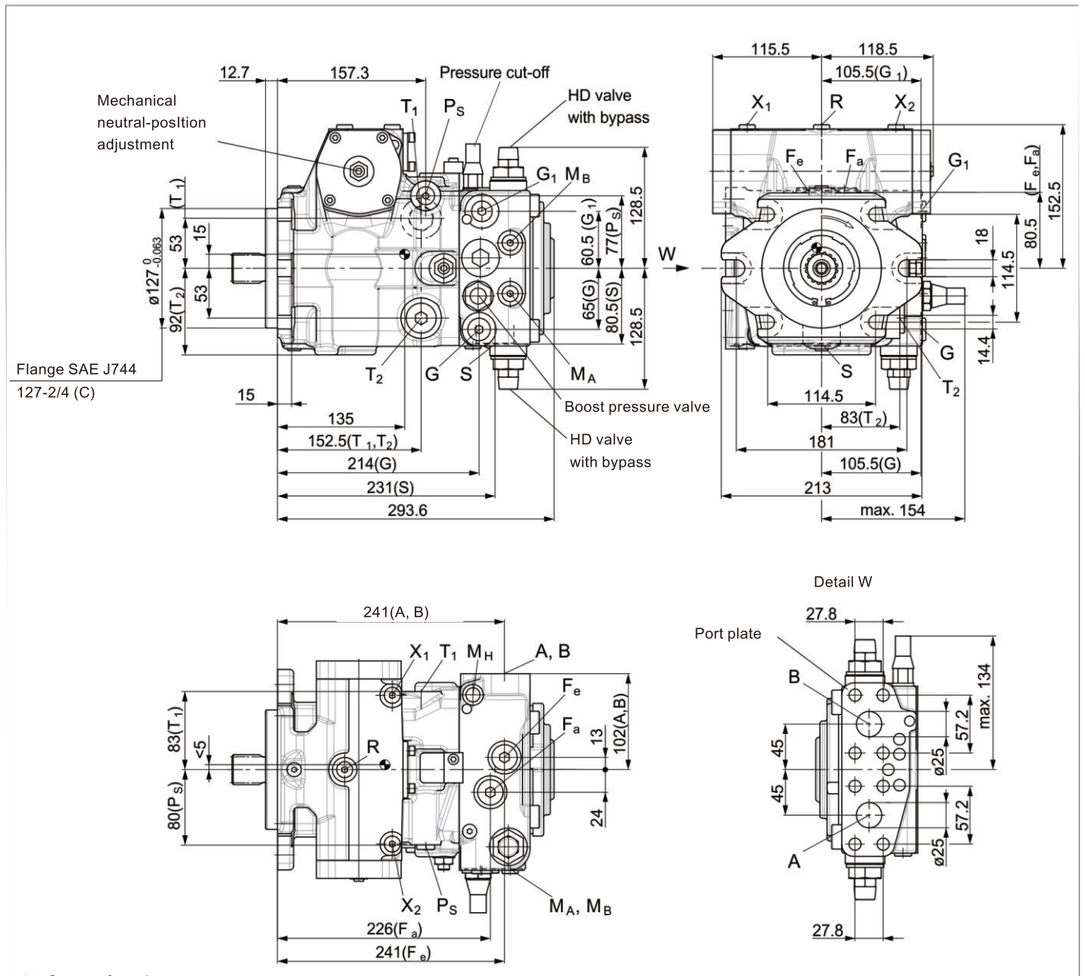



Center of gravity

Notice

Option: SAE working port A and B top and bottom
suction port S top(03 ). Port plate(02) rotated through
180° installation drawing on request

NV-Version without control module
Standard: SAE working port A and B,same side left, suction S bottom (10)




Center of gravity

Notice

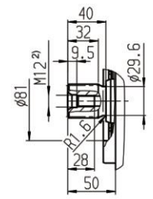
Option:SAE working port A and B,same side right,
suction port S top (13),installation drawing on request





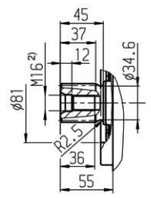
▼ Splined shaft DIN 5480

Z - W35×2×16×9g



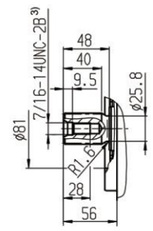

▼ Splined shaft DIN 5480

A - W40×2×18×9g



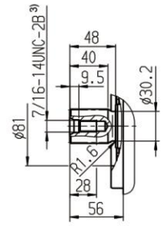

▼ Splined shaft ANSI B92.1a

S - 1 1/4 in 14T 12/24 DP[1]




▼ Splined shaft ANSI B92.1a

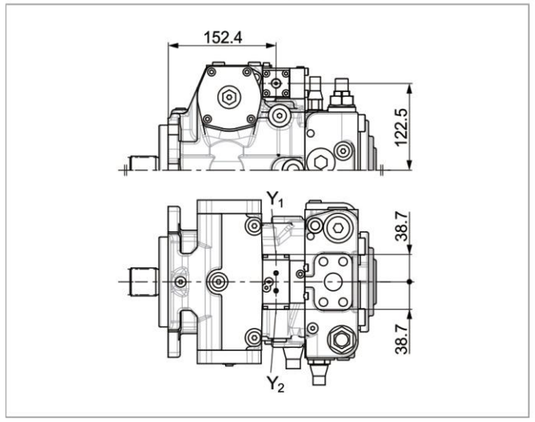
T - 1 3/8 in 21T 16/32 DP[1]



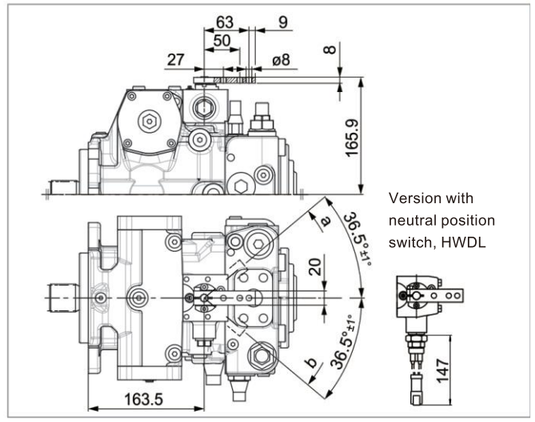

| Ports | | Standard | Size | $p_{max}$ [bar] [4] | State [10] |
|---|---|---|---|---|---|
| A, B | Working port | SAEJ518[5] | 1 in | 450 | O |
| | Fastening thread | DIN 13 | M12 × 1.75; 17 deep | | |
| S | Suction port | DIN 3852[8] | M42 × 2; 20 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN 3852[8] | M26 × 1.5; 16 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN 3852[8] | M26 × 1.5; 16 deep | 3 | X[7] |
| R | Air bleed port | DIN 3852[8] | M12 × 1.5; 12 deep | 3 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice) | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice, DG only) | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | O |
| $X_3$, $X_4$ [9] | Stroking chamber pressure port | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $P_S$ | Pilot pressure port | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | X |
| $P_S$ | Pilot pressure port (DA..7 only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| $M_A$, $M_B$ | Measuring port pressure A, B | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port,high pressure | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852[8] | M26 × 1.5; 16 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filter) | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $F_S$ | Line from filter to suction port (cold start) | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $Y_1$, $Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852[8] | M14 × 1.5; 8 deep | 40 | O |
| Z | Pilot pressure port (inch signal DA..8 only) | DIN 3852[8] | M10 × 1; 12 deep | 40 | X |

1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Center bore according to DIN 332 (thread according to DIN 13)
3) Thread according to ASME B1.1
4) Depending on the application,momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
5) Only dimensions according to SAE J518, metric fastening thread is a deviation from the standard.
6) Plugged at external boost pressure supply.
7) Depending on installation position, $T_1$ or $T_2$ must be connected
8) The countersink can be deeper than as specified in the standard.
9) Optional
10) O = Must be connected (plugged when delivered)
X = Plugged (in normal operation)

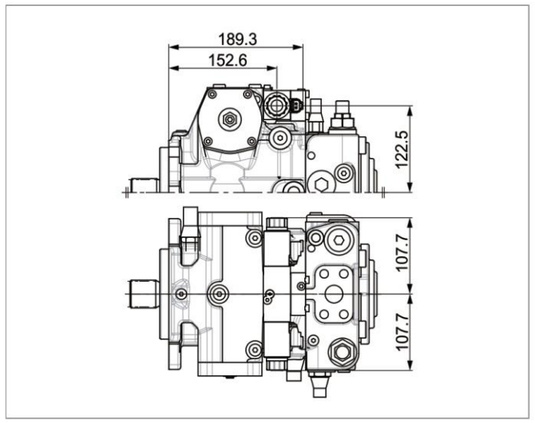
▼ HD - Proportional control, hydraulic, pilot-pressure related



