



## Index

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Type	Displacement cm <sup>3</sup> /rev [in <sup>3</sup> /rev]	Max. flow l/min [U.S. gpm]	Max. pressure cont. bar [psi]	Max. peak pressure bar [psi]
SH7V 055	61 [3.72]	271 [71.5]	430 [6235]	480 [6960]
SH7V 075	80.58 [4.91]	322 [85]	430 [6235]	480 [6960]
SH7V 108	112.5 [6.86]	400 [105.6]	430 [6235]	480 [6960]
SH7V 160	160.8 [9.81]	500 [132]	430 [6235]	480 [6960]
SH7V 200	216 [13.176]	626 [165.37]	430 [6235]	480 [6960]

SH7V 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 SH7V series motors to provide up to 430 bar [6235 psi] continuous 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 SH7V series motors to any application both industrial and mobile.



**Simbology:**

<b>C</b>	N/bar [lbf/psi]	Load
<b>F<sub>ax max</sub></b>	N [lbf]	Axial pushing load
<b>F<sub>ax max</sub></b>	N [lbf]	Axial pulling load
<b>F<sub>q</sub></b>	N [lbf]	Radial load
<b>F<sub>q max</sub></b>	N [lbf]	Maximum permissible radial load
<b>J</b>	kg·m <sup>2</sup> [lbf·ft <sup>2</sup> ]	Moment of inertia
<b>m</b>	kg [lbs]	Weight
<b>n<sub>0 max</sub></b>	rpm	Maximum speed
<b>p<sub>nom</sub></b>	bar [psi]	Maximum cont. pressure
<b>p<sub>max</sub></b>	bar [psi]	Maximum pressure peak

<b>q<sub>max</sub></b>	l/min [U.S. gpm]	Maximum flow
<b>q<sub>d</sub></b>	l/min [U.S. gpm]	External drain flow
<b>T<sub>k</sub></b>	Nm/bar [lbf.ft/psi]	Torque costant
<b>T<sub>nom</sub></b>	Nm [lbf.ft]	Maximum torque at pressure cont.
<b>T<sub>max</sub></b>	Nm [lbf.ft]	Maximum torque at pressure peak
<b>V<sub>g</sub></b>	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]	Displacement
<b>P<sub>max</sub></b>	kW [hp]	Maximum power at p <sub>nom</sub>
<b>η<sub>hm</sub></b>	%	Mech-hyd. efficiency
<b>η<sub>v</sub></b>	%	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:**

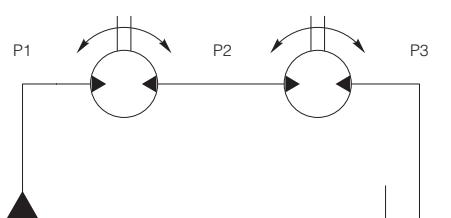
The operating temperature of the oil must be within -25°C ÷ 115°C [-13°F ÷ 239°F]. The running of the unit with oil temperature higher than 115°C [239°F] or lower than -25°C [-13°F] is not allowed. For further information see at Fluids and filtering section.

**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:**

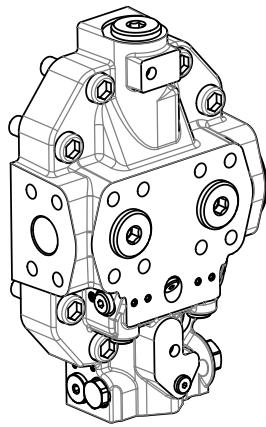
Seals used on standard SH7V series axial piston motors are of FKM seals (Fluoroelastomer - Viton®). In case of use of special fluids, contact Dana.

**Minimum rotating speed:**

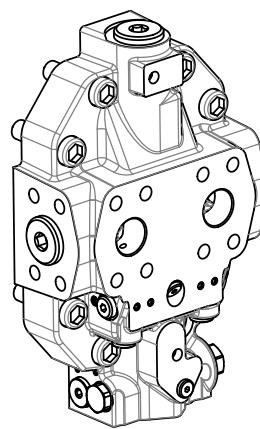
Under "minimum rotating speed" we mean the minimum speed ensuring a smooth running of the piston unit. Operation smoothness at low speeds depends on many factors, as type of load and operating pressure. At a speed higher than 150 rpm, a smooth running is ensured almost in every case. Lower speeds are, usually, possible. For special applications please contact Dana.

**Port plates:**

The SH7V 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**

**Flushing valve:**

The motors can be equipped with built in flushing valve for closed circuit operation. The use of the flushing valve in open loop circuits should be avoided, please contact Dana for further information

**Installation:**

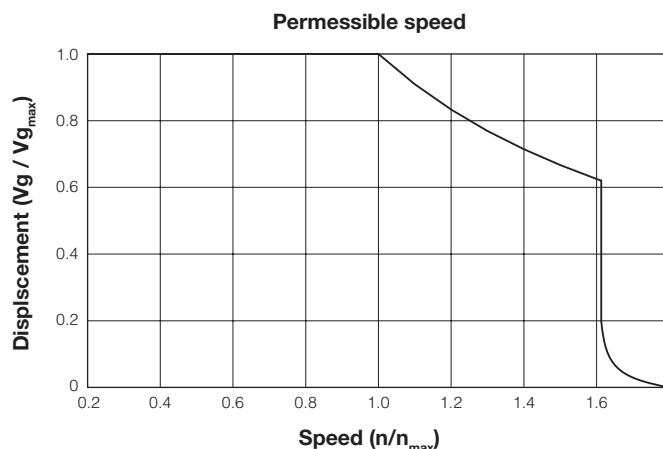
SH7V series motors can be installed in every position or direction. These axial piston units have separate ports and drain chambers and so must be always drained. Installation of the unit with shaft in vertical position and above the tank involves some limitations. For further details see at General installation guidelines.

			Size	55	75	108	160	200
<b>Max. Displacement</b>	<b>Vg</b>	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]		61 [3.72]	80.58 [4.91]	112.5 [6.86]	160.8 [9.81]	216 [13.176]
<b>Min. Displacement</b>	<b>Vg<sub>min</sub></b>	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]		30 [1.83]	40 [2.44]	56 [3.416]	80 [4.88]	108 [6.59]
<b>Displacement minimum possible</b>	<b>Vg<sub>min</sub></b>	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]		12.2 [0.74]	16 [0.97]	22 [1.34]	32.2 [1.96]	43 [2.62]
<b>Displacement Optional</b>	<b>Vg<sub>o</sub></b>	cm <sup>3</sup> /rev [in <sup>3</sup> /rev]		0 [0]	0 [0]	0 [0]	0 [0]	0 [0]
<b>Max. Press. cont.</b>	<b>p<sub>nom</sub></b>	bar [psi]		430 [6235]	430 [6235]	430 [6235]	430 [6235]	430 [6235]
<b>Max. Press. peak</b>	<b>p<sub>max</sub></b>	bar [psi]		480 [6960]	480 [6960]	480 [6960]	480 [6960]	480 [6960]
<b>Max. flow</b>	<b>q<sub>max</sub></b>	l/min [U.S.gpm]		271 [71.5]	322 [85]	400 [105.6]	500 [132]	626 [165.37]
<b>Max. speed at Vg<sub>max</sub> and q<sub>max</sub></b>	<b>n<sub>0 max</sub></b>	rpm		4450	4000	3550	3100	2900
<b>Max. speed at Vg&lt;Vg<sub>max</sub><sup>(2)</sup></b>	<b>n<sub>0 max lim</sub></b>	rpm		7000	6150	5600	5000	4600
<b>Max. speed at Vg<sub>o</sub></b>	<b>n<sub>0 max lim</sub></b>	rpm		8350	7350	6300	5500	5100
<b>Torque constant Vg<sub>max</sub></b>	<b>T<sub>k</sub></b>	Nm/bar [lbf.ft/psi]		0.97 [0.04]	1.28 [0.06]	1.79 [0.09]	2.56 [0.13]	3.44 [0.17]
<b>Max power at q<sub>max</sub> and p<sub>nom</sub></b>	<b>P<sub>max</sub></b>	kW [hp]		194 [259.9]	231 [309.5]	273 [365.8]	330 [442.2]	449 [602.1]
<b>Max. torque cont. at p<sub>nom</sub></b>	<b>T<sub>nom</sub></b>	Nm [lbf.ft]		418 [308]	552 [406.8]	770 [567.5]	1101 [811.4]	1479 [1090]
<b>Max torque peak at p<sub>max</sub></b>	<b>T<sub>max</sub></b>	Nm [lbf.ft]		466 [343.4]	616 [453.9]	859 [633]	1230 [906.5]	1651 [1216]
<b>Moment of inertia</b>	<b>J</b>	kg·m <sup>2</sup> [lbf.ft <sup>2</sup> ]		0.005 [0.12]	0.009 [0.22]	0.0124 [0.31]	0.026 [0.616]	0.035 [0.829]
<b>Weight<sup>(3)</sup></b>	<b>m</b>	kg [lbs]		28 [61.7]	36 [79.3]	47 [103.6]	63 [138.4]	82 [180.7]
<b>Drain flow<sup>(4)</sup></b>	<b>q<sub>d</sub></b>	l/min [U.S.gpm]		3 [0.79]	4 [1.05]	5 [1.32]	5 [1.32]	5 [1.32]

(Theoretical values, without considering n<sub>hm</sub> and n<sub>v</sub> approximate values). Peak operations must not exceed 1% of every minute. A simultaneous maximum pressure and maximum speed not recommended.

#### Notes:

- (1) Maximum and minimum displacement can be changed with continuity. When ordering state Vg<sub>max</sub> and Vg<sub>min</sub> required.
- (2) Determination of admissible speed n<sub>max</sub> value can be increased by reducing motor maximum displacement. To determine the relationship between Vg<sub>max</sub> and n<sub>max</sub> use the right side chart. Motor maximum admissible speed is n<sub>max lim</sub>.
- (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 Series	2 Motor	3 Size	4 Maximum displacement limitation	5 Minimum displacement limitation	6 Mount flange	7 Shaft end	8 Port cover	9 Seal	10 Control	11 Control specification	12 Valve	13 Flanged valves features	14 Flushing valve	15 Series feature	16 Painting
SH7V	M	055	61÷30	12÷42	OC	S20	FM	V	RPE	000	XXXX	000	PR	XX	XX

1	Series
SH7V	Variable displacement axial piston motor for open and closed circuit

2	Motor
M	Motor

3	Size
055	61 cm <sup>3</sup> /rev [3.72 in <sup>3</sup> /rev]
075	80.58 cm <sup>3</sup> /rev [4.91 in <sup>3</sup> /rev]
108	112.5 cm <sup>3</sup> /rev [6.86 in <sup>3</sup> /rev]
160	160.8 cm <sup>3</sup> /rev [9.81 in <sup>3</sup> /rev]
200	216 cm <sup>3</sup> /rev [13.176 in <sup>3</sup> /rev]

4	Maximum displacement limitation		Size				
			055	075	108	160	200
61÷30	From 61 cm <sup>3</sup> /rev [3.721 in <sup>3</sup> /rev] to 30 cm <sup>3</sup> /rev [1.830 in <sup>3</sup> /rev]	Standard 61 cm <sup>3</sup> /rev [3.721 in <sup>3</sup> /rev]	●	-	-	-	-
80÷64	From 80 cm <sup>3</sup> /rev [4.880 in <sup>3</sup> /rev] to 64 cm <sup>3</sup> /rev [3.904 in <sup>3</sup> /rev]	Standard 80 cm <sup>3</sup> /rev [4.880 in <sup>3</sup> /rev]	-	●	-	-	-
112÷91	From 112 cm <sup>3</sup> /rev [6.832 in <sup>3</sup> /rev] to 91 cm <sup>3</sup> /rev [5.551 in <sup>3</sup> /rev]	Standard 112 cm <sup>3</sup> /rev [6.832 in <sup>3</sup> /rev]	-	-	●	-	-
160÷130	From 160 cm <sup>3</sup> /rev [9.760 in <sup>3</sup> /rev] to 130 cm <sup>3</sup> /rev [7.930 in <sup>3</sup> /rev]	Standard 160 cm <sup>3</sup> /rev [9.760 in <sup>3</sup> /rev]	-	-	-	●	-
216÷172	From 216 cm <sup>3</sup> /rev [13.176 in <sup>3</sup> /rev] to 172 cm <sup>3</sup> /rev [10.492 in <sup>3</sup> /rev]	Standard 216 cm <sup>3</sup> /rev [13.176 in <sup>3</sup> /rev]	-	-	-	-	●

● Available

- Not available



1 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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5

	Minimum displacement limitation	Size				
		055	075	108	160	200
0	0 cm <sup>3</sup> /rev	●	●	●	●	●
12÷42	From 12 cm <sup>3</sup> /rev [0.732 in <sup>3</sup> /rev] to 42 cm <sup>3</sup> /rev [2.562 in <sup>3</sup> /rev]	Standard 30 cm <sup>3</sup> /rev [1.830 in <sup>3</sup> /rev]	●	–	–	–
16÷56	From 16 cm <sup>3</sup> /rev [0.976 in <sup>3</sup> /rev] to 56 cm <sup>3</sup> /rev [3.416 in <sup>3</sup> /rev]	Standard 40 cm <sup>3</sup> /rev [2.440 in <sup>3</sup> /rev]	–	●	–	–
22÷80	From 22 cm <sup>3</sup> /rev [1.342 in <sup>3</sup> /rev] to 80 cm <sup>3</sup> /rev [4.880 in <sup>3</sup> /rev]	Standard 56 cm <sup>3</sup> /rev [3.416 in <sup>3</sup> /rev]	–	–	●	–
32÷112	From 32 cm <sup>3</sup> /rev [1.952 in <sup>3</sup> /rev] to 112 cm <sup>3</sup> /rev [6.832 in <sup>3</sup> /rev]	Standard 80 cm <sup>3</sup> /rev [4.880 in <sup>3</sup> /rev]	–	–	–	●
43÷108	From 43 cm <sup>3</sup> /rev [2.623 in <sup>3</sup> /rev] to 108 cm <sup>3</sup> /rev [6.588 in <sup>3</sup> /rev]	Standard 108 cm <sup>3</sup> /rev [6.588 in <sup>3</sup> /rev]	–	–	–	●

● Available

– Not available

6

	Mount flange	Size				
		055	075	108	160	200
OC	ISO 4 Bolts Ø 125 mm [Ø 4.921 in]	●	–	–	–	–
OD	ISO 4 Bolts Ø 140 mm [Ø 5.511 in]	–	●	–	–	–
OE	ISO 4 Bolts Ø 160 mm [Ø 6.299 in]	–	–	●	–	–
OF	ISO 4 Bolts Ø 180 mm [Ø 7.086 in]	–	–	–	●	–
OG	ISO 4 Bolts Ø 200 mm [Ø 7.87 in]	–	–	–	–	●
05	SAE-C 4 Bolts	●	●	–	–	–
08	SAE-D 4 Bolts	–	–	●	●	–
10	SAE-E 4 Bolts	–	–	–	–	●

● Available

– Not available



1 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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7

Shaft end	Size				
	055	075	108	160	200
<b>S20</b> Splined 27T - 16/32 DP	–	–	●	●	–
<b>S19</b> Splined 15T - 8/16 DP	–	–	–	●	●
<b>S15</b> Splined 13T - 8/16 DP	–	–	●	●	–
<b>S12</b> Splined 14T - 12/24 DP	●	●	–	–	–
<b>SAR</b> Splined W50x2x30x24 - DIN 5480	–	–	–	●	●
<b>SAP</b> Splined W45x2x30x21 - DIN 5480	–	–	●	●	–
<b>SAO</b> Splined W40x2x30x18 - DIN 5480	–	●	●	● <sup>1)</sup>	–
<b>SAM</b> Splined W35x2x30x16 - DIN 5480	●	●	–	–	–
<b>SAI</b> Splined W30x2x30x14 - DIN 5480	●	–	–	–	–
<b>C18</b> Ø44.45 mm [1.75 in] Parallel keyed	–	–	●	● <sup>1)</sup>	–
<b>C17</b> Ø31.75 mm [1.25 in] Parallel keyed	●	–	–	–	–
<b>CAJ</b> Ø45 mm [1.772 in] Parallel keyed	–	–	–	●	–
<b>CAK</b> Ø40 mm [1.574 in] Parallel keyed	–	–	●	–	–
<b>CAY</b> Ø35 mm - 10x8x56 [1.378 in - 0.39x0.31x2.2] Parallel keyed	–	●	–	–	–
<b>CAW</b> Ø30 mm [1.181 in] Parallel keyed	●	–	–	–	–

● Available

– Not available

1) Special on request

8

Port cover	Size									
	055		075		108		160		200	
	Mount flange									
	OC	05	OD	05	OE	08	OF	08	OG	10
<b>FM</b> Metric End Main ports	●	●	●	●	●	●	●	●	●	●
<b>FS</b> SAE End Main ports	●	●	●	●	●	●	●	●	●	●
<b>LM</b> Metric Main Ports positioned 180° apart	●	●	●	●	●	●	●	●	●	●
<b>LS</b> SAE Main Ports positioned 180° apart	●	●	●	●	●	●	●	●	●	●
<b>L3</b> Metric Main Ports positioned 180° apart (no VSC)	●	–	●	–	●	–	●	–	●	–

● Available

– Not available

**Warning****Referred ports are the ones on the portplate and on the controls**

1 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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9	Seal
V	FKM

Control		Port Cover				
		FM	FS	LM	LS	L3
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 hidraulic override	●	●	●	●	●
RPS	Working pressure control with electric override	●	●	●	●	●
ROE	Working pressure control Δp 100 bar	●	●	●	●	●
ROI	Working pressure control Δp 100 bar with hidraulic override	●	●	●	●	●
ROS	Working pressure control Δp 100 bar with electric override	●	●	●	●	●

- Available
- Not available

1 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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11

Valve Feature		Control															
		RPE	ROE	2EE	2EN	2IE	2IN	REE	RED <sup>(t)</sup>	REN	RID <sup>(t)</sup>	RIE	RIN	RPI	ROI	ROS	RPS
1	Displacement setting	From Max. Displac. to Min. Displac. ( $Vg_{max} \rightarrow Vg_{min}$ )	-	-	●	●	●	●	●	●	●	●	●	-	-	-	-
		From Min. Displac. to Max. Displac. ( $Vg_{min} \rightarrow Vg_{max}$ )	●	●	-	●	-	●	-	-	●	-	●	●	●	●	●
00	None		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(*)	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]	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-
25	Δp Displacement change	25 bar [363 psi]	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-
12	Voltage	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)	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-
04	Control orifice (**)	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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Available

– Not available

(\*) 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 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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12

Valve	Size				
	055	075	108	160	200
XXXX	●	●	●	●	●
VCD1	LM	LM	LM	LM	LM
VCD2	-	LM	LM	LM	LM
VCR2	FM	-	-	-	-
VCR4	-	FM	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		Port Cover				
		FM	FS	LM	LS	L3
XX	No Flushing Valve	-	-	-	-	●
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]	●	●	●	●	-

● Available

- Not available



1 SH7V	2 M	3 055	4 61÷30	5 12÷42	6 OC	7 S20	8 FM	9 V	10 RPE	11 000	12 XXXX	13 000	14 PR	15 XX	16 XX
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15

**Series feature**

<b>XX</b>	None
<b>TS</b>	Prepared for tachometer sensor
<b>TW</b>	Tachometer + sensor 2-channel-Hall effect PNP - 5V
<b>TZ</b>	Tachometer + sensor 2-channel-Hall effect

- Available
- Not available

16

**Painting**

<b>XX</b>	Not Required
<b>01</b>	Black Painted RAL 9005
<b>02</b>	Blue Painted RAL 5015



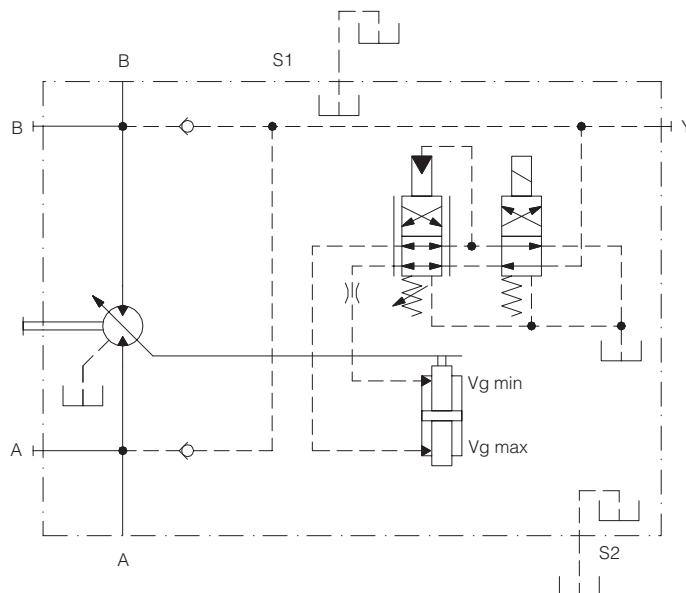
The 2EE control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as '2EN' control, when solenoid valve is switched off the motor is at  $Vg_{max}$ . The motor displacement is adjusted to  $Vg_{min}$  when the solenoid valve is switched 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  $Vg_{max}$ . Swivel range is from  $Vg_{max}$  to  $Vg_{min}$  (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.

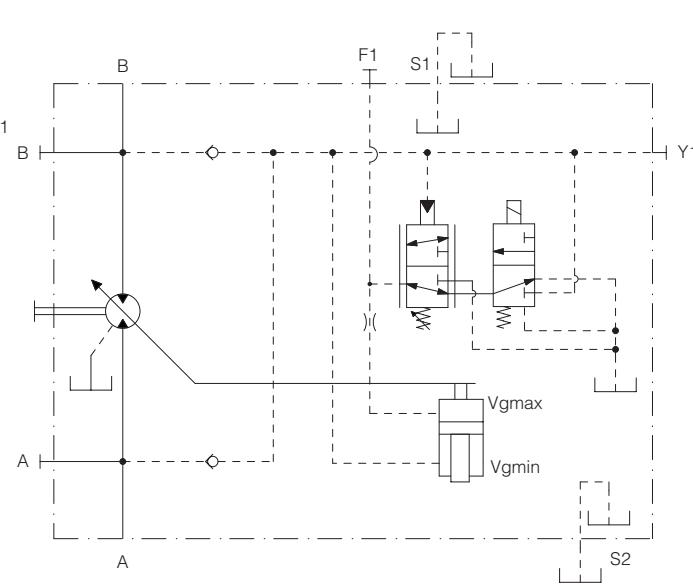
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055-075-108-160

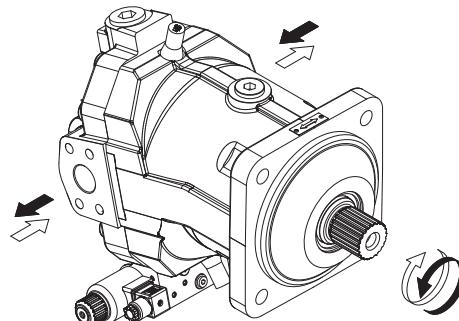


**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



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

**Note:**

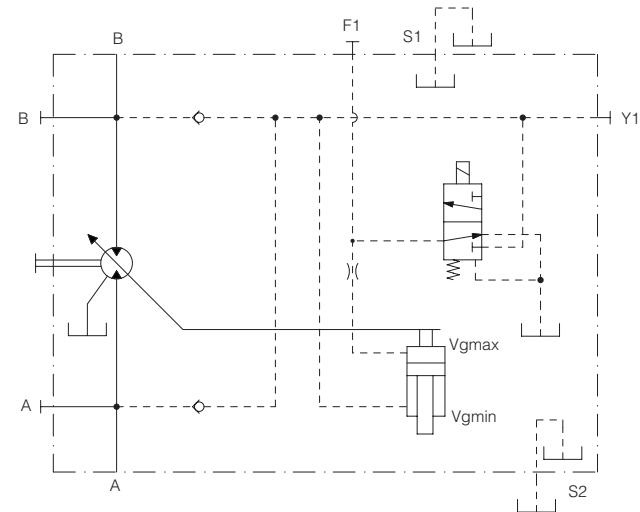
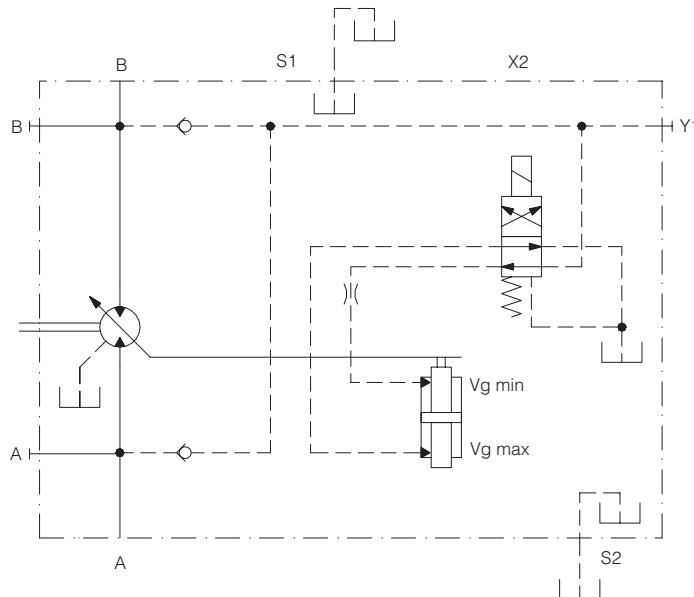
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

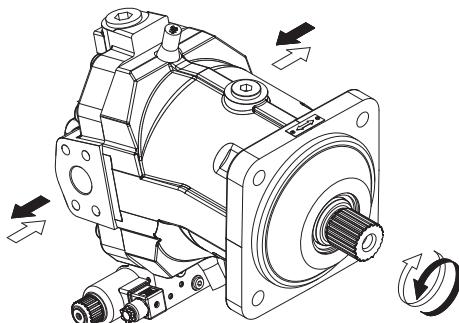
055-075-108-160

**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



The 2IE control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as 2IN control, the motor displacement is adjusted to  $Vg_{min}$  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  $Vg_{max}$ . Swivel range is from  $Vg_{max}$  to  $Vg_{min}$  (displacement setting 1 per our ordering code).

**Note:**

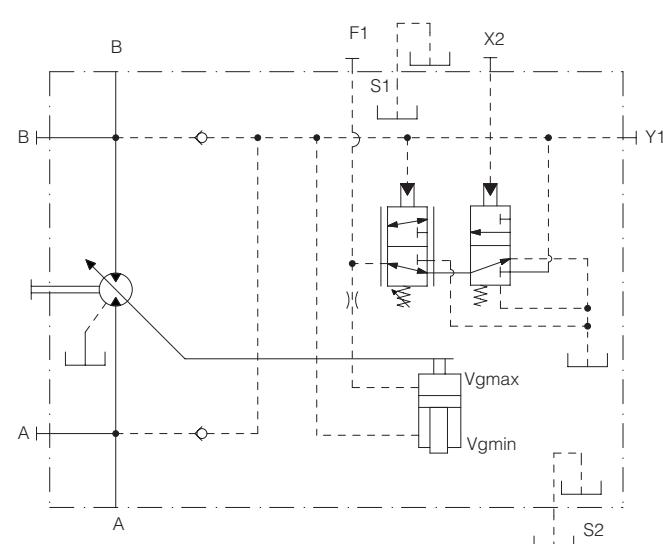
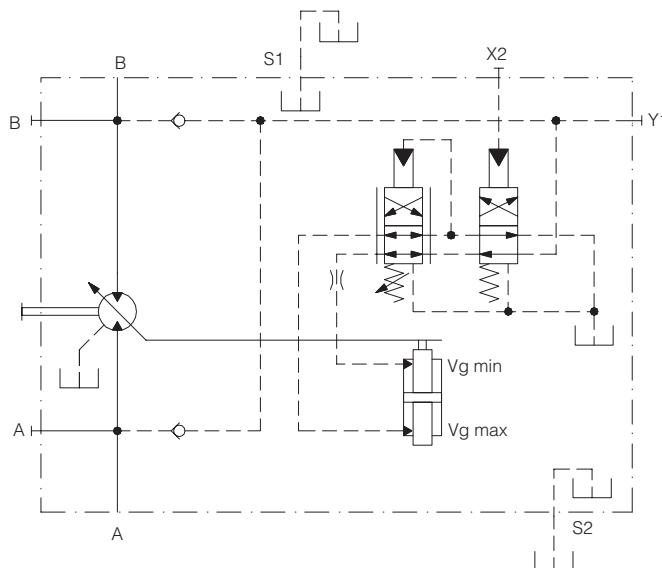
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

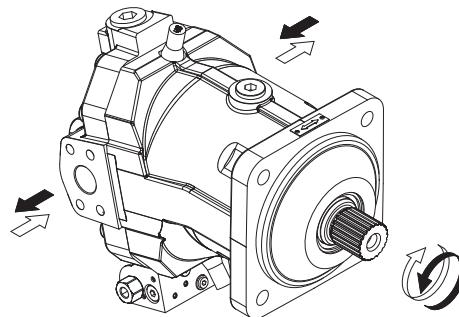
055-075-108-160

**Size:**

200



**The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.**



The hydraulic two positions control allows the displacement of the motor to be set to  $Vg_{max}$  or  $Vg_{min}$  by applying or not a pilot pressure at port X2. The feed back spring is missing so  $Vg_{max}$  or  $Vg_{min}$  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  $Vg_{max}$  to  $Vg_{min}$ ) or 2 (swivel range from  $Vg_{min}$  to  $Vg_{max}$ ).

**Note:**

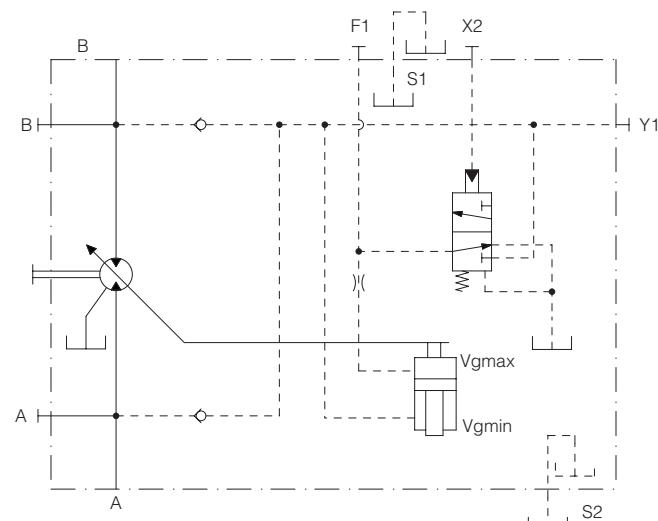
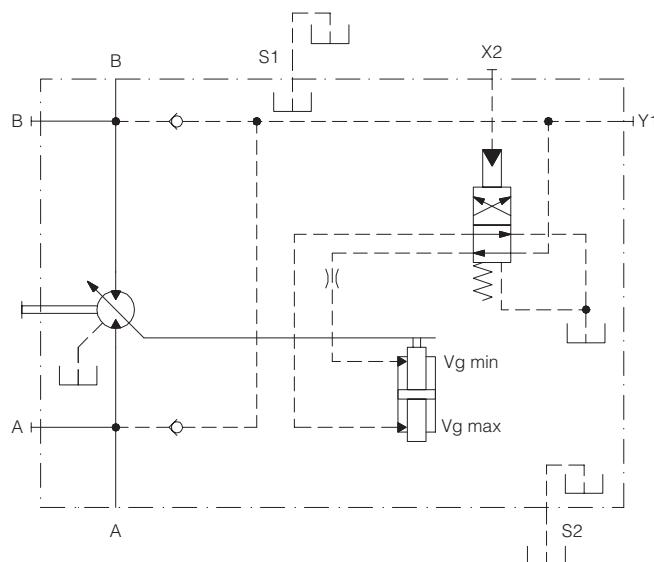
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

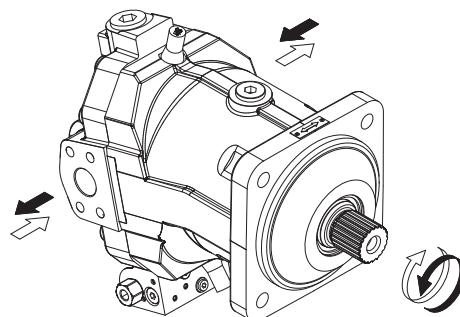
055-075-108-160

**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



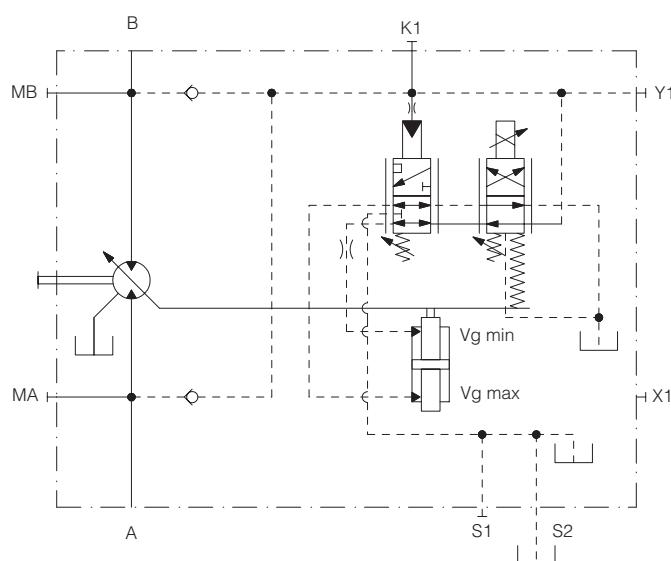
The REE control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as REN control, when solenoid valve is switched off the motor is at  $Vg_{max}$ . The proportional solenoid valve is available in 12V DC and 24V DC version and with connector DIN 43650 o DEUTSCH. The motor displacement is adjusted to  $Vg_{min}$  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  $Vg_{max}$ . Swivel range is from  $Vg_{max}$  to  $Vg_{min}$  (displacement setting 1 per our ordering code).

