



Index

General information - Features..... P2
 Technical data P4
 Ordering code P5
 Control P12
 SH9V 061 P28
 SH9V 085..... P28
 SH9V 115..... P39
 SSH9V 215 P50
 Flushing valve P61
 Tachometer P63

Type	Displacement cm ³ /rev [in ³ /rev]	Max. flow l/min [U.S. gpm]	Max. pressure cont. bar [psi]	Max Peak Pressure bar [psi]
SH9V 085	85.3 [5.203]	341 [90.02]	430 [6235]	480 [6960]
SH9V 115	115.7 [7.05]	411 [108.5]	430 [6235]	480 [6960]
SH9V 215	216 [13.176]	627 [165.63]	430 [6235]	480 [6960]

H9V series are a family of variable displacement motors, bent axis piston design for operation in both open and closed circuit. The proven design incorporating the lens shape valve plate, the high quality components and manufacturing techniques make able the SH9V series motors to provide up to 430 bar [6235 psi] ontinuous and 480 bar [6960 psi] peak performance.

Fully laboratory tested and field proven, these motors provide maximum efficiency and long life even at very bad filtering conditions. Heavy duty bearings permit high radial and axial loads. Versatile design includes a variety of control and shaft ends that will adapt the SH9V series motors to any application both industrial and mobile.



Simbology:

C	N/bar [lbf/psi]	Load
F_{ax max}	N [lbf]	Axial pushing load
F_{ax max}	N [lbf]	Axial pulling load
F_q	N [lbf]	Radial load
F_{q max}	N [lbf]	Maximum permissible radial load
J	kg·m ² [lbf·ft ²]	Moment of inertia
m	kg [lbs]	Weight
n_{0 max}	rpm	Maximum speed
p_{nom}	bar [psi]	Maximum cont. pressure
p_{max}	bar [psi]	Maximum pressure peak

q_{max}	l/min [U.S. gpm]	Maximum flow
q_d	l/min [U.S. gpm]	External drain flow
T_k	Nm/bar [lbf.ft/psi]	Torque constant
T_{nom}	Nm [lbf.ft]	Maximum torque at pressure cont.
T_{max}	Nm [lbf.ft]	Maximum torque at pressure peak
V_g	cm ³ /rev [in ³ /rev]	Displacement
P_{max}	kW [hp]	Maximum power at p _{nom}
η_{hm}	%	Mech-hyd. efficiency
η_v	%	Volumetric efficiency

Hydraulic fluids:

Use fluids with mineral oil basis and anticorrosive, antioxidant and wear preventing addition agents (HL or HM). Viscosity range at operating temperature must be of 15÷40 cSt. For short periods and upon cold start, a max. viscosity of 800 cSt is allowed. Viscosities less than 10 cSt are not allowed. A viscosity range of 10÷15 cSt is allowed for extreme operating conditions and for short periods only. For further information see at Fluids and filtering section.

Temperature ranges:

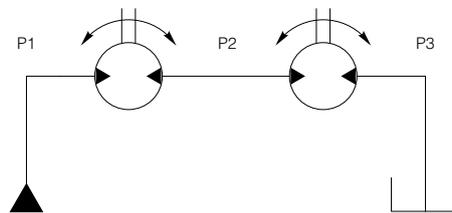
The operating temperature of the oil must be within -25°C ÷ 115°C [-13°F ÷ 239°F]. The running of the unit with oil temperature higher than 115°C [239°F] or lower than -25°C [-13°F] is not allowed. For further information see at Fluids and filtering section

Filtering:

A correct filtering helps to extend the service life of axial piston units. In order to ensure a correct functioning of the unit, the max. permissible contamination class is 21/19/16 according to ISO 4406:1999. For further details see at Fluids and filtration section.

Operating pressure:

The maximum permissible pressure on pressure ports is 430 bar [6235 psi] continuous and 480 bar [6960 psi] peak. If two motors are connected in series, total pressure has to be limited to following values: P1+P2 700 bar max. [10150 psi max].

**Case drain pressure:**

Maximum permissible case drain pressure is 10 bar [145 psi]. A higher pressure can damage the main shaft seal or reduce its life.

Seals:

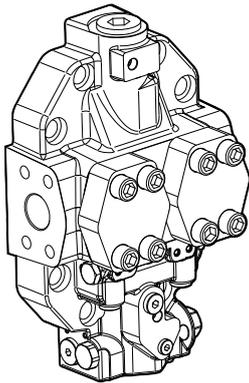
Seals used on standard SH9V series axial piston motors are of FKM seals (Fluoroelastomer - Viton®). In case of use of special fluids, contact Dana.

Minimum rotating speed:

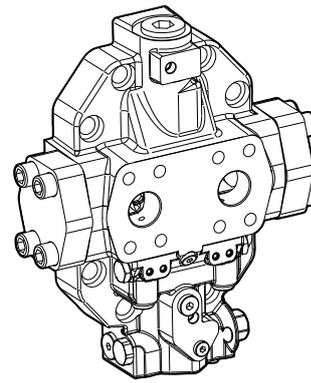
Under “minimum rotating speed” we mean the minimum speed ensuring a smooth running of the piston unit. Operation smoothness at low speeds depends on many factors, as type of load and operating pressure. This unit offers consistent advantages at very low speeds. For special applications please contact Dana.

Port plates:

The SH9V motor port plate has inlet and outlet ports, both lateral (LM-LS cover) and frontal (FM-FS cover). Unused ports are plugged with blind flanges. The kind of ports to be used must be specified when ordering.



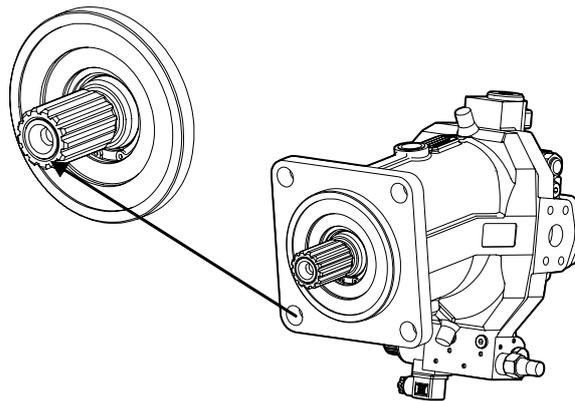
LM-LS Port plate



FM-FS Port plate

Unit identification:

The SH9V motors compared to SH7V motors can be recognized by an identification mark on the top of the shaft.



Flushing valve:

The motors can be equipped with built in flushing valve for closed circuit operation.

Installation:

The motors can be installed in every position or direction. These axial piston units have separate ports and drain chambers and so must be always drained. Installation of the unit with shaft in vertical position and above the tank involves some limitations. For further details see at General installation guidelines

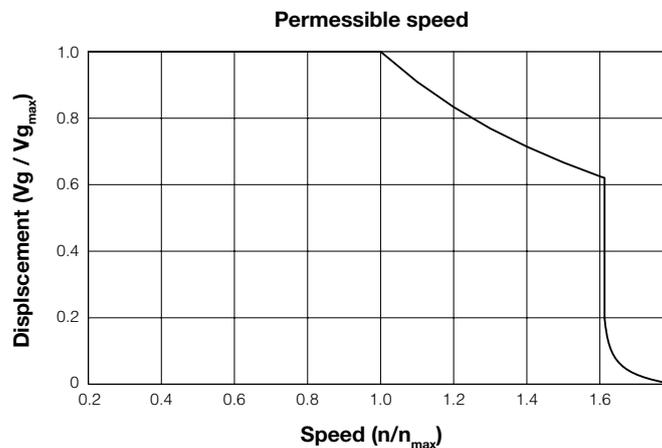


			Size		
			085	115	215
Max. Displacement	V_g	cm ³ /rev [in ³ /rev]	85.3 [5.203]	115.7 [7.05]	216 [13.176]
Min. Displacement	$V_{g_{min}}$	cm ³ /rev [in ³ /rev]	40 [2.44]	56 [3.416]	108 [6.59]
Displacement minimum possible	$V_{g_{min}}$	cm ³ /rev [in ³ /rev]	17 [1.03]	23 [1.403]	43 [2.62]
Displacement Optional	V_{g_o}	cm ³ /rev [in ³ /rev]	0 [0]	0 [0]	0 [0]
Max. Press. cont.	p_{nom}	bar [psi]	430 [6235]	430 [6235]	430 [6235]
Max. Press. peak	p_{max}	bar [psi]	480 [6960]	480 [6960]	480 [6960]
Max. flow	q_{max}	l/min [U.S.gpm]	341 [90.02]	411 [108.5]	627 [165.63]
Max. speed at $V_{g_{max}}$ and q_{max}	$n_{0_{max}}$	rpm	4000	3550	2900
Max. speed at $V_g < V_{g_{max}}$ ⁽²⁾	$n_{0_{max_{lim}}}$	rpm	6150	5600	4600
Max. speed at V_{g_0}	$n_{0_{max_{lim}}}$	rpm	7350	6300	5100
Torque constant $V_{g_{max}}$	T_k	Nm/bar [lbf.ft/psi]	1.36 [0.05]	1.84 [0.07]	3.44 [0.17]
Max power at q_{max} and p_{nom}	P_{max}	kW [hp]	244 [326.9]	295 [395.3]	449 [602.1]
Max. torque cont. at p_{nom}	T_{nom}	Nm [lbf.ft]	584 [430.4]	792 [583.7]	1480 [1091.6]
Max torque peak at p_{max}	T_{max}	Nm [lbf.ft]	652 [480.5]	884 [651.5]	1652 [1218.4]
Moment of inertia	J	kg·m ² [lbf.ft ²]	0.009 [0.22]	0.0124 [0.31]	0.035 [0.829]
Weight ⁽³⁾	m	kg [lbs]	36 [79.3]	47 [103.6]	82 [180.7]
Drain flow ⁽⁴⁾	q_d	l/min [U.S.gpm]	4 [1.05]	5 [1.32]	5 [1.32]

(Theoretical values, without considering η_{nm} and η_v ; approximate values). Peak operations must not exceed 1% of every minute. Avoid continuously working at simultaneously maximum pressure and maximum speed.

Notes:

- (1) Maximum and minimum displacement can be changed with continuity. When ordering state $V_{g_{max}}$ and $V_{g_{min}}$ required.
- (2) Determination of admissible speed n_{max} value can be increased by reducing motor maximum displacement. To determine the relationship between $V_{g_{max}}$ and n_{max} use the right side chart. Motor maximum admissible speed is $n_{max_{lim}}$.
- (3) Approximate values.
- (4) Maximum value at 250 bar [3625 psi] with mineral oil at 45°C [113°F] and 35 cSt of viscosity.



The following alphanumeric codes system has been developed to identify all of the configuration options for the SH11C motors. Use the model code below to specify the desired features.

All alphanumeric digits system of the code must be present when ordering.

We advise to carefully read the catalogue before filling the ordering code.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Series	Motor	Size	Maximum displacement limitation	Minimum displacement limitation	Mount flange	Shaft end	Port cover	Seal	Control	Control specification	Valve	Flanged valves features	Flushing valve	Serie feature	Painting
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

1	
Series	
SH9V	Variable displacement axial piston motor for open and closed circuit

2	
Motor	
M	Motor

3	
Size	
085	85.3 cm ³ /rev [5.203 in ³ /rev]
115	115.7 cm ³ /rev [7.05 in ³ /rev]
215	216 cm ³ /rev [13.176 in ³ /rev]

4			Maximum displacement limitation		
		Size			
		085	115	215	
85÷68	From 85 cm ³ /rev [5.185 in ³ /rev] to 68 cm ³ /rev [4.148 in ³ /rev]	Standard 85 cm ³ /rev [5.185 in ³ /rev]	–	–	–
115÷091	From 115 cm ³ /rev [7.015 in ³ /rev] to 91 cm ³ /rev [5.551 in ³ /rev]	Standard 115 cm ³ /rev [7.015 in ³ /rev]	–	●	–
216÷172	From 216 cm ³ /rev [13.176 in ³ /rev] to 172 cm ³ /rev [10.492 in ³ /rev]	Standard 216 cm ³ /rev [13.176 in ³ /rev]	–	–	●

- Required
- Not required

[Click i button to return to main index](#)

[Click Dana button to return to Section index](#)



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

5

Minimum displacement limitation		Size		
		085	115	215
0	0 cm ³ /rev	●	●	●
17÷56	From 17 cm ³ /rev [1.037 in ³ /rev] to 56 cm ³ /rev [3.416 in ³ /rev]	●	–	–
23÷80	From 23 cm ³ /rev [1.403 in ³ /rev] to 80 cm ³ /rev [4.880 in ³ /rev]	–	●	–
43÷108	From 43 cm ³ /rev [2.623 in ³ /rev] to 108 cm ³ /rev [6.588 in ³ /rev]	–	–	●

- Required
- Not required

6

Mount flange		Size		
		085	115	215
OD	ISO 4 Bolts Ø 140 mm [Ø 5.511 in]	●	–	–
OE	ISO 4 Bolts Ø 160 mm [Ø 6.299 in]	–	●	–
OG	ISO 4 Bolts Ø 200 mm [Ø 7.874 in]	–	–	●
05	SAE-C 4 Bolts	●	–	–
08	SAE-D 4 Bolts	–	●	–
10	SAE-E 4 Bolts	–	–	●

- Available
- Not available

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

7

Shaft end		Size		
		085	115	215
S19	Splined 15T - 8/16 DP	-	-	●
S15	Splined 13T - 8/16 DP	-	●	-
S12	Splined 14T - 12/24 DP	●	-	-
SAR	Splined W50x2x30x24 - DIN 5480	-	-	●
SAP	Splined W45x2x30x21 - DIN 5480	-	●	-
SAO	Splined W40x2x30x18 - DIN 5480	●	●	-
SAM	Splined W35x2x30x16 - DIN 5480	●	-	-
C18	Parallel keyed Ø 44.45 mm [1.75 in]	-	-	●
CAX	Parallel keyed Ø 50 mm k6 [1.97 in k6]	-	-	●

- Available
- Not available

8

Port cover		Size		
		085	115	215
FM	Metric End Main ports	●	●	●
FS	SAE End Main ports	●	●	●
LM	Metric Main Ports positioned 180° apart	●	●	●
LS	SAE Main Ports positioned 180° apart	●	●	●

- Available
- Not available

Warning

Metric Ports (FM-LM) means both main ports and control ports
 SAE Ports (FS-LS) means both main ports and control ports



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

9

Seal	
V	FKM

10

Control	
2EE	Electric two positions control with pressure override
2EN	Electric two positions control
2IE	Hydraulic two positions control with pressure override
2IN	Hydraulic two positions control
REE	Electric proportional control with pressure override
RED	Electric proportional control with double step pressure override
REN	Electric proportional control
RIE	Hydraulic proportional control with pressure override
RID	Hydraulic proportional control with double step pressure override
RIN	Hydraulic proportional control
RPE	Working pressure control
RPI	Working pressure control with hydraulic override
RPS	Working pressure control with electric override
ROE	Working pressure control Δp 100 bar
ROI	Working pressure control Δp 100 bar with hydraulic override
ROS	Working pressure control Δp 100 bar with electric override

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

Control specification		Control (Chosen)															
		RPE	ROE	2EE	2EN	2IE	2IN	REE	RED ⁽¹⁾	REN	RID ⁽¹⁾	RIE	RIN	RPI	ROI	ROS	RPS
Displacement setting	1	From Max. Displac. to Min. Displac. (Vg _{max} → Vg _{min})	-	-	•	•	•	•	•	•	•	•	•	-	-	-	-
	2	From Min. Displac. to Max. Displac. (Vg _{min} → Vg _{max})	•	•	-	•	-	•	-	•	-	-	•	•	•	•	•
None	00		-	-	-	-	-	•	-	-	-	-	-	-	-	-	
Pressure Setting (*)	(*)	100÷400 bar [1430÷5802 psi]	•	-	•	-	•	-	•	•	-	•	•	-	•	-	-
		100÷350 bar [1430÷5076 psi]	-	•	-	-	-	-	-	-	-	-	-	-	-	•	•
Start of control, Setting range (*)	(*)	5-10-15-20 bar [72-145-218-290 psi]	-	-	-	-	-	-	-	-	•	•	•	-	-	-	-
Δp Displacement change	(*)	25 bar [363 psi]	-	-	-	-	-	-	-	-	•	•	•	-	-	-	-
Voltage	12	12 - Connector DIN43650	-	-	•	•	-	-	•	•	•	-	-	-	-	•	•
	24	24 - Connector DIN43650	-	-	•	•	-	-	•	•	•	-	-	-	-	•	•
	D2	12 - Deutsch DT04	-	-	•	•	-	-	•	-	•	-	-	-	-	•	•
	D4	24 - Deutsch DT04	-	-	•	•	-	-	•	-	•	-	-	-	-	•	•
	A2	12 V - ATEX T6 (Solo 55 2EN)	-	-	-	•	-	-	-	-	•	-	-	-	-	-	-
	A4	24 V - ATEX T6 (Solo 55 2EN)	-	-	-	•	-	-	-	-	•	-	-	-	-	-	-
Control orifice (**)	04	With Ø 0.4 mm [Ø 0.015 in] Control Orifice	•	-	•	•	•	•	-	-	-	-	-	-	-	-	-
	05	With Ø 0.5 mm [Ø 0.0196 in] Control Orifice	-	•	-	-	-	-	•	•	•	•	•	•	•	•	•
	07	With Ø 0.7 mm [Ø 0.027 in] Control Orifice	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Specify for each control, all the required values for the chosen control.

- Available
- Not available

⁽¹⁾ Specify Pressure Setting values for Step 1 and Step 2 (Step1<Step2)

(*) Supply the setting value

(**) 0.4 mm [Ø 0.015 in] (standard) nozzle, provides a smooth control response (max-to-min and min-to-max), while Ø 0.5-0.7 mm [Ø 0.0196-0.027 in] (optional) nozzle, provides a faster reaction.

Warning:

The values showed are only valid in maximum and minimum displacement conditions of the respective displacement. For different values, verify the possibility with the control diagrams present on the catalogue.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

12

Valve		Size		
		085	115	215
XXXX	None	●	●	●
VCD1	VCD/1 Pilot assisted overcentre valve	LM	LM	LM
VCD2	VCD/2 Pilot assisted overcentre valve	LM	LM	LM
VCR4	VCR4 double acting overcentre valve	FM	FM	-

- Available
- Not available

The valves are available with ISO port cover only, please contact Technical department for SAE version
The LM - FM digit means that the valve is only available with LM - FM port cover.

13

Flanged valves features		Valve				
		XXXX	VCD1	VCD2	VCR2	VCR4
000	Feature not necessary	●	-	-	-	-
002	Not Set 0÷350 bar [0 to 5075 psi][Piloting ratio 2.9:1] - Control of rotation CW	-	●	-	-	-
006	Not Set 0÷350 bar [0 to 5075 psi][Piloting ratio 2.9:1] - Control of rotation CCW	-	●	-	-	-
003	Not Set 250÷500 bar [3625 to 7250 psi][Piloting ratio 13:1] - Control of rotation CW	-	-	●	-	-
007	Not Set 250÷500 bar [3625 to 7250 psi] [Piloting ratio 13:1] - Control of rotation CCW	-	-	●	-	-
010	Not Set - Aluminum 60÷350 bar [870 to 5075 psi] [Piloting ratio 6.2:1]	-	-	-	●	-
013	Not Set 140÷350 bar [2030 to 5075 psi] [Piloting ratio 4.5:1]	-	-	-	-	●

- Available
- Not available

Please contact Technical department for valve which require specific setting.
For the feature see catalogue valves.

14

Flushing valve		Size		
		085	115	215
PR	Arranged for Flushing Valve	●	●	●
06	VSC/F Flushing valve - 6 l/min [1.58 U.S. gpm]	●	●	●
09	VSC/F Flushing valve - 10.5 l/min [2.77 U.S. gpm]	●	●	●
15	VSC/F Flushing valve - 15 l/min [3.96 U.S. gpm]	●	●	●
21	VSC/F Flushing valve - 20 l/min [5.28 U.S. gpm]	-	●	●

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SH9V	M	085	85	17	OD	S19	FM	V	RPE	2 100 04	XXXX	000	PR	XX	XX

15

Serie feature		Size		
		085	115	215
XX	None	•	•	•
TW	Tachometer + sensor 2-Channel Differential Hall effect PNP - 5V	•	•	•
TZ	Tachometer + sensor 2-Channel Differential-Hall effect	•	•	•

- Available
- Not available

16

Painting	
XX	Not Required
01	Black Painted RAL 9005
02	Blue Painted RAL 5015



The 2EE control version with the pressure override allows the motor to swivel to $V_{g\ max}$ when the pressure setting is reached. Same as '2EN' control, when solenoid valve is switched off the motor is at $V_{g\ max}$. The motor displacement is adjusted to $V_{g\ min}$ when the solenoid valve is switched on and if the operating pressure rises beyond the pressure setting, the pressure limiting device overrides the electric two positions control and the motor swivels out to $V_{g\ max}$. Swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting 1 per our ordering code).

Note:

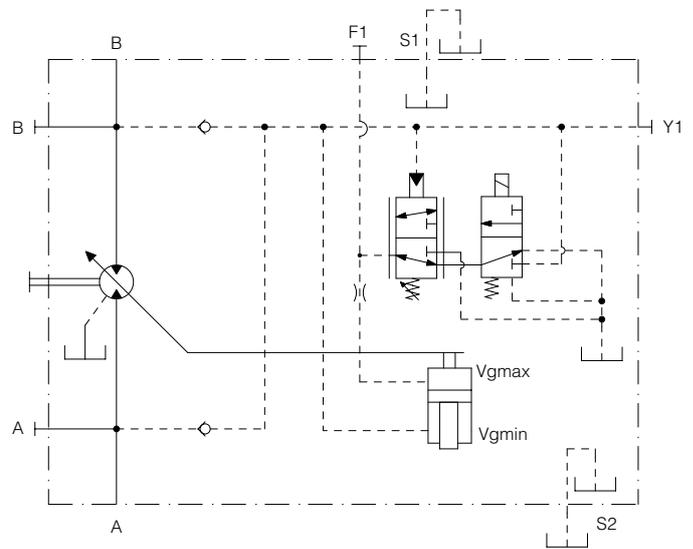
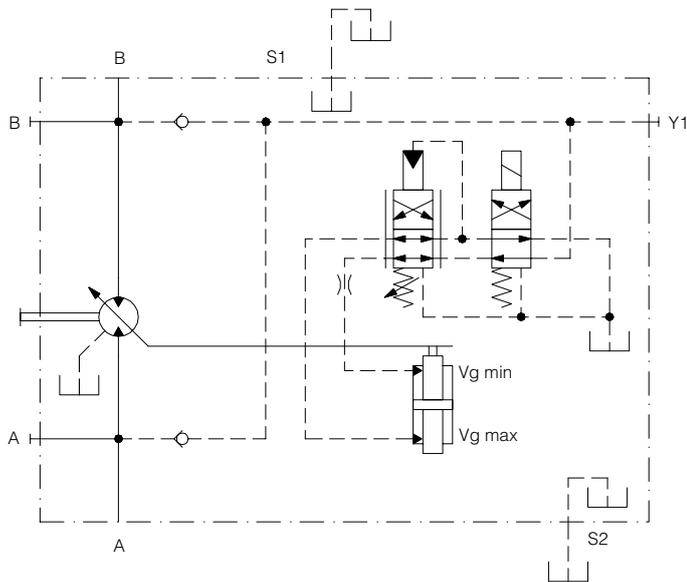
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:

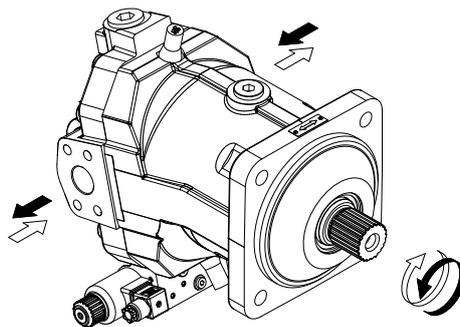
085-115

Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



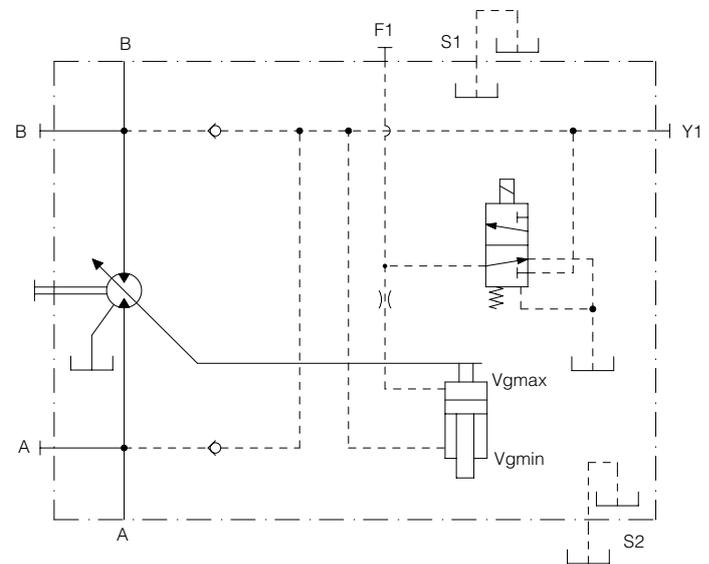
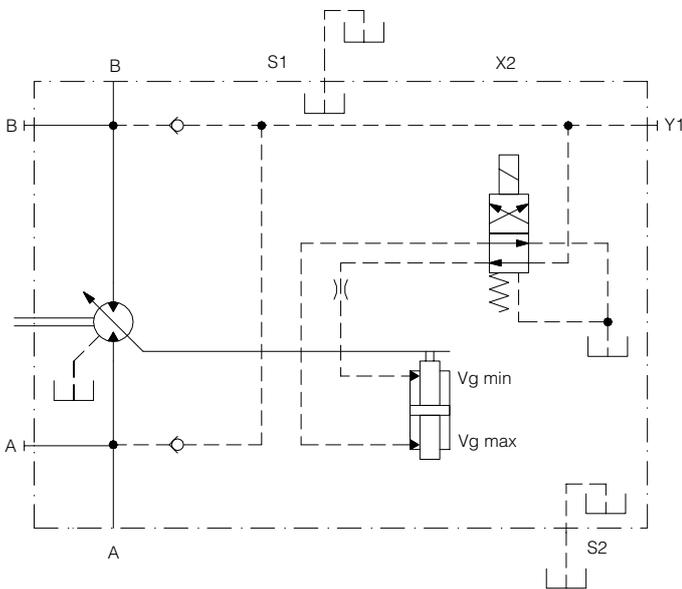
The electric two positions control allows the displacement of the motor to be set to $V_{g\ max}$ or $V_{g\ min}$ by switching an ON/OFF solenoid valve. The feed back spring is missing so $V_{g\ max}$ or $V_{g\ min}$ only can be set. 12V DC and 24V DC ON/OFF solenoid are available. The swivel range is 1 (from $V_{g\ max}$ to $V_{g\ min}$) or 2 (swivel range from $V_{g\ min}$ to $V_{g\ max}$).

