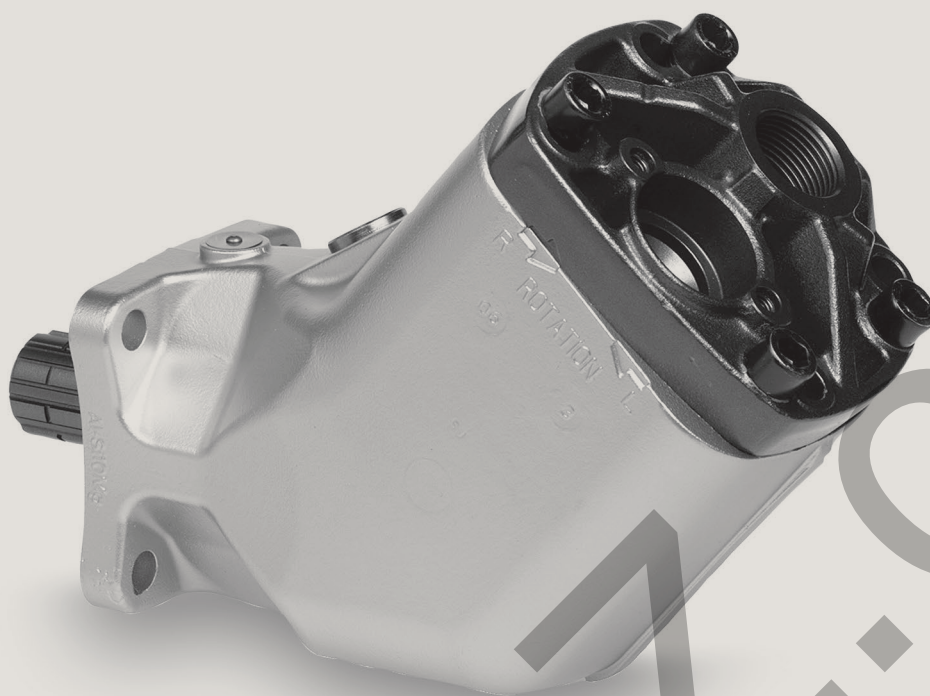


F1 Pump

F1-ISO



Contents.....	Page
Pump and Line selection.....	13
F1-25 to -101, ISO.....	24
Specifications and pump cross section	24
Installation Dimensions, F1-25, to -61	25
Ordering code and standard versions	25
Installation Dimensions F1-81 and -101	26
Port size and standard versions	26
F1-12 ISO with BSP port treads	27
Specifications and pump cross section	27
Installation Dimensions, F1-12 with BSP port treads.....	28
Ordering code and standard versions	28
Installation Dimensions, F1-25 to -101 with BSP port treads.....	29
Ordering code, port size and standard versions.....	29
Suction fittings.....	62
Installation and start up.....	80