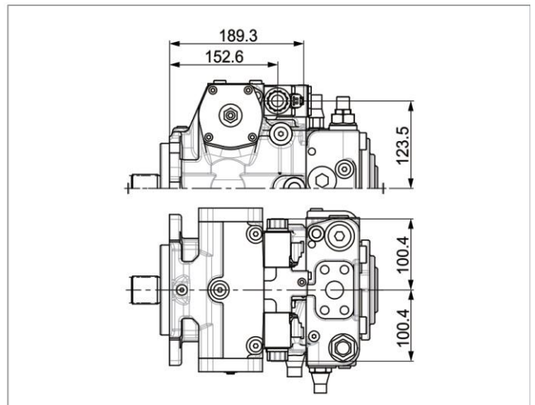

▼ HW - Proportional control, hydraulic, mechanical servo



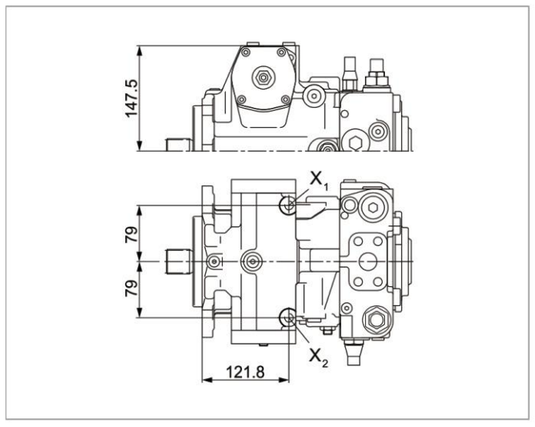

▼ EP - Proportional control, electric




▼ EZ - Two-point control, electric




▼ DG - Hydraulic control, direct operated

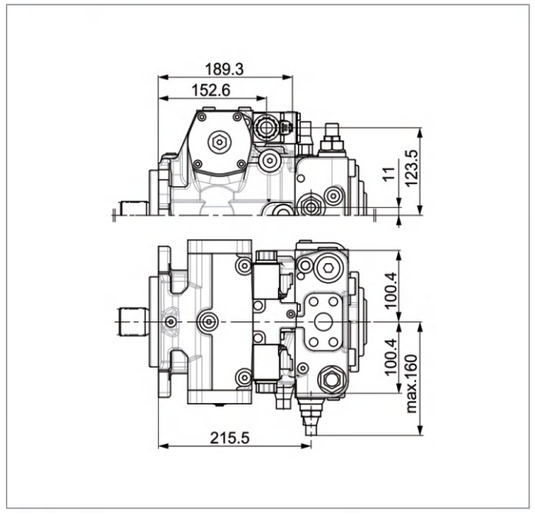




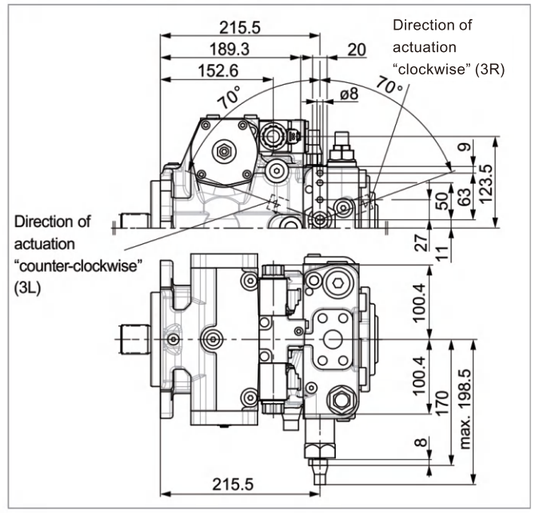



## DA control valve

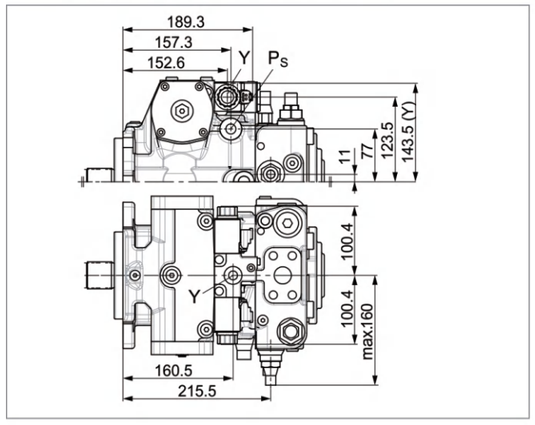
▼ DA..2 - Fixed setting



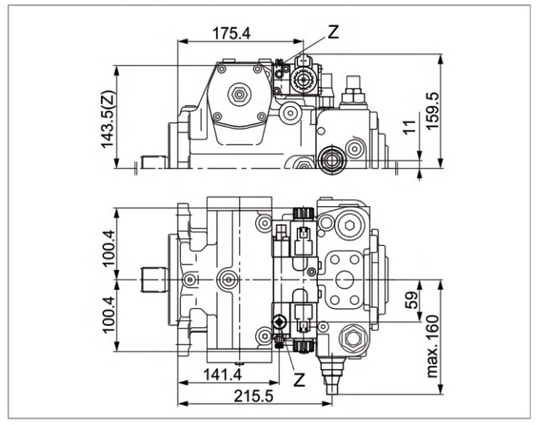

▼ DA..3 - Mechanically adjustable with position lever




▼ DA..7 - Fixed setting and ports for pilot control device



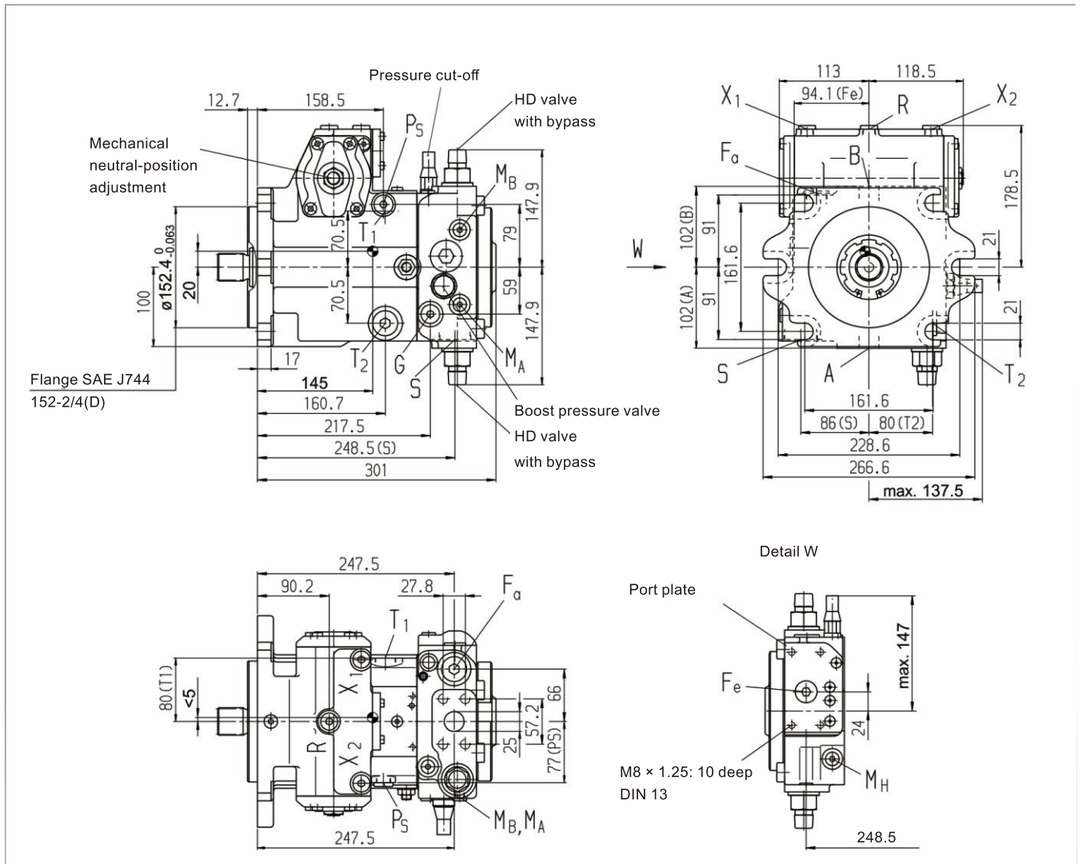

▼ DA..8 - Fixed setting and inch valve mounted



## Dimensions, size 90

NV - Version without control module

Standard:SAE working port A and B top and bottom, suction port S bottom (02)




Notice

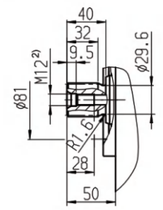
Option: SAE working port A and B top and bottom,
suction port S top (03). Port plate (02) rotated through
180°,installation drawing on request





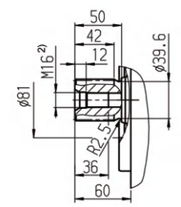
▼ Splined shaft DIN 5480

Z - W35×2×16×9g



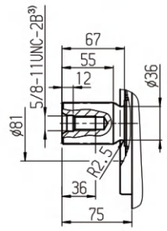
▼ Splined shaft DIN 5480

A - W45×2×21×9g



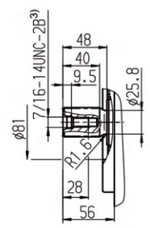
▼ Splined shaft ANSI B92.1a

S -1 3/4 in 13T 8/16DP[1]



▼ Splined shaft ANSI B92.1a

U -1 1/4 in 14T 12/24DP[1]