Note:

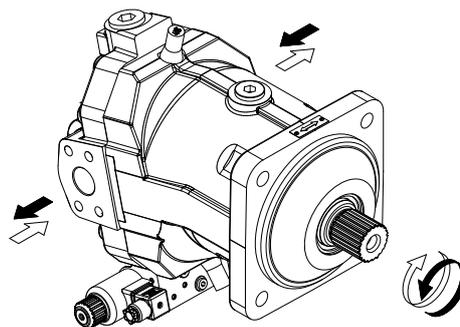
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:
085-115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The 2IE control version with the pressure override allows the motor to swivel to $V_{g\ max}$ when the pressure setting is reached. Same as 2IN control, the motor displacement is adjusted to $V_{g\ min}$ when the pilot pressure applied at port X2. Minimum required pilot pressure = 10 bar [145 psi] and maximum permissible pressure at port X2=100 bar [1450 psi]. If the operating pressure rises beyond the pressure setting, the pressure limiting device the motor swivels out to $V_{g\ max}$. Swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting 1 per our ordering code).

Note:

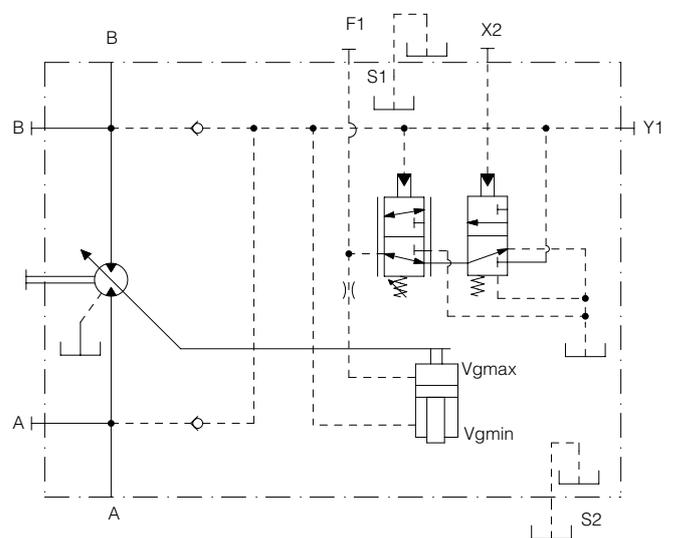
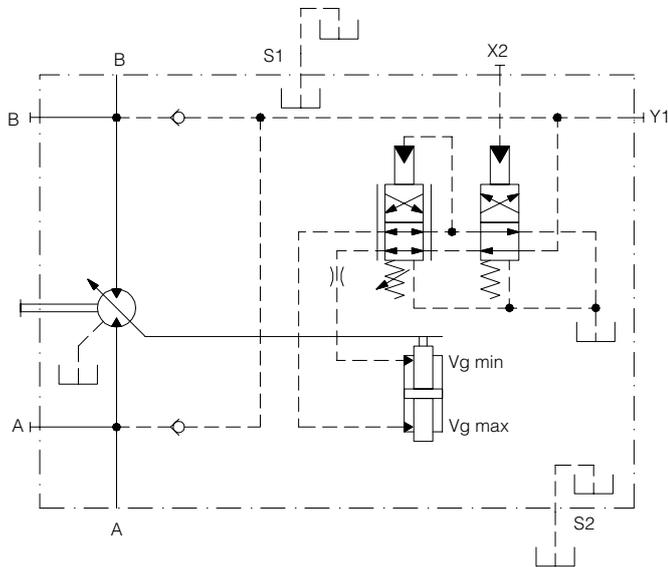
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:

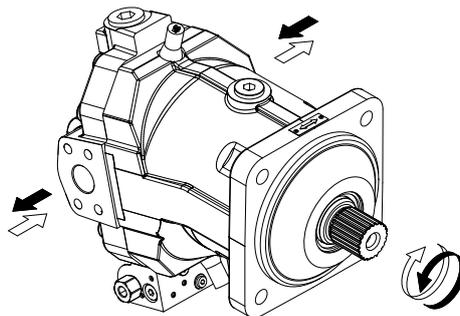
085-115

Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



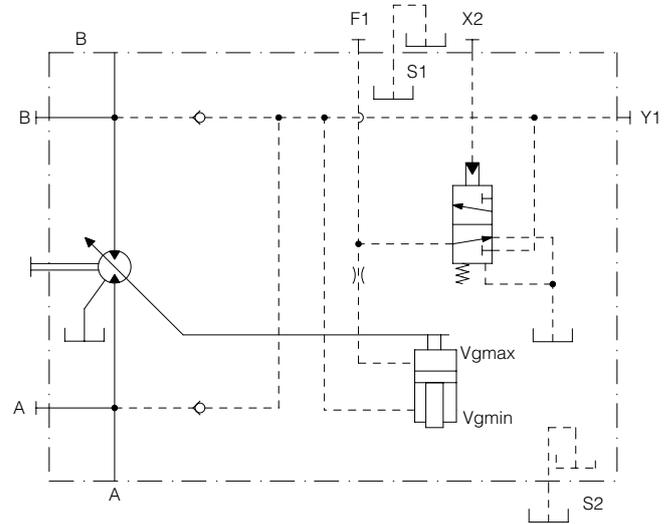
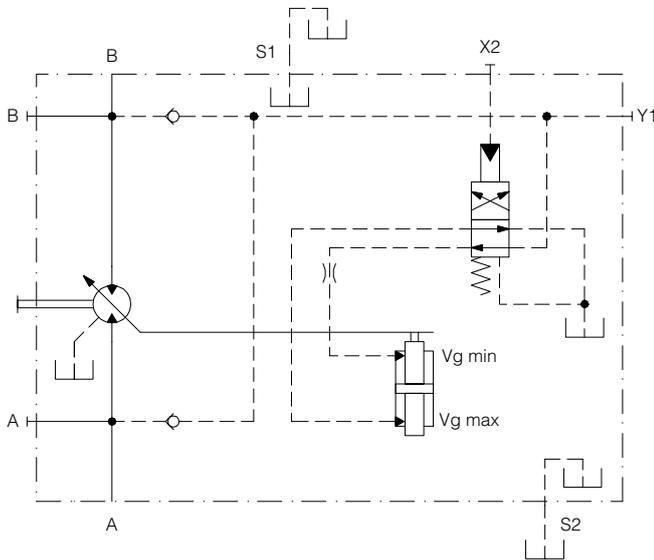
The hydraulic two positions control allows the displacement of the motor to be set to V_{gmax} or V_{gmin} by applying or not a pilot pressure at port X2. The feed back spring is missing so V_{gmax} or V_{gmin} only can be set. Minimum required pilot pressure = 10 bar [145 psi] and maximum permissible pressure at port X2=100 bar [1450 psi]. The swivel range is 1 (from V_{gmax} to V_{gmin}) or 2 (swivel range from V_{gmin} to V_{gmax}).

Note:

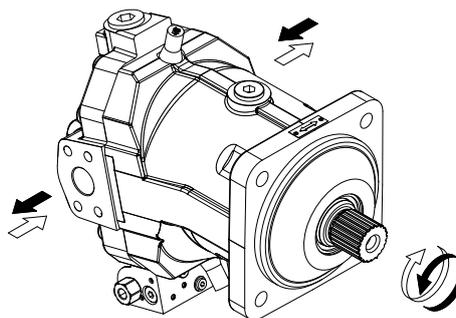
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:
085-115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



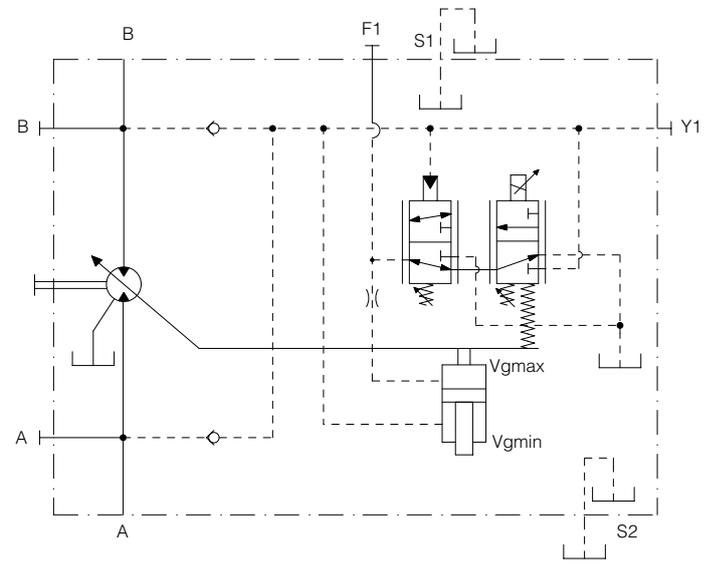
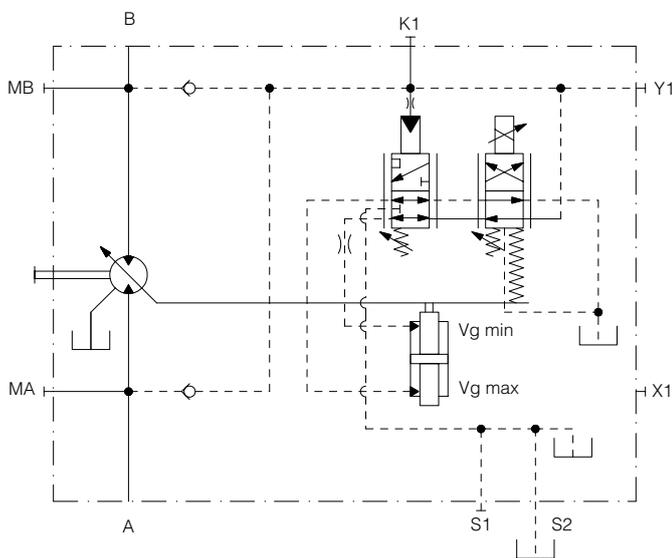
The REE control version with the pressure override allows the motor to swivel to $V_{g\ max}$ when the pressure setting is reached. Same as REN control, when solenoid valve is switched off the motor is at $V_{g\ max}$. The proportional solenoid valve is available in 12V DC and 24V DC version and with connector DIN 43650 or DEUTSCH. The motor displacement is adjusted to $V_{g\ min}$ when the solenoid valve is switched on and if the operating pressure rises beyond the pressure setting, the pressure limiting device overrides the electric two positions control and the motor swivels out to $V_{g\ max}$. Swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting 1 per our ordering code).

Note:

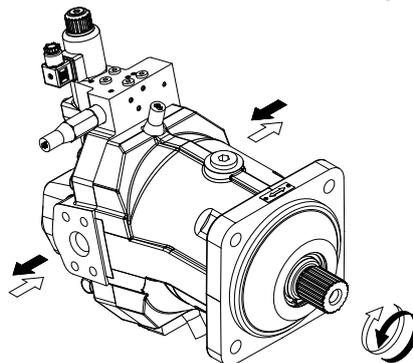
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:
085-115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The RED control version with the pressure override allows the motor to swivel to V_{gmax} when the pressure setting is reached. Same as REN control, when solenoid valve is switched off the motor is at V_{gmax} . The proportional solenoid valve is available in 12V DC and 24V DC version and with connector DIN 43650 or DEUTSCH. The motor displacement is adjusted to V_{gmin} when the solenoid valve is switched on and if the operating pressure rises beyond the pressure setting, the pressure limiting device overrides the electric two positions control and the motor swivels out to V_{gmax} . Swivel range is from V_{gmax} to V_{gmin} (displacement setting 1 per our ordering code). Applying a pressure to port X3, the setting of PE control can be overridden by a different value of pressure. Setting range from 16 bar [232 psi] to 64 bar [928 psi] around.

Note:

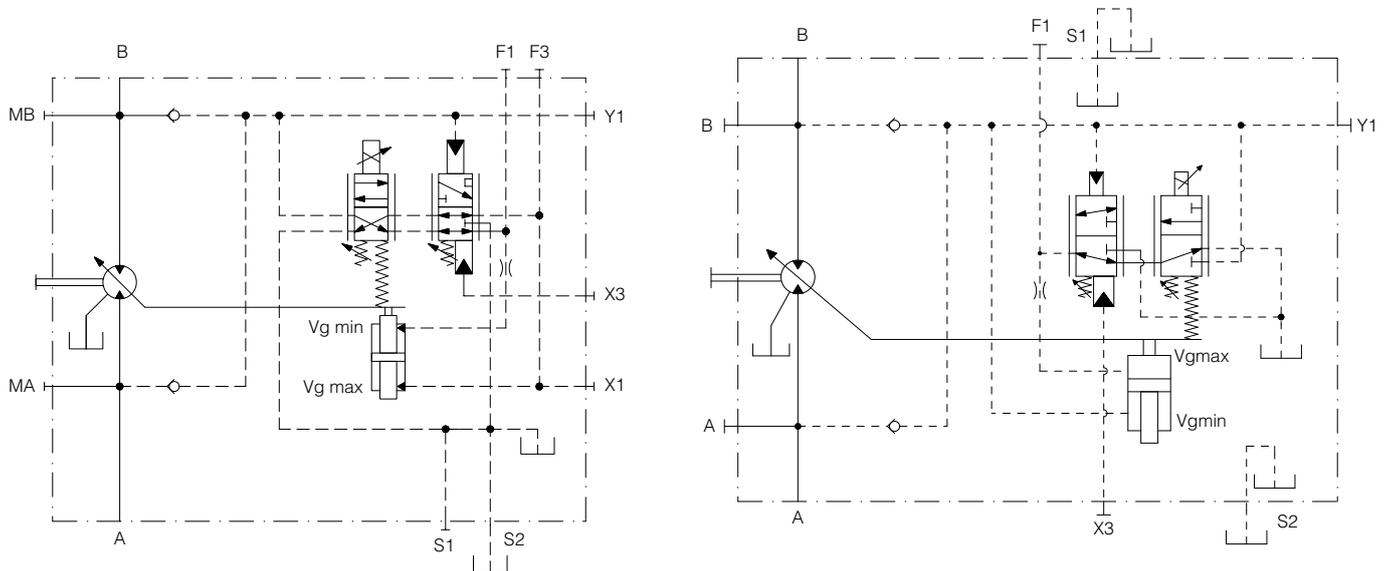
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:

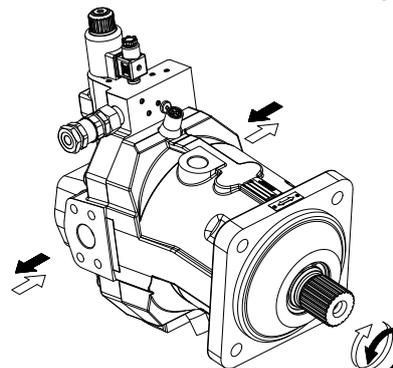
085-115

Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.

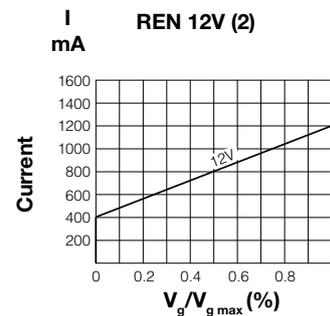
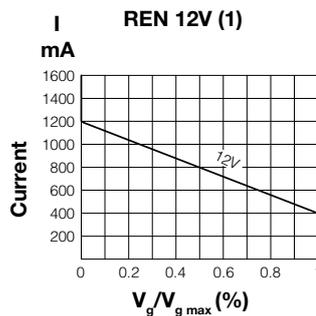
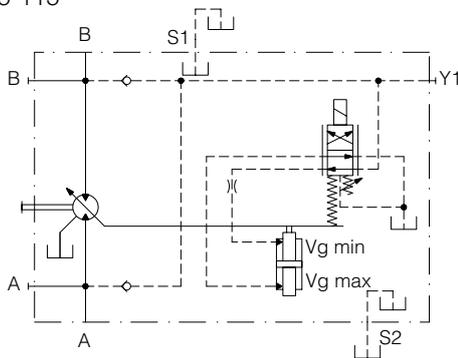


The electrical proportional control allows stepless and programmable adjustment of the motor displacement proportionally to the current strength supplied to a proportional solenoid valve available in 12V DC and 24V DC version and with connector DIN 43650 or DEUTSCH. The proportional solenoid valve applies a force on the spool proportional to the current strength and the motor swivels until a force balance is restored by a feed-back spring. To control the proportional solenoid valve a 24V DC (12V DC) supply is required. Current range between 200 (400) and 600 (1200) mA approx. (with standard setting of Max and Min displacement). Max permissible current = 800 (1600) mA. Usually the swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting type 1 as per our ordering code) so that increasing the current strength the motor swivels towards $V_{g\ min}$, however displacement setting type 2 (swivels range from $V_{g\ min}$ to $V_{g\ max}$) is also available. The electronic devices are available to control the solenoid (they must be ordered separately).

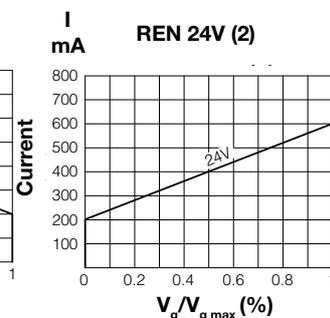
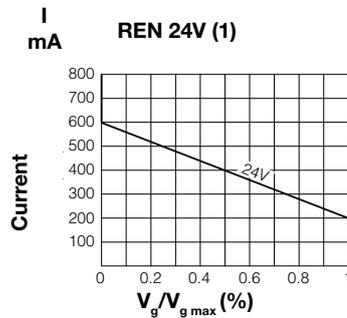
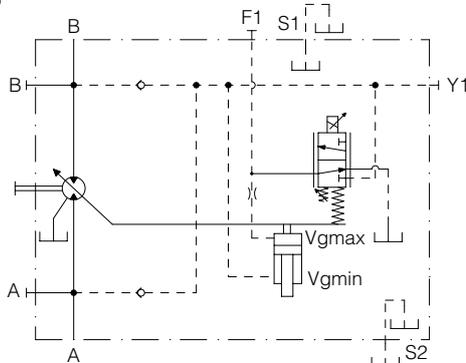
Note:

For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

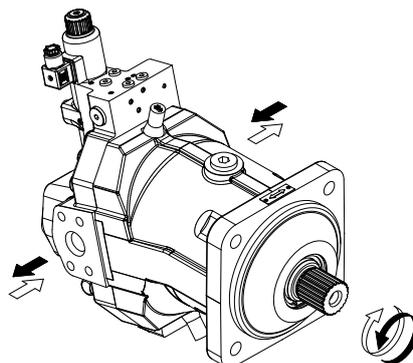
Size:
085-115



Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The RIE control version with the pressure override allows the motor to swivel to $V_{g\ max}$ when the pressure setting is reached. Same as RIN control, the motor displacement is adjusted to $V_{g\ min}$ when the pilot pressure applied at port X2. If the operating pressure rises beyond the pressure setting, the pressure limiting device the motor swivels out to $V_{g\ max}$. Swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting 1 per our ordering code).

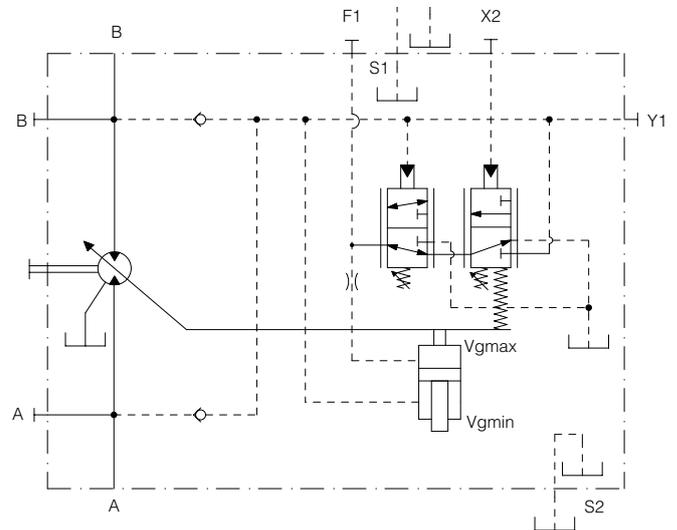
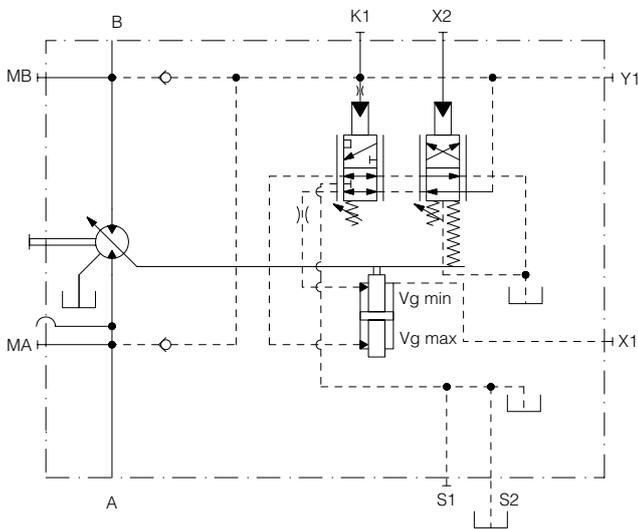
Start of control, Setting range from 5 bar [72.5 psi] to 20 bar [290 psi] around. Pilot pressure range 25 bar [362.5 psi]. Max permissible pilot pressure at port X2 = 100 bar [1450 psi].

Note:

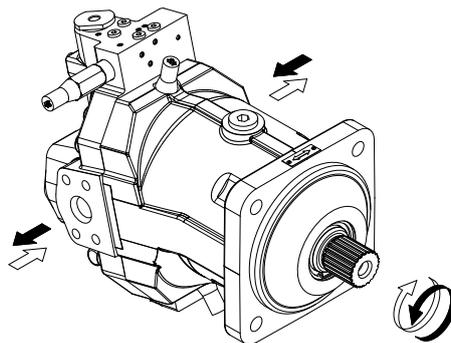
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:
085-115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The RID control version with the pressure override allows the motor to swivel to $V_{g\ max}$ when the pressure setting is reached. Same as RIN control, the motor displacement is adjusted to $V_{g\ min}$ when the pilot pressure applied at port X2. If the operating pressure rises beyond the pressure setting, the pressure limiting device the motor swivels out to $V_{g\ max}$. Swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting 1 per our ordering code).

Applying a pressure to port X3, the setting of PE control can be overridden by a different value of pressure.