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	12.3	12.1

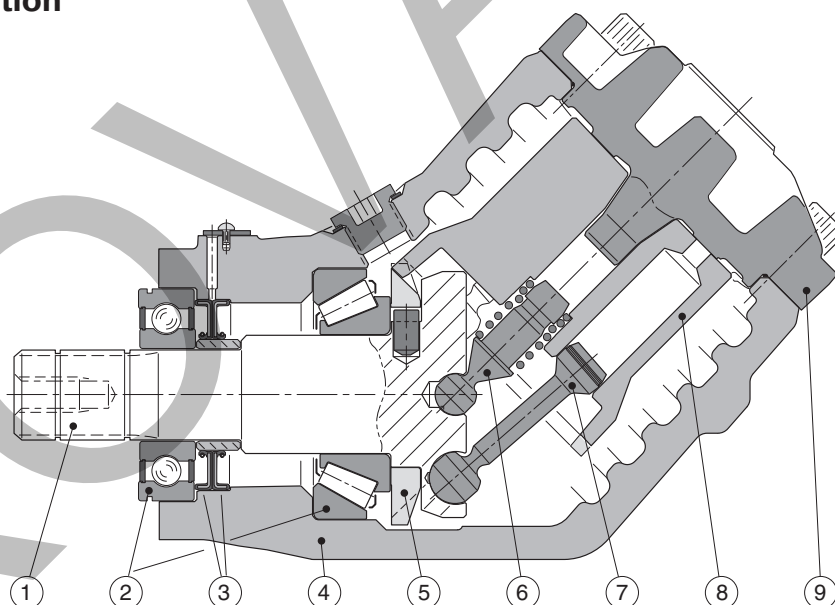
1) Theoretical values

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

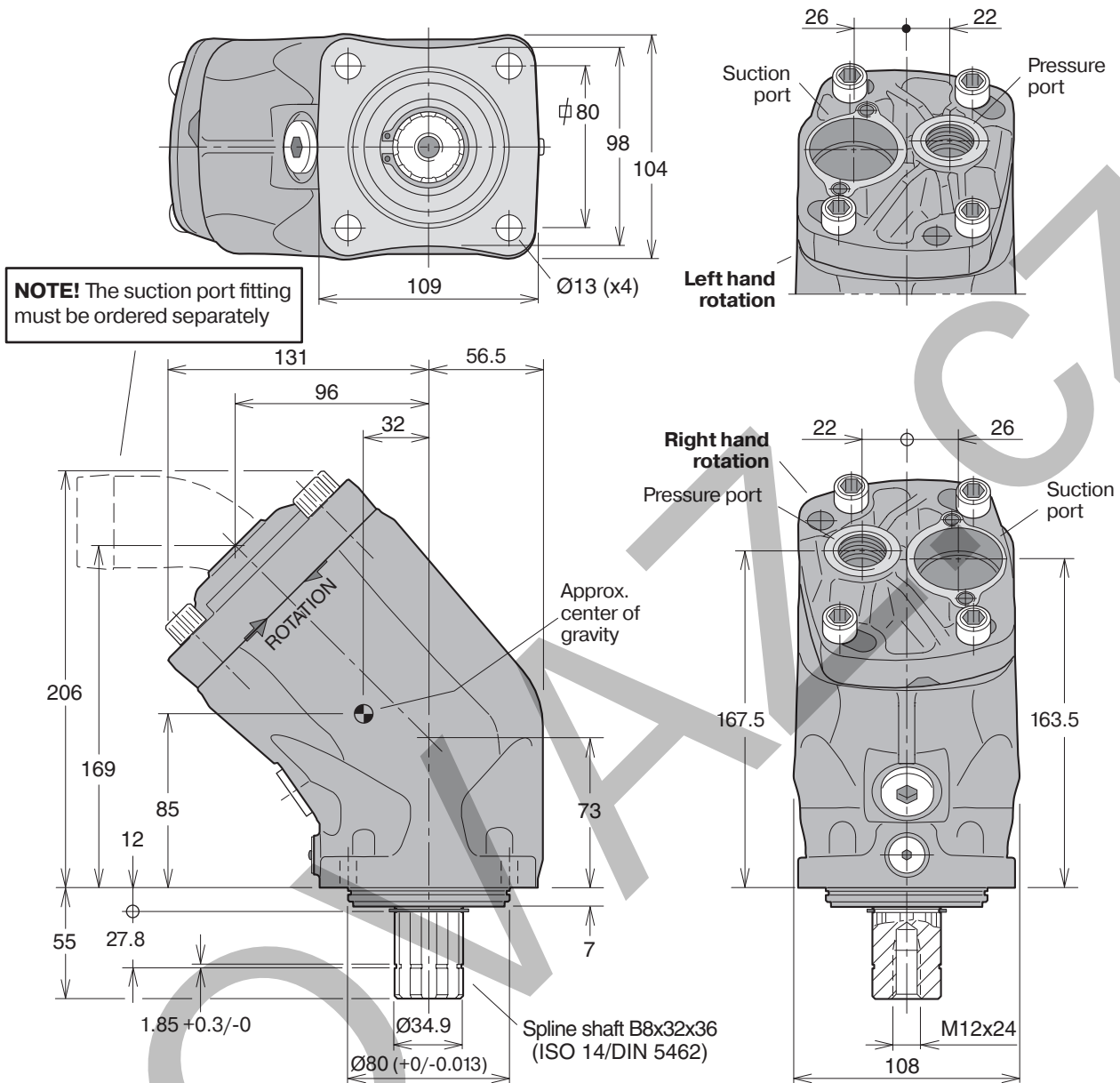


1. Input shaft
2. Bearings
3. Shaft seals

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 frame size

