

A | RANGE

hydraulic pumps & motors

ROTARY POWER has over 35 years experience in the design and development of high quality Hydraulic equipment.

Our current product range includes :-

"A" Axial Piston Pumps for heavy-duty open circuit applications. Wide range of controls. Excellent life characteristics. Suitable for most fluids, including HLP,HFA, HFB, HFC ,HFD, HFR , HFE , Isocyanates & Polyols. Fixed and variable capacities from 11.5 to 125 cm³/rev.

"C" Axial Piston Pumps for high accuracy fluid metering with precision flow controls and high-pressure capability. Specifically designed for the Polyurethane Industry. Capacities from 3 to 62 cm³/rev.

"XL" Cam Motors of radial piston configuration. Wheel/shaft/torque module configurations. Design offers high-speed capability. Capacities from 150 to 1120 cm³/rev.

"XK" Cam Motors radial piston configuration offering static/dynamic brakes, single/2 speed, wheel/shaft & torque-module mount options.

Heavy-Duty External Load & High-Speed options. Capacities from 1000 to 5000 cm³/rev.

"SMA" Motors heavy-duty radial piston/eccentric configuration, offering excellent life. Withstands high mechanical and hydraulic shock loads. 350bar Continuous pressure rating. Speed & power ratings significantly greater than standard HTLS motors.

Displacements from 150 to 10500 cm³/rev.

Wholly owned subsidiaries in the USA and Germany and a network of distributors throughout the world provide product support in most countries.

ROTARY POWER is a company within British Engines Ltd (BEL) group, which was established over 60 years ago.

The British Engines group of companies design manufacture and market a wide range of engineered products for offshore, electrical, construction, engineering and other industries, employing nearly 700 people on a 4600 sq m site in Newcastle upon Tyne, England.

FEATURES

Unique construction allows operation on a wide range of fluids. i.e. Hydraulic Mineral Oils, Water Emulsions, Water Glycols, Phosphete Ester, Diesel and other special fluids.

Wide range of controls as standard, with many special variants possible to suit specialised applications.

Fast and accurate control response.

Compact overall dimensions with good power to weight ratio.

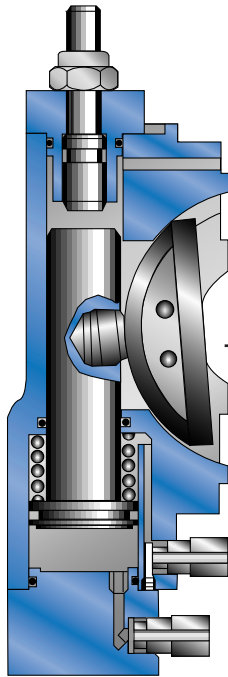
Designed and developed to give long operating life.

Reliability proven over 35 years in the most demanding of conditions.

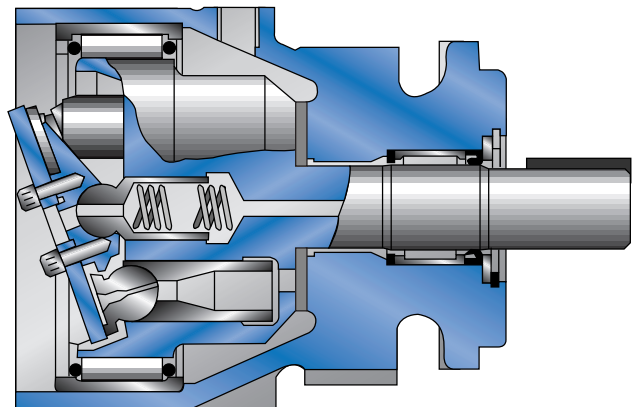
A X I A L P I S T O N P U M P S A N D M O T O R S

AXIAL PISTON PUMPS AND MOTORS

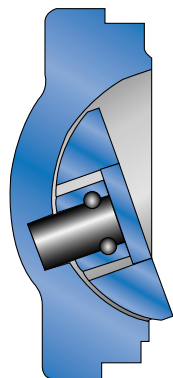
Typical example of a pressure control this illustration is of a constant pressure control type LB.



ROTARY POWER pumps and motors are of swashplate construction. The one piece rotor is supported by high capacity roller bearings which provide excellent life characteristics. The unique running plate and retainer plate enhance the units ability for a wide range of fluids.



Typical example of a volume control, this illustration is of a fixed displacement type FA.



The basic module shown above is common to all types of pump and motor control, the addition of an endcase and actuator plus camplate completes the assembly.

The characteristic is determined by the control assembly. Standard options are shown in this catalogue further details are available upon request.

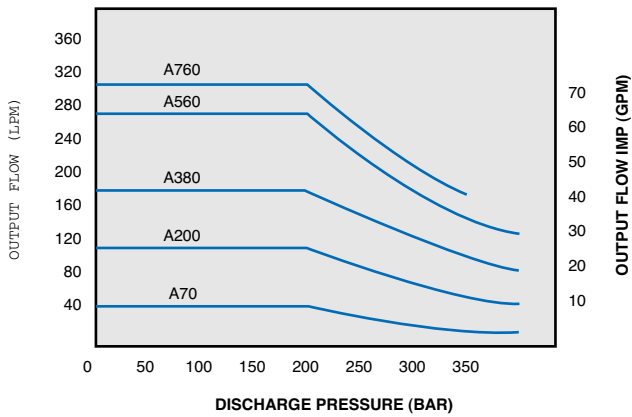
AXIAL PISTON PUMPS AND MOTORS

PERFORMANCE DATA

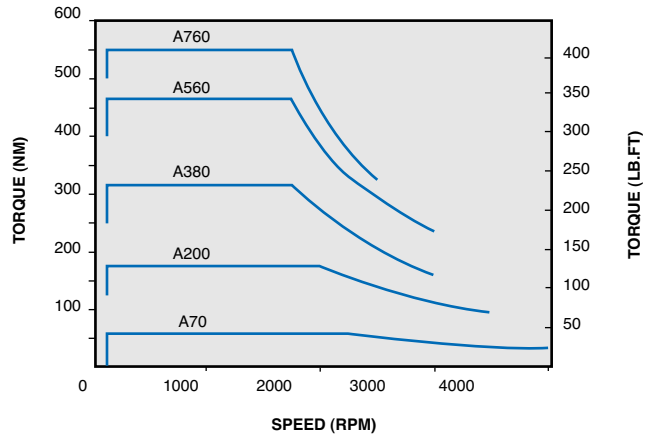
SIZE		A70	A200	A380	A560	A760
DISPLACEMENT	CC/REV	11.5	33	62	92	125
	in ³ /REV	0.7	2.0	3.8	5.6	7.6
MAX CONTINUOUS PRESSURE (2)	BAR (lb/in ²)	320 (4600)	320 (4600)	320 (4600)	320 (4600)	280 (4000)
MAX INTERMITTENT PRESSURE (2)	BAR (lb/in ²)	380 (5500)	380 (5500)	380 (5500)	380 (5500)	350 (5000)
MAXIMUM SPEED (2)	REV/MIN	4000	3500	3000	3000	2500
SPECIFIC FLOW (1)	L/MIN	46	115.5	186	276	312.5
SPECIFIC TORQUE	Nm	51.2	147	276.2	409.9	557

1. Theoretical - Speed maximum rpm - Torque at 280 bar
2. Contact ROTARY POWER for operation at above the maximum continuous ratings.

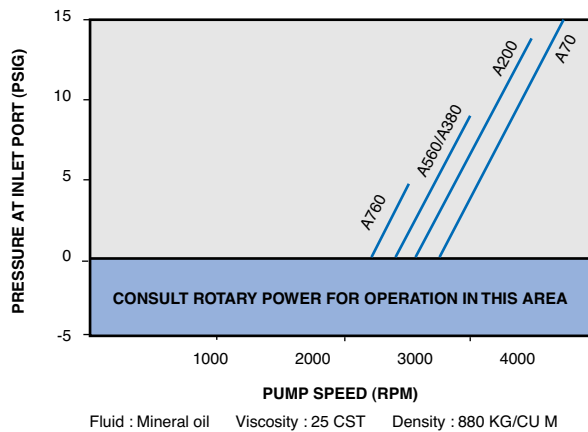
Pump selection (continuous duty)



Motor selection (continuous duty)



Pressure at inlet port against speed (maximum swash)

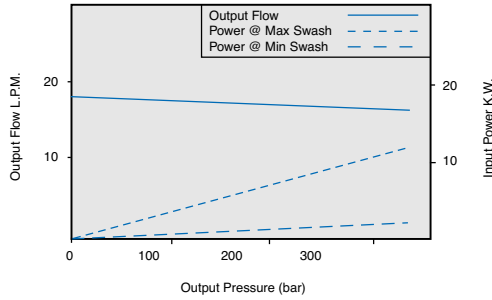


AXIAL PISTON PUMPS AND MOTORS

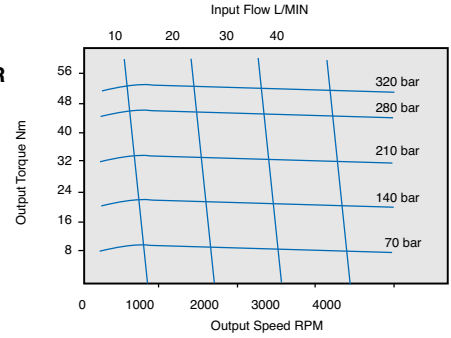
PERFORMANCE DATA

• Pump performance at 1500 RPM with mineral oil at 25 centistokes.