**Note:**

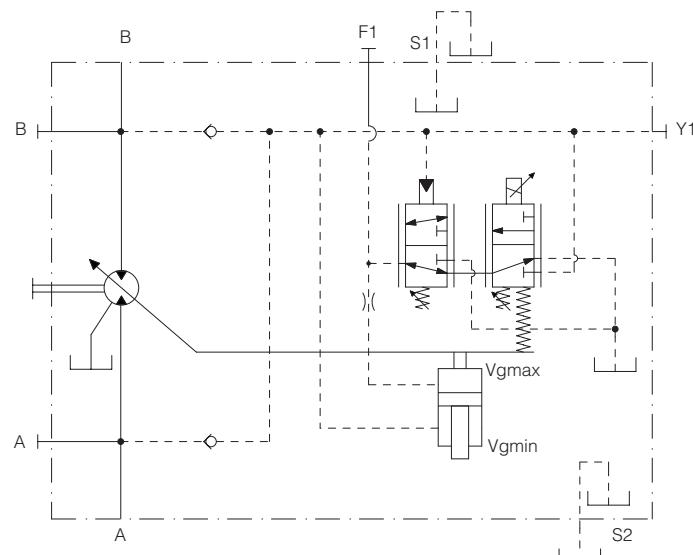
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

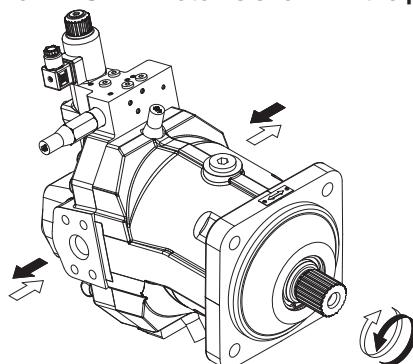
055-075-108-160


**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



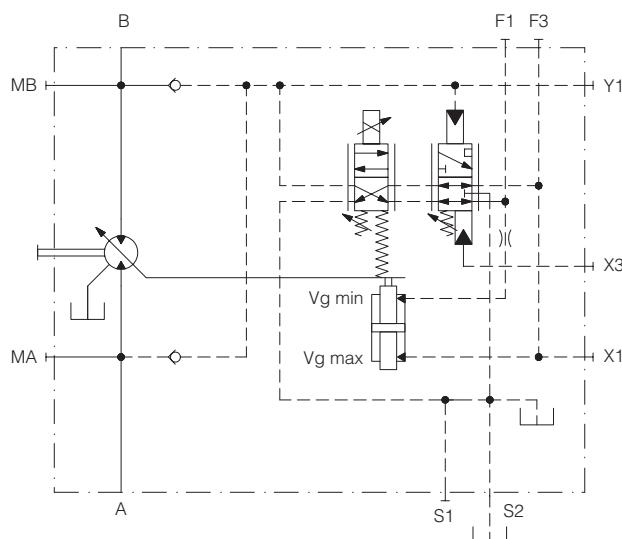
The RED control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as REN control, when solenoid valve is switched off the motor is at  $Vg_{max}$ . The proportional solenoid valve is available in 12V DC and 24V DC version and with connector DIN 43650 o DEUTSCH. The motor displacement is adjusted to  $Vg_{min}$  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  $Vg_{max}$ . Swivel range is from  $Vg_{max}$  to  $Vg_{min}$  (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.

**Note:**

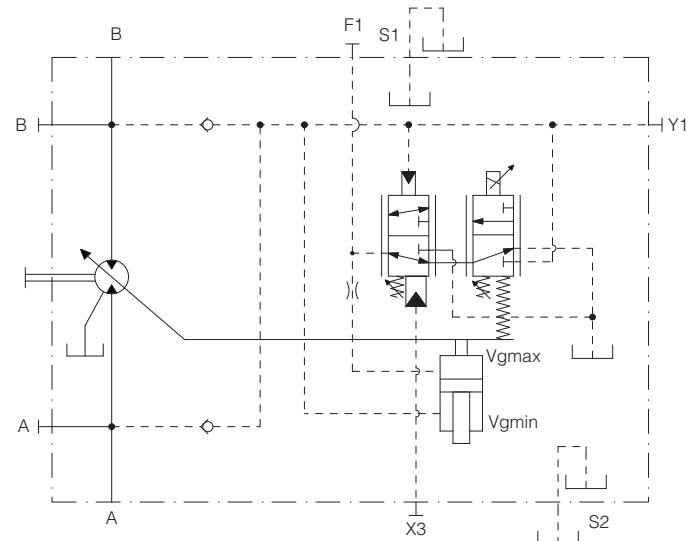
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

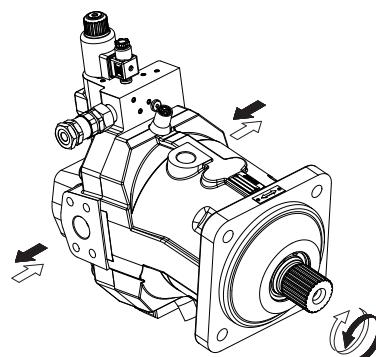
055-075-108-160

**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



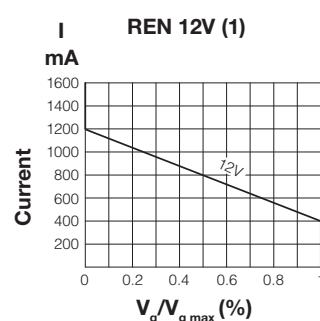
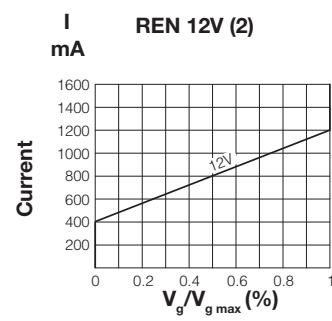
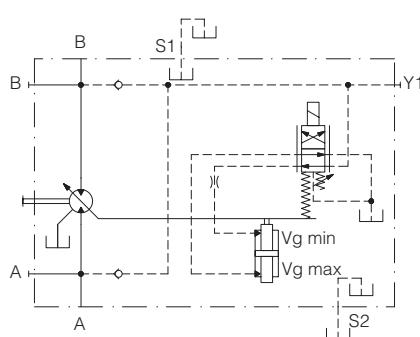
The electrical proportional control allows stepless and programmable adjustment of the motor displacement proportionally to the current strength supplied to a proportional solenoid valve available in 12V DC and 24V DC version and with connector DIN 43650 o DEUTSCH. The proportional solenoid valve applies 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:**

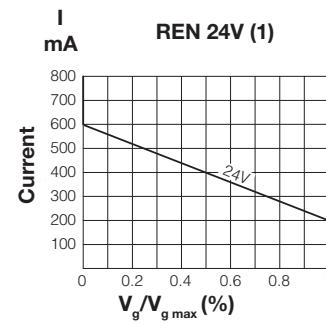
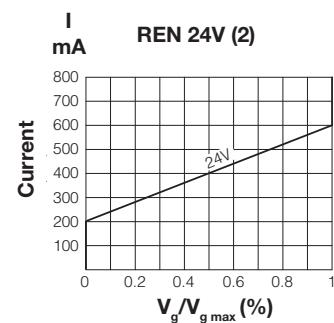
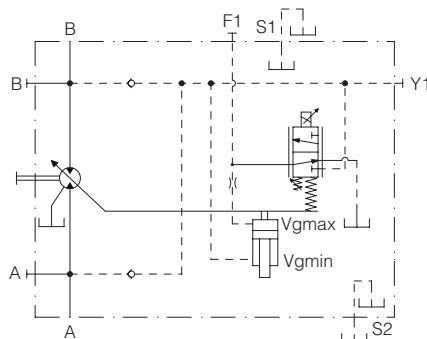
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

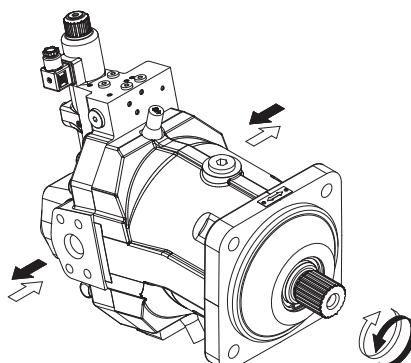
055-075-108-160


**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



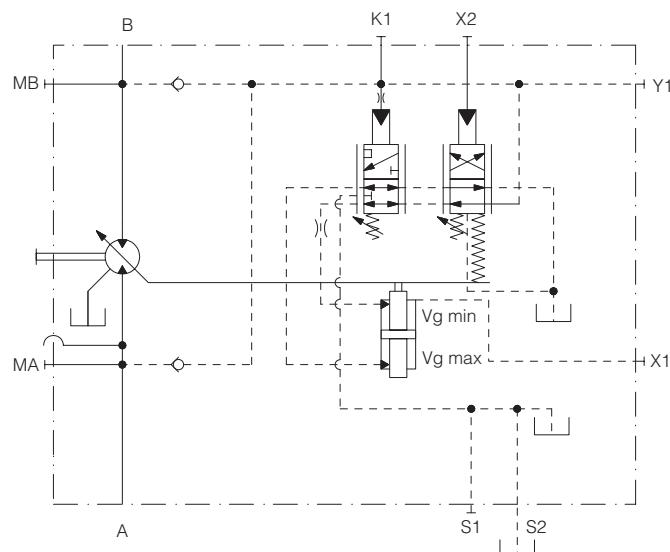
The RIE control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as RIN control, the motor displacement is adjusted to  $Vg_{min}$  when the pilot pressure applied at port X2. If the operating pressure rises beyond the pressure setting, the pressure limiting device the motor swivels out to  $Vg_{max}$ . Swivel range is from  $Vg_{max}$  to  $Vg_{min}$  (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:**

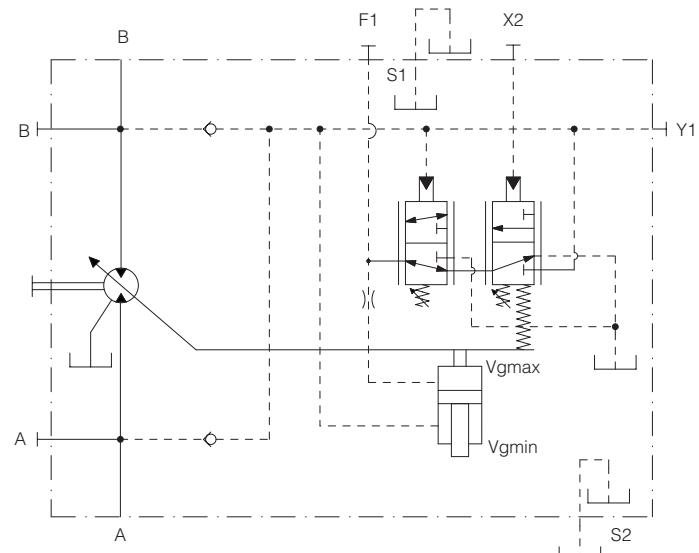
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

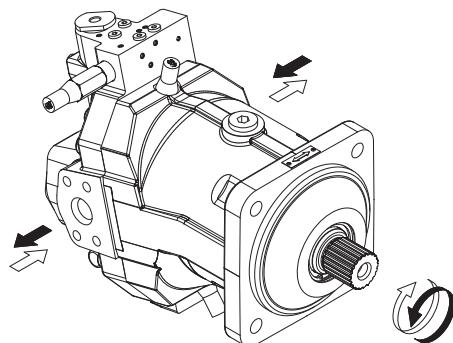
055-075-108-160

**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



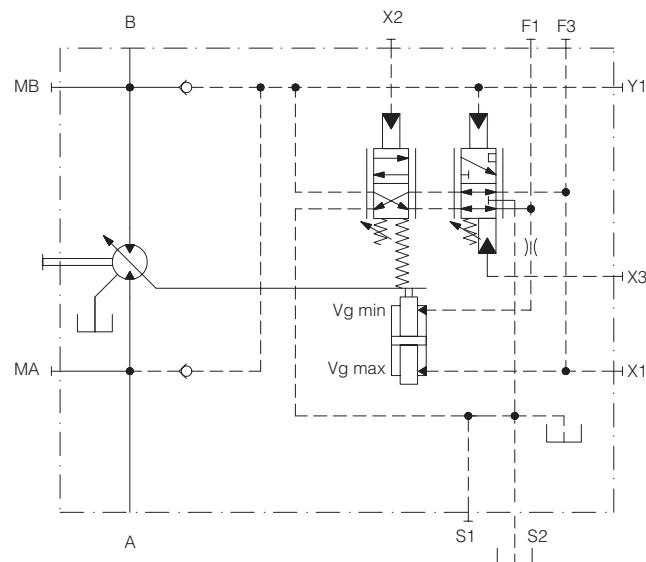
The RID control version with the pressure override allows the motor to swivel to  $Vg_{max}$  when the pressure setting is reached. Same as RIN control, the motor displacement is adjusted to  $Vg_{min}$  when the pilot pressure applied at port X2. If the operating pressure rises beyond the pressure setting,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

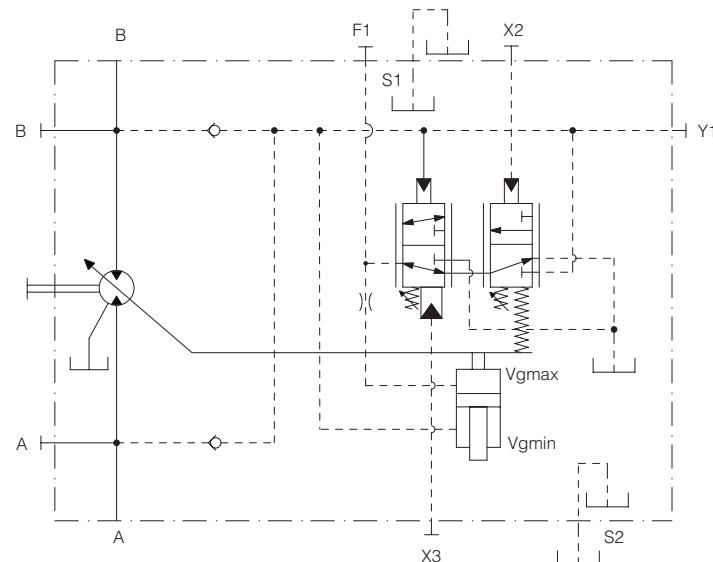
#### Size:

055-075-108-160

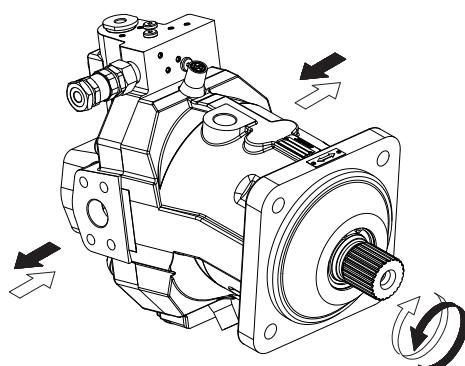


#### Size:

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



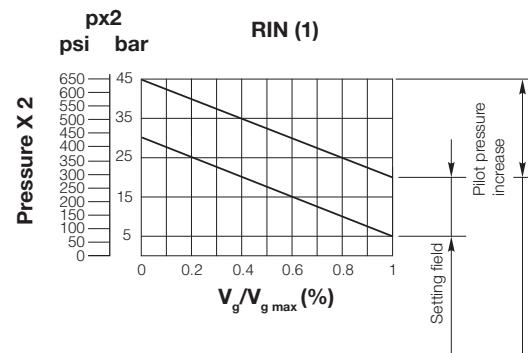
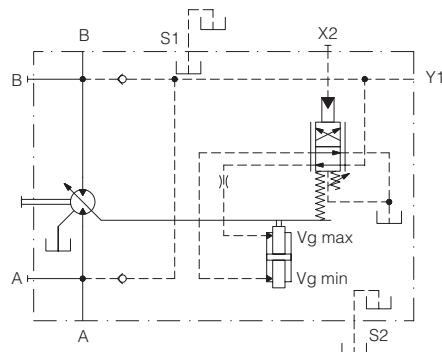
The hydraulic proportional control allows a stepless adjustment of the motor displacement proportionally to the pilot pressure applied at port X2. The pilot pressure applies a force on the spool and the motor swivels until a force balance on the arm is stored by feed back spring. Therefore the motor 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:**

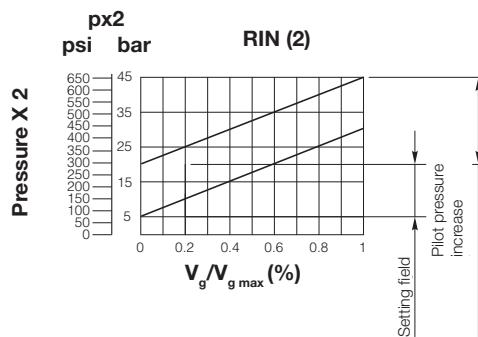
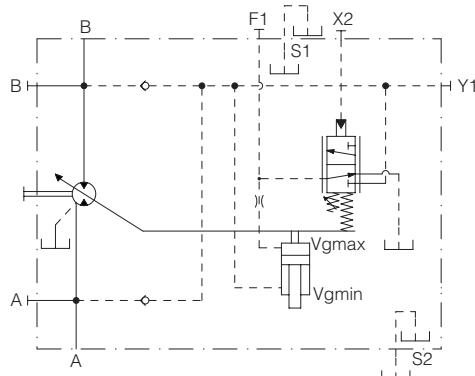
For reliable control, an operating pressure of at least 20 bar [290 psi], is necessary at port A (B). If in the application this pressure is not guaranteed, an auxiliary pressure of 20 bar [290 psi] is to be applied at port Y1.

**Size:**

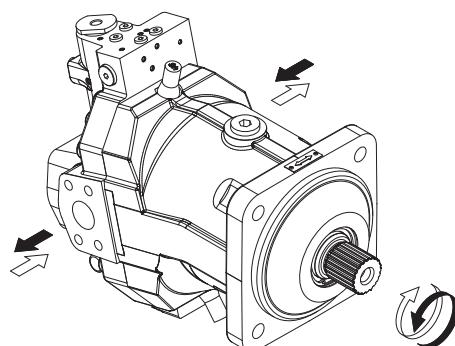
055-075-108-160

**Size:**

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



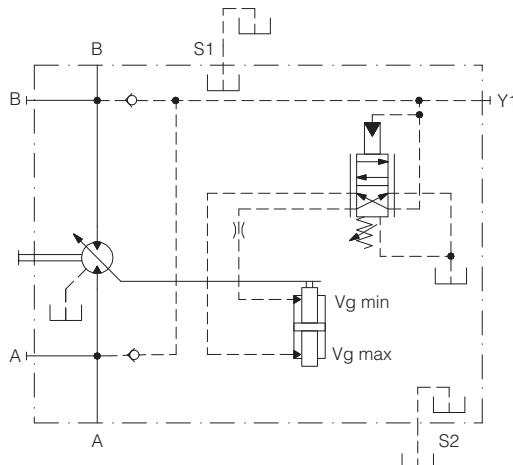
The working pressure control allows to swivel the motor displacement from  $V_{g\ min}$  to  $V_{g\ max}$  when the operating pressure rises beyond the preset operating pressure, so that the motor is at  $V_{g\ min}$  when min torque and max speed are required and at  $V_{g\ max}$  when max torque and 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.

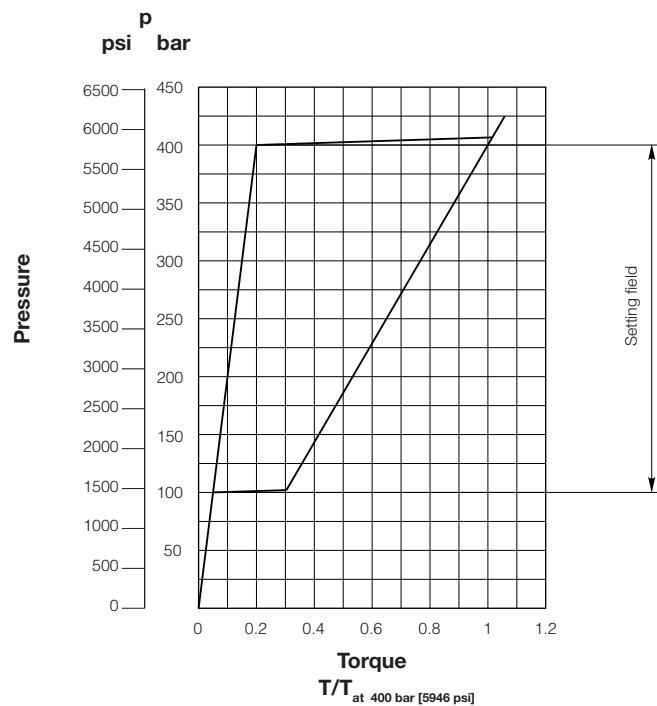
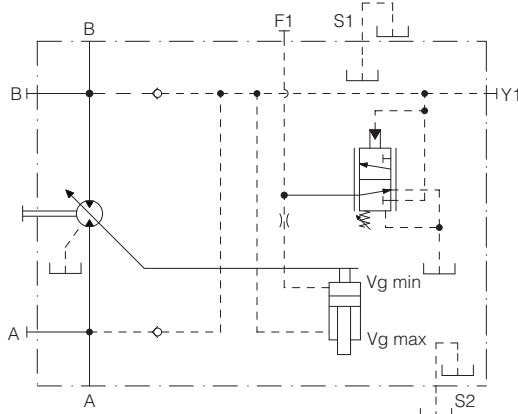
#### Size:

055 - 075 - 108 - 160

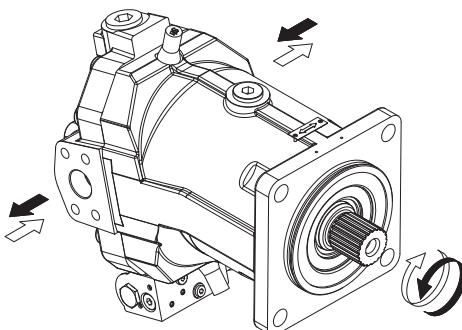


#### Size:

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



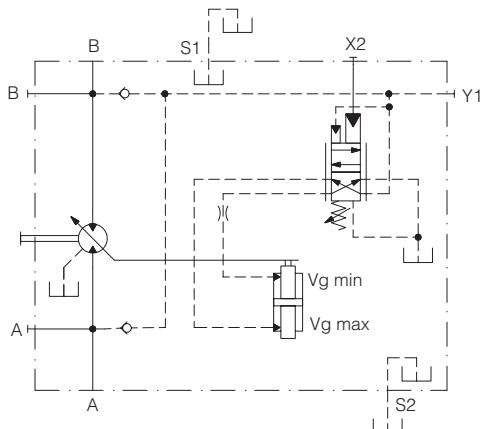
The hydraulic limiting device makes possible to reduce the pressure setting of RPE control by means of an external pilot pressure applied at port X2. The RPE control pressure setting is reduced proportionally to the pilot pressure in the ratio of 1/17 (for each pilot pressure bar, the preset operating 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 Vgmax independently from the operating pressure, a pilot pressure of 20 bar [290 psi] should be applied at port X2. Swivel range from Vg<sub>min</sub> to Vg<sub>max</sub> (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.

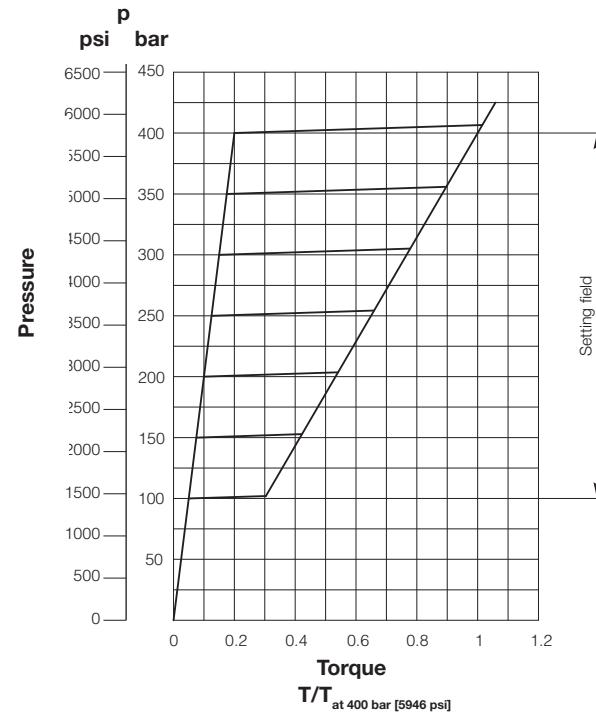
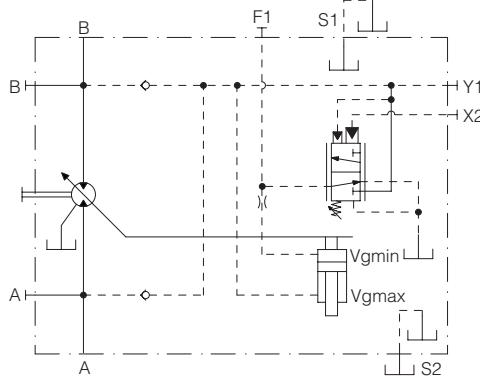
#### Size:

055-075-108-160

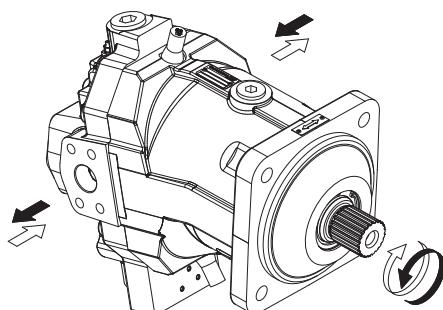


#### Size:

200



The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.

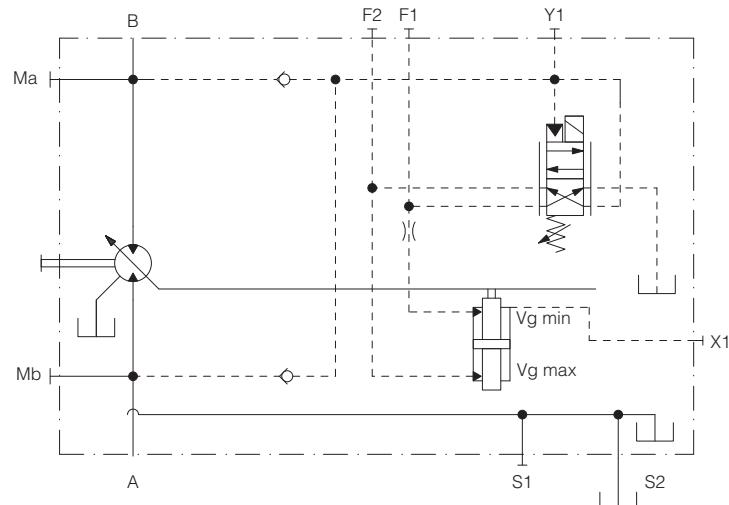


RPS control is a pressure related control which permits the changing of displacement  $V_{g\ min}$  to  $V_{g\ max}$  when working pressure exceeds setting threshold, so that the motor works at  $V_{g\ min}$  when low torque and high speed are required and at  $V_{g\ max}$  when high torque and low speed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

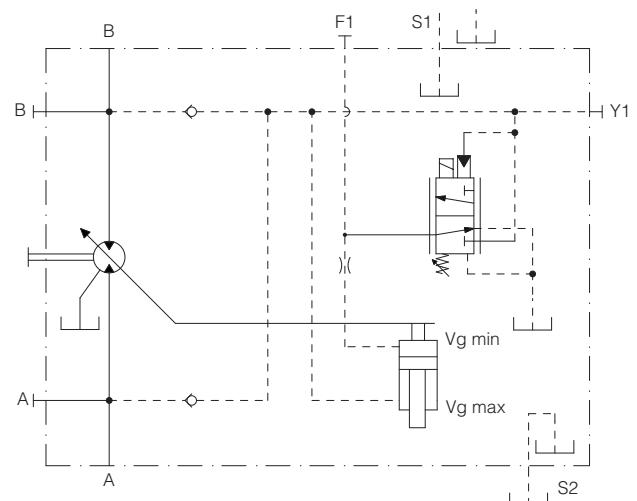
$\Delta p$  of working pressure that allows the changing of displacement from minimum to maximum is around 10 bar (such as RPE control). This pressure related control can be overridden by an electrical signal; when solenoid is energized, the motor reaches maximum displacement without stopping in an intermediate 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.

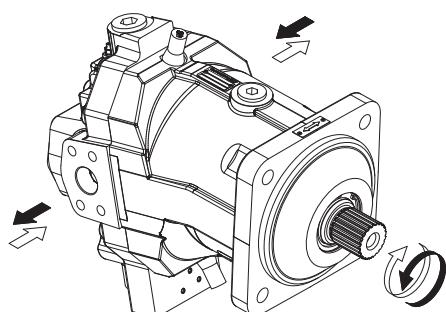
**Size:**  
055 - 075 - 108 - 160



**Size:**  
200



The relation between direction of rotation of shaft and direction of flow in SH7V 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  $Vg_{min}$  to  $Vg_{max}$  allows a smoother working of the motor during displacement variation. The “ROE” allows the displacement variation with the pressure range show in the table.

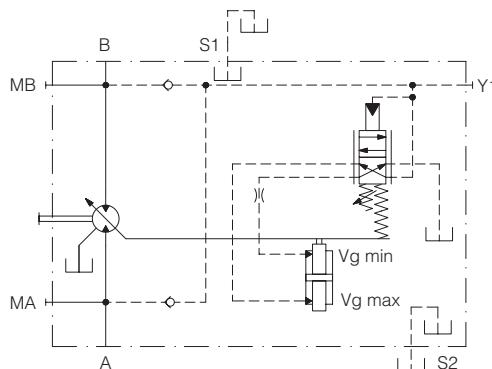
$\Delta p$ bar [psi]	$P_{min}$ bar [psi]	$P_{max}$ bar [psi]
100 [1450]	100 [1450]	350 [5075]

Where:

- $\Delta p$  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.

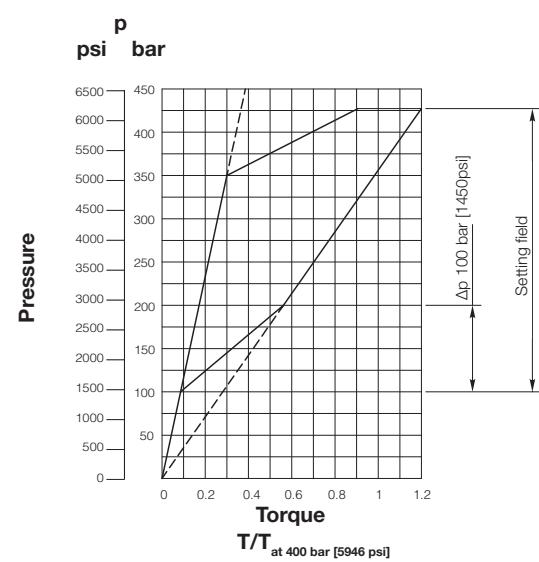
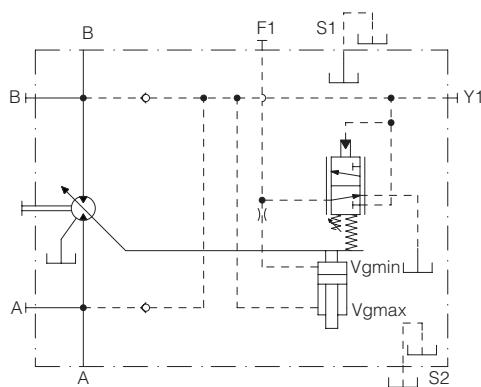
#### Size:

055-075-108-160



#### Size:

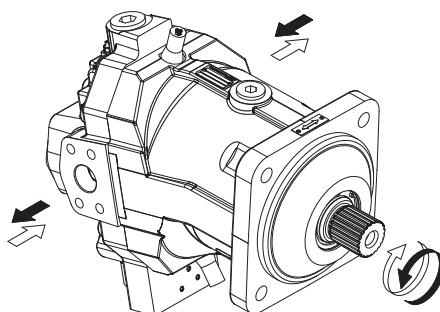
200



#### Warning:

in case of displacement limitation, the control shall vary of a reduced  $\Delta p$  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 SH7V 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  $V_g \text{ max}$  independently from the operating pressure, a pilot pressure of 20 bar [290 psi] should be applied at port X2.