25, 41, 51, 61, 81 or 101

F1 - 81 - R

Shaft rotation

R Right hand

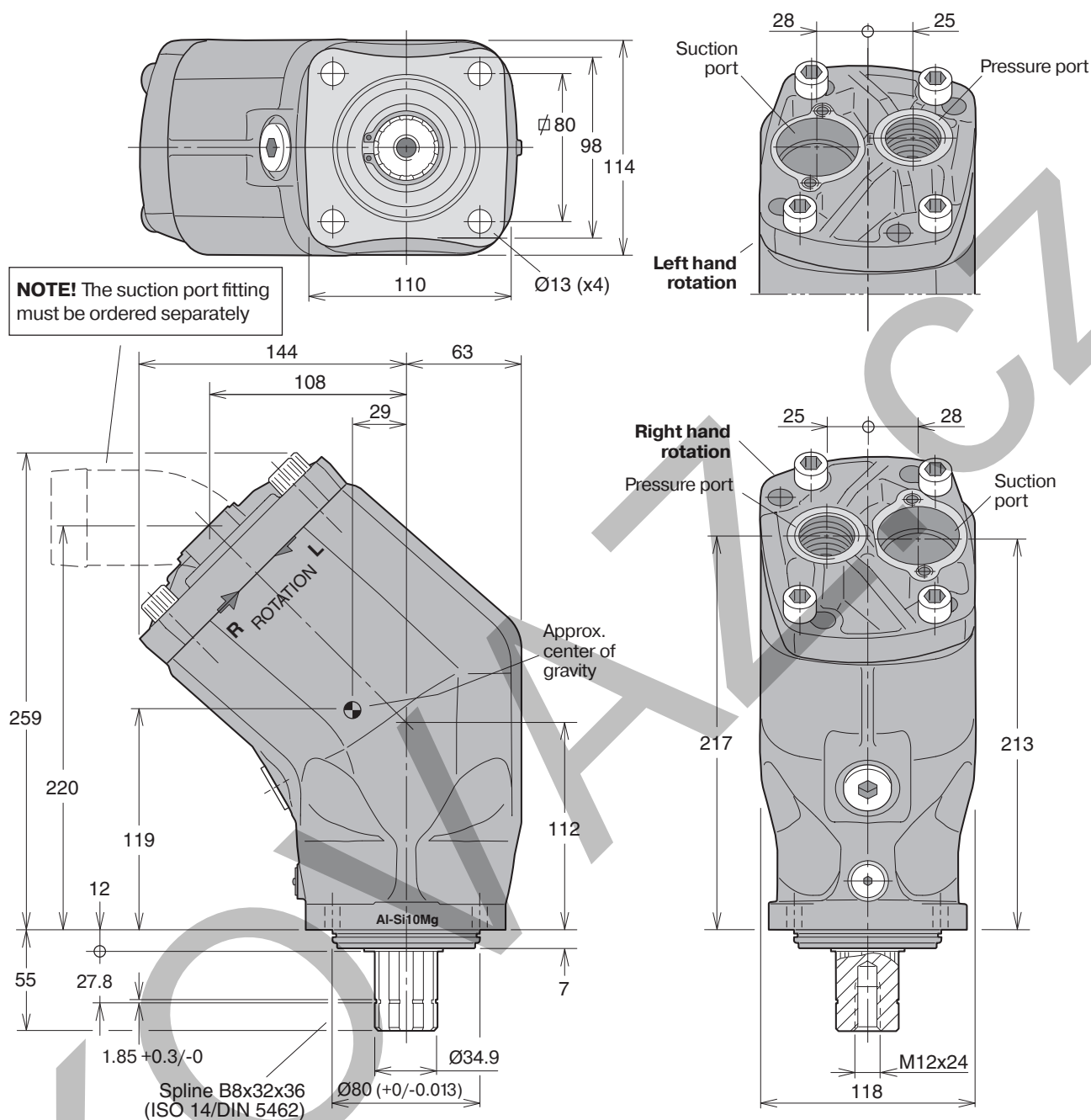
L Left hand

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 62ff.

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 62ff.

F1-12 ISO with BSP port threads

Specifications