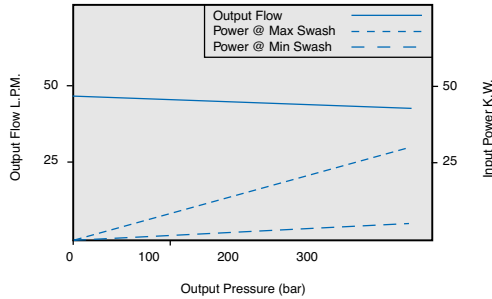
**A70 PUMP
(11.5 cc)**



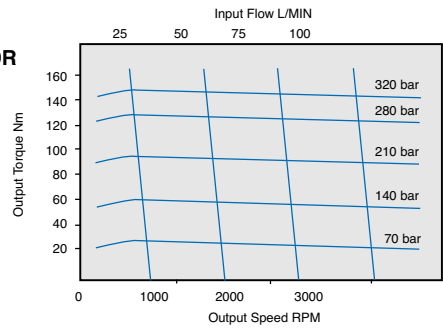
**A70 MOTOR
(11.5 cc)**



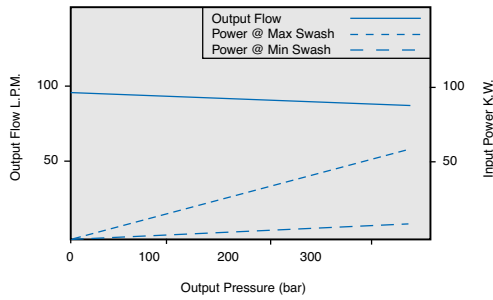
**A200 PUMP
(33 cc)**



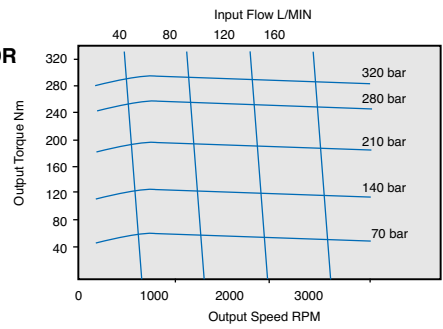
**A200 MOTOR
(33 cc)**



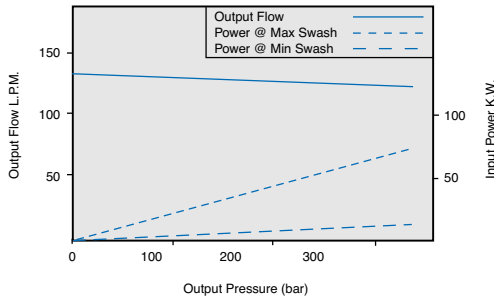
**A380 PUMP
(62 cc)**



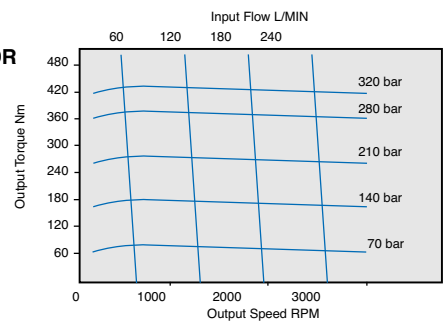
**A380 MOTOR
(62 cc)**



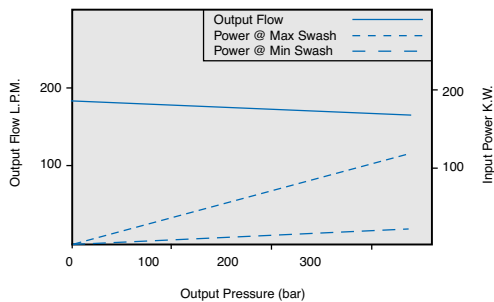
**A560 PUMP
(92 cc)**



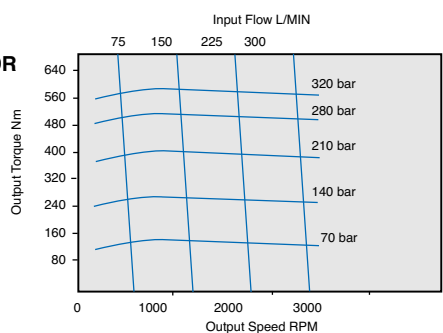
**A560 MOTOR
(92 cc)**



**A760 PUMP
(125 cc)**



**A760 MOTOR
(125 cc)**



For continuous and intermittent conditions, please refer to performance data on page 2.

AXIAL PISTON PUMPS AND MOTORS

PUMP CONTROL RANGE

CONTROL OPTION	TYPE	OUTLINE	CIRCUIT	CHARACTERISTIC
FIXED DISPLACEMENT	FA			
MANUAL HANDWHEEL STANDARD	MA			
MANUAL HANDWHEEL FINE CONTROL	MB			
DIAL INDICATOR FINE CONTROL	MD			
SPINDLE ASSISTED MANUAL STEM CONTROL	ME			
SERVO ASSISTED MANUAL STEM CONTROL	SA			
ELECTRO-HYDRAULIC PROPORTIONAL CONTROL	SE			
HYDRAULIC ACTUATOR CONTROL	AA			

AXIAL PISTON PUMPS AND MOTORS

PUMP CONTROL RANGE

CONTROL OPTION	TYPE	OUTLINE	CIRCUIT	CHARACTERISTIC
HYDRAULIC ACTUATOR CONTROL (OVERCENTRE)	AB			
PRESSURE COMPENSATOR	PA			
PRESSURE COMPENSATOR WITH VOLUME OVERRIDE	QA			
PRESSURE COMPENSATOR WITH PRESSURE OVERRIDE	RA			
PRESSURE COMPENSATOR WITH VOLUME AND PRESSURE OVERRIDES	TA			
POWER LIMITING	PJ			
POWER LIMITING WITH VOLUME OVERRIDE	QJ			
POWER LIMITING WITH PRESSURE OVERRIDE	RJ			
POWER LIMITING WITH VOLUME AND PRESSURE OVERRIDES	TJ			
CONSTANT PRESSURE	LB HYDR			

AXIAL PISTON PUMPS AND MOTORS

PUMP CONTROL RANGE

CONTROL OPTION	TYPE	OUTLINE	CIRCUIT	CHARACTERISTIC
CONSTANT PRESSURE EXTERNAL PILOT (TWO LEVEL)	LG			
CONSTANT PRESSURE EXTERNAL PILOT (REMOTE SET)	LV			
LOAD SENSING	LJ			
LOAD SENSING WITH PRESSURE OVERRIDE	LK			
LOAD SENSING WITH PRESSURE COMPENSATED OVERRIDE	RU			
LOAD SENSING WITH PRESSURE COMPENSATED AND CONSTANT PRESSURE OVERRIDES	RN			
LOAD SENSING WITH POWER LIMITING OVERRIDE	RQ			
LOAD SENSING WITH POWER LIMITING OVERRIDE	RS			

AXIAL PISTON PUMPS AND MOTORS

MOTOR CONTROL RANGE

CONTROL OPTION	TYPE	OUTLINE	CIRCUIT	CHARACTERISTIC
FIXED DISPLACEMENT	FA			
MANUAL HANDWHEEL DISPLACEMENT CONTROL	MA			
SERVO ASSISTED MANUAL STEM DISPLACEMENT CONTROL	SA			
HYDRAULIC ACTUATOR TWO DISPLACEMENT CONTROL	AA			
HYDRAULIC ACTUATOR OVERCENTRE CONTROL	AB			
POWER LIMITING	LM			

INSTALLATION

MOUNTING

The drive coupling must allow the pump/motor to establish its own internal clearances and only connections which permit axial freedom should be used. See section 2 in commissioning.

Mating shafts concentricity must be within (0.05mm).

Recommended flexible couplings to have 0.5mm radial and 0.25 axial freedom minimum.

Drive coupling must be drawn onto the shafts, as hammering will cause internal damage.

SUCTION

Suction lines must be completely filled and contain no air.

Both ports on the ROTARY POWER unit are designed for high pressure connections. In the suction line the localised restriction of the port should not be taken as an indication of suction pipe diameter.

Table 1 indicates minimum inlet line bore sizes for mineral oils in the viscosity range 1cSt - 100 cSt.

Inlet line lengths and flow discontinuities should be minimised with the aim of creating minimum vacuum at the inlet port.

Water based fluids a minimum of atmospheric pressure must be present at the inlet port at all times. The suction line should be full of fluid at all times.

TABLE 1

Maximum Flow Rate		Minimum inlet line bore (1cSt - 100 cSt Fluid)	
gals/min	litres/min	inch	mm
2	9	0.50	13
4	18	0.75	19
8	36	1.00	25
10	45	1.25	32
16	72	1.25	32
20	90	1.50	37
25	110	1.50	37
30	136	2.00	50
35	160	2.25	57
40	180	2.50	62
45	200	2.75	70
50	225	3.00	76
55	250	3.50	89

FILTRATION

FLUID VISCOSITY 5cSt - 2000 cSt;

Suction: 125 micron strainer sized in accordance with the suction pressure requirement.

Return lines: 10 micron absolute.

System contamination levels should be monitored periodically to ensure the solid particle contamination is within ISO/DIS standard 4406 code 18/13.

FLUID VISCOSITY 1-5cSt:

appropriate filtration must achieve cleanliness code of ISO/DIS 13/10 or better.

TEMPERATURES

Maximum inlet temp. 100°C (with appropriate precautions). However, for optimum fluid life bulk fluid temperatures should not generally exceed 50°C:

Bulk temperatures should not exceed 40°C for water based fluids HFA, HFB and HFC.

Higher temperatures can be tolerated; however, due consideration must be given to the seal materials and inlet pressure. Consult ROTARY POWER for operation at elevated temperatures.

CASE DRAIN

The drain line should be connected to the highest point on the unit and should be piped separately to a point in the reservoir below the minimum fluid level.

The drain line should remain filled at all times.