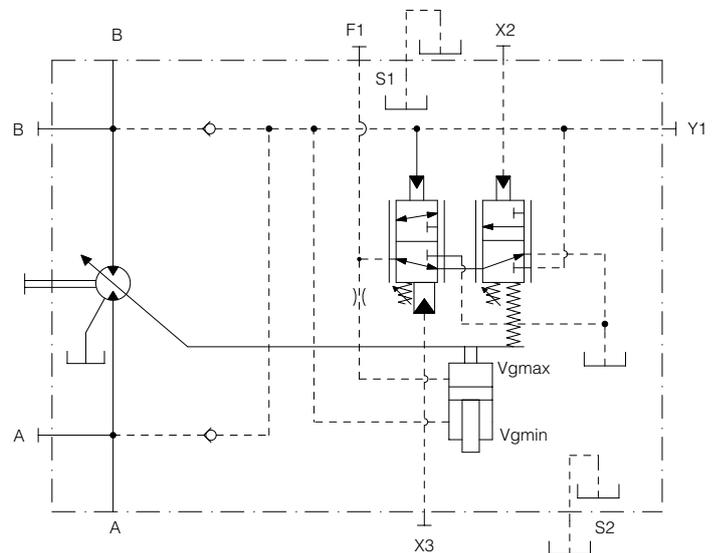
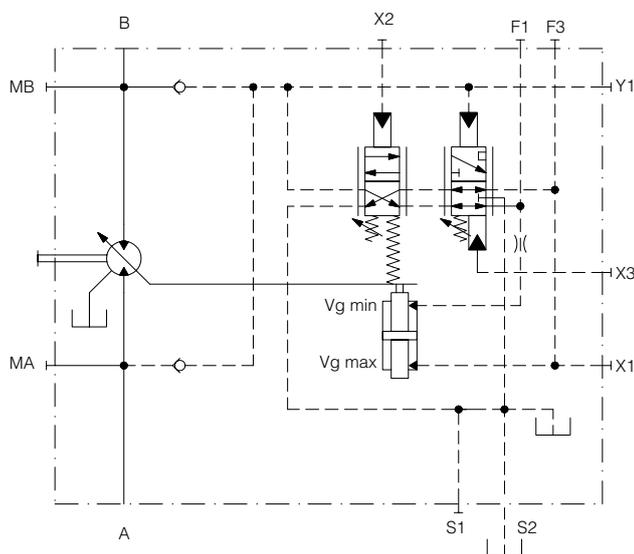
Setting range from 16 bar [232 psi] to 64 bar [928 psi] around. Start of control, Setting range from 5 bar [72.5 psi] to 20 bar [290 psi] around. Pilot pressure range 25 bar [362.5 psi]. Max permissible pilot pressure at port X2 = 100 bar [1450 psi].

Note:

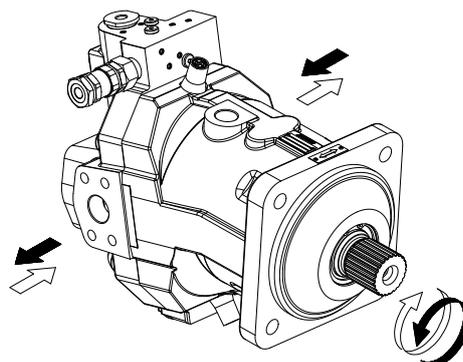
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

Size:
085-115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



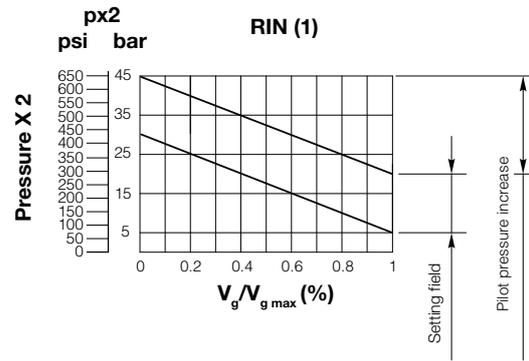
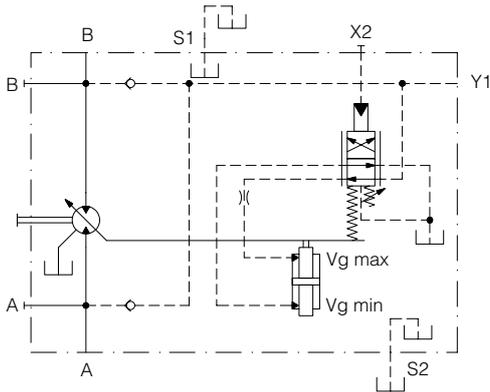
The hydraulic proportional control allows a stepless adjustment of the motor displacement proportionally to the pilot pressure applied at port X2. The pilot pressure applies a force on the spool and the motor swivels until a force balance on the arm is stored by feed back spring. Therefore the motor displacement is adjusted in direct proportion with the pilot pressure. Usually the swivel range is from $V_{g\ max}$ to $V_{g\ min}$ (displacement setting type 1 as per our ordering code) so that increasing the pilot pressure the motor swivels towards $V_{g\ min}$, however, displacement setting type 2 (swivel range from $V_{g\ min}$ to $V_{g\ max}$) is also available. Start of control, Setting range from 5 bar [72.5 psi] to 20 bar [290 psi] around. Pilot pressure range 25 bar [362.5 psi]. Max permissible pilot pressure at port X2 = 100 bar [1450 psi].

Note:

For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

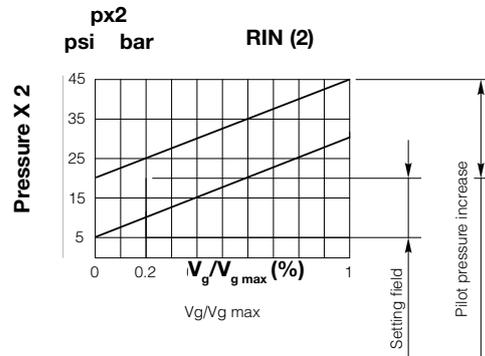
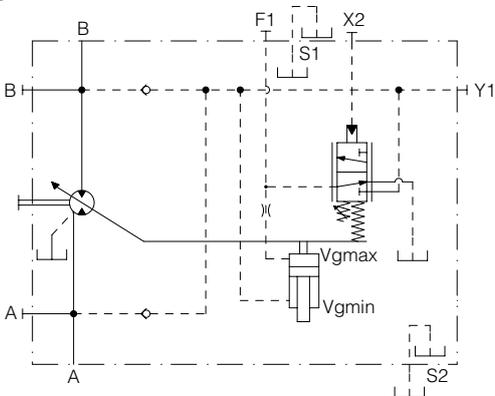
Size:

085-115

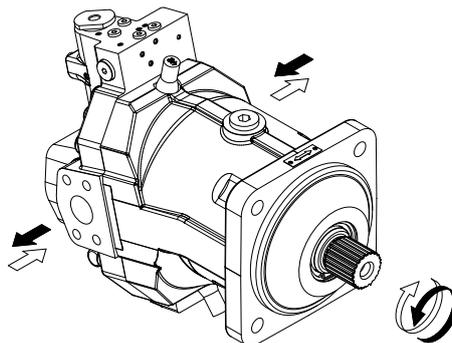


Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



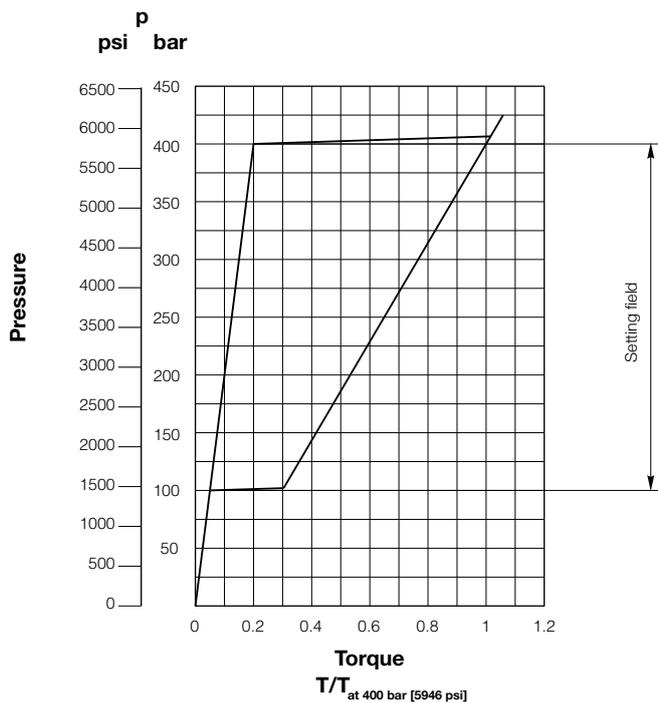
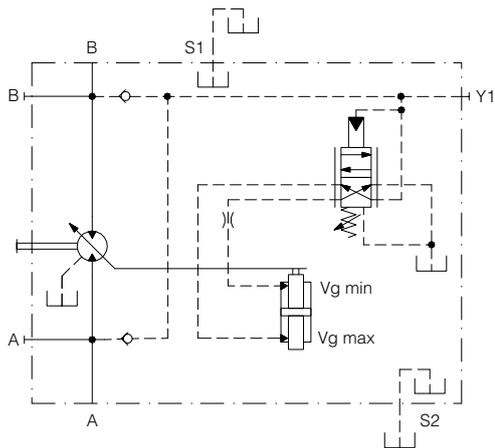
The working pressure control allows to swivel the motor displacement from $V_{g\ min}$ to $V_{g\ max}$ when the operating pressure rises beyond the preset operating pressure, so that the motor is at $V_{g\ min}$ when min torque and max speed are required and at $V_{g\ max}$ when max torque and min speed are required. The operating pressure applies a force on the spool which is matched by an adjustable spring. The motor keeps the $V_{g\ min}$ until the operating pressure reaches the setting value (pressure setting). Once the preset pressure rises beyond, the motor swivels from $V_{g\ min}$ to $V_{g\ max}$. The swivel range is from $V_{g\ min}$ to $V_{g\ max}$ (displacement setting type 2 as per our ordering code). Start of control adjustable between 100 and 400 bar [1450 and 5800 psi].

When ordering please clearly state:

Control pressure setting.

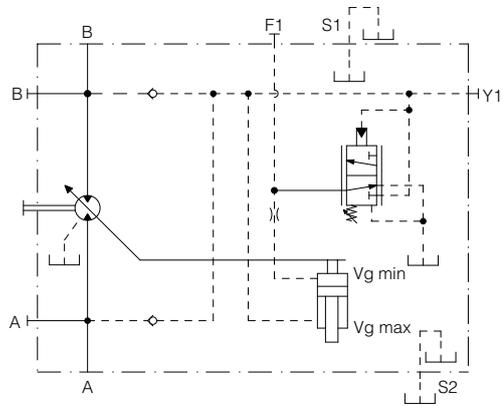
Size:

085 - 115

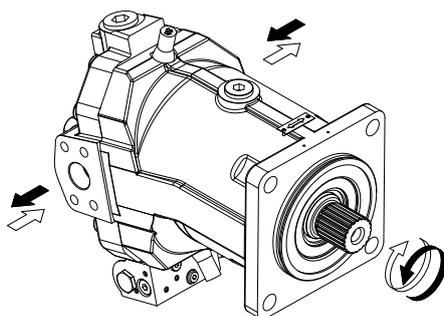


Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The hydraulic limiting device makes possible to reduce the pressure setting of RPE control by means of an external pilot pressure applied at port X2. The RPE control pressure setting is reduced proportionally to the pilot pressure in the ratio of 1/17 (for each pilot pressure bar, the preset operating pressure is reduced of 17 bar) [170 psi each 10 psi of pilot pressure]. Max permissible pilot pressure at port X2 = 100 bar [1450 psi].

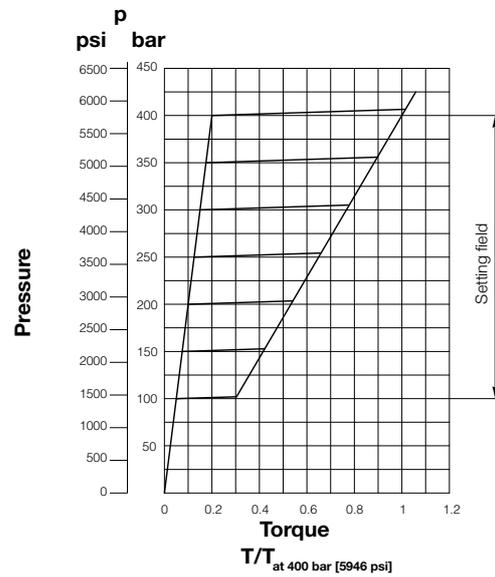
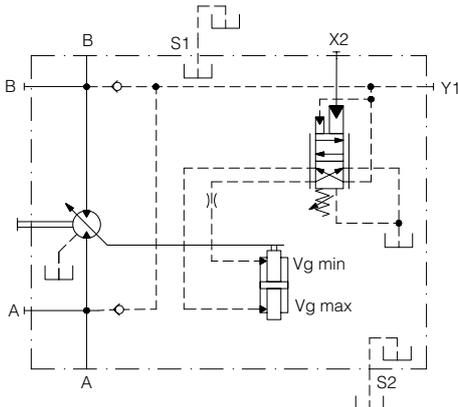
Example: preset operating pressure of RPE control = 300 bar [4350 psi]. By applying at port X2 a pilot pressure of 10 bar [145 psi], the pressure setting comes to 130 bar [1885 psi] ($300 - (10 \times 17) = 130$) ($4350 - (145 \times 17) = 1885$). Should it be required to swivel the motor to $V_{g\ max}$ independently from the operating pressure, a pilot pressure of 20 bar [290 psi] should be applied at port X2. Swivel range from $V_{g\ min}$ to $V_{g\ max}$ (assembly type 2 as per our ordering code). Start of control adjustable between 100 and 400 bar [1450 and 5800 psi].

When ordering please clearly state:

Control pressure setting.

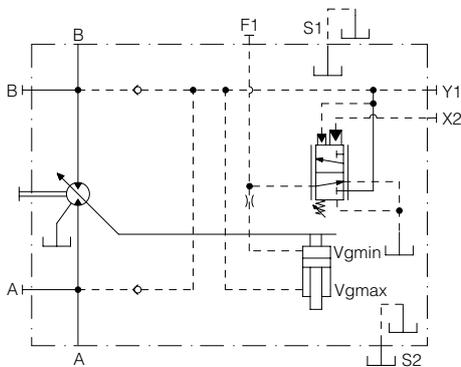
Size:

085 - 115

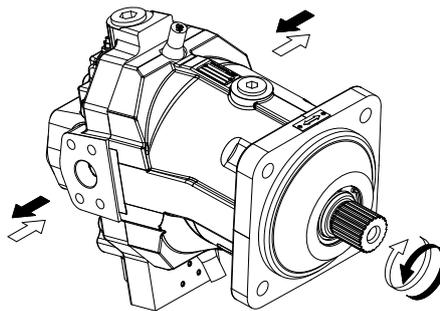


Size:

215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



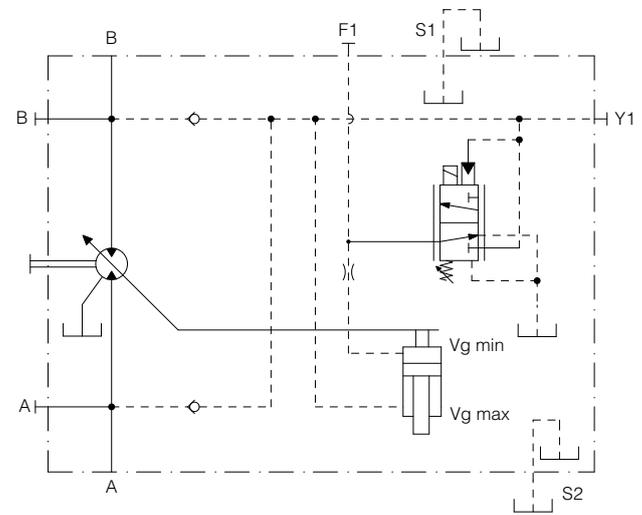
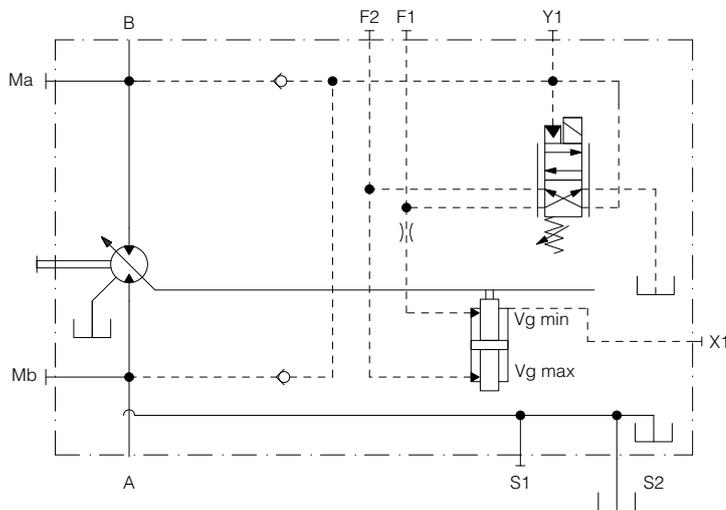
RPS control is a pressure related control which permits the changing of displacement $V_{g\ min}$ to $V_{g\ max}$ when working pressure exceeds setting threshold, so that the motor works at $V_{g\ min}$ when low torque and high speed are required and at $V_{g\ max}$ when high torque and low speed are required. The motor stands at $V_{g\ min}$ till working pressure reaches setting threshold.

Δp of working pressure that allows the changing of diaplacement from minimum to maximum is around 10 bar (such as RPE control). This pressure related control can be overridden by an electrical signal; when solenoid is energized , the motor reaches maximum displacement without stopping in an intermediate position. Swivel range from $V_{g\ min}$ to $V_{g\ max}$ (assembly type 2 as per our ordering code). Setting pressure range is 100-300 bar.

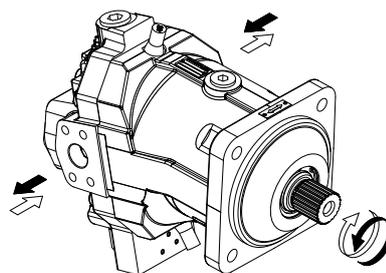
When ordering please clearly state:
Control pressure setting.

Size:
085 - 115

Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The "ROE" control allows a larger pressure range for displacement variation in comparison to "RPE" control. The increase of pressure range for variation from $V_{g_{min}}$ to $V_{g_{max}}$ allows a smoother working of the motor during displacement variation. The "ROE" allows the displacement variation with the pressure range show in the table.

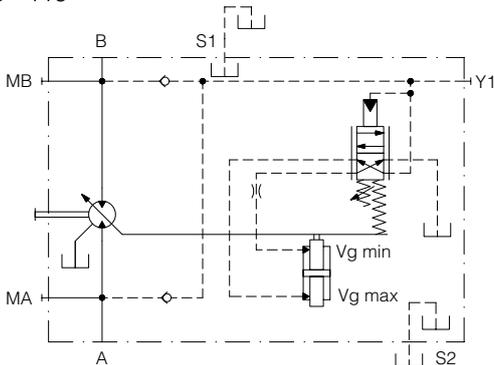
Δp bar [psi]	P_{min} bar [psi]	P_{max} bar [psi]
100 [1450]	100 [1450]	350 [5075]

Where:

- Δp is the working pressure range that allows the displacement variation.
- P_{min} is the minimum pressure at which displacement variation starting can be set.
- P_{max} is the maximum pressure at which displacement variation starting can be set.

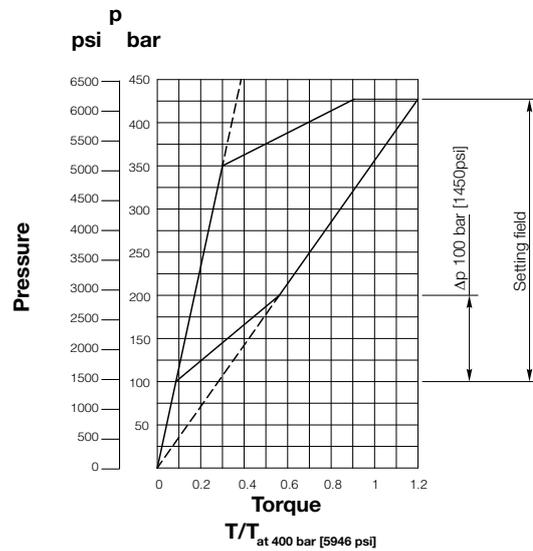
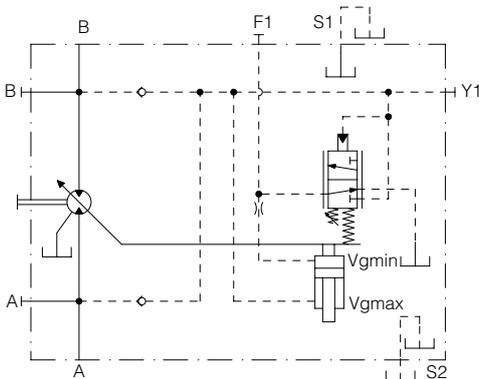
Size:

085 - 115



Size:

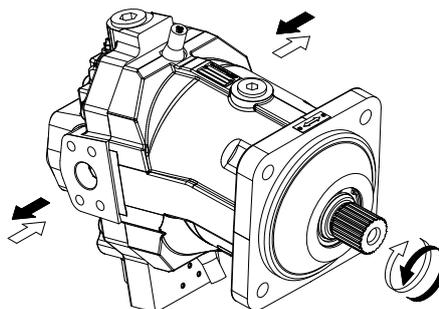
215



Warning:

in case of displacement limitation, the control shall vary of a reduced Δp with respect to its standard one. Please contact Dana for more info.

The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



The hydraulic limiting device makes possible to reduce the pressure setting of ROE control by means of an external pilot pressure applied at port X2. The ROE control pressure setting is reduced proportionally to the pilot pressure in the ratio of 1/17 (for each pilot pressure bar, the preset operating pressure is reduced of 17 bar) [170 psi each 10 psi of pilot pressure]. Max permissible pilot pressure at port X2 = 100 bar [1450 psi].

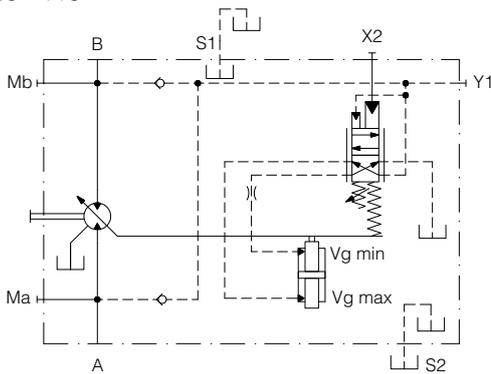
Example: preset operating pressure of ROE control = 300 bar [4350 psi]. By applying at port X2 a pilot pressure of 10 bar [145 psi], the pressure setting comes to 130 bar [1885 psi] $(300 - (10 \times 17) = 130)$ $(4350 - (145 \times 17) = 1885)$. Should it be required to swivel the motor to $V_{g \max}$ independently from the operating pressure, a pilot pressure of 20 bar [290 psi] should be applied at port X2.

Swivel range from $V_{g \min}$ to $V_{g \max}$ (assembly type 2 as per our ordering code). Start of control adjustable between 100 and 350 bar [1450 and 5000 psi].

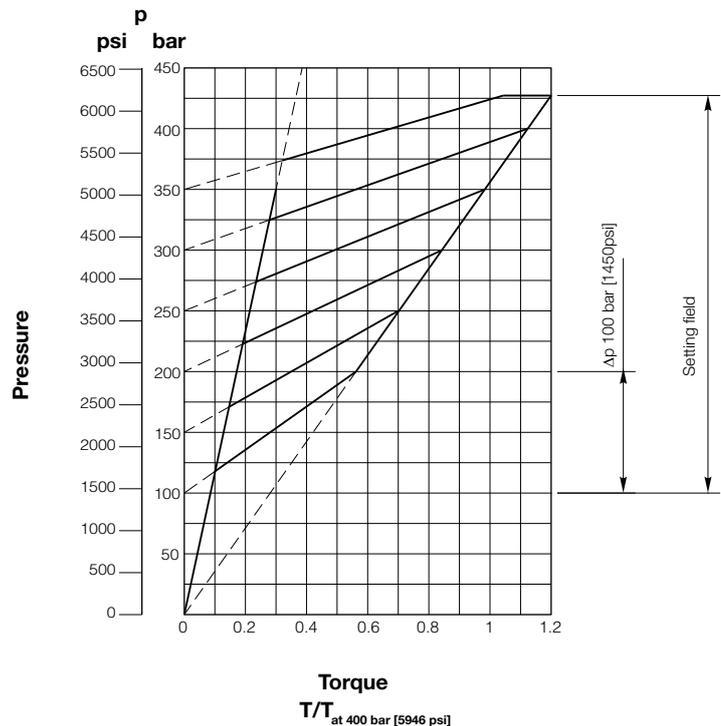
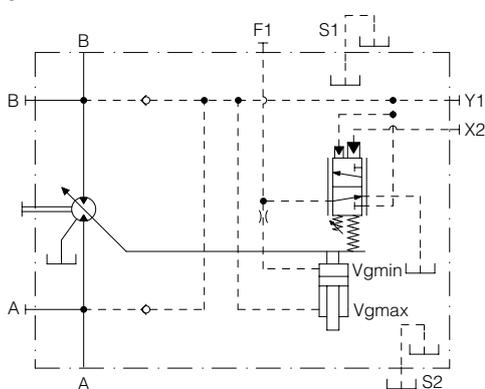
When ordering please clearly state:

Control pressure setting.

