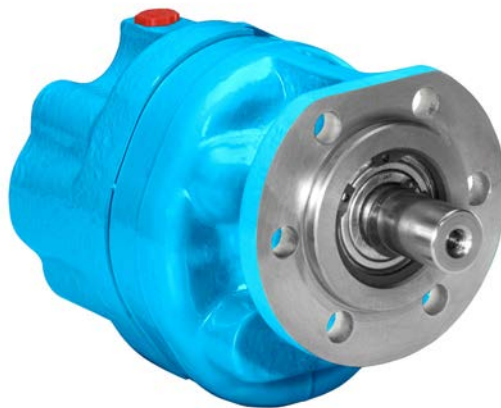


Fluidea

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Hydraulic gear pumps & motors 1600 1.01.01

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Operating parameters

Maximum outlet pressure:	See following pages
Inlet pressure:	See below*
Speed:	See following pages
Fluid temperature:	Minimum at start up -40°C Maximum continuous +80°C Maximum intermittent +100°C
Fluid viscosity:	Minimum at start up 2000 cSt Maximum continuous 250 cSt Minimum continuous 10 cSt Optimum 15-25 cSt
Contamination class:	ISO 4406 21/16/13 NAS 1638 9
Fluid speed:	Maximum (inlet) 2.5 m/sec Optimum (inlet) 1.5 m/sec
Fluids:	Hydraulic mineral oils HL e HLP (DIN 51524)
Rotation:	Clockwise (C), Counter-clockwise (A) and reversible (D), when available, view from shaft end

For characteristic diagrams (pressure - flow - efficiency - maximum power) and driving shaft loads, please consult the general technical data sheet available on our website.

* INLET CONDITIONS:

It's extremely important that pumps are installed in a way they can always be filled with fluid in any working conditions.

Pump inlet ports are designed to allow the complete filling, however it is recommended to observe the following advices in order to optimize pump performances and lifecycle:

- In suction lines, use large diameter pipes and fittings avoiding bending and long sections to minimize pressure losses; ensure that fluid speed doesn't exceed the values shown above.
- Never run pumps dry; ensure that all the valves on the inlet ports are opened.
- If needed, fill the inlet line with fluid and ensure that there are no bubbles.
- Special care is needed for fluids with high speed or high viscosity. As general rule, pressure at the inlet line should not be less than 0,8 bar absolute with viscosity of 23 cSt