Units fitted with the standard seal arrangement should be limited to a maximum case pressure of 0.7 bar. Optional seal support is offered allowing case pressures up to 4 bar.

In applications where discharge pressure (pump) or inlet pressure (motor) is less than 4 x case pressure, consult ROTARY POWER.

CONTROL SETTINGS

Factory pre-set controls should not be adjusted without consultation with ROTARY POWER.

VISCOSITY

The normal recommended operating viscosity range is 6-300 cSt but for special fluids, a viscosity down to 1 cSt and up to 2000 cSt can be accommodated with due consideration to temperature and suction details.

Consult ROTARY POWER for operation outside of 6-300 cSt.

Note - Full installation and maintenance instructions are available on request.

AXIAL PISTON PUMPS AND MOTORS

COMMISSIONING

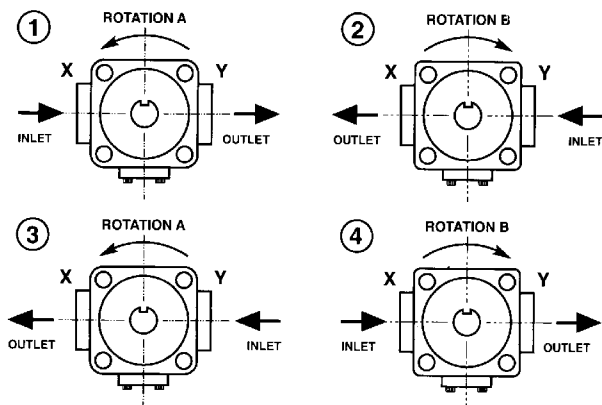
GENERAL PROCEDURE

1. Thoroughly descale, clean and flush the system before the pump/motor is put into service and refer to filtration section of the Installation Instruction to ensure fluid cleanliness.
2. Check that the shaft, axial and radial load does not exceed that given in table 1. If the unit is mounted vertically the weight of the coupling will exert a thrust, which, if excessive will detrimental to the unit.

A failure to generates flow is most commonly associated with shaft end loading.

	A70	A200	A380	A560	A760
Radial Load (Kg)	4.5	9	12	16	20
Axial Load (Kg)	6	11	21	23	30

3. Totally fill the suction line between the tank and pump. Fill the pump/motor case via the uppermost case drain port. With suction and discharge valves open slowing rotate the pump so as to purge any residual air from within the rotor/pistons/ports. Re-connect case drain pipework.



CONTROL TYPE	MB MD ME	MA SA SE		FA CV AA LB
	PA QA RA TA	SH AB	LG LJ LK LM	
	PJ QJ RJ TJ			
	RU RN RQ RS			
Operating Quadrant	P	P	Q	Q
Rotation Flow Diagram	①	①	③	③
	②	②	④	④

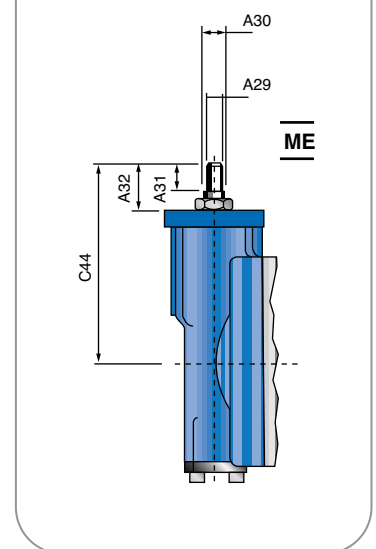
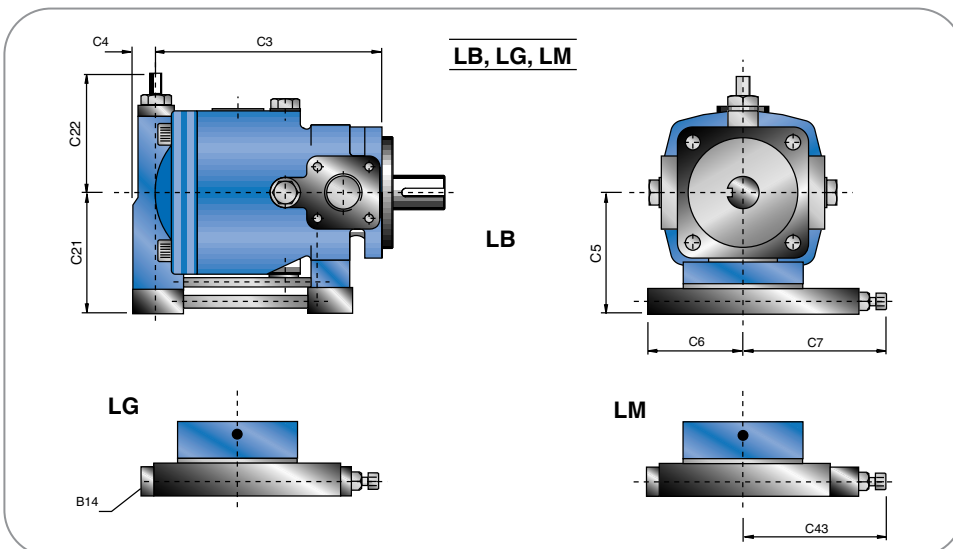
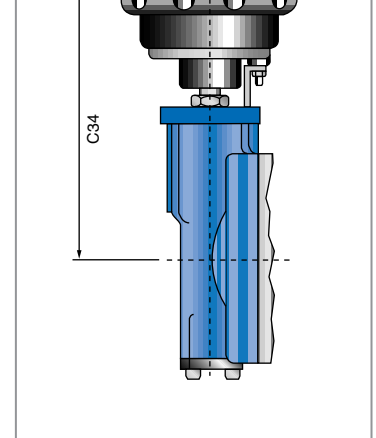
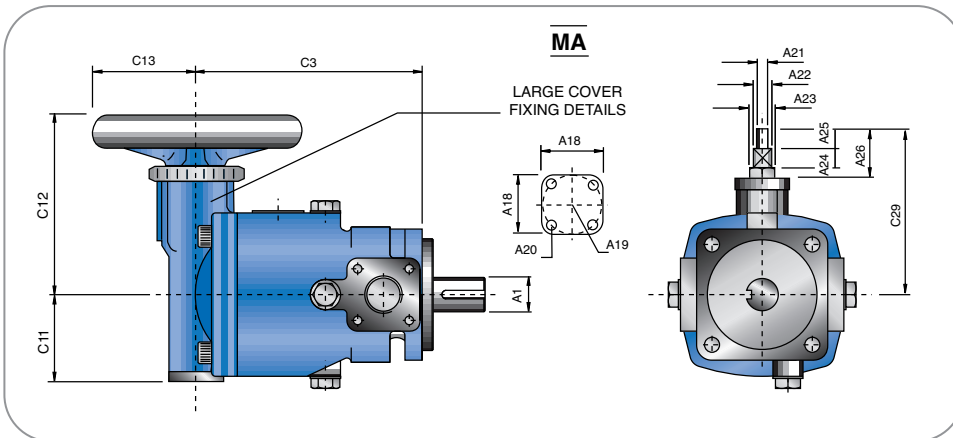
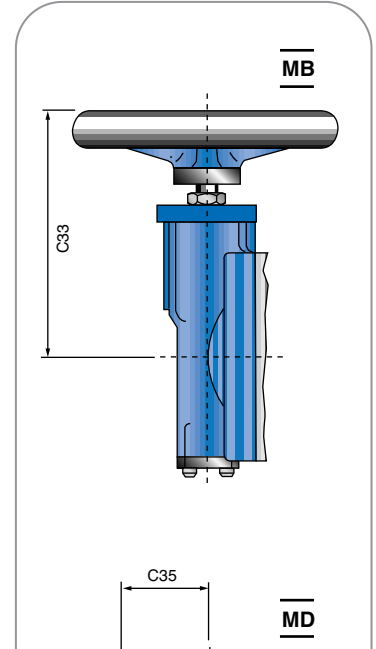
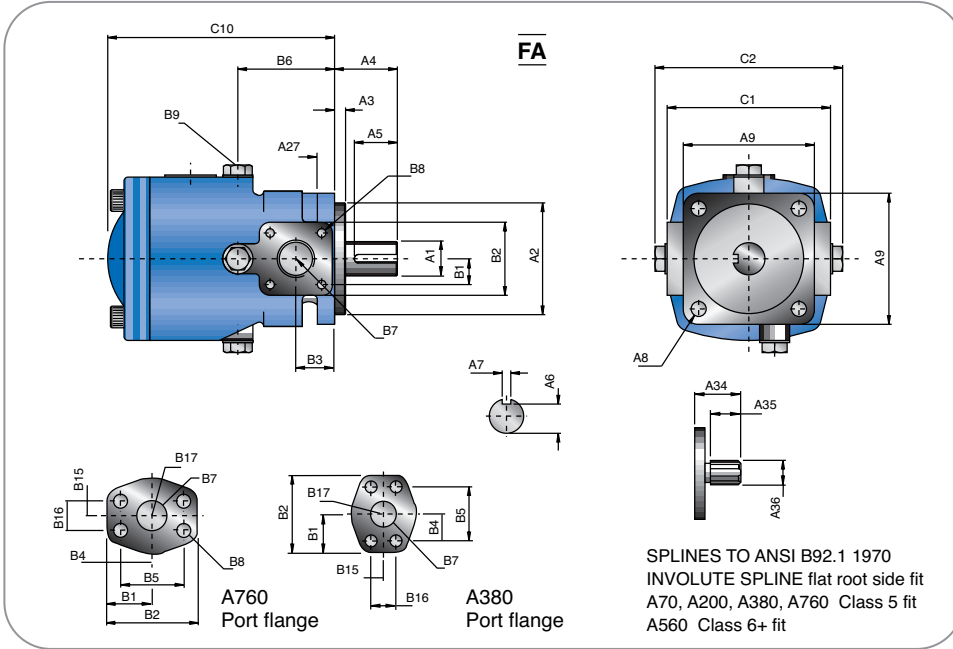
If in doubt - refer to ROTARY POWER

4. Check with the ROTATION - FLOW diagrams to ensure delivery from the correct port.
5. Initially, operate the pump at maximum available flow but with a low output pressure. Maintain low pressure until all entrained air in the circuit has been released. In closed circuit applications ensure the charge pressure is present whilst the main pump is running. For HFB and HFC fluids consult ROTARY POWER, as these fluids require special attention with regard to de-aeration, following the initial priming of the circuit.
6. Where pumps have pressure controls fitted, then associated circuit relief valve settings should be set at least 20 Bar above the Pressure setting of the pump.