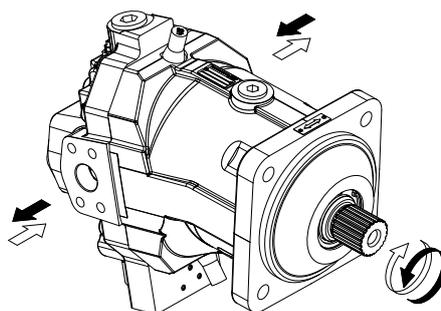
Size:
085 - 115



Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.



ROS control is a pressure related control which permits the changing of displacement $V_{g\ min}$ to $V_{g\ max}$ when working pressure exceeds setting threshold, so that the motor works at $V_{g\ min}$ when low torque and high speed are required and at $V_{g\ max}$ when high torque and low speed are required. The motor stands at $V_{g\ min}$ till working pressure reaches setting threshold. Δp of working pressure that allows the changing of diaplacement from minimum to maximum is 100 bar (such as ROE control).

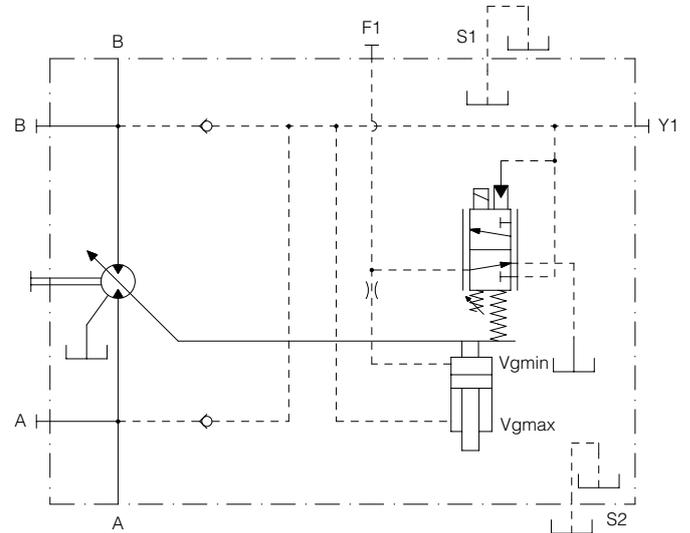
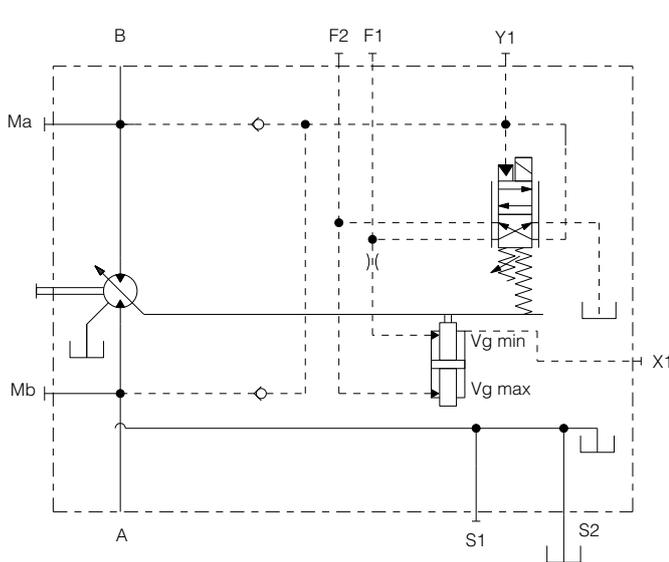
This pressure related control can be overridden by an electrical signal; when solenoid is energized , the motor reaches maximum displacement without stopping in an intermediate position. Swivel range from $V_{g\ min}$ to $V_{g\ max}$ (assembly type 2 as per our ordering code). Setting pressure range is 100-300 bar.

When ordering please clearly state:

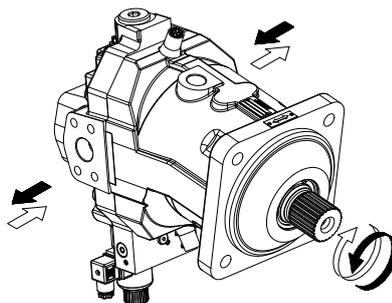
Control pressure setting.

Size:
085 - 115

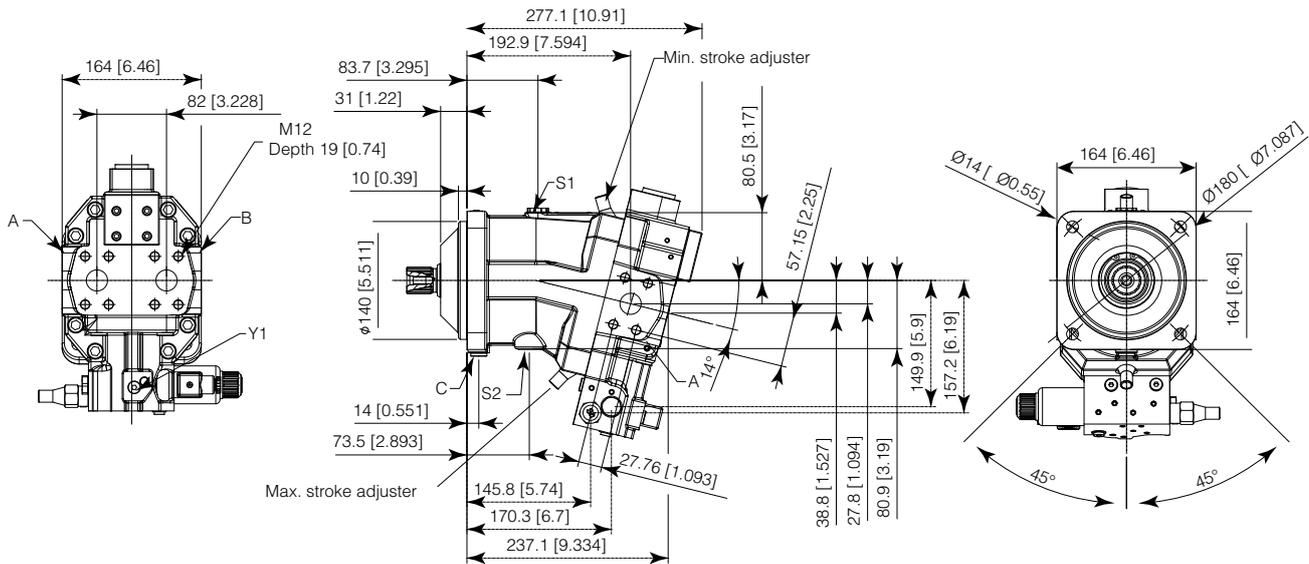
Size:
215



The relation between direction of rotation of shaft and direction of flow in SH9V motor is shown in the picture below.

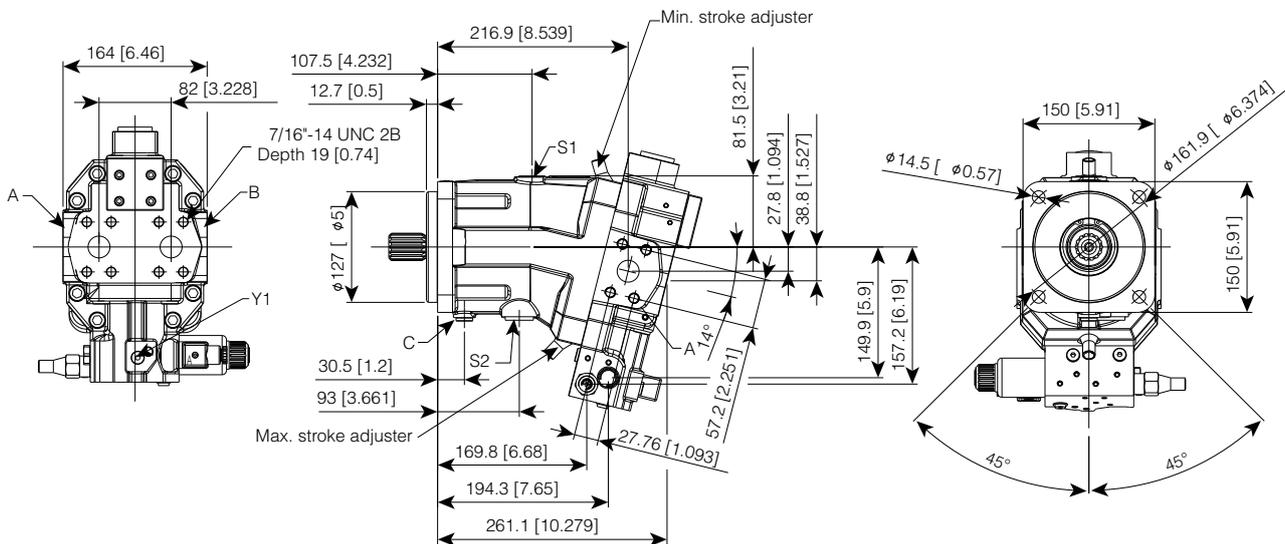


SH9V 085 Motor - Mounting flange ISO 4 Bolts (OD)



A-B: Service line ports - 1" SAE 6000
 C: Air bleed bearings flushing port - 1/4 G (BSPP)
 S1-S2: Case drain port - 1/2 G (BSPP)
 Y1: Working pressure piloting port - 1/8 G (BSPP)

SH9V 085 Motor - Mounting flange SAE-C 4 Bolts (O5)

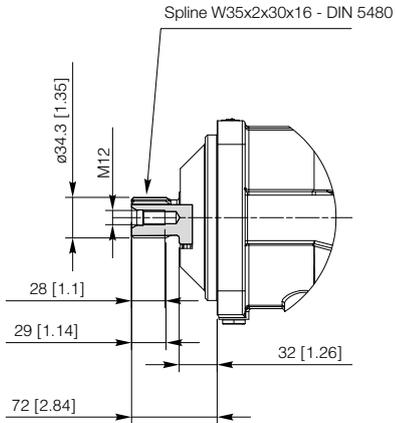


A-B: Service line ports - 1" SAE 6000
 C: Air bleed bearings flushing port - 7/16"-20 UNF
 S1-S2: Case drain port - 1" 1/16 - 12 UN 2B
 Y1: Working pressure piloting port - 7/16"-20 UNF-2B

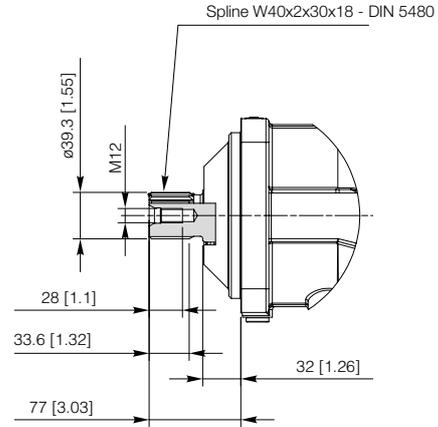
7

Shaft end

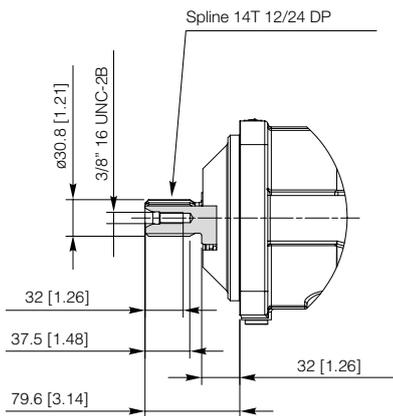
SAM Splined shaft



SAO Splined shaft



S12 Splined shaft

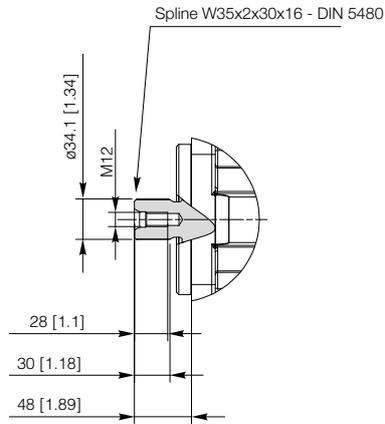


7

Shaft end

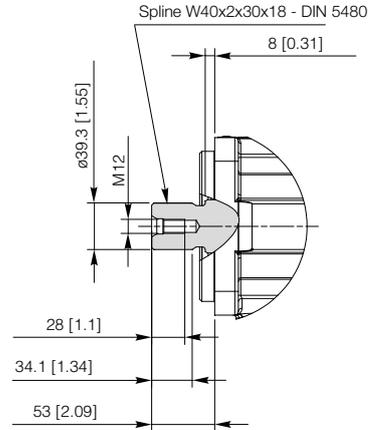
SAM

Splined shaft



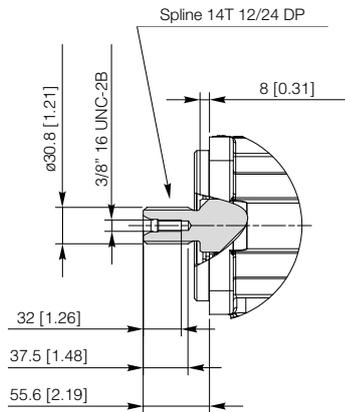
SAO

Splined shaft



S12

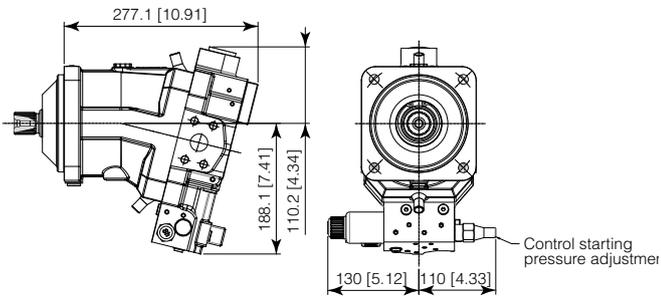
Splined shaft



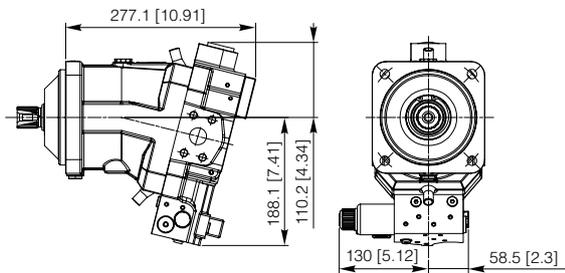
10

Control

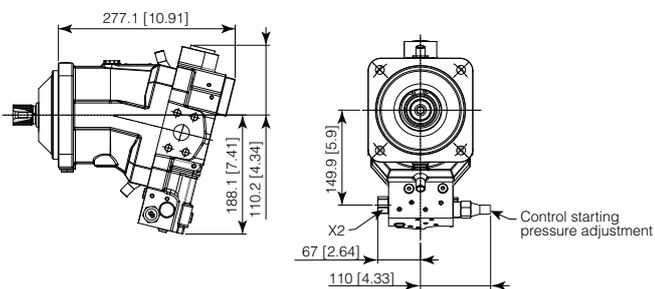
2EE Control



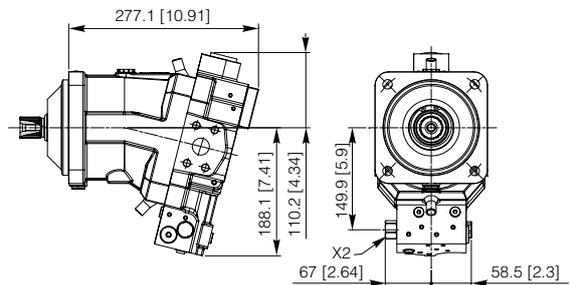
2EN Control



2IE Control



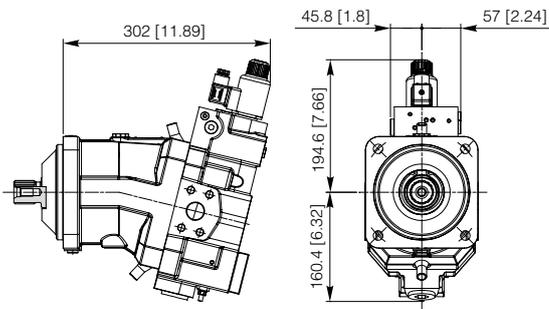
2IN Control



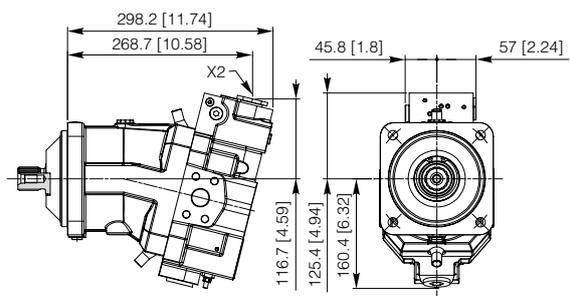
X2: Piloting port - 1/4 G (BSPP)

X2: Piloting port - 1/4 G (BSPP)

REN Control



RIN Control



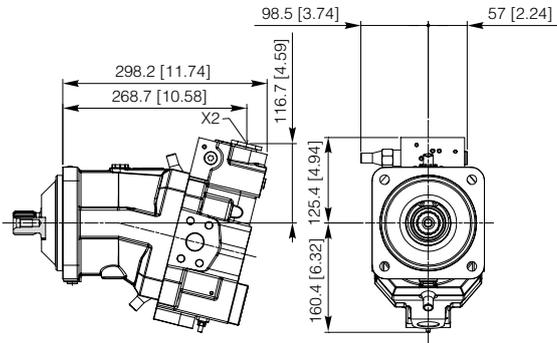
X2: Piloting port - 1/4 G (BSPP)



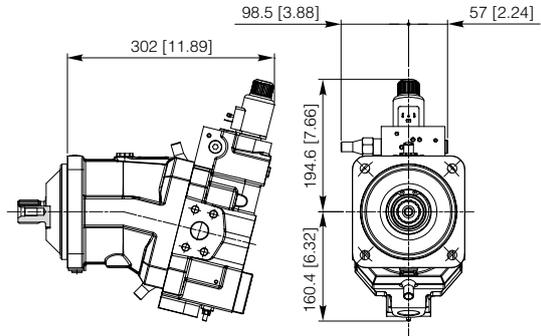
10

Control

RIE Control

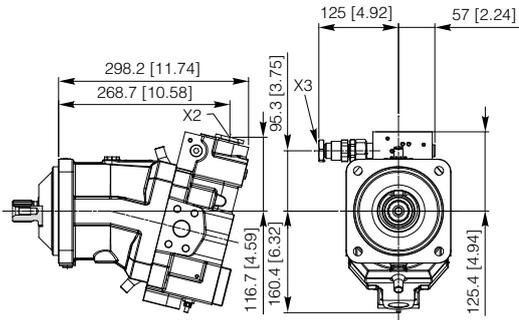


REE Control



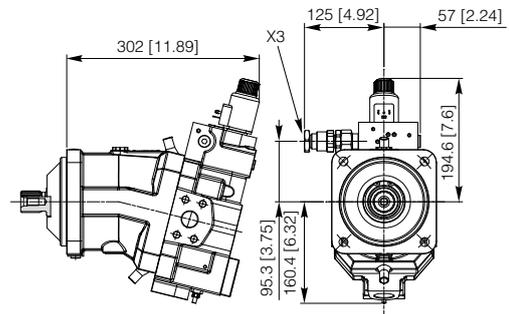
X2: Piloting port - 1/4 G (BSPP)

RID Control



X2: Piloting port - 1/4 G (BSPP)
X3: Double step piloting port - 1/4 G (BSPP)

RED Control

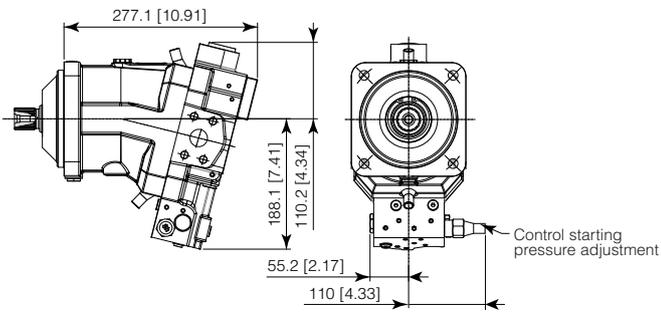


X3: Double step piloting port - 1/4 G (BSPP)

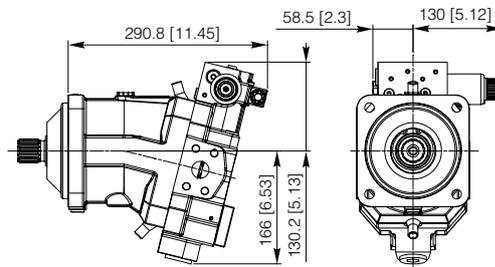
10

Control

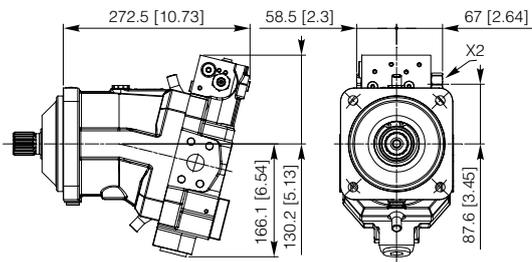
RPE Control



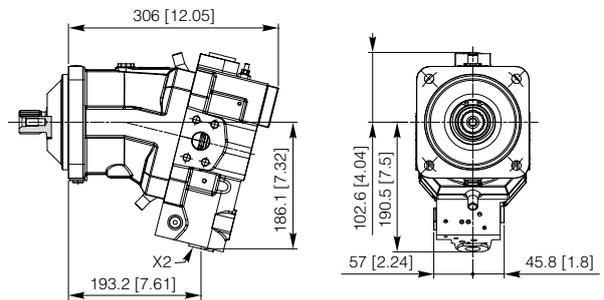
2EN Control



2IN Control



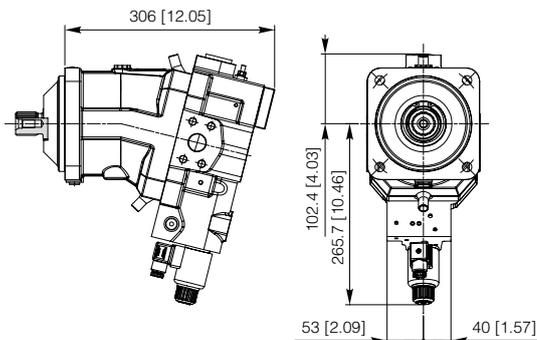
RIN Control



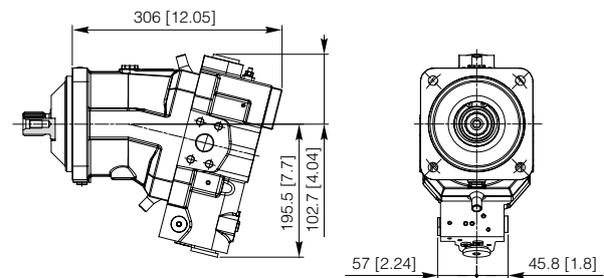
X2: Piloting port - 1/4 G (BSPP)

X2: Piloting port - 1/4 G (BSPP)

REN Control



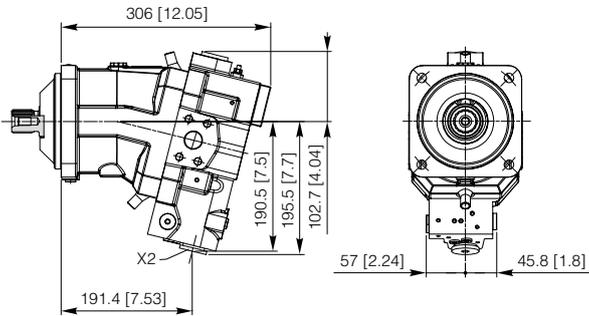
ROE Control



10

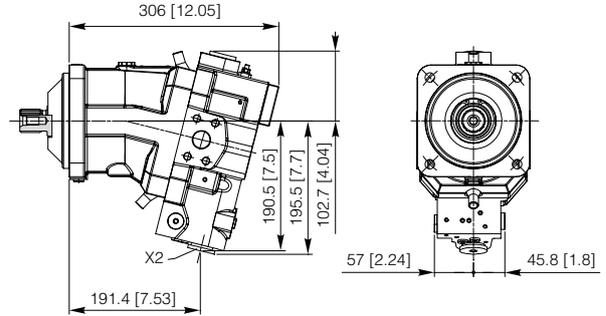
Control

ROI Control



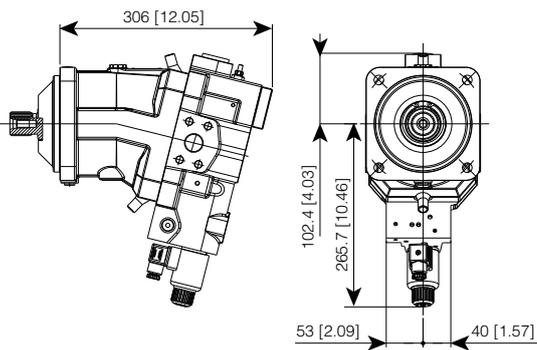
X2: Piloting port - 1/4 G (BSPP)

