

F1 Pump

F1-ISO



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F1-25 to -101, ISO

Specifications

Frame size F1-	25	41	51	61	81	101
Displacement [cm ³ /rev]	25.6	40.9	51.1	59.5	81.6	102.9
Max flow ¹⁾ [l/min]	78	104	125	143	180	216
Max operating pressure [bar]	400	400	400	400	400	400
Mass moment of inertia J [kgm ²]	0.00274	0.00266	0.00261	0.00257	0.00532	0.00524
Shaft speed [rpm]						
- short circuited pump (low press.)	3100	2700	2700	2700	2300	2300
- max selfpriming speed ²⁾	3050	2550	2450	2400	2200	2100
Torque ¹⁾ [Nm]	163	260	324	378	518	653
Max Input power ³⁾ [kW]	45	61	73	83	105	126
Weight [kg]	8.5	8.5	8.5	8.5	12.5	12.5

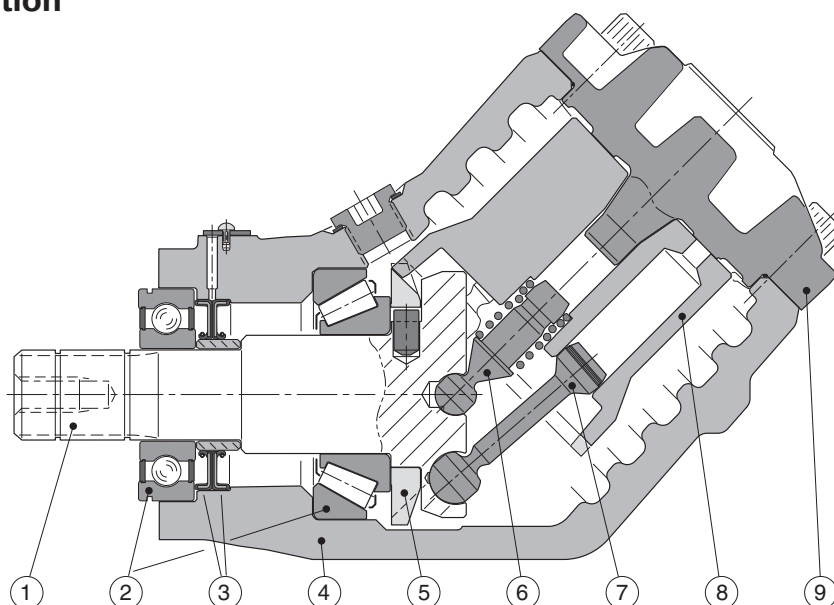
1) Theoretical values

2) Valid at an inlet pressure of 1.0 bar (abs.) when operating on mineral oil at a viscosity of 30 mm²/s (cSt).

3) Max 6 seconds in any one minute.