	APPROXIMATE WEIGHTS (Kg)				
	A70	A200	A380	A560	A760
FA	5.0	10.9	27.7	35.0	64.1
MA	7.5	13.6	37.0	42.3	73.6
MB	-	-	37.0	42.3	73.6
MD	-	-	36.7	40.3	71.1
ME	-	-	35.0	38.6	69.4
SA	6.8	12.3	32.3	39.5	70.0
SE	13.3	19.1	39.9	47.8	79.4
AA	6.8	12.3	32.3	39.5	70.0
AB	6.8	12.3	32.3	39.5	70.0
PA	-	-	36.8	44.1	76.6
QA	-	-	38.1	45.4	81.6
RA	-	-	38.2	45.5	78.0
TA	-	-	39.5	46.8	83.0
PJ	-	-	36.8	44.1	76.6
QJ	-	-	38.1	45.4	81.6
RJ	-	-	38.2	45.5	78.0
TJ	10.0	16.8	39.5	46.8	83.0
LB	7.7	14.1	35.9	41.4	71.4
LG	7.7	14.1	35.9	41.4	71.4
LJ	7.7	14.1	35.9	41.4	71.4
LK	9.1	15.5	37.3	42.8	72.8
RU	-	-	38.2	45.5	78.0
RN	-	-	39.6	46.9	79.4
RQ	-	-	38.2	45.5	78.0
RS	-	-	39.6	46.9	79.4

AXIAL PISTON PUMPS AND MOTORS

INSTALLATION DETAILS FA MA MB MD ME LB LG LM

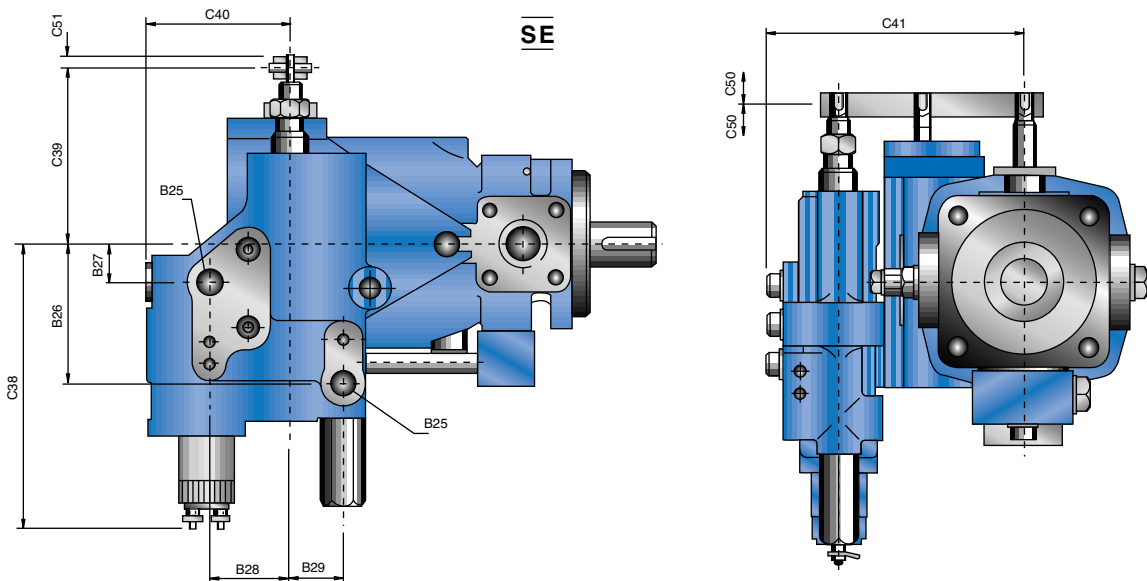
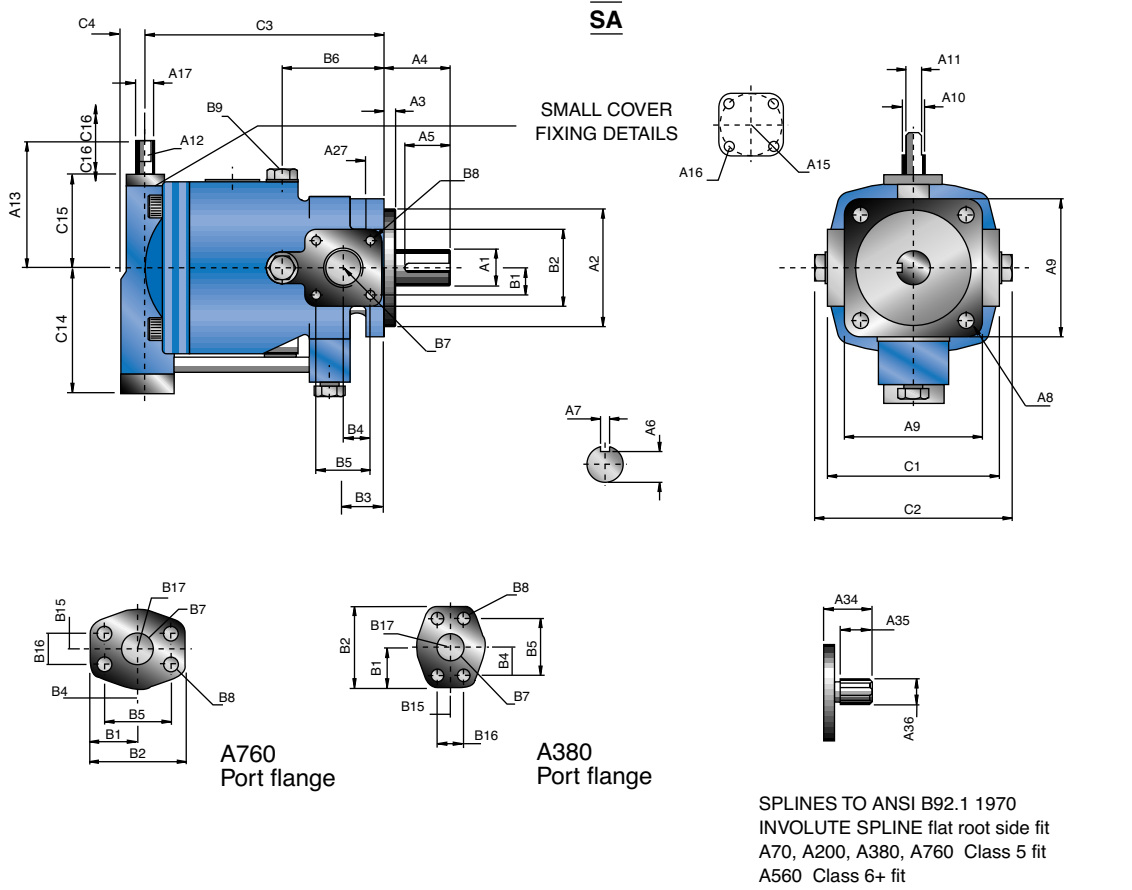