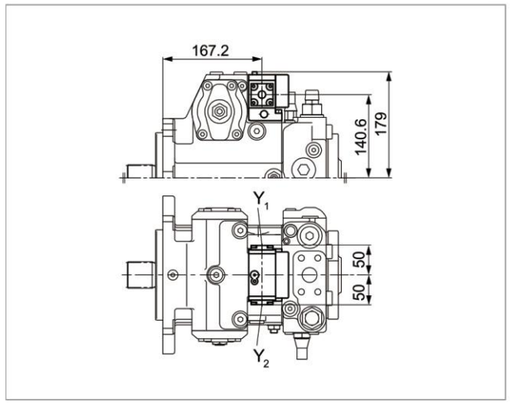


| Ports | | Standard | Size | $P_{max}$ [bar][4] | State[10] |
|---|---|---|---|---|---|
| A, B | Working port<br>Fastening thread | SAEJ518[5]<br>DIN 13 | 1 in<br>M12 × 1.75; 17 deep | 450 | O |
| S | Suction port | DIN 3852[8] | M42 × 2; 20 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN 3852[8] | M26 × 1.5; 16 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN 3852[8] | M26 × 1.5; 16 deep | 3 | X[7] |
| R | Air bleed port | DIN 3852[8] | M16 × 1.5; 12 deep | 3 | X |
| $X_1, X_2$ | Control pressure port (upstream of orifice) | DIN 3852[8] | M16 × 1.5; 12 deep | 40 | X |
| $X_1, X_2$ | Control pressure port (upstream of orifice, DG only) | DIN 3852[8] | M16 × 1.5; 12 deep | 40 | O |
| $X_3, X_4$[9] | Stroking chamber pressure port | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $P_s$ | Pilot pressure port | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $P_s$ | Pilot pressure port (DA..7 only) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | O |
| $M_A, M_B$ | Measuring port pressure A, B | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port, high pressure | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852[8] | M26 × 1.5; 16 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filter) | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $F_E$ | Boost pressure port outlet | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $F_S$ | Line from filter to suction port (cold start) | DIN 3852[8] | M22 × 1.5; 14 deep | 40 | X |
| $Y_1, Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| Z | Pilot pressure port(inch signal DA..8 only) | DIN 3852[8] | M10 × 1; 8 deep | 40 | X |

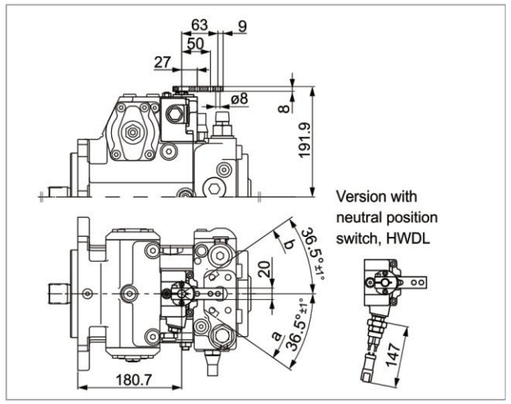
1) Involute spline according to ANSI B92.1a, 30° pressure angle flat root, side fit tolerance class 5
2) Center bore according to DIN 332 (thread according to DIN 13)
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings
5) Only dimensions according to SAE J518, metric fastening thread is a deviation from the standard
6) Plugged at external boost pressure supply
7) Depending on installation position, $T_1$ or $T_2$ must be connected
8) The countersink can be deeper than as specified in the standard
9) Optional
10) O= Must be connected(plugged when delivered)
X= Plugged (in normal operation)

## Dimensions [mm]

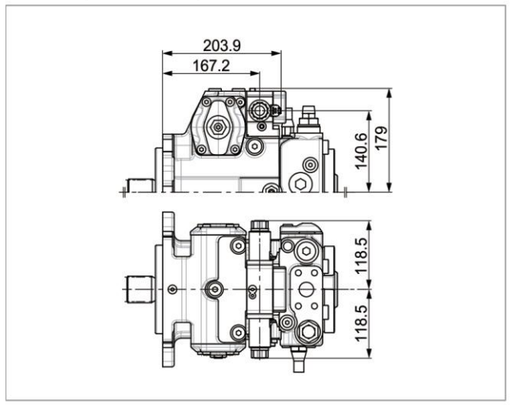
▼ HD - Proportional control,hydraulic, pilot-pressure related