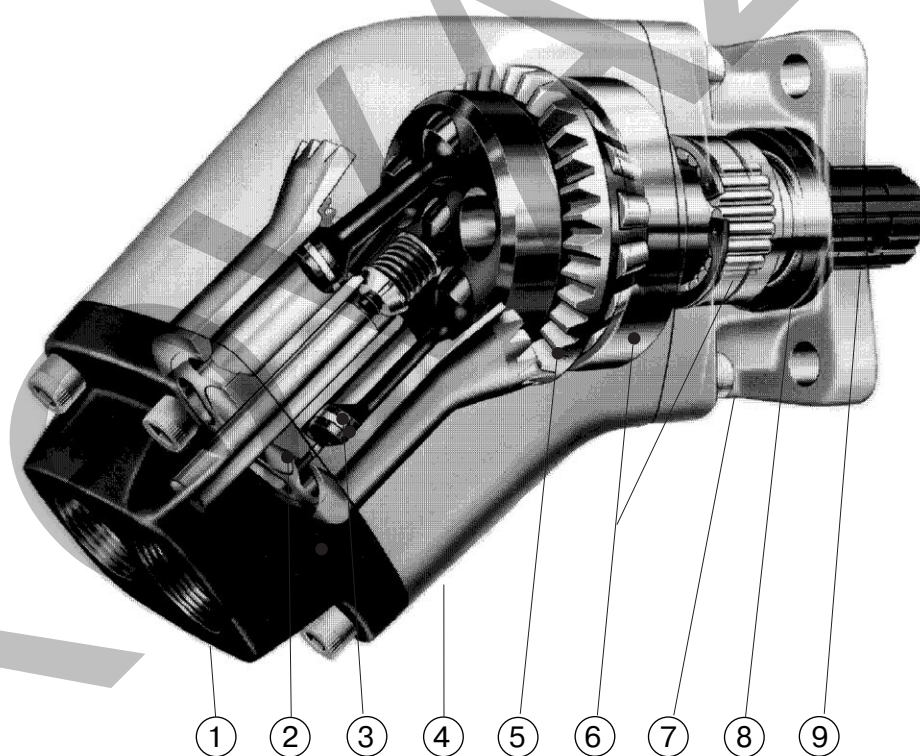
Frame size F1-	12
Displacement [cm ³ /rev]	12
Max flow ¹⁾ [l/min]	28
Max operating pressure [bar]	350
Shaft speed [rpm]	
- short circuited pump (low press.)	3100
- max selfpriming speed	2300
Torque ¹⁾ [Nm]	67
Max input power [kW]	16
Weight [kg]	6.7

¹⁾ Theoretical values

NOTE:

For noise level information, contact Parker Hannifin

Pump cross section



1 End cap

2 Cylinder barrel

3 Piston with piston ring

4 Barrel housing

5 Timing gear

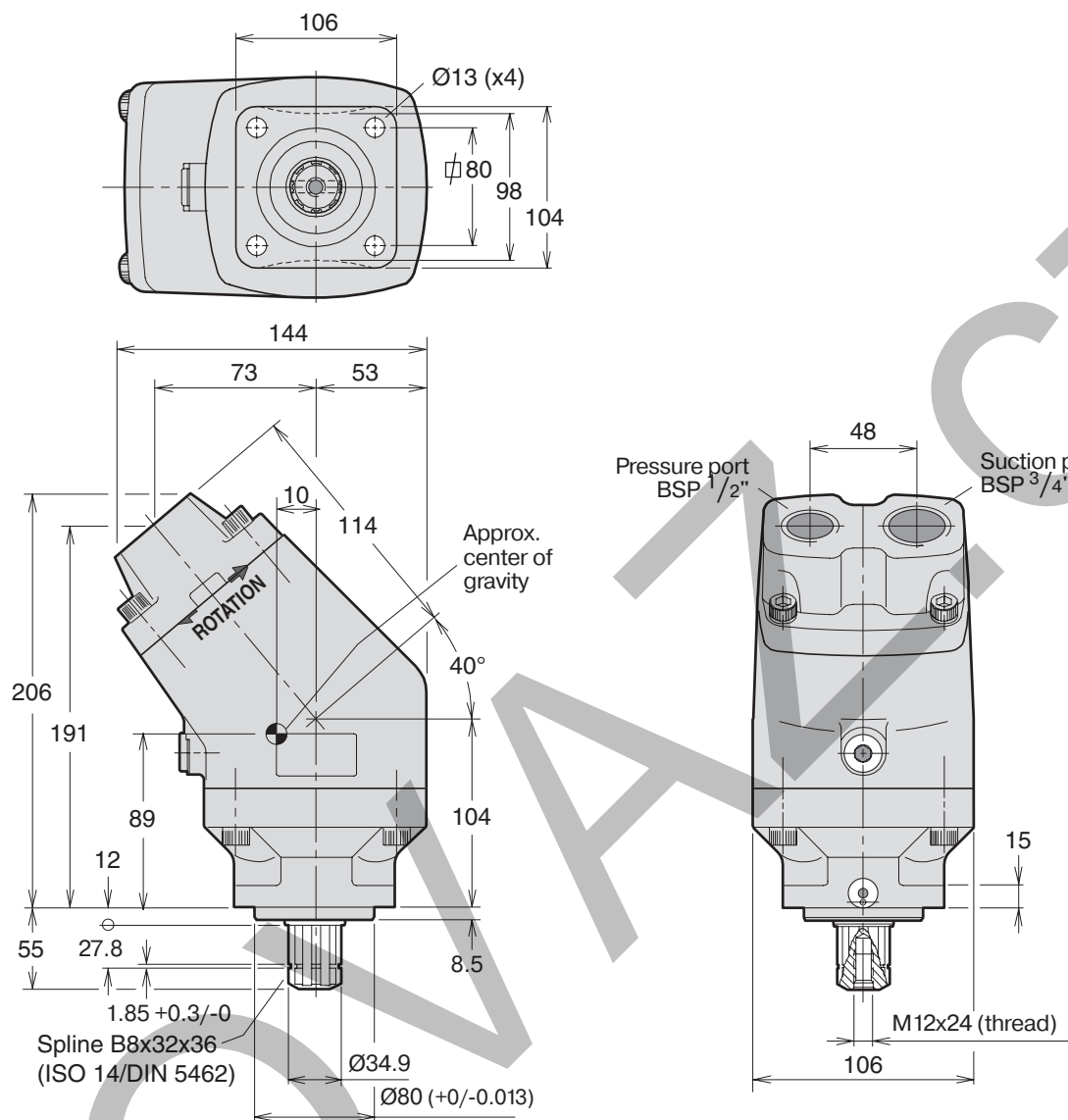
6 Roller bearings

7 Bearing housing with flange

8 Shaft seals

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 62ff.

Technical drawings of the 1000 Series Hydraulic Pump, showing front, side, and top views with dimensions and labels.

Front View (Top Left): Shows the pump housing with dimensions: 109 (width), 104 (height), 98 (height to center), 80 (diameter), and 13 (hole diameter, x4). The label "Left hand rotation" is present.

