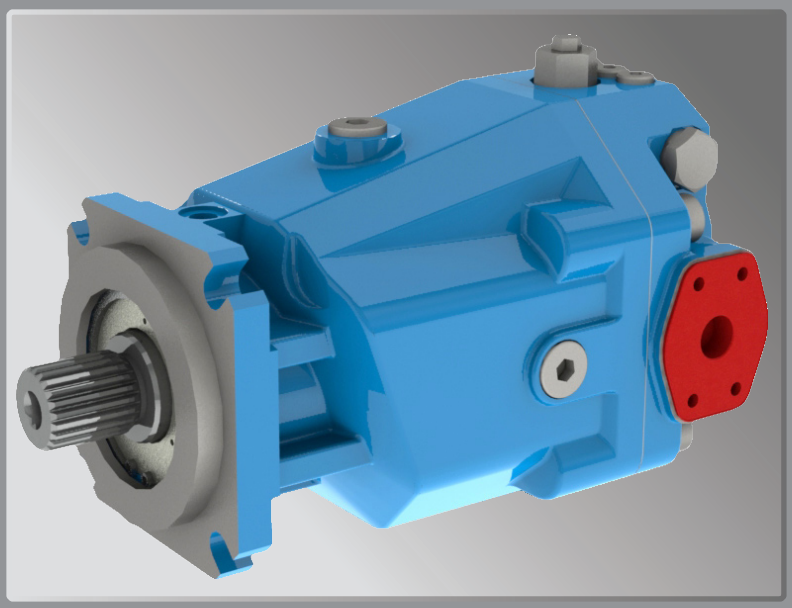
PSM HYDRAULICS

406 series

Axial Piston
Fixed displacement Motor

Swashplate design

Technical Catalogue



PSM-Hydraulics
04/2010

Contents

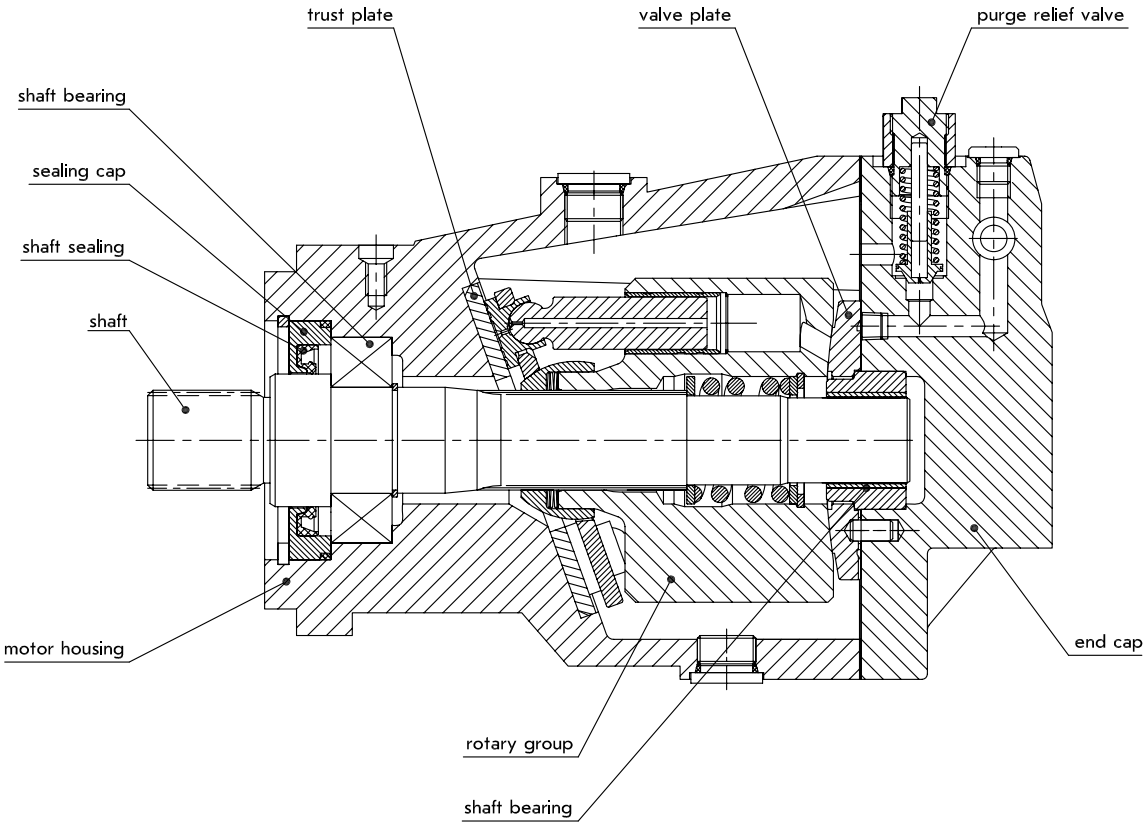
General information

406 series hydraulic motors – worldwide usage product, designed for the global market.

Purpose	406 series hydraulic motors are intended for operation in hydrostatic transmissions (HST). Hydraulic motors transform the working fluid energy into the mechanical energy of the shaft rotation. Hydraulic motor shaft rotation direction is determined by working fluid input direction. Shaft rotation frequency is determined by fluid flow volume. Created torque on hydraulic motor shaft is determined by the working fluid pressure.	
Application	Intended for use in mobile and stationary installations in set with HST.	
Design	Fixed displacement swashplate axial-piston machines.	
Size range	406 series hydraulic motors have the following working displacements:	
	406.0.71	- 71 cm^3
	406.0.90	- 90 cm^3
	406.0.110	- 110 cm^3
	406.0.125	- 125 cm^3
Operating pressure	max	- 400 bar
	peak	- 450 bar
Connection	mounting flanges	- SAE C (Ø127 mm) 4 bolt
	operating pressure ports	- SAE 1" 3000psi - SAE 1" 6000psi
	case drain ports	- as per ISO 9974-1 / DIN 3852-1 - as per ISO 11926-1
	spline shafts	- 1 1/2" 23T 16/32DP ANSI B92.1a - 1 3/8" 21T 16/32DP ANSI B92.1a - W35x2x30x16x9g DIN 5480 - W40x2x30x18x9g DIN 5480 - W45x2x30x21x9g DIN 5480
Built-on options		- loop flushing valve - purge relief valve
Requirement options		- shaft speed sensor - pressure-relief valves

406 series hydraulic motors description.

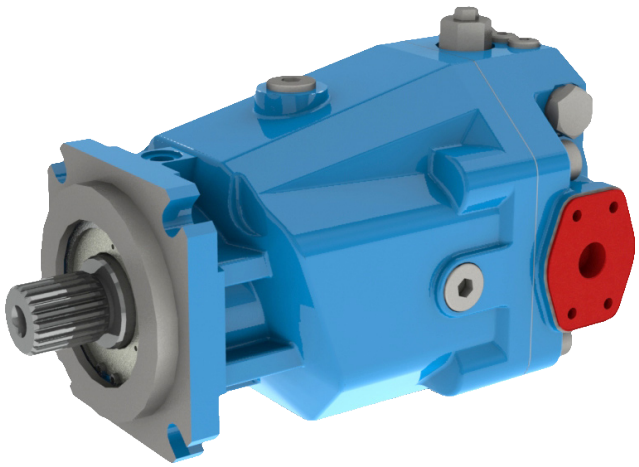
Section view

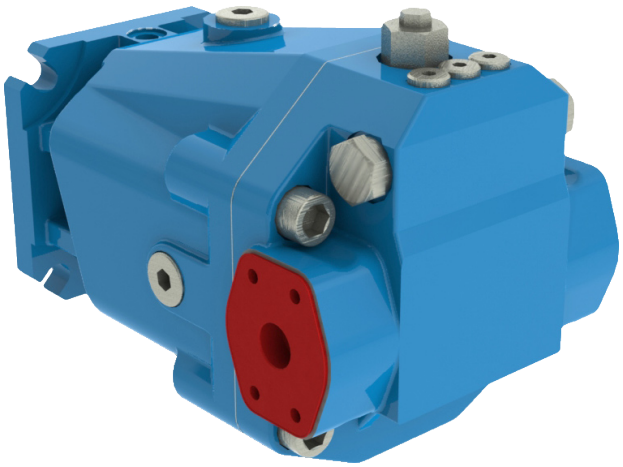


The main hydraulic motor has cast iron housing which contains the following:
- the main shaft passing through the whole hydraulic motor; the front cradle of the shaft is the roller bearing mounted into the housing. The back cradle of the shaft is the friction bearing which is mounted in end cap.
- hydraulic motor rotary group driven through the spline connection of the cylinders block and main shaft. Rotary group piston shoes are tightened to the inclined cradle in the housing, and are sliding on the cradle during the rotary group rotation;
The spherical valve plate and steel bronzed cylinders block are applied in hydraulic motor rotary group which helps to increase the max working pressure and the lifetime.
- gasket cover installed in hydraulic motor housing from mounting flange side. The gasket is mounted in the gasket cover which provides the leakproofness of hydraulic motor housing on the main shaft.
Hydraulic motor end cap contains:
- loop flushing valve;
- purge relief valve.