NOTE: For noise level information, contact Parker Hannifin

Pump cross section

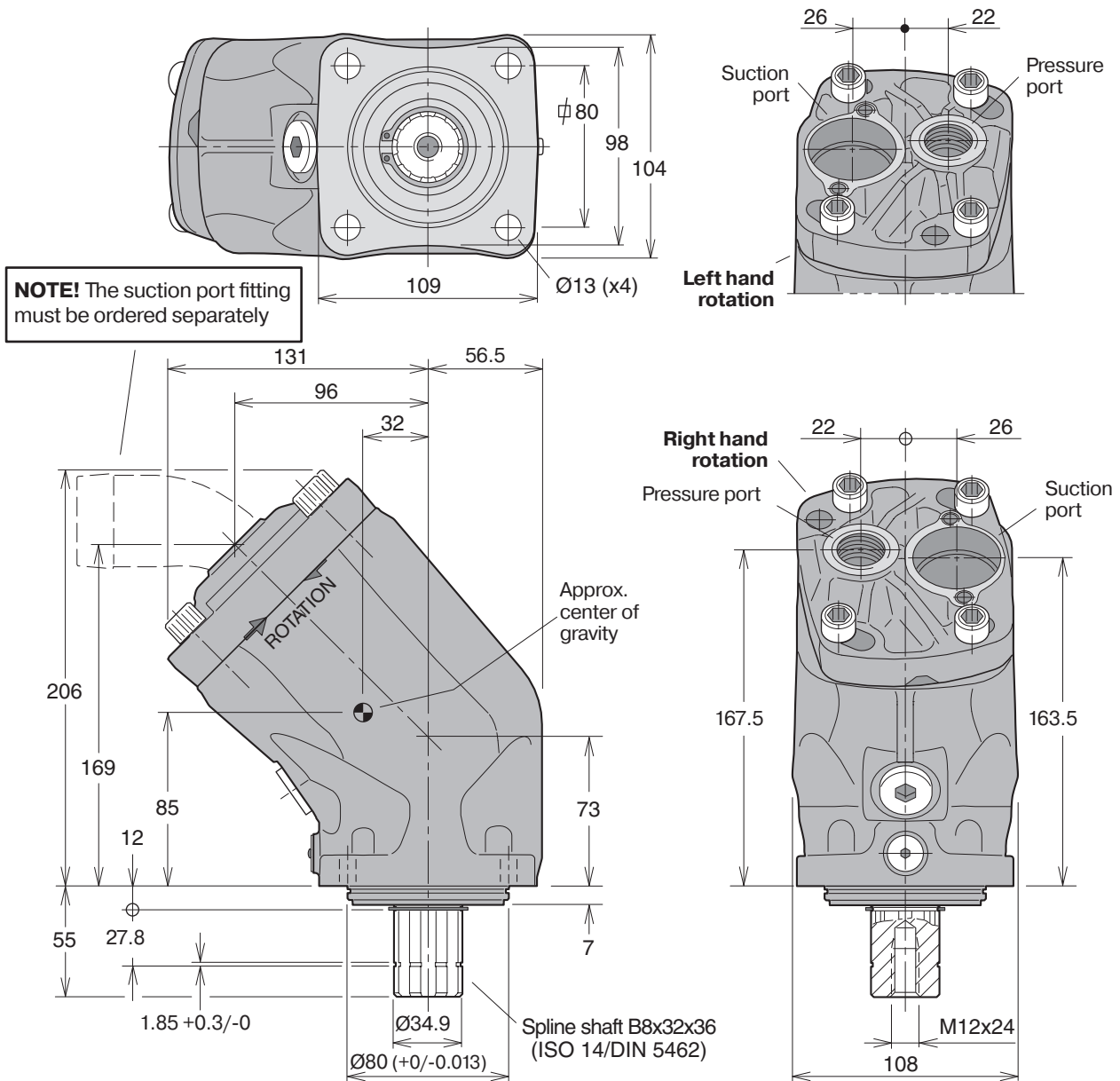


- 1. Input shaft
- 2. Bearings
- 3. Shaft seals

- 4. Housing
- 5. Timing gear
- 6. Barrel support

- 7. Piston with piston ring
- 8. Cylinder barrel
- 9. End cap

F1-25, -41, -51 and -61



Ordering code

Example: **F1 - 81 - R**

F1 frame size
25, 41, 51, 61, 81 or 101

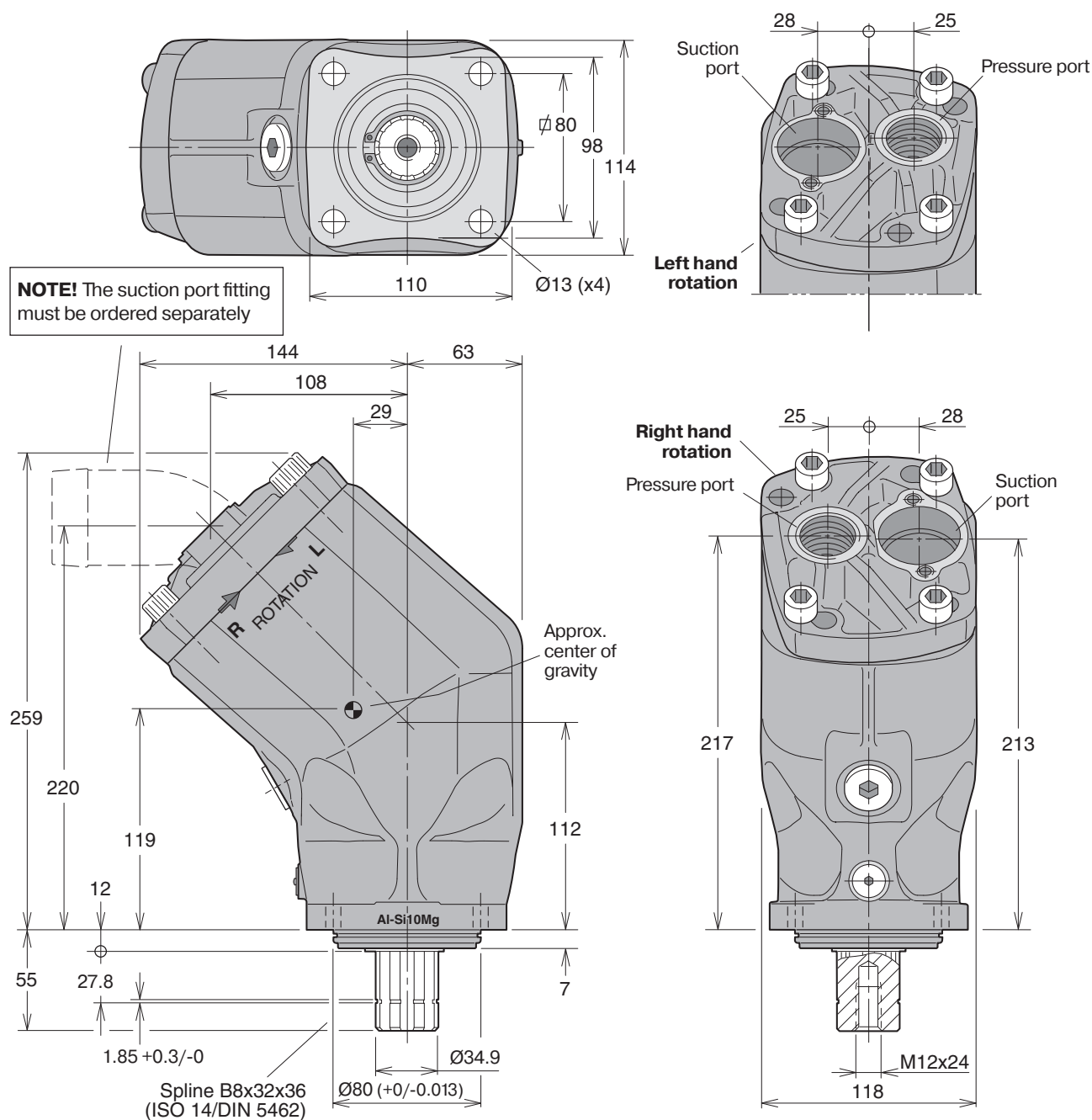
Shaft rotation
R Right hand
L Left hand

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 57ff.

Standard versions

Designation	Ordering no.
F1-25-R	378 1024
F1-25-L	378 1025
F1-41-R	378 1040
F1-41-L	378 1041
F1-51-R	378 1050
F1-51-L	378 1051
F1-61-R	378 1060
F1-61-L	378 1061

F1-81 and -101



Port size

F1 frame size	Pressure port ¹⁾
-25	3/4"
-41	3/4"
-51	3/4"
-61	3/4"
-81	1"
-101	1"

¹⁾ BSP thread (fitting not included)

Standard versions

Designation	Ordering no.
F1-81-R	378 1080
F1-81-L	378 1081
F1-101-R	378 1100
F1-101-L	378 1101

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 57ff.

