



2.2.3

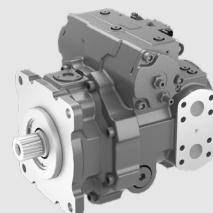
V40G SERIES

Swash-plate Type Axial Piston Variable Displacement Pump

V40G series axial piston pump is a ultrahigh pressure closed circuit pump, which can meet the application requirements of customers for harsh working conditions such as high pressure, high rotational speed and frequent impact.

Suitable for a ultrahigh-pressure closed circuit

| | | | | |
|-----------------------|-----|-----|-----|-----|
| Size : | 145 | 175 | 215 | 280 |
| Rated pressure (bar): | 450 | 450 | 450 | 450 |
| Max. pressure (bar): | 500 | 500 | 500 | 500 |



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| ·V40G 215type | 21-25 |
| ·V40G 280 type | 26-30 |

Features

- Variable axial piston pump of swashplate design for hydrostatic drives in closed circuit.
- Flow direction changes smoothly when the swashplate is moved through the neutral position.
- Two pressure relief valves are installed on the high-pressure side to prevent overload.
- The built-in charge pump acts as charge pump and control pump.
- The maximum charge pressure is limited by the built-in low pressure relief valve.
- New rotary components and bearings, make the transmission efficiency improved, and the input speed increased.
- The V40G pump adopts an integrated design at the rear of the housing to reduce leaking points.
- Optimized shell design to reduce vibration and noise.
- Electric proportional displacement control meets the application requirements of multiple industries.
- Various oil outlet connection methods help to optimize pipeline connection.
- V40G pump can be optionally equipped with a flush valve, which can be directly installed on the pump body.

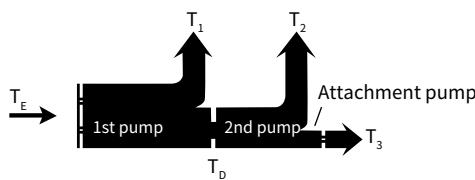
Technical data

| | | | | | |
|--|--|-----------------------------------|-------|-------|-------|
| Size | | 145 | 175 | 215 | 280 |
| Displacement (cc/rev) | | 145.3 | 175.4 | 215.7 | 280 |
| Speed | Rated (rpm) | 2850 | 2650 | 2500 | 2400 |
| | Max. (rpm) | 3000 | 2800 | 2650 | 2550 |
| | Min. (rpm) | 500 | 500 | 500 | 500 |
| Pressure | Rated (bar) | 450 | 450 | 450 | 450 |
| | Max. (bar) | 500 | 500 | 500 | 500 |
| | Minimum low loop pressure (bar) (Above charge pump) | 10 | 10 | 10 | 10 |
| Charge pump displacement (cc/rev) | | 32 | 26/39 | 47 | 60 |
| Charge pressure (relative to Charge pump) | Max. (bar) | 40 | 40 | 40 | 40 |
| Casting pressure | Rated (bar) | 2 | 2 | 2 | 2 |
| | Max. (bar)(Short-time peak pressure) | 5.0 | 5.0 | 5.0 | 5.0 |
| Suction pressure (Absolute pressure) | Rated (bar) | | | | |
| | Oil viscosity $\leq 30 \text{ mm}^2/\text{s}$ | 0.8 | 0.8 | 0.5 | 0.8 |
| | Max. (bar) | 6 | 6 | 5 | 5 |
| Oil viscosity (mm^2/s) | | 10~1000, Best range: 16~36 | | | |
| Oil temperature (°C) | | -20~95 | | | |
| Oil cleanliness | | ISO 4406 Class 20/18/15 or higher | | | |
| Weight (w/o auxiliary flange) (Kg) | | 110 | 115 | 146 | 179.4 |

Technical data

| Permissible input and through-drive torques | | | | | |
|---|-----------------------|-------------|------|------|------|
| Size | | 145 | 175 | 215 | 280 |
| Torque at $V_{g\max}$ and $\Delta p = 430$ bar Nm | T | 992 | 1197 | 1471 | 1916 |
| Maximum input torque at drive shaft (Nm) | | | | | |
| ANSI B92.1b | 1 3/4 in 13T 8/16 DP | $T_{E\max}$ | 1640 | 1640 | |
| | 1 3/4 in 27T 16/32 DP | $T_{E\max}$ | 1830 | | |
| | 2 in 15T 8/16DP | $T_{E\max}$ | 2670 | | 2670 |
| | 2 1/4 in 17T 8/16 DP | $T_{E\max}$ | 4070 | 4070 | 4070 |
| | W50×2×24×9g | $T_{E\max}$ | 3140 | 3140 | |
| | W55×2×26×9gw | $T_{E\max}$ | | | 4350 |
| Maximum through-drive torque (Nm) | $T_{D\max}$ | 1760 | 1760 | 2641 | 2641 |

• Torque distribution



| | | |
|----------------------|----------|-------------------------|
| V40G | 1st pump | T_1 |
| | 2nd pump | T_2 |
| Attachment pump | | T_3 |
| Input torque | | $T_E = T_1 + T_2 + T_3$ |
| | | $T_E < T_{E\max}$ |
| Through-drive torque | | $T_D = T_2 + T_3$ |
| | | $T_D < T_{D\max}$ |

Type introduction

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|------|------|------|------|------|---|------|
| V40 | G | 280 | E1 | A | D | / | R | N | E3 | 1 | FD | D4 | 8 | D | - | |
| (1) | (2) | (3) | (4) | (5) | (6) | | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | | (15) |

Product series

| | | |
|-----|--|-----|
| (1) | Variable piston pump of swashplate in closed circuit | V40 |
|-----|--|-----|

Nominal pressure

| | | |
|-----|--------------------------|---|
| (2) | nominal pressure 450 bar | G |
|-----|--------------------------|---|

Size

| | | | | | |
|-----|------|-----|-----|-----|-----|
| (3) | Size | 145 | 175 | 215 | 280 |
|-----|------|-----|-----|-----|-----|

02

Control mode

| (4) | | 145 | 175 | 215 | 280 | Code |
|-----|---|---|---|---|---|--------------------------------------|
| | | Proportional control (electric U = 12 V DC) | Proportional control (electric U = 24 V DC) | Proportional control (electric U = 12 V DC), explosion proof electromagnetic coil | Proportional control (electric U = 24 V DC), explosion proof electromagnetic coil | Hydraulic pilot proportional control |
| | Proportional control (electric U = 12 V DC) | ● | ● | ● | ● | E1 |
| | Proportional control (electric U = 24 V DC) | ● | ● | ● | ● | E2 |
| | Proportional control (electric U = 12 V DC), explosion proof electromagnetic coil | ● | ● | ○ | ● | E5 |
| | Proportional control (electric U = 24 V DC), explosion proof electromagnetic coil | ● | ● | ○ | ● | E6 |
| | Hydraulic pilot proportional control | ● | ● | ● | ● | H2 |

DA control valve

| (5) | | 145 | 175 | 215 | 280 | Code |
|-----|---------------------------------|---------------------------------|-------------------------|-----|-----|-------|
| | | Without swivel DA control valve | Swivel DA control valve | | | |
| | Without swivel DA control valve | ● | ● | ● | ● | Blank |
| | Swivel DA control valve | | | | ● | A |

Pressure cut-off

| | | |
|-----|--------------------------|-------|
| (6) | Without pressure cut-off | Blank |
| | Pressure cut-off | D |

Rotation

| | | |
|-----|-------------------------------|---|
| (7) | Right hand (clockwise) | R |
| | Left hand (counter-clockwise) | L |

Type introduction

Sealing material

| | | 145 | 175 | 215 | 280 | Code |
|---|-------------------------------------|-----|-----|-----|-----|------|
| ⑧ | NBR (nitrile rubber) | ● | ● | ● | ● | N |
| | Shaft seal in FKM (fluoroelastomer) | ○ | ● | ○ | ○ | |
| | Cryogenic seal | ○ | ● | ○ | ○ | W |

