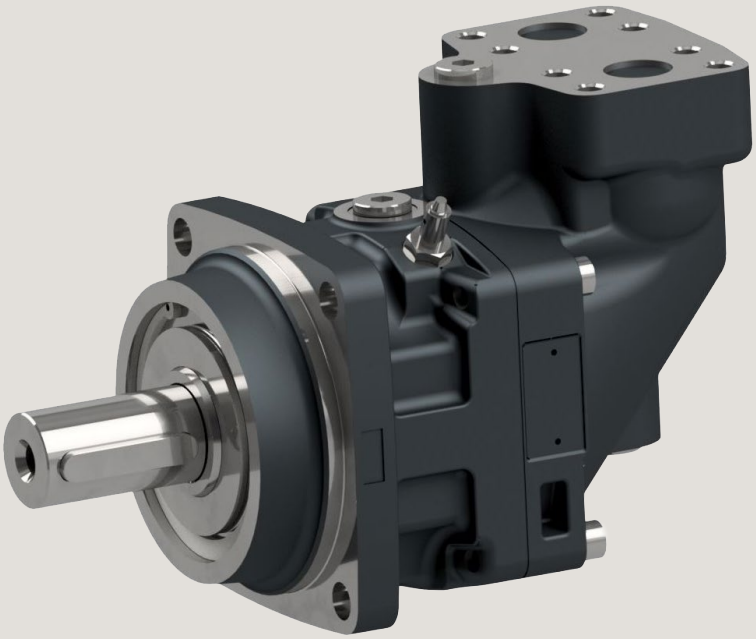
F12



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Frame size F12	**-030**	**-040**	**-060**	**-080**	**-090**	**-110**	**-125**	**-152**	**-162**	**-182**	**-250**
Displacement [cm^3/rev]	30.0	40.0	59.8	80.4	93.0	110.1	125.0	149.8	163.1	179.8	242
[cu in/rev]	1.83	2.44	3.65	4.91	5.68	6.72	7.63	9.14	9.95	10.97	14.8
Operating pressure 3)											
max intermittent1) [bar]	500	500	500	500	420	480	480	480	480	480	420
[psi]	7252	7252	7252	7252	6092	6962	6962	6962	6962	6962	6092
max continuous [bar]	450	450	450	450	350	420	420	420	420	420	350
[psi]	6527	6527	6527	6527	5076	6092	6092	6092	6092	6092	5076
Motor operating speed 3) [rpm]											
max intermittent 1)	8600	6900	6400	5500	5100	4800	4600	4000	4000	4000	3000
max continuous	7300	6300	5800	5100	4600	4400	4200	3700	3700	3700	2700
min continuous	50	50	50	50	50	50	50	50	50	50	50
Max pump selfpriming speed 2)											
L or R function; max [rpm]	3100	2800	2400	2200	2200	2000	2000	1700	1600	1500	1500
Motor input flow											
max intermittent1) [l/min]	258	276	383	440	474	528	575	608	648	728	726
[gpm]	68.2	72.9	101.2	116.2	125.2	139.5	151.9	160.6	171.2	192.3	191.8
max continuous [l/min]	219	252	347	408	428	484	525	547	583	655	653
[gpm]	57.9	66.6	91.7	107.8	113.1	127.9	138.7	144.5	154.0	173.0	172.5
Drain temperature3), max [°C] / [°F]	115	115	115	115	115	115	115	115	115	115	115
min [°C] / [°F]	-40	-40	-40	-40	-40	-40	-40	-40	-40	-40	-40
Theoretical torque at 100 bar [Nm]	47.6	63.5	94.9	127.6	147.6	174.8	198.4	241	257	289	384.1
[lbf ft]	35.1	46.9	70.0	94.2	108.9	129.0	146.4	177.8	189.6	213.2	283.5
Mass moment of inertia											
($x10^{-3}$) [kg m^2]	1.7	2.9	5	8.4	8.4	11.2	11.2	21	21	21	46
($x10^{-2}$) [$lbft^2$]	4.03	6.88	11.86	19.93	19.93	26.58	26.58	79.83	79.83	79.83	109.16
Weight [kg]	11.5	15.7	18.6	25.7	25.7	33	33	40	40	40	77
[lb]	25.3	34.6	41	56.7	56.7	72.6	72.6	88	88	88	170

1) Intermittent: max 6 seconds in any one minute.
2) Selfpriming speed valid at sea level. Find more info on page 58
3) See also installation information. Page 85 – 87