F1-12 ISO with BSP port threads

Specifications

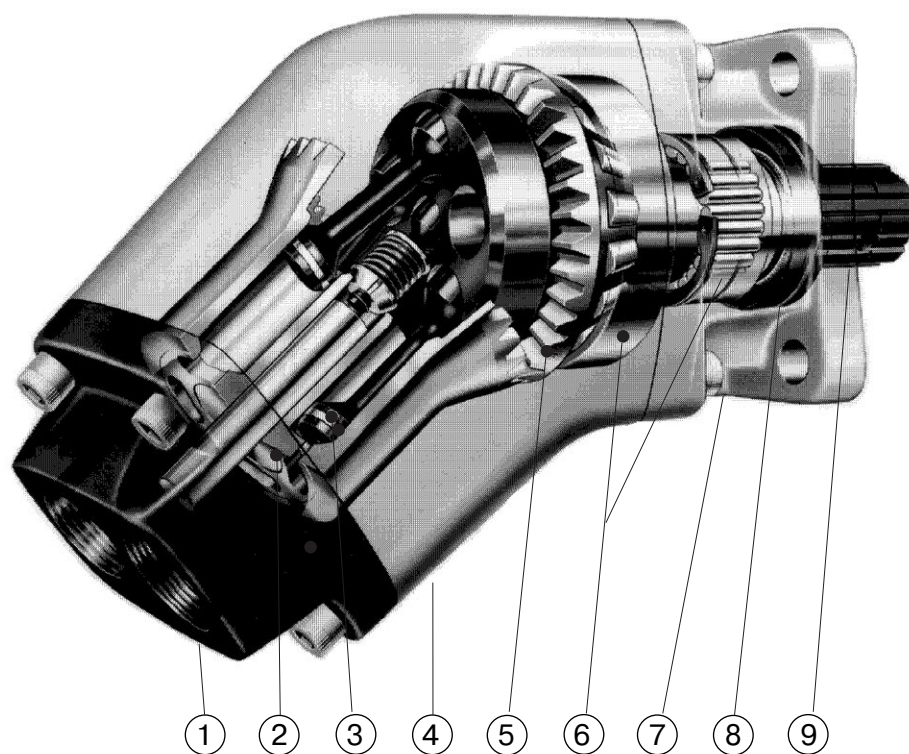
Frame size F1-	12
Displacement [cm ³ /rev]	12
Max flow ¹⁾ [l/min]	28
Max operating pressure [bar]	350
Shaft speed [rpm]	
- short circuited pump (low press.)	3100
- max selfpriming speed	2300
Torque ¹⁾ [Nm]	67
Max input power [kW]	16
Weight [kg]	6.7

¹⁾ Theoretical values

NOTE:

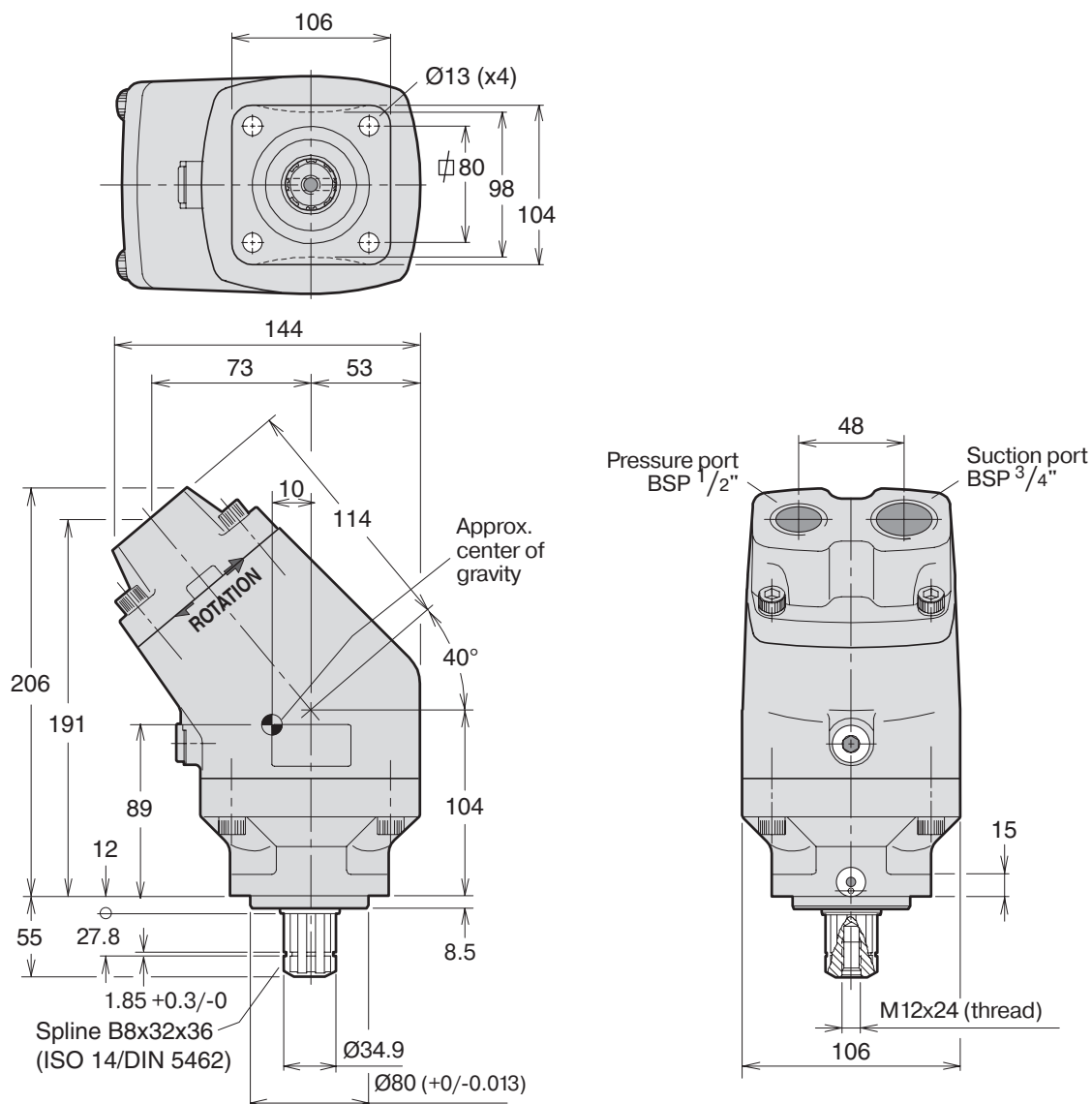
For noise level information, contact Parker Hannifin

Pump cross section



- | | | |
|---------------------------|-------------------|-------------------------------|
| 1 End cap | 4 Barrel housing | 7 Bearing housing with flange |
| 2 Cylinder barrel | 5 Timing gear | 8 Shaft seals |
| 3 Piston with piston ring | 6 Roller bearings | 9 Input shaft |

F1-12 with BSP port treads



Ordering code

Example:

F1-12-R

F1 frame size **12**

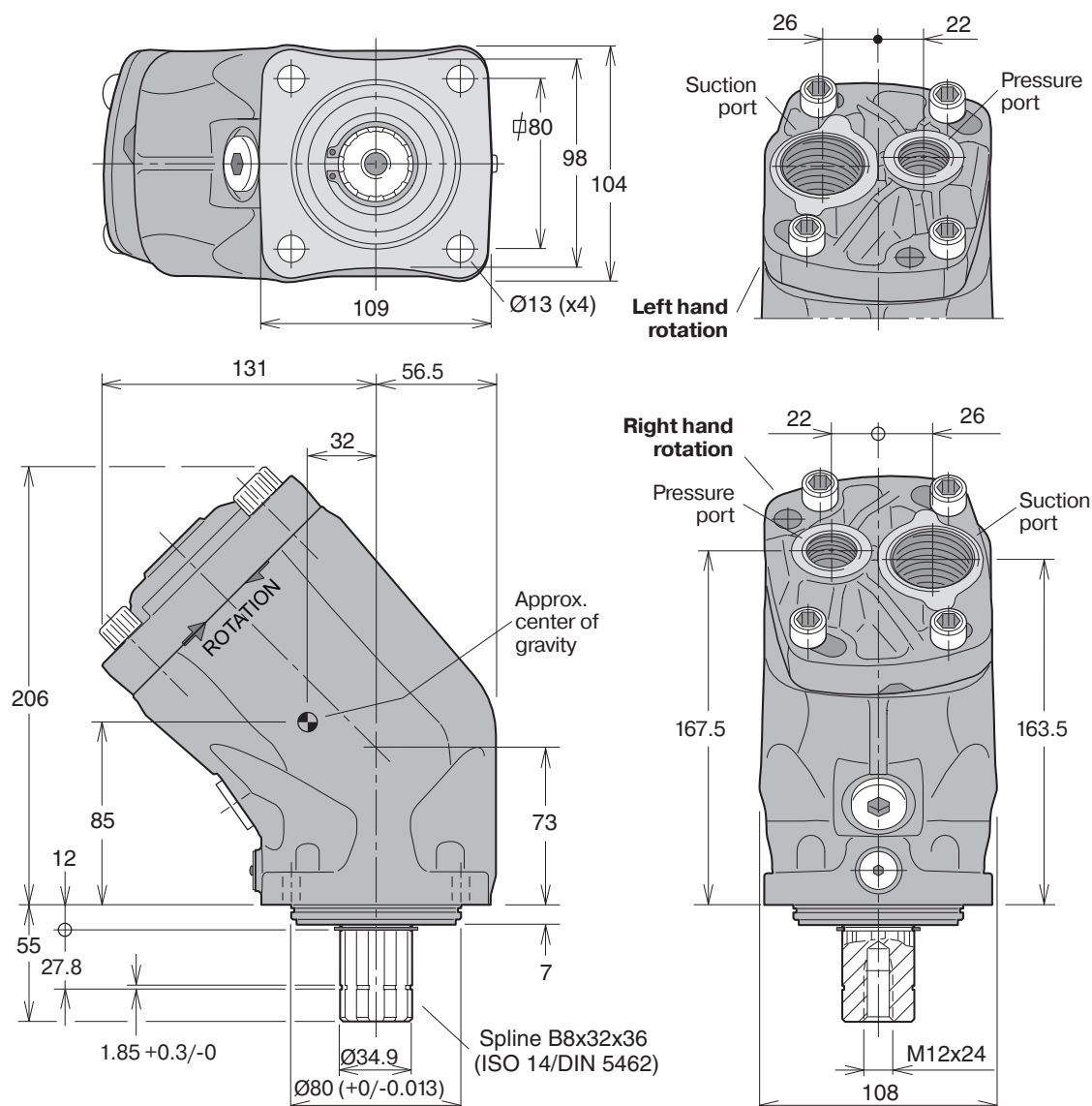
Shaft rotation
R Right hand
L Left hand

Standard versions

Designation	Ordering no.
F1-12-R	378 2212
F1-12-L	378 2211

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 57ff.

F1-25, -41, -51 and -61 with BSP port treads



Port size (all ports are BSP)

F1 frame size	Pressure port ¹⁾	Suction port
-25	3/4"	1"
-41	3/4"	1"
-51	3/4"	1"
-61	3/4"	1"

Ordering code

Example: **F1 - 61 - RB**

F1 frame size **25, 41, 51, 61, 81 or 101**

Shaft rotation/port threads **RB** Right hand/BSP
LB Left hand/BSP

Standard versions

Designation	Ordering no.
F1-25-RB	378 4024
F1-25-LB	378 4025
F1-41-RB	378 4040
F1-41-LB	378 4041
F1-51-RB	378 4050
F1-51-LB	378 4051
F1-61-RB	378 4060
F1-61-LB	378 4061

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 57ff.

Technical drawings of the 10Mg series hydraulic pump, showing front, side, and top views with dimensions and labels.