Mounting flangew and drive shaft

| | Mounting flange | Drive shaft | 145 | 175 | 215 | 280 | Code |
|---|--------------------|-----------------------------------|-----|-----|-----|-----|------|
| ⑨ | SAE D J744-152-2/4 | ANSI B92.1b 1 3/4 in 13T 8/16 DP | ● | ● | | | D1 |
| | | ANSI B92.1b 1 3/4 in 27T 16/32 DP | ● | | | | D2 |
| | | ANSI B92.1b 2 in 15T 8/16 DP | ● | | | | D3 |
| | | ANSI B92.1b 2 1/4 in 17T 8/16 DP | ● | ● | | | D7 |
| | | DIN 5480 W50×2×24×9g | ● | ● | | | D6 |
| ⑩ | SAE E J744-165-4 | ANSI B92.1b 1 3/4 in 13T 8/16 DP | ● | ● | | | E1 |
| | | ANSI B92.1b 1 3/4 in 27T 16/32 DP | ● | | | | E2 |
| | | ANSI B92.1b 2 in 15T 8/16DP | ● | | ● | ● | E3 |
| | | ANSI B92.1b 2 1/4 in 17T 8/16 DP | ● | ● | ● | ● | E4 |
| | | DIN 5480 W50×2×24×9g | ● | ● | | | E5 |
| | | DIN 5480 W55×2×26×9g | | | ● | ● | E6 |

Working port

| ⑩ | Working port | 145 | 175 | 215 | 280 | Code |
|---|-----------------------------------|-----|-----|-----|-----|------|
| | Same-side SAE flange port A and B | ● | ● | ● | ● | 1 |

Boost pump and rotary group configuration

| ⑪ | Standard rotary group, without boost pump | K | | | | | |
|---|--|-----------------------------------|-----|-----|-----|-----|------|
| | | Charge pump displacement (cc/rev) | 145 | 175 | 215 | 280 | Code |
| ⑪ | Standard rotary group, boost pump integrated | 26 | | ● | | | F7 |
| | | 32 | ● | | | | FA |
| | | 39 | | ● | | | FB |
| | | 47 | | | ● | | FC |
| | | 60 | | | | ● | FD |

Type introduction

Through drive

| Through drive | | 145 | 175 | 215 | 280 | Code |
|-----------------------|-----------------------------------|-----|-----|-----|-----|-------|
| Without through drive | | ● | ● | ● | ● | Blank |
| Flange | Splined shaft | | | | | |
| ⑫ SAE A J744-82-2 | ANSI B92.1b 5/8 in 9T 16/32 DP | ● | ● | ● | ● | A1 |
| | ANSI B92.1b 3/4 in 11T 16/32 DP | ● | ● | | | A2 |
| ⑬ SAE B J744-101-2 | ANSI B92.1b 7/8 in 13T 16/32DP | ● | ● | ● | ● | B1 |
| | ANSI B92.1b 1 in 15T 16/32 DP | ● | ● | ● | ● | B3 |
| ⑭ SAE C J744-127-2/4 | ANSI B92.1b 1 1/4 in 14T 12/24 DP | ● | ● | ● | ● | CC |
| | ANSI B92.1b 1 3/4 in 13T 8/16 DP | ● | ● | ● | ● | CD |
| | ANSI B92.1b 1 1/4 in 17T 12/24 DP | | | ● | | CG |
| ⑮ SAE D J744-152-2/4 | ANSI B92.1b 1 3/4 in 13T 8/16 DP | ● | ● | ● | ● | D1 |
| | DIN 5480 N40×2×18×9g | | | ● | ● | D4 |
| ⑯ SAE E J744-165-4 | ANSI B92.1b 1 3/4 in 13T 8/16 DP | ● | ● | ● | ● | E1 |
| | ANSI B92.1b 2 in 15T 8/16DP | | | ● | ● | E3 |

02

Relief valve

| Relief valve | | Setting range Δp | 145 | 175 | 215 | 280 | Code |
|---|--|------------------------------|-----|-----|-----|-----|------|
| ⑰ Direct-acting high-pressure relief valve, fixed setting | | 120~470bar, without a bypass | ● | ● | ● | ● | 8 |

Filtration boost circuit/external boost pressure supply

| | | | | | | |
|--|--|-----|-----|-----|-----|-------|
| Filtration boost circuit/external boost pressure supply | | 145 | 175 | 215 | 280 | Code |
| External boost pressure supply (version without integrated boost pump) | | | | | | Blank |
| Filtration in the boost pump suction line | | ● | ● | ● | ● | S |
| ⑯ Filtration in the boost pump pressure line (ports with external filter circuit) | | ● | ● | ● | ● | D |
| | | | | ○ | ○ | F |
| Filtration in the boost pump pressure line (with filter) | | | | ○ | ○ | B |
| Filtration in the boost pump pressure line (with filter, cold start valve, contamination indicator) | | | | ○ | ○ | |

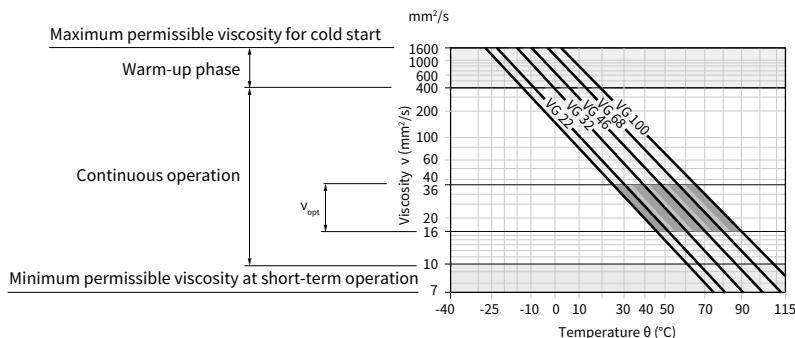
Standard / special version

| | | | | | | |
|----------------------------|--|--------------------------|-----|-----|-----|-------|
| Standard / Special version | | 145 | 175 | 215 | 280 | Code |
| Standard version | | ● | ● | ● | ● | Blank |
| ⑰ Special version | High-speed slewing body | ○ | ● | | | S |
| | With flush valve (Opening pressure 16bar, differential pressure $\Delta P=25$ bar) | Flushing flow (L/min) | 145 | 175 | 215 | 280 |
| | | 20 | | | ● | 4 |

Remark: ● = Available; ○ = On request

Hydraulic fluid

• Selection diagram



Notes on selection of hydraulic fluid:

The hydraulic fluid should be selected such that the operating viscosity in the operating temperature range is within the optimum range (ν_{opt} see selection diagram).

Notice:

At no point of the component may the temperature be higher than 115 ° C. The temperature difference specified in the table is to be taken into account when determining the viscosity in the bearing. Please contact us if the above conditions cannot be met due to extreme operating parameters.

Hydraulic fluid

• Viscosity and temperature of hydraulic fluids

| | Viscosity (mm ² /s) | Shaft seal | Temperature | Comment |
|----------------------|---|------------|--------------------------------|---|
| Cold start | $V_{max} \leq 7400$ (1600) | NBR | $\theta_{St} \geq -40^\circ C$ | $t \leq 3\text{min}$, without load($p \leq 725\text{psi}(50\text{bar})$, $n \leq 1000\text{rpm}$) Permissible temperature difference between axial piston unit and hydraulic fluid in the system maximum $45^\circ F$ ($25 K$). |
| | | FKM | $\theta_{St} \geq -25^\circ C$ | |
| Warm-up phase | $v = 7400 \dots 1850$ (1600 ... 400) | | | $t \leq 15\text{min}$, $p \leq 0.7 \times p_{nom}$ and $n \leq 0.5 \times n_{nom}$ |
| Continuous operation | $v = 1850 \dots 60$ (400 ... 10) | NBR | $\theta \leq +85^\circ C$ | measured at port T |
| | | FKM | $\theta \leq +110^\circ C$ | |
| | $V_{opt} = 170 \dots 82$ (36 ... 16) | | | Range of optimum operating viscosity and efficiency |
| Short-term operation | $v_{min} = 60 \dots 49$ (10 ... 7) | NBR | $\theta \leq +85^\circ C$ | $t \leq 3\text{min}$, $p \leq 0.3 \times p_{nom}$, measured at port T |
| | | FKM | $\theta \leq +110^\circ C$ | |

• Filtration of the hydraulic fluid

Finer filtration improves the cleanliness level of the hydraulic fluid, which increases the service life of the axial piston unit.