Top View (Bottom Left): Shows the pump housing with dimensions: 206 (width), 131 (width), 56.5 (width), 32 (width), 85 (height), 12 (height), 55 (height), 27.8 (height), 1.85 +0.3/-0 (width), 73 (height), 7 (height), and 34.9 (diameter). The label "Approx. center of gravity" is present.

Side View (Bottom Right): Shows the pump housing with dimensions: 167.5 (height), 163.5 (height), 108 (width), and 12x24 (thread). The label "Right hand rotation" is present.

Top View (Top Right): Shows the pump housing with dimensions: 26 (width), 22 (width), 26 (width), 22 (width), and 108 (width). The label "Suction port" is present.

Bottom View (Bottom Right): Shows the pump housing with dimensions: 108 (width), 12x24 (thread), and 108 (width). The label "Suction port" is present.

Technical Specifications:

- Spine B8x32x36 (ISO 14/DIN 5462)
- Ø80 (+0/-0.013)
- Ø34.9
- 1.85 +0.3/-0
- 12x24
- 108
- 163.5
- 167.5
- 22
- 26
- 26
- 22
- 104
- 98
- 80
- 13 (x4)
- 109
- 206
- 131
- 56.5
- 32
- 85
- 12
- 55
- 27.8
- 73
- 7

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

Example: **F1 - 61 - RB**

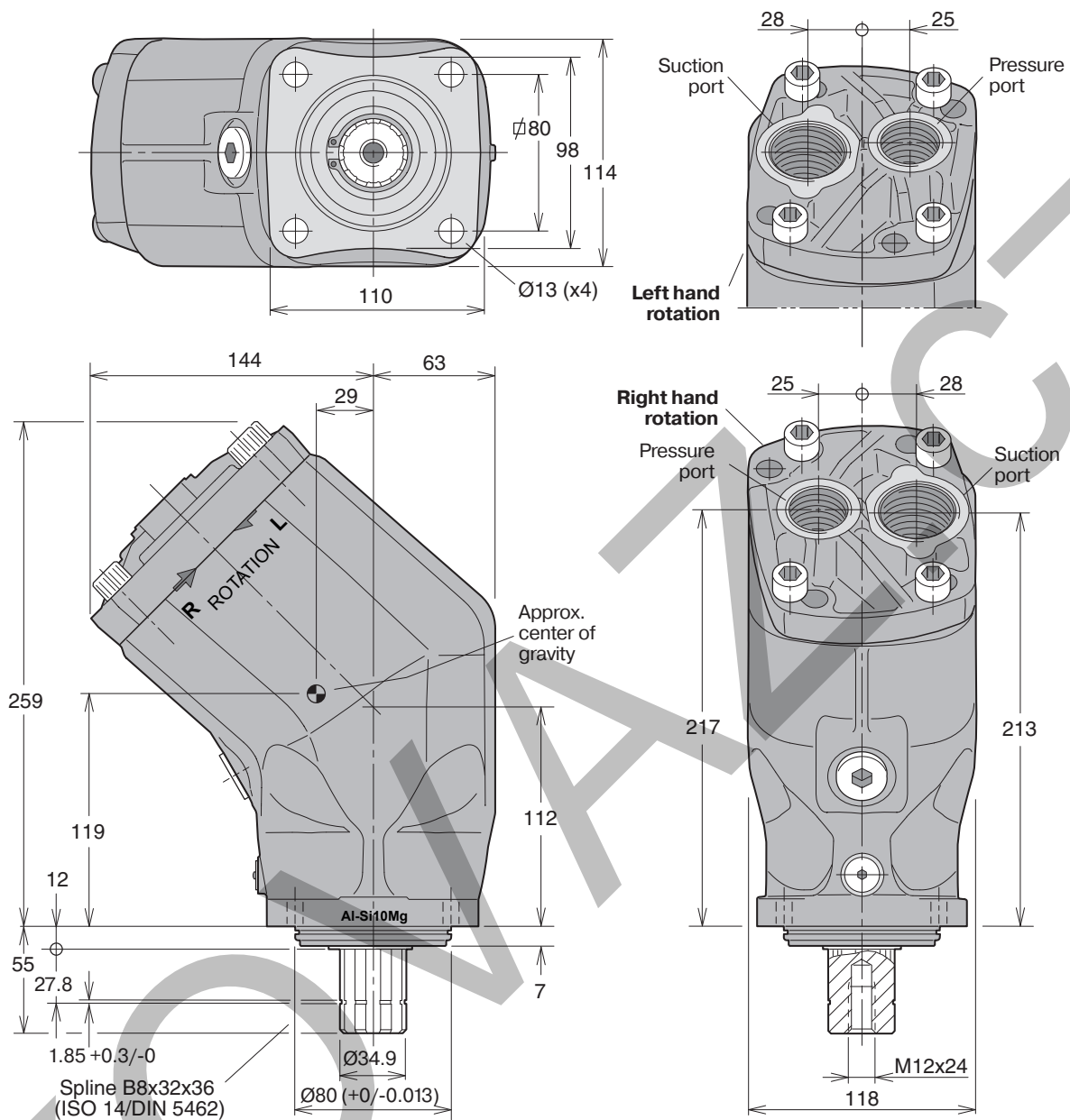
F1 frame size **25, 41, 51, 61, 81 or 101**