Efficiency

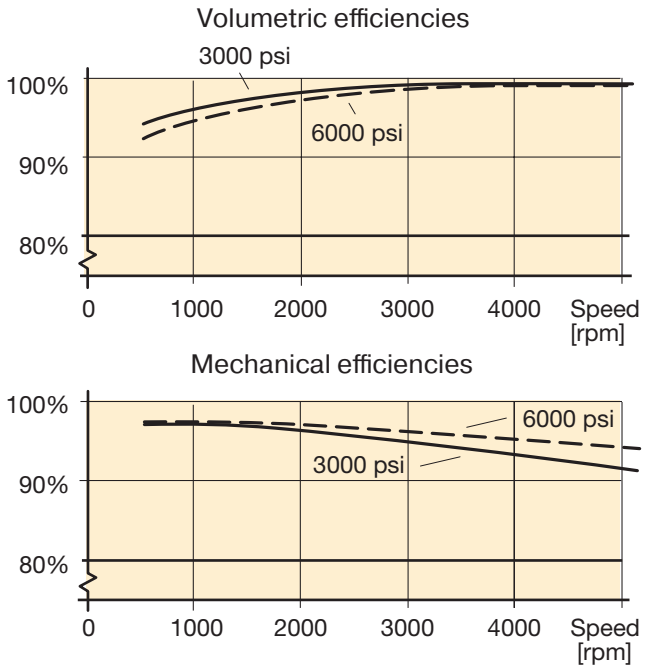
Because of its high overall efficiency, driving a motor/pump from series F12 requires less fuel or electric power.

Also, it allows the use of a small reservoir and heat exchanger, which in turn reduce cost, weight, and installation size.

The diagrams to the right show volumetric and mechanical efficiencies of an F12-030 motor.

F12-030 motors can be equipped with Power Boost which in high speed applications can decrease the mechanical losses by up to 15 %, see page 7.

Contact Parker Hannifin for efficiency information on a particular F12 frame size that is being considered.



Noise level

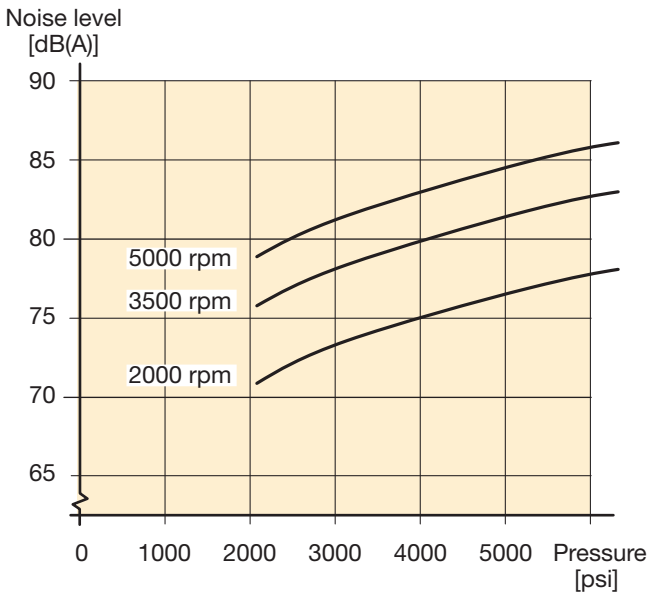
Series F12 feature low noise levels from low to high speeds and pressures.

As an example, the diagram to the right shows the noise level of an F12-030 pump/motor.

The noise level is measured in a semi-anechoic room, 1 m behind the unit.

The noise level for a particular motor/pump may vary ±2 dB(A) compared to what is shown in the diagram.

NOTE: Noise information for F12 frame sizes are available from Parker Hannifin.



Selfpriming speed and required inlet pressure

Series F12

When operating the F12 as a pump (with L or R valve plate) above the selfpriming speed, the inlet must be pressurized. Increased noise and deteriorating performance may otherwise be experienced.

Diagrams 2 and 3 shows required pump inlet pressure vs. shaft speed.

The F12 motor (type M valve plate) sometimes operates as a pump e.g. when used in a propel transmission and the vehicle is going downhill.

Minimum required inlet pressure versus shaft speed is shown in the diagrams.

The inlet pressure can be charged by external pump, pressurized reservoir or using BLA Boost unit.

Find more info about the BLA unit at page 84.