A X I A L P I S T O N P U M P S A N D M O T O R S

	A70	A200	A380	A560	A760
A1	17.46/17.45	25.40/25.39	25.40/25.37	34.93/34.91	38.085/38.075
A2	45.24/45.19	82.55/82.50	101.59/101.56	127.00/126.95	126.98/126.96
A3	8.26	8.13	9.40	12.45	12.45
A4	35.14	46.24	46.10	62.55	61.99
A5	25.40	31.75	31.75	44.45	44.45
A6	14.53/14.72	21.51/21.70	21.77/21.85	30.95/31.03	32.66/32.54
A7	4.76	6.36	6.36	9.51	9.51
A8	8.73/8.76 x 88.90 PCD	11.11/11.14 x 104.78 PCD	14.20/14.60 x 126.94 PCD	14.29/14.31 x 161.80 PCD	14.20/14.61 x 161.93 PCD
A9	82.55	96.84	117.48	146.05	142.88
A18	39.69	44.45	69.85	69.85	82.55
A19	38.10 PCD	44.45 PCD	73.03 PCD	73.03 PCD	76.20 PCD
A20	1/4 BSF	1/4 BSF	M8	3/8 BSF	M12
A21	0 BA	5/16 BSF	1/2 BSF	1/2 BSF	1/2 BSF
A22	6.35	7.94	12.70	12.70	12.70
A23	7/16 BSW	1/2 BSW	3/4 BSW	3/4 BSW	3/4 BSW
A24	11.11	12.70	17.46	17.46	17.50
A25	9.35	9.35	14.29	14.29	14.29
A26	28.68	30.26	42.94	42.94	42.94
A27	12.70	12.70	19.05	20.64	30.16
A29	9.51/9.49	9.51/9.49	12.68/12.66	12.68/12.66	
A30	M12	M12	M16	M16	
A31	15.13	15.13	20.24	20.24	
A32	27.08	27.08	35.24	35.24	
A34	33.60	40.77	46.10	54.60	62.12
A35	20.65	26.99	31.75	38.61	44.45
A36	15.456/15.329 9T - 16/32P	21.806/21.679 13T - 16/32P	25.400/24.841 15T - 16/32P	31.224/31.097 14T - 12/24P	38.100/37.440 17T - 12/24P
B1	22.23	26.99	34.93	34.93	57.15
B2	44.45	53.98	69.85	69.85	114.30
B3	26.99	28.58	46.02	38.10	68.28
B4	15.88	19.05	26.21	25.40	39.67
B5	31.75	38.10	52.40	50.80	79.38
B6	63.50	71.44	101.60	106.36	192.07
B7	1/2 BSP x 15.88 DP	3/4 BSP x 19.05 DP	23.88/25.40	1-1/4 BSP x 25.40 DP	36.58/38.10
B8	1/4 BSF x 11.11 DP	5/16 BSF x 15.88 DP	M10x22.23 DP	3/8 BSF x 15.88 DP	M16x36.51 DP
B9	1/4 BSP	1/4 BSP	3/8 BSP	1/2 BSP	3/4 BSP
B14	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
B15	-	-	13.08	-	18.24
B16	-	-	26.16	-	36.50
B17	-	-	29.37	-	47.63
C1	90.47	120.65	177.80	165.10	228.60
C2	108.98	139.15	196.30	206.54	244.64
C3	135.74	164.29	242.75	248.44	331.09
C4	19.84	22.23	34.93	34.93	41.28
C5	102.07	109.99	142.09	145.00	154.77
C6	61.91	61.91	61.91	61.91	78.00
C7	104.86	104.86	104.86	104.86	90.00
C10	124.63	168.31	247.65	255.60	341.43
C11	51.59	63.50	92.63	92.63	100.82
C12	102.44	125.41	196.84	196.84	233.98
C13	57.15	76.20	114.30	114.30	114.30
C21	86.54	103.17	159.54	159.54	198.79
C22	78.11	94.45	138.10	130.00	155.64
C29	97.68	114.30	168.26	168.26	205.45
C33	119.85	142.83	219.77	219.77	-
C34	154.91	169.95	232.60	232.60	-
C35	50.80	50.80	82.55	82.55	-
C43	121.54	121.54	121.54	102.50	-
C44	100.06	115.09	179.69	179.69	-

AXIAL PISTON PUMPS AND MOTORS

INSTALLATION DETAILS SA SE



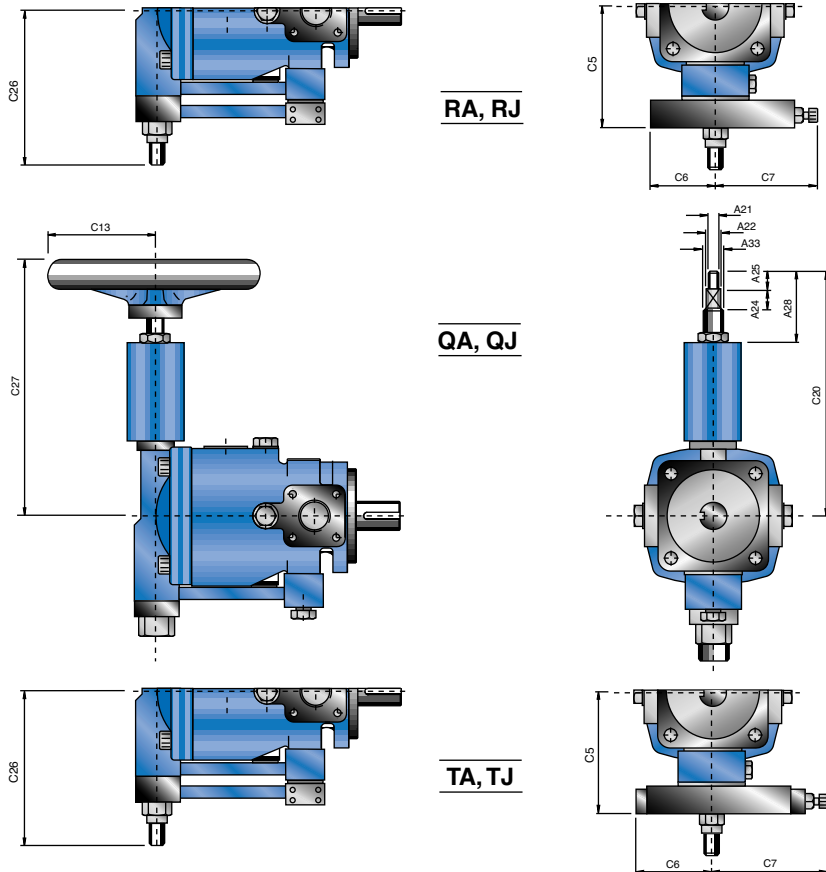
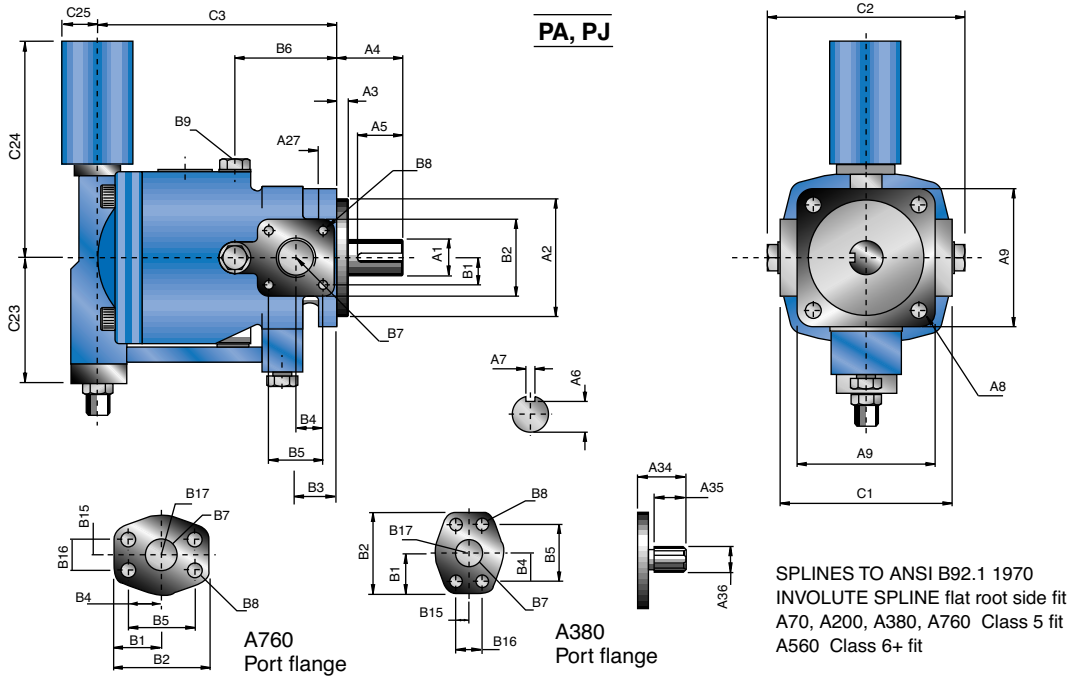


AXIAL PISTON PUMPS AND MOTORS

	A70	A200	A380	A560	A760
A1	17.46/17.45	25.40/25.39	25.40/25.37	34.93/34.91	38.085/38.075
A2	45.24/45.19	82.55/82.50	101.59/101.56	127.00/126.95	126.98/126.96
A3	8.26	8.13	9.40	12.45	12.45
A4	35.14	46.24	46.10	62.55	61.99
A5	25.40	31.75	31.75	44.45	44.45
A6	14.53/14.72	21.51/21.70	21.77/21.85	30.95/31.03	32.66/32.54
A7	4.76	6.36	6.36	9.51	9.51
A8	8.73/8.76 x 88.90 PCD	11.11/11.14 x 104.78 PCD	14.20/14.60 x 126.94 PCD	14.29/14.31 x 161.80 PCD	14.20/14.61 x 161.93 PCD
A9	82.55	96.84	117.48	146.05	142.88
A10	11.08/11.10	12.67/12.68	19.03/19.01	19.03/19.01	19.38/19.96
A11	4.90	4.72	6.48	6.48	5.97
A12	3.97/3.99	4.76/4.78	6.35/6.37	6.35/6.37	6.35/6.37
A13	88.84	107.15	155.17	155.17	171.13
A15	28.58 PCD	30.15 PCD	49.20 PCD	49.20 PCD	53.98 PCD
A16	2 BA	2 BA	M6	1/4 BSF	M8
A17	9.40/9.65	11.05/11.10	17.08/17.84	17.08/17.84	17.08/17.84
A27	12.70	12.70	19.05	20.64	30.16
A34	33.60	40.77	46.10	54.60	62.12
A35	20.65	26.99	31.75	38.61	44.45
A36	15.456/15.329 9T - 16/32P	21.806/21.679 13T - 16/32P	25.400/24.841 15T - 16/32P	31.224/31.097 14T - 12/24P	38.100/37.440 17T - 12/24P
B1	22.23	26.99	34.93	34.93	57.15
B2	44.45	53.98	69.85	69.85	114.30
B3	26.99	28.58	46.02	38.10	68.28
B4	15.88	19.05	26.21	25.40	39.67
B5	31.75	38.10	52.40	50.80	79.38
B6	63.50	71.44	101.60	106.36	192.07
B7	1/2 BSP x 15.88 DP	3/4 BSP x 19.05 DP	23.88/25.40	1-1/4 BSP x 25.40 DP	36.58/38.10
B8	1/4 BSF x 11.11 DP	5/16 BSF x 15.88 DP	M10 x 22.23 DP	3/8 BSF x 15.88 DP	M16 x 36.51 DP
B9	1/4 BSP	1/4 BSP	3/8 BSP	1/2 BSP	3/4 BSP
B11	-	90.49	134.92	134.92	149.23
B12	-	30.16	53.98	53.98	53.98
B13	-	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
B15	-	-	13.08	-	18.24
B16	-	-	26.16	-	36.50
B17	-	-	29.37	-	47.63
B25	1/4 - 18 NPT	1/4 - 18 NPT	1/4 - 18 NPT	1/4 - 18 NPT	-
B26	100.00	88.90	44.45	44.45	-
B27	36.50	25.40	19.05	19.05	-
B28	41.15	41.15	41.15	41.15	-
B29	29.97	29.97	29.97	29.97	-
C1	90.47	120.65	177.80	165.10	228.60
C2	108.98	139.15	196.30	206.54	244.64
C3	135.74	164.29	242.75	248.44	331.09
C4	19.84	22.23	34.93	34.93	41.28
C14	75.43	91.85	132.55	132.55	170.22
C15	51.59	65.09	93.66	93.66	104.79
C16	11.89	15.88	23.01	23.01	29.72
C36	-	224.64	342.89	342.89	357.19
C37	-	31.75	46.04	46.04	46.04
C38	155.96	181.36	136.91	136.91	-
C39	84.07	99.62	145.16	145.16	-
C40	80.77	80.77	80.77	80.77	-
C41	129.06	144.19	171.13	177.80	-
C50	12.70	12.70	12.70	12.70	12.70
C51	6.35	6.35	7.92	5.54	-