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

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 62ff.

F1-81 and -101 with BSP port threads



Port size (all ports are BSP)

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

Ordering code

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

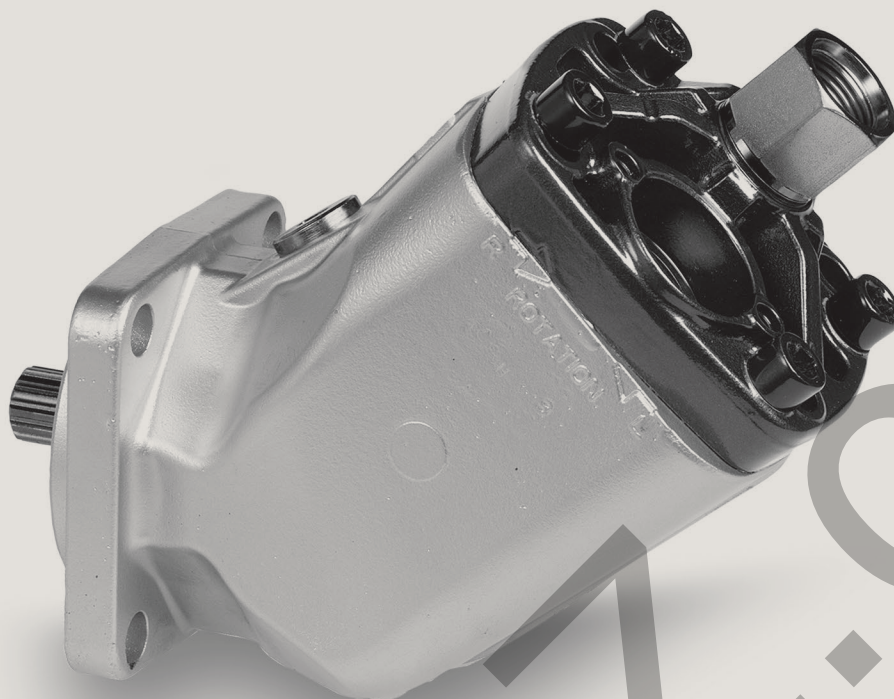
Standard versions

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 62ff.