RPI Control

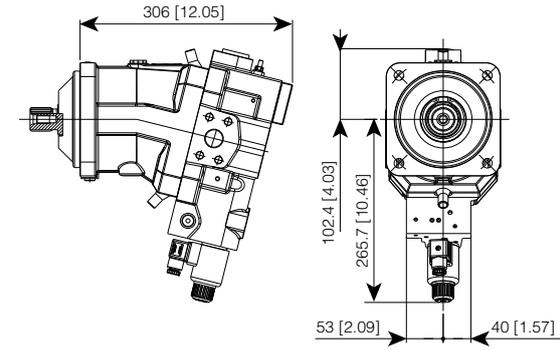


X2: Piloting port - 1/4 G (BSPP)

ROS Control



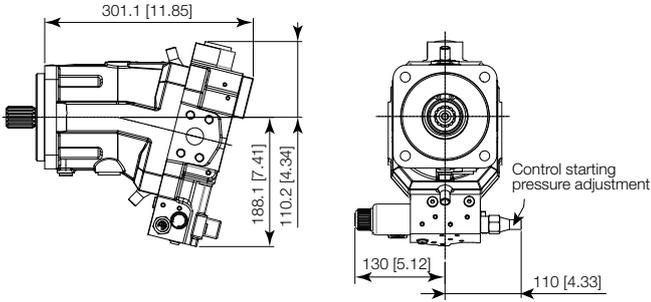
RPS Control



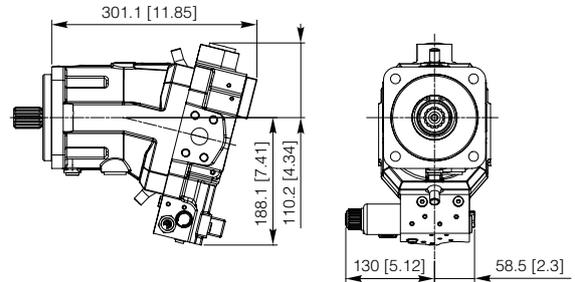
10

Control

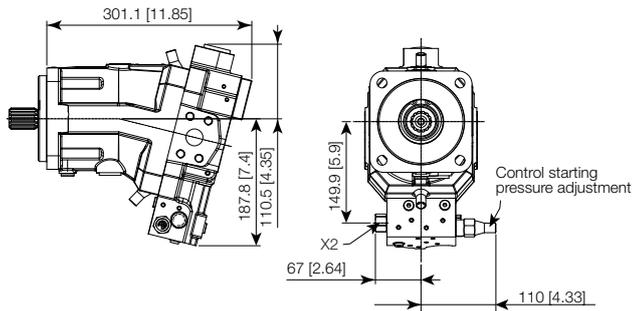
2EE Control



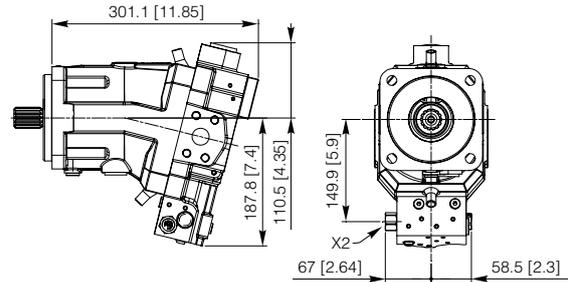
2EN Control



2IE Control



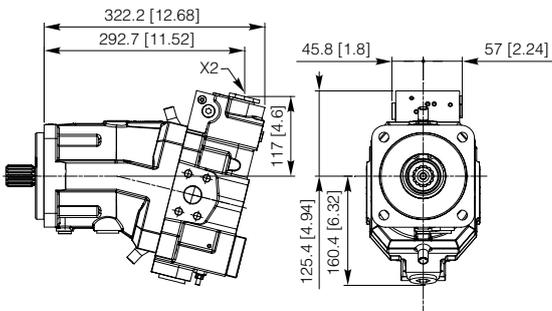
2IN Control



X2: Piloting port - 7/16"-20 UNF

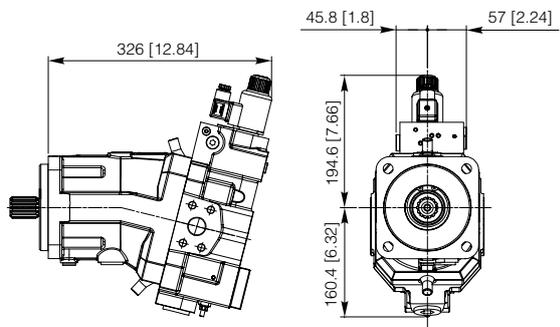
X2: Piloting port - 7/16"-20 UNF

RIN Control



X2: Piloting port - 7/16"-20 UNF

REN Control

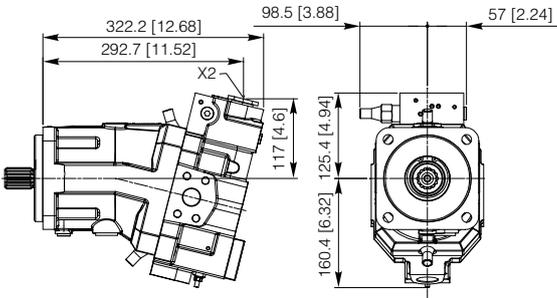


10

Control

RIE

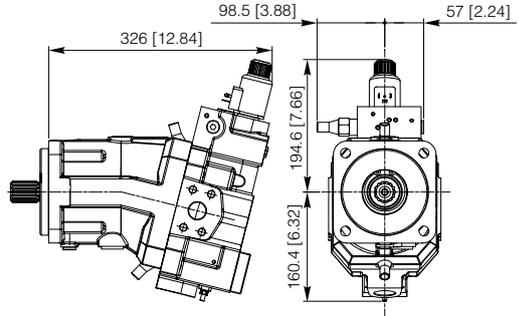
Control



X2: Piloting port - 7/16"-20 UNF

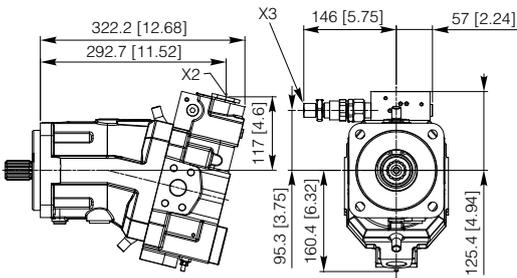
REE

Control



RID

Control

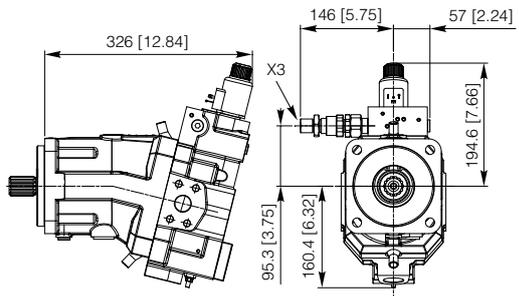


X2: Piloting port - 7/16"-20 UNF

X3: Double step piloting port - 7/16"-20 UNF

RED

Control

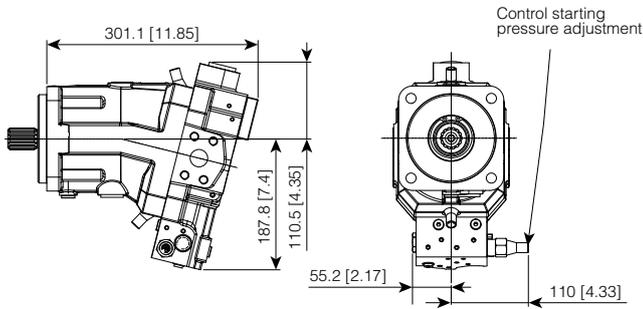


X3: Double step piloting port - 7/16"-20 UNF

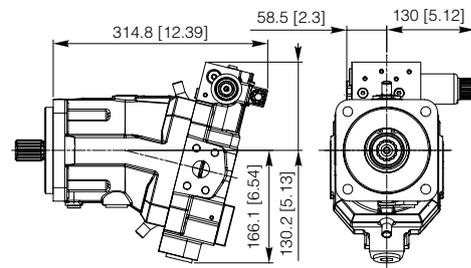
10

Control

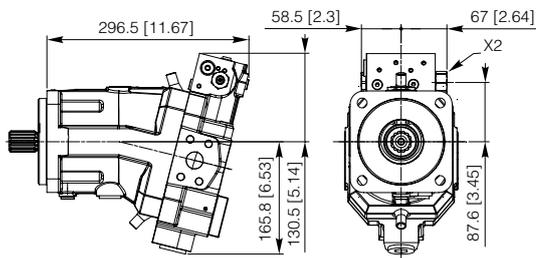
RPE Control



2EN Control

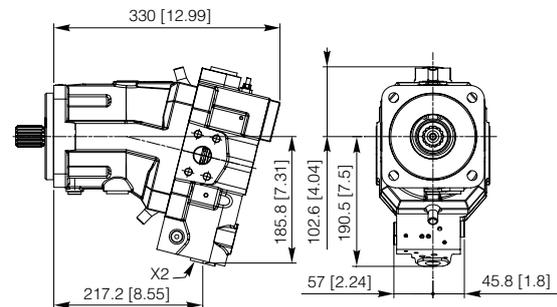


2IN Control



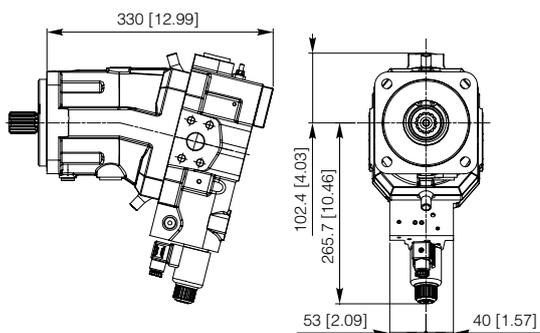
X2: Piloting port - 7/16"-20 UNF

RIN Control

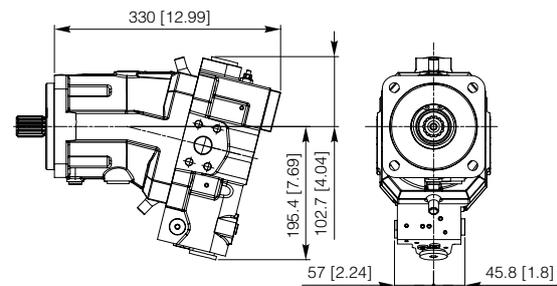


X2: Piloting port - 7/16"-20 UNF

REN Control



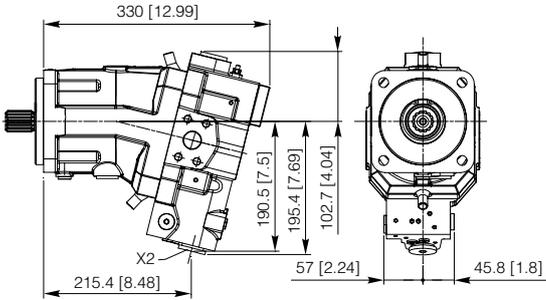
ROE Control



10

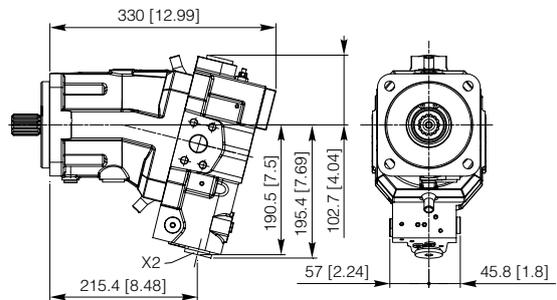
Control

ROI Control



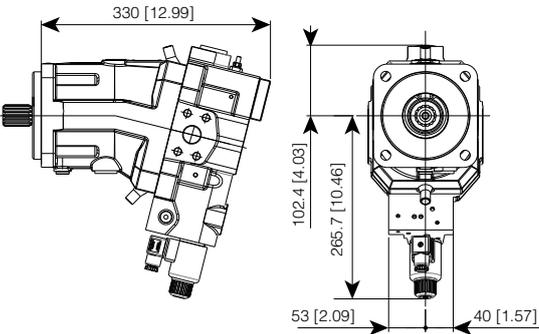
X2: Piloting port - 7/16"-20 UNF

RPI Control

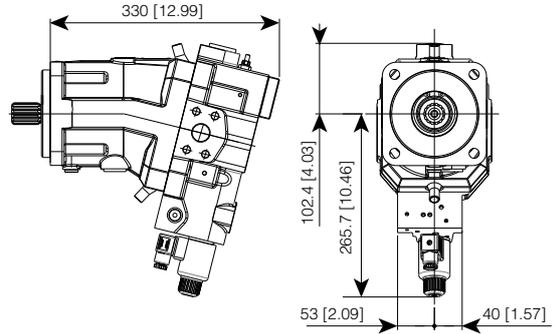


X2: Piloting port - 7/16"-20 UNF

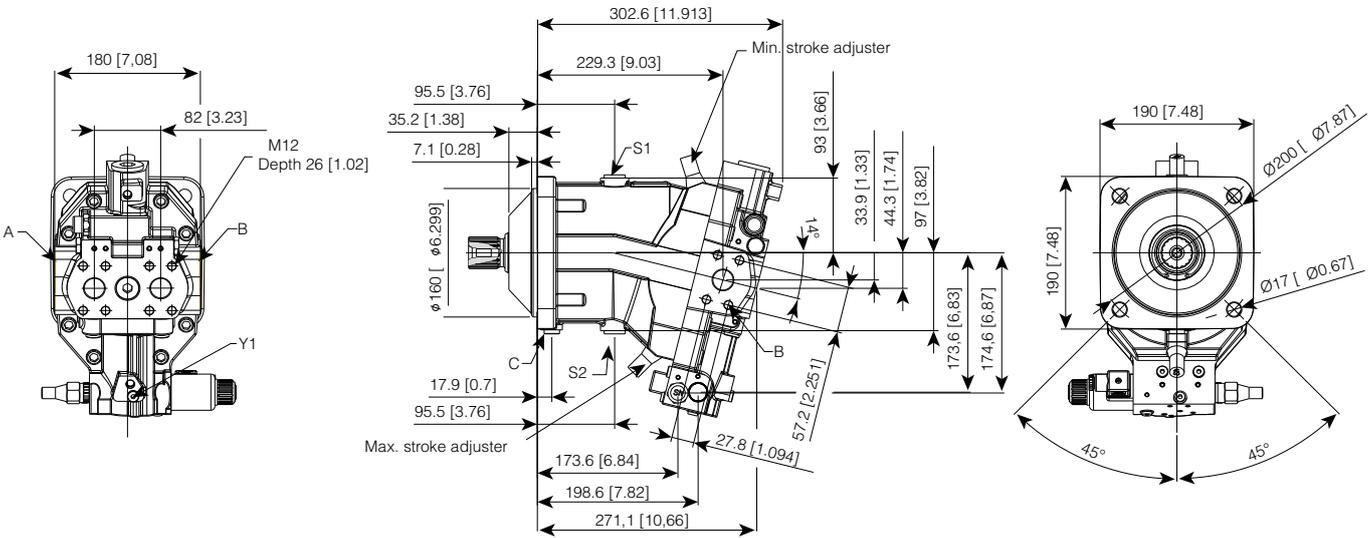
ROS Control



RPS Control

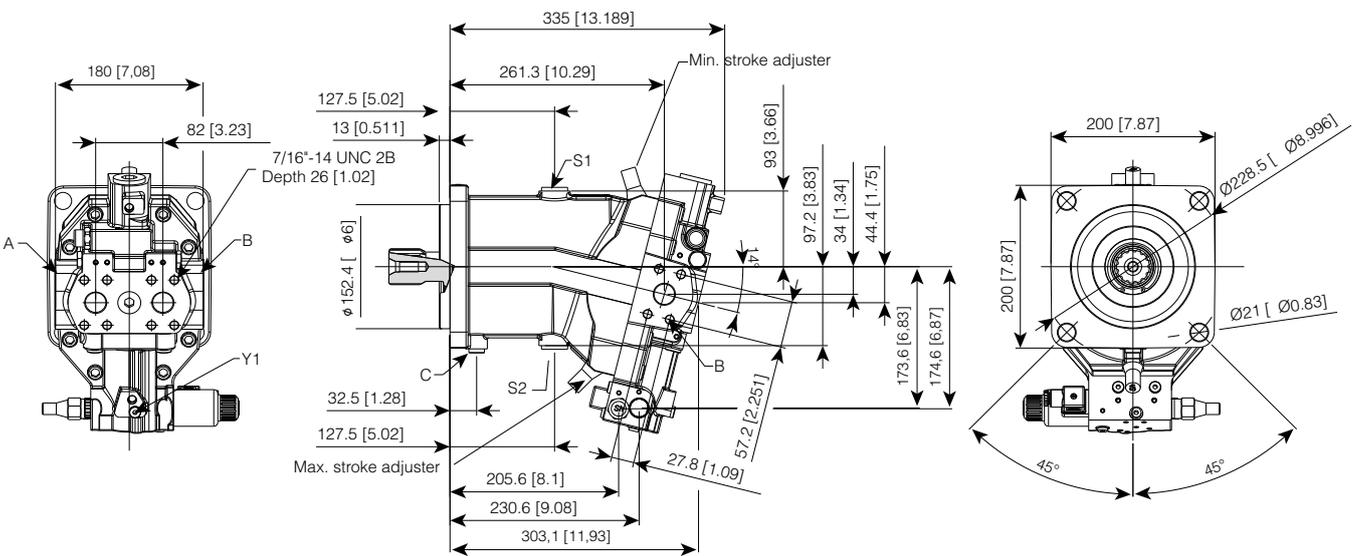


SH9V 115 Motor - Mounting flange ISO 4 Bolts (OE)



A-B: Service line ports - 1" SAE 6000
 C: Air bleed bearings flushing port - 1/4 G (BSPP)
 S1-S2: Case drain port - 1/2 G (BSPP)
 Y1: Working pressure piloting port - 1/8 G (BSPP)

SH9V 115 Motor - Mounting flange SAE-D 4 Bolts (08)



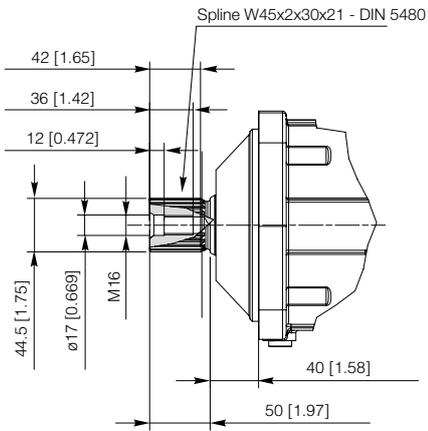
A-B: Service line ports - 1" SAE 6000
 C: Air bleed bearings flushing port - 7/16"-20 UNF
 S1-S2: Case drain port - 1" 1/16 - 12 UN 2B
 Y1: Working pressure piloting port - 7/16"-20 UNF-2B



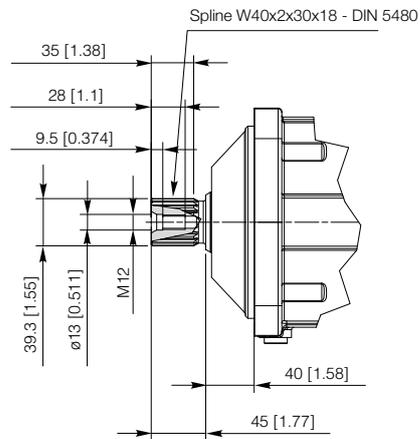
7

Shaft end

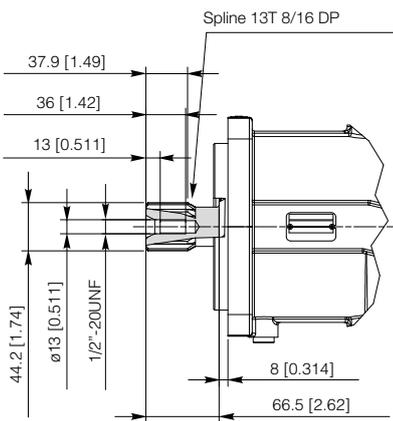
SAP Splined shaft



SAO Splined shaft



S15 Splined shaft

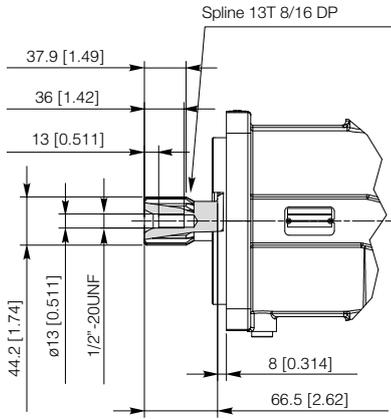


7

Shaft end

S15

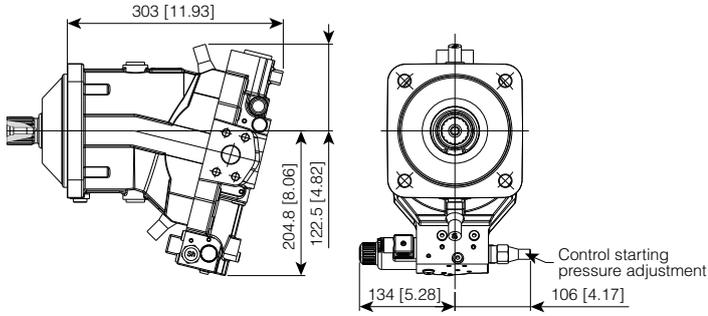
Splined shaft



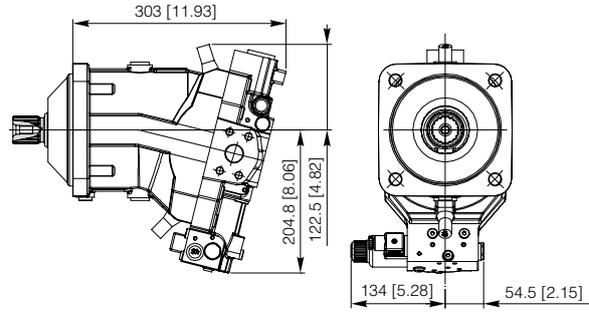
10

Control

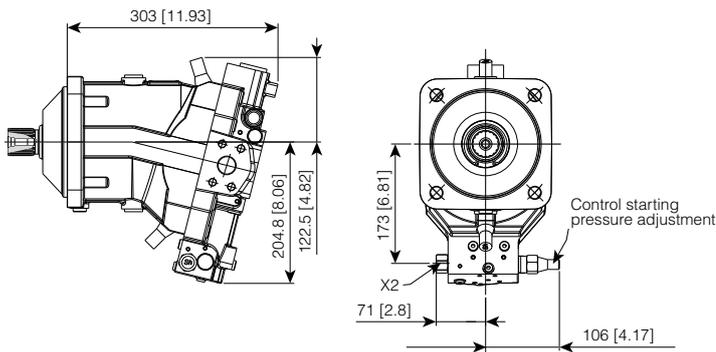
2EE Control



2EN Control

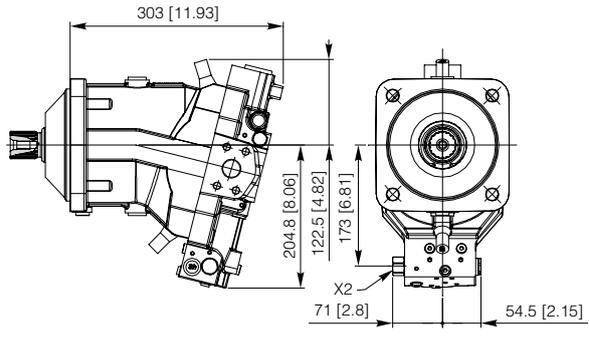


2IE Control



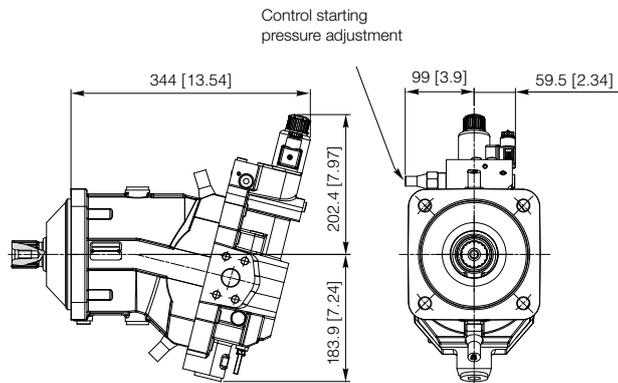
X2: Piloting port - 1/4 G (BSPP)