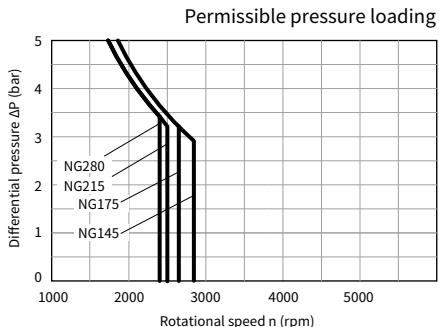
A cleanliness level of at least 20/18/15 is to be maintained according to ISO 4406.

At a hydraulic fluid viscosity of less than 10 mm²/s (e.g. due to high temperatures during short-term operation) at the drain port, a cleanliness level of at least 19/17/14 according to ISO 4406 is required.

Shaft seal

Notice

- Working pressure range valid when using hydraulic fluids based on mineral oils. Please contact us for values for other hydraulic fluids.
- In addition to the hydraulic fluid and the temperature, the service life of the shaft seal is influenced by the rotational speed of the axial piston unit and the case pressure.
- The service life of the shaft seal decreases with increasing frequency of pressure peaks and increasing mean differential pressure.
- The case pressure must be greater than the ambient pressure.



E - Electrical displacement control

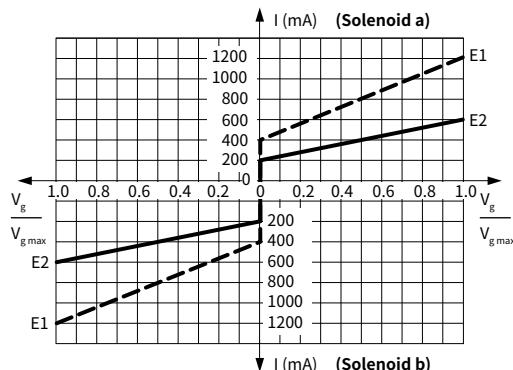
• Electrical displacement control principle

The output flow of the pump is infinitely variable between 0 and 100%, proportional to the electrical current supplied to solenoid a or b.

The electrical energy is converted into a force acting on the control spool.

This control spool then directs control oil into and out of the stroking cylinder to adjust pump displacement as required.

A feedback lever connected to the stroking piston maintains the pump flow for any given current within the control range.



Standard:

Proportional solenoid without manual emergency operation.

Supply as required:

Proportional solenoid with manual emergency operation and spring return.

02

Technical data, solenoid

| Control | E1 | E2 |
|--------------------------------------|--|---------------------|
| Voltage | 12 V ($\pm 20\%$) | 24 V ($\pm 20\%$) |
| Control current | Start of control at $V_g=0$ End of control at $V_g=V_{g,max}$ | 400 mA 1200 mA |
| Current limit | 1540 mA | 840 mA |
| Nominal resistance (at 68 °F (20°C)) | 5.5 Ω | 21.7 Ω |
| Dither frequency | 100Hz / 120Hz (120Hz only for the V40G175 closed pumps) | |
| Duty cycle | 100% | |
| Type of protection | See connector version | |

Note:

The spring-return device in the control module is not a safety device

The control module may be stuck in an uncertain position by internal impurities (hydraulic oil impurities, system component wear or sediment). As a result, the controller can no longer respond correctly to the instruction from the operator.

Check whether additional safety measures are required on your machine to move the drive actuator to a controlled safe position (emergency stop). When necessary, please ensure that these operations are implemented correctly.

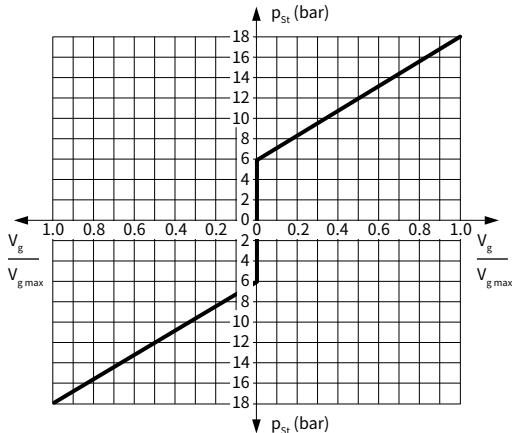
H2 - Proportional control, hydraulic, pilot-pressure related

• Hydraulic proportional control principle

The output flow of the pump is infinitely variable between 0 and 100%, proportional to the difference in pilot pressure applied to the two pilot pressure ports (Y_1 and Y_2). The pilot signal, coming from an external source, is a pressure signal. Flow is negligible, as the pilot signal acts only on the control spool of the control valve.

This control spool then directs control oil into and out of the stroking cylinder to adjust pump displacement as required.

A feedback lever connected to the stroking piston maintains the pump flow for any given pilot signal within the control range.



Displacement at $V_g = p_{St}$

Displacement at $V_g \text{ max} = p_{St} = 18 \text{ bar}$

Pilot signal $p_{St} = 6$ to 18 bar (at port Y_1, Y_2)

Initial control value at 6 bar pressure

Control termination value when the pressure is 18 bar

(The maximum displacement $V_g \text{ max}$)

Note:

In the neutral position, the HD control module must be unloaded to reservoir via the external pilot control device.

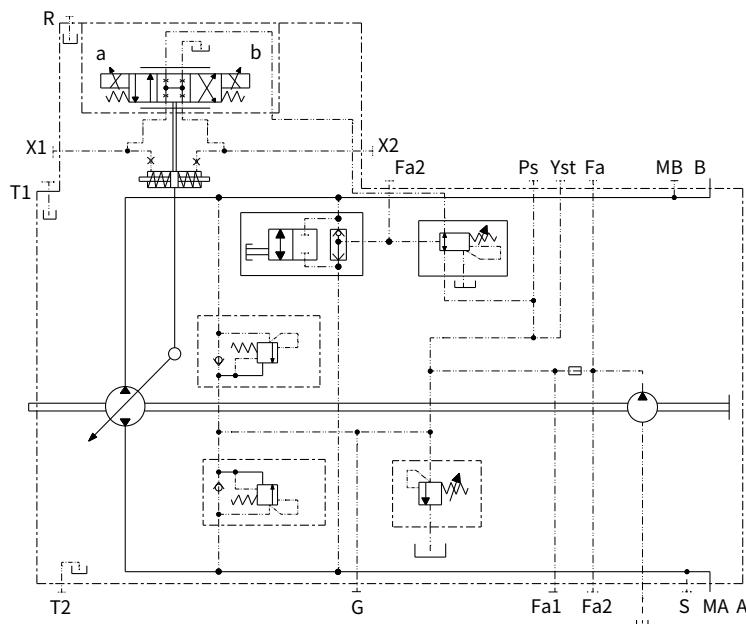
Note:

The spring-return device in the control module is not a safety device

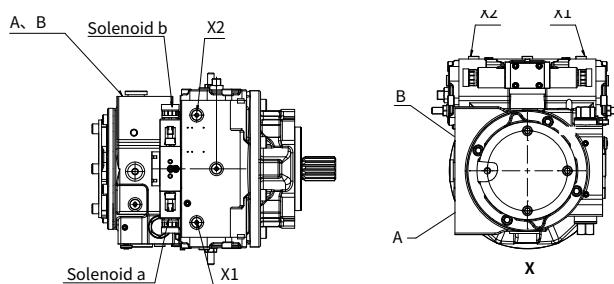
The control module may be stuck in an uncertain position by internal impurities (hydraulic oil impurities, system component wear or sediment). As a result, the controller can no longer respond correctly to the instruction from the operator.

