

F12 Large Frame Fixed Displacement Bent-Axis Motors



Series F12 is the high performance bent-axis, fixed displacement heavy-duty motor series. They can be used in numerous applications at unusually high shaft speeds.

Motor Performance Data

Model Series	Displacement in ³ /rev (cc/rev)	Maximum Outlet Pressure PSI (BAR)	Rated Drive Speed RPM	Flow GPM (LPM)
F12-030	1.83 (30.0)	6000 (420)	6700	44 (166.6)
F12-040	2.44 (40.0)	6000 (420)	6100	53 (200.6)
F12-060	3.64 (59.6)	6000 (420)	5300	68 (257.4)
F12-080	4.91 (80.4)	6000 (420)	4800	85 (321.8)
F12-090	5.68 (93.0)	6000 (420)	4600	—
F12-110	6.72 (110.1)	6000 (420)	4400	105 (397.5)
F12-125	7.63 (125.0)	6000 (420)	4200	—
F12-150	9.15 (150.0)	5000 (350)	3200	103 (139.9)
F12-250	14.77 (242.0)	5000 (350)	2700	154 (583.0)

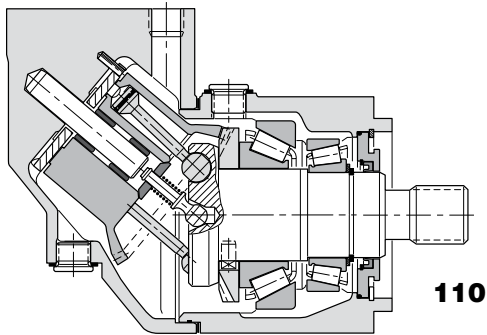
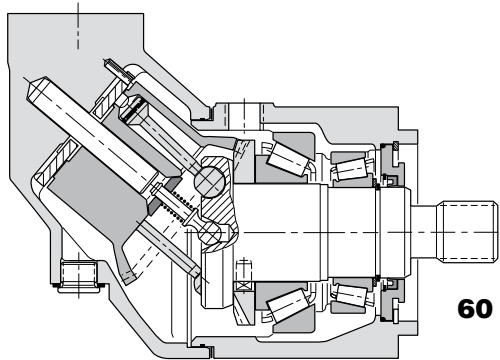
Markets

Applications

Forestry	Saw Drives, Feller Bunchers, Skidder, Forwarder, Cranes, Mowers / Cutters
Industrial	Aircraft Test Stands
Marine	Deck Cranes, Constant Tension Winches, Hatch Covers
Oil & Gas	Nitrogen Pumpers, Frac Trucks
Construction	Skid Steer, Off-Highway Trucks, Fan Drives, Cranes, Dust Collector, Excavator
Mining	Drill Rigs, Top Drives, Loaders, Subsurface Loaders, Tunneling Equipment
Material Handling	Conveyor Drives, Truck Mounted Cranes, Mixers
Recycling	Shredders, Vacuum Truck Systems
Military	Fan Drives

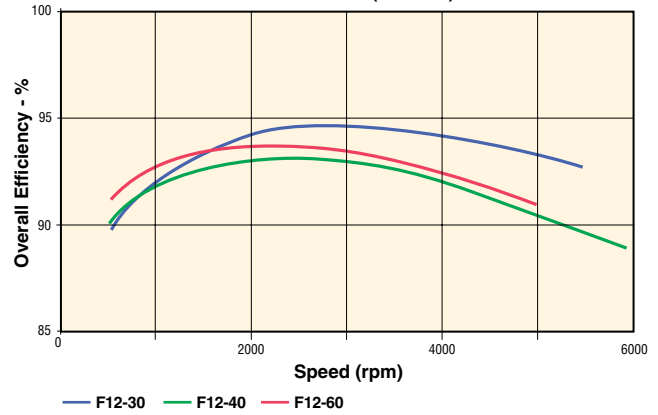
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Performance Characteristics