AXIAL PISTON PUMPS AND MOTORS

INSTALLATION DETAILS PA QA RA TA PJ QJ RJ TJ



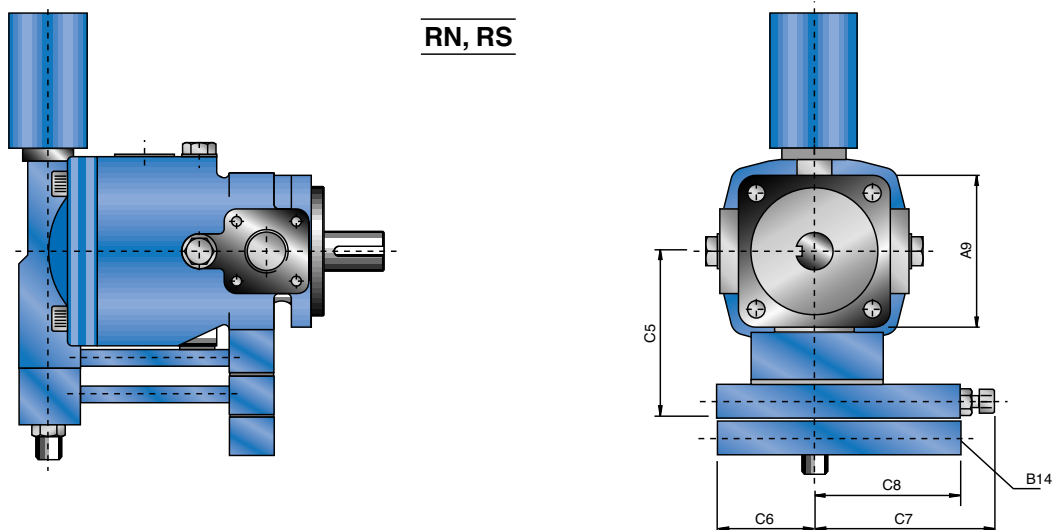
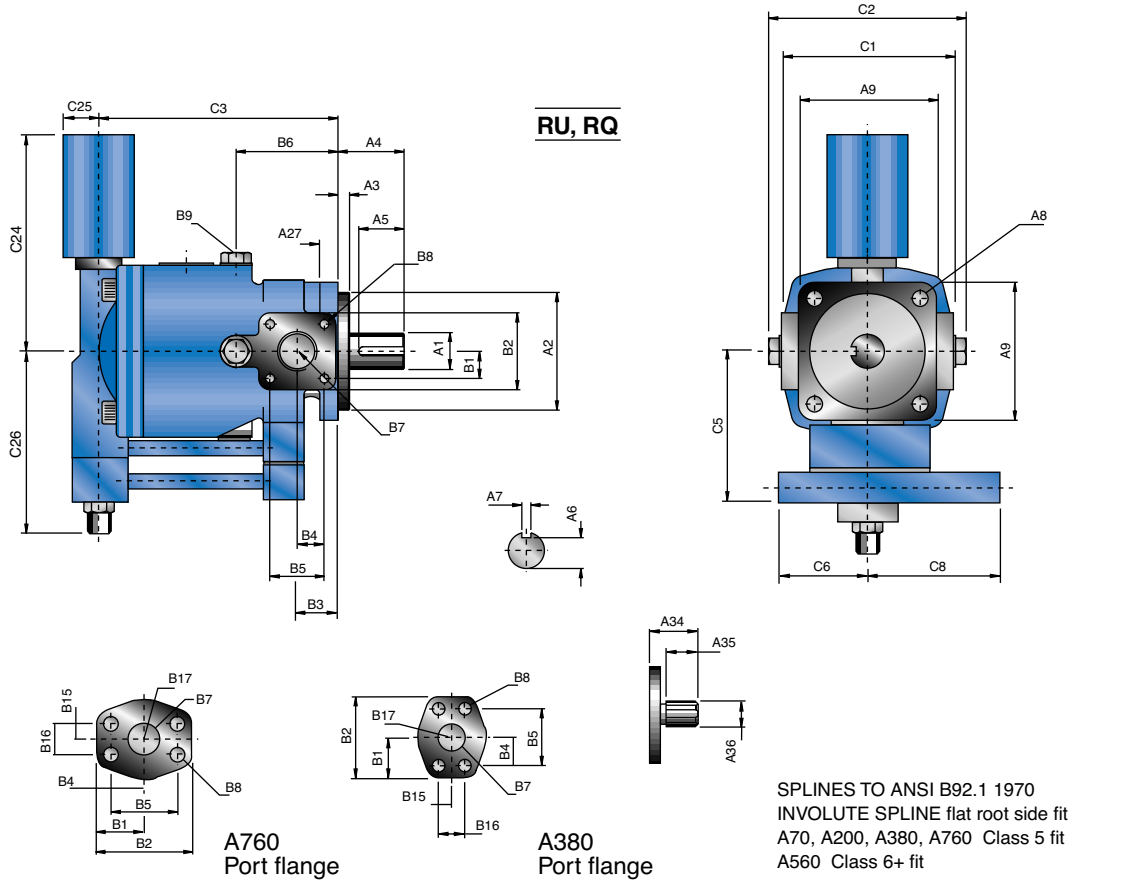


AXIAL PISTON PUMPS AND MOTORS

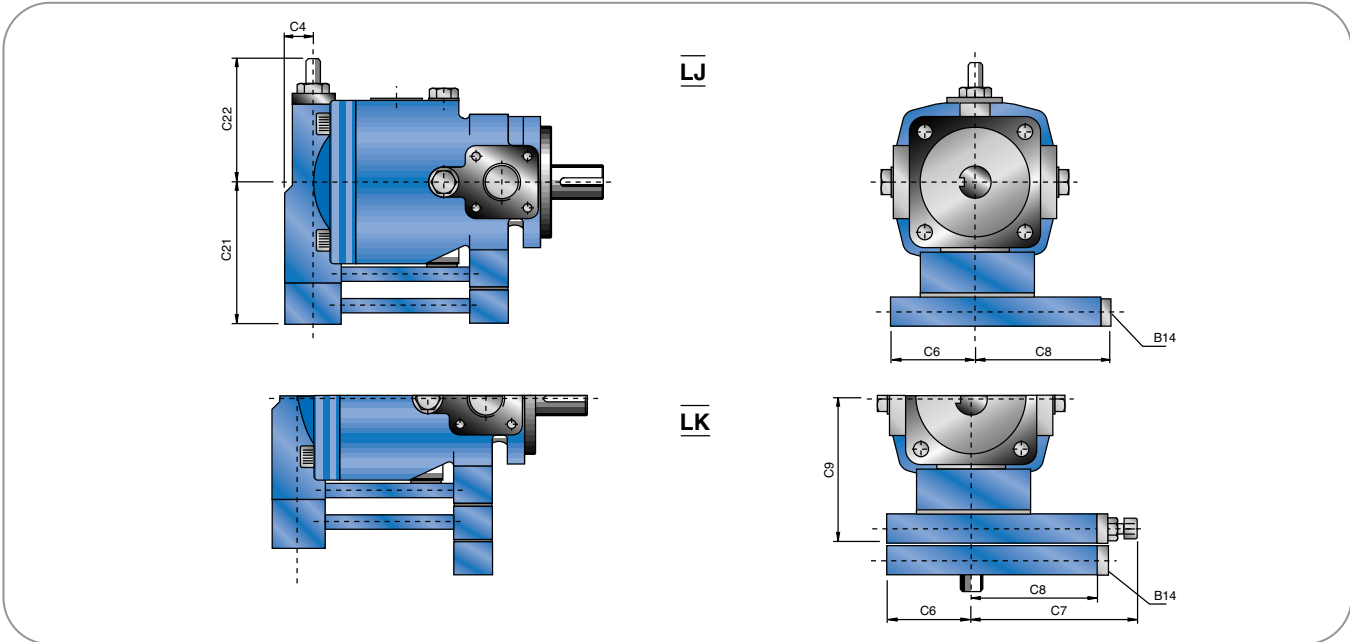
	A380	A560	A760
A1	25.40/25.37	34.93/34.91	38.085/38.075
A2	101.59/101.56	127.00/126.95	126.98/126.96
A3	9.40	12.45	12.45
A4	46.10	62.55	61.99
A5	31.75	44.45	44.45
A6	21.77/21.85	30.95/31.03	32.66/32.54
A7	6.36	9.51	9.51
A8	14.20/14.60 x 126.94 PCD	14.29/14.31 x 161.80 PCD	14.20/14.61 x 161.93 PCD
A9	117.48	146.05	142.88
A21	1/2 BSF	1/2 BSF	1/2 BSF
A22	12.70	12.70	12.70
A23	3/4 BSW	3/4 BSW	3/4 BSW
A24	17.46	17.46	17.50
A25	14.29	14.29	14.29
A27	19.05	20.64	30.16
A28	87.33	87.33	113.47
A33	M20	M20	M20
A34	46.10	54.60	62.12
A35	31.75	38.61	44.45
A36	25.400/24.841 15T - 16/32P	31.224/31.097 14T - 12/24P	38.100/37.440 17T - 12/24P
B1	34.93	34.93	57.15
B2	69.85	69.85	114.30
B3	46.02	38.10	68.28
B4	26.21	25.40	39.67
B5	52.40	50.80	79.38
B6	101.60	106.36	192.07
B7	23.88/25.40	1-1/4 BSP x 25.40 DP	36.58/38.10
B8	M10 x 22.23 DP	3/8 BSF x 15.88 DP	M16 x 36.51 DP
B9	3/8 BSP	1/2 BSP	3/4 BSP
B15	13.08	-	18.24
B16	26.16	-	36.50
B17	29.37	-	47.63
C1	177.80	165.10	228.60
C2	196.30	206.54	244.64
C3	242.75	248.44	331.09
C5	142.09	134.61	154.77
C6	61.91	61.91	78.00
C7	104.86	104.86	90.00
C13	114.30	114.30	114.30
C20	74.63	74.63	91.25
C23	196.85	196.85	253.78
C24	268.29	268.29	314.85
C25	47.63	47.63	53.98
C26	196.85	196.85	253.78
C27	361.95	361.95	418.27