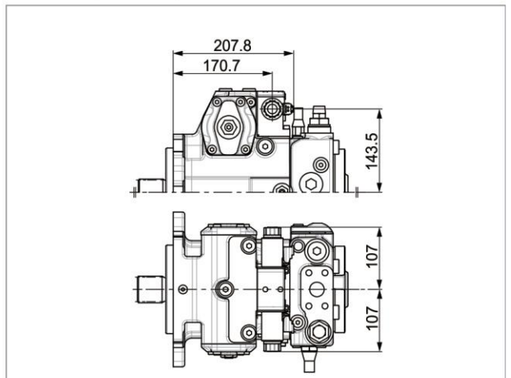

▼ HW - Proportional control, hydraulic, mechanical servo



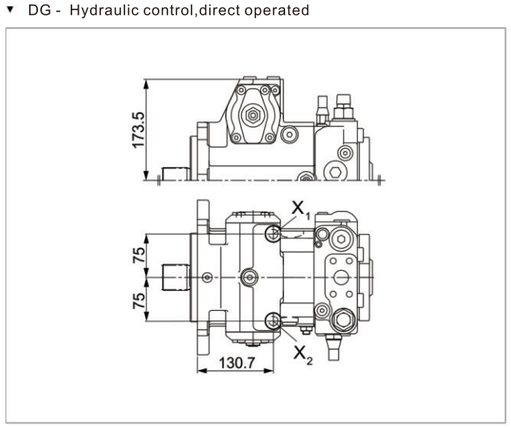

▼ EP - Proportional control, electric




▼ EZ - Two-point control,electric




▼ DG - Hydraulic control,direct operated

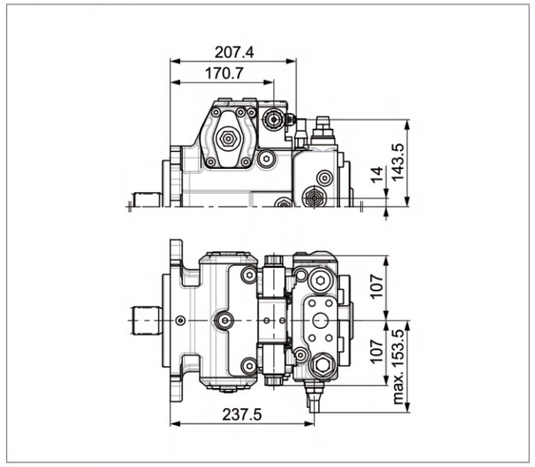




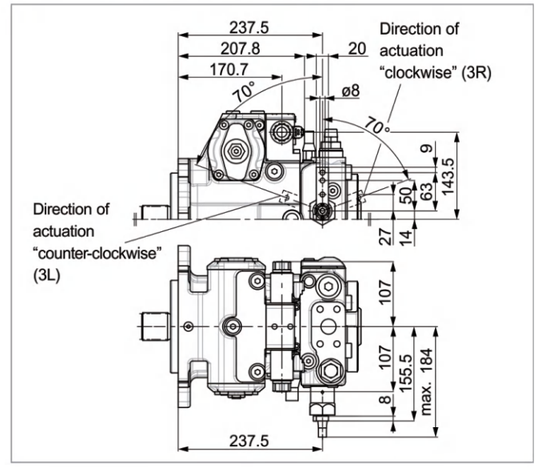



## DA control valve

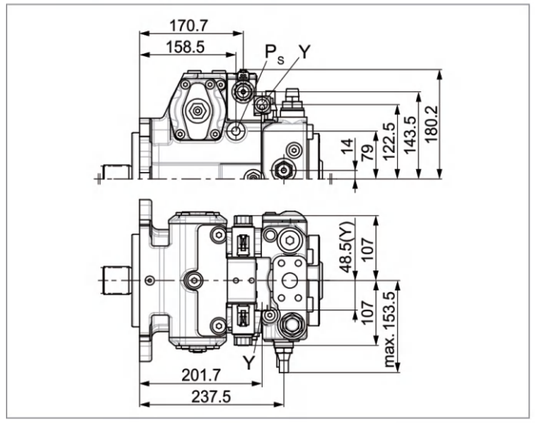
▼ DA..2 - Fixed-FiXed setting



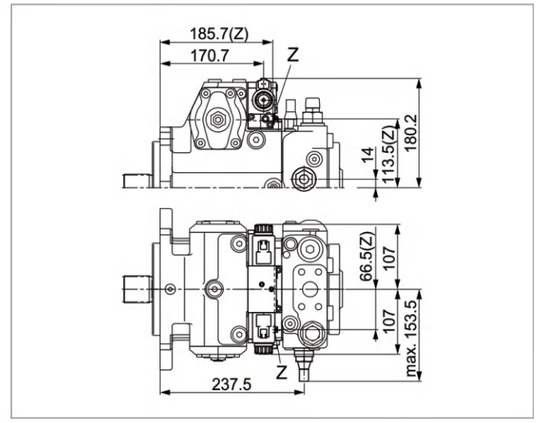

▼ DA..3 - Mechanically adjustable with position lever




▼ DA..7 —Fixed setting and ports for pilot control device



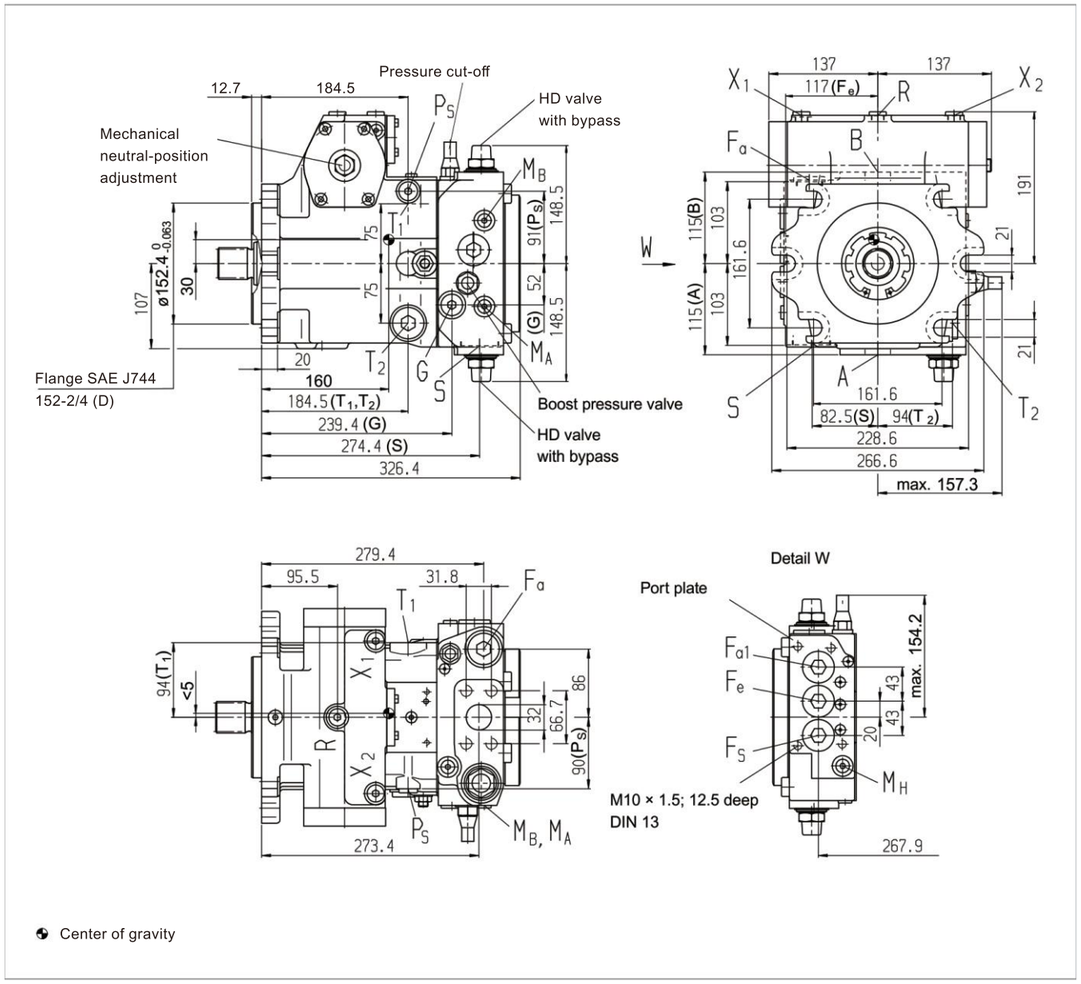

▼ DA..8 —Fixed setting and inch valve mounted



## Dimensions,size 125

NV - Version without control module

Standard:SAE working port A and B top and bottom, suction port S bottom (02)




Notice

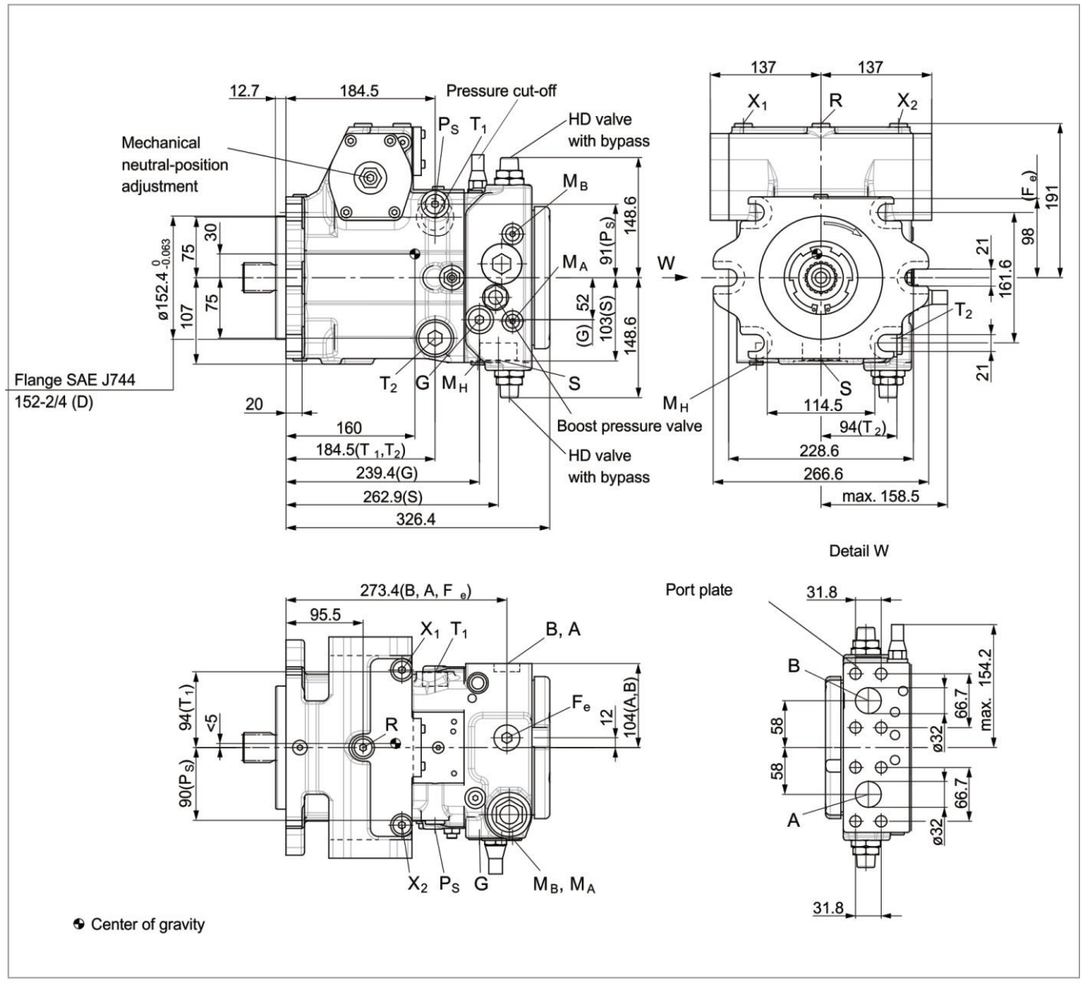
Option:SAE working port A and B top and bottom,
suction port S top (03). Port plate (02) rotated through
180° , installation drawing on request





NV - Version without control module

Standard: SAE working port A and B, same side left,suction port S bottom (10)

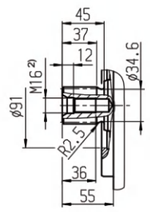



Notice

Option:SAE working port A and B ,same side right,
suction port S top (13),installation drawing on request

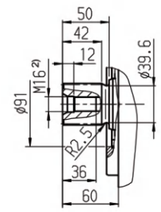
▼ Splined shaft DIN 5480

Z - W40×2×18×9 g



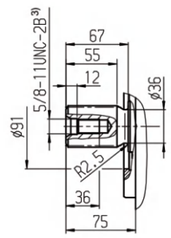

▼ Splined shaft DIN 5480

A - W45×2×21×9 g



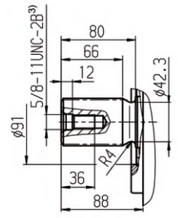

▼ Splined shaft ANSI B92.1a

S - 1 3/4 in 13T 8/16DP[1]




▼ Splined shaft ANSI B92.1a

T - 2 in 15T 8/16DP[1]




| Ports | | Standard | Size | $P_{max}$ [bar][4] | State[10] |
|---|---|---|---|---|---|
| A, B | Working port | SAEJ518[5] | 1 1/4 in | 450 | O |
| | Fastening thread | DIN13 | M14 × 2; 19 deep | | |
| S | Suction port | DIN 3852[8] | M48 × 2; 22 deep | 5 | O[6] |
| $T_1$ | Drain port | DIN 3852[8] | M33 × 2; 18 deep | 3 | O[7] |
| $T_2$ | Drain port | DIN 3852[8] | M33 × 2; 18 deep | 3 | X[7] |
| R | Air bleed port | DIN 3852[8] | M16 × 1.5; 12 deep | 3 | X |
| $X_1$,$X_2$ | Control pressune port (upstrean of orifice) | DIN 3852[8] | M16 × 1.5; 12 deep | 40 | X |
| $X_1$,$X_2$ | Control pressure port (upstream of orifice,DG only) | DIN 3852[8] | M16 × 1.5; 12 deep | 40 | O |
| $X_3$,$X_4$[9] | Stroking chamber pressure port | DIN 3852[8] | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852[8] | M22 × 1.5; 12 deep | 40 | X |
| $P_S$ | Pilot pressure port | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | X |
| $P_S$ | Pilot pressure port (DA..7 only) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852[8] | M18 × 1.5; 12 deep | 40 | O |
| $M_A$,$M_B$ | Measuring port pressure A, B | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port,high pressure | DIN 3852[8] | M12 × 1.5; 12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852[8] | M33 × 2; 18 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filer) | DIN 3852[8] | M33 × 2; 18 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN 3852[8] | M33 × 2; 18 deep | 40 | X |
| $F_e$ | Line from filter to suction port (cold start) | DIN 3852[8] | M33 × 2; 18 deep | 40 | X |
| $Y_1$,$Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852[8] | M14 × 1.5; 12 deep | 40 | O |
| Z | Pilot pressure port(inch signal DA..8 only) | DIN 3852[8] | M10 × 1; 8 deep | 40 | X |