Technical features

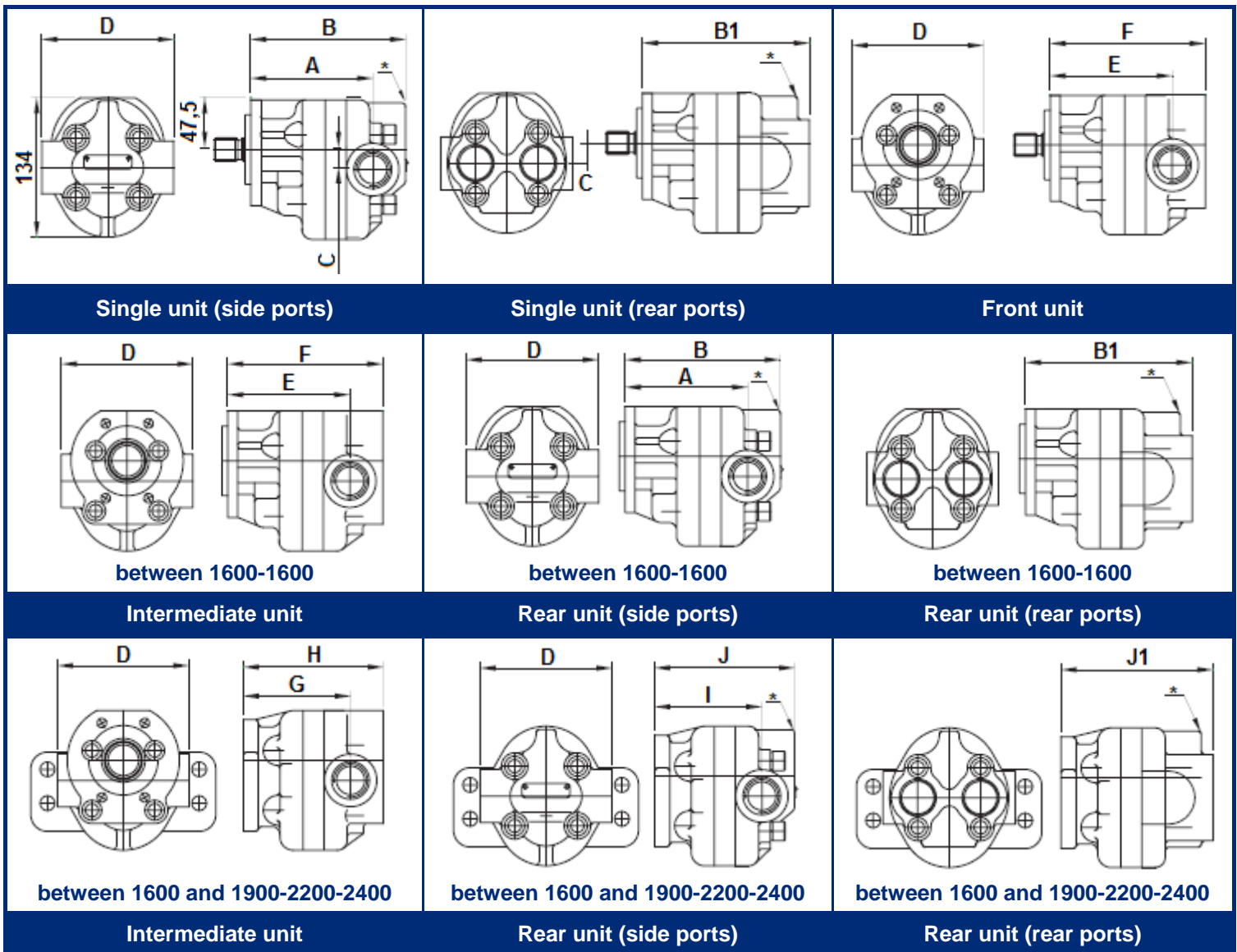
	Model	1604	1606	1608	1610	1613	1617
	Displacement (cc/rev)	12,4	14,6	19,4	24,3	31,6	41,3
	Working pressure (MPa)	17	17	17	17	15,5	15,5
	Maximum speed (RPM)	2700 pumps 3000 motors					
	Maximum torque Motor (Nm)	31	36	48	60	72	84

Seal configurations

A Applications with radial load	B Applications without load	E Applications with high axial load and low radial load.
C Applications without loads, with external drain hole to prevent the mixing of the gear box lubrication oil and the hydraulic fluid.	A2P High pressure seal for applications with low radial load and without check valves.	C2P High pressure seal for applications without load and without check valves.
	A2PV High pressure seal for applications with low radial load and with check valves.	C2PV High pressure seal for applications without load and with check valves.

* Standard mounting flange surface.

Overall dimensions



Model	A	B	B1	C	Weight [kg]	E	F	Weight [kg]	G	H	Weight [kg]	I	J	J1	Weight [kg]	D
1604	112	144	155	19,3	7	112	144	7	98	130	7	98	130	141	7	127
1606	112	144	155	19,3	7	112	144	7	98	130	7	98	130	141	7	127
1608	117	149	160	19,3	8	117	149	8	103	135	8	103	135	146	8	127
1610	122	154	165	19,3	8	122	154	8	108	140	8	108	140	151	8	127
1613	130	162	173	19,3	9	130	162	9	116	148	9	116	148	159	9	127
1617	140	172	183	19,3	9	140	172	9	126	158	9	126	158	169	9	127

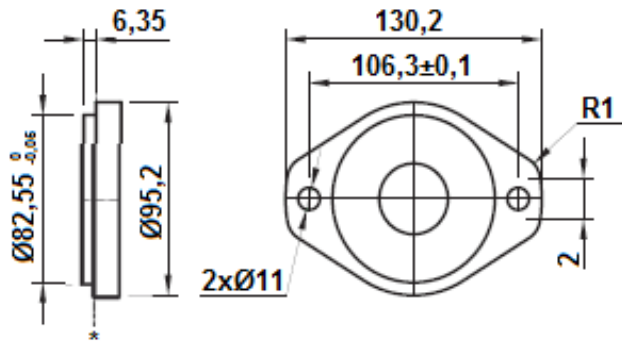
Shafts

Spline SAE A 5/8"	Spline SAE B 7/8" L=33,3 mm	Spline SAE B 7/8" L=27 mm
A	B	V
Solid Ø20 with key	Solid Ø7/8" with key	
AD	F	

* Standard mounting flange surface.