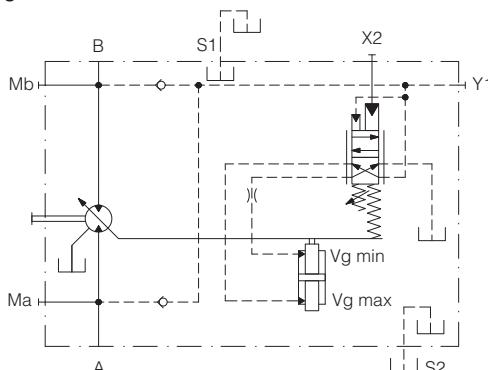
Swivel range from  $V_g \text{ min}$  to  $V_g \text{ max}$  (assembly type 2 as per our ordering code). Start of control adjustable between 100 and 350 bar [1450 and 5000 psi].

#### When ordering please clearly state:

Control pressure setting.

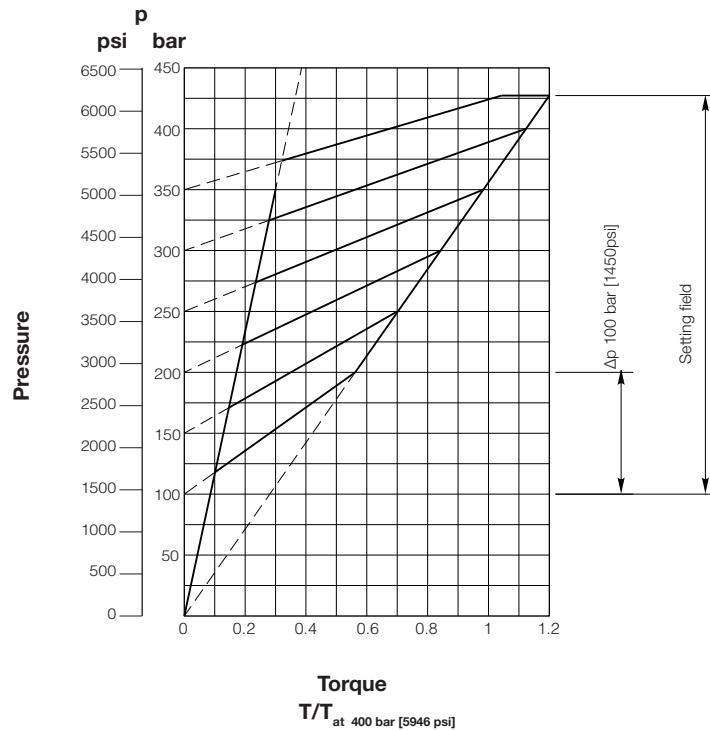
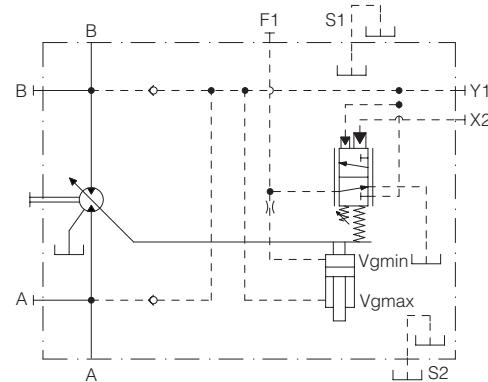
#### Size:

055 - 075 - 108 - 160

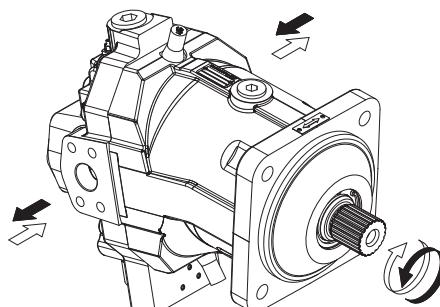


#### Size:

200



The relation between direction of rotation of shaft and direction of flow in SH7V 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.  $\Delta p$  of working pressure that allows the changing of displacement 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:**

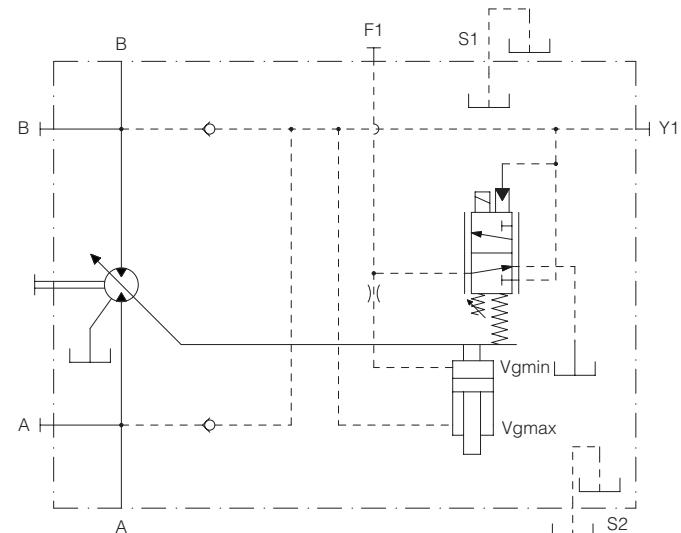
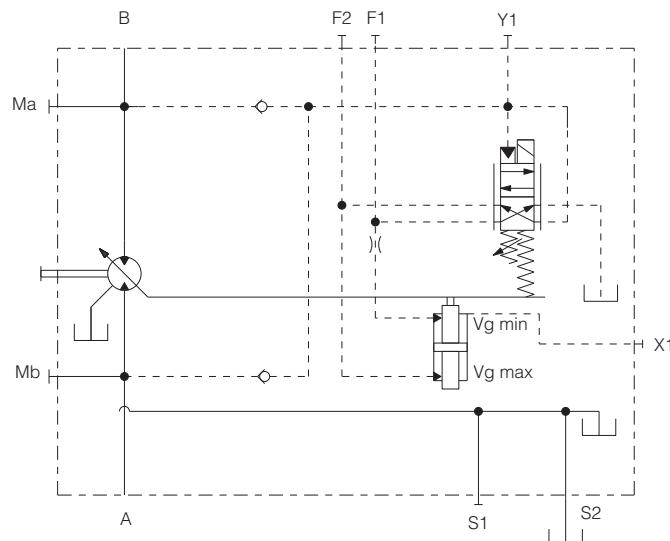
Control pressure setting.

**Size:**

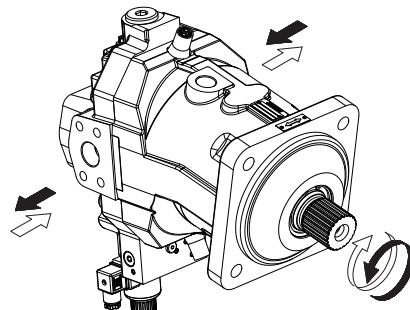
055 - 075 - 108 - 160

**Size:**

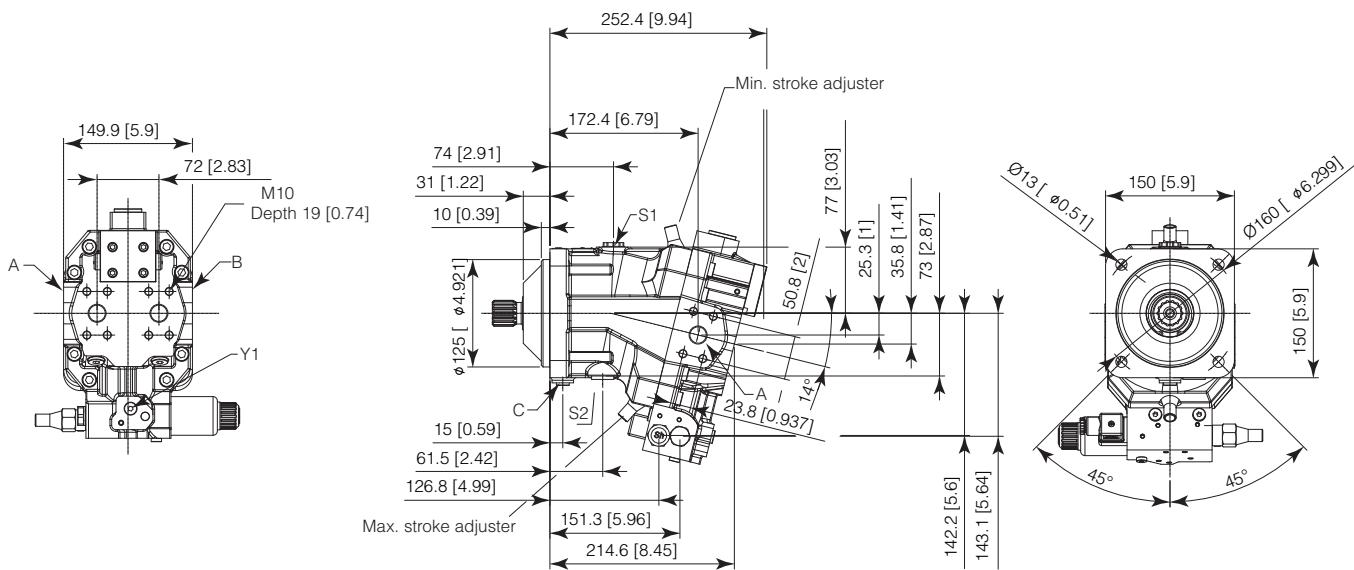
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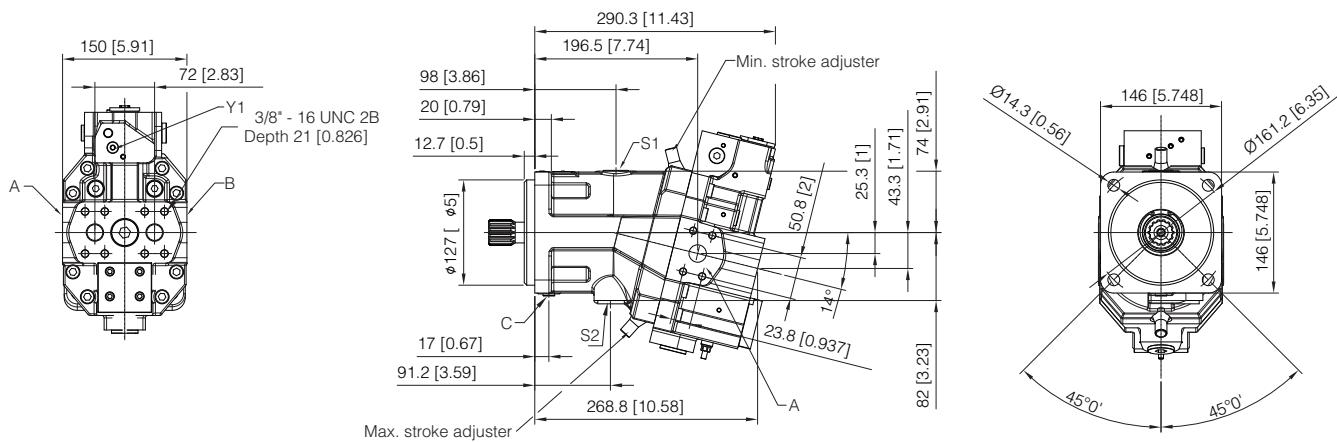
The relation between direction of rotation of shaft and direction of flow in SH7V motor is shown in the picture below.



## SH7V 055 Motor - Mounting flange ISO 4 Bolts (OC)



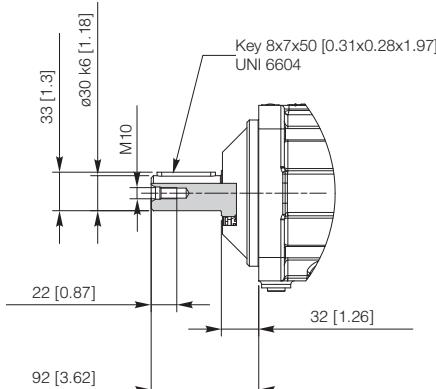
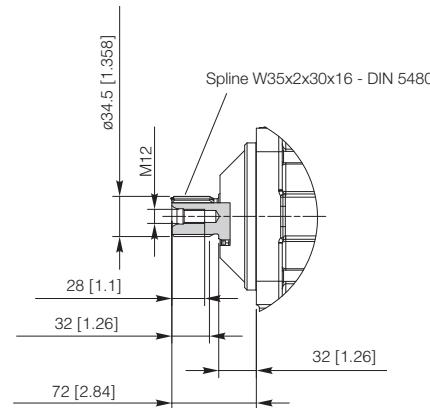
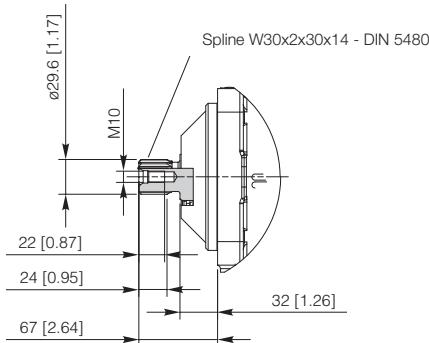
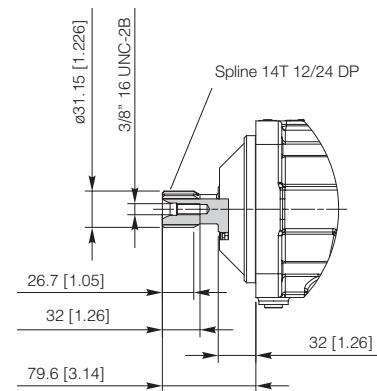
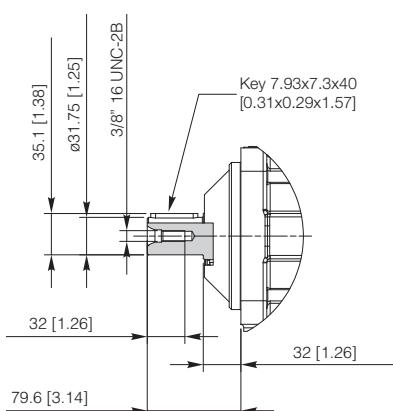
## SH7V 055 Motor - Mounting flange SAE-C 4 Bolts (O5)



A-B: Service line ports - 3/4" 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

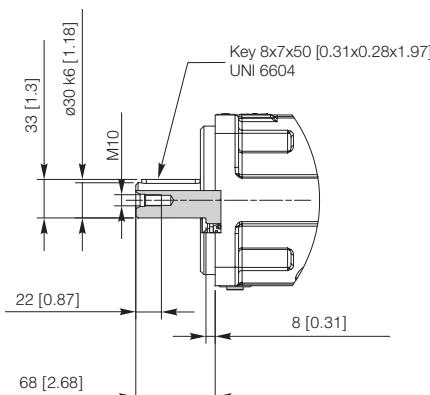
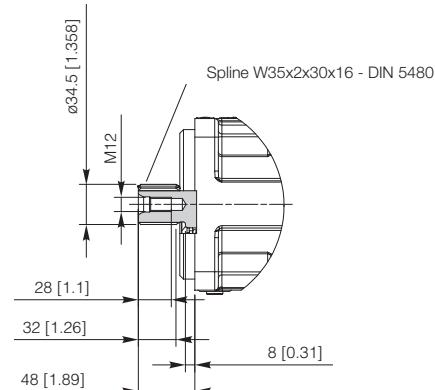
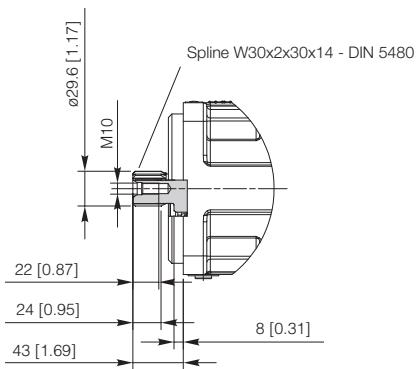
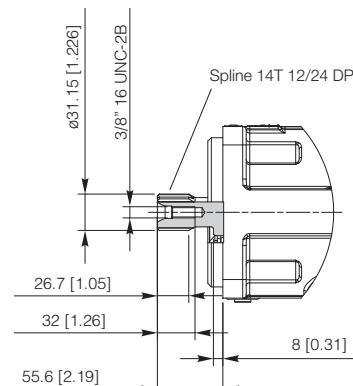
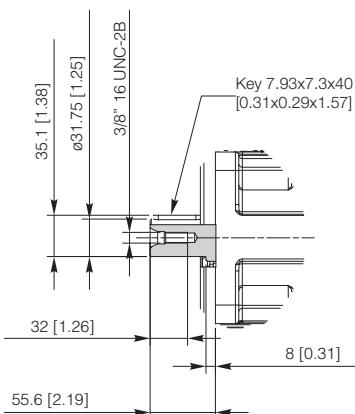
7

## Shaft end

**CAW** Parallel keyed shaft**SAM** Splined shaft**SAI** Splined shaft**S12** Splined shaft**C17** Parallel keyed shaft

7

## Shaft end

**CAW** Parallel keyed shaft**SAM** Splined shaft**SAI** Splined shaft**S12** Splined shaft**C17** Parallel keyed shaft

Click DANA button to return to Section Index

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SH7V/M - Section N

Click i button to return to main index



10

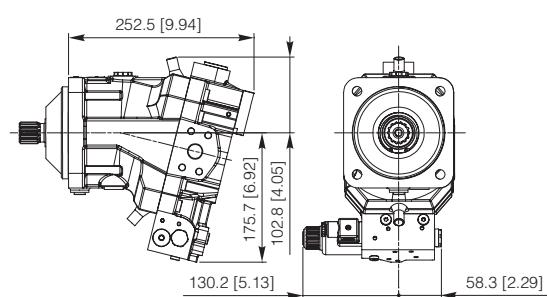
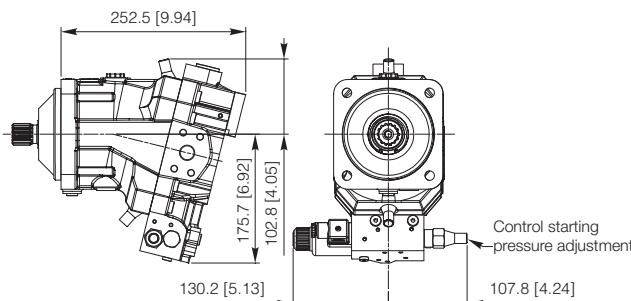
Control

**2EE**

Control

**2EN**

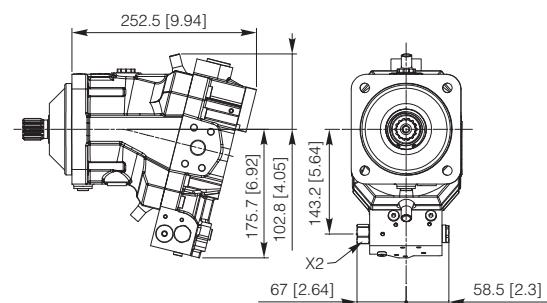
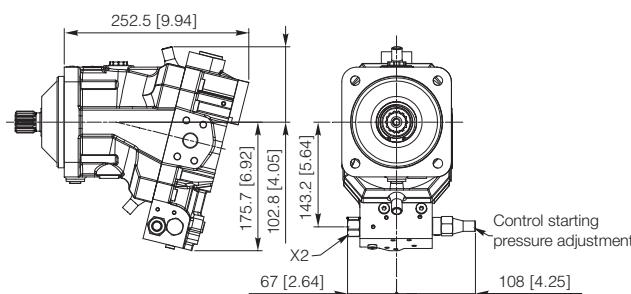
Control

**2IE**

Control

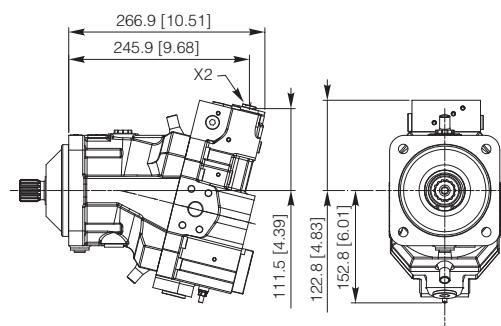
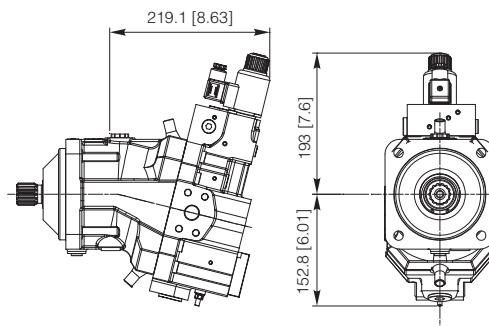
**2IN**

Control



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

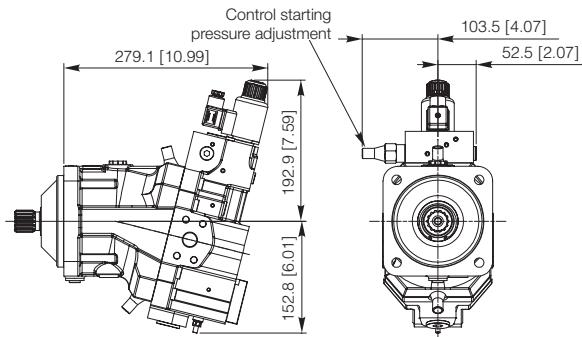
X2: Piloting port - 1/4 G (BSPP)

**REN** Control**RIN** Control

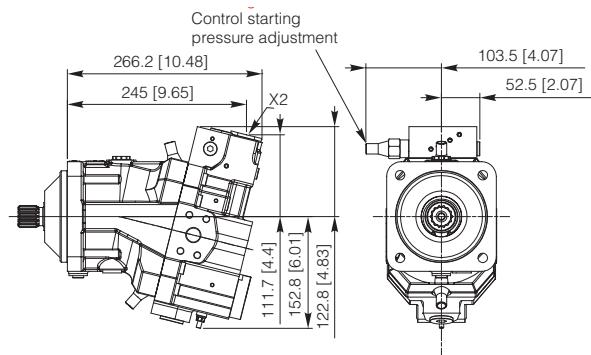
X2: Piloting port - 1/4 G (BSPP)



## REE Control

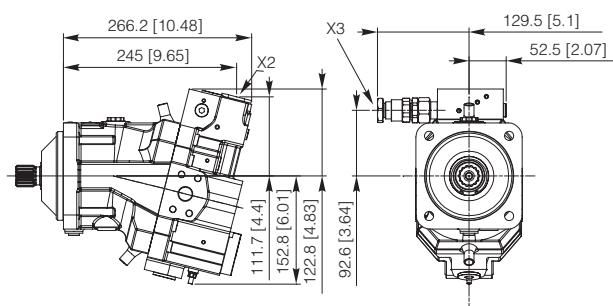


## RIE Control

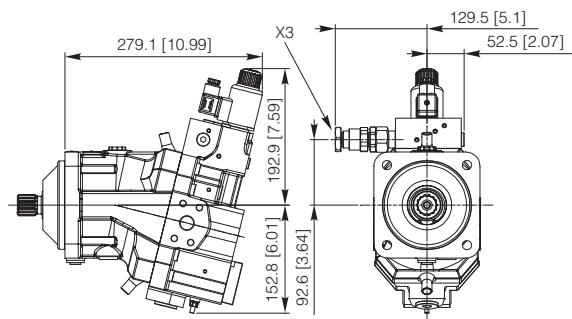


X2: Piloting port - 1/4 G (BSPP)

## RID Control



## RED Control



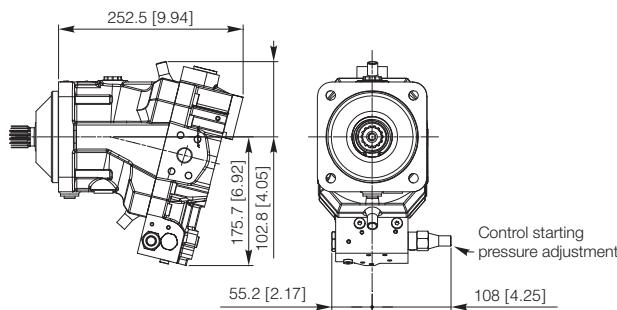
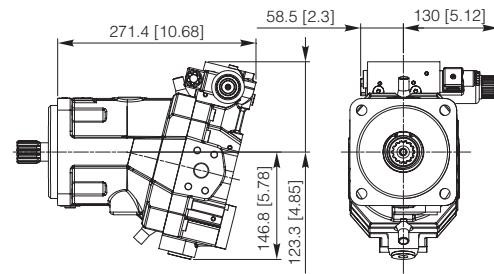
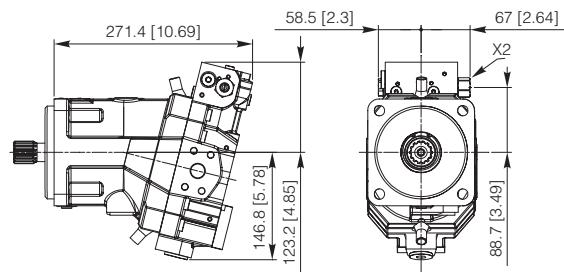
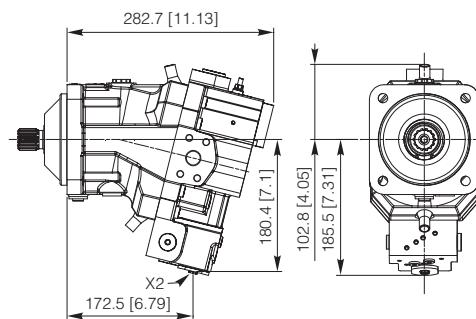
X2: Piloting port - 1/4 G (BSPP)

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

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

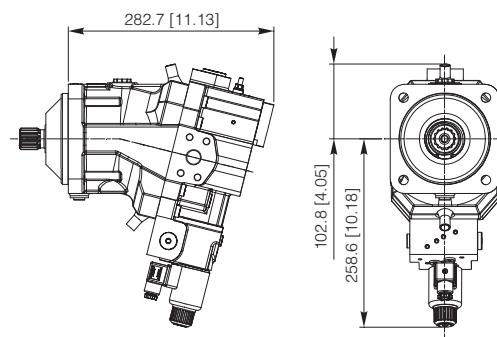
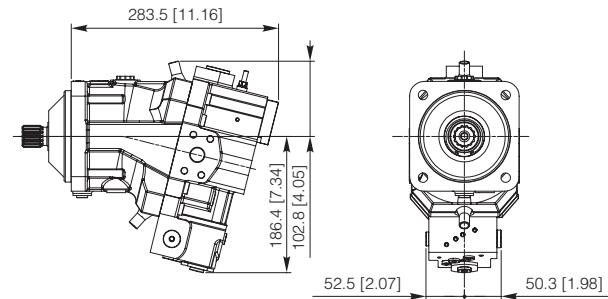
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Control

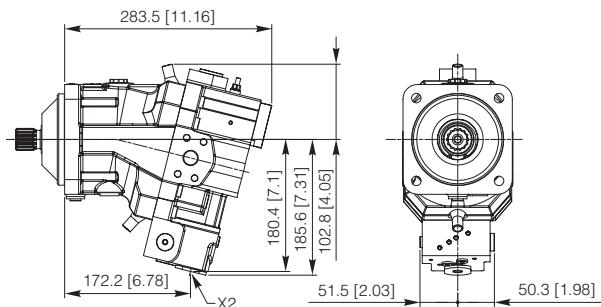
**RPE** Control**2EN** Control**2IN** Control**RIN** Control

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

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

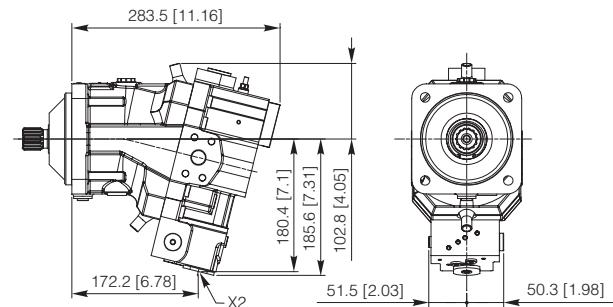
**REN** Control**ROE** Control

## ROI Control



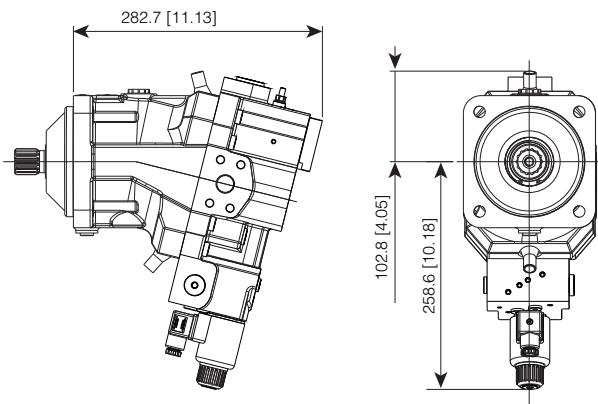
X2: Piloting port - 1/4 G (BSPP)

## RPI Control

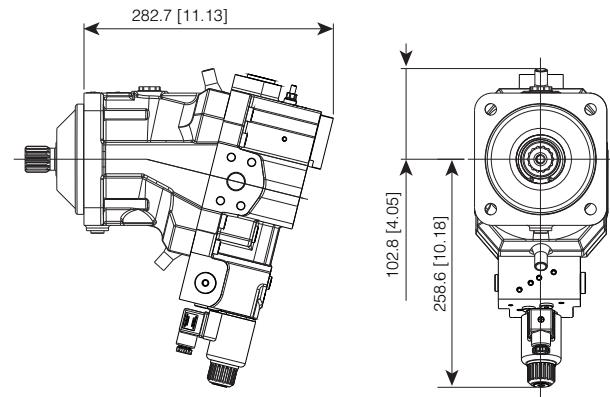


X2: Piloting port - 1/4 G (BSPP)

## ROS Control

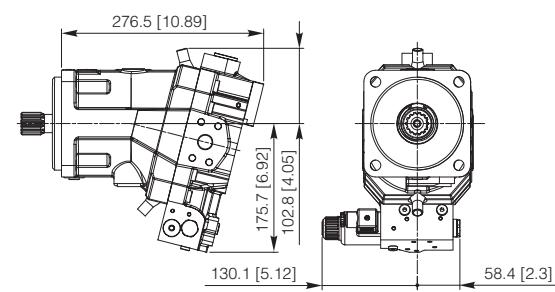
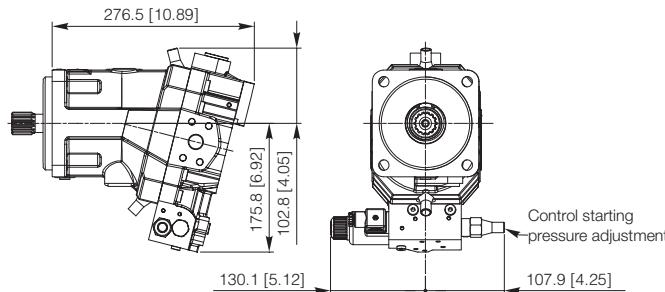
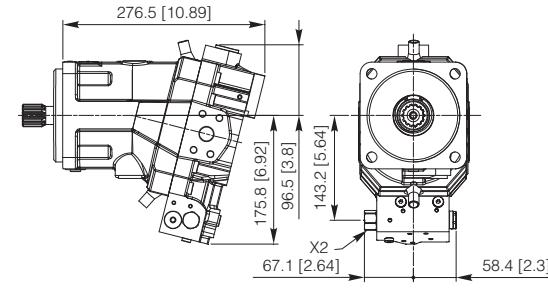
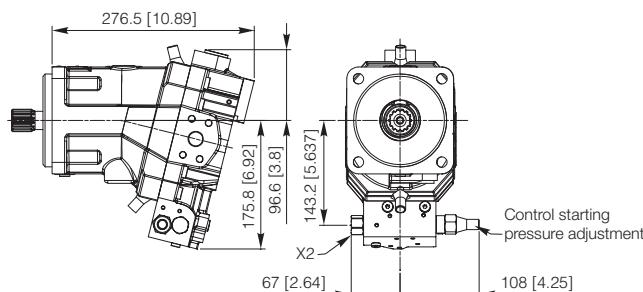