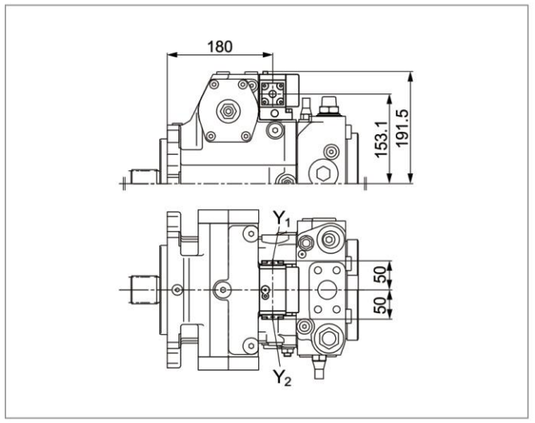
1) Involute spline according to ANSI B92.1a, 30°pressure angle, flat root,side fit,tolerance class 5
2) Center bore according to DIN 332 (thread according to DIN 13)
3) Thread according to ASME B1.1
4) Depending on the application, momentary pressure peaks can occur. Keep this in mind when selecting measuring device and fittings.
5) Only dimensions according to SAE J518, metric fastening thread is a deviation from the standard.
6) Piugged at external boost pressure supply.
7) Depending on installation position, $T_1$ or $T_2$ must be connected
8) The countersink can be deeper than as specified in the standard.
9) Optional
10) O = Must be connected (plugged when delivered)
X = Plugged (in normal operation)



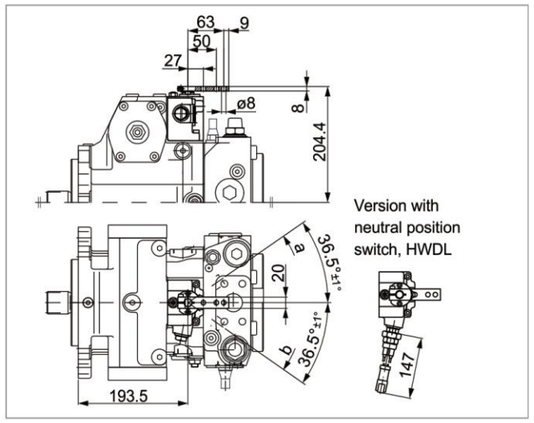
Axial piston variable pump I A4VG Series 32
Dimensions, size 125

PRANCE HYDRAULIC

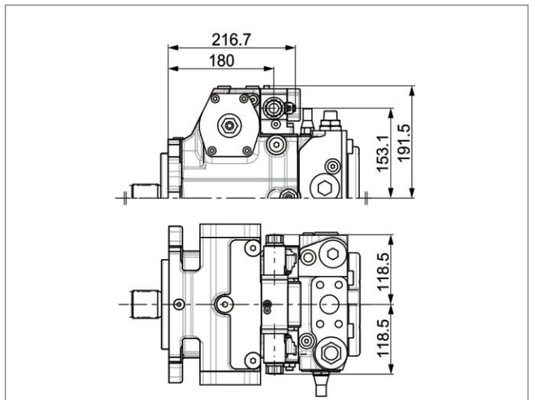
▼ HD - Proportional control, hydraulic,pilot-pressure related