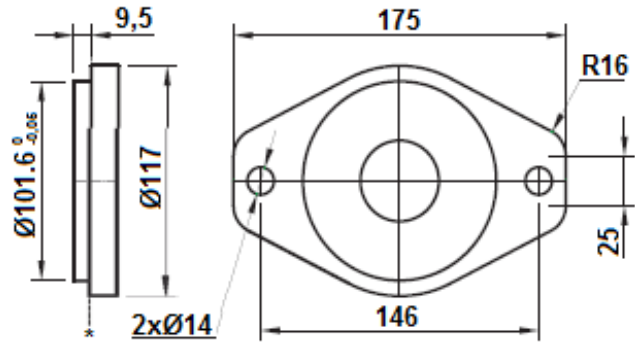
OPTION	SIZE	SIDE FIT	DIAMETRAL PITCH	ANGLE OF PRESSURE	NUMBER OF TEETH	EXTERNAL DIAMETER
B e V	SAE B 7/8"	Flat root	16/32	30°	13	21,79/21,66
A	SAE A 5/8"	Flat root	16/32	30°	9	15,44/15,30

Mounting flanges



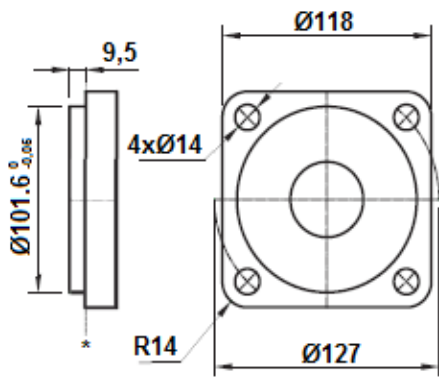
SAE A 2 HOLES

1



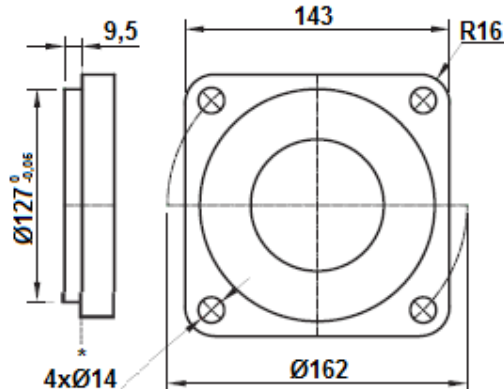
SAE B 2 HOLES

2



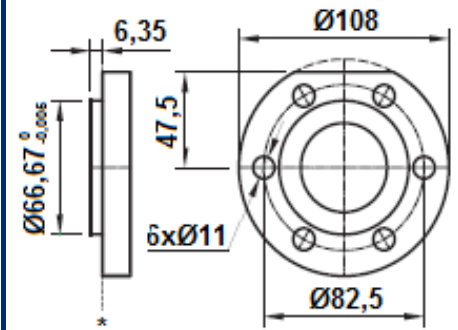
SAE B 4 HOLES

3



SAE C 4 HOLES

5

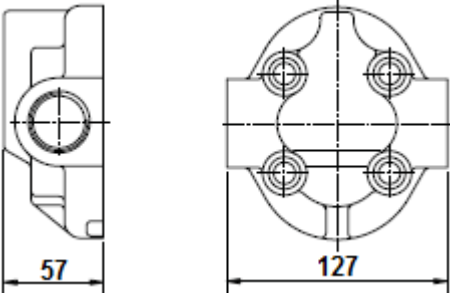
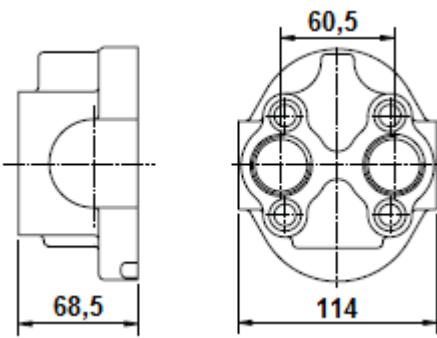
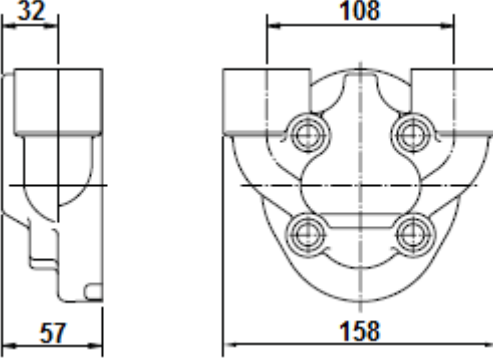


6 HOLES ROUND ADAPTER

8

* Standard mounting flange surface.

Ports

		
SIDE PORTS		
	INLET	OUTLET
C5	1" BSP O-ring	1" BSP O-ring
C9	1-5/16" UNF SAE	1-5/16" UNF SAE
C21	M33x1,5	M33x1,5
C23	M33x2 O-ring	M33x2 O-ring
		
REAR PORTS		
	INLET	OUTLET
E5	1" BSP O-ring	1" BSP O-ring
E9	1-5/16" UNF SAE	1-5/16" UNF SAE
E21	M33x1,5	M33x1,5
E23	M33x2 O-ring	M33x2 O-ring
		
TOP PORTS		
	INLET	OUTLET
L32	1" BSP O-ring	1" BSP O-ring

Model coding

P	2	C	1604	B	8	C23	C
---	---	---	------	---	---	-----	---

Rotation

- A = Counter-clockwise
- C = Clockwise
- D = Bidirectional

Ports (page 8):

- C5 = Side ports 1" BSPP O-ring
- E5 = Rear ports 1" BSPP O-ring
- C9 = Side ports 1-5/16" UNF-SAE
- E9 = Rear ports 1-5/16" UNF-SAE
- C21 = Side ports M33x1,5
- E21 = Rear ports M33x1,5
- C23 = Side ports M33x2 O-ring
- E23 = Rear ports M33x2 O-ring
- L32 = Top ports 1" BSPP O-ring

Mounting flanges (page 7):

- 1 = "SAE A" 2 holes
- 2 = "SAE B" 2 holes
- 3 = "SAE B" 4 holes
- 5 = "SAE C" 4 holes
- 8 = 6 holes round adapter