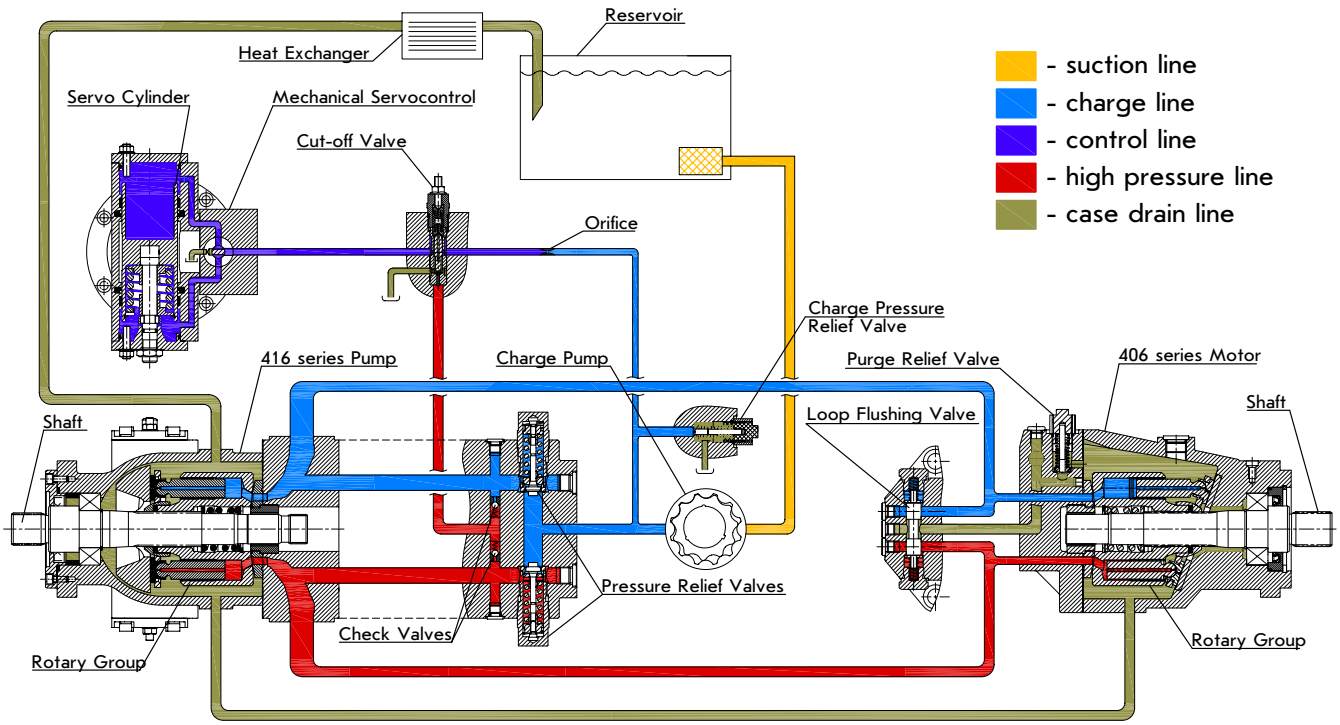
Hydraulic motors can be equipped with safety valves.

General view





Hydrostatic transmission hydraulic circuit diagram.



Hydrostatic transmission is a closed loop hydraulic scheme consisting of hydraulic pump and hydraulic motor. Hydrostatic transmission is intended for conveying the mechanical energy from the driven engine to the article actuating device.

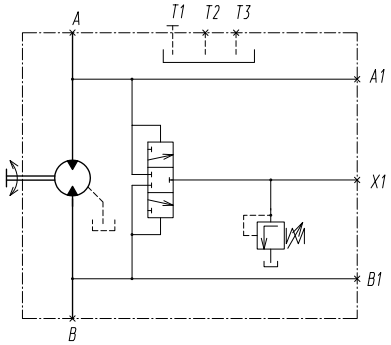
The main closed loop.

The main hydraulic motor ports are connected with hydraulic lines of the pump main ports. The working fluid flows in any direction, from the pump to hydraulic motor, and then returns to the pump in this closed loop. Each of hydraulic lines can be under high pressure. In working mode, the swashplate position determines which line is under the high pressure and the direction of working fluid flow.

Drain loop and heat exchange.

Drain lines are obligatory for the pump and hydraulic motor in order to remove the hot fluid from the drain chambers. The hydraulic motor must be connected with the drain line through the drain hole located in the upper point in order to provide hydraulic motor drain chamber filling. Hydraulic motor drain line is recommended to be connected with the pump lower drain hole, the output of joined leaks into reservoir is performed through the pump upper drain hole. The heat exchanger is intended to cool the working fluid which contains the drain leakage before the working fluid getting into the reservoir.

Hydraulic circuit diagram



A, B	– operating pressure ports
A1, B1	– operating pressure gauge ports
X1	– charge pressure gauge port
T1, T2	– case drain ports
T3	– shaft speed sensor installation port

Ordering Code

A				B		C				D		E			F					G			H		I		
4	0	6	.	0	.				.		.			.					.			.		.		

● = standard
o = optional
- = not available

A - series

code	description				
406	series 406				

B - product version

code	description	406.0.71	406.0.90	406.0.110	406.0.125
0	basic	●	●	●	●

C - displacement

code	displacement	406.0.71	406.0.90	406.0.110	406.0.125
71	71 cm^3	●	-	-	-
90	90 cm^3	-	●	-	-
110	110 cm^3	-	-	●	-
125	125 cm^3	-	-	-	●

D - rotation

code	description	406.0.71	406.0.90	406.0.110	406.0.125
W	reverse	●	●	●	●

E - shaft end

code	description	406.0.71	406.0.90	406.0.110	406.0.125
A2	splined shaft W35x2x30x16x9g DIN5480	●	●	o	o
A3	splined shaft W40x2x30x18x9g DIN5480	●	●	●	●
A4	splined shaft W45x2x30x21x9g DIN5480	o	o	●	●
S2	splined shaft 1 3/8" 21T 16/32DP ANSI B92.1a	●	●	●	●
S3	splined shaft1 1/2" 23T 16/32DP ANSI B92.1a	●	●	●	●

F - end cap ports and options

code				description	406.0.71	406.0.90	406.0.110	406.0.125
F	1	1	1	SAE flange ports A and B at rear side / FV / SAE 1" 3000PSI	o	o	o	o
F	2	1	1	SAE flange ports A and B at opposite side / FV / SAE 1" 3000PSI	●	●	●	●
F	2	1	2	SAE flange ports A and B at opposite side / FV / SAE 1" 6000PSI	●	●	●	●
F	3	1	1	SAE flange ports A and B at same side / FV / SAE 1" 3000PSI	o	o	o	o

↓ ↓ ↓

system ports (high pressure)	
1	SAE 1" 3000PSI M10-6H (26.2 x 52.4 mm)
2	SAE 1" 6000PSI M12-6H (27.8 x 57.2 mm)

valves	
0	none
1	flushing valve (FV)
2	pressure valves (PV)
6	pressure valves, flushing valve (PV, FV)

ports options	
1	SAE flange ports A and B at rear side
2	SAE flange ports A and B at opposite side
3	SAE flange ports A and B at same side

G - special features

code	description	406.0.71	406.0.90	406.0.110	406.0.125
NN	none	●	●	●	●
IN	case drain ports 7/8-14UNF-2B ISO 11926-1	●	●	o	-
RN	case drain ports M22x1.5 ISO 9974-1 / DIN 3852-1	o	o	●	o
NX	speed sensor	●	●	o	o

H – shaft seal

code	description	406.0.71	406.0.90	406.0.110	406.0.125
B	NBR	●	●	●	●
F	FKM	●	●	●	●

I - climatic version and category of desposition

code	description	406.0.71	406.0.90	406.0.110	406.0.125
У1	temperate climate, placing on open air	●	●	●	●
T1	tropical climate, placing on open air	●	●	●	●

Technical characteristics.

Size range	406.0.71	406.0.90	406.0.110	406.0.125
Working displacement V_g, cm^3	71	90	110	125
Shaft rotation speed n, rpm				
- min n_{min}	50	50	50	50
- nominal n_{nom}	2000	2000	2000	2000
- max n_{max}, at input pressure 0.8 bar	3050	3050	3000	3000
- peak n_{peak}, at input pressure 2 bar	3300	3300	3200	3200
Flow Q, l/min				
- min Q_{min}	3.74	4.74	5.79	6.58
- nominal Q_{nom}	149.47	189.47	173.68	197.37
- max Q_{max}	227.95	288.95	347.37	394.74
- peak Q_{peak}	246.63	312.63	370.53	421.05
Working pressure (difference) ΔP, bar				
- nominal ΔP_{nom}	250	250	250	250
- max working ΔP_{max}	400	400	400	400
- peak ΔP_{peak}	450	450	450	450
Purge relief valve adjustment pressure P_n, bar	23	23	23	23
Drain pressure P_{dr}, bar				
- max working	2.5	2.5	2.5	2.5
- max short-term (t<5 min)	5	5	5	5
Effective power N, kW				
- nominal N_{nom} (at n_{nom}, P_{nom})	56.05	71.05	65.13	74.01
- max N_{max} (at n_{max}, P_{max})	136.77	173.37	208.42	236.84
- peak N_{peak} (at n_{peak}, P_{peak})	166.47	211.02	250.10	284.21
Torque T, Nm				
- nominal T_{nom} (at P_{nom})	254.25	322.29	393.91	447.62
- max T_{max} (at P_{max})	406.80	515.66	630.25	716.20
- peak T_{peak} (at P_{peak})	457.65	580.12	709.04	805.72
Volume efficiency	0.95	0.95	0.95	0.95
Weight, kg	40	40	48	48

Hydraulic motor nominal size determination

$$\text{Flow } Q = \frac{V_g \cdot n}{1000 \cdot \eta_v} \text{ l/min}$$

$$\text{Torque } T = \frac{V_g \cdot \Delta P \cdot \eta_{mh}}{20 \cdot \pi} \text{ N•m}$$

$$\text{Effective power } N = \frac{Q \cdot \Delta P \cdot \eta_t}{600} \text{ kW}$$

$$\text{Rotation frequency } n = \frac{Q \cdot 1000 \cdot \eta_v}{V_g} \text{ rpm}$$

Where:
Q – flow, l/min
T – torque, N•m
N – power, kW
V_g – motor displacement, cm^3
n – shaft rotation speed, rpm
ΔP – pressure difference, bar
η_v – volume efficiency
η_{mh} – hydraulic mechanical efficiency
$\eta_t = \eta_v \cdot \eta_{mh}$ – overall efficiency

Working fluid requirements.