Check whether additional safety measures are required on your machine to move the drive actuator to a controlled safe position (emergency stop). When necessary, please ensure that these operations are implemented correctly.

V40G 145 Control principle

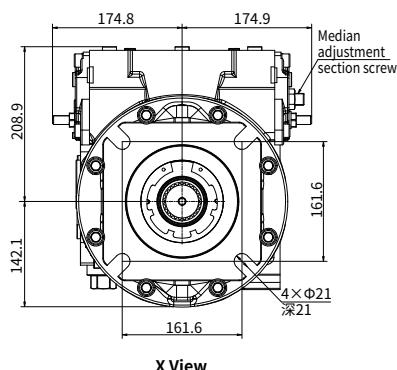
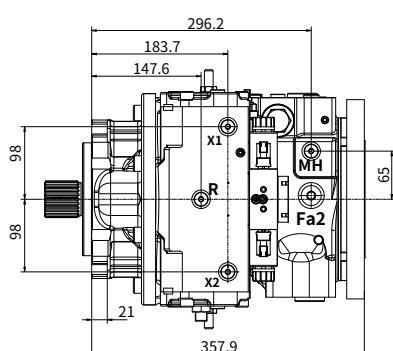


| Direction of rotation | Clockwise | | Counter-clockwise | |
|------------------------------------|-----------|--------|-------------------|--------|
| Actuation of proportional solenoid | a | b | a | b |
| Control pressure | X1 | X2 | X1 | X2 |
| Flow direction | B to A | A to B | A to B | B to A |
| Working pressure | MA | MB | MB | MA |

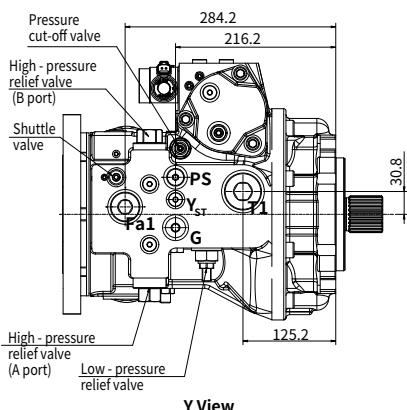
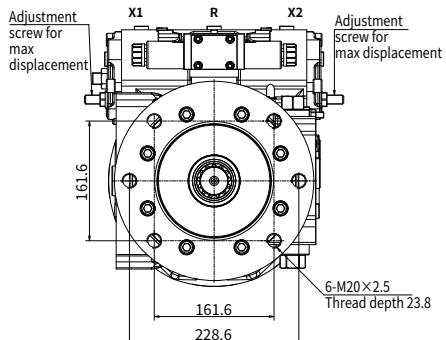
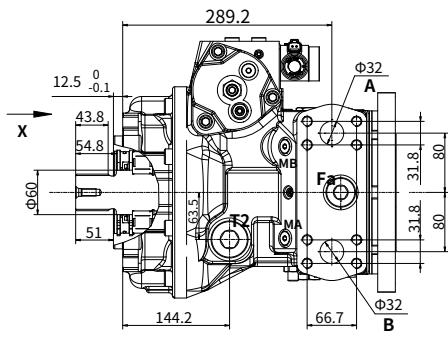


Installation size

V40G 145 Installation size



X View



Y View

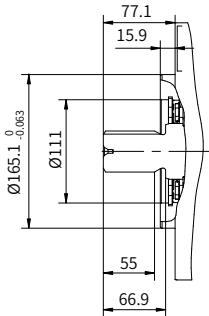
Installation size

•V40G 145 Port details

| Port | Port Name | Standard | Oil Port Specification (thread depth) | Maximum pressure (bar) |
|-----------------|---|------------|--|------------------------|
| A, B | Working port | SAE J518 | 1 1/4in | 500 |
| | Fastening thread A/B | DIN 13 | M14×2 (depth 19) | - |
| S | Suction port | ISO 9974-1 | M48×2 (depth 22) | 5 |
| T1, T2 | Drain port | ISO 9974-1 | M42×2 (depth 19.5) | 3 |
| R | Air bleed port | ISO 9974-1 | M14×1.5 (depth 11.5) | 3 |
| X1, X2 | Control pressure port | ISO 9974-1 | M14×1.5 (depth 11.5) | 40 |
| G | Boost pressure port | ISO 9974-1 | M22×1.5 (depth 15.5) | 40 |
| P _s | Pilot pressure port inlet | ISO 9974-1 | M18×1.5 (depth 14.5) | 40 |
| Y _{ST} | Pilot pressure port outlet | ISO 9974-1 | M14×1.5 (depth 11.5) | 40 |
| MA, MB | Measuring port pressure A, B | ISO 9974-1 | M14×1.5 (depth 11.5) | 500 |
| MH | Measuring port, high pressure | ISO 9974-1 | M14×1.5 (depth 11.5) | 500 |
| Fa | Boost pressure port (Can be connected to an external filter) | ISO 9974-1 | M33×2 (depth 17.2) | 40 |
| Fa1 | Boost pressure port (Can be connected to an external filter) | ISO 9974-1 | M33×2 (depth 21) | 40 |
| Fa2 | Boost pressure port | ISO 9974-1 | M22×1.5 (depth 18.5) | 40 |

Installation size

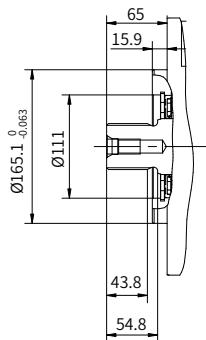
• V40G145 Shaft extension type



"E1" type spline shaft

ANSI B92.1b

1 3/4 in 13T-8/16 DP



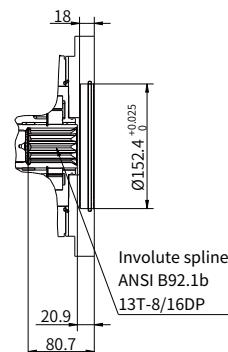
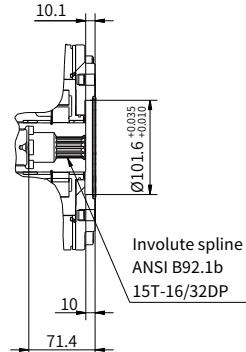
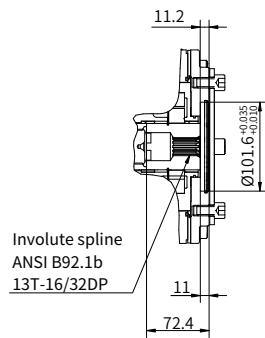
"E5" type spline shaft