F1 Pump

F1-SAE



Contents.....	Page
Pump and Line selection.....	13
Specifications.....	32
Pump cross section.....	32
Installation Dimensions, F1-25, -41, -51 and -61 (SAE)	33
Ordering code (SAE).....	33
Port size and standard versions.....	33
Suction fittings.....	62
Installation and start up.....	80

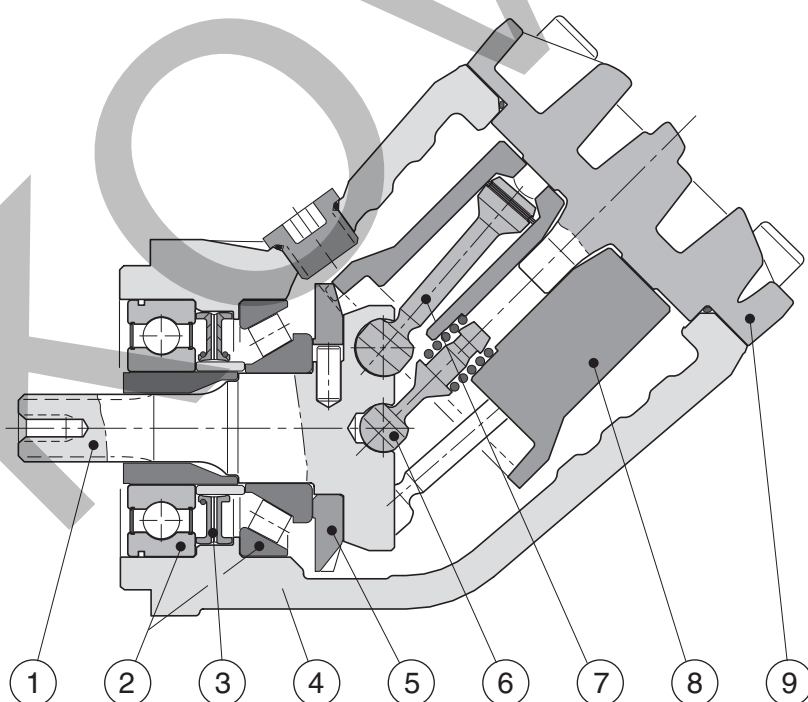
Specifications

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]



F1 frame size
25, 41, 51 or 61

Shaft rotation
R Right hand
L Left hand

Main port

F1 - 61 - RU - SV - S

- 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 $\frac{1}{16}$ " -12 UN
-41	1 $\frac{1}{16}$ " -12 UN
-51	1 $\frac{1}{16}$ " -12 UN
-61	1 $\frac{1}{16}$ " -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

NOTE: The pump **does not** include a suction fitting; it must be ordered separately. See page 62ff.

F1 Motor



Contents.....	Page
Pump and Line selection.....	13
Specifications.....	39
Ordering code.....	39
Installation.....	39
Port size.....	39
Standard versions.....	39
Suction fittings.....	62
Installation and start up.....	80

Specifications

Motor frame size F1 -	25-M	41-M	51-M	61-M	81-M	101-M	121-M
Displacement [cm ³ /rev]	25.6	40.9	51.1	59.5	81.6	102.9	118.5
Max operating pressure [bar]							
continuous	250	250	250	250	250	250	250
intermittent ¹⁾	350	350	350	350	350	350	350
Max Shaft speed [rpm]							
- continuous	2 300	2 000	1 800	1 700	1 500	1 400	1300
- intermittent	3 000	2 700	2 400	2 200	2 000	1 800	1700
Torque (theor.) [Nm]							
at 200 bar	81	130	162	189	259	327	376
at 350 bar	142	227	284	331	453	572	658
Max output power [kW]	45	64	72	76	95	108	117
Weight [kg]	8.5	8.5	8.5	8.5	12.5	12.5	12.5

¹⁾ Max 6 seconds in any one minute.

Ordering code

Example: **F1 - 81 - M**
F1 Motor frame size
25, 41, 51, 61, 81, 101 or 121

Port size

F1 motor frame size	Port size
F1-25/41/51/61	3/4"
-81/101/121	1"

Standard versions

Designation	Ordering no.
F1-25-M	378 1724
F1-41-M	378 1740
F1-51-M	378 1750
F1-61-M	378 1760
F1-81-M	378 1780
F1-101-M	378 1800
F1-121-M	378 4120

Installation dimensions