F12 Pump version

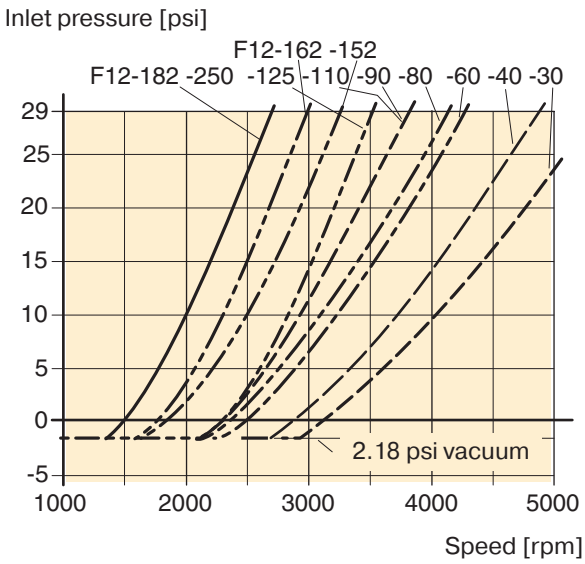


Diagram 2. Min. required pump (F12-L or -R) inlet press.

F12 Motor version

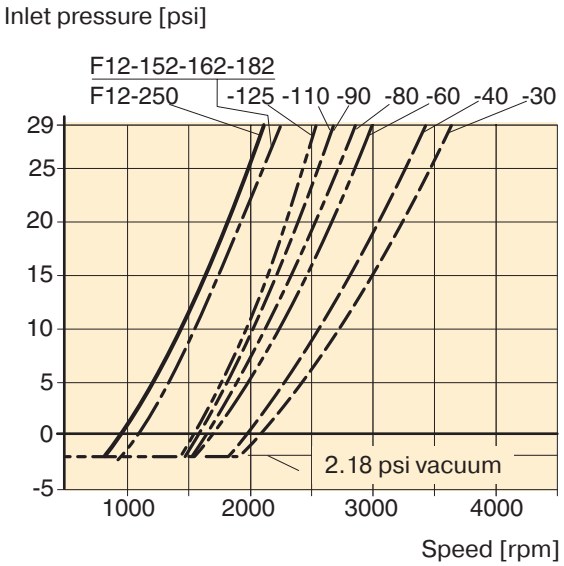


Diagram 3. Min. required motor (F12-M) inlet pressure.

F12-ISO

F12	–		–			–			–		–		–		–	
		Frame size		Function	Main ports		Mounting flange	Shaft seal		Shaft		Version number		Option page 77 – 79		Option page 7

Frame size		
Code	Displacem. (cm^3/rev)	Displacem. (cu in/rev)
030	30.0	1.83
040	40.0	2.44
060	59.8	3.65
080	80.4	4.91
090	93.0	5.68
110	110.1	6.72
125	125.0	7.63
152	149.8	9.14
162	163.1	9.95
182	179.8	11.11

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Function										
M	Motor	x	x	x	x	x	x	x	x	x	x
S	Motor, high speed	(x)	(x)	(x)	-	-	-	-	(x)	(x)	(x)
R	Pump, clockwise rotation	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
L	Pump, counter clockwise rot'n	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

For other versions, contact Parker Hannifin

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Main ports										
F	SAE 6000 psi flange	x	x	x	x	x	x	x	x	x	x
D	SAE 6000 psi Horizontal	-	-	-	-	-	-	-	(x)	(x)	(x)
A	SAE 6000 psi Axial	-	-	-	-	-	-	-	(x)	(x)	(x)
K	SAE 6000 psi Rear	-	-	-	-	-	-	-	(x)	(x)	(x)
M	SAE 6000 psi Side	-	-	-	-	-	-	-	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Mounting flange										
I	ISO flange	x	x	x	x	x	x	x	x	x	x
F	ISO 200 flange	-	-	-	-	-	-	-	x	x	x

x: Available (x): Optional – : Not available

1) F12-110 and -125: Accessory valve block (page 78)

2) Pressure setting on page 79

NOTE: All combinations are not valid, please contact Parker Hannifin

Version number
(assigned for special versions)

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Shaft*										
D	DIN Spline, Standard	x	x	x	x	x	x	x	x	x	x
A	DIN Spline, Optional	-	(x)	-	-	-	-	-	-	-	-
Z	DIN Spline, Optional	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
K	Metric key, Standard	x	x	x	x	x	x	x	x	x	x
J	Metric key, Optional	-	(x)	-	-	-	-	-	-	-	-
H	DIN Spline, Optional	-	-	-	-	-	-	-	(x)	(x)	(x)
G	Metric key, Optional	-	-	-	-	-	-	-	(x)	(x)	(x)
P	Metric key, Optional	(x)	-	-	-	-	-	-	(x)	(x)	(x)
V	Tapered shaft	(x)	(x)	(x)	-	-	-	-	-	-	-

*See also dimensional drawings on pages 62 and 64.