DIN 5480

W50×2×24×9g

Installation size

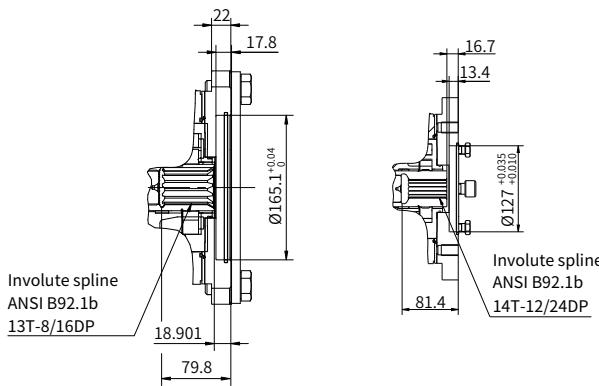
• V40G145 Through shaft drive



“B1” type through drive

“B3” type through drive

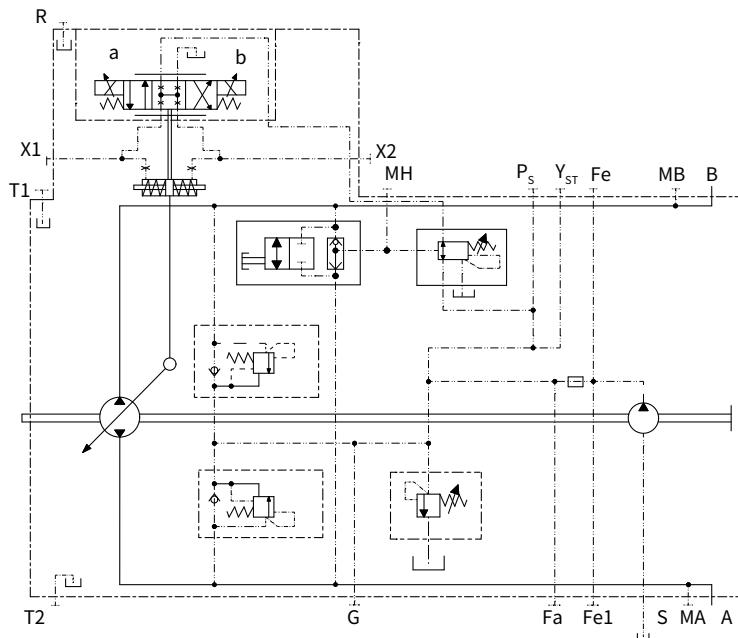
“D1” type through drive



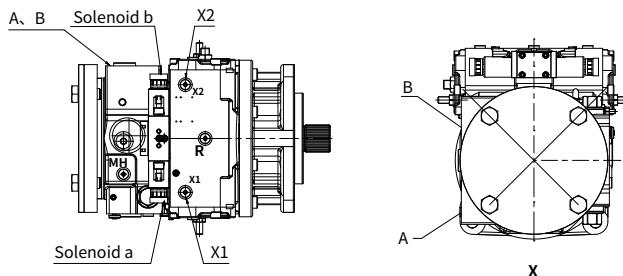
“E1” type through drive

“CC” type through drive

V40G 175 Control principle

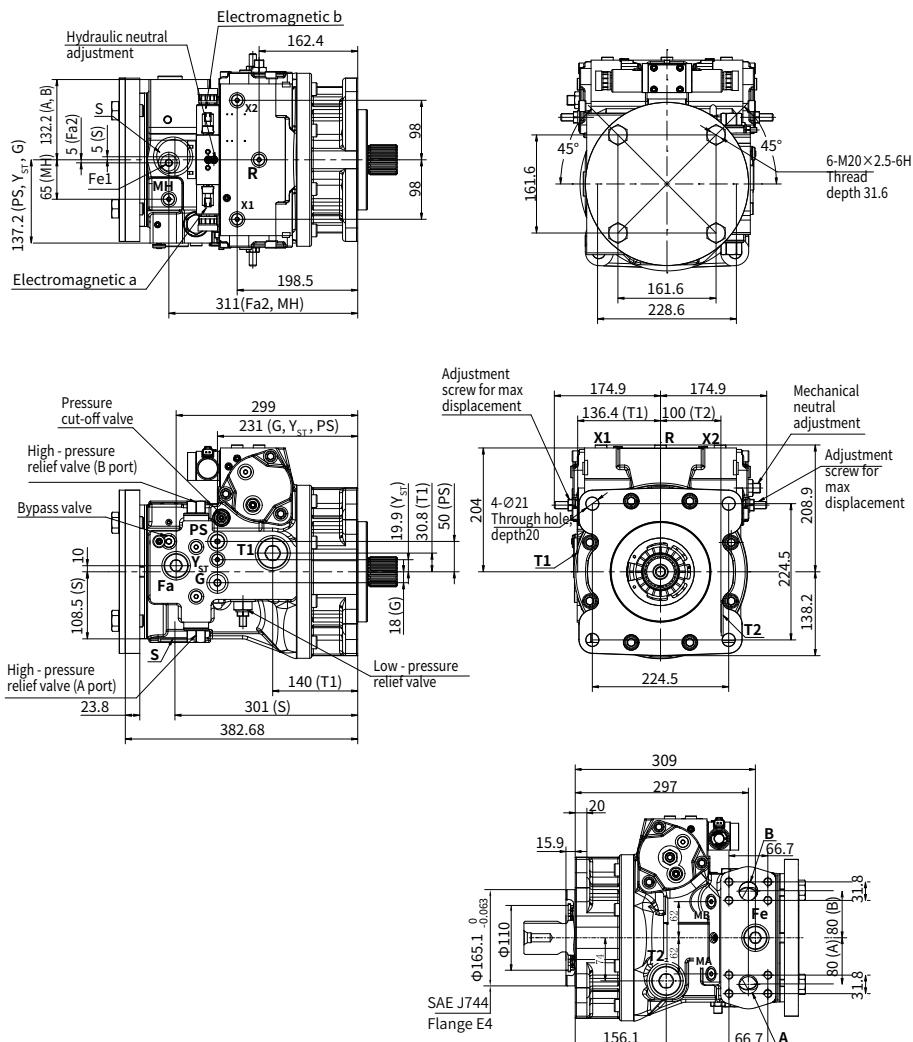


| Direction of rotation | Clockwise | | Counter-clockwise | |
|------------------------------------|-----------|--------|-------------------|--------|
| Actuation of proportional solenoid | a | b | a | b |
| Control pressure | X1 | X2 | X1 | X2 |
| Flow direction | B to A | A to B | A to B | B to A |
| Working pressure | MA | MB | MB | MA |



Installation size

V40G 175 Installation size



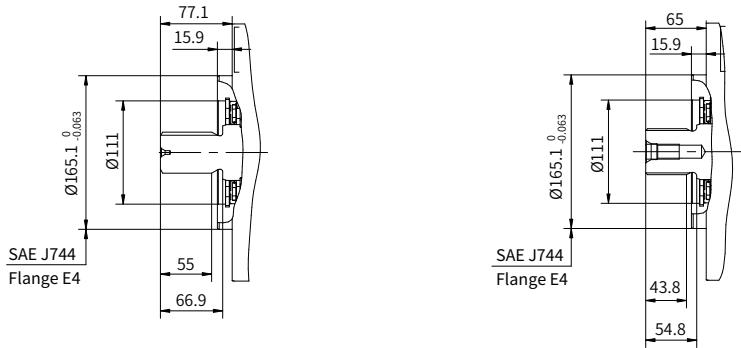
Installation size

·V40G 175 Port details

| Port | Port Name | Standard | Oil Port Specification (thread depth) | Maximum pressure (bar) |
|-----------------|---|------------|---------------------------------------|------------------------|
| A, B | Working port | SAE J518 | 1 1/4in | 500 |
| | Fastening thread A/B | DIN 13 | M14×2 (depth 19) | - |
| S | Suction port | ISO 9974-1 | M48×2 (depth 22) | 5 |
| T1, T2 | Drain port | ISO 9974-1 | M42×2 (depth 19.5) | 3 |
| R | Air bleed port | ISO 9974-1 | M14×1.5 (depth 11.5) | 3 |
| X1, X2 | Control pressure port | ISO 9974-1 | M14×1.5 (depth 11.5) | 40 |
| G | Boost pressure port | ISO 9974-1 | M22×1.5 (depth 15.5) | 40 |
| P _S | Pilot pressure port inlet | ISO 9974-1 | M18×1.5 (depth 14.5) | 40 |
| Y _{ST} | Pilot pressure port outlet | ISO 9974-1 | M14×1.5 (depth 11.5) | 40 |
| MA, MB | Measuring port pressure A, B | ISO 9974-1 | M14×1.5 (depth 11.5) | 500 |
| MH | Measuring port, high pressure | ISO 9974-1 | M14×1.5 (depth 11.5) | 500 |
| Fa | Boost pressure port (Can be connected to an external filter) | ISO 9974-1 | M33×2 (depth 17.2) | 40 |
| Fe | Boost pressure port (Can be connected to an external filter) | ISO 9974-1 | M33×2 (depth 21) | 40 |
| Fe1 | Boost pressure port | ISO 9974-1 | M22×1.5 (depth 18.5) | 40 |