2IN Control

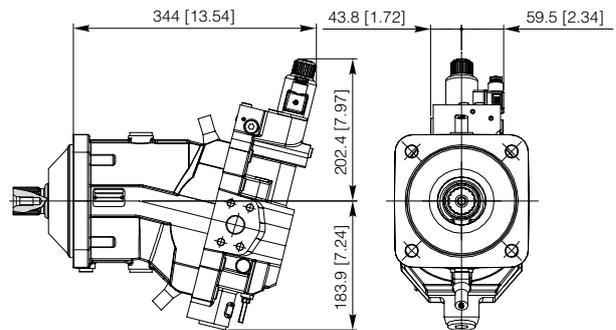


X2: Piloting port - 1/4 G (BSPP)

REE Control



REN Control

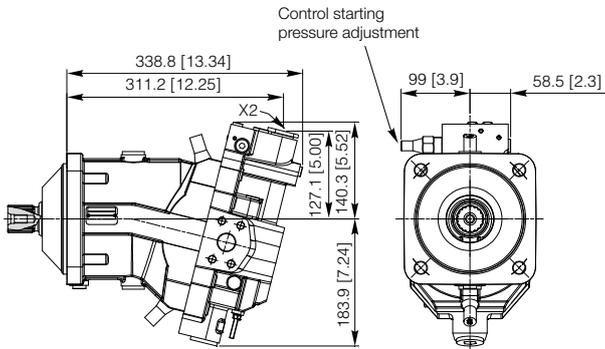


10

Control

RIE

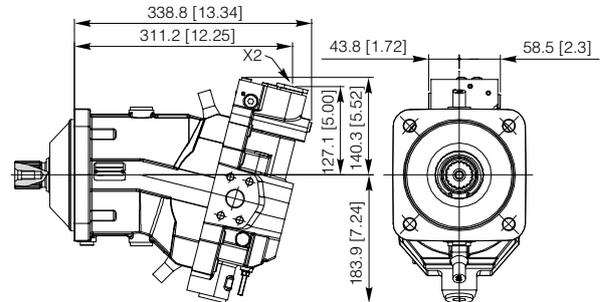
Control



X2: Piloting port - 1/4 G (BSPP)

RIN

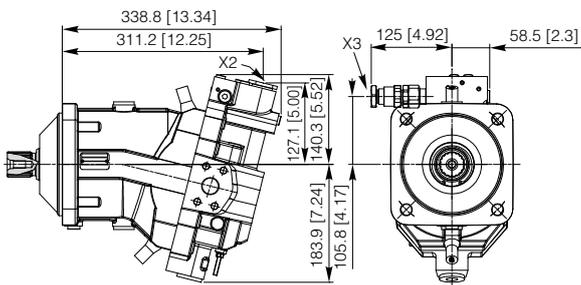
Control



X2: Piloting port - 1/4 G (BSPP)

RID

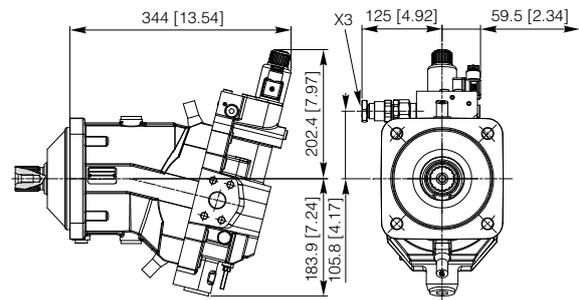
Control



X2: Piloting port - 1/4 G (BSPP)
X3: Double step piloting port - 1/4 G (BSPP)

RED

Control

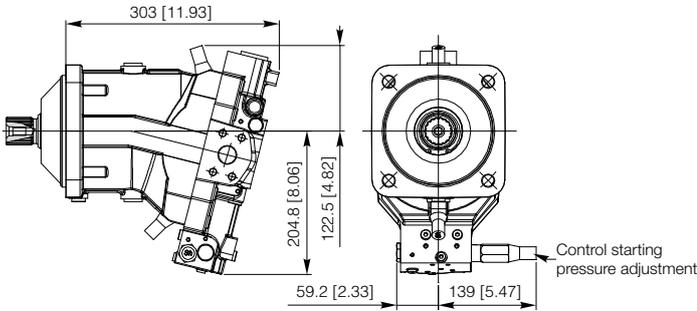


X3: Double step piloting port - 1/4 G (BSPP)

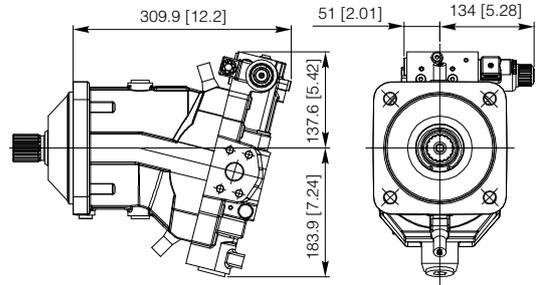
10

Control

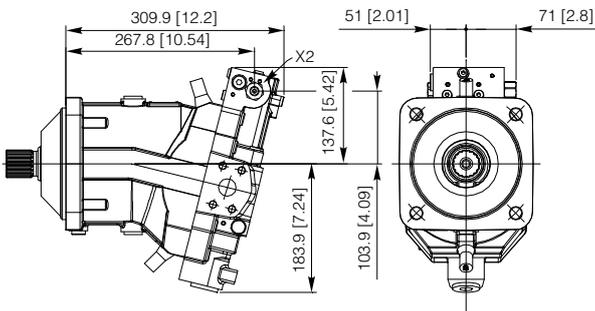
RPE Control



2EN Control

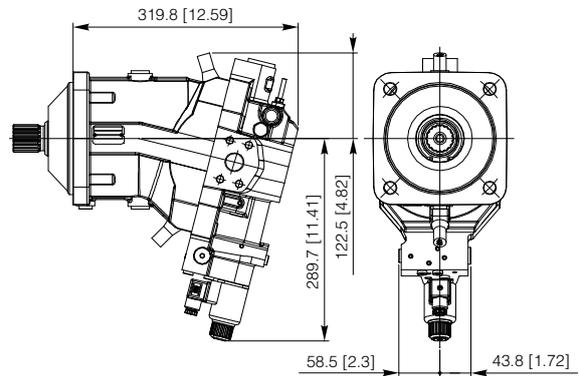


2IN Control

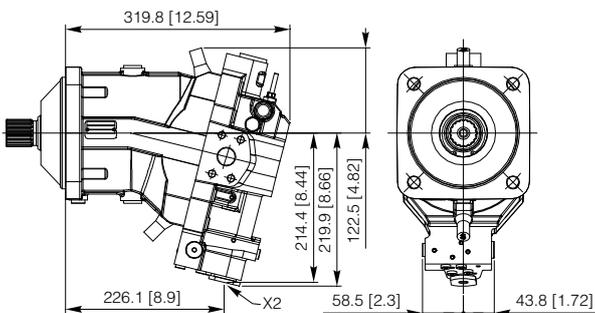


X2: Piloting port - 1/4 G (BSPP)

REN Control

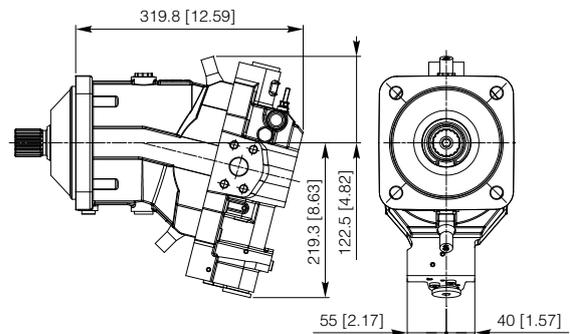


RIN Control



X2: Piloting port - 1/4 G (BSPP)

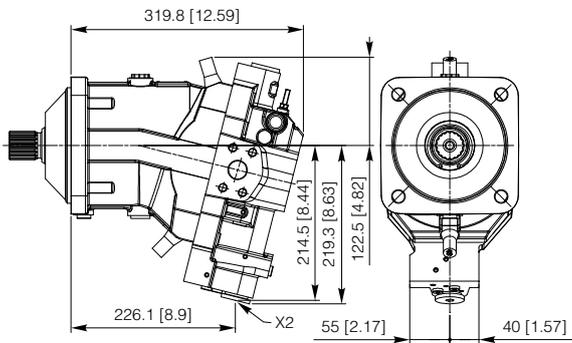
ROE Control



10

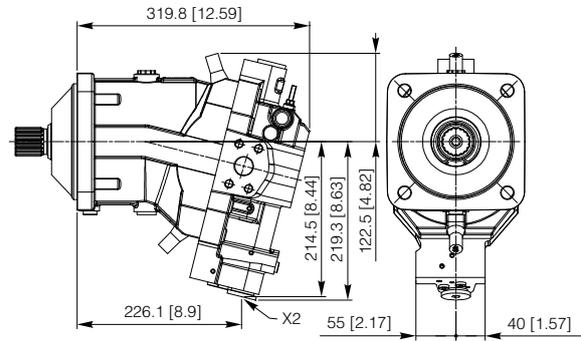
Control

ROI Control



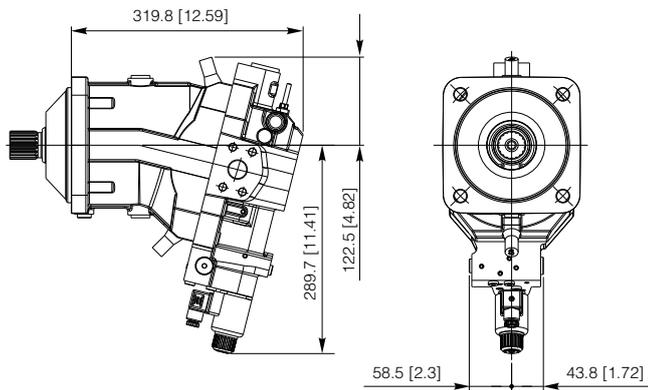
X2: Piloting port - 1/4 G (BSPP)

RPI Control

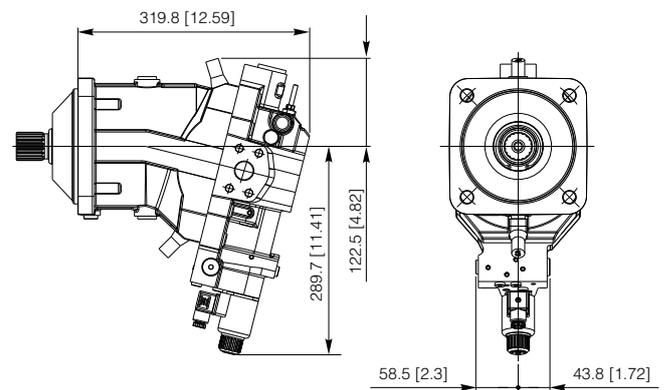


X2: Piloting port - 1/4 G (BSPP)

ROS Control



RPS Control

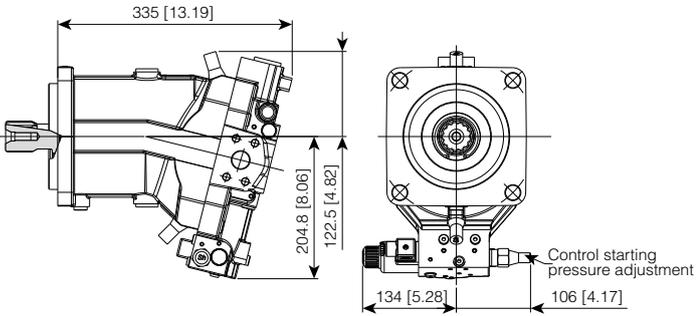


10

Control

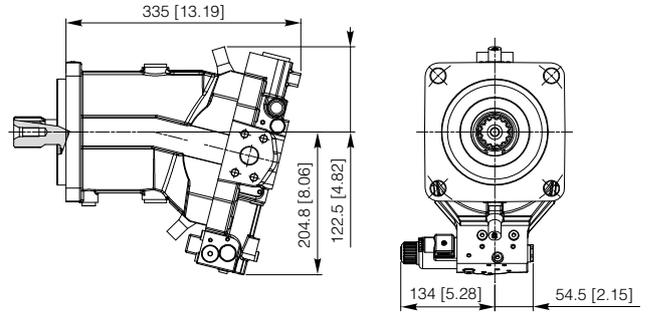
2EE

Control



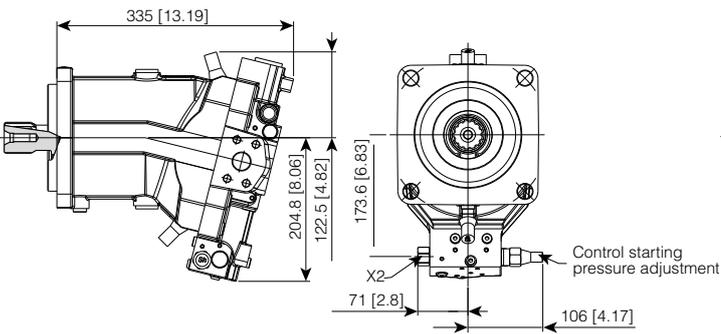
2EN

Control



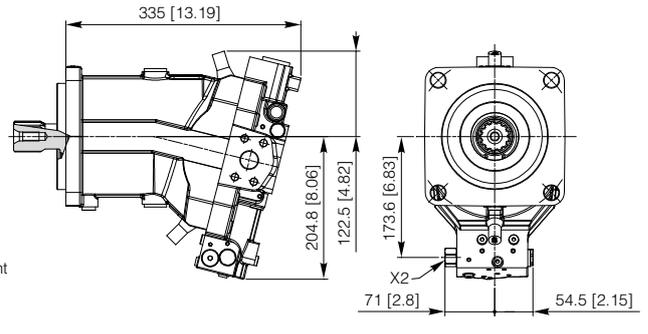
2IE

Control



2IN

Control

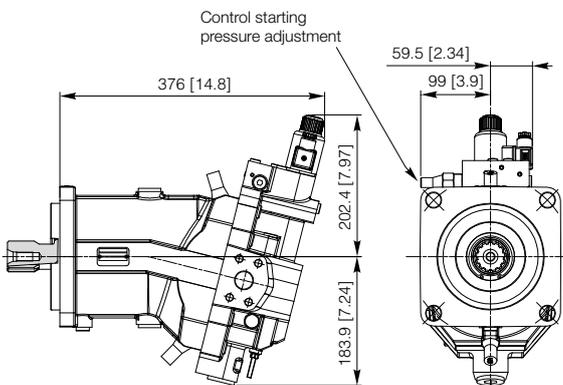


X2: Piloting port - 7/16"-20 UNF

X2: Piloting port - 7/16"-20 UNF

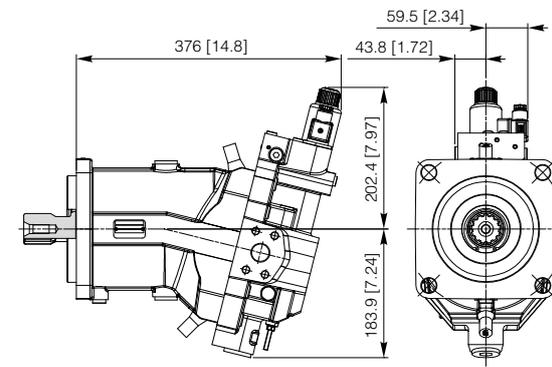
REE

Control



REN

Control

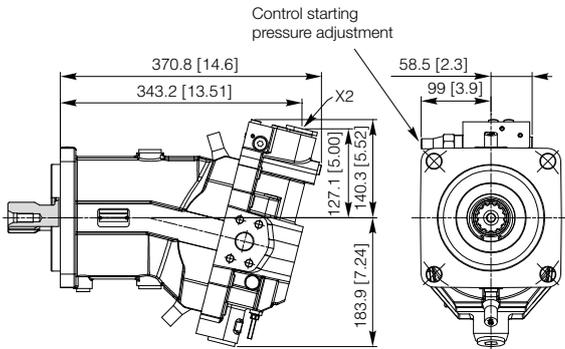


10

Control

RIE

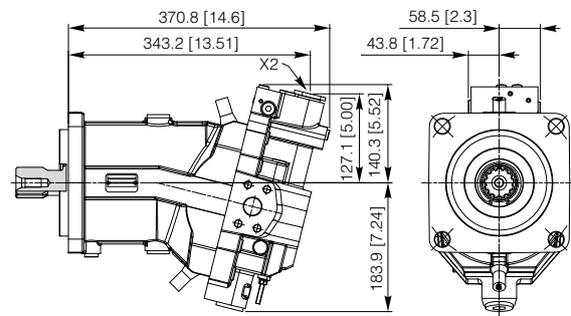
Control



X2: Piloting port - 7/16"-20 UNF

RIN

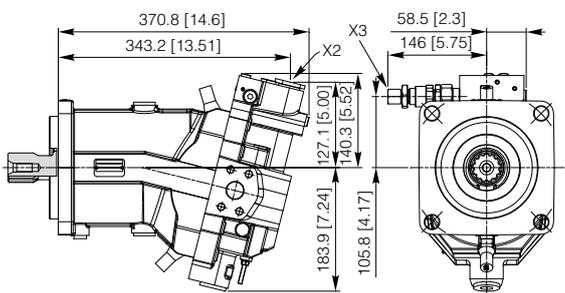
Control



X2: Piloting port - 7/16"-20 UNF

RID

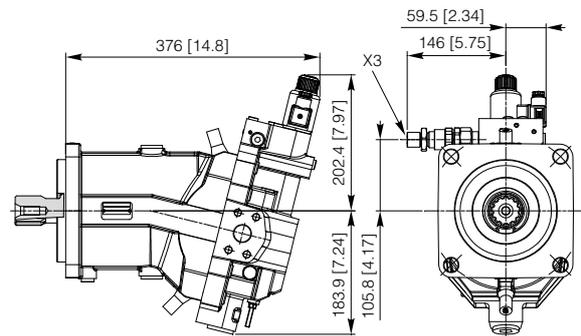
Control



X2: Piloting port - 7/16"-20 UNF
X3: Double step piloting port - 7/16"-20 UNF

RED

Control



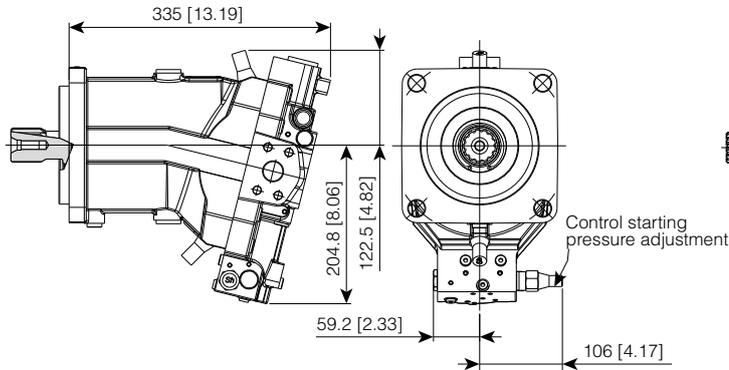
X3: Double step piloting port - 7/16"-20 UNF