## RPS Control



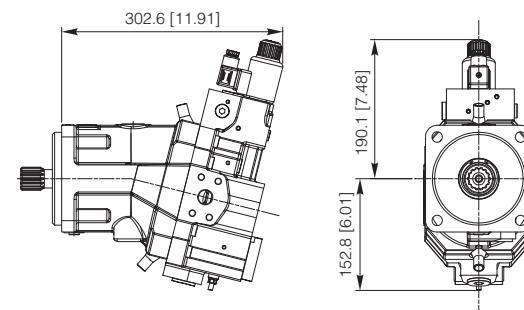
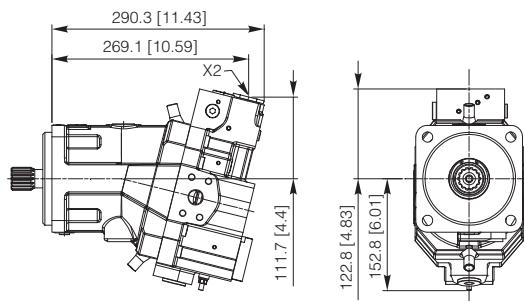
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Control

**2EE** Control**2EN** Control**2IE** Control**2IN** Control

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

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

**RIN** Control**REN** Control

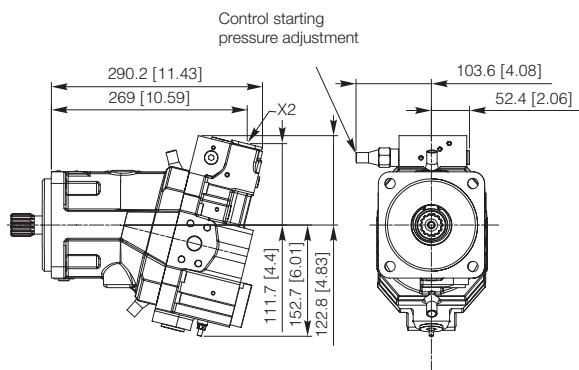
X2: Piloting port - 7/16" - 20 UNF

Click i button to return to main index

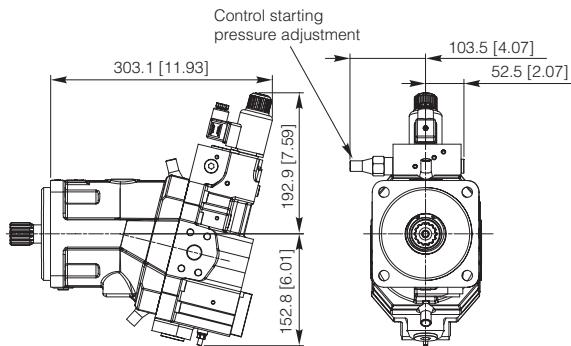
Click Dana button to return to Section index

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## RIE Control

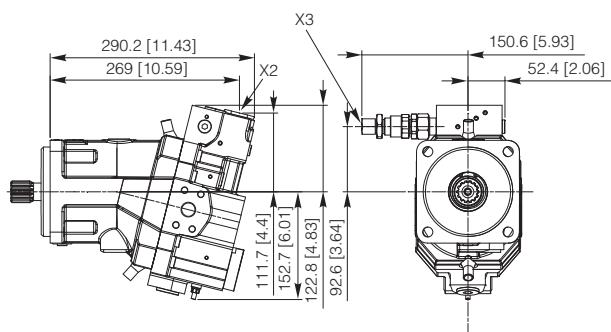


## REE Control

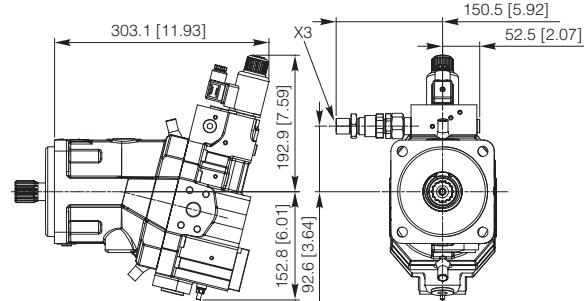


X2: Piloting port - 7/16" - 20 UNF

## RID Control



## RED Control



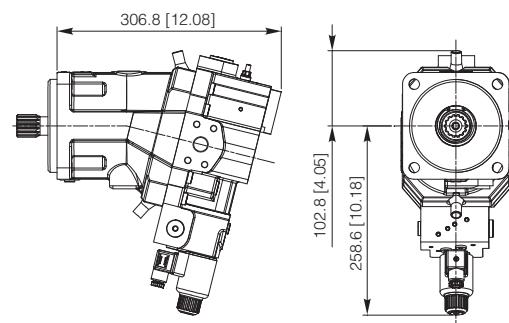
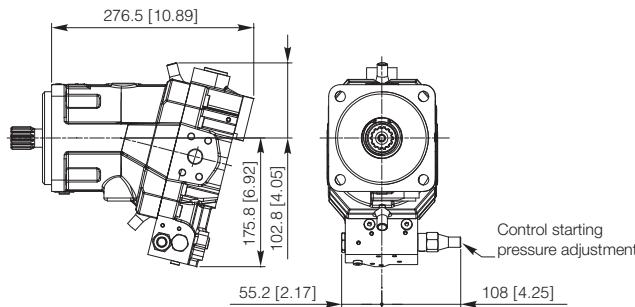
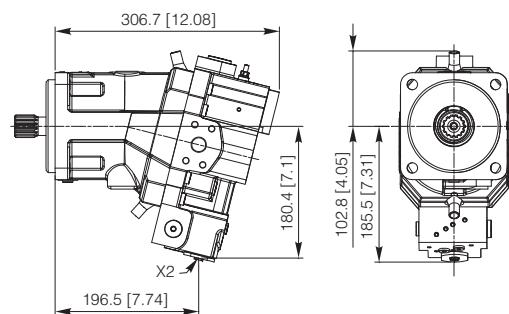
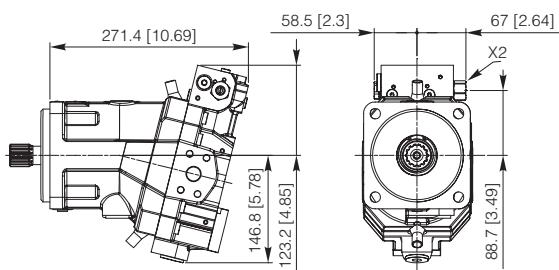
X2: Piloting port - 7/16" - 20 UNF

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

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

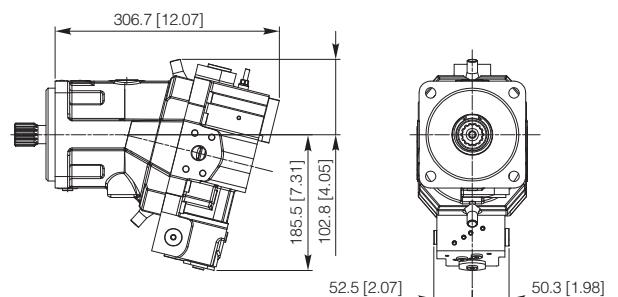
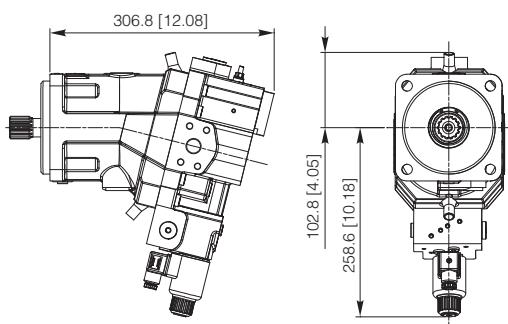
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Control

**RPE** Control**2EN** Control**2IN** Control**RIN** Control

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

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

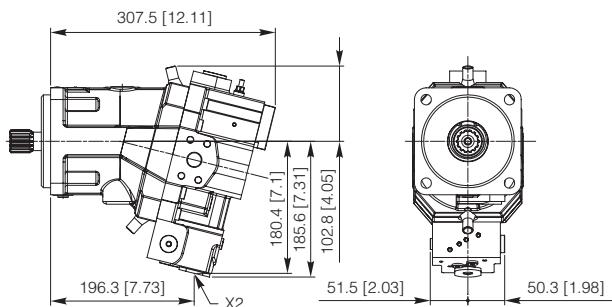
**REN** Control**ROE** Control

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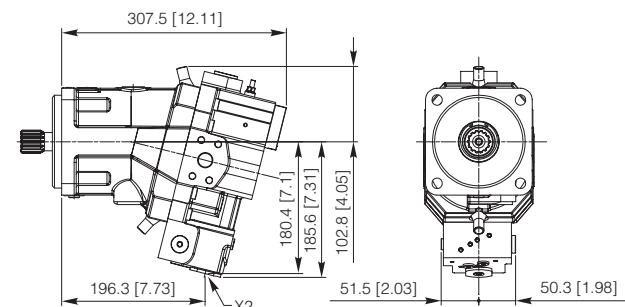
Control

ROI Control

RPI Control



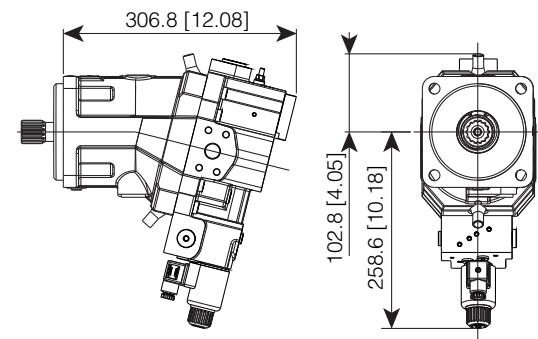
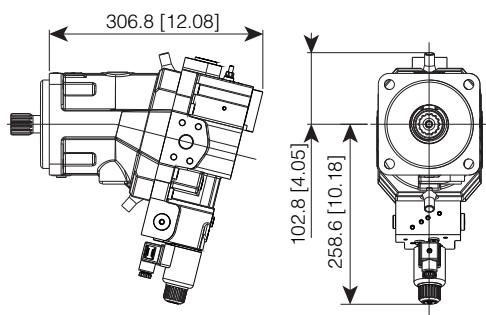
X2: Piloting port - 7/16" - 20 UNF



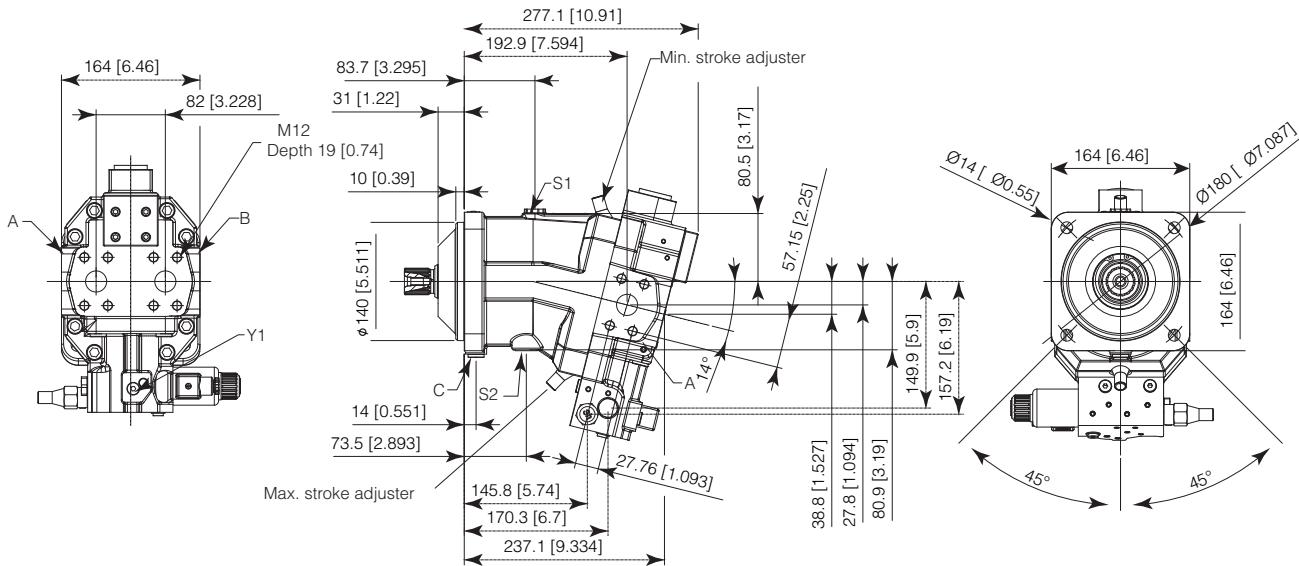
X2: Piloting port - 7/16" - 20 UNF

ROS Control

RPS Control



## SH7V 075 Motor - Mounting flange ISO 4 Bolts (OD)



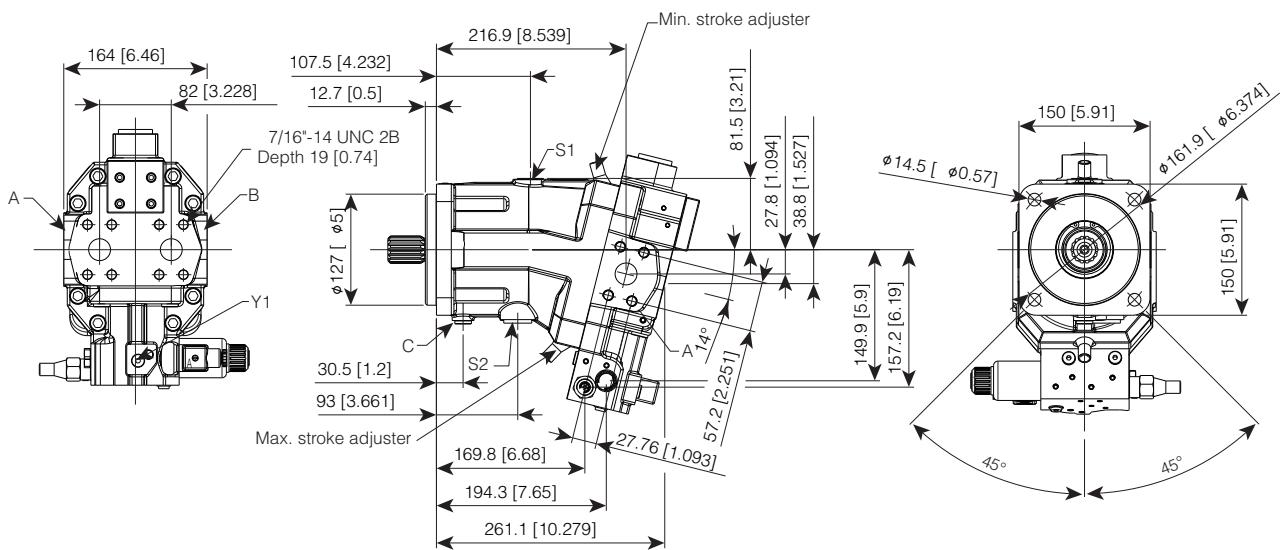
A-B: Service line ports - 1" SAE 6000

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)

## SH7V 075 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

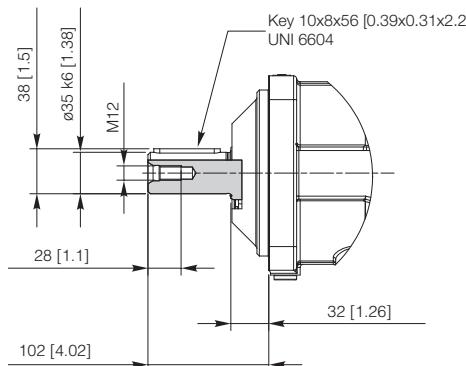
Y1: Working pressure piloting port - 7/16"-20 UNF-2B

7

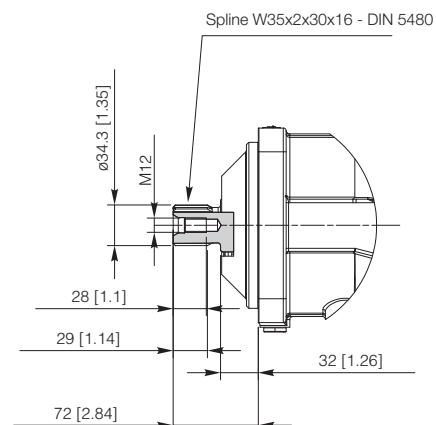
## Shaft end

**CAY**

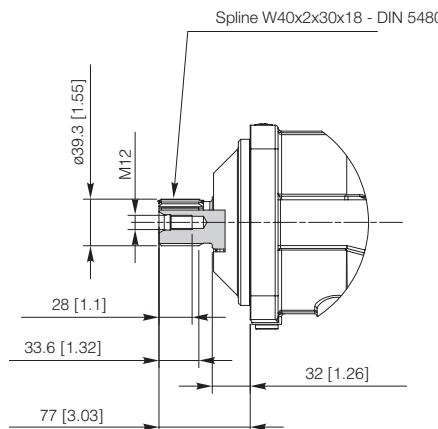
Parallel keyed shaft

**SAM**

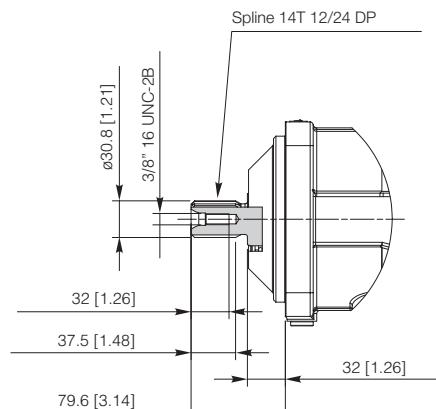
Splined shaft

**SAO**

Splined shaft

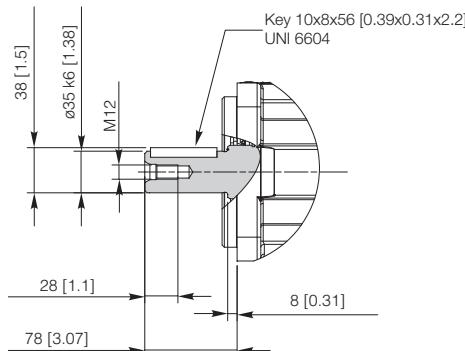
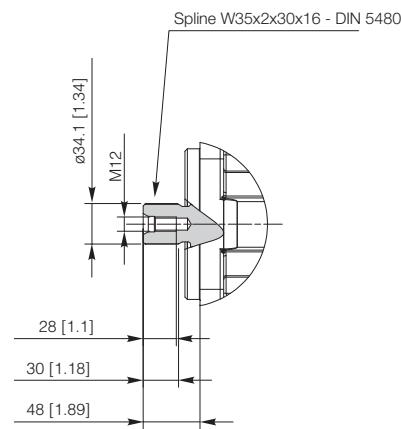
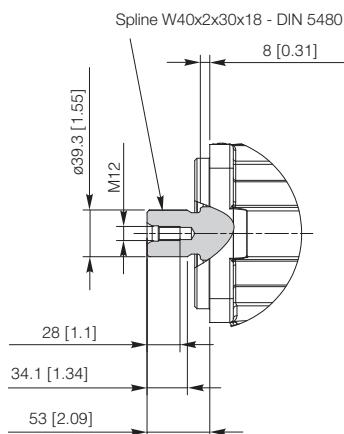
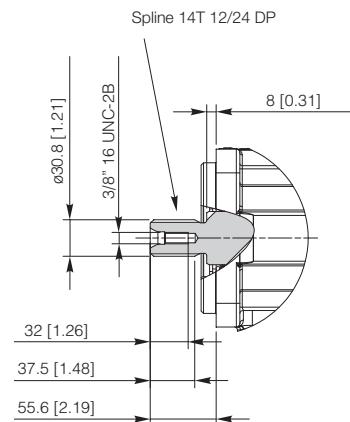
**S12**

Splined shaft



7

## Shaft end

**CAY** Parallel keyed shaft**SAM** Splined shaft**SAO** Splined shaft**S12** Splined shaft

10

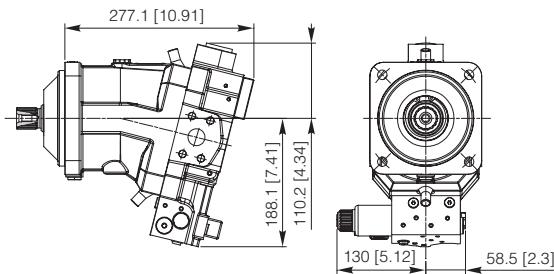
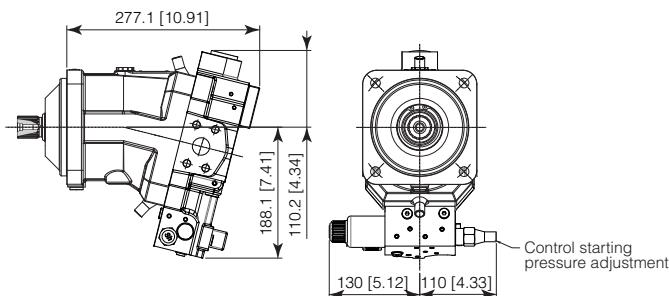
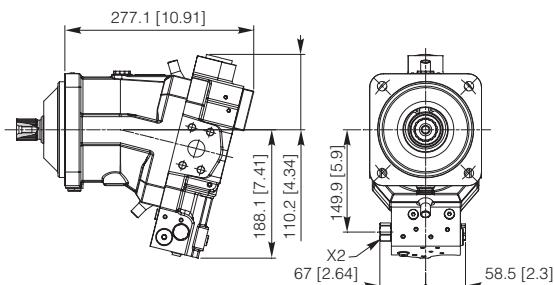
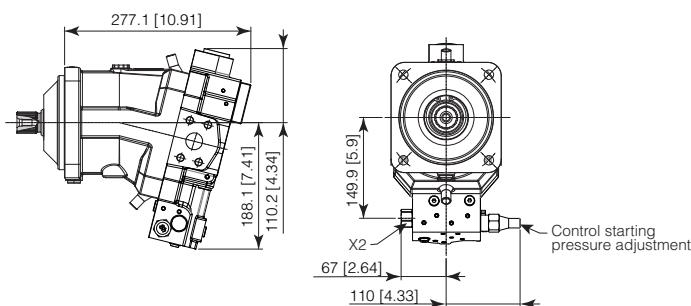
Control

**2EE**

Control

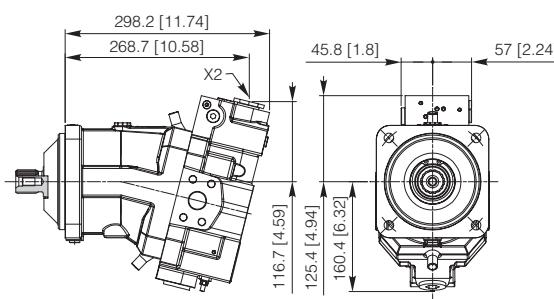
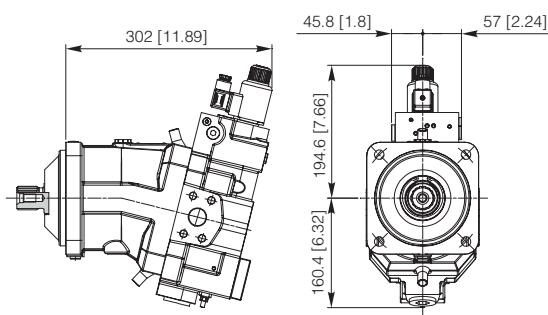
**2EN**

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)

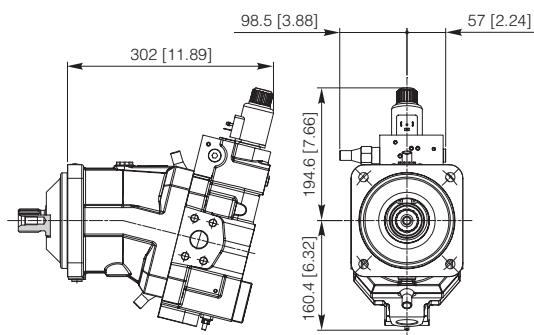
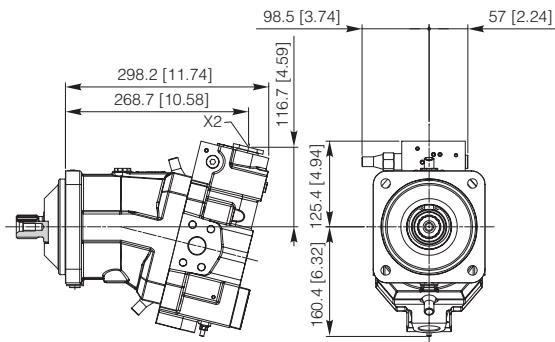
Click DANA button to return to Section Index

Click i button to return to main index

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SH7V/M - Section N

## RIE Control

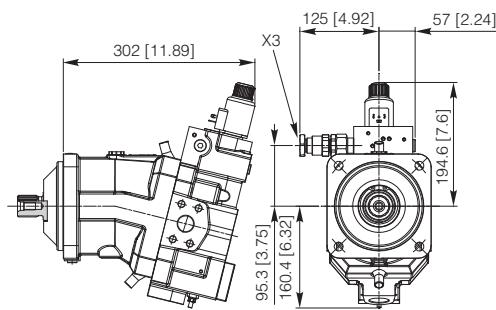
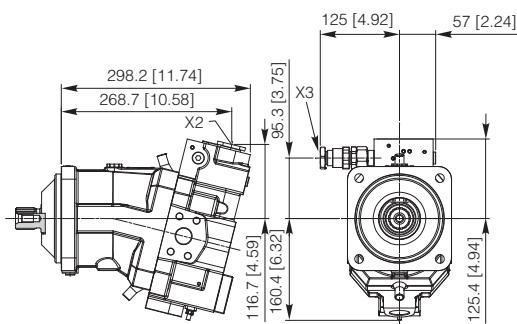
## REE Control



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

## RID Control

## RED Control



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

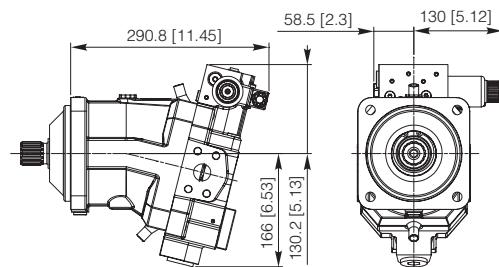
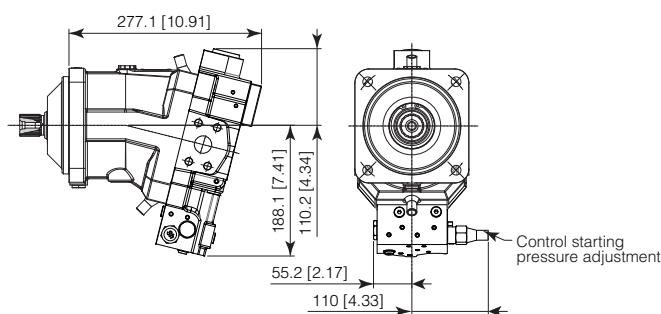
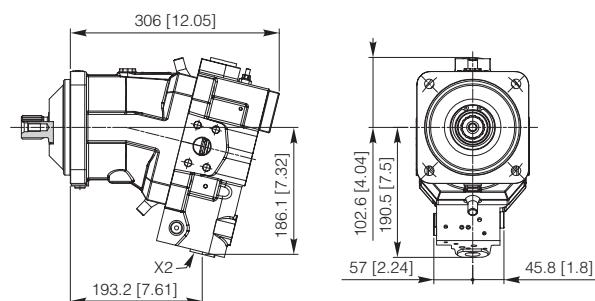
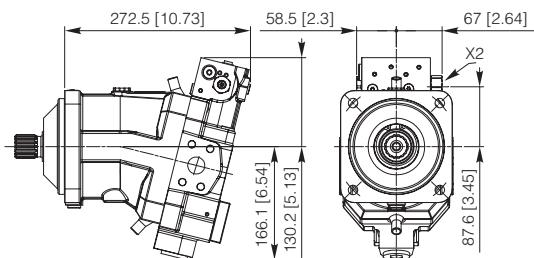
X3: Double step piloting port - 1/4 G (BSPP)

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



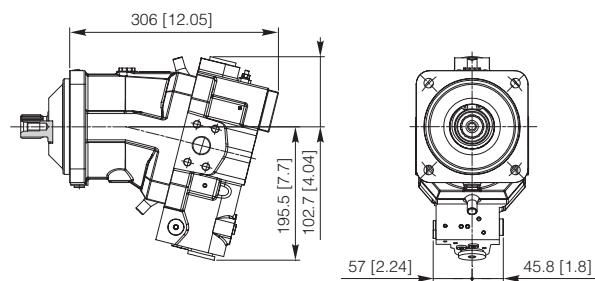
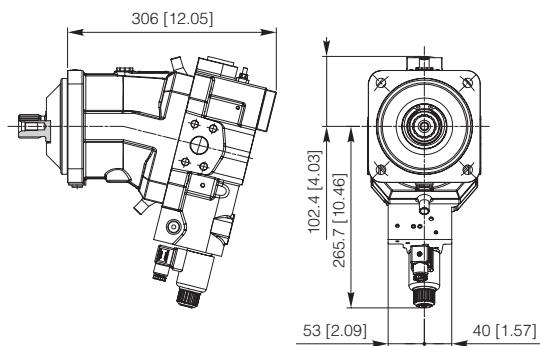
10

Control

**RPE** Control**2EN** Control**2IN** Control**RIN** Control

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

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

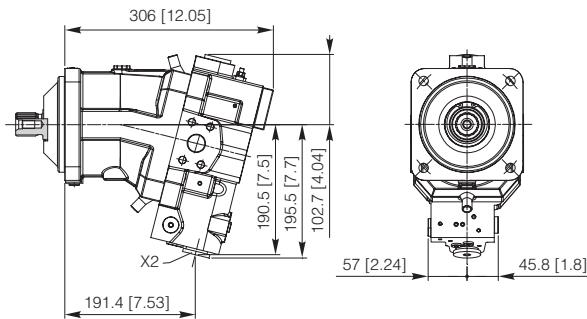
**REN** Control**ROE** Control

10

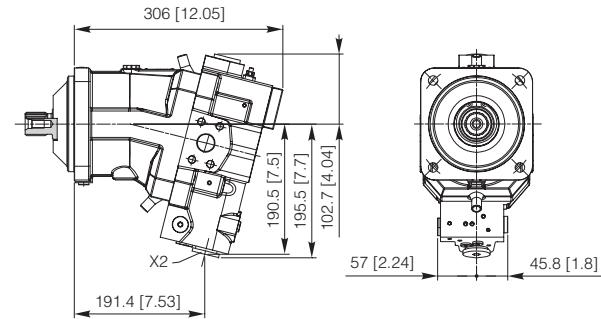
Control

ROI Control

RPI Control



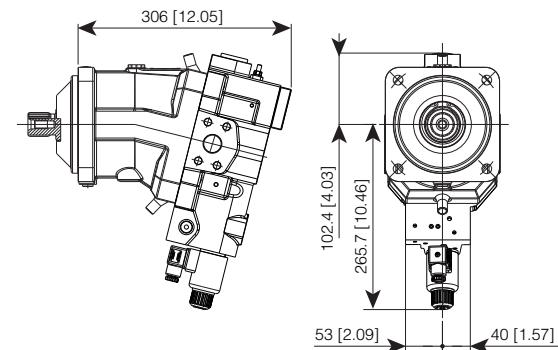
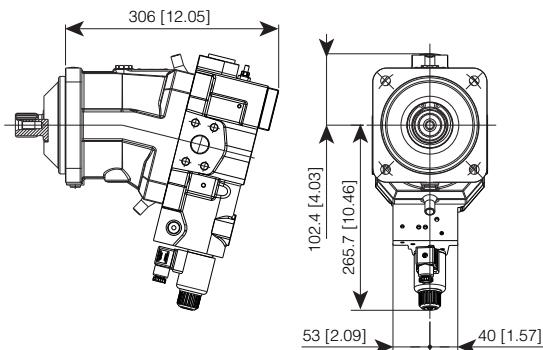
X2: Piloting port - 1/4 G (BSPP)



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

ROS Control

RPS Control



10

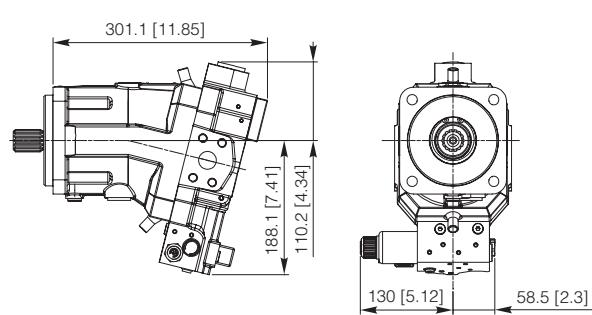
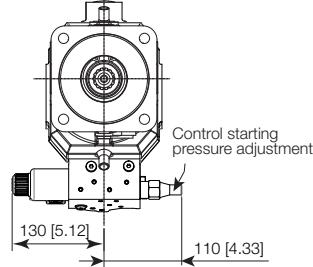
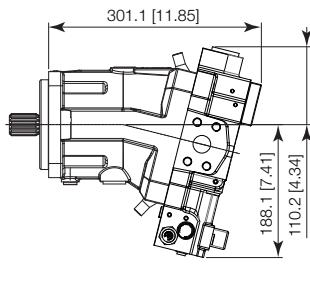
Control