Shafts (page 6):

- A = Spline SAE A 5/8"
- B = Spline SAE B 7/8"L=33,3 mm
- V = Spline SAE B 7/8"L=27 mm
- AD = Solid Ø20 with key
- F = Solid Ø7/8" with key

Models (page 5):

1604 - 1606 - 1608 - 1610 - 1613 - 1617

Seals (page 4):

- A = Applications with radial load
- B = Applications with radial load
- C = Applications without loads, with external drain hole to prevent the mixing of the gear box lubrication oil and the hydraulic fluid.
- E = Applications with high axial load and low radial load
- A2P = High pressure seal for applications with low radial load and without check valves.
- A2PV = High pressure seal for applications with low radial load and with check valves.
- C2P = High pressure seal for applications without load and without check valves.
- C2PV = High pressure seal for applications without load and without check valves

Series:

- 2 = Model 2

Pump/Motor:

- P = Pump
- M = Motor

Design and production of remote control components & systems

The comprehensive range includes the following manufactured and marketed equipment:

- Hydraulic pumps and motors
- Directional control valves
- Proportional pressure reducing valves
- Hydraulic, pneumatic and electric joysticks
- Radio controls and electronic controllers
- Control pads, dashboards and armrests
- Ergonomic, cylindrical and palm grips
- Electro-hydraulics pilot blocks
- Hydraulic filters
- heat exchangers and cooling systems
- Fluid monitoring and diagnostic equipment
- Bell housings, driving flanges & elastic couplings



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