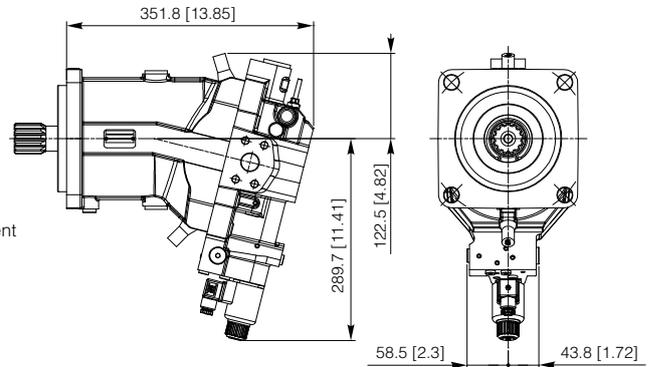
10

Control

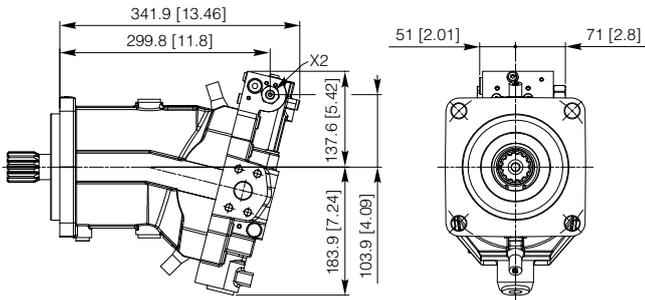
RPE Control



2EN Control

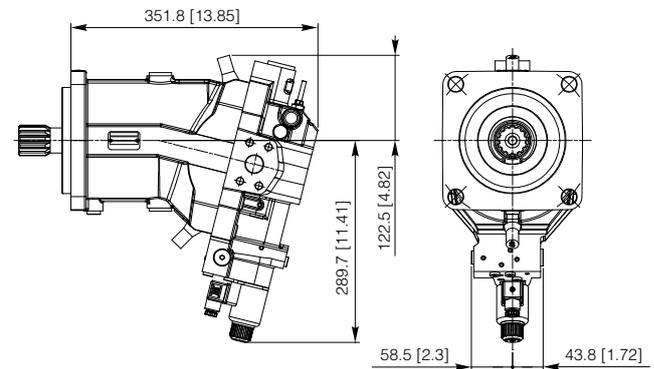


2IN Control

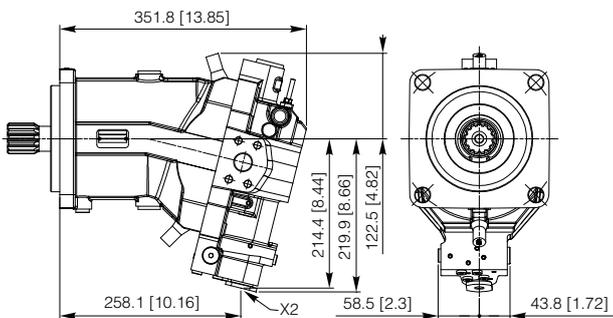


X2: Piloting port - 7/16"-20 UNF

REN Control

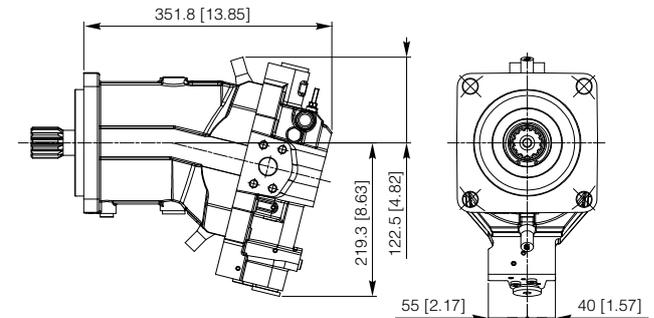


RIN Control



X2: Piloting port - 7/16"-20 UNF

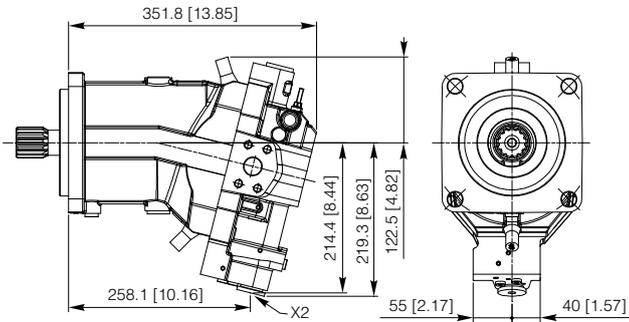
ROE Control



10

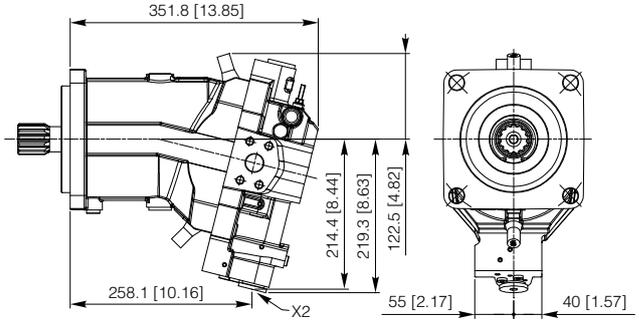
Control

ROI Control



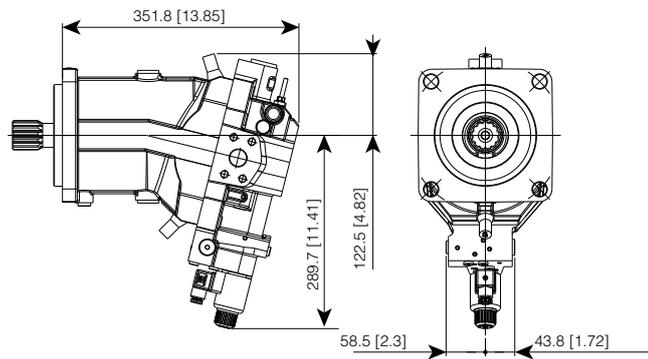
X2: Piloting port - 7/16"-20 UNF

RPI Control

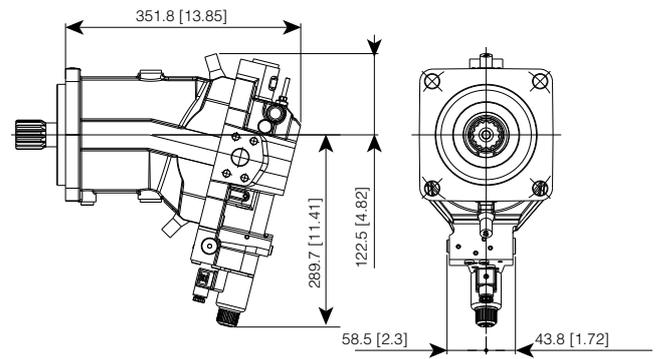


X2: Piloting port - 7/16"-20 UNF

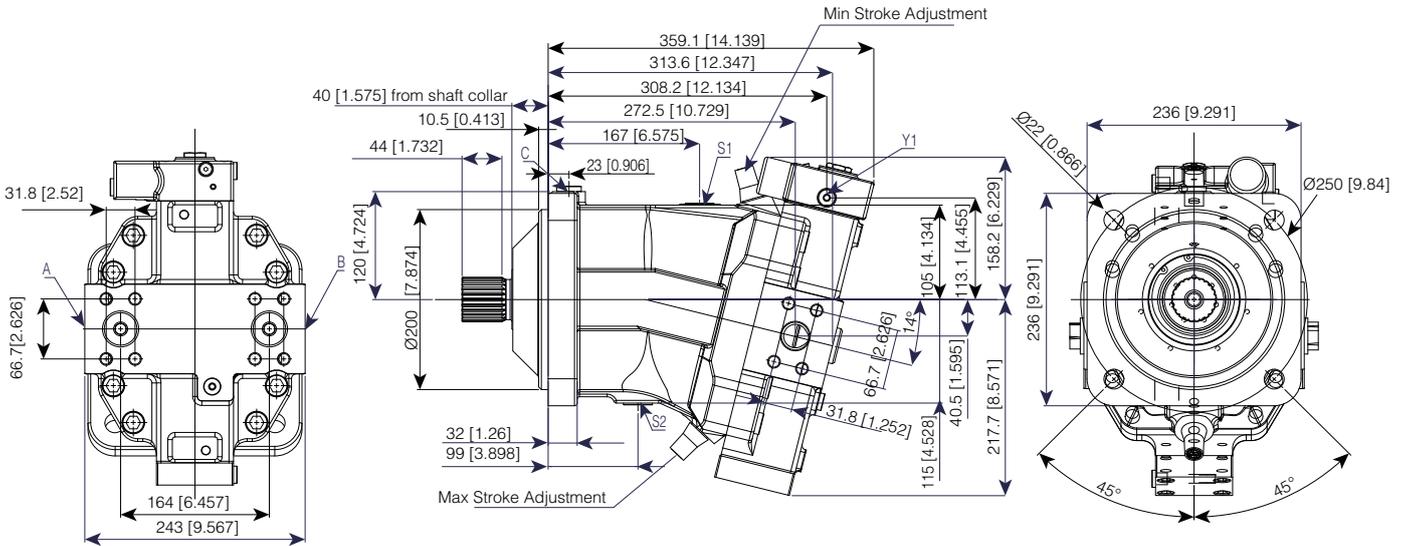
ROS Control



RPS Control

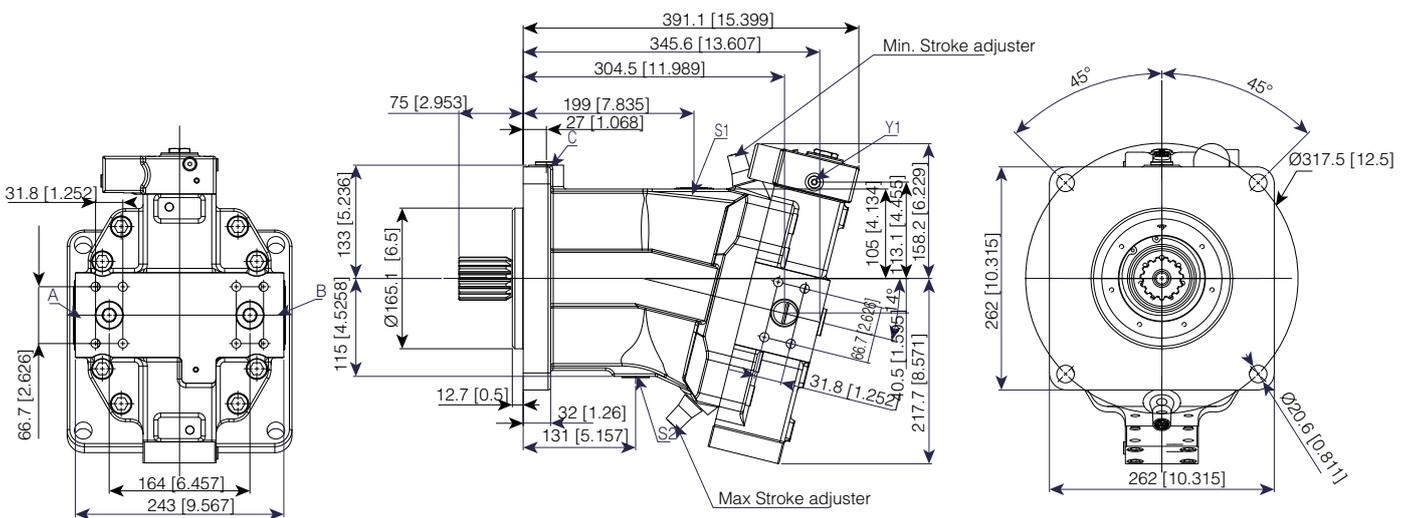


SH9V 215 Motor - Mounting flange ISO 4 Bolts (OG)



A-B: Service line ports - 1"1/4 SAE 6000
 C: Air bleed bearings flushing port - 1/2 G (BSPP)
 S1-S2: Case drain port - 3/4 G (BSPP)
 Y1: Working pressure piloting port - 1/8 G (BSPP)

SH9V 215 Motor - Mounting flange SAE-E 4 Bolts (10)



A-B: Service line ports - 1"1/4 SAE 6000
 C: Air bleed bearings flushing port - 3/4"-16 UNF-2B
 S1-S2: Case drain port - 1" 1/16 - 12 UN-2B
 Y1: Working pressure piloting port - 7/16"-20 UNF-2B

[Click DANA button to return to Section Index](#)

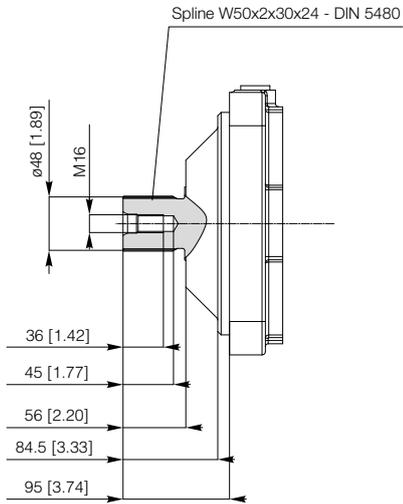
[Click i button to return to main index](#)



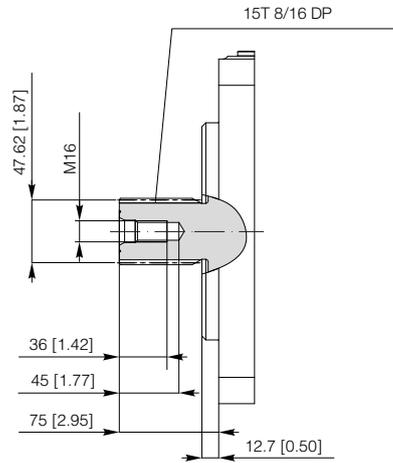
7

Shaft end - for mounting flange ISO 4 bolts (OG)

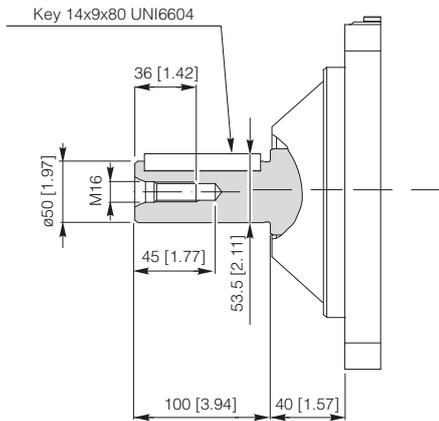
SAR Splined shaft



S19 Splined shaft



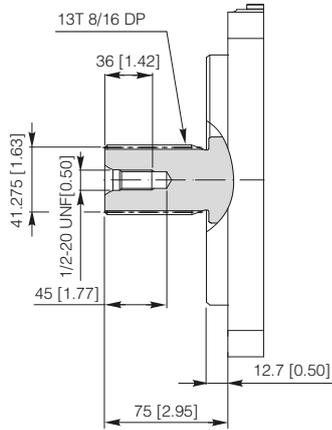
CAX Parallel keyed shaft



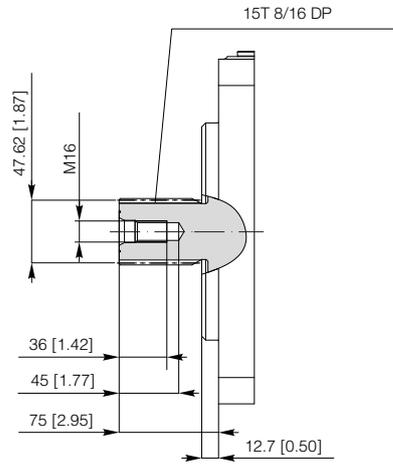
7

Shaft end - for mounting flange SAE-E 4 bolts (10)

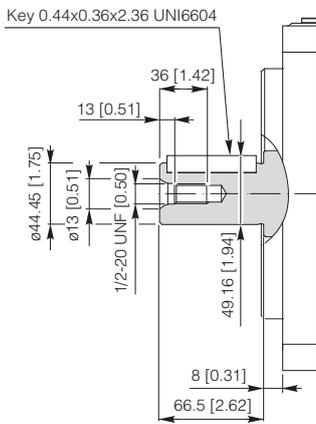
S15 Splined shaft



S19 Splined shaft



C18 Parallel keyed shaft

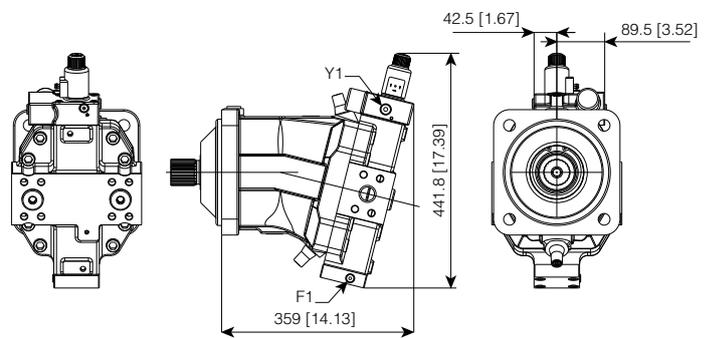
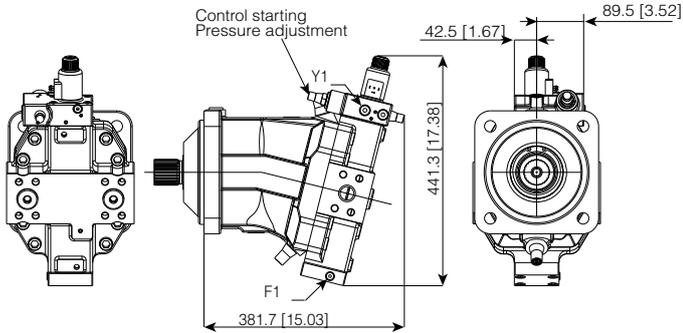


10

Control

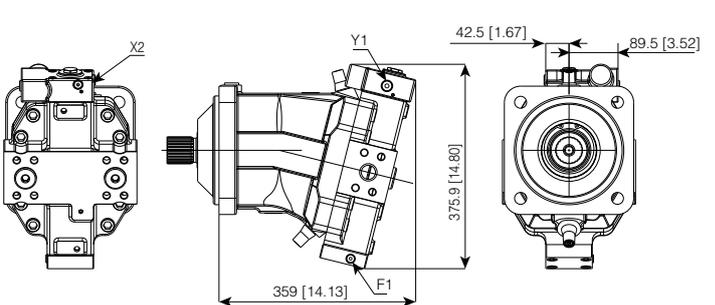
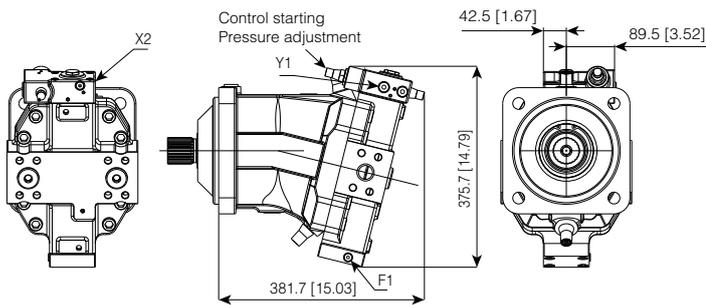
2EE Control

2EN Control



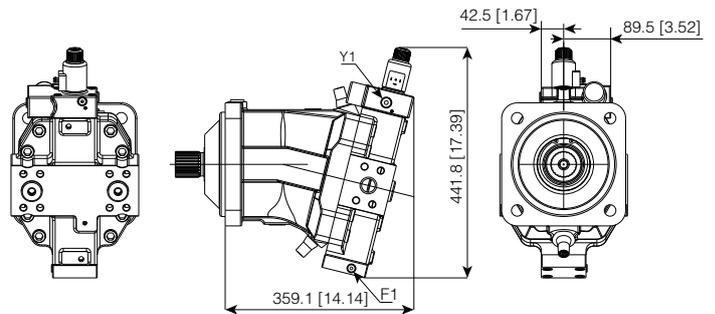
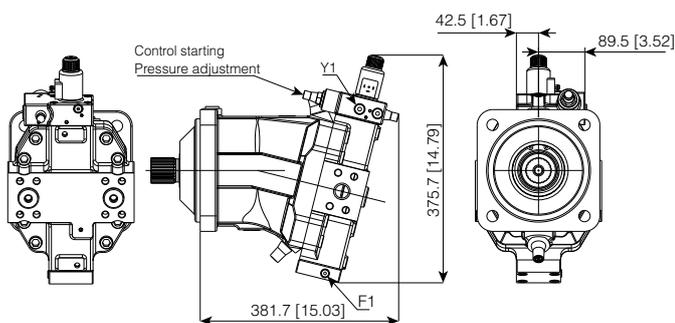
2IE Control

2IN Control



REE Control

REN Control



[Click i button to return to main index](#)

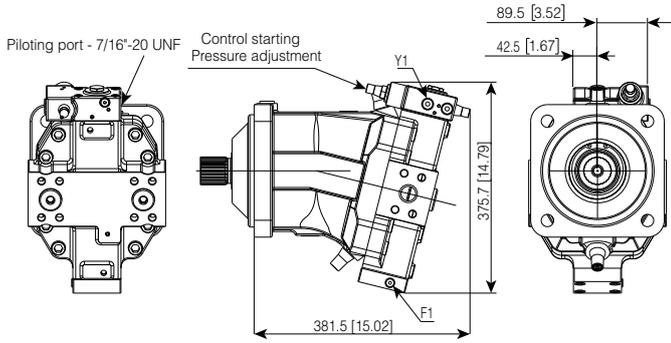
[Click Dana button to return to Section index](#)