2EE

Control

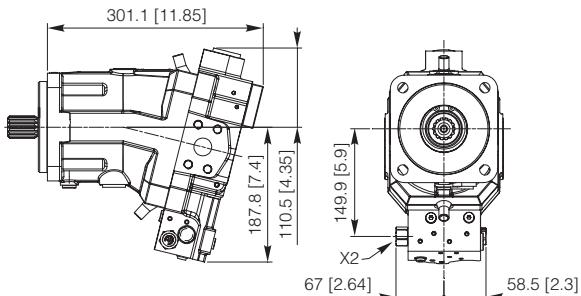
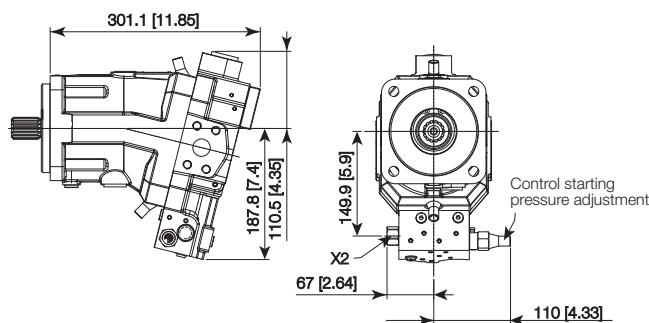
2EN

Control



2IE Control

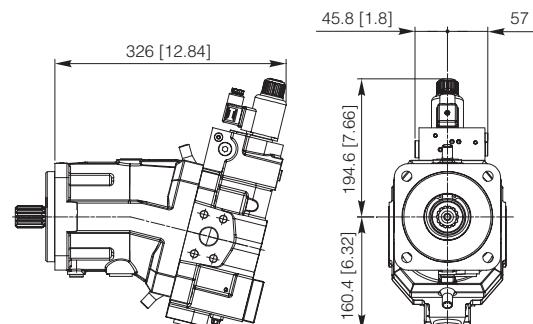
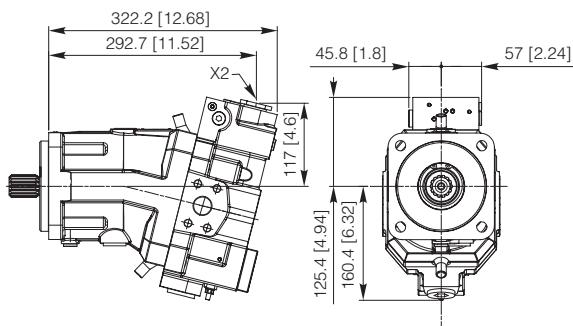
2IN Control



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

RIN Control

REN Control



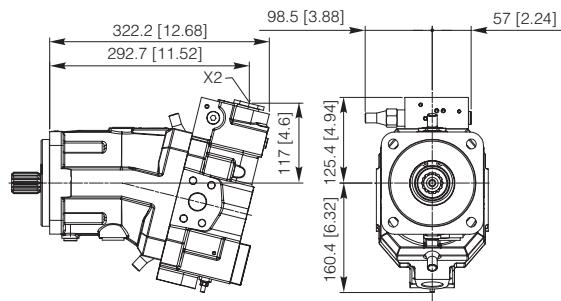
X2: Piloting port - 7/16"-20 UNF

Click DANA button to return to Section Index

Click i button to return to main index

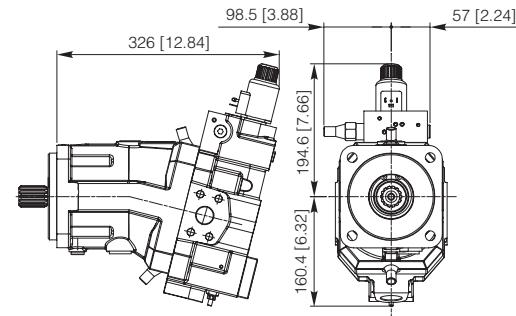


## RIE Control

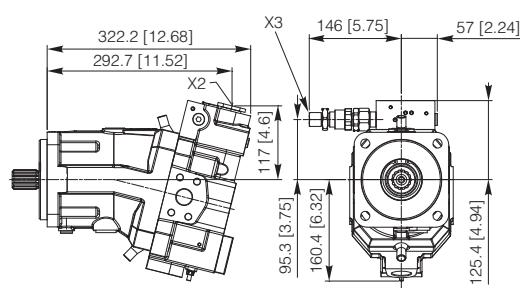


X2: Piloting port - 7/16"-20 UNF

## REE Control



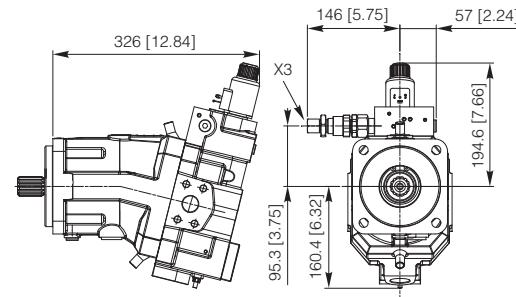
## RID Control



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

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

## RED Control

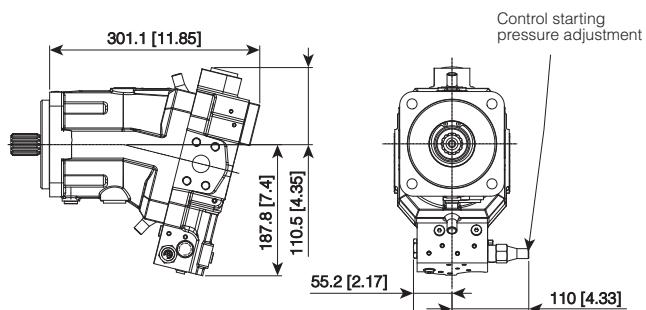
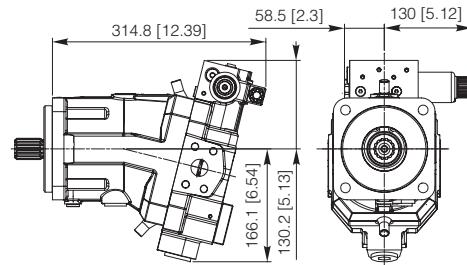
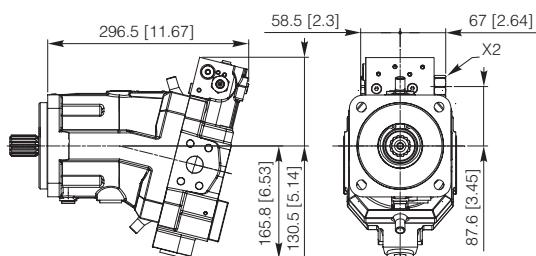
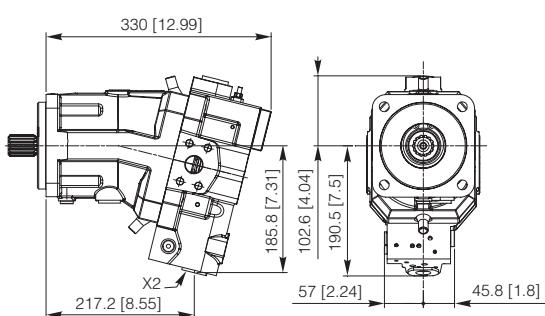


X3: Double step piloting port - 7/16"-20 UNF



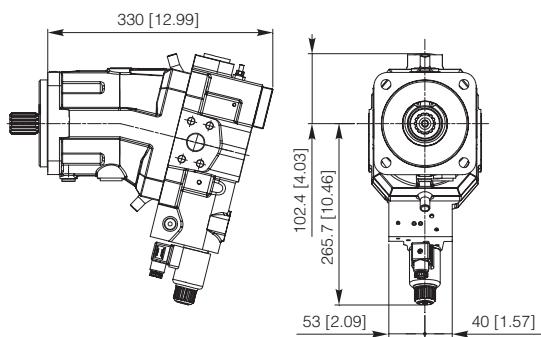
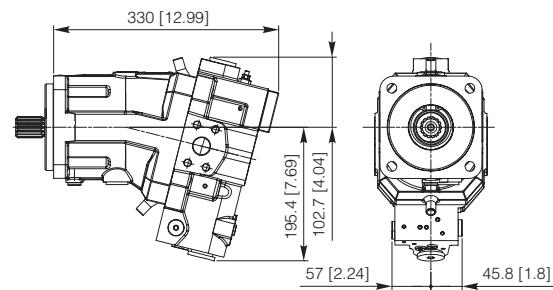
10

Control

**RPE** Control**2EN** Control**2IN** Control**RIN** Control

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

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

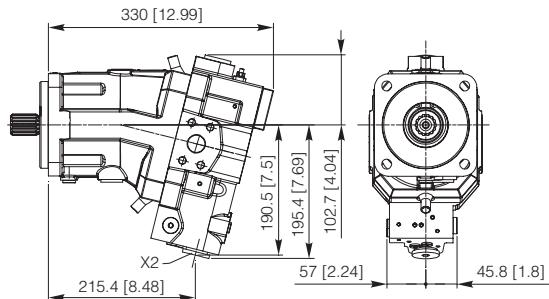
**REN** Control**ROE** Control

10

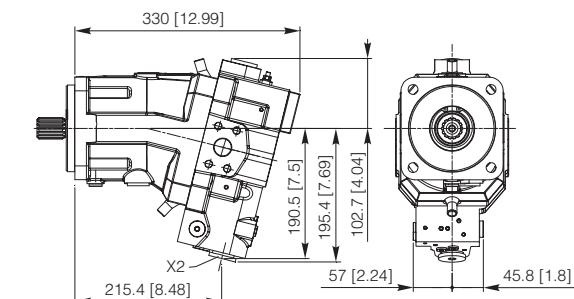
Control

ROI Control

RPI Control



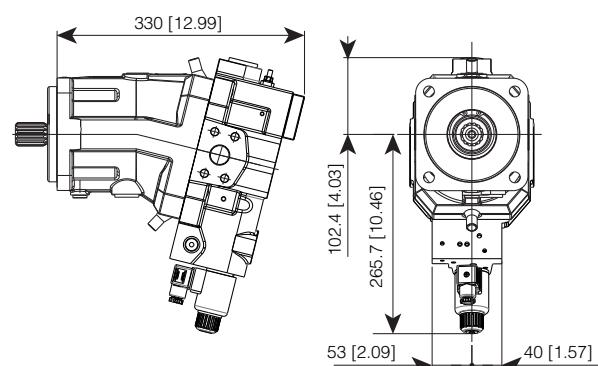
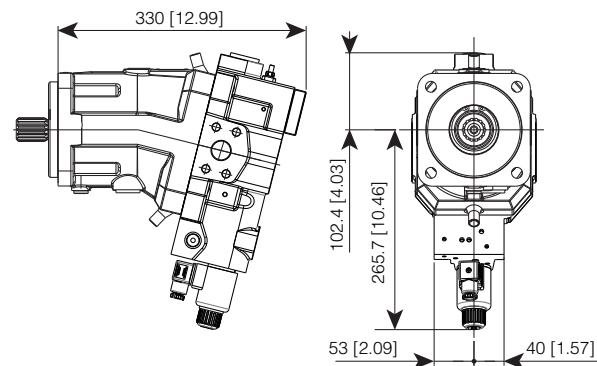
X2: Piloting port - 7/16"-20 UNF



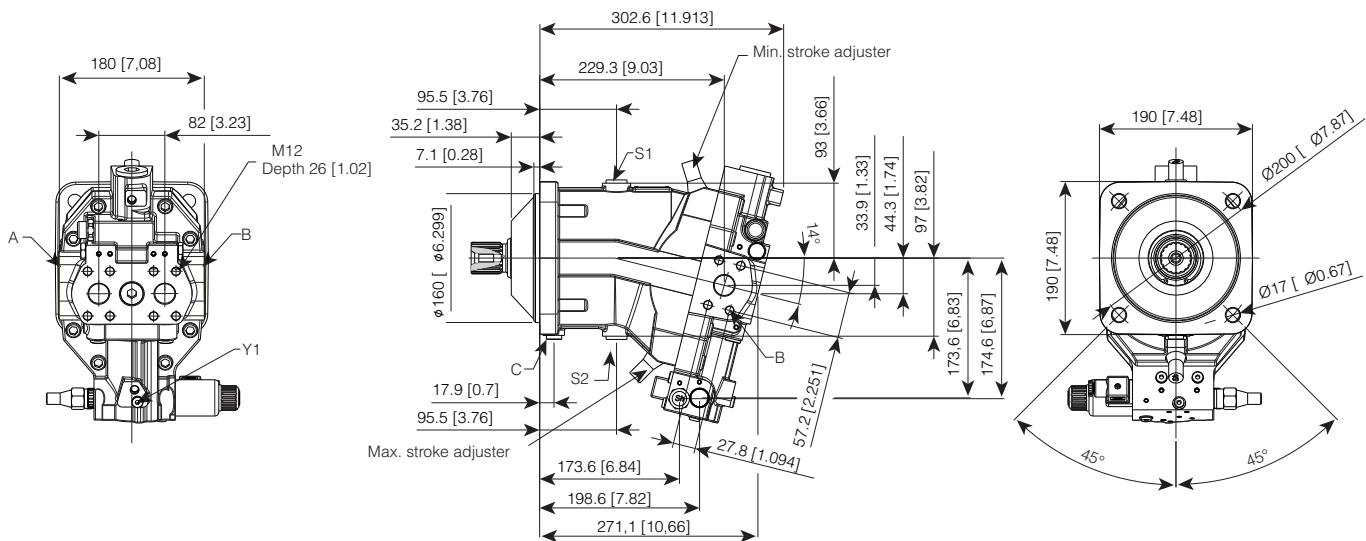
X2: Piloting port - 7/16"-20 UNF

ROS Control

RPS Control



## SH7V 108 Motor - Mounting flange ISO 4 Bolts (OE)



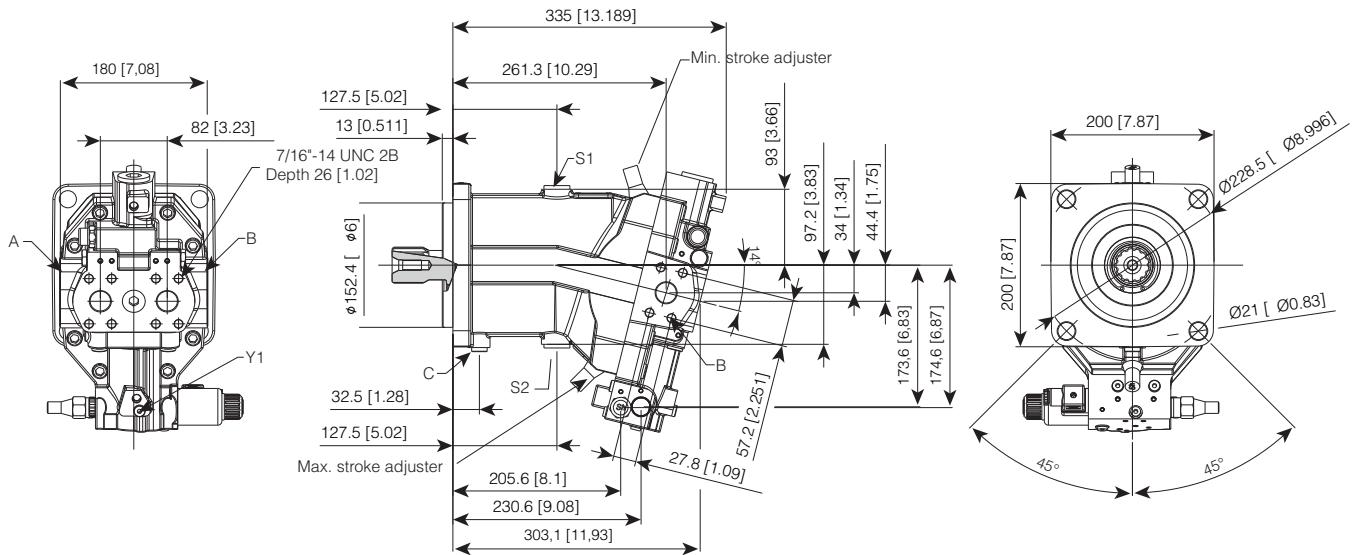
A-B: Service line ports - 1" SAE 6000

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)

## SH7V 108 Motor - Mounting flange SAE-C 4 Bolts (08)



A-B: Service line ports - 1" SAE 6000

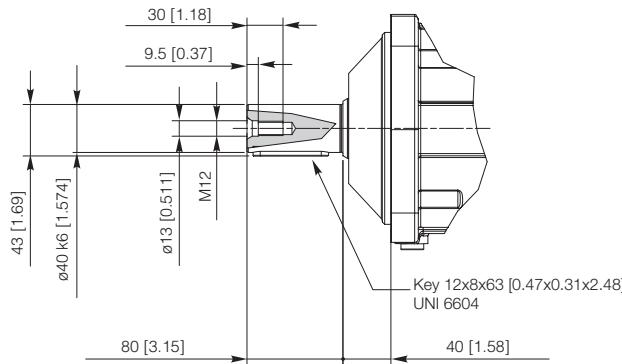
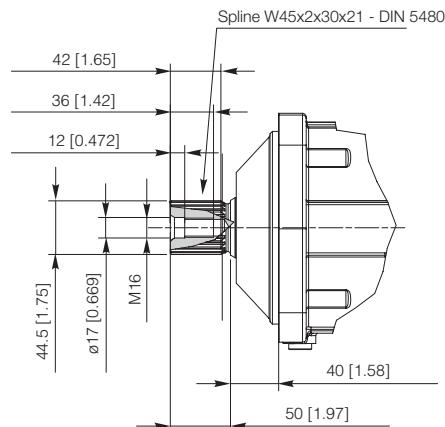
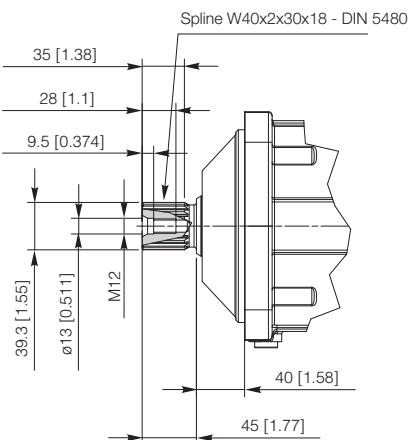
C: Air bleed bearings flushing port - 7/16"-20 UNF

S1-S2: Case drain port - 1" 1/16 - 12 UN 2B

Y1: Working pressure piloting port - 7/16"-20 UNF-2B

7

## Shaft end

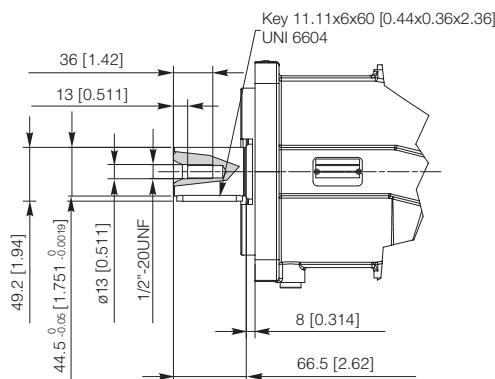
**CAK** Parallel keyed shaft**SAP** Splined shaft**SA0** Splined shaft

7

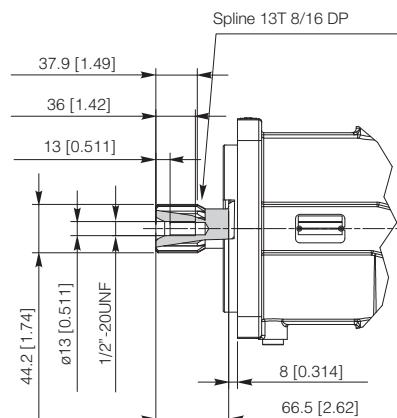
## Shaft end

**C18**

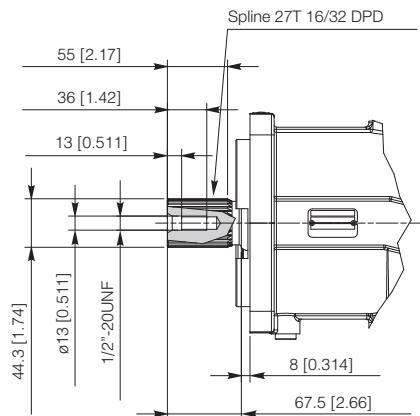
Parallel keyed shaft

**S15**

Splined shaft

**S20**

Splined shaft

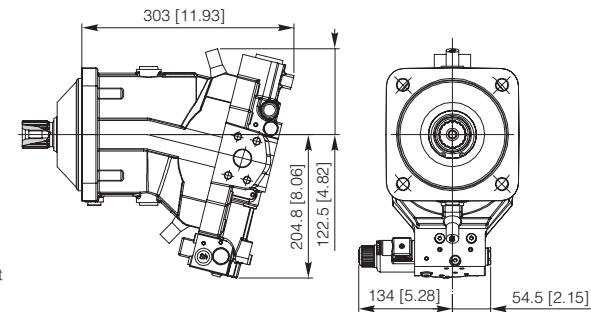
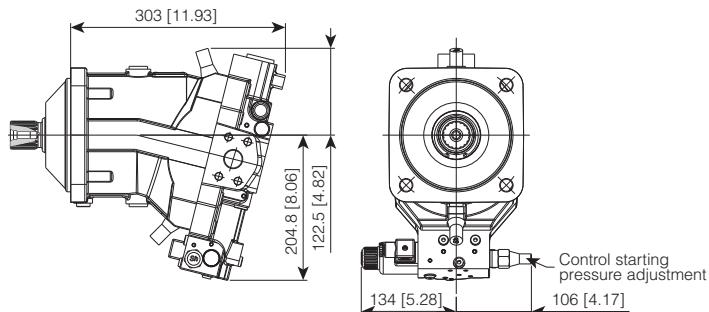


10

Control

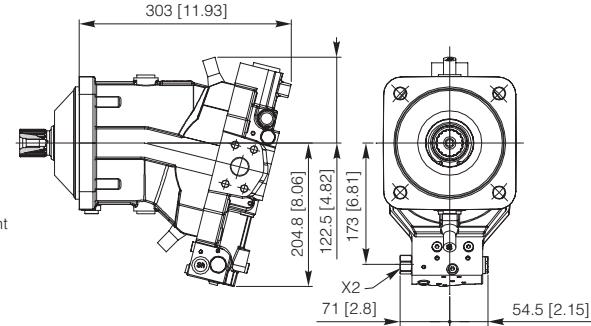
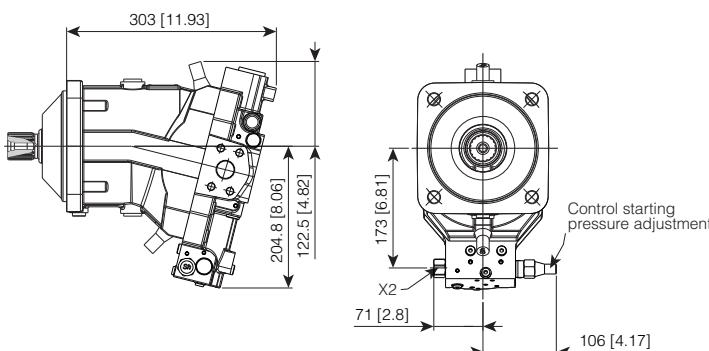
2EE Control

2EN Control



2IE Control

2IN Control

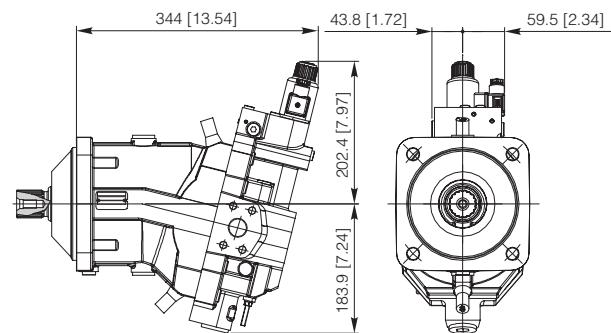
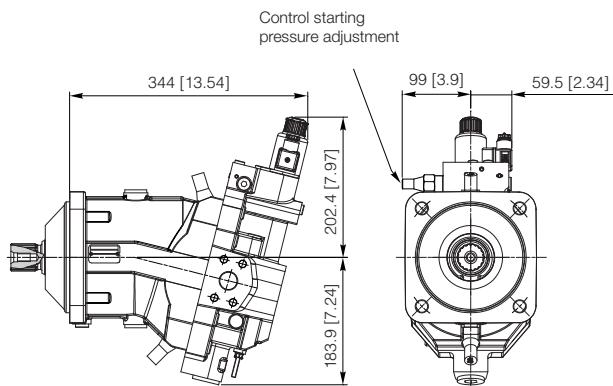


X2: Piloting port - 1/4 G (BSPP)

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

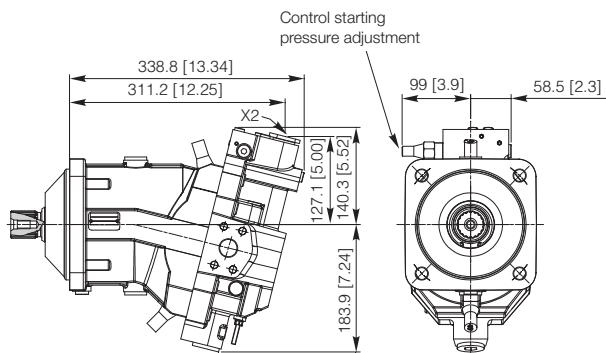
REE Control

REN Control



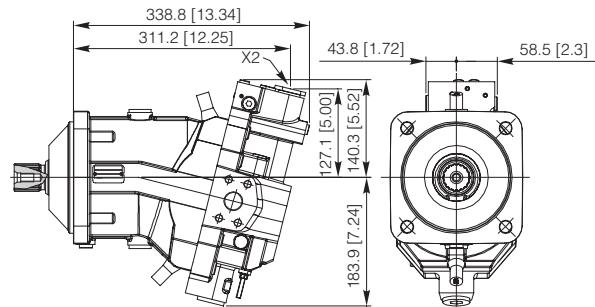
## RIE

## Control



## RIN

## Control

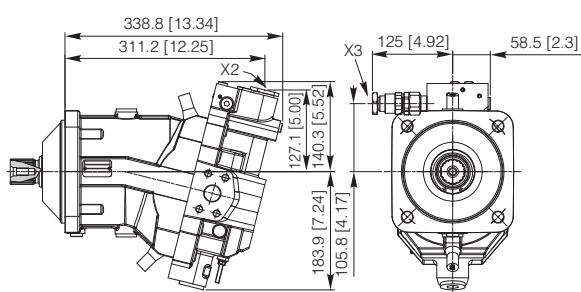


X2: Piloting port - 1/4 G (BSPP)

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

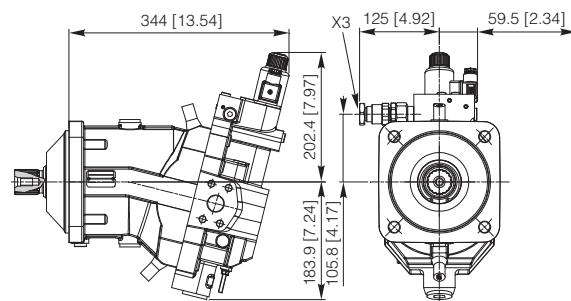
## RID

## Control



## RED

## Control



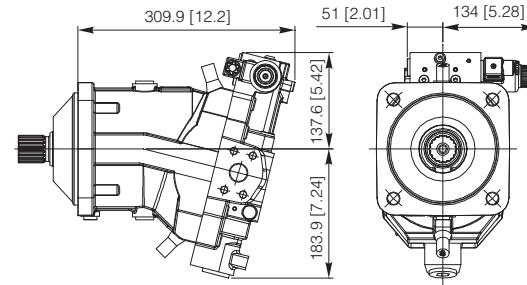
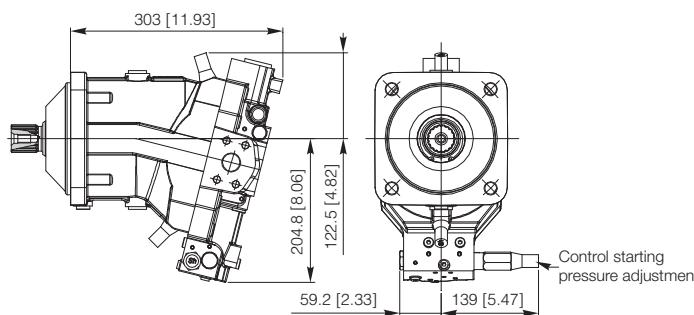
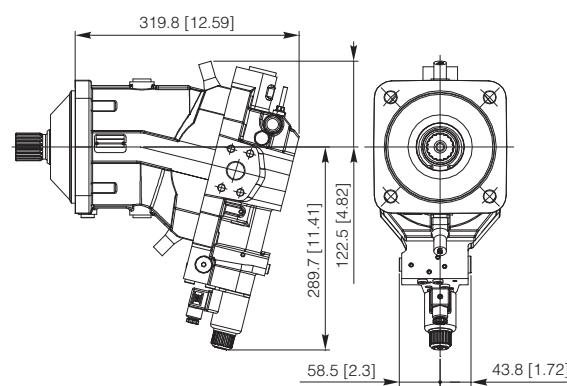
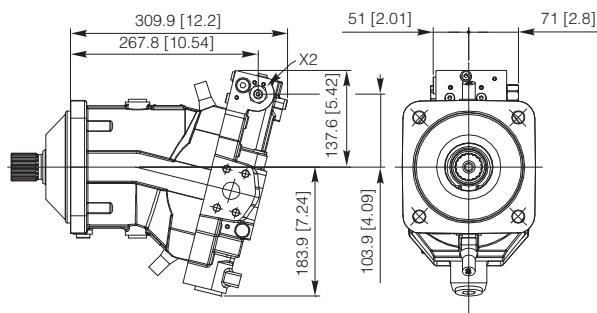
X2: Piloting port - 1/4 G (BSPP)

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

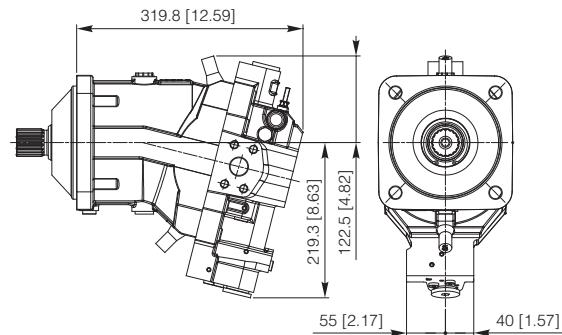
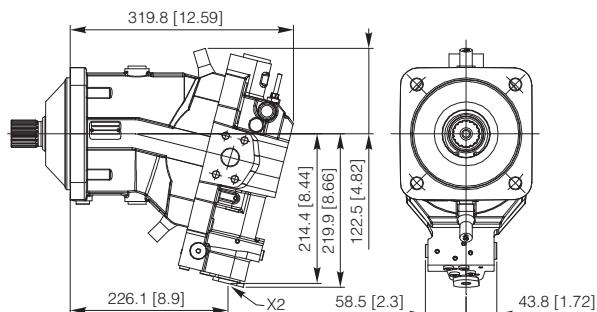
X3: Double step piloting port - 1/4 G (BSPP)

10

Control

**RPE** Control**2EN** Control**2IN** Control**REN** Control

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

**RIN** Control**ROE** Control

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

Click i button to return to main index

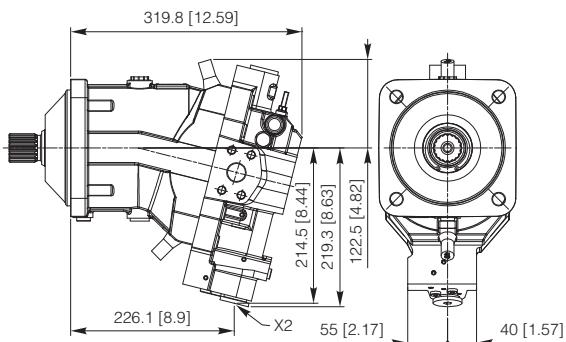
Click Dana button to return to Section index

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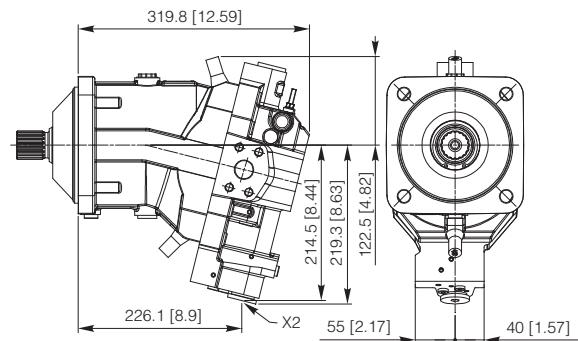
Control