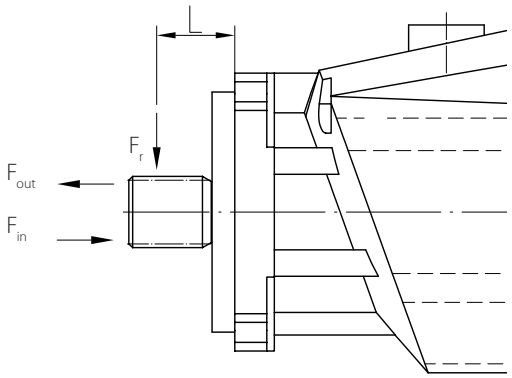
Working fluid temperature:	
Max constant	+75ºC
Max peak (short-term)	+100ºC
Min short-term (at cold start)	- 40ºC
Working fluid cinematic viscosity:	
optimal (constant)	20-35 mm^2/sec (cSt)
max startup	1500 mm^2/sec (cSt)
min short-term	10 mm^2/sec (cSt)
Working fluid purity:	at least 12th class as per GOST 17216-71 at least 18/15th class as per ISO/DIN 4406

Allowed radial and axial loads on shaft.

Hydraulic motor bearing lifetime directly depends on the forces acting on hydraulic motor output shaft from outside.

The scheme of acting forces is given on the figure:

$M_r = F_r \cdot L$ – torque
F_{out} – axial force from hydraulic motor
F_{in} – axial force into hydraulic motor



In order to avoid hydraulic motors premature failure it is necessary to observe the restrictions on outer forces on hydraulic motor output shaft.

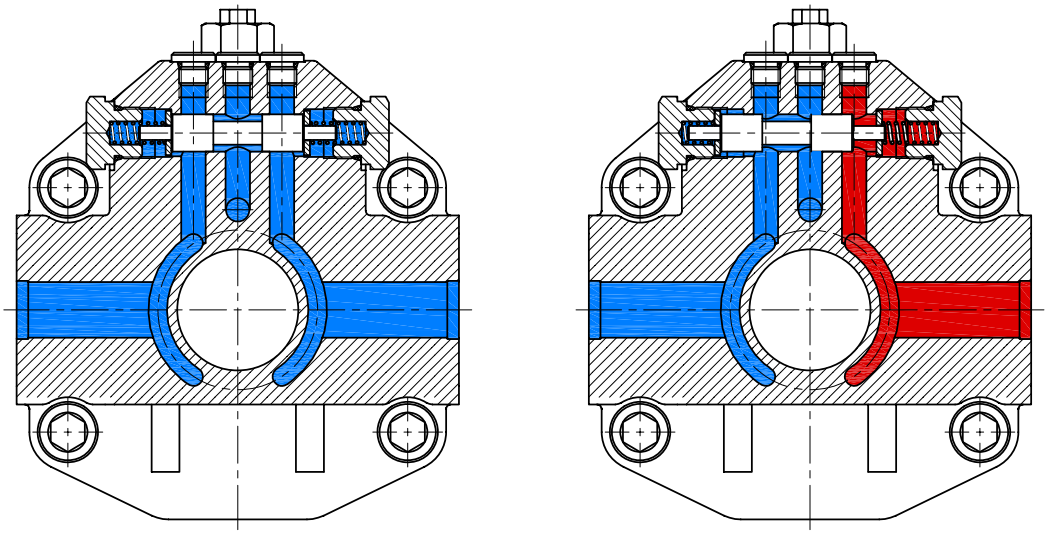
The values of peak loads on shaft are given in the table.

Parameter	416.0.71	416.0.90	416.0.110	416.0.125
Radial load F_r, N	1800		3500	
Cradle/shoulder L, mm	23.4		23.4	
Axial load F_{in}, N	2140		2110	
Axial load F_{out}, N	843		475	

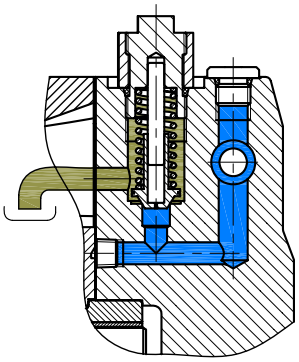
Loop flushing valve and purge relief valve.

Loop flushing valve is mounted in hydraulic motor end cap. Loop flushing valve design and operating principle is given on the Fig.
The loop flushing valve is intended for compulsory working fluid change in power lines in order to provide the eligible temperature operating conditions of the article hydraulic system, and to provide the possibility of volume closed loop constant cleaning from wear debris. At achieving the slight pressure difference on the valve buttends, it shifts to the corresponding side and compresses the spring. The line with lower pressure (drain line) is connected with drain line into the article housing through the purge relief valve. The valve springs are compressed with plugs.

Loop flushing valve design



Purge relief valve is intended for maintaining the control and charge pressure in machine hydraulic system at loop flushing valve actuation.
At achieving the adjustment pressure the force on the valve buttend is compressing the spring and is connecting the drain line with the article drain line through the loop flushing valve maintaining the control and charge pressure. The valve actuation pressure is adjusted by spring compression with the valve threaded body.



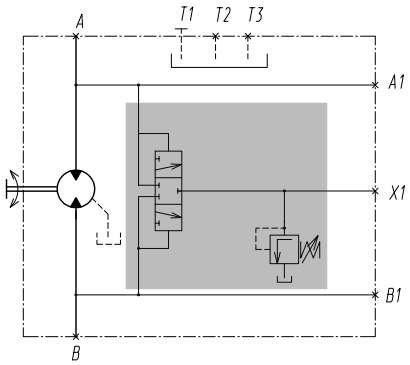
The purge relief valve adjustment pressure = 23^{+1} bar (by default).

The pressure is adjusted at:

- motor shaft speed — n = 1500 rpm;
- working fluid temperature in the loop — t = +45…50°C.

The charge pressure is adjusted in negotiation with the customer.

Hydraulic circuit diagram

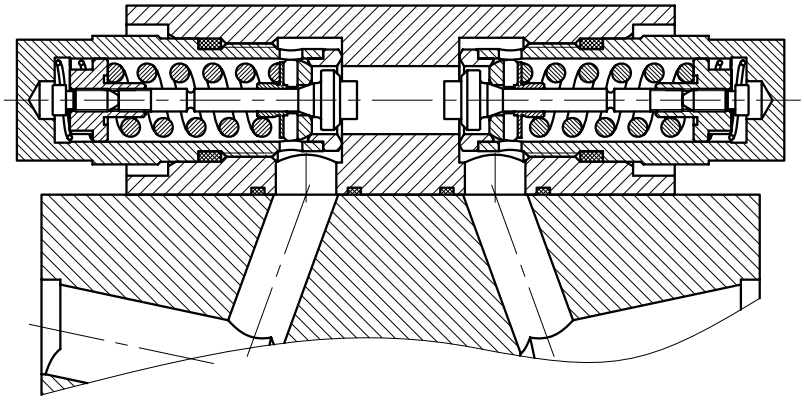


Safety valves.

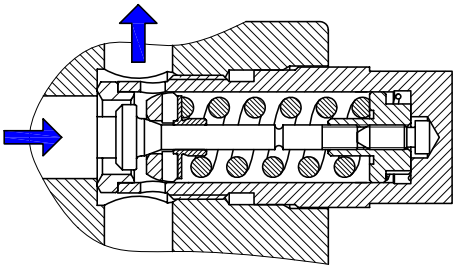
Hydraulic motors can be equipped with mounted in check-safety valves.

Check-safety valves of double direction are intended for the restriction of peak pressure in working lines.

Safety valves

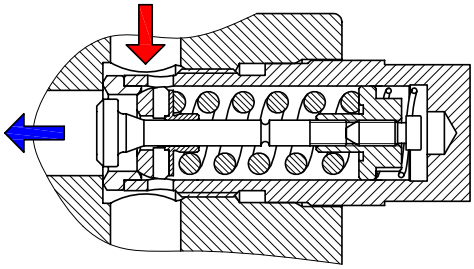


Check-safety valve operation in check valve mode



The valve shifts into the valve body deforming the weak spring. The working fluid is passing through the valve to the opposite valve. The fluid pressure is determined by the opposite valve adjustment.