Installation size

· V40G175 Shaft extension type



"E1" type spline shaft

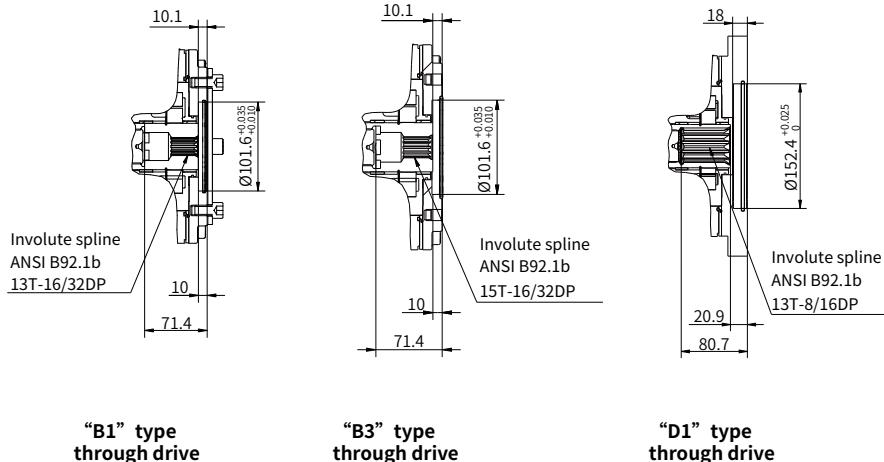
ANSI B92.1b
1 3/4 in 13T-8/16 DP

"E5" type spline shaft

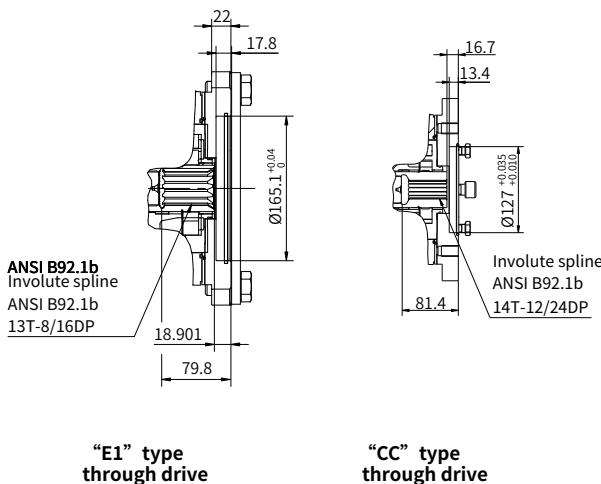
DIN 5480
W50×2×24×9g

Installation size

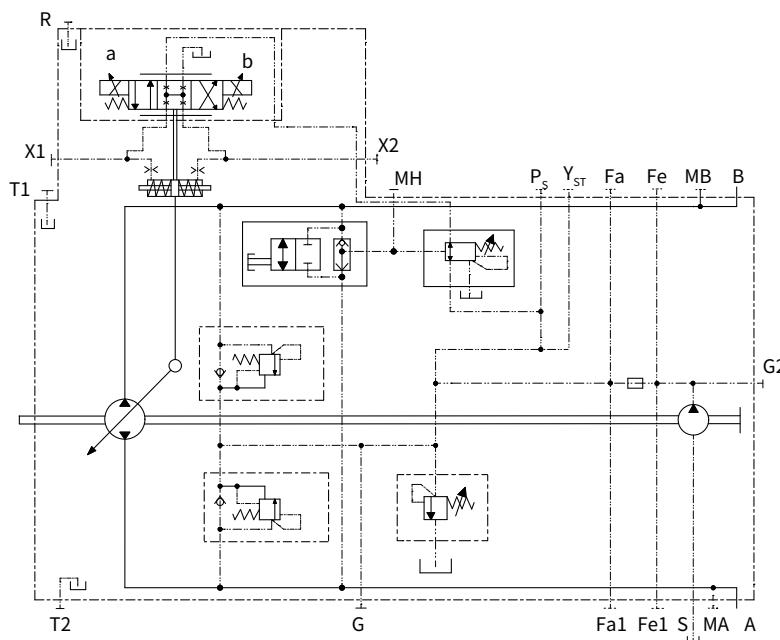
· V40G175 Through shaft drive



02

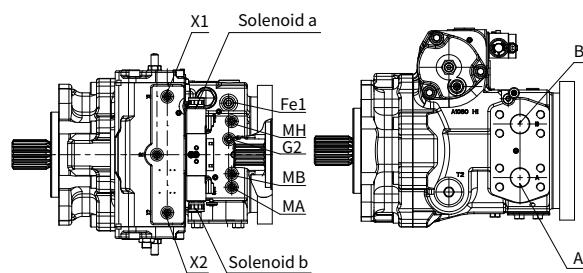


V40G 215 Control principle



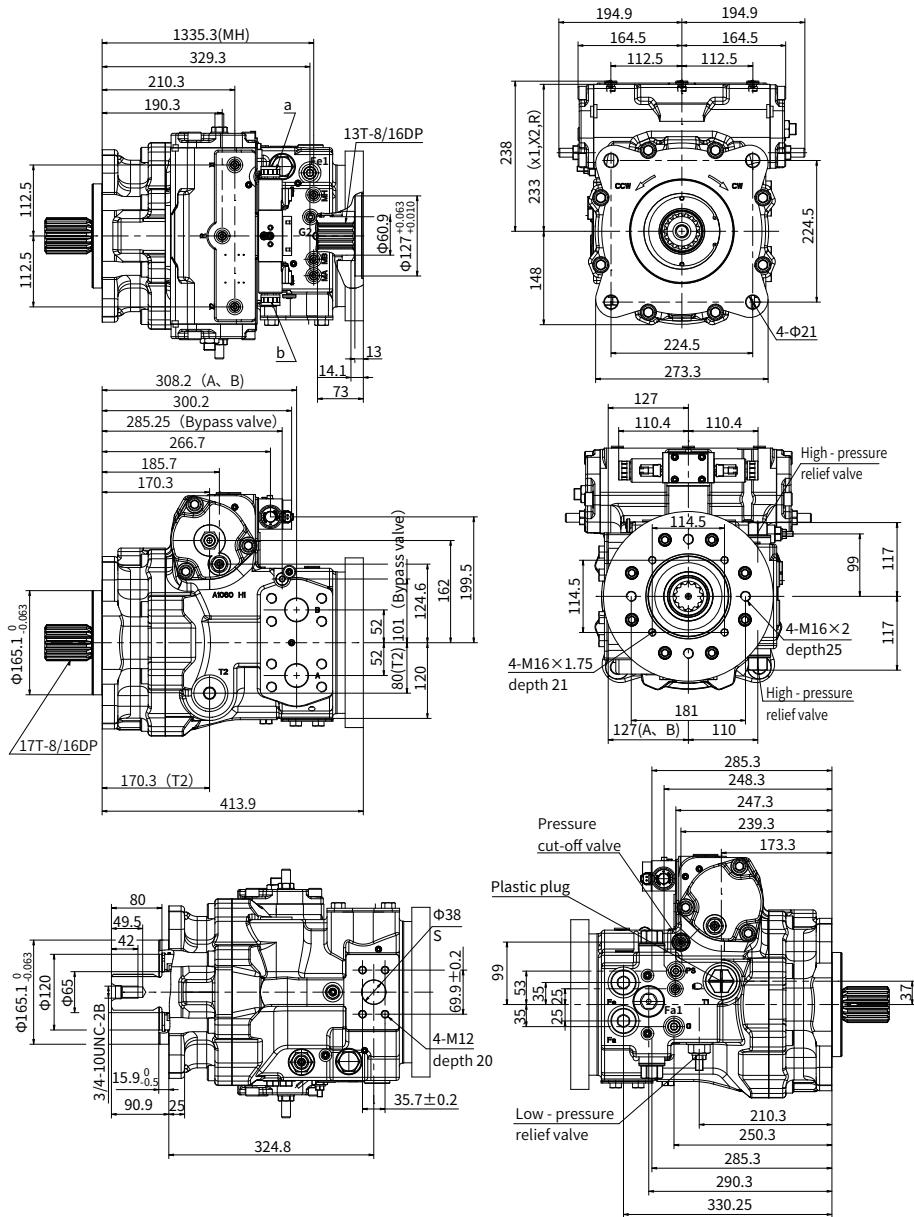
02

| Direction of rotation | Clockwise | | Counter-clockwise | |
|------------------------------------|-----------|--------|-------------------|--------|
| Actuation of proportional solenoid | a | b | a | b |
| Control pressure | X1 | X2 | X1 | X2 |
| Flow direction | B to A | A to B | A to B | B to A |
| Working pressure | MA | MB | MB | MA |