ROI Control



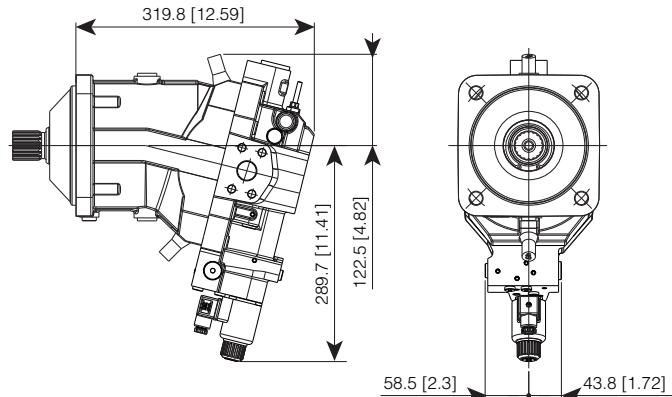
X2: Piloting port - 1/4 G (BSPP)

RPI Control

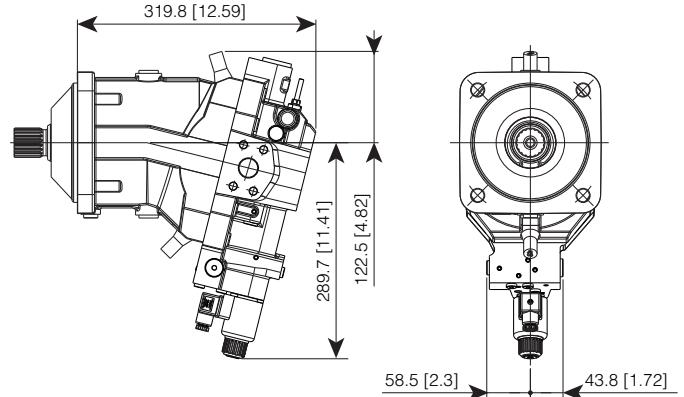


X2: Piloting port - 1/4 G (BSPP)

ROS Control

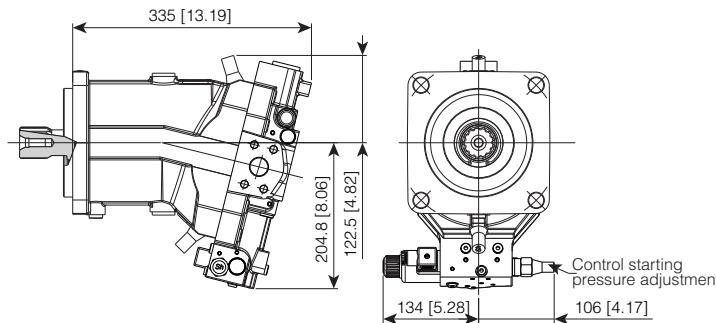
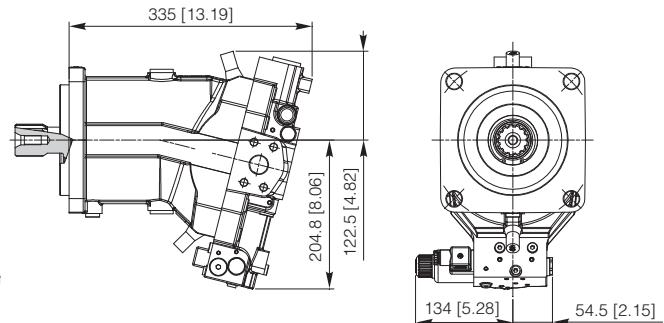
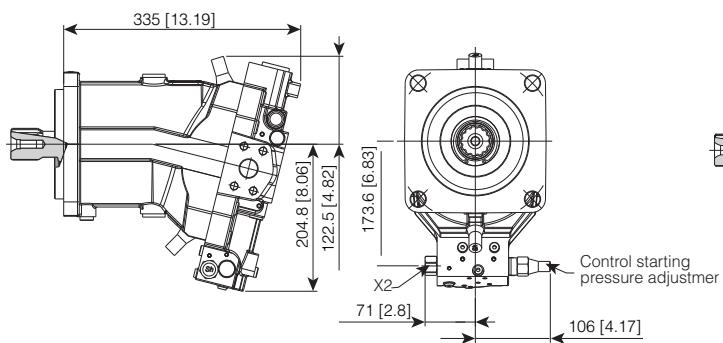
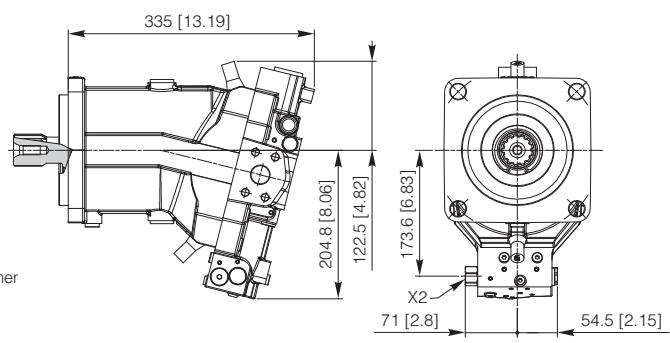


RPS Control



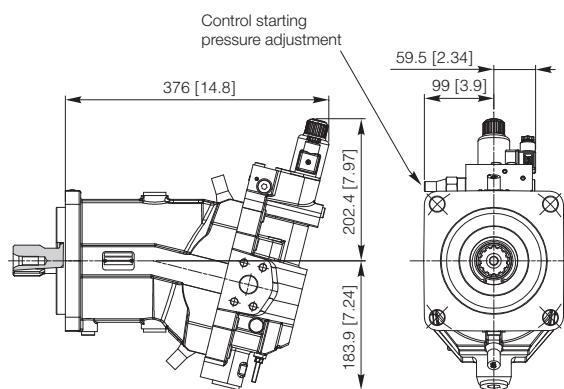
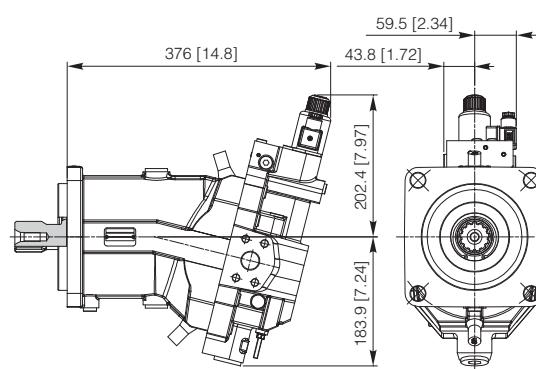
10

Control

**2EE** Control**2EN** Control**2IE** Control**2IN** Control

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

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

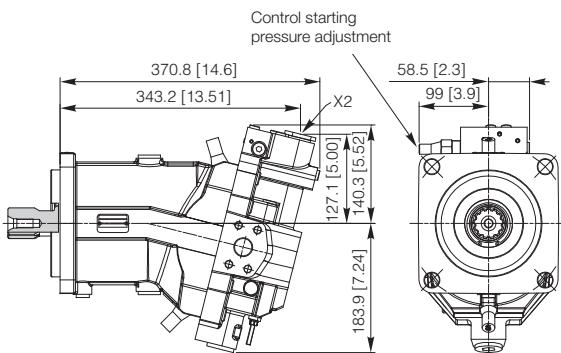
**REE** Control**REN** Control

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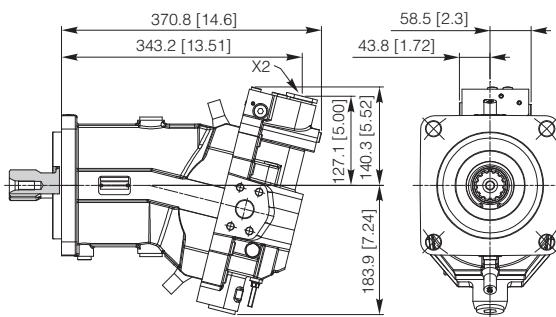


## RIE Control



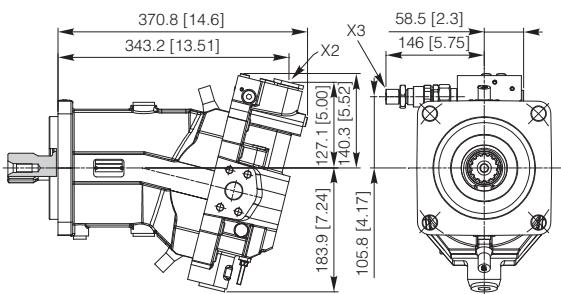
X2: Piloting port - 7/16"-20 UNF

## RIN Control



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

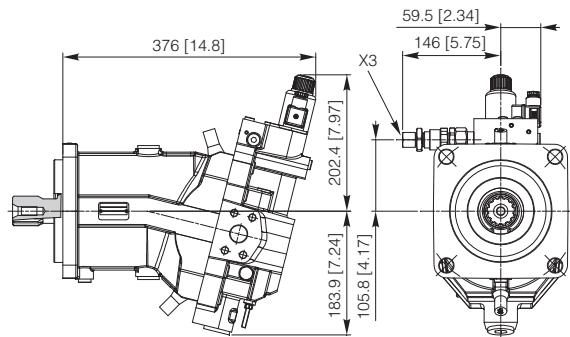
## RID Control



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

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

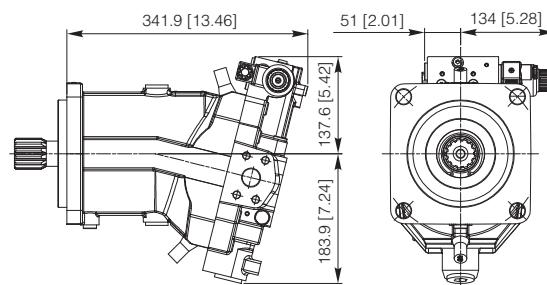
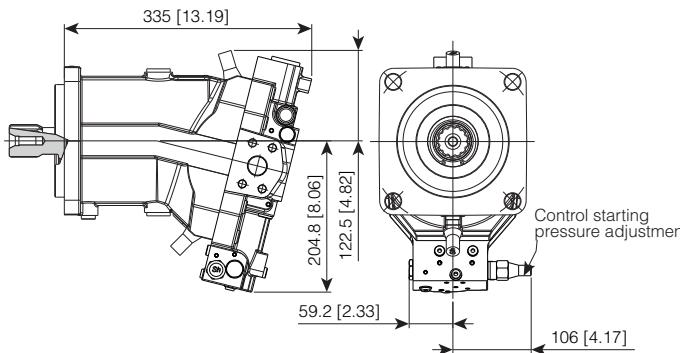
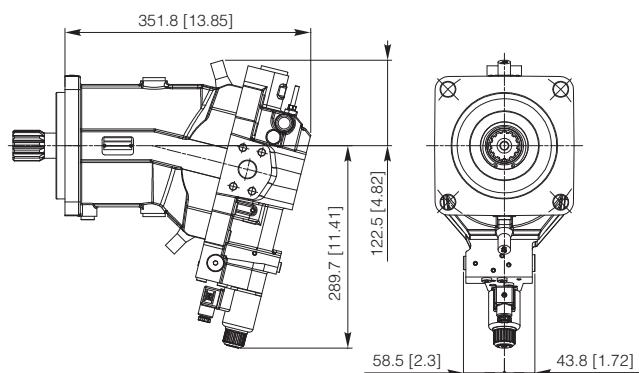
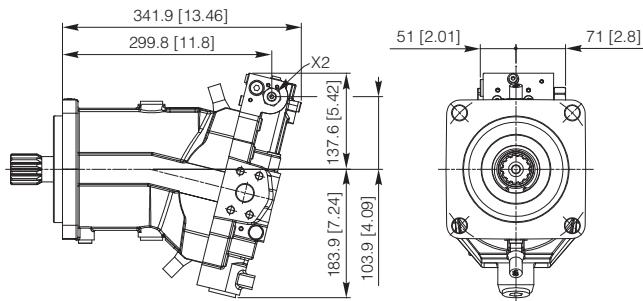
## RED Control



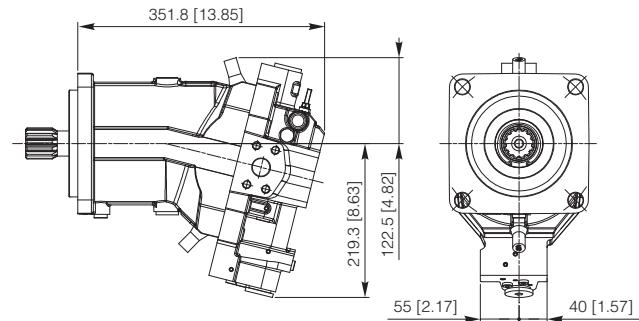
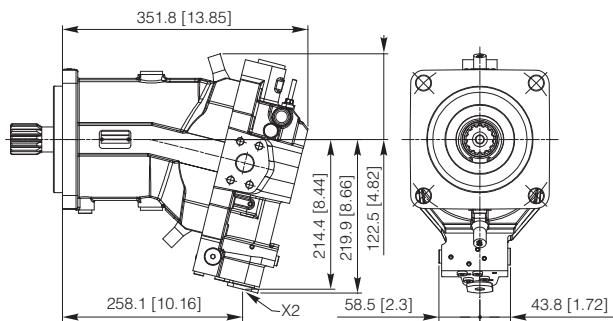
X3: Double step piloting port - 7/16"-20 UNF

10

Control

**RPE** Control**2EN** Control**2IN** Control**REN** Control

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

**RIN** Control**ROE** Control

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

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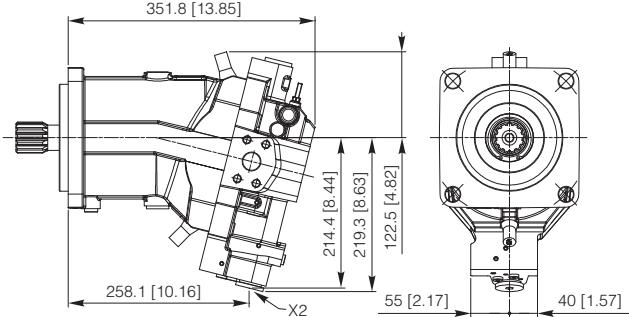
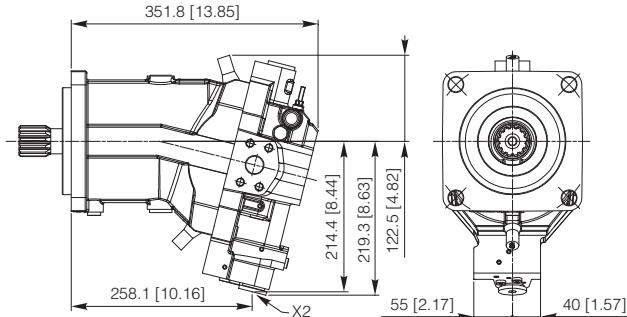
Control

**ROI**

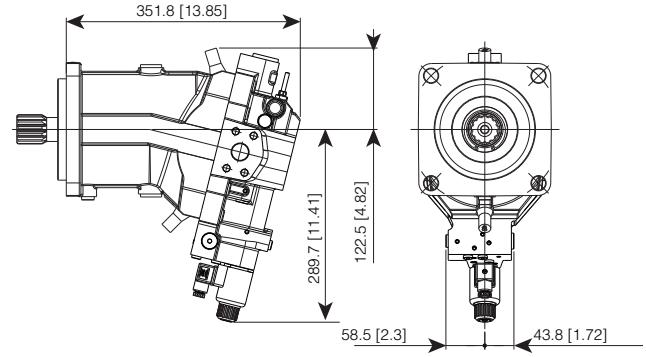
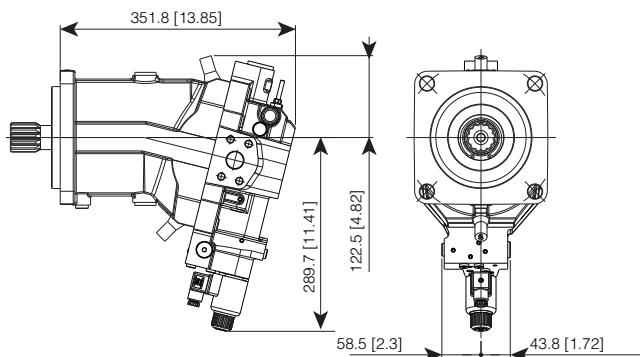
Control

**RPI**

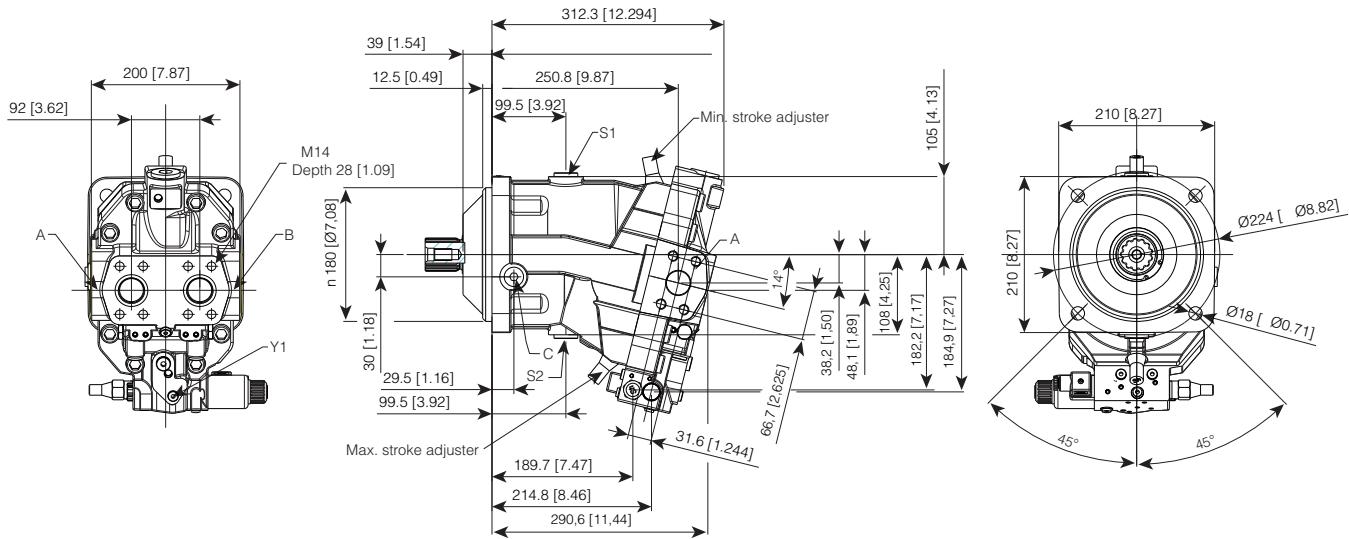
Control



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

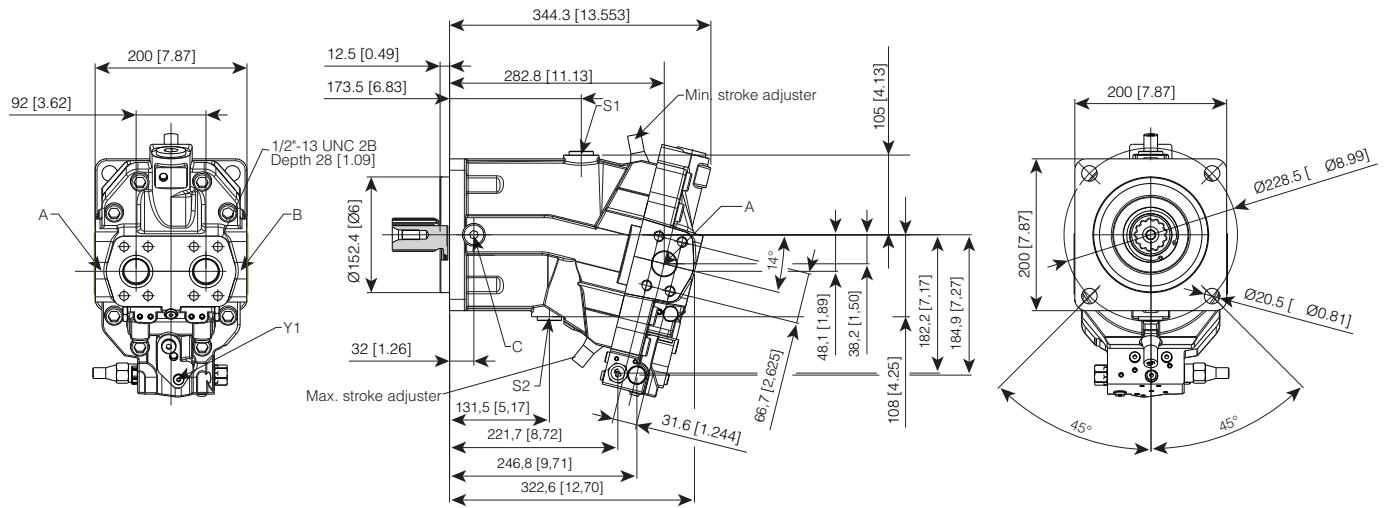
**ROS** Control**RPS** Control

## SH7V 160 Motor - Mounting flange ISO 4 Bolts (OF)



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)

## SH7V 160 Motor - Mounting flange SAE-D 4 Bolts (08)



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

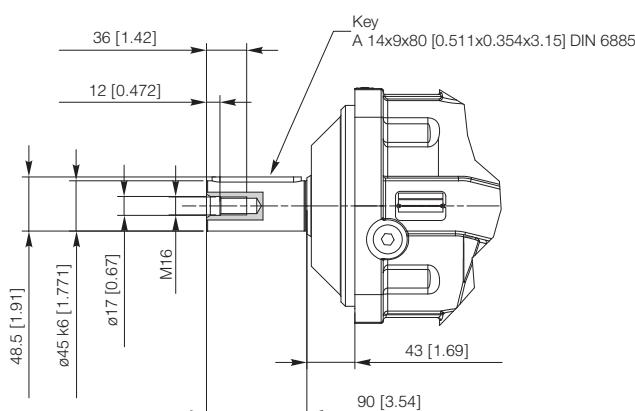


7

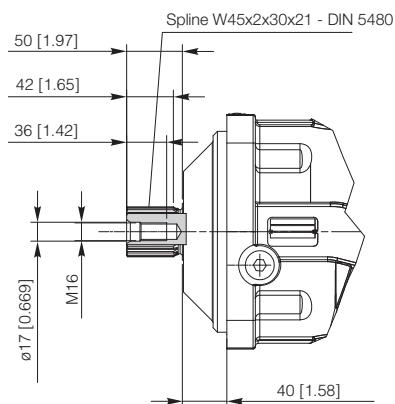
## Shaft end

**CAJ**

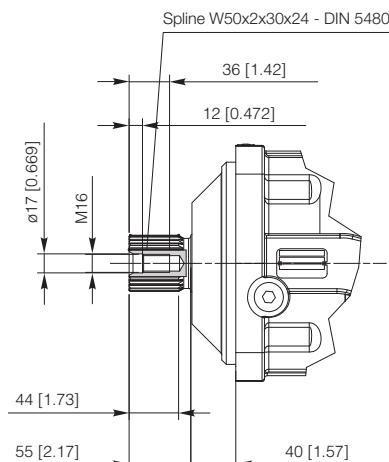
Parallel keyed shaft

**SAP**

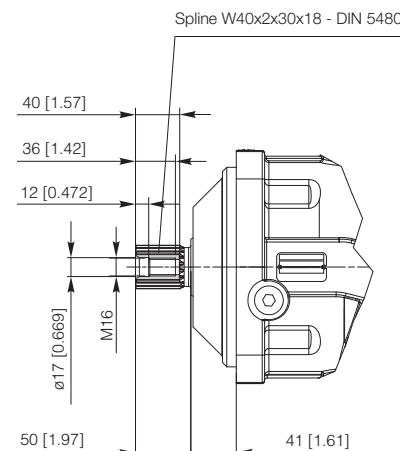
Splined shaft

**SAR**

Splined shaft

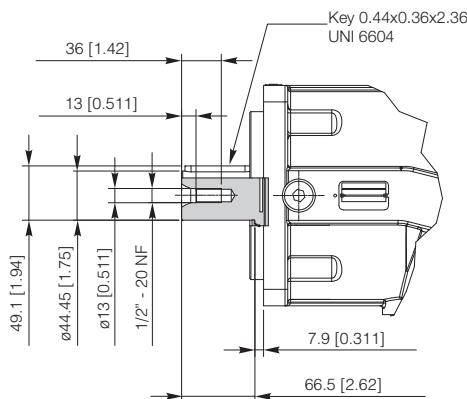
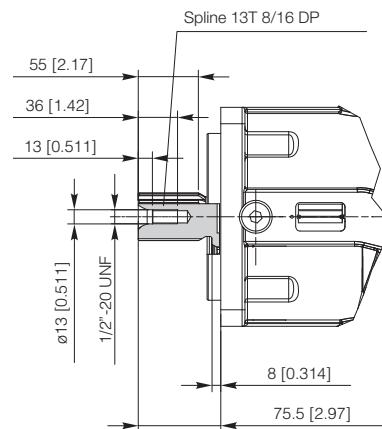
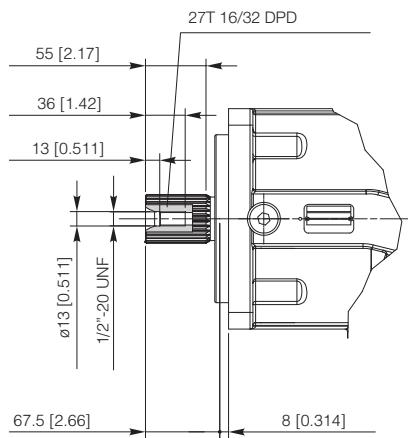
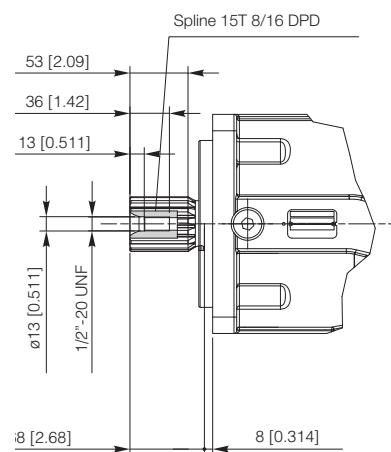
**SA0**

Splined shaft



7

## Shaft end

**C18** Parallel keyed shaft**S15** Splined shaft**S20** Splined shaft**S19** Splined shaft

10

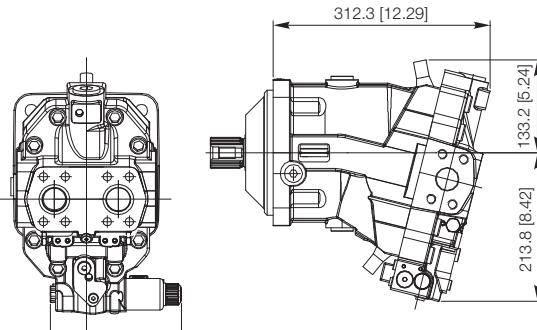
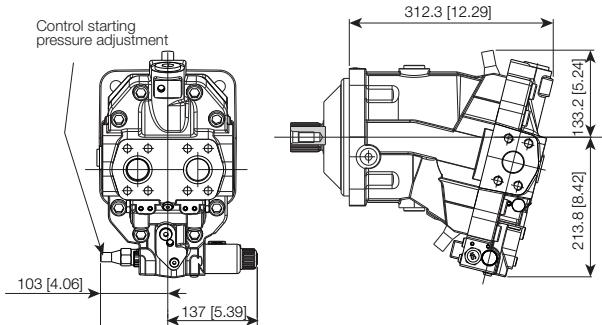
Control

2EE

Control

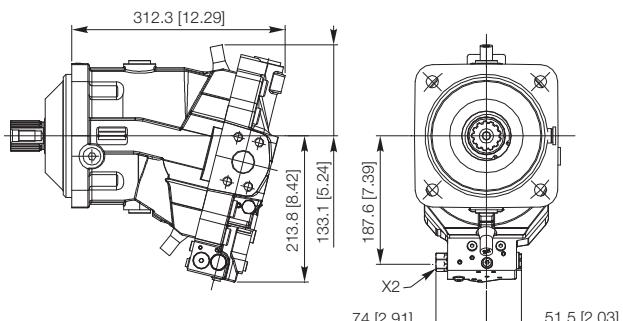
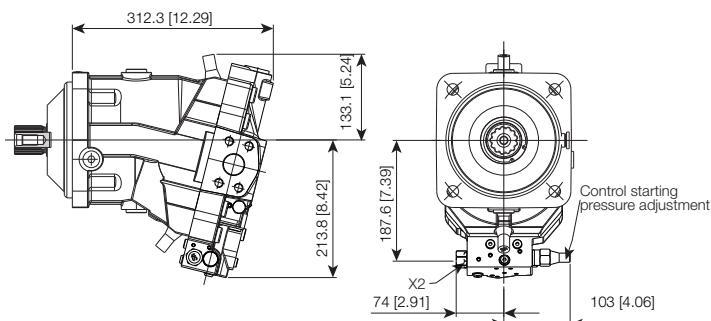
2EN

Control



2IE Control

2IN Control

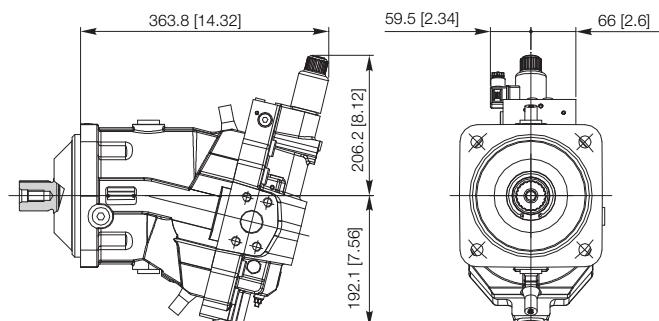
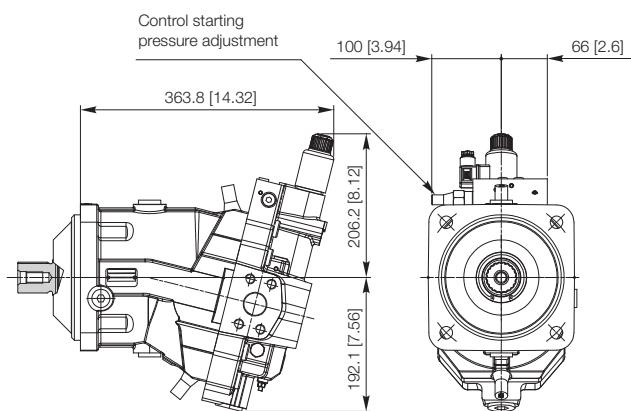


X2: Piloting port - 1/4 G (BSPP)

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

REE Control

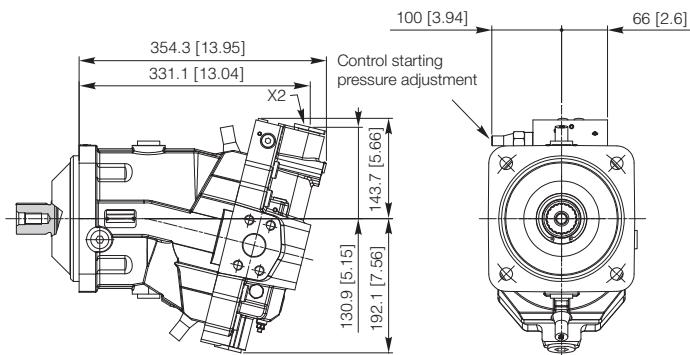
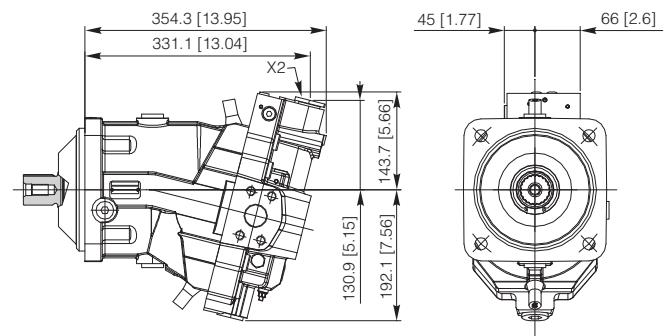
REN Control