Check-safety valve operation in safety valve mode



At achieving the pressure corresponding to the safety valve adjustment in hydraulic motor pressure line, the safety valve is actuated deforming the main spring and allowing the fluid passing between the valve and the cradle.

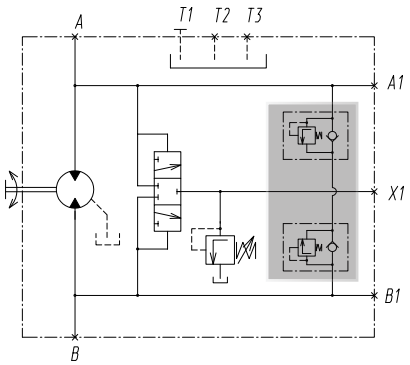
Check-safety valve adjustment pressure = 350^{+5} bar (by default).

The valve actuation adjustment at

- motor shaft speed n = 1500 rpm;
- working fluid temperature in the loop t = +45…50ºC.

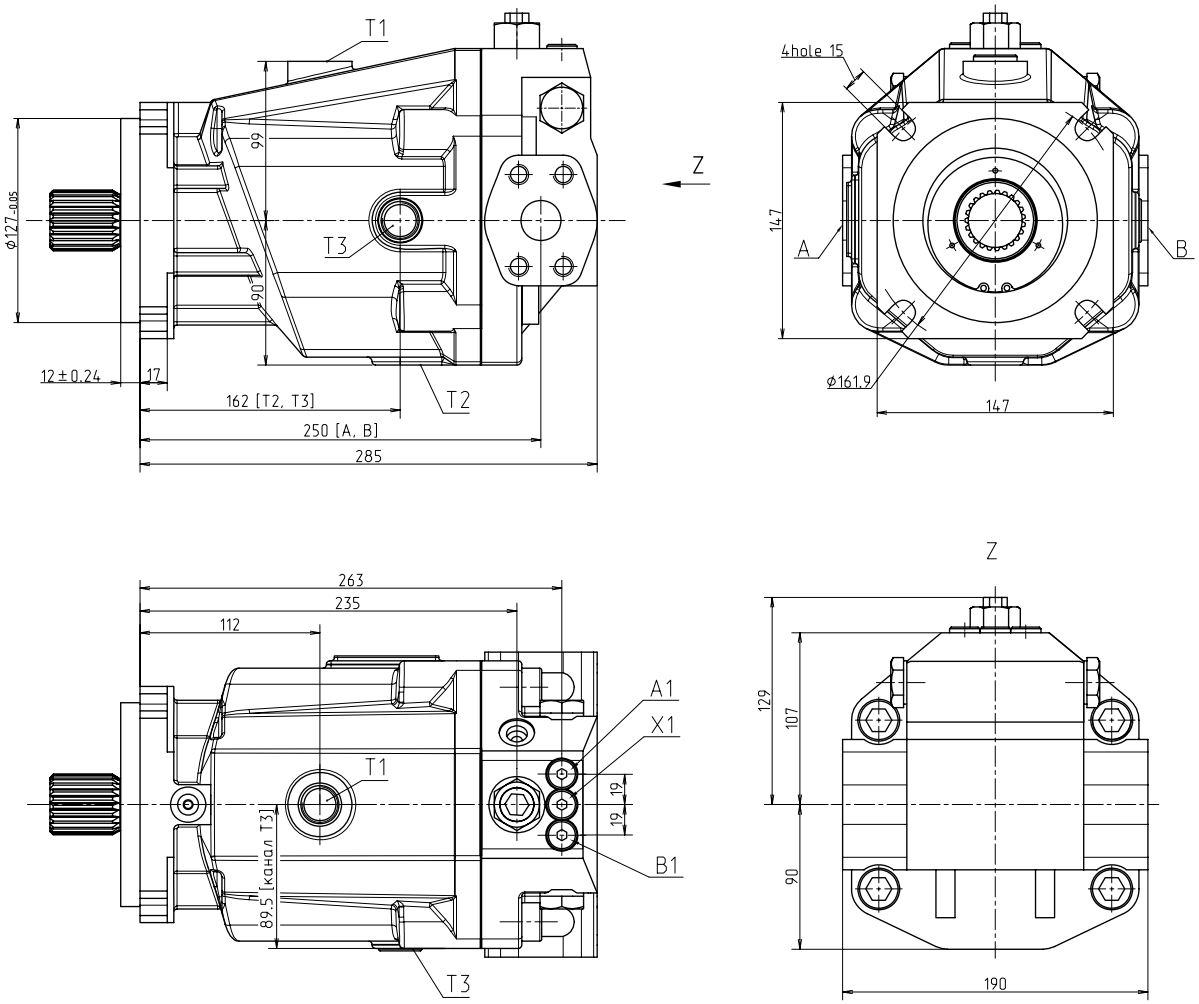
Check safety valve actuation pressure adjustment for other value is possible in negotiation with the customer.

Hydraulic circuit diagram



Overall-mounting dimensions. Size range 71, 90 cm³.

Main dimensions.

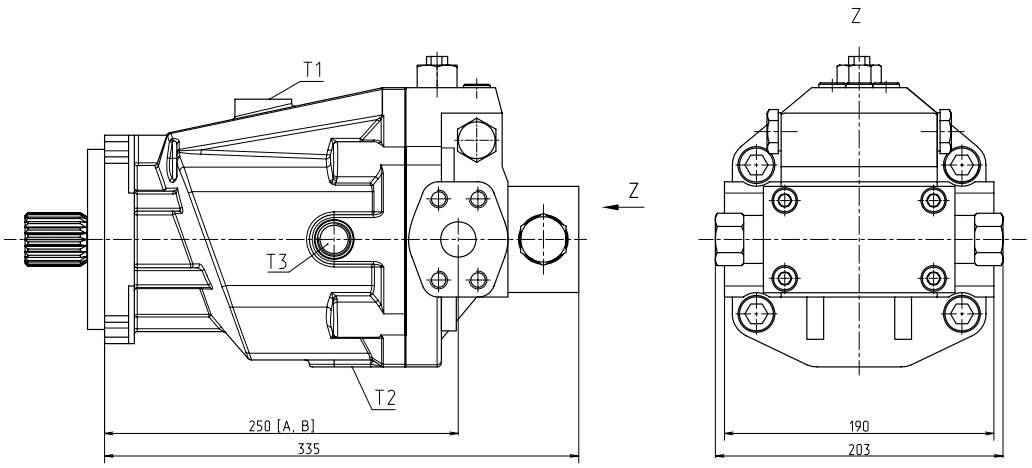


			option	code
A, B	operating pressure ports	SAE 1"3000psi	F	Fxx1
		SAE 1"6000psi	F	Fxx2
T1, T2	case drain ports	M22x1.5-15, GOST 25064 / ISO 6149-1	-	standard program
		7/8-14UNF-2B, ISO 11926-1	G	IN
		M22x1.5-26, DIN 3852-1 / ISO 9974-1	G	RN
A1, B2	operating pressure gauge ports	M12x1.5-12, GOST 25065 / ISO 6149-1	-	standard program
X1	charge pressure gauge port	M12x1.5-14, GOST 25065 / ISO 6149-1	-	standard program

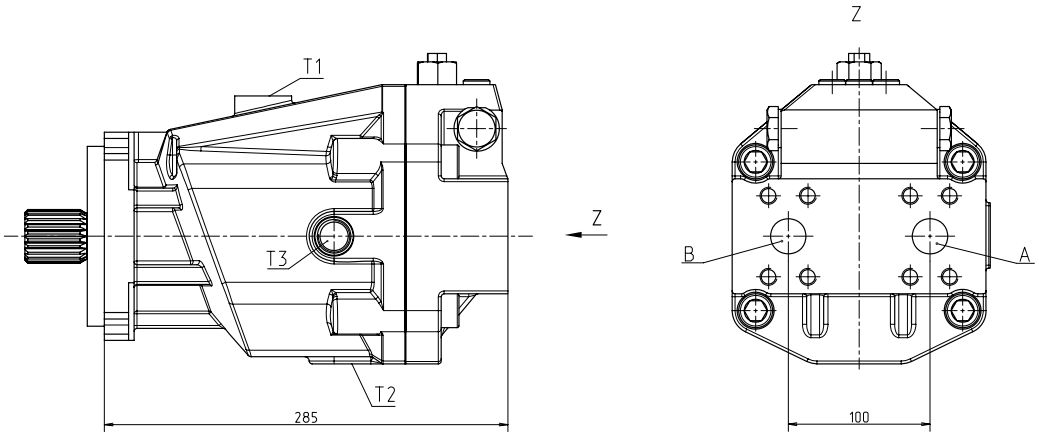
Overall-mounting dimensions. Size range 71, 90 cm³.

Hydraulic motor versions.

Operating pressure ports A and B on opposite sides. Built-in loop flushing valve and mounting-on safety valves. Option code F: F26X.