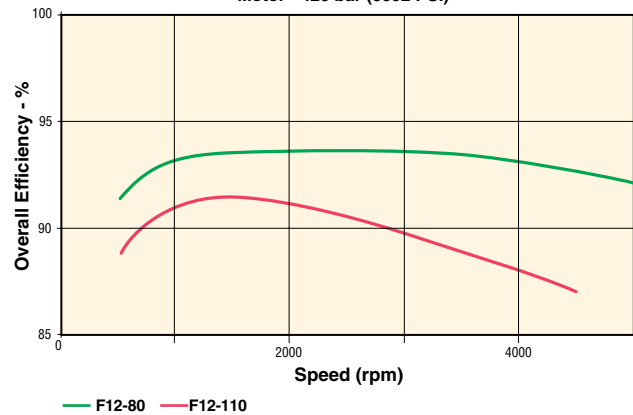
F12 Series Overall Efficiency

Motor - 420 bar (6092 PSI)



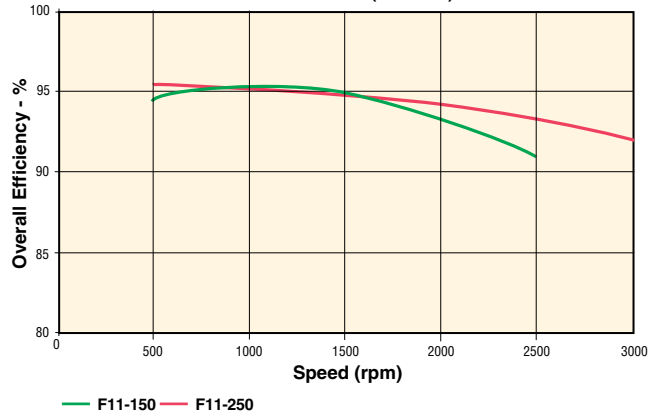
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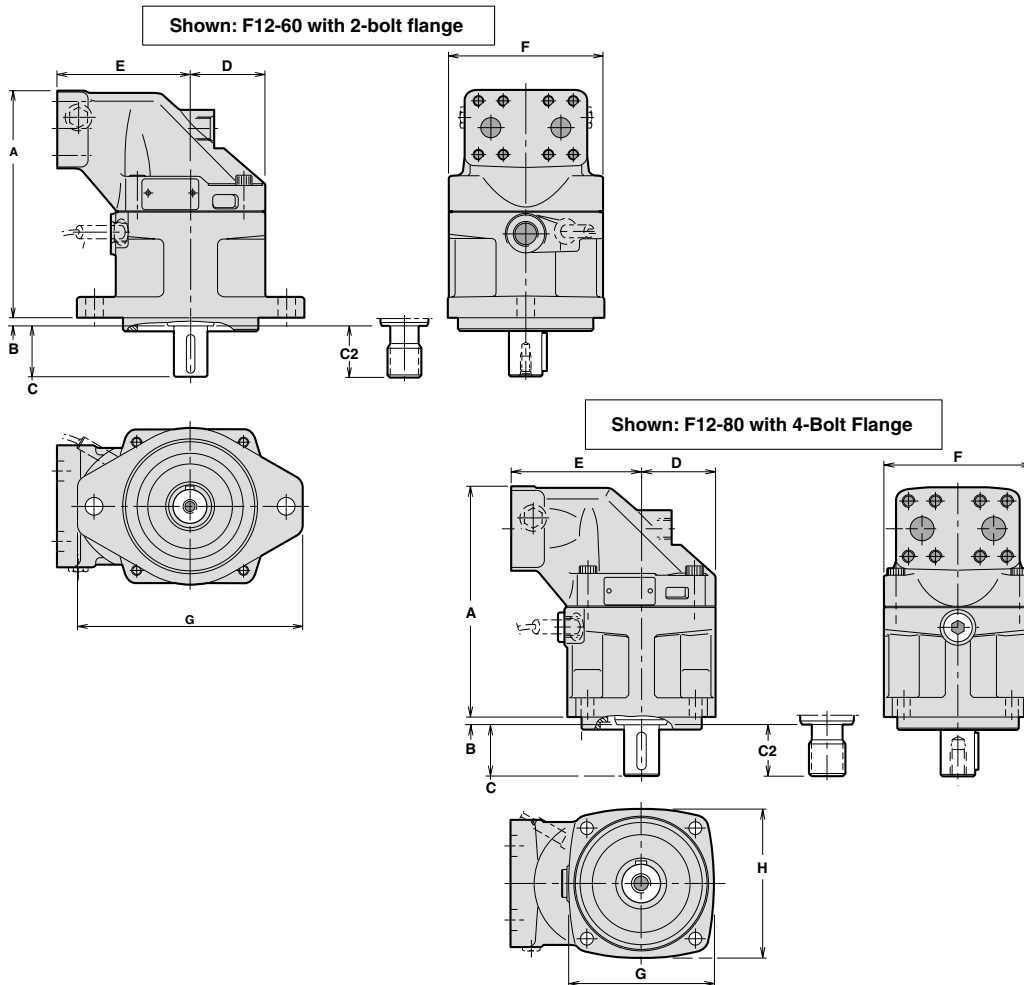
Motor - 250 bar (3625 PSI)