Front View (Top Left): Shows the main body with dimensions: 110 (width), 98 (height), 114 (total height), and 80 (flange diameter). Four mounting holes are indicated as $\varnothing 13 \times 4$.

Left Hand Rotation View (Top Right): Shows the pump head with dimensions: 28 (port spacing), 25 (port spacing), and 28 (total width). Labels indicate "Suction port" and "Pressure port".

Right Hand Rotation View (Bottom Right): Shows the pump head with dimensions: 25 (port spacing), 28 (port spacing), and 28 (total width). Labels indicate "Pressure port" and "Suction port".

Side View (Bottom Left): Shows the pump body with dimensions: 144 (total width), 63 (flange width), 29 (flange offset), 259 (total height), 119 (body height), 12 (flange thickness), 55 (flange offset), 27.8 (flange offset), 1.85 $\pm 0.3/0$ (flange thickness), 7 (base height), 112 (body height), and 29 (flange offset). The material is labeled "Al-Si10Mg". The base is labeled "Splined B8x32x36 (ISO 14/DIN 5462)". The base diameter is $\varnothing 80 (+0/-0.013)$ and the base hole diameter is $\varnothing 34.9$. The "Approx. center of gravity" is marked.

F1 frame size	Pressure port ¹⁾	Suction port
-81	1"	1 ¹ / ₄ "
-101	1"	1 ¹ / ₄ "

Example: **F1 - 81 - RB**

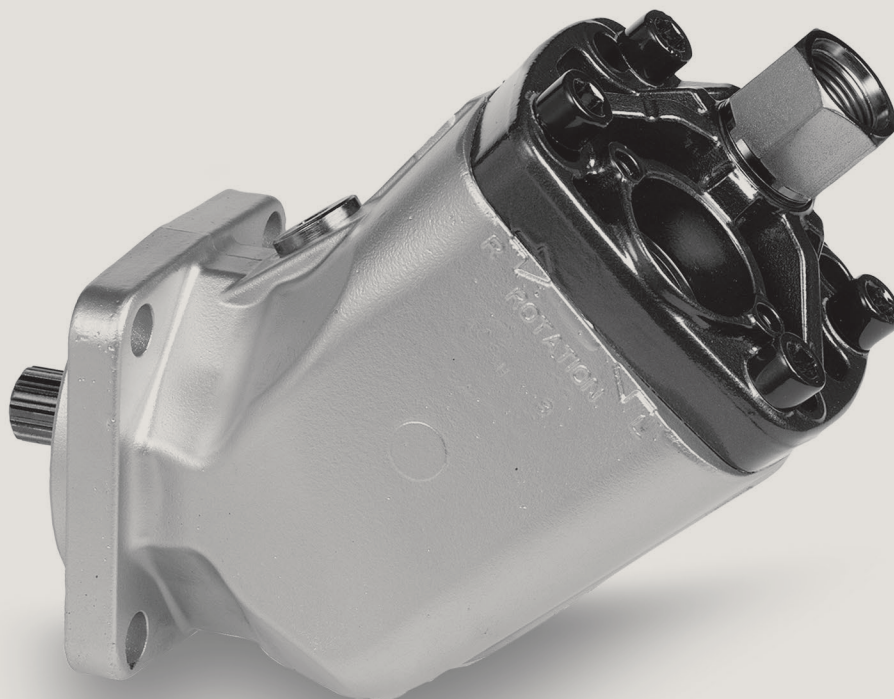
F1 frame size **25, 41, 51, 61, 81 or 101**

Shaft rotation/port threads **RB** Right hand/BSP
LB Left hand/BSP

Designation	Ordering no.
F1-81-RB	378 4080
F1-81-LB	378 4081
F1-101-RB	378 4100
F1-101-LB	378 4101

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 57ff.