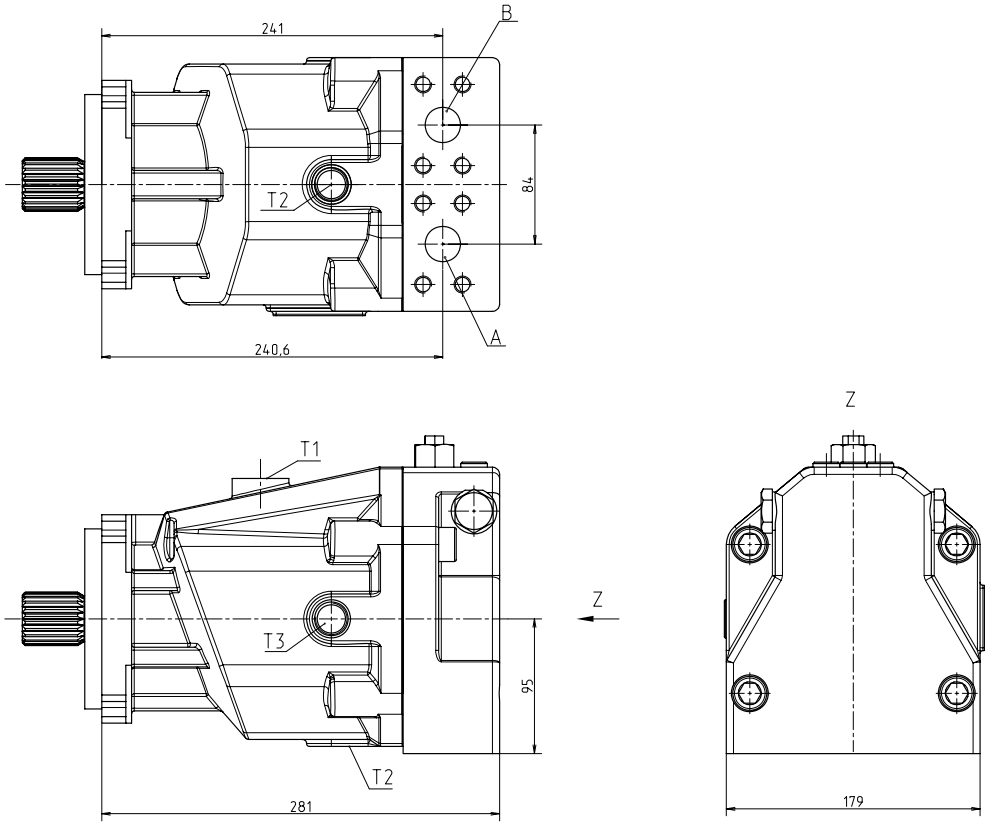


Operating pressure ports A and B at rear. Built-in loop flushing valve. Option code F: 11X.

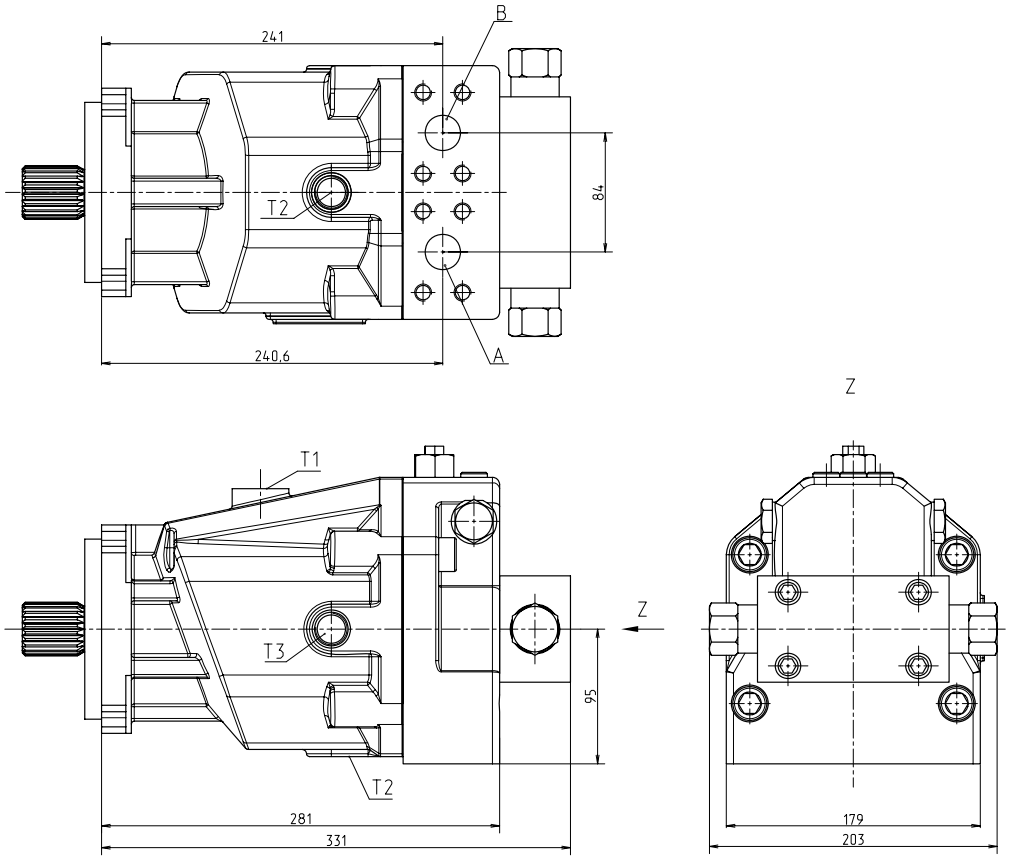


Overall-mounting dimensions. Size range 71, 90 cm³.

Operating pressure ports A and B on same side. Built-in loop flushing valve. Option code F: F31X.



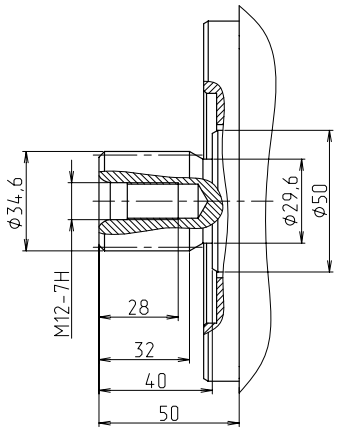
Operating pressure ports A and B on same side. Built-in loop flushing valve and safety valves. Option code F: F36X.



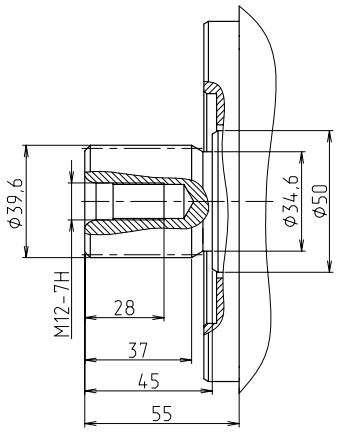
Overall-mounting dimensions. Size range 71, 90 cm³.

Shaft ends.