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Option										
0000	Standard	x	x	x	x	x	x	x	x	x	x
L130	Flushing valve 1.3 mm orifice	(x)	(x)	(x)	(x)	(x)	-[1]	-[1]	-	-	-
MUVR	Make up/Anti cavitation valve clockwise rotation	(x)	-	-	-	-	-	-	-	-	-
MUVL	Make up/Anti cavitation valve counter clockwise rotation	(x)	-	-	-	-	-	-	-	-	-
P__R[2]	Pressure relief valve clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-
P__L[2]	Pressure relief valve counter clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Option										
P0	Prepared for speed sensor	x	x	x	x	x	x	x	x	x	x
PT	Prepared for speed sensor and Painted Black	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
B0	Power Boost and Prepared for speed sensor	(x)	-	-	-	-	-	-	-	-	-
BT	Power Boost, Prepared for speed sensor and Painted Black	(x)	-	-	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182
Code	Shaft seal										
V	FPM, high pressure, high temperature	x	x	x	x	x	x	x	x	x	x

For other versions, contact Parker Hannifin

Parker Hannifin
Pump & Motor Division Europe
Trollhättan, Sweden

F12-Cartridge

F12 – [ ] – [ ] [ ] [ ] – [ ] [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Frame size | Function | Main ports | Mounting flange | Shaft seal | Shaft | Version number | Option page 77 – 79 | Option page 7

Frame size		
Code	Displacem. (cm^3/rev)	Displacem. (cu in/rev)
030	30.0	1.83
040	40.0	2.44
060	59.8	3.65
080	80.4	4.91
090	93.0	5.68
110	110.1	6.72
125	125.0	7.63

Version number
(assigned for special versions)

Frame size		30	40	60	80	90	110	125
Code	Shaft*							
C	DIN Spline, Std.	x	x	x	x	x	x	x
K	Metric key, Option	(x)	-	(x)	(x)	(x)	(x)	(x)
J	Metric key, Option	-	(x)	-	-	-	-	-
B	Spline DIN 5480	-	-	-	-	-	(x)	(x)
V	Tapered shaft	(x)	(x)	(x)	-	-	-	-
P	Metric Key, Optional	30 (X)	-	-	-	-	-	-

*See also dimensional drawings on page 66

Frame size		30	40	60	80	90	110	125
Code	Function							
M	Motor	x	x	x	x	x	x	x
S	Motor, high speed	(x)	(x)	(x)	-	-	-	-

For other versions, contact Parker Hannifin

Frame size		30	40	60	80	90	110	125
Code	Main ports							
F	SAE 6000 psi flange	x	x	x	x	x	x	x

Frame size		30	40	60	80	90	110	125
Code	Mounting flange							
C	Cartridge	x	x	x	x	x	x	x

Frame size		30	40	60	80	90	110	125
Code	Option							
0000	Standard	x	x	x	x	x	x	x
L130	Flushing valve 1.3 mm orifice	(x)	(x)	(x)	(x)	(x)	-[1]	-[1]
MUVR	Make up/Anti cavitation valve clockwise rotation	(x)	-	-	-	-	-	-
MUVL	Make up/Anti cavitation valve counter clockwise rotation	(x)	-	-	-	-	-	-
P__R[2]	Pressure relief valve clockwise rotation	(x)	(x)	(x)	-	-	-	-
P__L[2]	Pressure relief valve counter clockwise rotation	(x)	(x)	(x)	-	-	-	-

Frame size		30	40	60	80	90	110	125
Code	Option							
P0	Prepared for speed sensor	x	x	x	x	x	x	x
PT	Prepared for speed sensor and Painted Black	(x)	(x)	(x)	(x)	(x)	(x)	(x)
B0	Power Boost and Pre-pared for speed sensor	(x)	-	-	-	-	-	-
BT	Power Boost, Prepared for speed sensor and Painted Black	(x)	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125
Code	Shaft seal							
V	FPM, high pressure, high temperature	x	x	x	x	x	x	x

For other versions, contact Parker Hannifin

x: Available (x): Optional – : Not available

1) F12-110 and -125: Accessory valve block (page 78)
2) Pressure setting on page 79