Installation size

V40G 215 Installation size

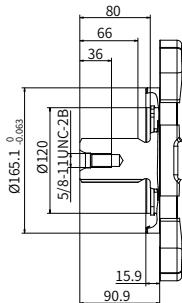


•V40G 215 Port details

| Port | Port Name | Standard | Oil Port Specification (thread depth) | Maximum pressure (bar) |
|-----------------|---|----------|--|------------------------|
| A, B | Working port | SAE J518 | 1 1/2" | 500 |
| | Fastening thread A/B | DIN 13 | M16×2 (depth 21) | - |
| S | Suction port | SAE J518 | 1 1/2" | 5 |
| | Fastening thread | DIN 13 | M12×1.75 (depth 20) | - |
| T1, T2 | Drain port | ISO 6149 | M42×2 (depth 19.5) | 3 |
| R | Air bleed port | ISO 6149 | M14×1.5 (depth 11.5) | 3 |
| X1, X2 | Control pressure port | ISO 6149 | M14×1.5 (depth 11.5) | 40 |
| G | Boost pressure port | ISO 6149 | M22×1.5 (depth 15.5) | 40 |
| G2 | Boost pressure port | ISO 6149 | M14×1.5 (depth 12) | 40 |
| P _s | Pilot pressure port inlet | ISO 6149 | M18×1.5 (depth 14.5) | 40 |
| Y _{ST} | Pilot pressure port outlet | ISO 6149 | M14×1.5 (depth 11.5) | 40 |
| MA, MB | Measuring port pressure A, B | ISO 6149 | M14×1.5 (depth 11.5) | 500 |
| MH | Measuring port, high pressure | ISO 6149 | M14×1.5 (depth 11.5) | 500 |
| Fa | Boost pressure port(Can be connected to an external filter) | ISO 6149 | M33×2 (depth 19) | 40 |
| Fa1 | Boost pressure port (DA valve reserved port) | ISO 6149 | M42×2 (depth 18) | 40 |
| Fe | Boost pressure port(Can be connected to an external filter) | ISO 6149 | M33×2 (depth 19) | 40 |
| Fe1 | Boost pressure port | ISO 6149 | M22×1.5 (depth 19.5) | 40 |