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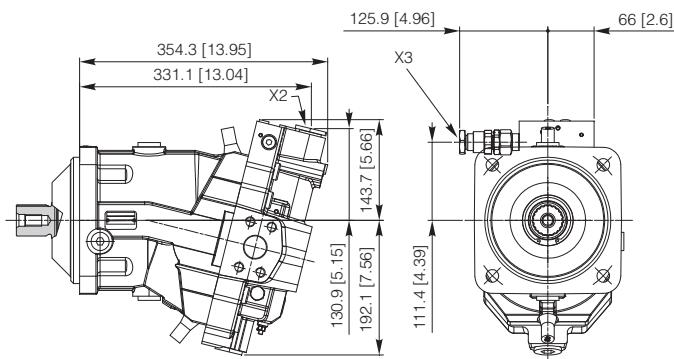
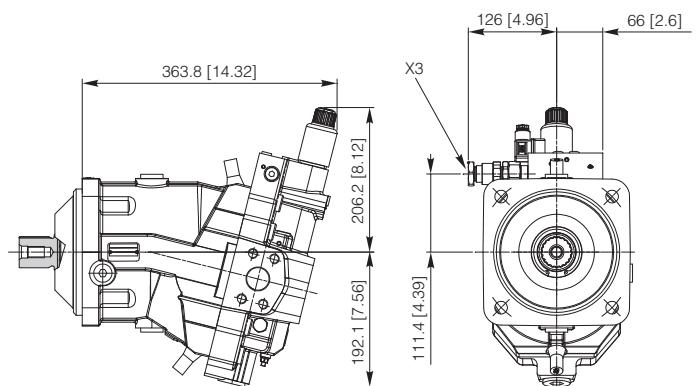
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**RIE** Control**RIN** Control

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

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

**RID** Control**RED** Control

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

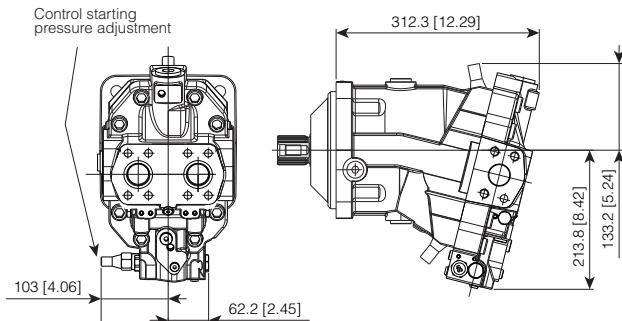
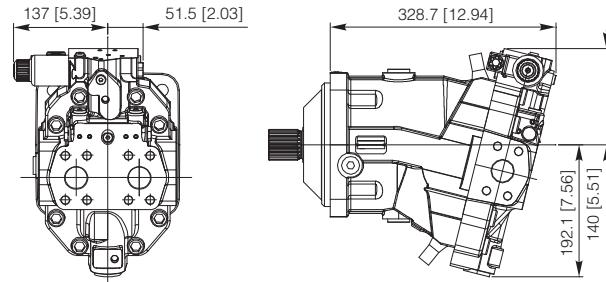
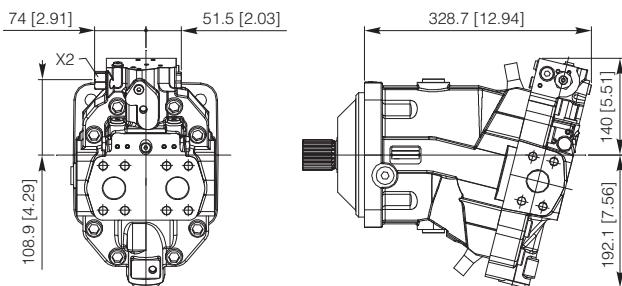
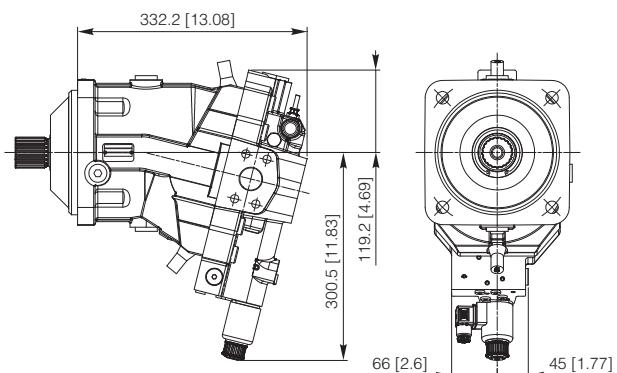
X3: Double step piloting port - 1/4 G (BSPP)

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

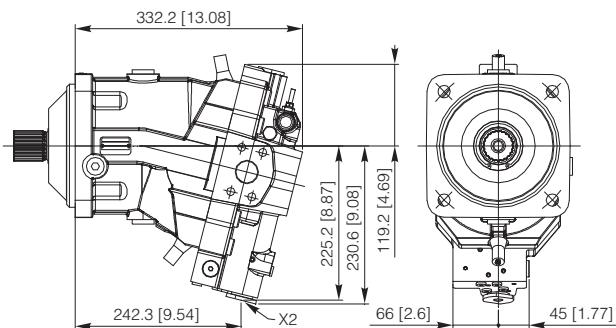
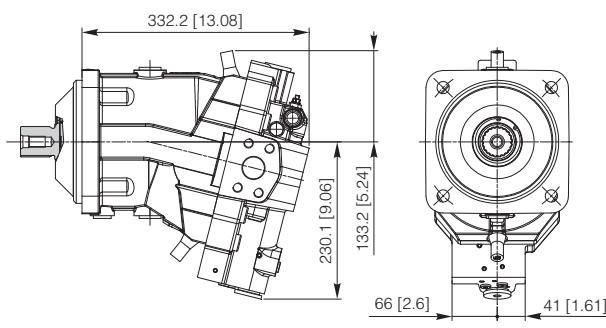


10

Control

**RPE** Control**2EN** Control**2IN** Control**REN** Control

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

**RIN** Control**ROE** Control

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

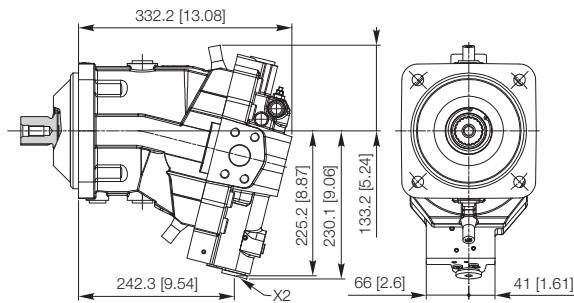
Click DANA button to return to Section Index

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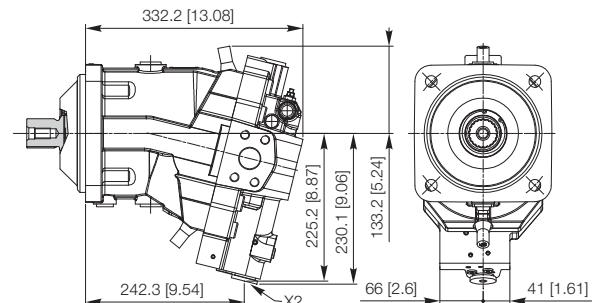
Click i button to return to main index



## ROI Control



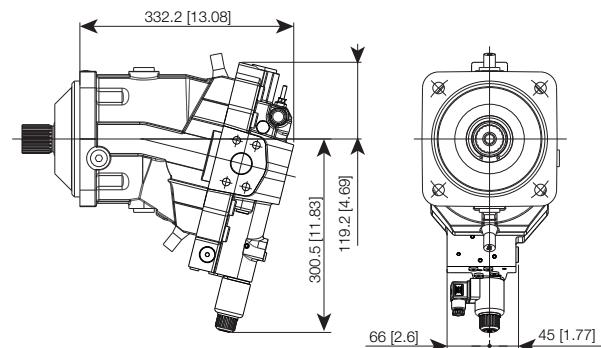
## RPI Control



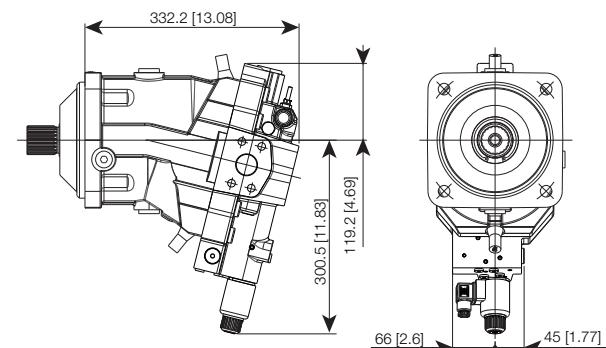
X2: Piloting port - 1/4 G (BSPP)

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

## ROS Control



## RPS Control

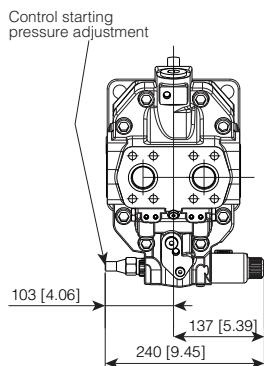


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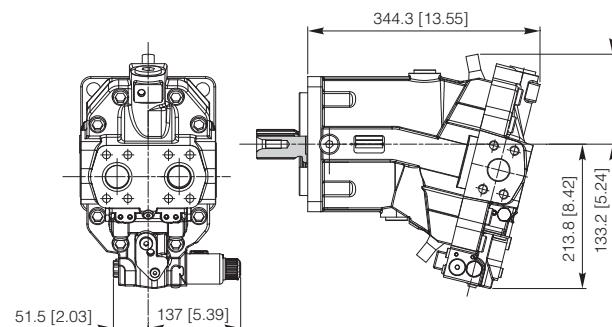
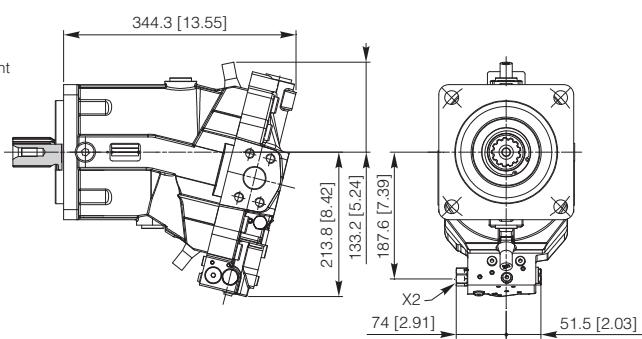
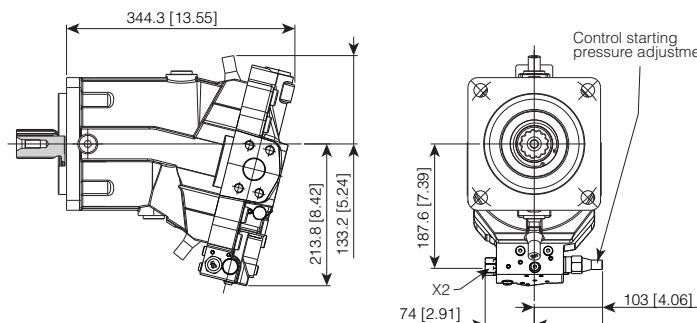
Control

**2EE**

Control

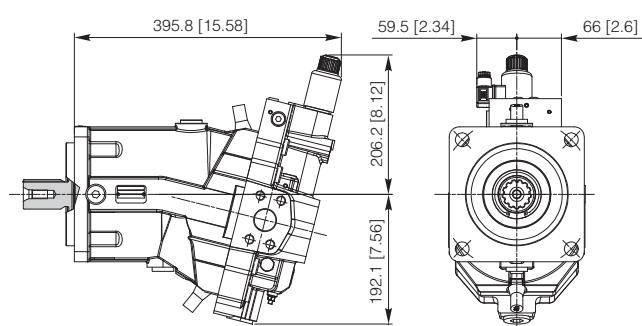
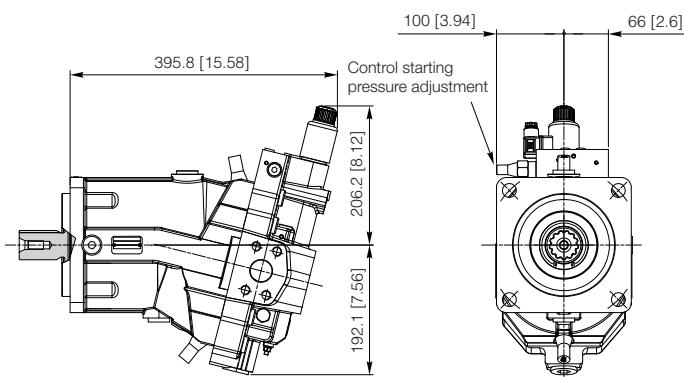
**2EN**

Control

**2IE****2IN** Control

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

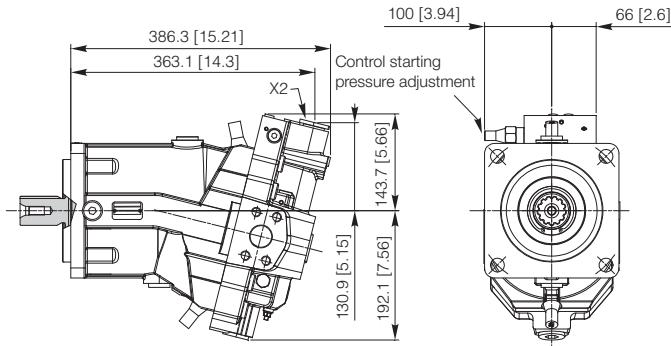
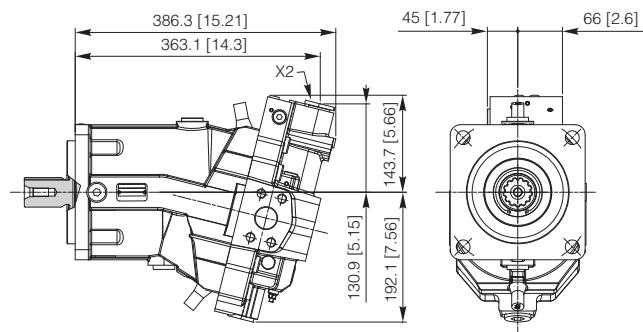
X2: Piloting port - 7/16"-20 UNF-2B

**REE** Control**REN** Control

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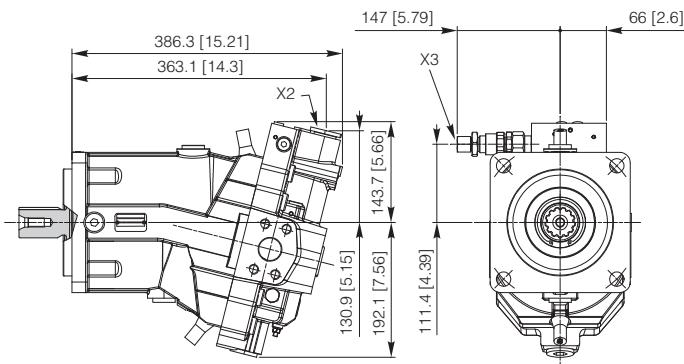
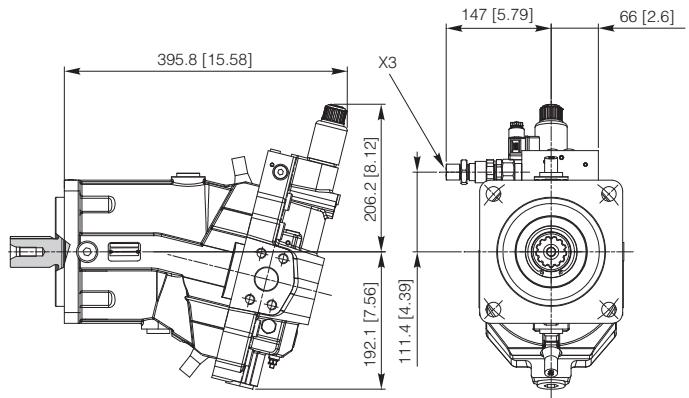
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**RIE** Control**RIN** Control

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

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

**RID** Control**RED** Control

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

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

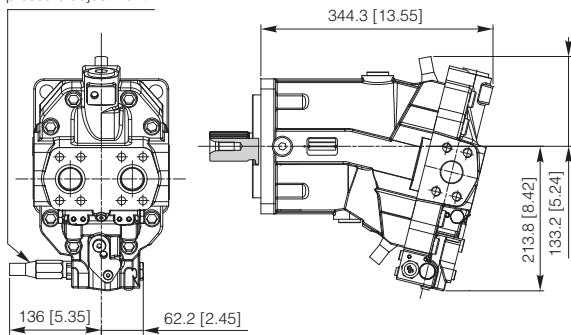
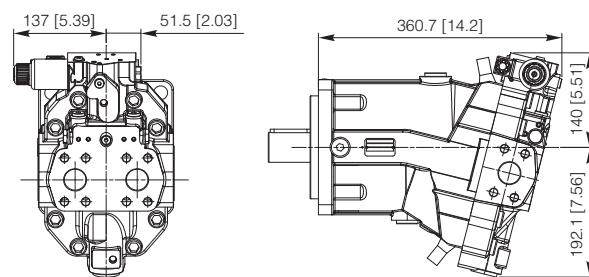
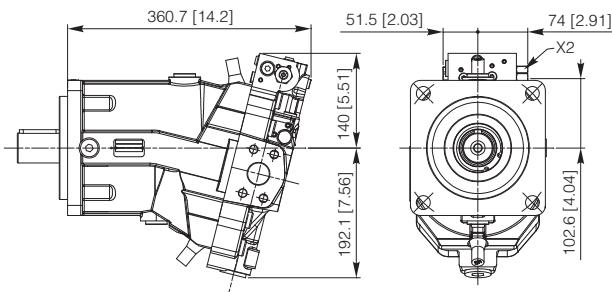
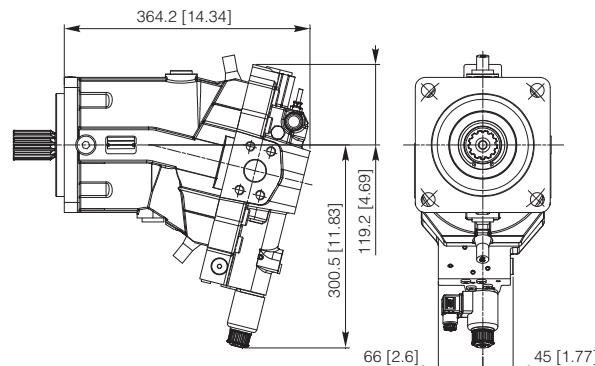
X3: Double step piloting port - 7/16"-20 UNF

10

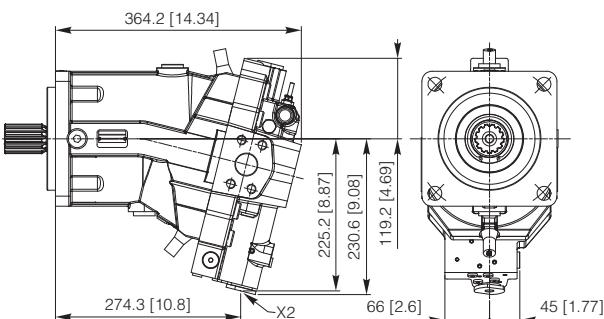
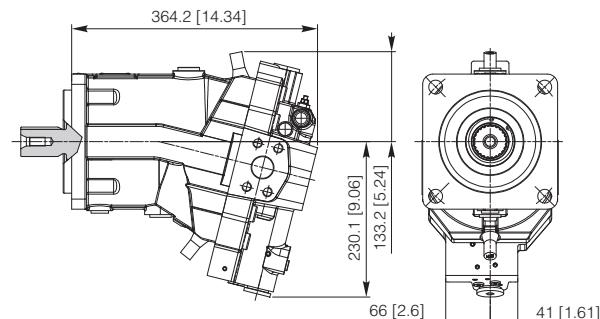
Control

**RPE** Control

Control starting pressure adjustment

**2EN** Control**2IN** Control**REN** Control

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

**RIN** Control**ROE** Control

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

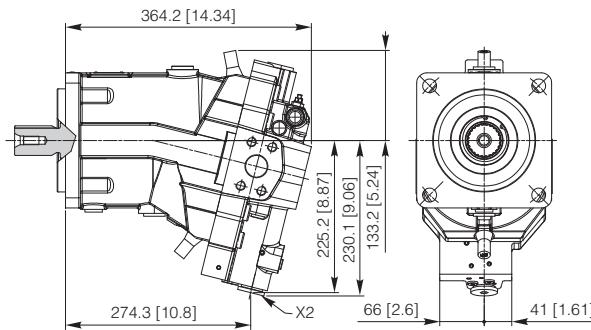
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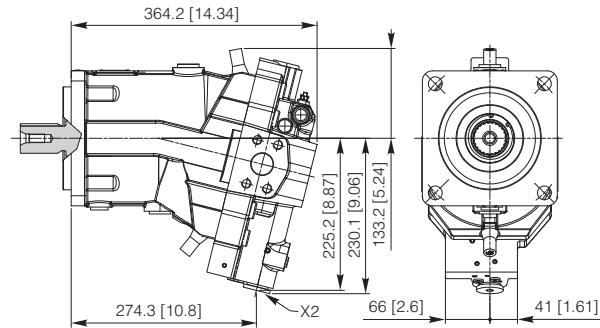
Click i button to return to main index



## ROI Control



## RPI Control

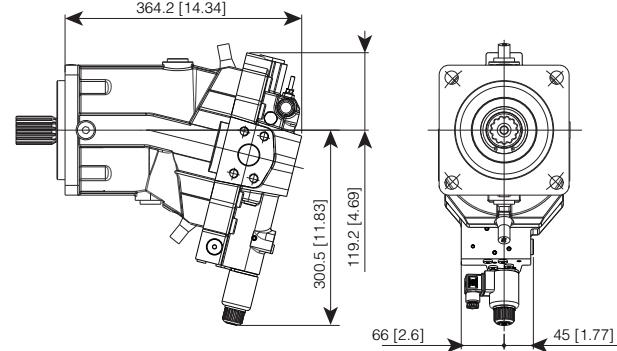
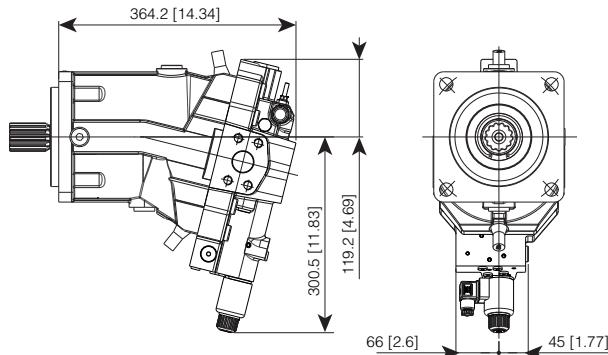


X2: Piloting port - 7/16"-20 UNF-2B

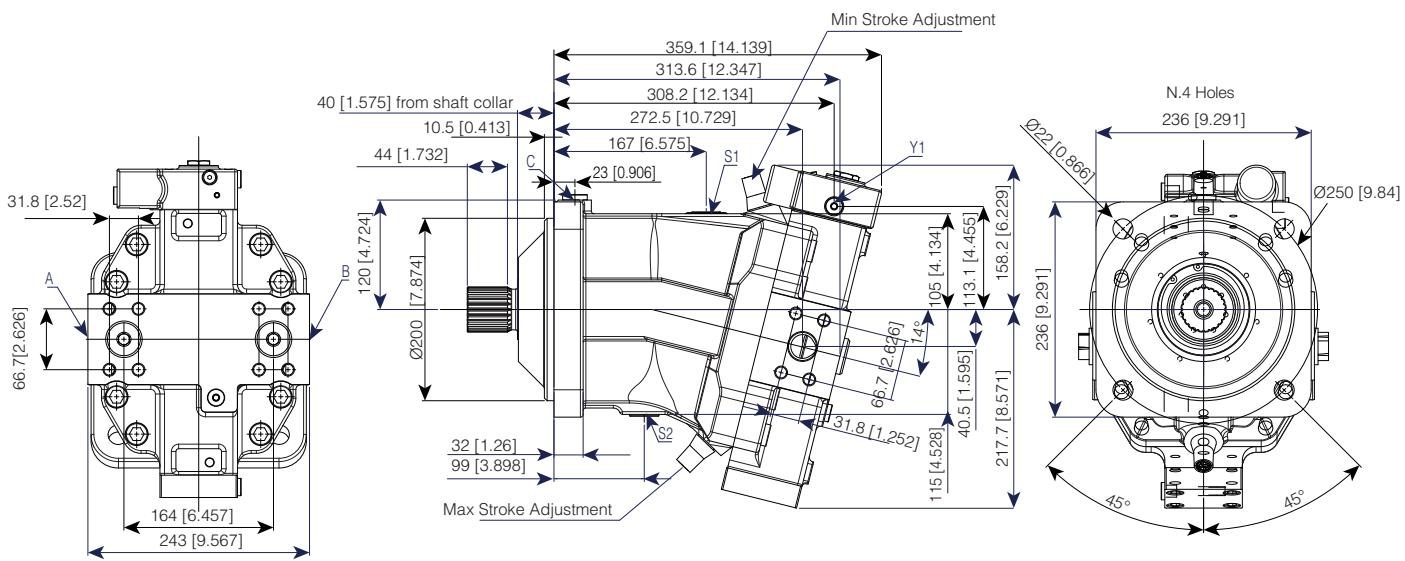
X2: Piloting port - 7/16"-20 UNF-2B

## ROS Control

## RPS Control

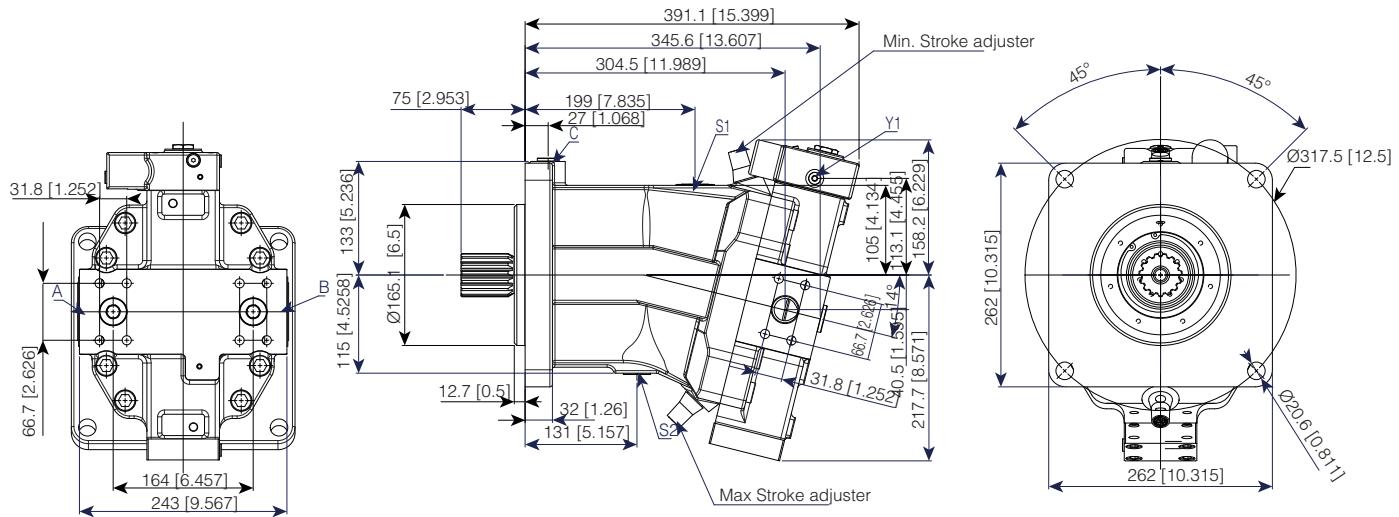


## SH7V 200 Motor - Mounting flange ISO 4 Bolts (OG)



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)

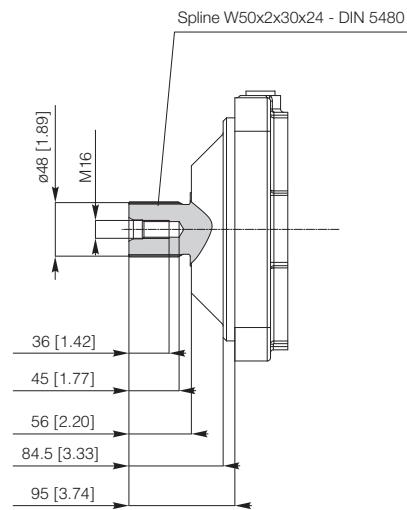
## SH7V 200 Motor - Mounting flange SAE-E 4 Bolts (10)



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

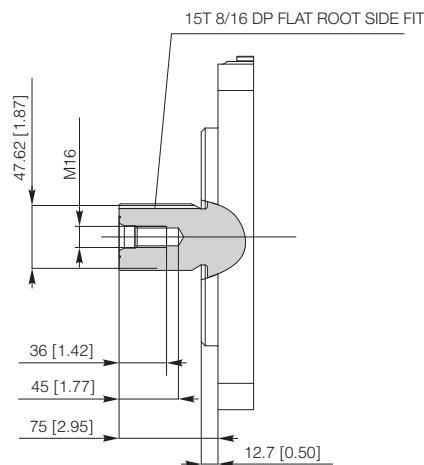
7

## Shaft end

**SAR**    Splined shaft


7

## Shaft end

**S19**    Splined shaft


10

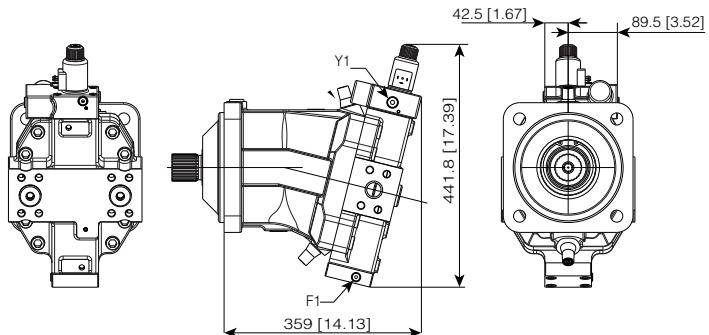
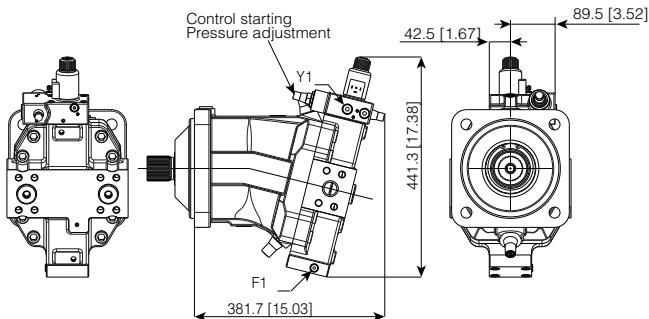
Control

**2EE**

Control

**2EN**

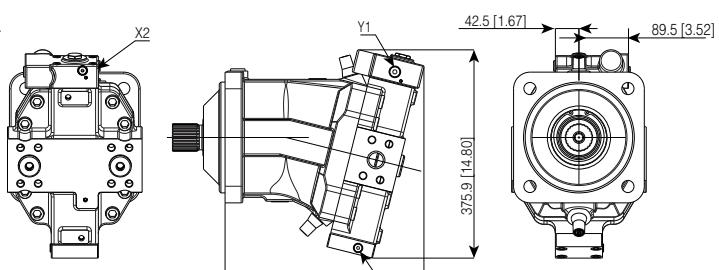
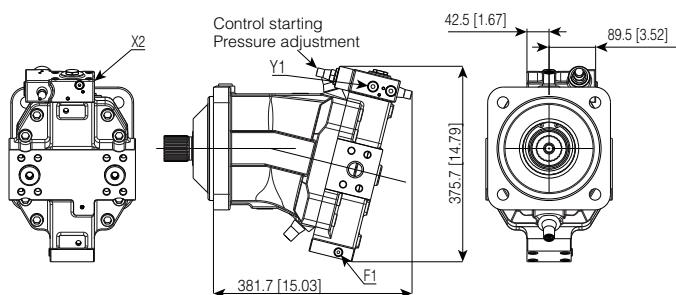
Control

**2IE**

Control

**2IN**

Control



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

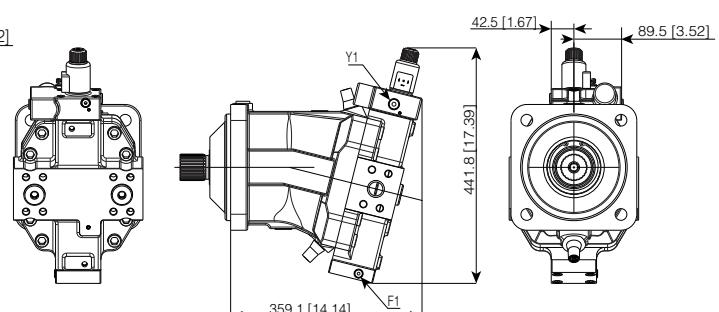
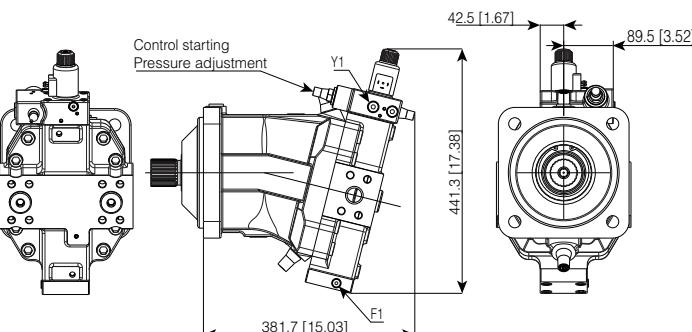
X2: Piloting port - 7/16"-20 UNF