F1 Pump
F1-SAE



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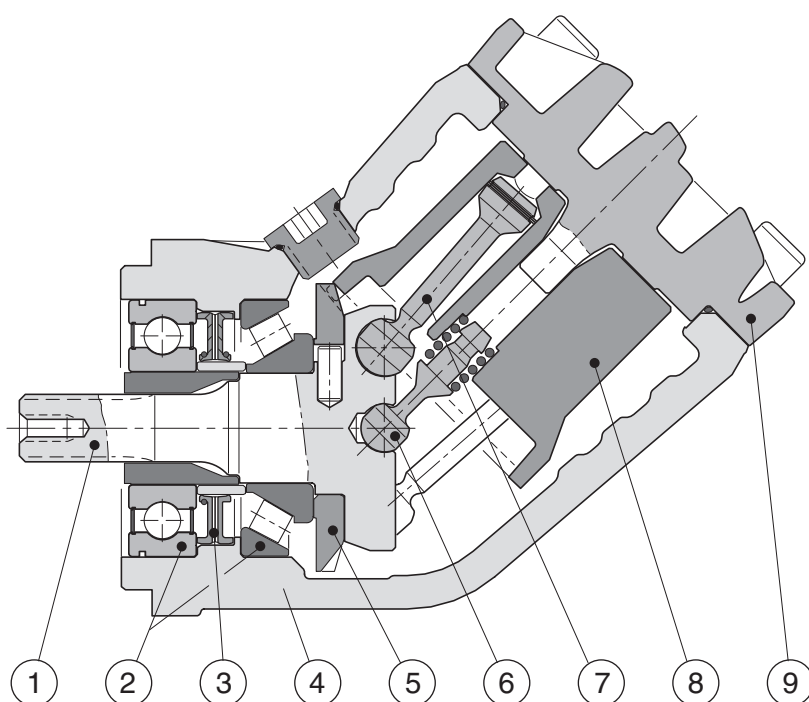
Specifications

Frame size F1 -	25	41	51	61
Displacement [cm ³ /rev]	25.6	40.9	51.1	59.5
[cu in/rev]	1.56	2.50	3.12	3.63
Max flow ¹⁾ [l/min]	78	104	125	143
[gpm]	20.6	27.5	33.0	37.8
Max operating pressure [bar]	350	350	350	350
[psi]	5800	5800	5800	5800
Shaft speed [rpm]				
- short circuited pump (low press.)	3100	2700	2700	2700
- max selfpriming speed ²⁾	3050	2550	2450	2400
Torque ¹⁾				
at 350 bar [Nm]	142	227	284	331
at 5000 psi [lbf ft]	105	168	210	244
Input power				
[kW]	45	61	73	83
[hp]	60	82	98	111
Weight [kg]	8.5	8.5	8.5	8.5
[lbs]	18.7	18.7	18.7	18.7

¹⁾ Theoretical values

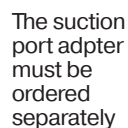
²⁾ Valid at an inlet pressure of 1.0 bar/15 psi (abs.) when operating on mineral oil at a viscosity of 30 mm²/s (cSt)/150 SUS.

Pump cross section



1. Input shaft
2. Bearings
3. Shaft seal
4. Housing
5. Timing gear
6. Barrel support
7. Piston with piston ring
8. Cylinder barrel
9. End cap

Dimensions in mm [inches]



Example: **F1 - 61 - R U - S V - S**

F1 frame size
25, 41, 51 or 61

Shaft rotation
R Right hand
L Left hand

Main port
U SAE O-ring, UN threads

Shaft end
S SAE spline
"B" spline

Shaft seal
V FPM

Mounting flange
S SAE "B"

Port size

F1 frame size	Pressure port ¹⁾
-25	1 ¹ / ₁₆ " -12 UN
-41	1 ¹ / ₁₆ " -12 UN
-51	1 ¹ / ₁₆ " -12 UN
-61	1 ¹ / ₁₆ " -12 UN

1) BSP-to-SAE adapter
(included)

Standard SAE versions

Designation	Ordering no.
F1-25-RU	378 1424
F1-25-LU	378 1425
F1-41-RU	378 1440
F1-41-LU	378 1441
F1-51-RU	378 1450
F1-51-LU	378 1451
F1-61-RU	378 1460
F1-61-LU	378 1461