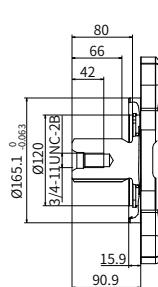
Installation size

• V40G215 Shaft extension type



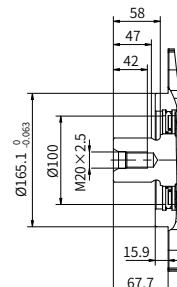
“E3” type spline shaft

ANSI B92.1b
2 in 15T-8/16 DP



“E4” type spline shaft

ANSI B92.1b
2 1/4 in 17T-8/16 DP

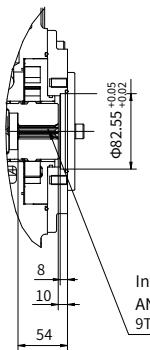


“E6” type spline shaft

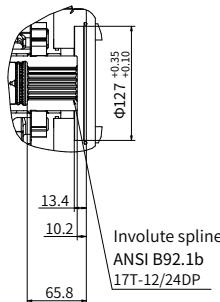
DIN 5480
W55×2×26×9g

Installation size

•V40G215 Through shaft drive

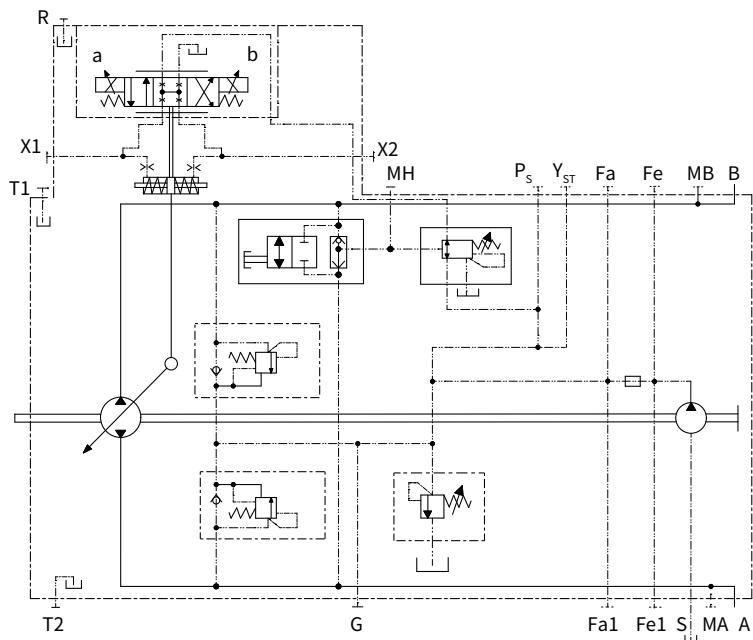


"A1" type
through drive

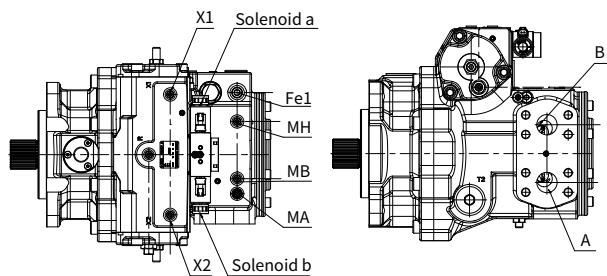


"CG" type
through drive

V40G 280 Control principle

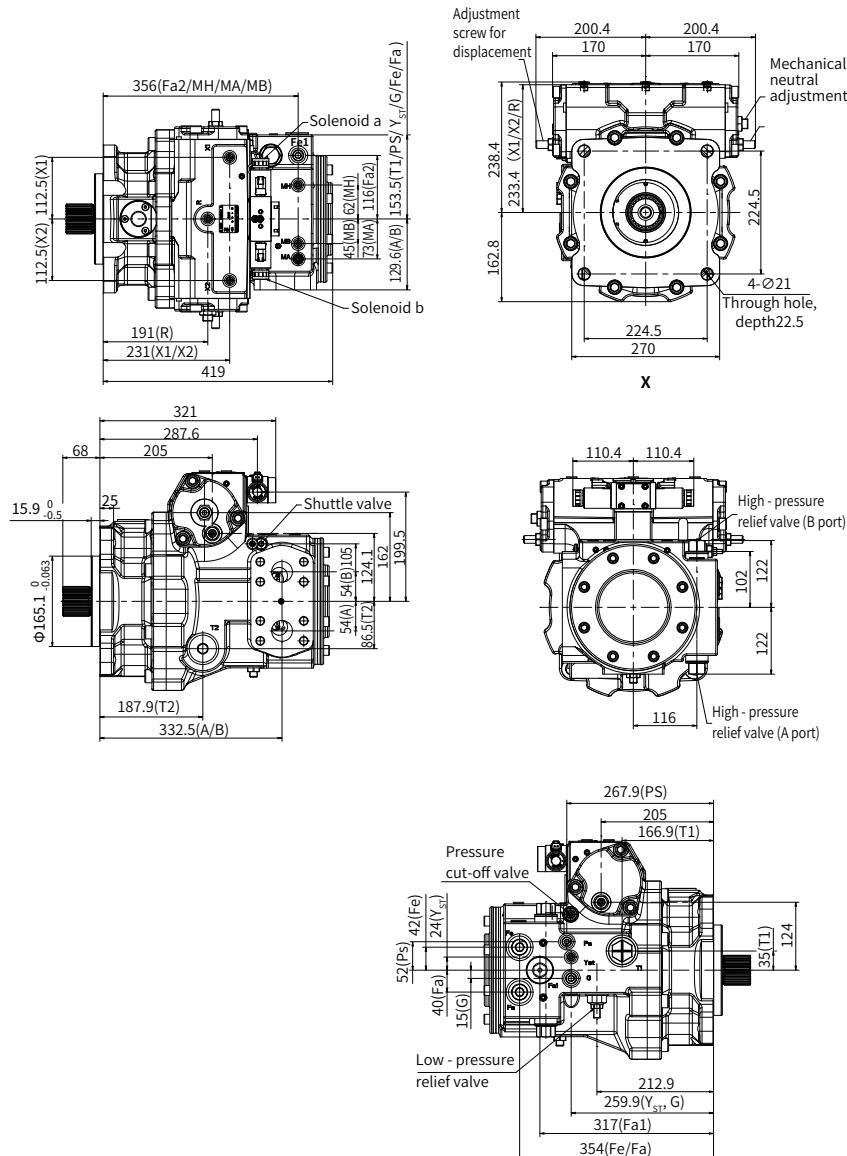


| Direction of rotation | Clockwise | | Counter-clockwise | |
|------------------------------------|-----------|--------|-------------------|--------|
| Actuation of proportional solenoid | a | b | a | b |
| Control pressure | X1 | X2 | X1 | X2 |
| Flow direction | B to A | A to B | A to B | B to A |
| Working pressure | MA | MB | MB | MA |



Installation size

V40G 280 Installation size

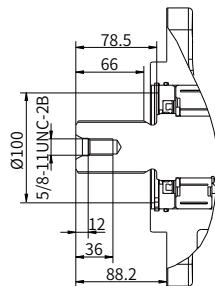
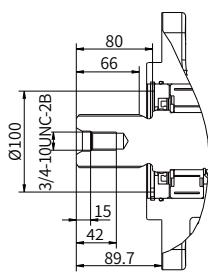


•V40G 280 Port details

| Port | Port Name | Standard | Oil Port Specification (thread depth) | Maximum pressure (bar) |
|-----------------|---|----------|---------------------------------------|------------------------|
| A, B | Working port | SAE J518 | 1 1/2" | 500 |
| | Fastening thread A/B | DIN 13 | M16×2 (depth 21) | - |
| S | Suction port | SAE J518 | 1 1/2" | 5 |
| | Fastening thread | DIN 13 | M12×1.75 (depth 20) | - |
| T1, T2 | Drain port | ISO 6149 | M42×2 (depth 19.5) | 3 |
| R | Air bleed port | ISO 6149 | M14×1.5 (depth 11.5) | 3 |
| X1, X2 | Control pressure port | ISO 6149 | M14×1.5 (depth 11.5) | 40 |
| G | Boost pressure port | ISO 6149 | M22×1.5 (depth 15.5) | 40 |
| P _s | Pilot pressure port inlet | ISO 6149 | M18×1.5 (depth 14.5) | 40 |
| Y _{ST} | Pilot pressure port outlet | ISO 6149 | M14×1.5 (depth 11.5) | 40 |
| MA, MB | Measuring port pressure A, B | ISO 6149 | M14×1.5 (depth 11.5) | 500 |
| MH | Measuring port, high pressure | ISO 6149 | M14×1.5 (depth 11.5) | 500 |
| Fa | Boost pressure port(Can be connected to an external filter) | ISO 6149 | M33×2 (depth 19) | 40 |
| Fa1 | Boost pressure port (DA valve reserved port) | ISO 6149 | M42×2 (depth 18) | 40 |
| Fe | Boost pressure port(Can be connected to an external filter) | ISO 6149 | M33×2 (depth 19) | 40 |
| Fe1 | Boost pressure port | ISO 6149 | M22×1.5 (depth 15.5) | 40 |

Installation size

• V40G280 Shaft extension type

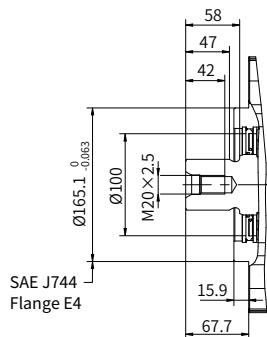


"E4" type spline shaft

ANSI B92.1b
2 1/4 in 17T-8/16DP

"E3" type spline shaft

ANSI B92.1b
2 in 15T-8/16DP

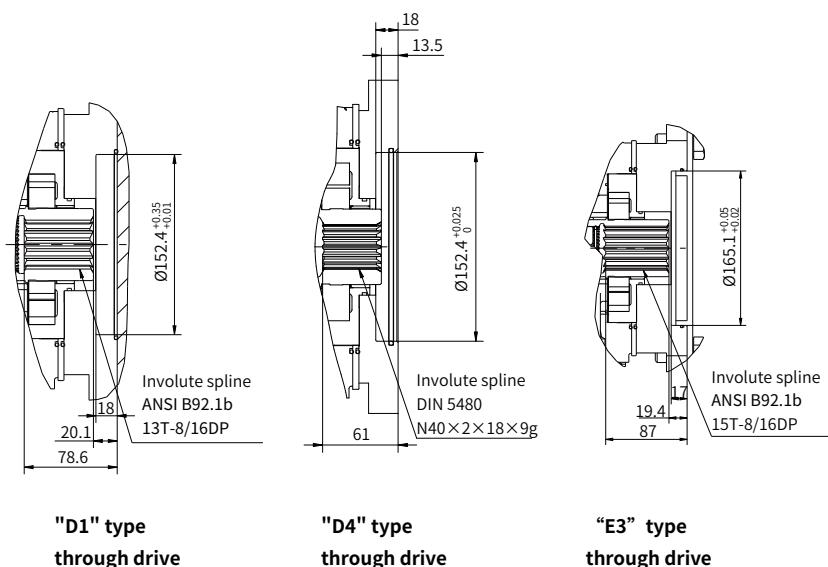
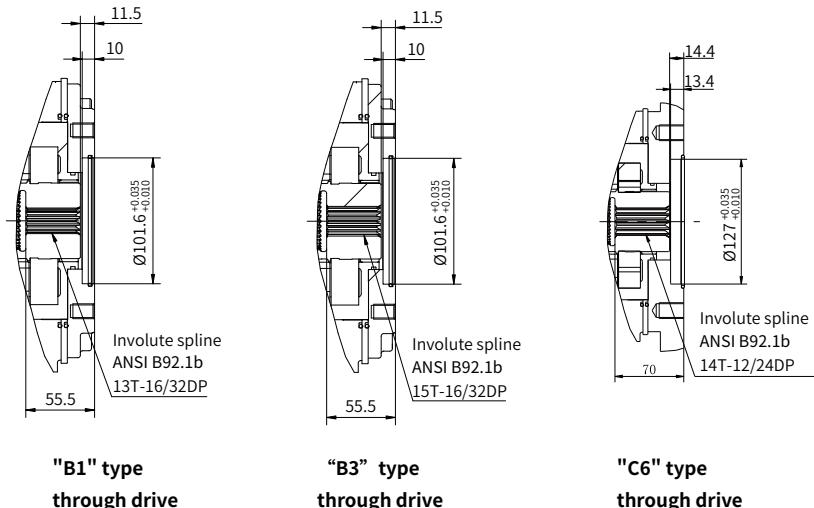


"E6" type spline shaft

DIN 5480
W55×2×26×9g

Installation size

· V40G280 Through shaft drive



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