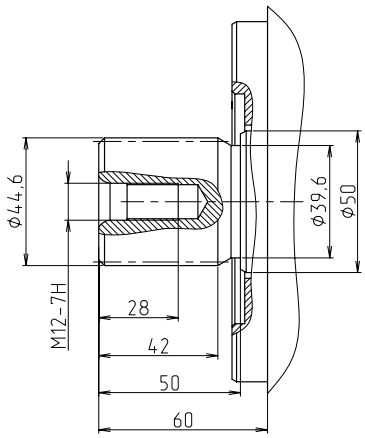
W35x2x30x16x9g DIN5480



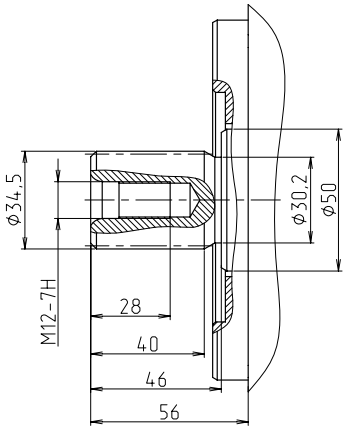
W40x2x30x18x9g DIN5480



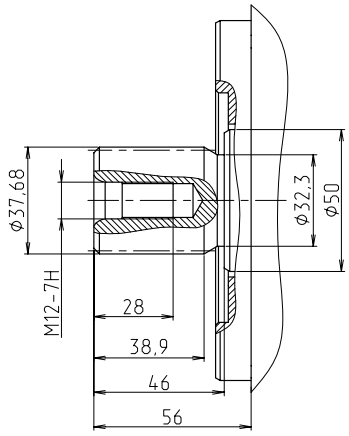
W45x2x30x21x9g DIN5480



21T 16/32 pitch ANSI B92.1a

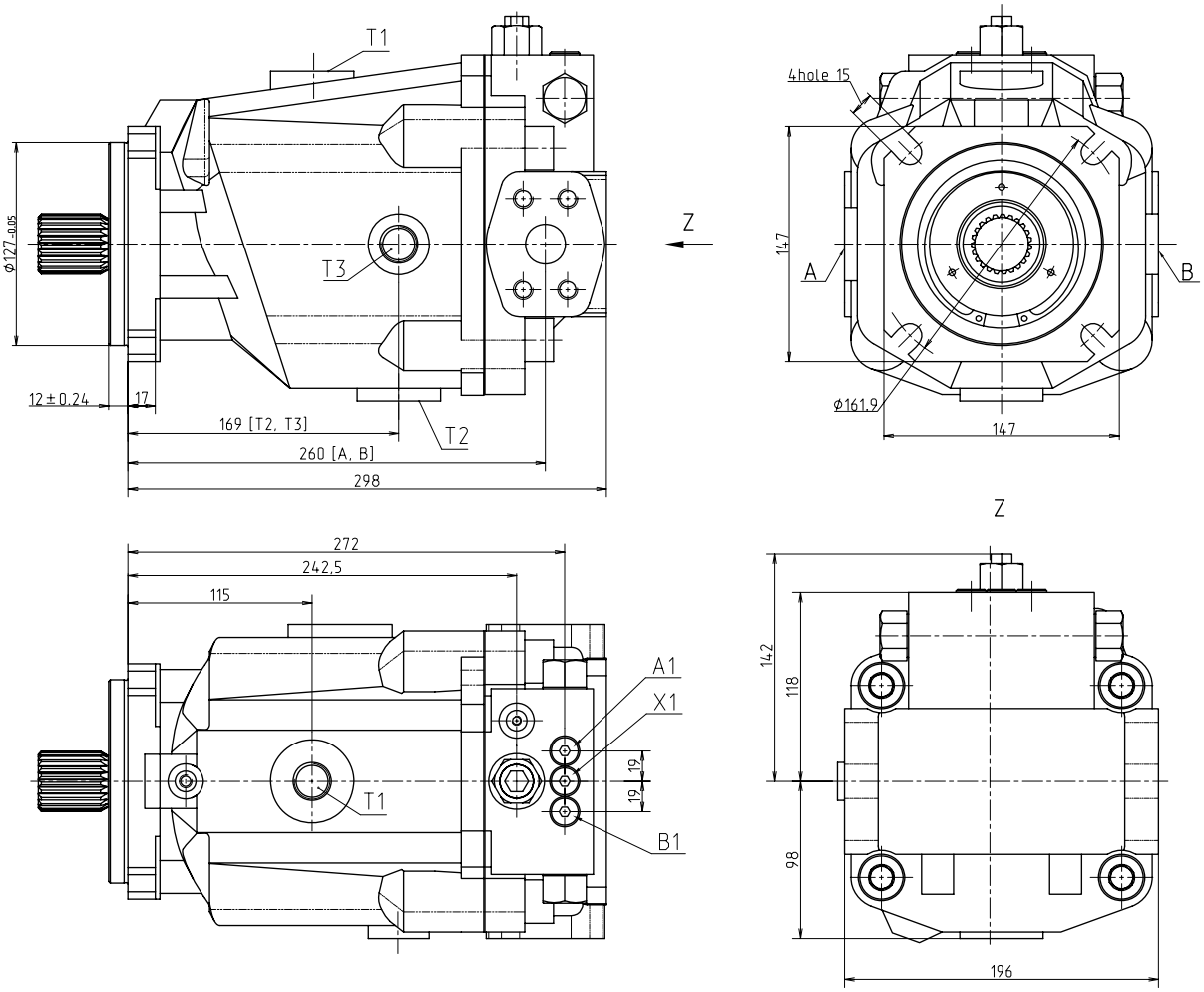


23T 16/32 pitch ANSI B92.1a



Overall-mounting dimensions. Size range 110, 125 cm³.

Main dimensions.

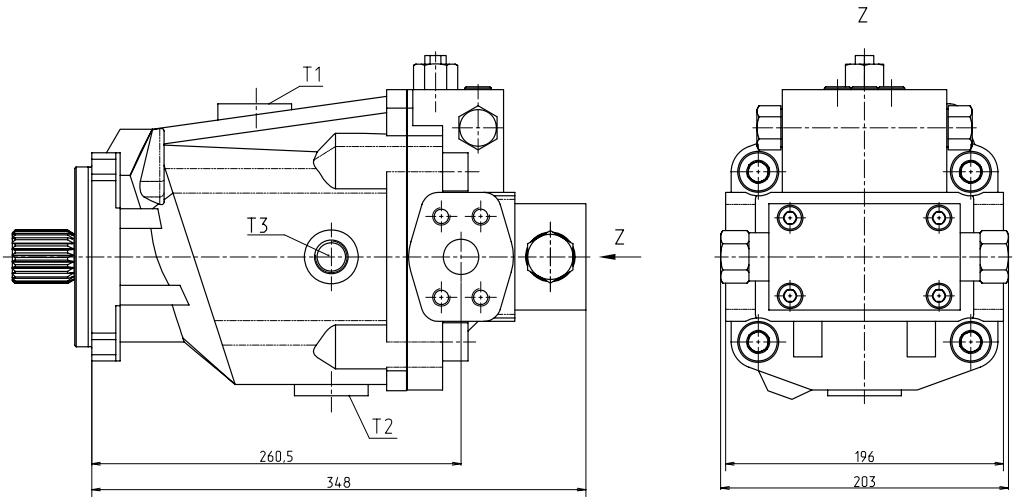


			option	code
A, B	operating pressure ports	SAE 1" 3000psi	F	Fxx1
		SAE 1" 6000psi	F	Fxx2
T1, T2	case drain ports	M22x1.5-15, GOST 25064 / ISO 6149-1	-	standard program
		7/8-14UNF-2B, ISO 11926-1	G	IN
		M22x1.5-26, DIN 3852-1 / ISO 9974-1	G	RN
A1, B2	operating pressure gauge points	M12x1.5-12, GOST 25065 / ISO 6149-1	-	standard program
X1	charge pressure gauge points	M12x1.5-14, GOST 25065 / ISO 6149-1	-	standard program

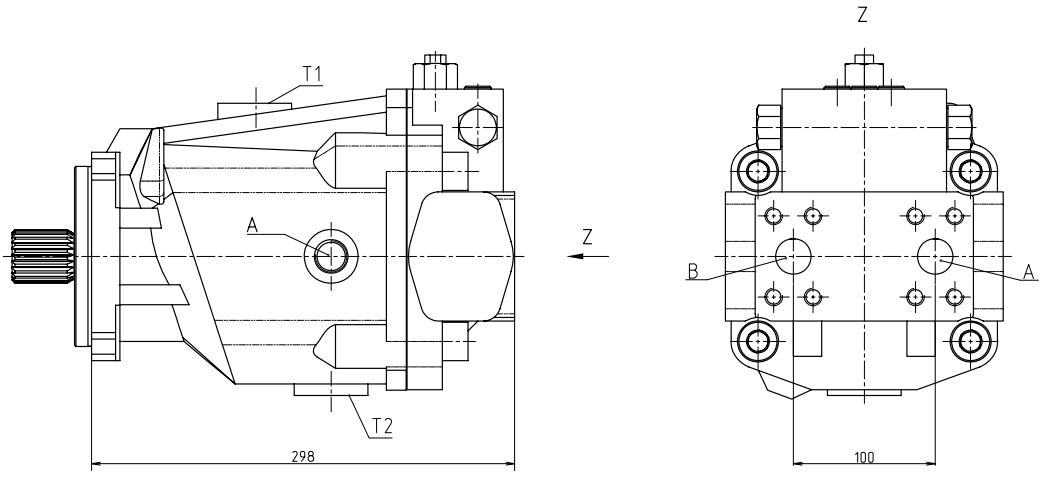
Overall-mounting dimensions. Size range 110, 125 cm³.

Hydraulic motors versions.

Operating pressure ports A and B on opposite sides. Built-in loop flushing valve and mounting-on safety valves. Option code F: F26X.

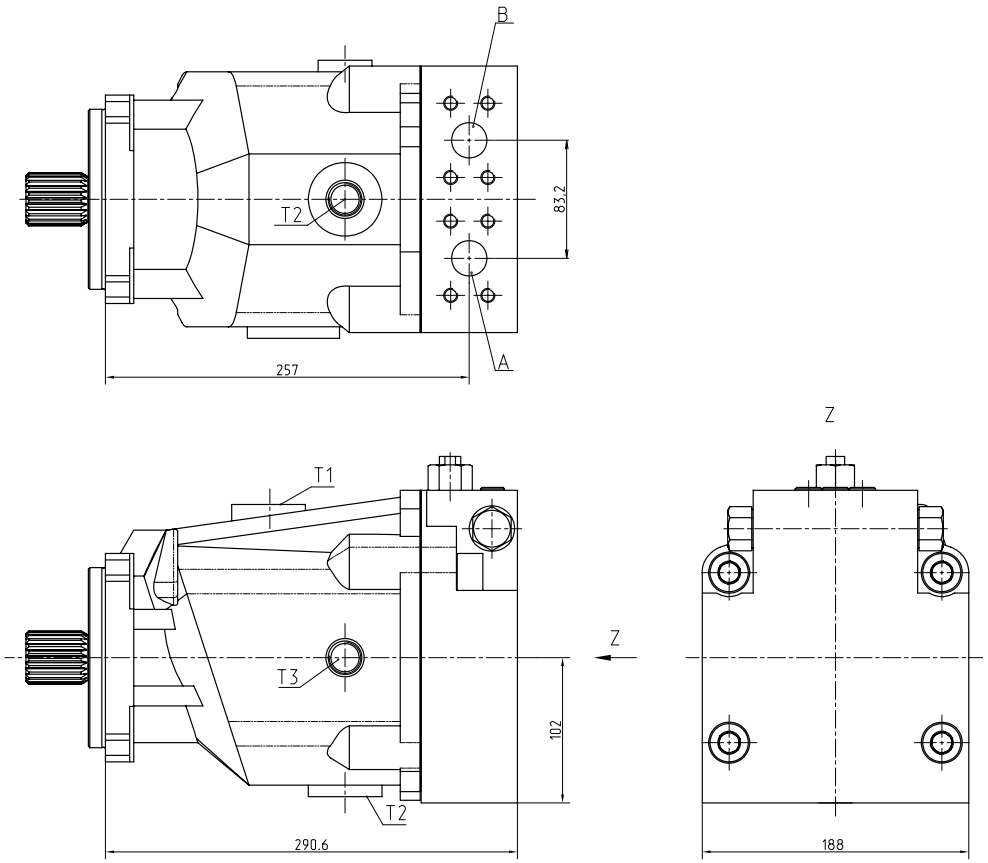


Operating pressure ports A and B at rear. Built-in loop flushing valve. Option code F: 11X.