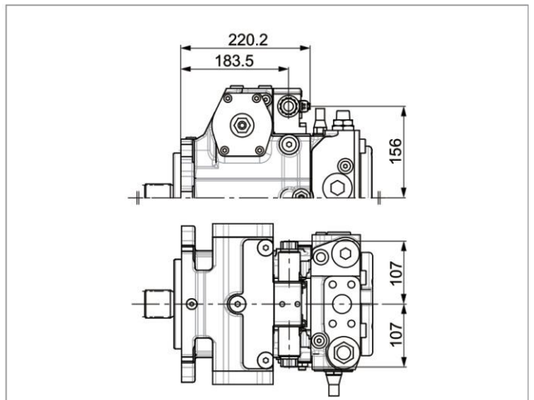

▼ HW - Proportional control, hydraulic, mechanical servo



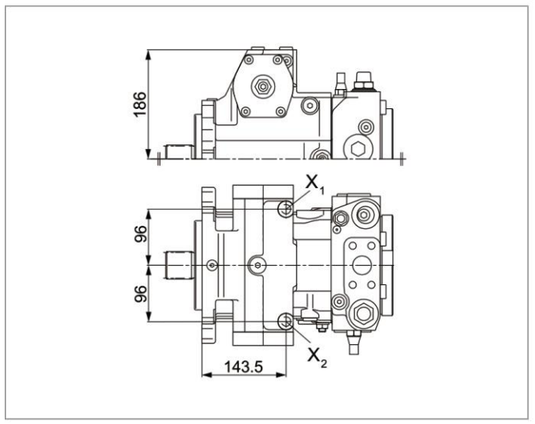

▼ EP – Pr oportional control, electric




▼ EZ – Two-point control,electric

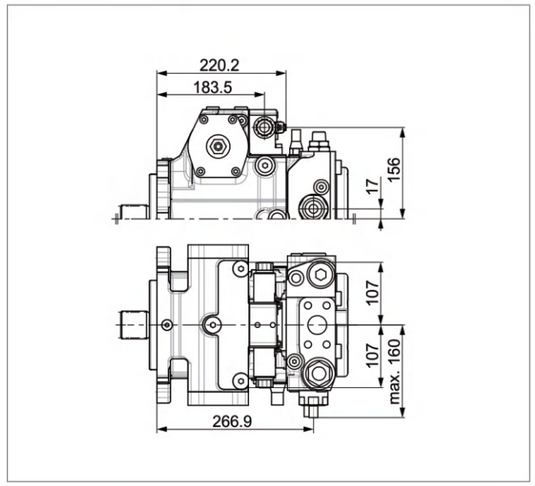



▼ DG – Hydr aulic control, direct operated

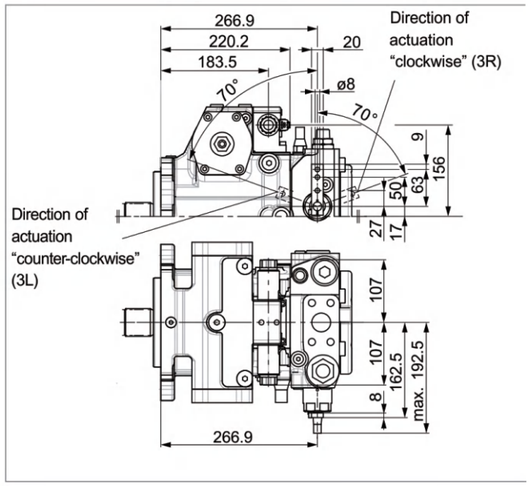


## DA control valve

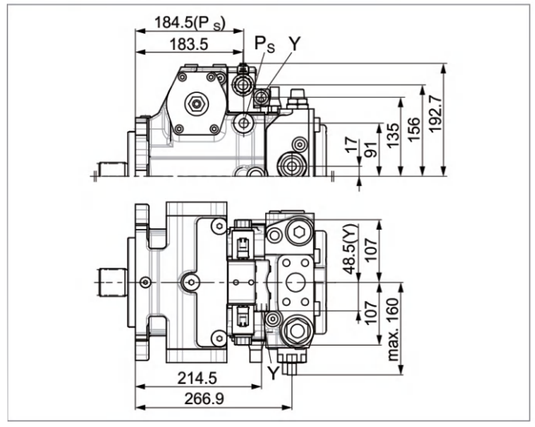
▼ DA..2 – Fixed setting



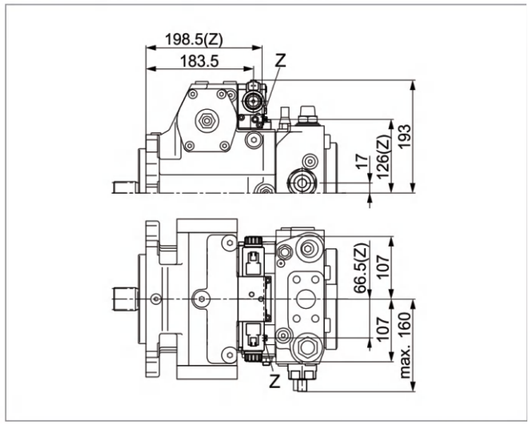

▼ DA ..3 – Mechanically adjustable with position lever




▼ DA..7 – Fixed setting and ports for pilot control device




▼ DA..8 – Fixed setting and inch valve mounted



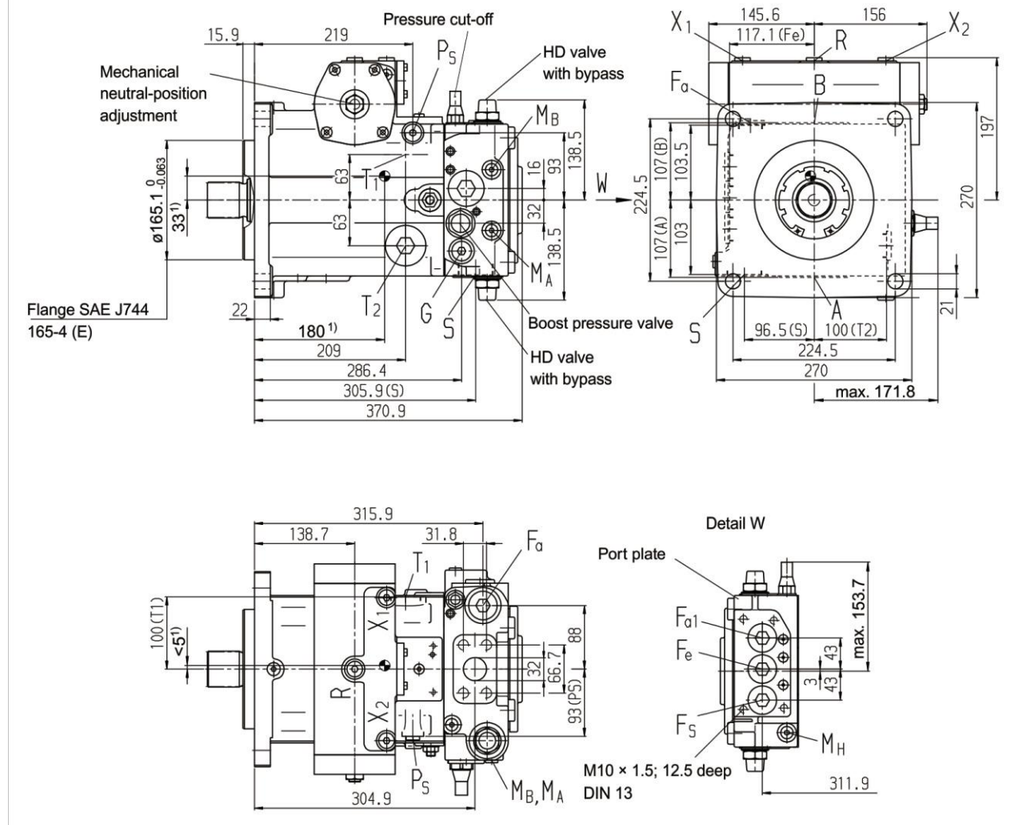





## Dimensions, size 180

NV-Version without control module

Standard: SAE working port **A** and **B** top and bottom, suction port **S** bottom(02)



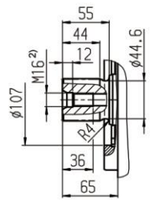

Center of gravity

Notice

Option : SAE working port A and B top and bottom,
suction port S top (03).Port plate (02) rotated through
180° , installation drawing on request

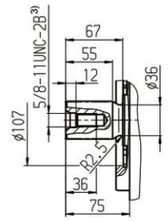
▼ Splined shaft DIN 5480

Z – W50×2×24×9 g



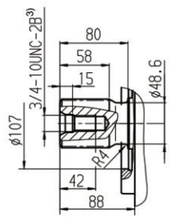

▼ Splined shaft ANSI B92.1a

S – 1 3/4 in 13T 8/16DP 1)




▼ Splined shaft ANSI B92.1a

T – 2 1/4 in 17T 8/16DP 1)




| Ports | | Standard | Size | $P_{max}$ [bar] 4) | State 10) |
|---|---|---|---|---|---|
| A, B | Working port | SAEJ518 5) | 1 1/4 in | 450 | O |
| | Fastening thread | DIN 13 | M14 × 2; 19 deep | | |
| S | Suction port | DIN 3852 8) | M48 × 2; 22 deep | 5 | O 6) |
| $T_1$ | Drain port | DIN 3852 8) | M42 × 2; 20 deep | 3 | O 7) |
| $T_2$ | Drain port | DIN 3852 8) | M42 × 2; 20 deep | 3 | X 7) |
| R | Air bleed port | DIN 3852 8) | M16 × 1.5; 12 deep | 3 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice) | DIN 3852 8) | M16 × 1.5; 12 deep | 40 | X |
| $X_1$, $X_2$ | Control pressure port (upstream of orifice, DG only) | DIN 3852 8) | M16 × 1.5; 12 deep | 40 | O |
| $X_3$, $X_4$ 9) | Stroking chamber pressure port | DIN 3852 8) | M12 × 1.5; 12 deep | 40 | X |
| G | Boost pressure port inlet | DIN 3852 8) | M22 × 1.5; 14 deep | 40 | X |
| $P_s$ | Pilot pressure port | DIN 3852 8) | M18 × 1.5; 12 deep | 40 | X |
| $P_s$ | Pilot pressure port (DA..7 only) | DIN 3852 8) | M18 × 1.5; 12 deep | 40 | O |
| Y | Pilot pressure port outlet (DA..7 only) | DIN 3852 8) | M18 × 1.5; 12 deep | 40 | O |
| $M_A$ , $M_B$ | Measuring port pressure A, B | DIN 3852 8) | M12 × 1.5; 12 deep | 450 | X |
| $M_H$ | Measuring port, high pressure | DIN 3852 8) | M12 × 1.5; 12 deep | 450 | X |
| $F_a$ | Boost pressure port inlet | DIN 3852 8) | M33 × 2; 18 deep | 40 | X |
| $F_{a1}$ | Boost pressure port inlet (attachment filter) | DIN 3852 8) | M33 × 2; 18 deep | 40 | X |
| $F_e$ | Boost pressure port outlet | DIN 3852 8) | M33 × 2; 18 deep | 40 | X |
| $F_s$ | Line from filter to suction port (cold start) | DIN 3852 8) | M33 × 2; 18 deep | 40 | X |
| $Y_1$, $Y_2$ | Pilot pressure port (pilot signal HD only) | DIN 3852 8) | M14 × 1.5; 12 deep | 40 | O |
| Z | Pilot pressure port (inch signal DA..8 only) | DIN 3852 8) | M10 × 1; 8 deep | 40 | X |

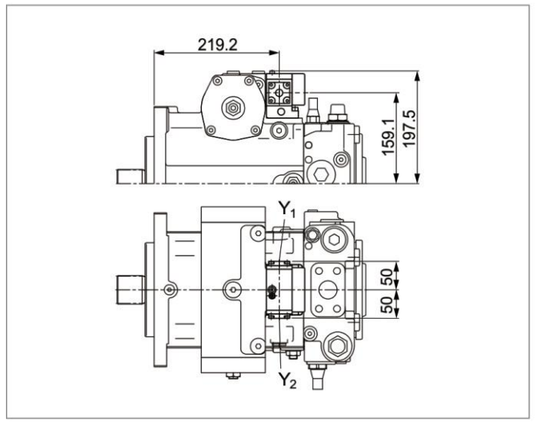
1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Center bore according to DIN 332 (thread according to DIN 13)
3) Thread according to ASME B1.1
4) Depending on the application,momentary pressure peaks can occur. Keep this in mind when selecting measuring devices and fittings.
5) Only dimensions according to SAE J518,metric fastenning thread is a deviation from the standard.
6) Plugged at external boost pressure supply.
7) Depending on installation position ,$T_1$ or $T_2$ must be connected The countersink can be deeper than as specified in the standard.
8) Optional
9) O = Must be connected (plugged when delivered)
10) X = plugged (in normal operation)



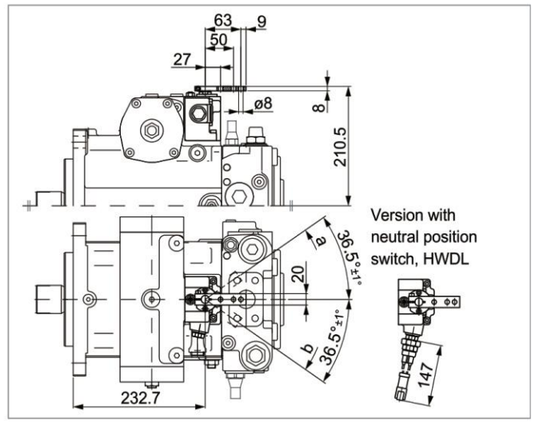
Axial piston variable pump I A4VG Series 32
Dimensions, size 180

PRANCE HYDRAULIC

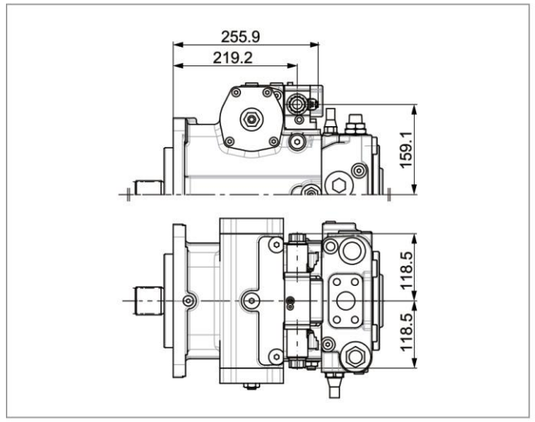
▼ HD – Proportional control, hydraulic, pilot-pressure related