AXIAL PISTON PUMPS AND MOTORS

INSTALLATION DETAILS RU RN RQ RS LJ LK



AXIAL PISTON PUMPS AND MOTORS



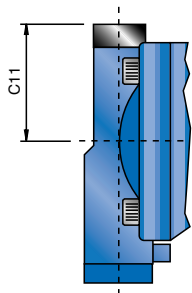
	A70	A200	A380	A560	A760
A1	17.46/17.45	25.40/25.39	25.40/25.37	34.93/34.91	38.085/38.075
A2	45.24/45.19	82.55/82.50	101.59/101.56	127.00/126.95	126.98/126.96
A3	8.26	8.13	9.40	12.45	12.45
A4	35.14	46.24	46.10	62.55	61.99
A5	25.40	31.75	31.75	44.45	44.45
A6	14.53/14.72	21.51/21.70	21.77/21.85	30.95/31.03	32.66/32.54
A7	4.76	6.36	6.36	9.51	9.51
A8	8.73/8.76 x 88.90 PCD	11.11/11.14 x 104.78 PCD	14.20/14.60 x 126.94 PCD	14.29/14.31 x 161.80 PCD	14.20/14.61 x 161.93 PCD
A9	82.55	96.84	117.48	146.05	142.88
A27	12.70	12.70	19.05	20.64	30.16
A34	33.60	40.77	46.10	54.60	62.12
A35	20.65	26.99	31.75	38.61	44.45
A36	15.456/15.329 9T - 16/32P	21.806/21.679 13T - 16/32P	25.400/24.841 15T - 16/32P	31.224/31.097 14T - 12/24P	38.100/37.440 17T - 12/24P
B1	22.23	26.99	34.93	34.93	57.15
B2	44.45	53.98	69.85	69.85	114.30
B3	26.99	28.58	46.02	38.10	68.28
B4	15.88	19.05	26.21	25.40	39.67
B5	31.75	38.10	52.40	50.80	79.38
B6	63.50	71.44	101.60	106.36	192.07
B7	1/2 BSP x 15.88 DP	3/4 BSP x 19.05 DP	23.88/25.40	1-1/4 BSP x 25.40 DP	36.58/38.10
B8	1/4 BSF x 11.11 DP	5/16 BSF x 15.88 DP	M10 x 22.23 DP	3/8 BSF x 15.88 DP	M16 x 36.51 DP
B9	1/4 BSP	1/4 BSP	3/8 BSP	1/2 BSP	3/4 BSP
B14	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
B15	-	-	13.08	-	18.24
B16	-	-	26.16	-	36.50
B17	-	-	29.37	-	47.63
C1	90.47	120.65	177.80	165.10	228.60
C2	108.98	139.15	196.30	206.54	244.64
C3	135.74	164.29	242.75	248.44	331.09
C5	102.07	109.99	142.09	134.61	154.77
C6	61.91	61.91	61.91	61.91	78.00
C7	104.86	104.86	104.86	104.86	90.00
C8	82.55	82.55	82.55	82.55	66.60
C9	124.26	138.56	170.66	163.19	182.55
C21	86.54	103.17	159.54	159.54	198.79
C22	78.11	94.45	138.10	138.10	155.64
C24	158.75	192.00	268.29	268.29	314.85
C25	26.99	31.75	47.63	47.63	53.98
C26	121.44	135.00	196.85	196.85	253.78

AXIAL PISTON PUMPS AND MOTORS

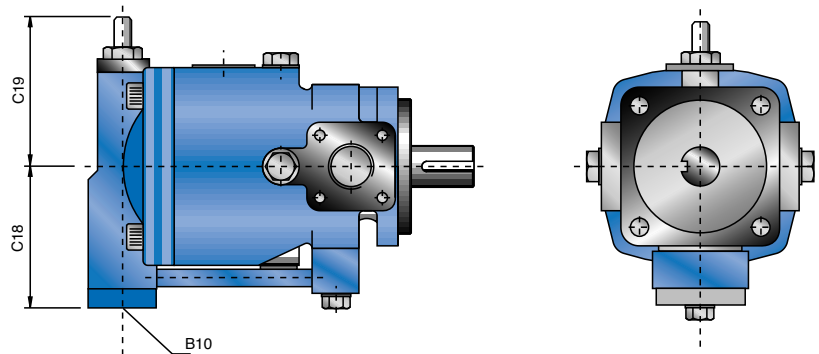
INSTALLATION DETAILS AA AB

	A70	A200	A380	A560	A760
A1	17.46/17.45	25.40/25.39	25.40/25.37	34.93/34.91	38.085/38.075
A2	45.24/45.19	82.55/82.50	101.59/101.56	127.00/126.95	126.98/126.96
A3	8.26	8.13	9.40	12.45	12.45
A4	35.14	46.24	46.10	62.55	61.99
A5	25.40	31.75	31.75	44.45	44.45
A6	14.53/14.72	21.51/21.70	21.77/21.85	30.95/31.03	32.66/32.54
A7	4.76	6.36	6.36	9.51	9.51
A8	8.73/8.76 x 88.90 PCD	11.11/11.14 x 104.78 PCD	14.20/14.60 x 126.94 PCD	14.29/14.31 x 161.80 PCD	14.20/14.61 x 161.93 PCD
A9	82.55	96.84	117.48	146.05	142.88
A27	12.70	12.70	19.05	20.64	30.16
A34	33.60	40.77	46.10	54.60	62.12
A35	20.65	26.99	31.75	38.61	44.45
A36	15.456/15.329 9T - 16/32P	21.806/21.679 13T - 16/32P	25.400/24.841 15T - 16/32P	31.224/31.097 14T - 12/24P	38.100/37.440 17T - 12/24P
B1	22.23	26.99	34.93	34.93	57.15
B2	44.45	53.98	69.85	69.85	114.30
B3	26.99	28.58	46.02	38.10	68.28
B4	15.88	19.05	26.21	25.40	39.67
B5	31.75	38.10	52.40	50.80	79.38
B6	63.50	71.44	101.60	106.36	192.07
B7	1/2 BSP x 15.88 DP	3/4 BSP x 19.05 DP	23.88/25.40	1-1/4 BSP x 25.40 DP	36.58/38.10
B8	1/4 BSF x 11.11 DP	5/16 BSP x 15.88 DP	M10 x 22.23 DP	3/8 BSF x 15.88 DP	M16 x 36.51 DP
B10	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
B15	-	-	13.08	-	18.24
B16	-	-	26.16	-	36.50
B17	-	-	29.37	-	47.63
C1	90.47	120.65	177.80	165.10	228.60
C2	108.98	139.15	196.30	206.54	244.64
C3	135.74	164.29	242.75	248.44	331.09
C5	102.07	109.99	142.09	134.61	154.77
C6	61.91	61.91	61.91	61.91	78.00
C11	51.59	63.50	92.63	92.63	100.82
C18	77.81	92.06	-	134.14	-
C19	78.11	94.45	-	138.10	-
C21	86.54	103.17	159.54	159.54	198.79
C22	78.11	94.45	138.10	138.10	155.64
C30	114.82	114.82	114.82	114.82	-
C31	113.82	128.91	-	157.48	-
C32	73.90	73.84	86.41	86.41	-

AB



AA





A X I A L P I S T O N P U M P S A N D M O T O R S

OPTIONS AND ACCESSORIES

SEAL MATERIAL

Nitrile is supplied as standard.
Viton is fitted for :

- (a) High temperature applications.
- (b) Fluid compatibility reasons.
- (c) Chemical metering applications.

Ethylene Propylene is usually fitted for use with SKYDROL fluids.

INTERNAL / EXTERNAL DRAIN

External case drain is supplied as standard and should be the Engineers preferred choice. For those applications where an internal drain is a necessity, this is accommodated by the use of a DRAIN PLATE which connects case drain directly to the low pressure port (suction on a pump, return on a motor). Incorrect installation which pressurises this port will also pressurise the pump/motor case which could potentially cause serious mechanical damage. For this reason it is essential that the ROTATIONAL - FLOW diagrams are consulted. (Contact ROTARY POWER).