**REE**

Control

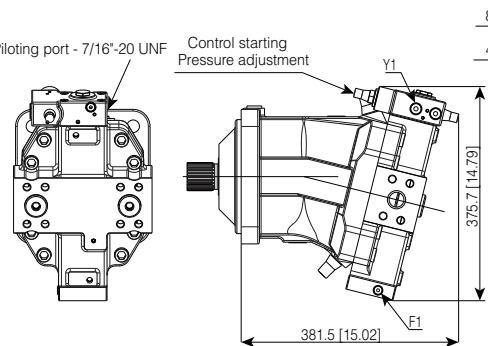
**REN**

Control



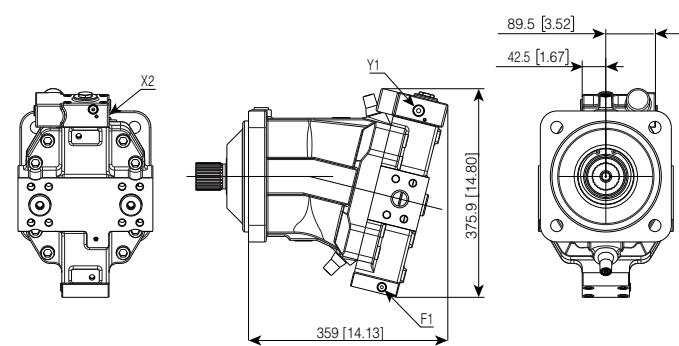
## RIE Control

Piloting port - 7/16"-20 UNF      Control starting Pressure adjustment



## RIN Control

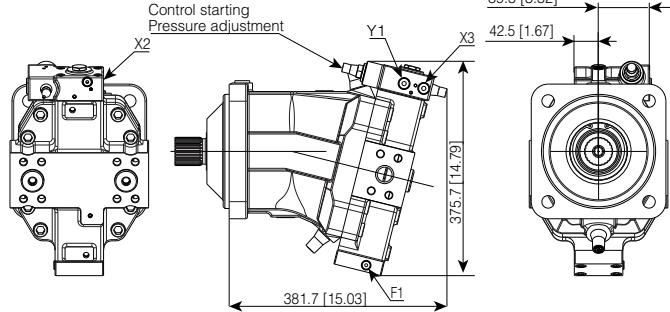
Piloting port - 7/16"-20 UNF      Control starting Pressure adjustment



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

## RID Control

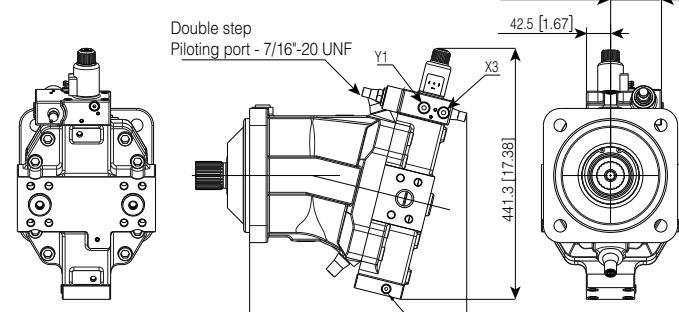
Control starting Pressure adjustment



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

## RED Control

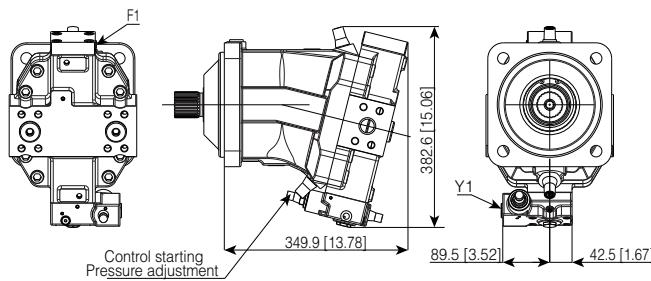
Double step Piloting port - 7/16"-20 UNF



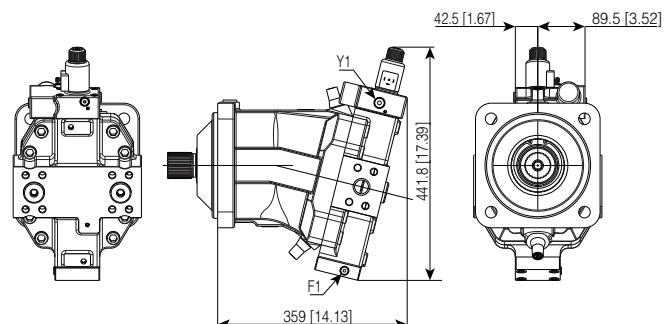
X3: Double step piloting port - 1/4 G (BSPP)



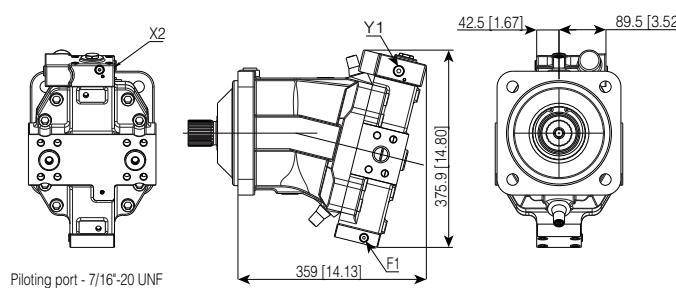
## RPE Control



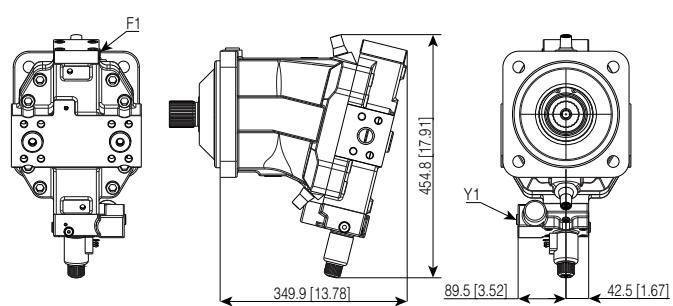
## 2EN Control



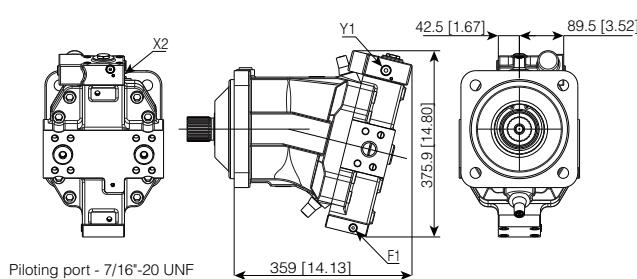
## 2IN Control



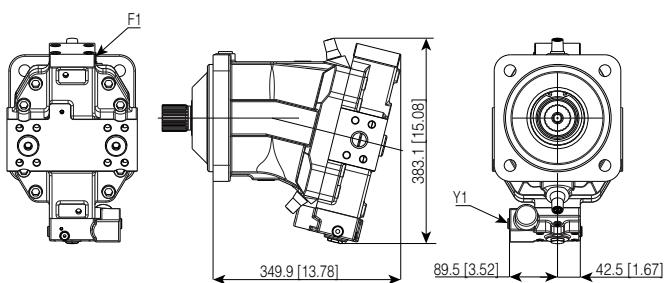
## REN Control



## RIN Control



## ROE Control

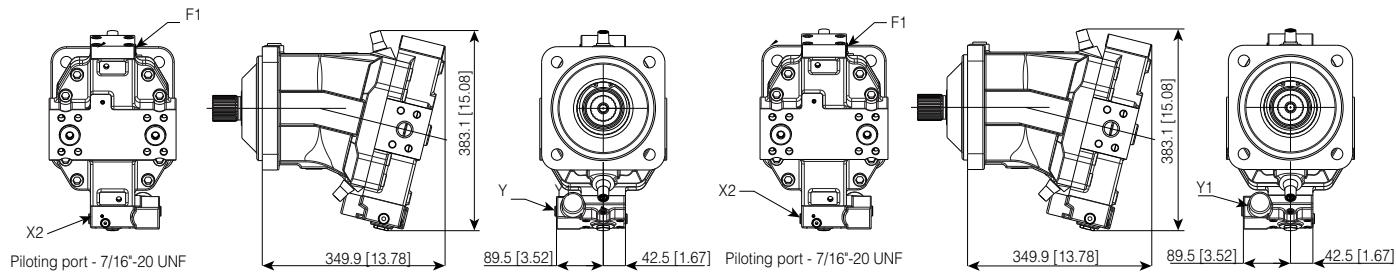


10

Control

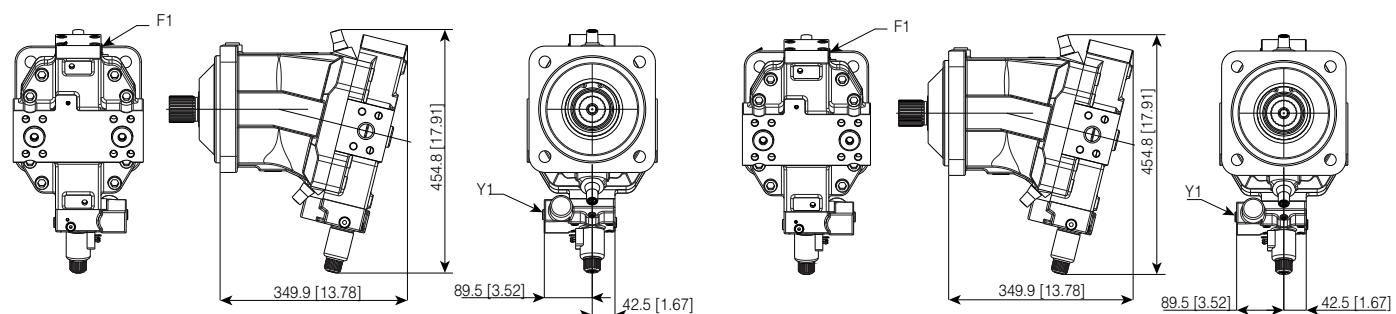
ROI Control

RPI Control



ROS Control

RPS Control



10

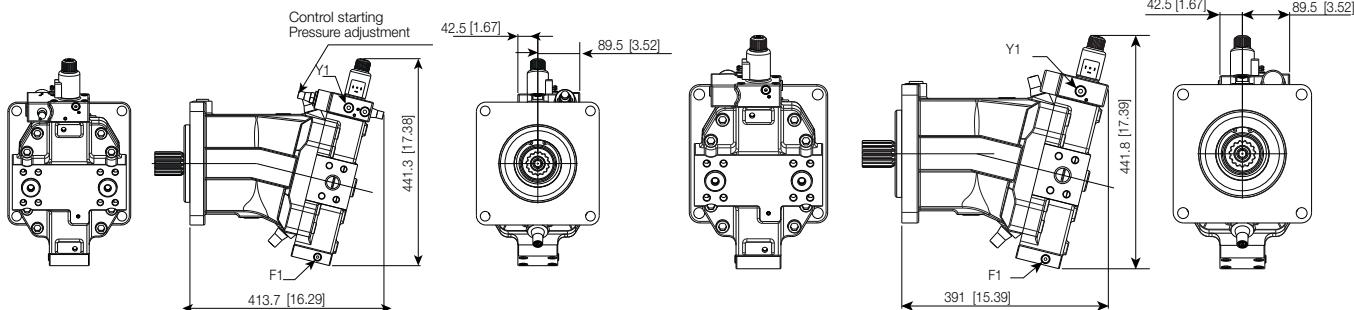
Control

**2EE**

Control

**2EN**

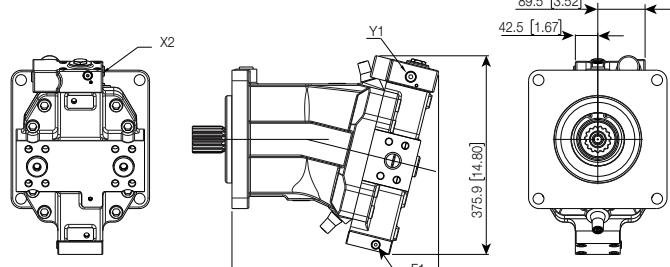
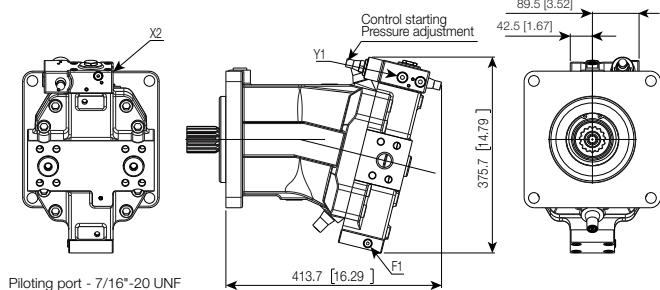
Control

**2IE**

Control

**2IN**

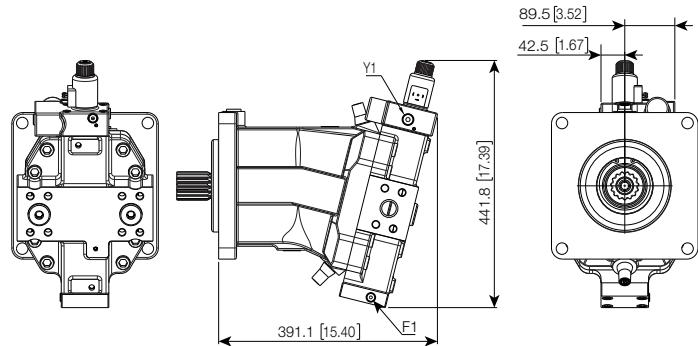
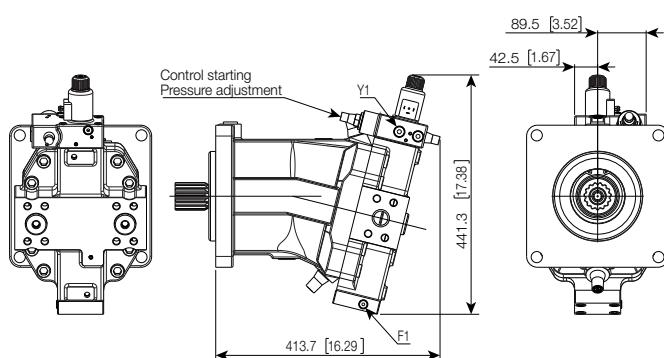
Control

**REE**

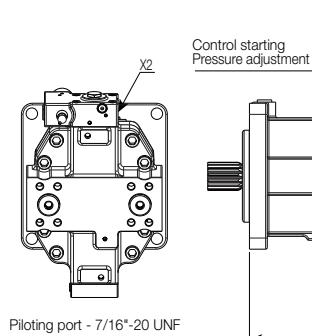
Control

**REN**

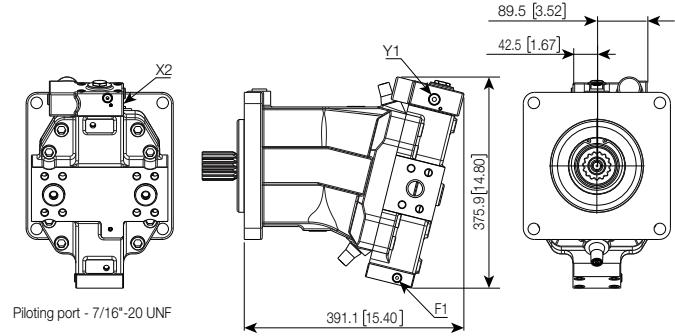
Control



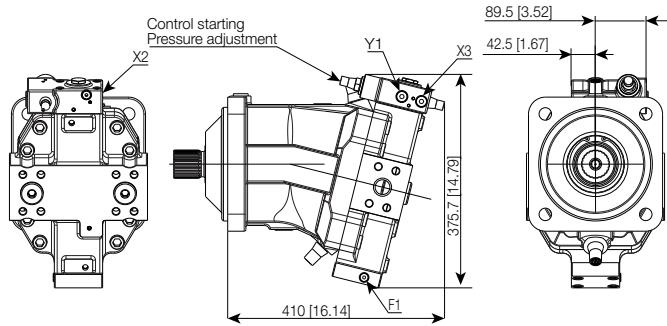
## RIE Control



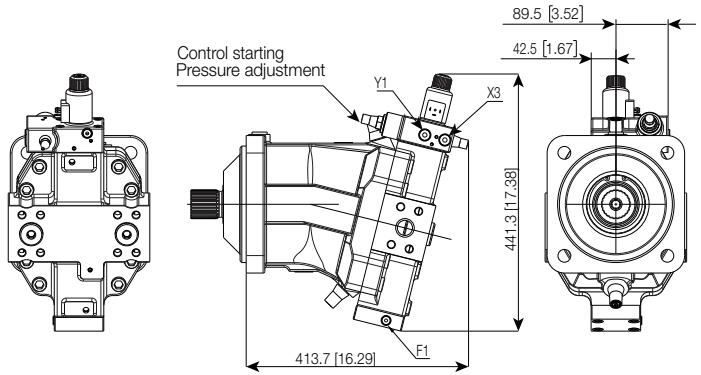
## RIN Control



## RID Control

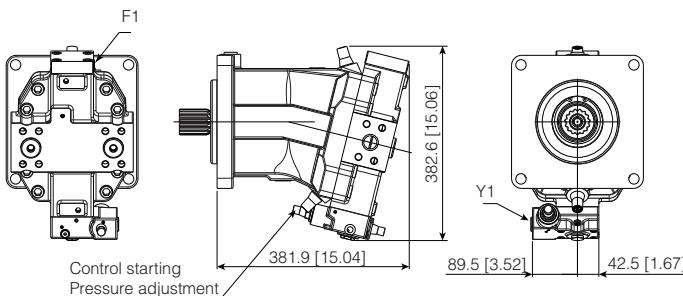
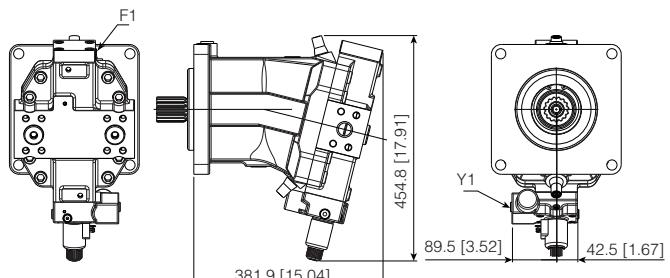
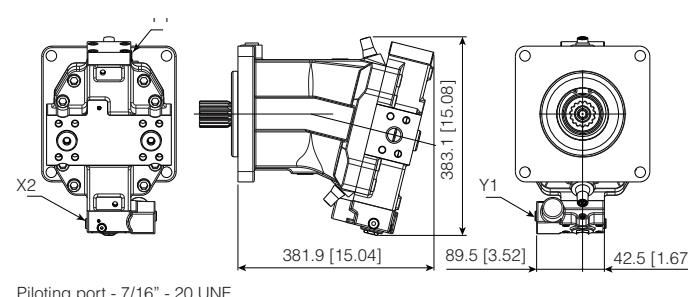
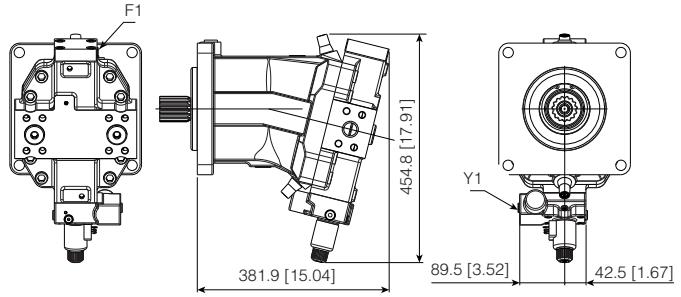
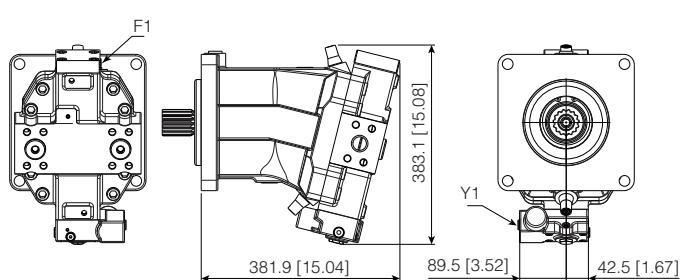
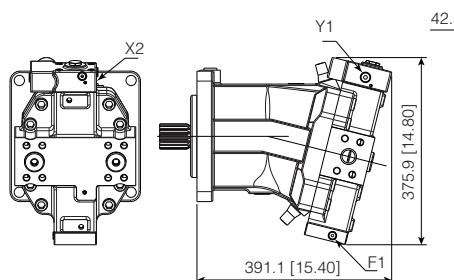


## RED Control



10

Control

**RPE** Control**2EN** Control**2IN** Control**REN** Control**RIN** Control**ROE** Control

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

Click DANA button to return to Section Index

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SH7V/M - Section N

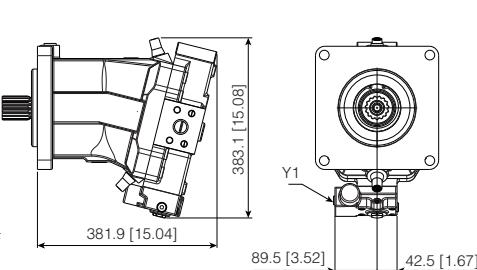
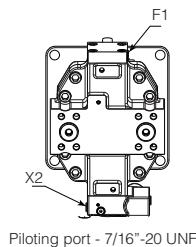
Click i button to return to main index



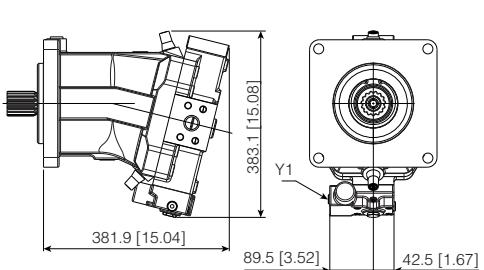
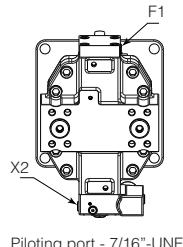
10

Control

## ROI Control

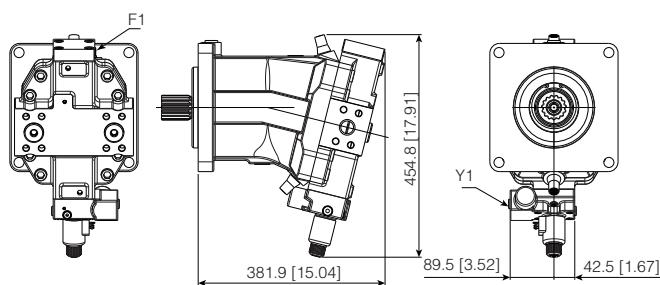


## RPI Control

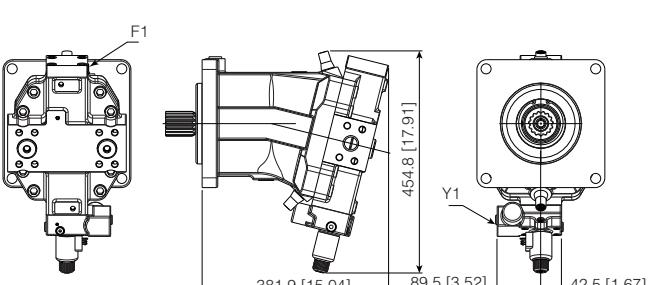


X2: Piloting port - 7/16"-20 UNF-2B

## ROS Control

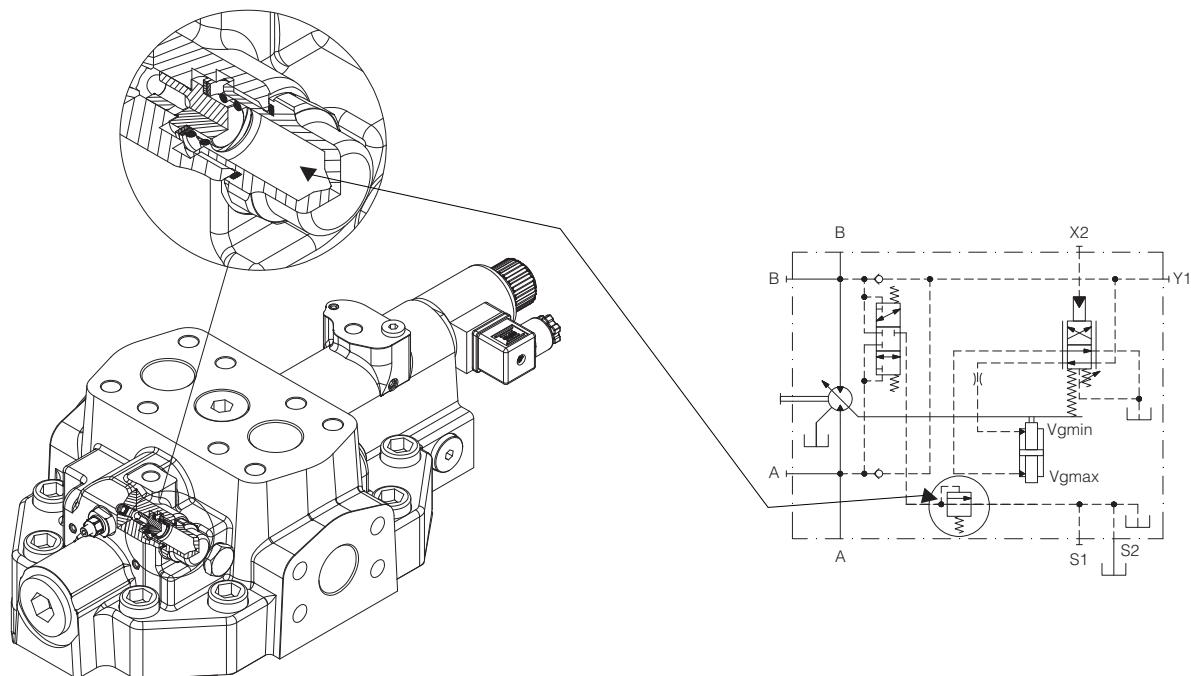


## RPS Control

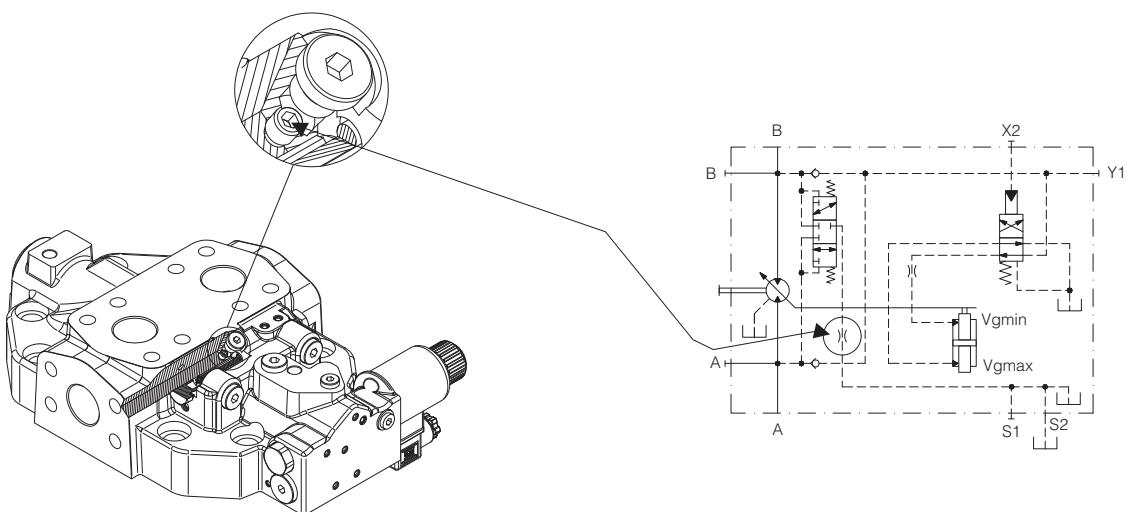


For closed circuit operation, the motors can be equipped with built in flushing valve.

**Only for SH7V 108 - 160**

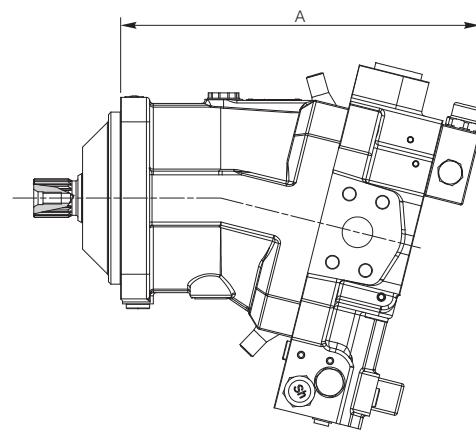


**Only for SH7V 160 with two positions controls**

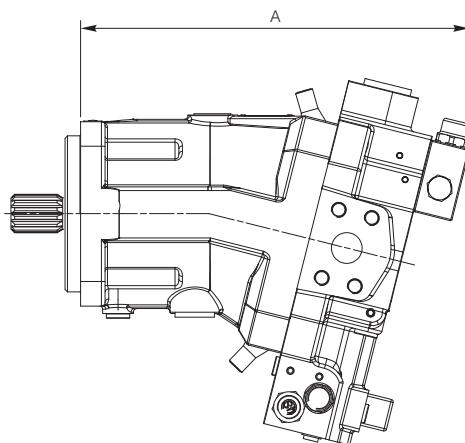


**SH7V 055-075 Motor - Mounting flange ISO**

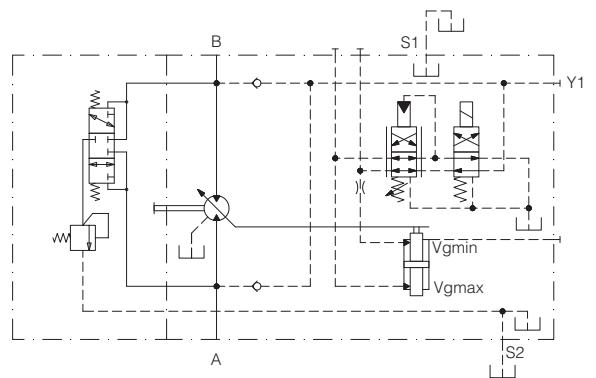
Only for SH7V 055 - 075

**SH7V 055 - 075 Motor - Mounting flange SAE**

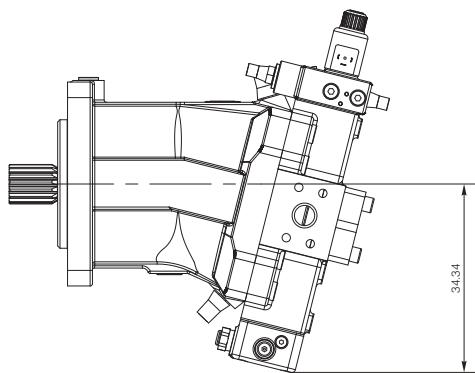
Only for SH7V 055 - 075



	Size			
	SH7V 055 ISO	SH7V 075 ISO	SH7V 055 SAE	SH7V 075 SAE
A mm [in]	268.3 [10.56]	292.6 [11.51]	323 [12.72]	316.6 [12.46]



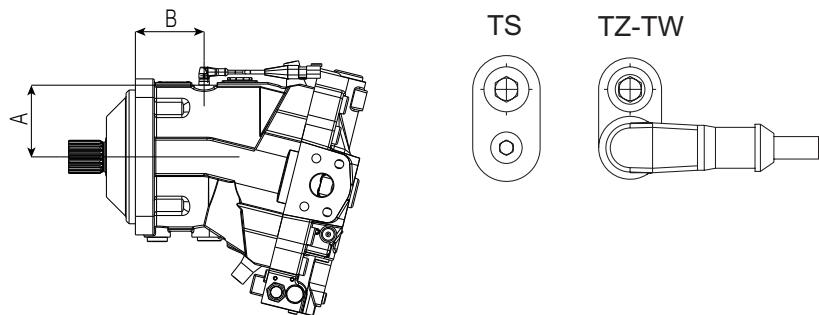
Only for SH7V 200



## 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									
SH7V055 ME	SH7V075 ME	SH7V108 ME	SH7V160 ME	SH7V200 ME	SH7V55 SE	SH7V075 SE	SH7V108 SE	SH7V160 SE	SH7V200 SE
A mm [inch]	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]
B mm [inch]	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]

**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				
	SH7V 055	SH7V 075	SH7V 108	SH7V 160	SH7V 200
Number of pulses per revolution	54	58	67	75	80





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*Motion Systems*

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