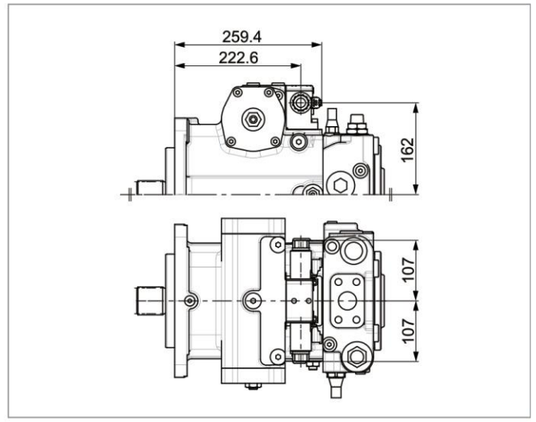

▼ HW – Proportional control, hydraulic, mechanical servo



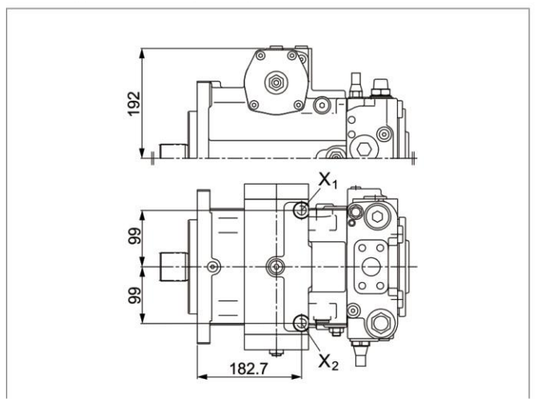

▼ EP – Proportional control, electric




▼ EZ – Two-point control, electric

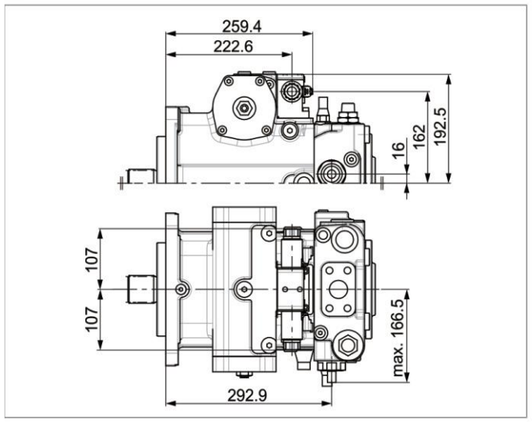



▼ DG – Hydraulic control, direct operated

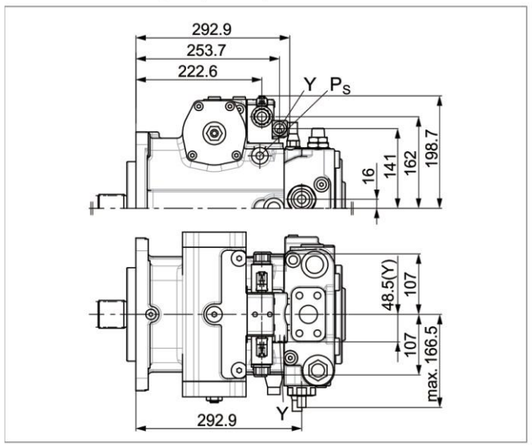


## DA control valve

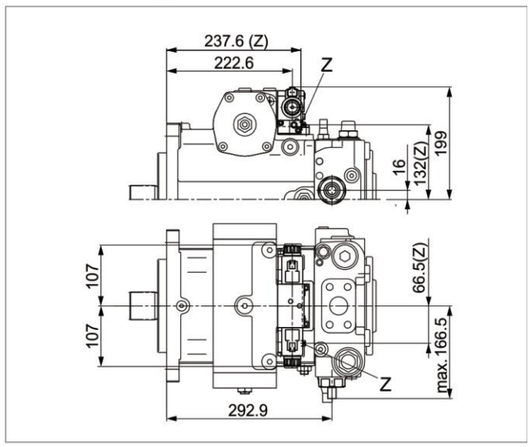
▼ DA..2 - Fixed setting




▼ DA..7 – Fixed setting and ports for pilot control device




▼ DA..8 – Fixed setting and inch valve mounted



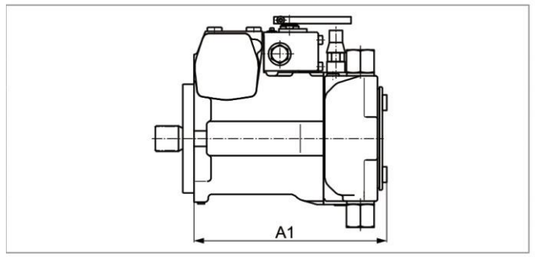





## Dimensions,through drive

| Flange SAE J744 | Hub for splined shaft [1] | 28 | 40 | 56 | 71 | 90 | 125 | 180 | Code |
|---|---|---|---|---|---|---|---|---|---|
| Without through drive | | • | • | • | • | • | • | • | 00 |
| 82-2 (A) | 5/8 in 9T 16/32DP | • | • | • | • | • | • | • | 01 |

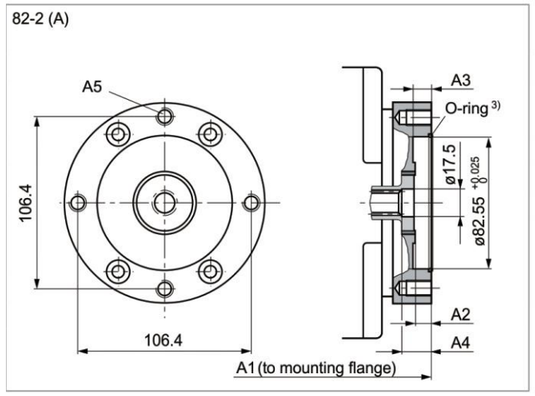
▼ N00 – without boost pump, without through drive / F00 – with boost pump,without through drive




| NG | A1 (N00) | A1 (N00) |
|---|---|---|
| 28 | 213.9 | 223.4 |
| 40 | 220.2 | 335.7 |
| 56 | 239.4 | 256.4 |
| 71 | 279.1 | 293.6 |
| 90 | 287 | 301 |
| 125 | 320.9 | 326.4 |
| 180 | 370.9 | 370.9 |

▼ F01/K01 [4]

82-2 (A)




| NG | A1 (F01) | A1 (K01) | A2 | A3 | A4 |
|---|---|---|---|---|---|
| 28 | 227.9 | 227.9 | 7.5 | 7.5 | 14.5 |
| 40 | 239.7 | 234.2 | 9 | 9 | 18 |
| 56 | 261.4 | 254.9 | 10 | 10 | 18 |
| 71 | 297.6 | 297.6 | 9 | 10 | 17 |
| 90 | 304 | 304 | 9 | 8 | – |
| 125 | 330.9 | 330.9 | 10.5 | 9 | – |
| 180 | 378.4 | 378.4 | 7.5 | 7.5[3] | 15.5 |

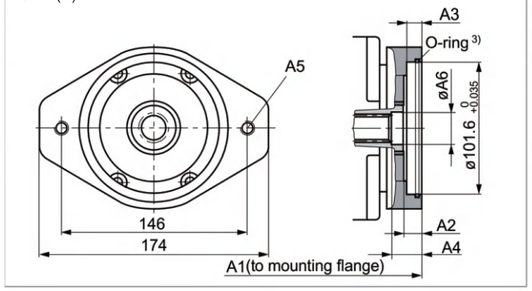
| NG | A5[2] |
|---|---|
| 28 to 125 | M10 × 1.5; 15 deep |
| 180 | M10 x 1.5; 16.5 deep |

1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Thread according to DIN 13
3) O-ring included in the scope of delivery
4) The illustration shows the 2-hole version. Piease state in piain text whether the 2-hole horizontal or the 2-hole vertical version is used.

| Flange SAE J744 | Hub for splined shaft[1] | 28 | 40 | 56 | 71 | 90 | 125 | 180 | Code |
|---|---|---|---|---|---|---|---|---|---|
| 101-2 (B) | 7/8 in 13T 16/32DP | ● | ● | ● | ● | ● | ● | ● | 02 |
| | 1 in 15T 16/32DP | ● | ● | ● | ● | ● | ● | ● | 04 |
| 127-2 (C) | 1 in 15T 16/32DP | - | ● | - | - | - | - | - | 09 |

▼ F02/K02; F04/K04[4]

101-2 (B)

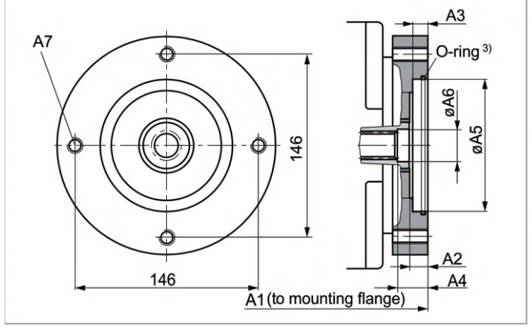



| NG | A1 | A2 | A3 | A4 (02) | A4 (04) | A52) |
|---|---|---|---|---|---|---|
| 28 | 230.4 | 9.7 | 9.7 | 16.2 | 13.7 | M12×1.75; 19 deep |
| 40 | 240.7 | 11 | 11[5] | 17 | 16 | M12×1.75; 19 deep |
| 56 | 262.4 | 12 | 11 | 19.5 | 18.5 | M12×1.75;19 deep |

| | ΦA6 |
|---|---|
| F02 / K02 | 24 |
| F04 / K04 | 27 |

▼ F02/K02; F04/K04[4]

101-2 (B)