NOTE: All combinations are not valid, please contact Parker Hannifin

F12-SAE

F12 – □ – □ □ □ – □ □ – □ – □ – □ – □

Frame size | Function | Main ports | Mounting flange | Shaft seal | Shaft | Version number | Option page 77 – 79 | Option page 7

Frame size		
Code	Displacem. (cm^3/rev)	Displacem. (cu in/rev)
030	30.0	1.83
040	40.0	2.44
060	59.8	3.65
080	80.4	4.91
090	93.0	5.68
110	110.1	6.72
125	125.0	7.63
152	149.8	9.14
162	163.1	9.95
182	179.8	11.11
250	242.0	14.77

Version number
(assigned for special versions)

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Function											
M	Motor	x	x	x	x	x	x	x	x	x	x	-
S	Motor, high speed	(x)	(x)	(x)	-	-	-	-	(x)	(x)	(x)	-
Q	Motor	-	-	-	-	-	-	-	-	-	-	x
R	Pump, clockwise rotation	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
L	Pump, counter clockwise rot'n	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

For other versions, contact Parker Hannifin

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Main ports											
S	SAE 6000 psi flange	x	x	x	x	x	x	x	-	-	-	-
U	SAE UN threads [4]	(x)	(x)	(x)	(x)	(x)	(x)	(x)	-	-	-	-
F	SAE 6000 psi flange [2]	-	-	-	-	-	-	-	x	x	x	x
D	SAE 6000 psi Horizontal [2]	-	-	-	-	-	-	-	(x)	(x)	(x)	-
A	SAE 6000 psi Axial [2]	-	-	-	-	-	-	-	(x)	(x)	(x)	-
K	SAE 6000 psi Rear [2]	-	-	-	-	-	-	-	(x)	(x)	(x)	-
M	SAE 6000 psi Side [2]	-	-	-	-	-	-	-	(x)	(x)	(x)	-

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Mounting flange											
S	SAE 4 bolt	x	x	x	x	x	x	x	x	x	x	x
R	SAE 4 bolt	-	-	-	(x)	(x)	-	-	-	-	-	-
T	SAE 2 bolt	x	x	x	-	-	-	-	-	-	-	-

x: Available (x): Optional – : Not available

1) F12-110 and -125: Accessory valve block (page 78)
2) Metric threads
3) Pressure setting on page 79
4) Not in combination with any valve options

NOTE: All combinations are not valid, please contact Parker Hannifin

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Shaft*											
T	SAE key, Standard	x	x	x	x	x	x	x	x	x	x	x
R	SAE key, Optional	-	-	-	(x)	(x)	-	-	-	-	-	-
S	SAE Spline, Optional	x	x	x	x	x	x	x	x	x	x	x
F	SAE Spline, Optional	-	-	-	(x)	(x)	-	-	(x)	(x)	(x)	(x)
U	SAE Spline, Optional	-	-	-	(x)	(x)	-	-	-	-	-	-
K	Metric key, Standard	-	-	-	-	-	-	-	-	-	-	x
D	Spline DIN 5480	-	-	-	-	-	-	-	-	-	-	(x)
V	Tapered shaft	(x)	(x)	(x)	-	-	-	-	-	-	-	-

*See also dimensional drawings on pages 67 – 74.

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Option											
0000	Standard	x	x	x	x	x	x	x	x	x	x	x
L130	Flushing valve 1.3 mm orifice	(x)	(x)	(x)	(x)	(x)	-[1]	-[1]	-	-	-	-
MUVR	Make up/ Anti cavitation valve clockwise rotation	(x)	-	-	-	-	-	-	-	-	-	-
MUVL	Make up/Anti cavitation valve counter clockwise rotation	(x)	-	-	-	-	-	-	-	-	-	-
P_R [3]	Pressure relief valve clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-	-
P_L [3]	Pressure relief valve counter clockwise rotation	(x)	(x)	(x)	-	-	-	-	-	-	-	-

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Option											
P_	Standard, prepared for speed sensor	x	x	x	x	x	x	x	x	x	x	x
B_	Power Boost and Prepared for speed sensor	(x)	-	-	-	-	-	-	-	-	-	-
T	Painted Black	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)

Frame size		30	40	60	80	90	110	125	152	162	182	250
Code	Shaft seal											
V	FPM, high pressure, high temperature	x	x	x	x	x	x	x	x	x	x	x

For other versions, contact Parker Hannifin

Parker Hannifin
Pump & Motor Division Europe
Trollhättan, Sweden