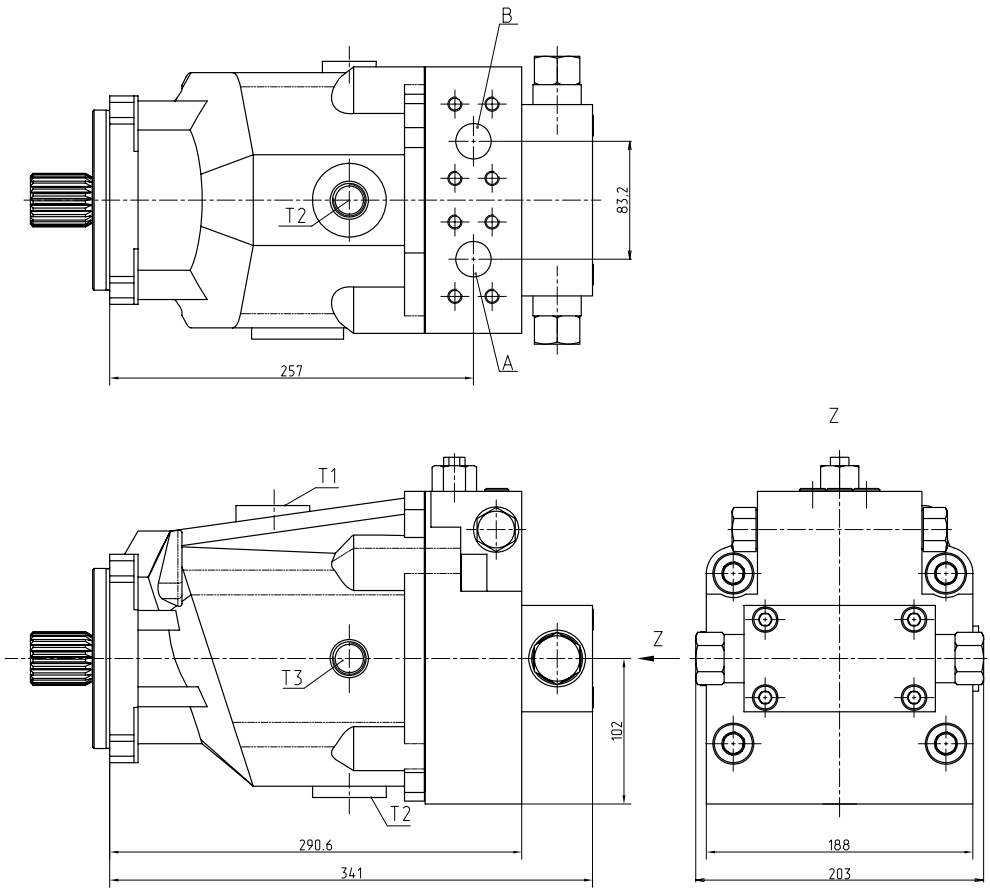


Overall-mounting dimensions. Size range 110, 125 cm³.

Operating pressure ports A and B on same side. Built-in loop flushing valve. Option code F: F31X.



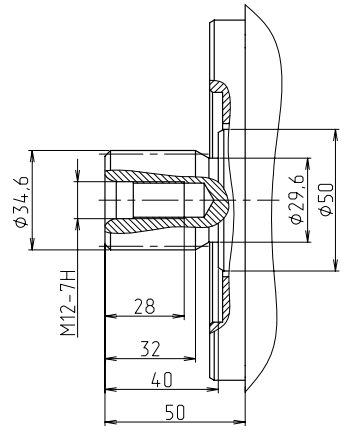
Operating pressure ports A and B on same side. Built-in loop flushing valve and mounting-on safety valves. Option code F: F36X.



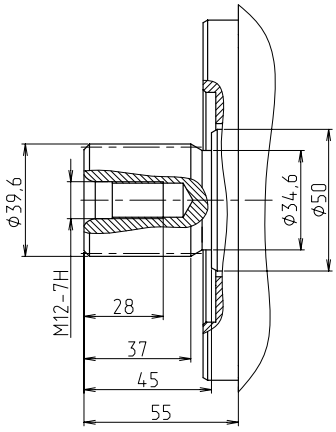
Overall-mounting dimensions. Size range 110, 125 cm³.

Shaft ends.

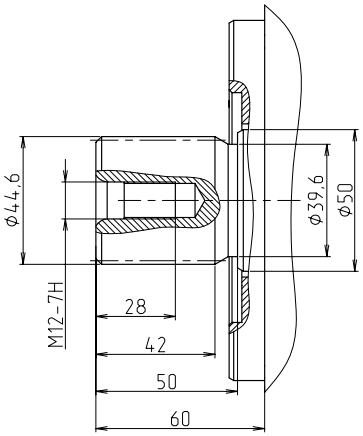
W35x2x30x16x9g DIN5480



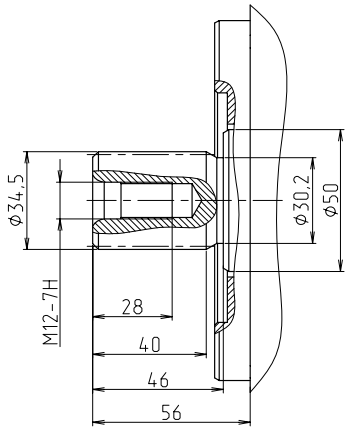
W40x2x30x18x9g DIN5480



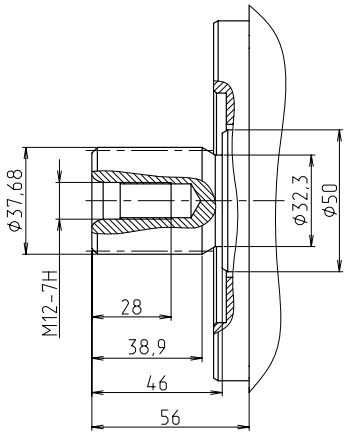
W45x2x30x21x9g DIN5480



21T 16/32 pitch ANSI B92.1a



23T 16/32 pitch ANSI B92.1a



Standard program.

406.0.71.W.S3.F211.NN.B.У1
406.0.71.W.S2.F211.NN.B.У1
406.0.71.W.A4.F211.NN.B.У1
406.0.71.W.A2.F211.NN.B.У1
406.0.71.W.S3.F212.NN.B.У1
406.0.71.W.S2.F212.NN.B.У1
406.0.71.W.A4.F212.NN.B.У1
406.0.71.W.A2.F212.NN.B.У1
406.0.71.W.S3.F211.IN.B.У1
406.0.71.W.S2.F211.IN.B.У1
406.0.71.W.A4.F211.IN.B.У1
406.0.71.W.A2.F211.IN.B.У1
406.0.71.W.S3.F212.IN.B.У1
406.0.71.W.S2.F212.IN.B.У1
406.0.71.W.A4.F212.IN.B.У1
406.0.71.W.A2.F212.IN.B.У1
406.0.71.W.S3.F211.NN.F.У1
406.0.71.W.S2.F211.NN.F.У1
406.0.71.W.A4.F211.NN.F.У1
406.0.71.W.A2.F211.NN.F.У1
406.0.71.W.S3.F212.NN.F.У1
406.0.71.W.S2.F212.NN.F.У1
406.0.71.W.A4.F212.NN.F.У1
406.0.71.W.A2.F212.NN.F.У1
406.0.71.W.S3.F211.IN.F.У1
406.0.71.W.S2.F211.IN.F.У1
406.0.71.W.A4.F211.IN.F.У1
406.0.71.W.A2.F211.IN.F.У1
406.0.71.W.S3.F212.IN.F.У1
406.0.71.W.S2.F212.IN.F.У1
406.0.71.W.A4.F212.IN.F.У1
406.0.71.W.A2.F212.IN.F.У1
406.0.71.W.S3.F211.NN.F.T1
406.0.71.W.S2.F211.NN.F.T1
406.0.71.W.S3.F212.NN.F.T1
406.0.71.W.S2.F212.NN.F.T1