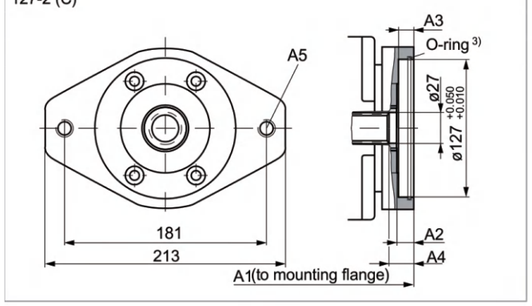

| NG | A1 | A2 | A3 | A4 (02) | A4 (04) | ΦA5 | (K) | (F) |
|---|---|---|---|---|---|---|---|---|
| 71 | 300.6 | 13 | 9.8 | 17 | 15.5 | 101.6 | +0.035 0 | +0.035 0 |
| 90 | 305 | 9 | 11 | 17 | 15 | 101.6 | +0.035 0 | +0.022 0 |
| 125 | 330.9 | 10 | 11 | 17 | 16.5 | 101.6 | +0.025 0 | +0.025 0 |
| 180 | 381.4 | 11 | 11 | 19 | 18 | 101.6 | +0.035 0 | +0.035 0 |

| NG | A7[2] |
|---|---|
| 71,90,180 | M12 × 1.75; 21 deep |
| 125 | M12 × 1.75; 18 deep |

| | ΦA6 |
|---|---|
| F02 / K02 | 24 |
| F04 / K04 | 27 |

▼ F09/K09

127-2 (C)




| NG | A1 | A2 | A3 | A4 |
|---|---|---|---|---|
| 40 | 244.7 | 14 | 14 | 19.5 |

| NG | A5[2] |
|---|---|
| 40 | M16 × 2; 20 deep |

1) Involute spline according to ANSI B92.1a,30° pressure angle, flat root,side fit, tolerance class 5
2) Thread according to DIN 13
3) O-ring included in the scope of delivery
4) The illustration shows the 2-hole version. Please state in plain text whether the 2-hole horizontal or the 2-hole vertical version is used.
5) For F04/K04 9.7 mm

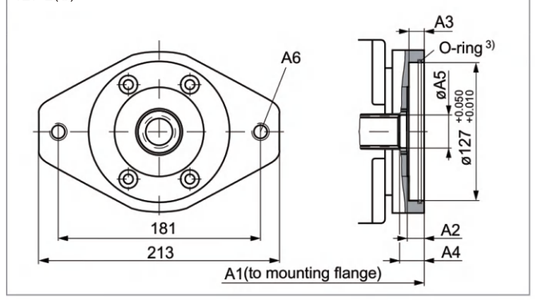




| Flange SAE J744 | Hub for splined shaft | 28 | 40 | 56 | 71 | 90 | 125 | 180 | Code |
|---|---|---|---|---|---|---|---|---|---|
| 127-2 (C) | 1 1/4 in 14T 12/24DP [1] | - | - | ● | ● | ● | ● | ● | 07 |
| 152-2/4(D) | W35 2×16 ×9 g (according to DIN 5480) | - | - | - | - | ● | - | - | 73 |
| | 1 3/4 in 13T 8/16DP [1] | - | - | - | - | - | ● | ● | 69 |

▼ F07/K07[4]

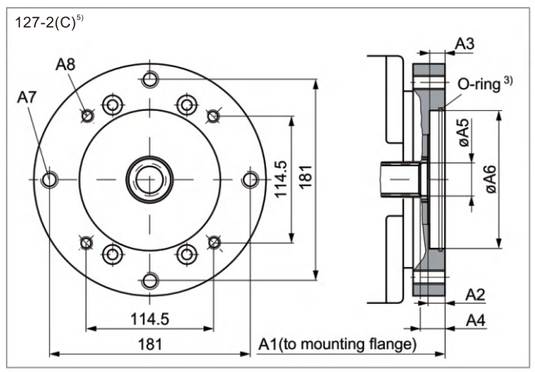
127-2(C)[5]




| NG | A1 | A2 | A3 | A4 | ΦA5 | A6 [2] |
|---|---|---|---|---|---|---|
| 56 | 266.4 | 15 | 14 | 17.5 | 32.7 | M16 × 2; 20 deep |
| 71 | 303.6 | 15 | 13.5 | 20 | 33.5 | M16 × 2; 24 deep |

▼ F07/K07[4]

127-2(C)[5]

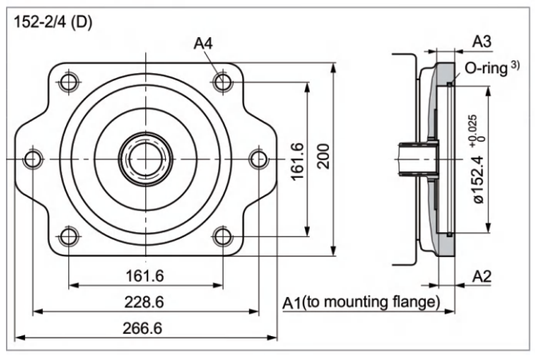



| NG | A1 | A2 | A3 | A4 | ΦA5 | ΦA6 |
|---|---|---|---|---|---|---|
| 90 | 309 | 13 | 14 | 20.5 | 33.5 | 127 +0.025 0 |
| 125 | 335.9 | 15 | 15.5 | 22.5 | 33.5 | 127 +0.025 0 |
| 180[7] | 384.4 | 14 | 19 | 17 | 33.5 | 127 +0.050 +0.010 |

| NG | A7 [2] | A8 [2] |
|---|---|---|
| 90, 125, 180[7] | M16 × 2; 23 deep | M12× 1.75;18 deep |

▼ F73/K73; F69/K69[6]

152-2/4 (D)

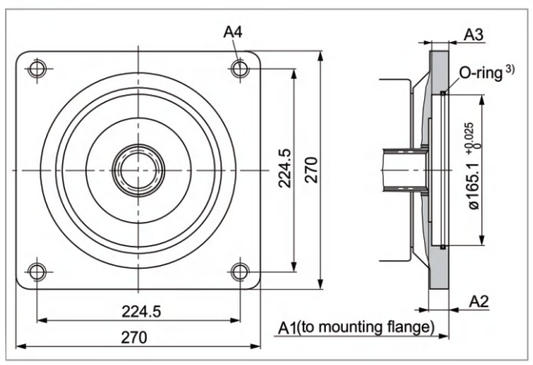



| NG | A1 | A2 | A3 | A4 [2] |
|---|---|---|---|---|
| 90 | 309 | 12 | 14 | M20 × 2.5;20 deep |
| 125 | 343.9 | 18 | 14 | M20 × 2.5;20 deep |
| 180 | 391.9 | 20.9 | 18 | M20 × 2.5;20 deep |

1) Involute spline according to ANSI B92.1a, 30° pressure angle, flat root, side fit, tolerance class 5
2) Thread according to DIN 13
3) O-ring included in the scope of delivery
4) The illustration shows the 4- and the 2-hole version .please state in plain text whether the 4-hole, the 2-hole horizontal or the 2-hole vertical version is used.
5) NG90 to 180 with additional 4-hole-flange (127-4)
6) The illustration shows the 4+2-hole version. Please state in piain text whether the 2-hole, the 4-hole or the 4+2-hole vertical version is used.
7) Size 180 only with SAE 2-hole flange

| Flange SAE J744 | Hub for splined shaft [1] | 28 | 40 | 56 | 71 | 90 | 125 | 180 | Code |
|---|---|---|---|---|---|---|---|---|---|
| 165-4 (E) | 1 3/4 in 13T 8/26DP | – | – | – | – | – | – | • | 72 |

▼ F72/K72




| NG | A1 | A2 | A3 | A4 [2] |
|---|---|---|---|---|
| 180 | 391.4 | 20.9 | 18 | M20 × 2.5;20 deep |

1) Involute spline according to ANSI B92.1, 30° pressure angle, flat root, side fit, tolerance class 5
2) Thread according to DIN 13
3) O-ring included in the scope of delivery

## Overview of mounting options

| Through drive [1] | | | Mounting option – 2. pump | | | | | |
|---|---|---|---|---|---|---|---|---|
| Flange | Hub for splined shaft | Code | A4VG/32 NG(shaft) | A10V(S)O/3X NG (shaft | A10V(S)O/5X NG (shaft | A11VO/1 NG (shaft) | A10VG NG (shaft) | External gear pump [2] |
| 82-2 (A) | 5/8 in | F/K01 | – | 18 (U) | 10, 18 (U) | – | – | AZPF NG4 to 22 |
| 101-2 (B) | 7/8 in | F/K02 | – | 28 (S) 45 (U) | 28 (S) 45 (U) | – | 18 (S) | AZPN NG20 to 36 AZPG NG32 to 50 |
| | 1 in | F/K04 | 28 (S) | 45 (S) | 45 (S) 60, 63, 72 (U) | 40 (S) | 28 (S) 45 (S) | – |
| 127-2 (C) [3] | 1 in | F/K09 | 40 (U) | 71 (U) | 60, 63, 71 (U) | – | – | – |
| | 1 1/4 in | F/K07 | 40, 56, 71 (S) | 71 (S) 100 (U) | 60, 63, 71 (S) 85, 100 (U) | 60 (S) | 63 (S) | – |
| 152-2/4 (D) | W35 | F/K73 | 90 (Z) | – | – | – | – | – |
| | 1 3/4 in | F/K69 | 90, 125 (S) | 140 (S) | – | 95, 130, 145 (S) | – | – |
| 165-4 (E) | 1 3/4 in | F/K72 | 180 (S) | – | – | 190 (S) | – | – |

1) Availability of the individual sizes
2) recommends special versions of the gear pumps Please contact us.
3) A10VO/5X with 4-hole flange attachable only to A4VG NG90 to 180