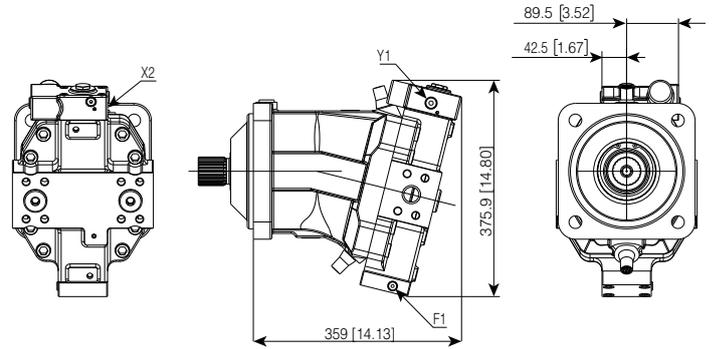
10

Control

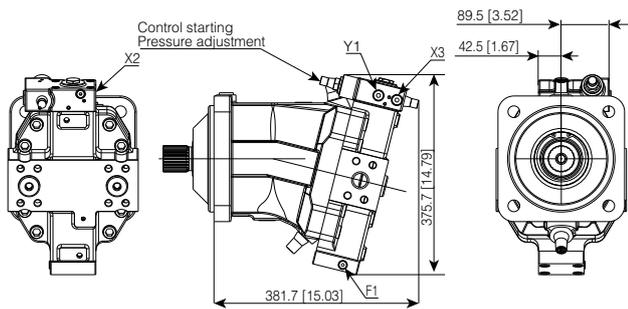
RIE Control



RIN Control

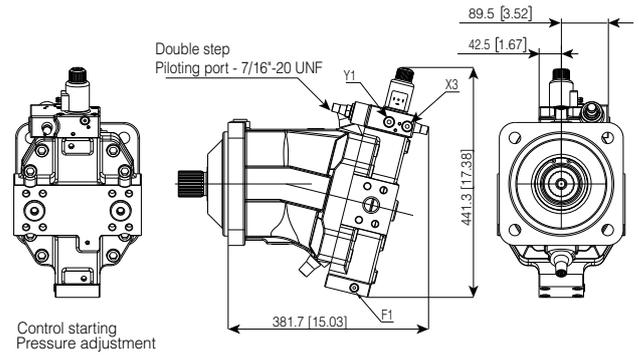


RID Control



X2: Piloting port - 7/16"-20 UNF
X3: Double step Piloting port - 7/16"-20 UNF

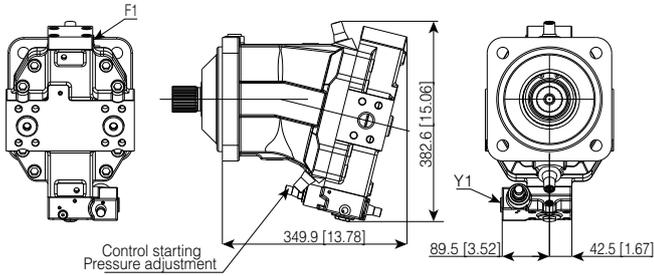
RED Control



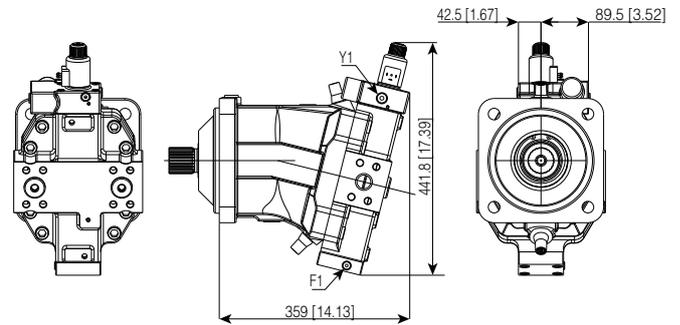
10

Control

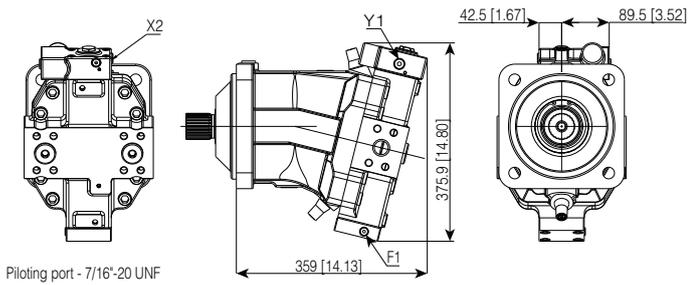
RPE Control



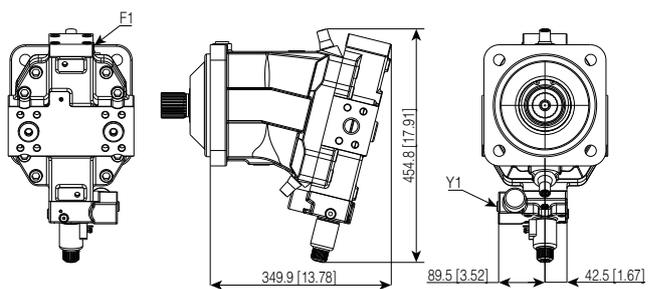
2EN Control



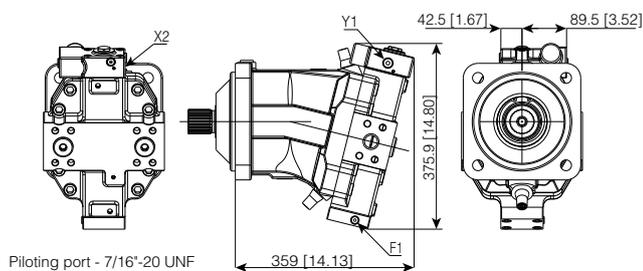
2IN Control



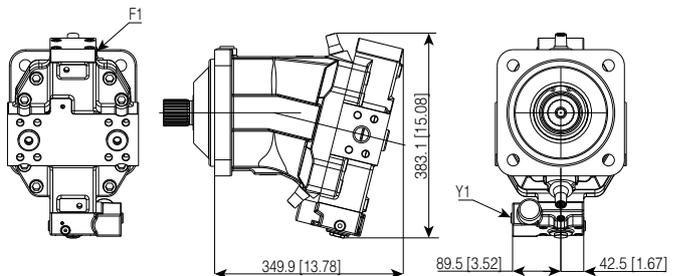
REN Control



RIN Control



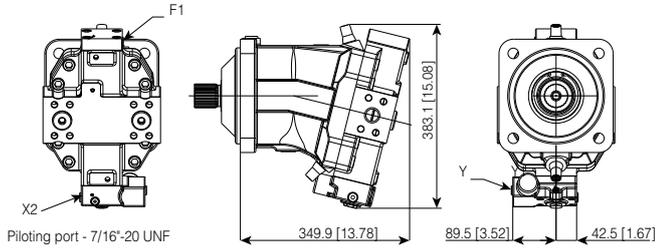
ROE Control



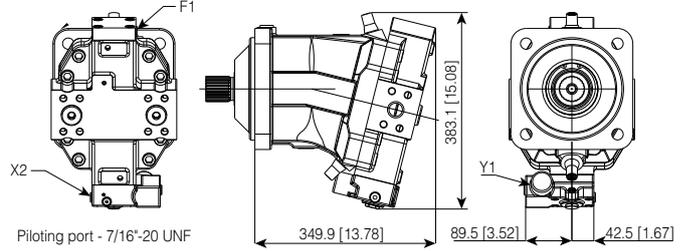
10

Control

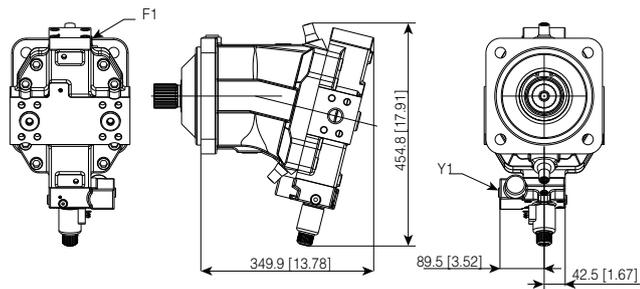
ROI Control



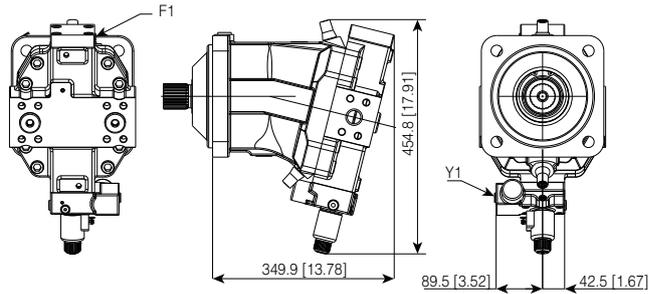
RPI Control



ROS Control



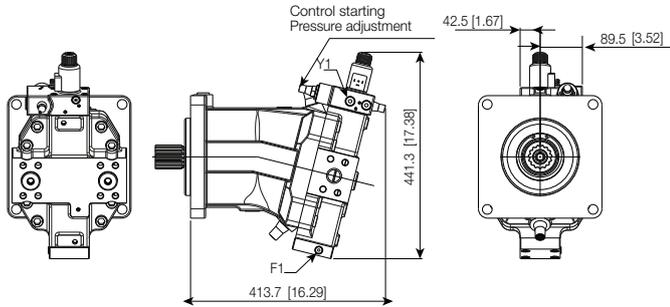
RPS Control



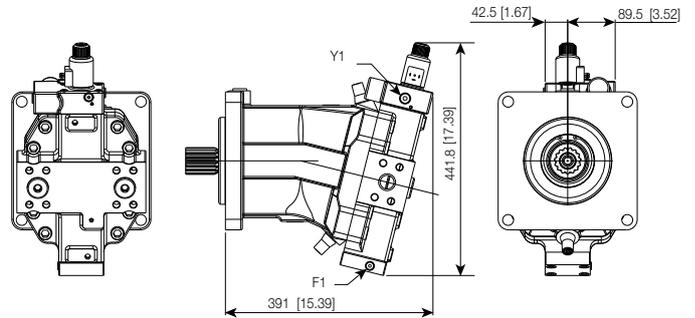
10

Control

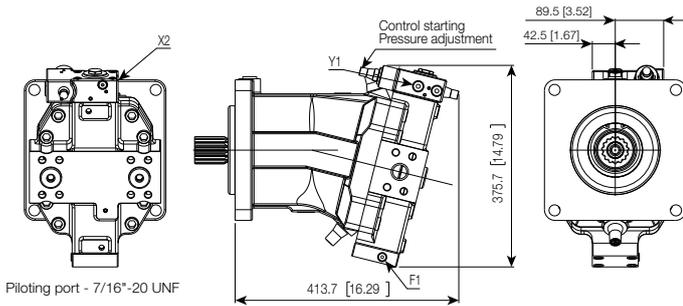
2EE Control



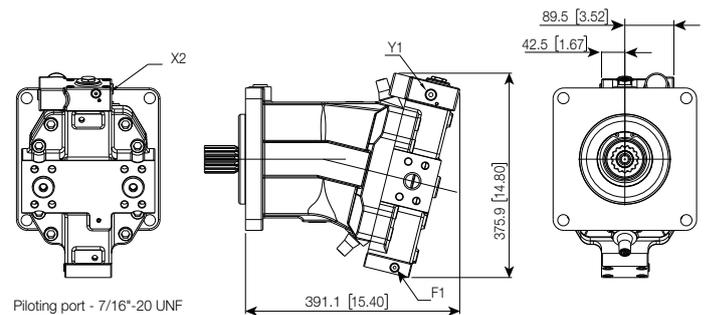
2EN Control



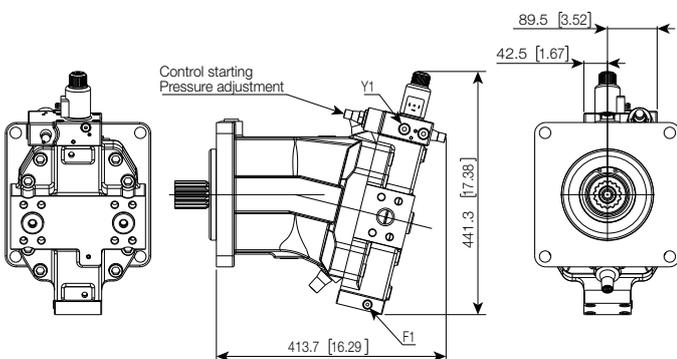
2IE Control



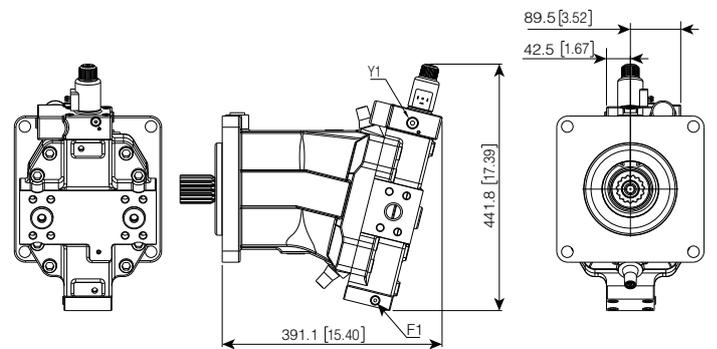
2IN Control



REE Control



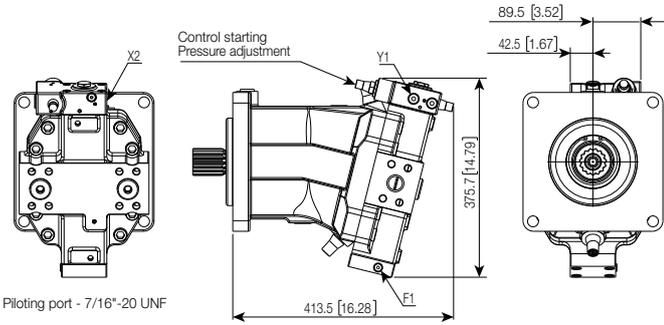
REN Control



10

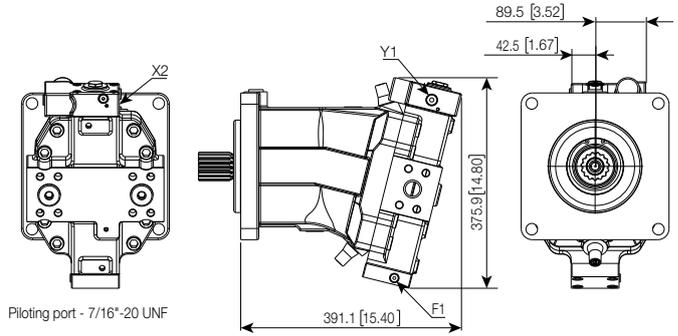
Control

RIE Control



Piloting port - 7/16"-20 UNF

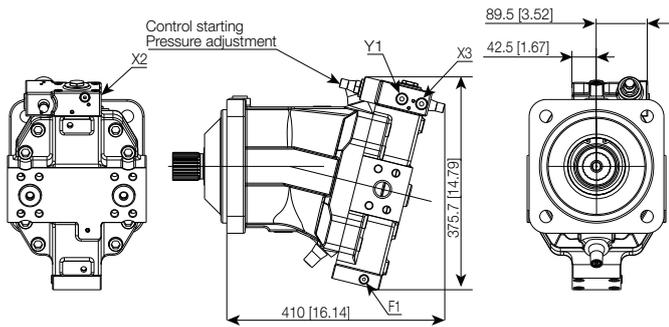
RIN Control



Piloting port - 7/16"-20 UNF

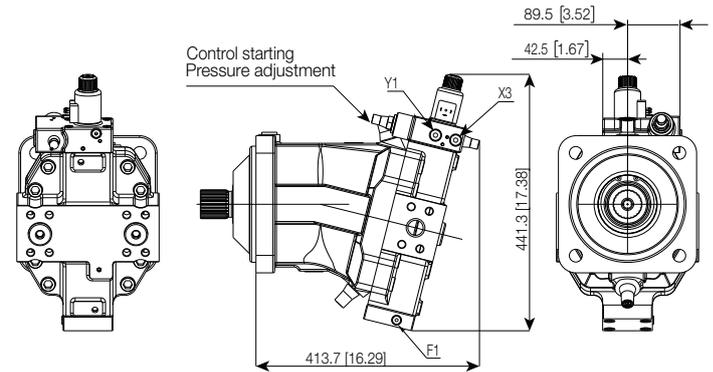
X2: Piloting port - 7/16"-20 UNF-2B

RID Control



X2: Piloting port - 7/16"-20 UNF
X3: Double step Piloting port - 7/16"-20 UNF

RED Control

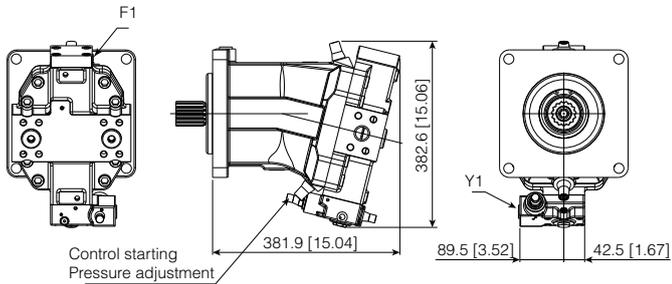


Double step Piloting port - 7/16"-20 UNF

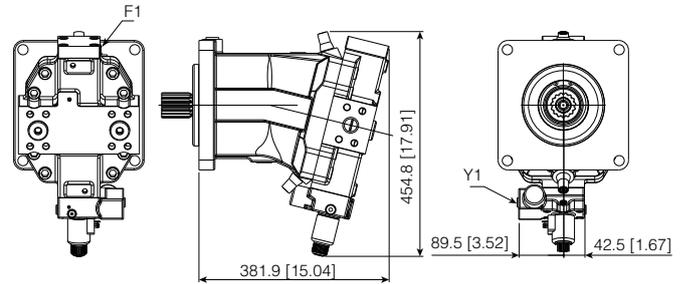
10

Control

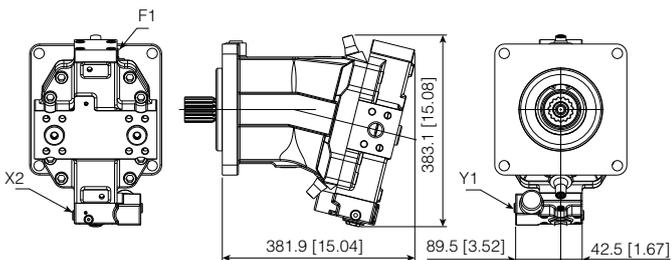
RPE Control



2EN Control

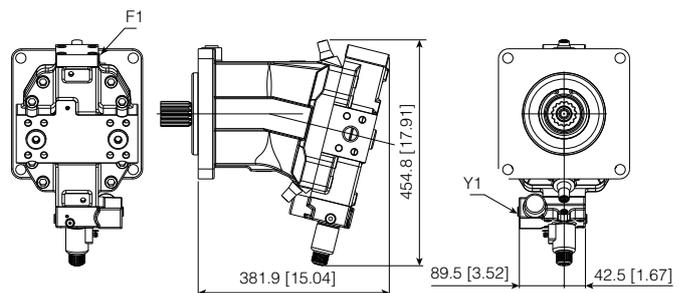


2IN Control

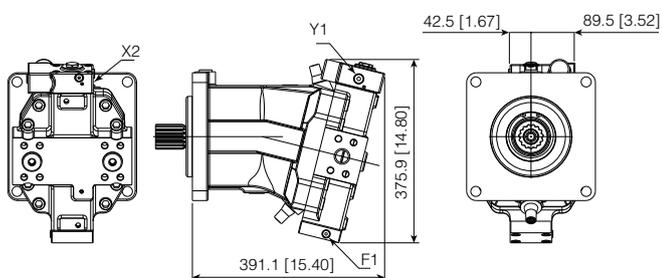


Piloting port - 7/16" - 20 UNF

REN Control

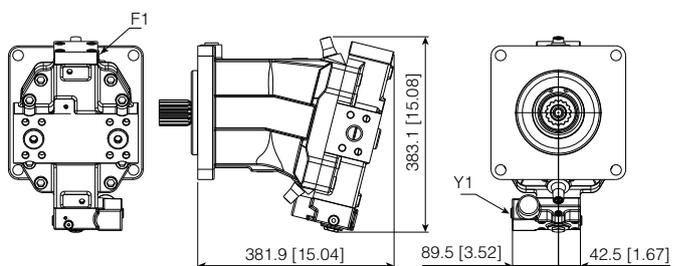


RIN Control



Piloting port - 7/16"-20 UNF

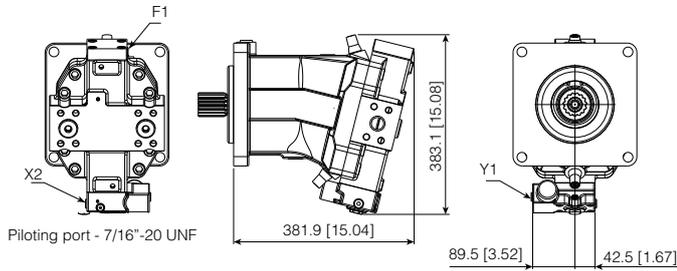
ROE Control



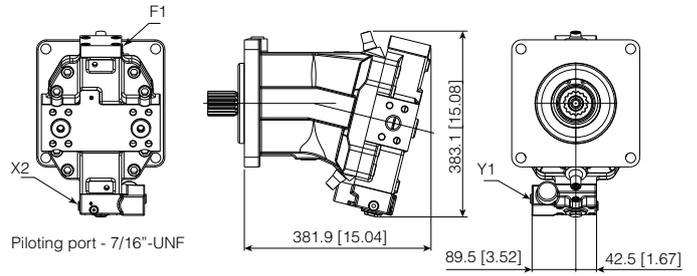
10

Control

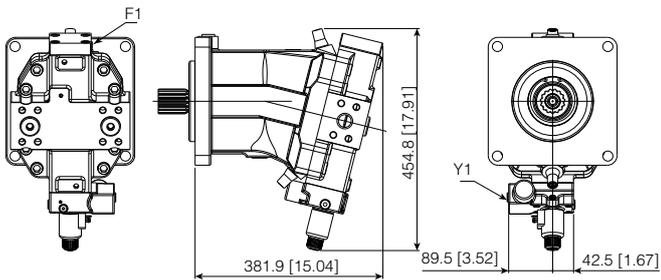
ROI Control



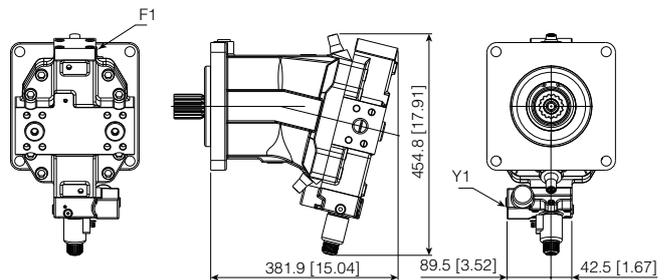
RPI Control



ROS Control

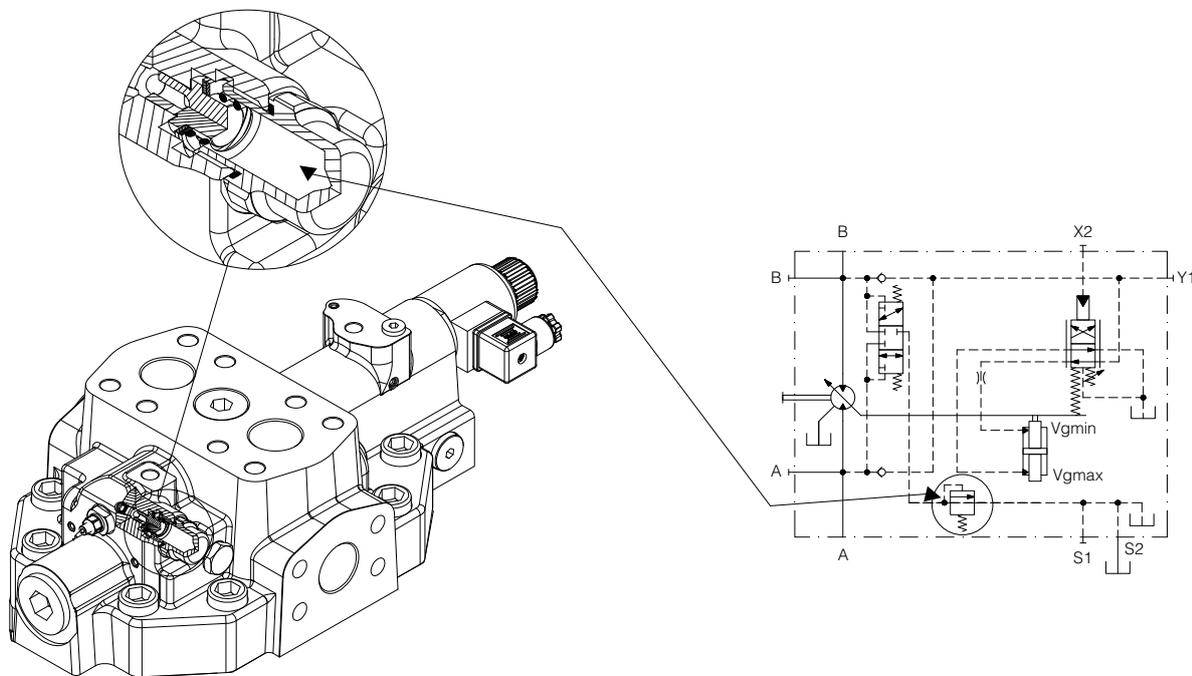


RPS Control

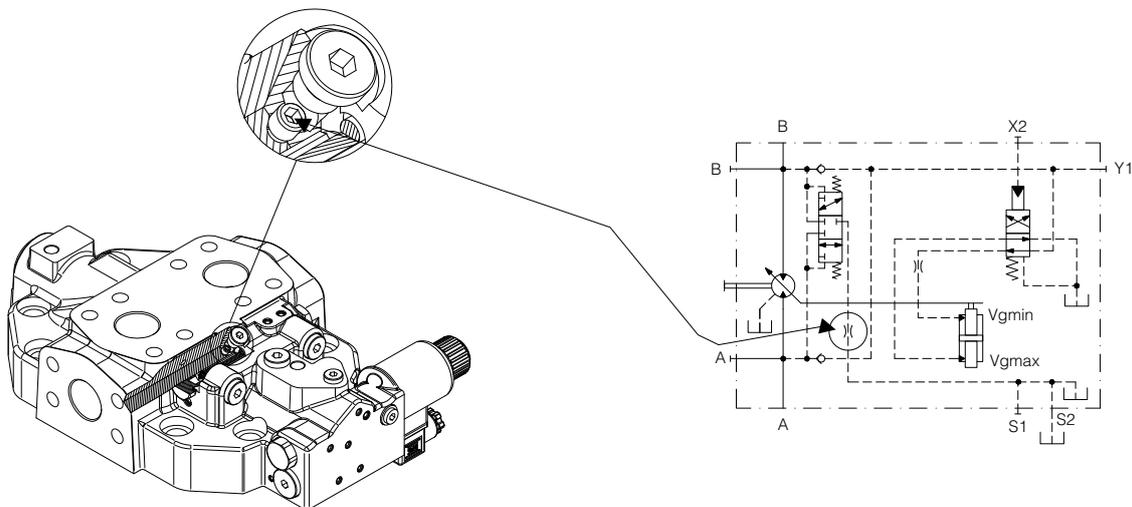


For closed circuit operation, the motors can be equipped with built in flushing valve.

Only for SH9V 115 - 165

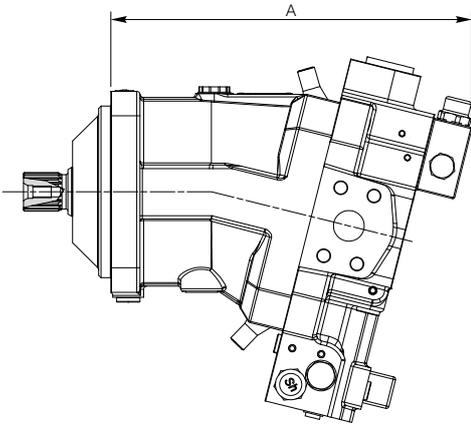


Only for SH9V 165 with two positions controls



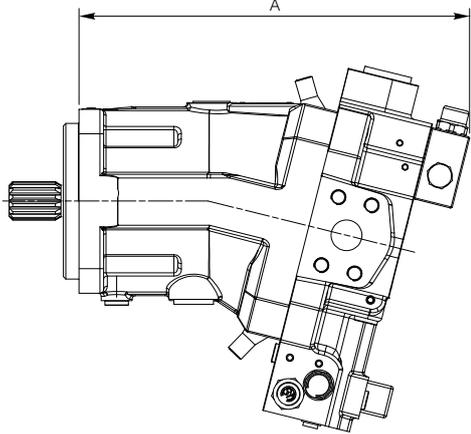
SH9V 061-085 Motor - Mounting flange ISO

Only for SH9V 061 - 085

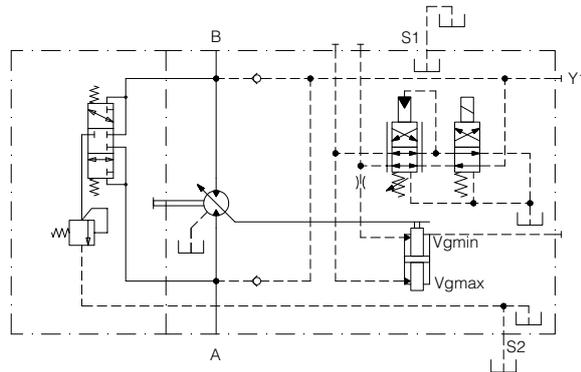


SH9V 061 - 085 Motor - Mounting flange SAE

Only for SH9V 061 - 085

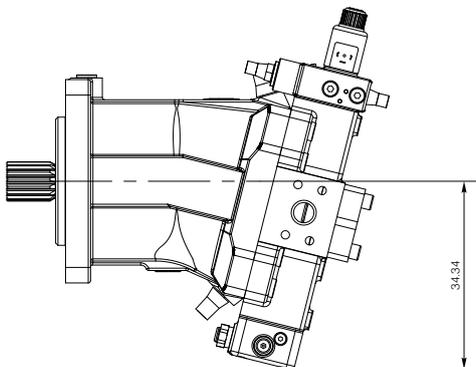


A mm [in]	Size			
	SH9V 061 ISO	SH9V 085 ISO	SH9V 061 SAE	SH9V 085 SAE
	268.3 [10.56]	292.6 [11.51]	323 [12.72]	316.6 [12.46]



SH9V 215 Motor

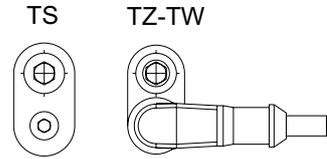
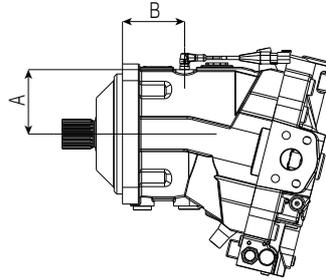
Only for SH9V 215



TS - TW - TZ

TS: Tachometer predisposition. Supplied with phonic wheel assembled on rotating group **without sensor**.

TW-TZ: With tachometer. Supplied with phonic wheel and sensor.



	Size									
	SH9V061 ME	SH9V085 ME	SH9V115 ME	SH9V165 ME	SH9V215 ME	SH9V061 SE	SH9V085 SE	SH9V115 SE	SH9V165 SE	SH9V215 SE
A mm	64 [2.52]	79.9 [3.14]	88.9 [3.49]	96.9 [3.81]	101.9 [4.01]	88 [3.46]	79.9 [3.14]	88.9 [3.49]	96.9 [3.81]	101.9 [4.01]
B mm	75.5 [2.97]	76.5 [3.01]	86.5 [3.40]	92.5 [3.64]	105 [4.13]	75.5 [2.97]	100.5 [3.95]	120.5 [4.74]	124.5 [4.90]	105 [4.13]

TW
 2-Channel differential-hall effect operating principle (1 square wave -1 digital for direction of rotation) Output signal PNP
 Power supply 4.5-16 VDC
 Frequency 0 - 20.000 Hz
 Operating temperature -40°C - +110°C
 Degree of protection IP67
 Sensor connector Deutsch DT04-4P
 Electromagnetic compatibility according to EN 60947-5-2
 Resistance to shock and vibration in accordance with IEC 68-2-17 IEC 68-2-6

TZ
 2-Channel differential-hall effect operating principle Sensor with dual-channel output (90°)
 Power supply 8-32 VDC
 Frequency 0-20.000 Hz
 Operating temperature -40°C +125°C
 Degree of protection IP67
 Sensor connector Deutsch DT04-4P
 Electromagnetic compatibility according to EN 60947-5-2
 Resistance to shock and vibration in accordance with IEC 68-2-17 IEC 68-2-6

	Size				
	SH9V061	SH7V 075	SH7V 108	SH7V 160	SH7V 200
Number of pulses per revolution	54	58	67	75	80





BREVINI[®]

Motion Systems