406.0.90.W.S3.F211.NN.B.У1
406.0.90.W.S2.F211.NN.B.У1
406.0.90.W.A4.F211.NN.B.У1
406.0.90.W.A2.F211.NN.B.У1
406.0.90.W.S3.F212.NN.B.У1
406.0.90.W.S2.F212.NN.B.У1
406.0.90.W.A4.F212.NN.B.У1
406.0.90.W.A2.F212.NN.B.У1
406.0.90.W.S3.F211.IN.B.У1
406.0.90.W.S2.F211.IN.B.У1
406.0.90.W.A4.F211.IN.B.У1
406.0.90.W.A2.F211.IN.B.У1
406.0.90.W.S3.F212.IN.B.У1
406.0.90.W.S2.F212.IN.B.У1
406.0.90.W.A4.F212.IN.B.У1
406.0.90.W.A2.F212.IN.B.У1
406.0.90.W.S3.F211.NN.F.У1
406.0.90.W.S2.F211.NN.F.У1
406.0.90.W.A4.F211.NN.F.У1
406.0.90.W.A2.F211.NN.F.У1
406.0.90.W.S3.F212.NN.F.У1
406.0.90.W.S2.F212.NN.F.У1
406.0.90.W.A4.F212.NN.F.У1
406.0.90.W.A2.F212.NN.F.У1
406.0.90.W.S3.F211.IN.F.У1
406.0.90.W.S2.F211.IN.F.У1
406.0.90.W.A4.F211.IN.F.У1
406.0.90.W.A2.F211.IN.F.У1
406.0.90.W.S3.F212.IN.F.У1
406.0.90.W.S2.F212.IN.F.У1
406.0.90.W.A4.F212.IN.F.У1
406.0.90.W.A2.F212.IN.F.У1
406.0.90.W.S3.F211.NN.F.T1
406.0.90.W.S2.F211.NN.F.T1
406.0.90.W.S3.F212.NN.F.T1
406.0.90.W.S2.F212.NN.F.T1

406.0.110.W.S3.F211.NN.B.У1
406.0.110.W.S2.F211.NN.B.У1
406.0.110.W.A4.F211.NN.B.У1
406.0.110.W.A2.F211.NN.B.У1
406.0.110.W.S3.F212.NN.B.У1
406.0.110.W.S2.F212.NN.B.У1
406.0.110.W.A4.F212.NN.B.У1
406.0.110.W.A2.F212.NN.B.У1
406.0.110.W.S3.F211.IN.B.У1
406.0.110.W.S2.F211.IN.B.У1
406.0.110.W.A4.F211.IN.B.У1
406.0.110.W.A2.F211.IN.B.У1
406.0.110.W.S3.F212.IN.B.У1
406.0.110.W.S2.F212.IN.B.У1
406.0.110.W.A4.F212.IN.B.У1
406.0.110.W.A2.F212.IN.B.У1
406.0.110.W.S3.F211.NN.F.У1
406.0.110.W.S2.F211.NN.F.У1
406.0.110.W.A4.F211.NN.F.У1
406.0.110.W.A2.F211.NN.F.У1
406.0.110.W.S3.F212.NN.F.У1
406.0.110.W.S2.F212.NN.F.У1
406.0.110.W.A4.F212.NN.F.У1
406.0.110.W.A2.F212.NN.F.У1
406.0.110.W.S3.F211.IN.F.У1
406.0.110.W.S2.F211.IN.F.У1
406.0.110.W.A4.F211.IN.F.У1
406.0.110.W.A2.F211.IN.F.У1
406.0.110.W.S3.F212.IN.F.У1
406.0.110.W.S2.F212.IN.F.У1
406.0.110.W.A4.F212.IN.F.У1
406.0.110.W.A2.F212.IN.F.У1
406.0.110.W.S3.F211.NN.F.T1
406.0.110.W.S2.F211.NN.F.T1
406.0.110.W.S3.F212.NN.F.T1
406.0.110.W.S2.F212.NN.F.T1

406.0.110.W.S3.F212.RN.B.У1

406.0.125.W.S3.F211.NN.B.У1
406.0.125.W.S2.F211.NN.B.У1
406.0.125.W.A4.F211.NN.B.У1
406.0.125.W.A2.F211.NN.B.У1
406.0.125.W.S3.F212.NN.B.У1
406.0.125.W.S2.F212.NN.B.У1
406.0.125.W.A4.F212.NN.B.У1
406.0.125.W.A2.F212.NN.B.У1
406.0.125.W.S3.F211.IN.B.У1
406.0.125.W.S2.F211.IN.B.У1
406.0.125.W.A4.F211.IN.B.У1
406.0.125.W.A2.F211.IN.B.У1
406.0.125.W.S3.F212.IN.B.У1
406.0.125.W.S2.F212.IN.B.У1
406.0.125.W.A4.F212.IN.B.У1
406.0.125.W.A2.F212.IN.B.У1
406.0.125.W.S3.F211.NN.F.У1
406.0.125.W.S2.F211.NN.F.У1
406.0.125.W.A4.F211.NN.F.У1
406.0.125.W.A2.F211.NN.F.У1
406.0.125.W.S3.F212.NN.F.У1
406.0.125.W.S2.F212.NN.F.У1
406.0.125.W.A4.F212.NN.F.У1
406.0.125.W.A2.F212.NN.F.У1
406.0.125.W.S3.F211.IN.F.У1
406.0.125.W.S2.F211.IN.F.У1
406.0.125.W.A4.F211.IN.F.У1
406.0.125.W.A2.F211.IN.F.У1
406.0.125.W.S3.F212.IN.F.У1
406.0.125.W.S2.F212.IN.F.У1
406.0.125.W.A4.F212.IN.F.У1
406.0.125.W.A2.F212.IN.F.У1
406.0.125.W.S3.F211.NN.F.T1
406.0.125.W.S2.F211.NN.F.T1
406.0.125.W.S3.F212.NN.F.T1
406.0.125.W.S2.F212.NN.F.T1

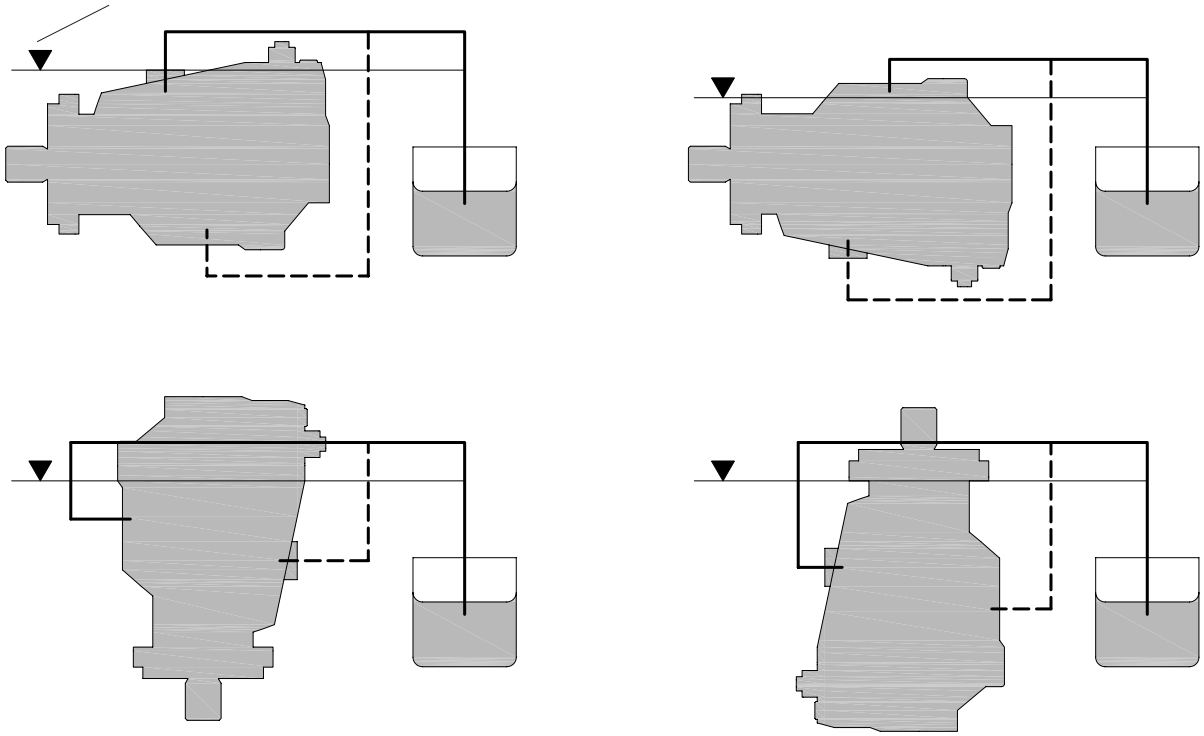
406.0.125.W.S3.F231.NN.B.У1
406.0.125.W.S2.F361.IN.B.У1

Hydraulic motor direction and drain pipe mounting scheme.

Any hydraulic motor direction of mounting is possible (see the Fig.).

Hydraulic motor drain chamber is to be connected with hydraulic system drain line.
The drain chamber is recommended to be connected through the hydraulic motor housing upper hole.
The drain line should be located according to the schemes given on the Fig. in order to avoid the hydraulic motor housing natural pressure from the tank.

The motor housing filling level.



PSM-Hydraulics
8, 1st km Sibirsky Trakt, Ekaterinburg, Russia, P.C. 620100
tel.: +7 (343) 264-66-50, fax: +7 (343) 229-79-83
web: www.psm-hydraulics.com
E-mail: trade@psmural.ru