INDIRECT DRIVE ADAPTORS

The ROTARY POWER pump/motor design does not permit high end loads or side loads on the shaft. The limits are given in the section 'INSTALLATION and MAINTENANCE'. (Contact ROTARY POWER).

SUCTION PORT ADAPTORS

The A380 and A760 have metric SAE flanges and it is recommended that standard fittings be used which conform to good hydraulic practice in terms of the restriction they present. For the A70, A200 & A560 a ROTARY POWER suction port adaptor should be employed to avoid the 'local' restriction of a screwed fitting .

Suction Port Adaptor Kit - Part Numbers	
A70	P07CC30N1
A200	P20CC30N1
A560	P56CC30N1

SHAFT SEAL SUPPORT

Standard supply is an unsupported shaft seal in NITRILE which is capable of withstanding a case pressure of 0.7 BAR (10 PSI). If case pressures in excess of this and upto 4 BAR (60 PSI) are anticipated, then the shaft seal must be supported. It is important that a shaft seal support is ONLY fitted excessive case pressures are anticipated, as there exists a possibility that the support could lift the seal lip at very low case pressures causing shaft seal leakage.

REMOTE POSITIONING OF VALVE BLOCKS

To achieve remote control of valve block functions, or for reasons of servicing, many of the valve blocks may be remotely positioned. Please consult ROTARY POWER sales staff for advice in this matter.

FLOW STOPS

Fixed and adjustable displacement stops are available to limit the swash piston movement in either of the operating quadrants P or Q. Table 1 summarises the availability of the stops and table 2, the adjustable stops ranges.

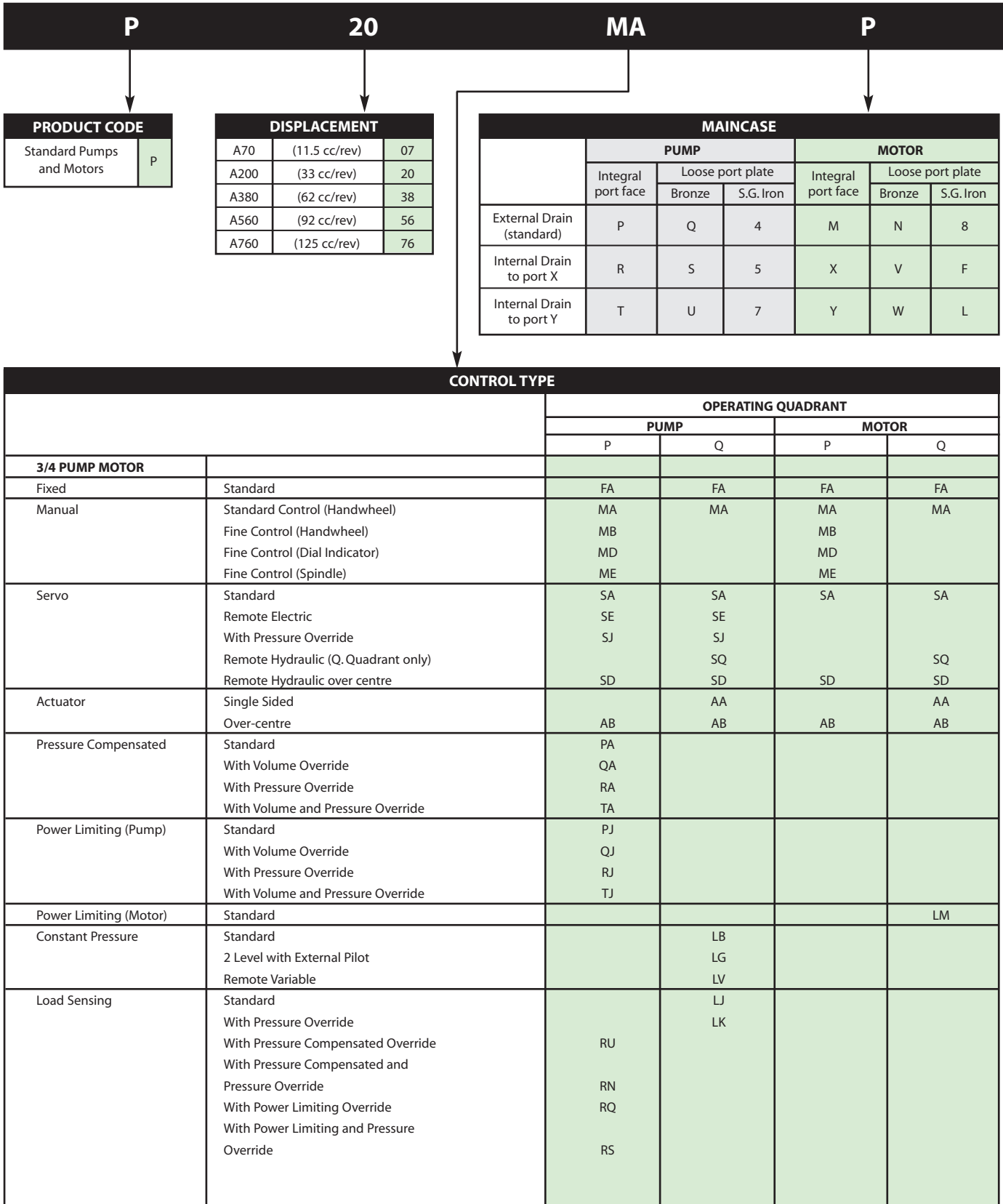
CONTROL TYPE	FIXED				ADJUSTABLE			
	Max		Min		Max		Min	
	P	Q	P	Q	P	Q	P	Q
Operating Quadrant								
MA	*	*	*	*		* SEE 1		
MB MD ME	*		*					
SA SE SH	*	*	*	*		* SEE 2		
CV AA LB LG LJ LK		*		*		* SEE 3		STD SEE 4
AB	*	*			* SEE 5	* SEE 6		
PA RA PJ RJ RU RN RQ RS	*		*				STD SEE 7	
QA QJ TA TJ	*		*		STD SEE 8		STD SEE 7	
LM		*		*		* SEE 6		STD SEE 9

STD : STANDARD * : OPTIONAL

	1	2	3	4	5	6	7	8	9
A70	-	100 - 29.5	100 - 26.5	0 - 21.5	100 - 20	100 - 26.5	0 - 30	100 - 34 8.4/TURN	-
A200	-	100 - 29.5	100 - 23.5	0 - 5	100 - 23	100 - 24	0 - 26.5	100 - 22 7.3/TURN	50 - 100
A380	-	100 - 28.5	97.5 - 19	0 - 49.5	97.5 - 18.5	95 - 18.5	0 - 8.5	100 - 35 6.9/TURN	-
A560	100 - 15	100 - 28.5	97.5 - 19	0 - 49.5	97.5 - 18.5	95 - 18.5	0 - 8.5	100 - 35 6.9/TURN	-
A760	-	100 - 0	100 - 0	0 - 82	-	-	0 - 50	89 - 0 8.3/TURN	-

AXIAL PISTON PUMPS AND MOTORS

PUMP AND MOTOR ORDERING CODE





AXIAL PISTON PUMPS AND MOTORS

O N S O

ROTOR & SHAFT SEAL ARRANGEMENT					
ROTOR SHAFT		SINGLE SHAFT SEAL		DOUBLE SHAFT SEAL	
		Max. Case Pressure		Max. Case Pressure	
		0.7 BAR	4 BAR	-	4 BAR
Parallel	A380, A760	G	H	-	K
	Keyed Shaft	A70, A200, A560	O	1	3
Splined Shaft	A380, A760	S	T	-	V
	A70, A200, A560	5	6	-	8

SEAL MATERIAL	
Nitrile (Standard)	N
Viton	V
Ethylene Propylene	E
Nitrile Plus Loctite Gasket	L
Viton plus Loctite Gasket	G

ROTATION & OPERATING QUADRANT	USE OPERATING QUADRANT INFORMATION GIVEN IN "CONTROL TYPE" ON FACING PAGE	Non-Variable		For FA, CA, CA + Two Control Pads, CA + Internal Drain to X, CA + Internal Drain to Y, FA + Internal Drain to Y (Pump), X (Motor), FA + Internal Drain to X (Pump), Y (Motor)															
		Dual Rotation	0																
CONTROL & OPERATING QUADRANT RANGE	P Quadrant Max. Angle, Neutral, Q Quadrant Max. Angle	Rotation	1																
		Inapplicable	2																
			3																
			4																
		Rotation A (ACW)	C																
		Rotation B (CW)	L																
		Variable	Rotation A (ACW)		A	B	C	D	E	F	G	H							
			Rotation B (CW)		J	K	L	M	N	P	Q	R							
			Dual Rotation		S	T	U	V	W	X	Y	Z							
		ADDITIONAL FLOWSTOPS	No Additional Stops	O															
Fixed (one or both)																			
Adjustable (one or both)																			
Adjustable Max, Fixed Min																			
Adjustable Min, Fixed Max																			
Fixed Min, (Fxd + Adj) Max																			
(Fixed + Adj) Max																			
Adj P Max, Fixed Q Max																			
Adj Q Max, Fixed P Max																			
(Fxd + Adj) P Max, Fxd Q Max																			
(Fxd + Adj) P Max, Adj Q Max																			
(Fxd + Adj) Q Max, Fxd P Max																			
(Fxd + Adj) Q Max, Adj P Max																			
(Fxd + Adj) Q Max, (Fxd + Adj) P Max																			
	A	For CA, FA Rotation A (ACW)																	
	B	For CA, FA Rotation B (CW)																	

UK

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