Benefits/Features

- Operating pressures to 6961.81 PSI (480 BAR)
- Compact, lightweight motor and pump
- Laminated piston ring provides low internal leakage and thermal shock resistance
- F12 Series have very few moving parts
- Heavy duty roller bearings

F12 Large Frame Fixed Displacement Bent-Axis Motors



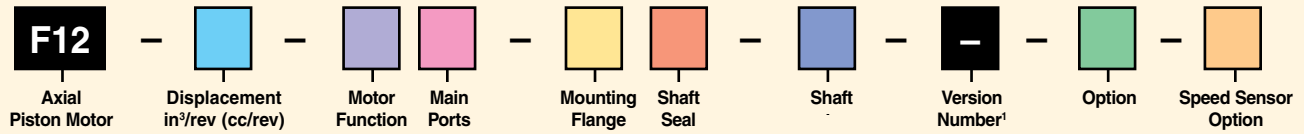
Dimensions, inch (mm)

Series 2-BOLT	A	B	C	C2	D	E	F	G	
F12-30	7.46 (189.5)	0.31 (7.9)	1.5 (38.1)	1.3 (33.0)	2.32 (58.9)	3.94 (100.1)	4.80 (121.9)	6.93 (176.0)	
F12-40	7.76 (197.1)	0.3 (7.9)	1.89 (48.0)	1.89 (48.0)	2.56 (64.0)	4.33 (110.0)	5.28 (134.1)	8.46 (214.9)	
F12-60	8.43 (214.1)	0.31 (7.9)	1.89 (48.0)	1.89 (48.0)	2.76 (70.1)	4.92 (125.0)	5.67 (144.0)	8.46 (214.9)	
Series 4-BOLT	A	B	C	C2	D	E	F	G	H
F12-30	7.46 (189.5)	0.31 (7.9)	1.50 (38.1)	1.30 (33.0)	2.32 (58.9)	3.94 (100.1)	4.80 (121.9)	4.65 (118.1)	4.65 (118.1)
F12-40	7.76 (197.1)	0.31 (7.9)	1.89 (48.0)	1.89 (48.0)	2.56 (65.0)	4.33 (110.0)	5.28 (134.1)	5.83 (148.1)	5.67 (144.0)
F12-60	8.43 (214.1)	0.31 (7.9)	1.89 (48.0)	1.89 (48.0)	2.76 (70.1)	4.92 (125.0)	5.67 (144.0)	5.83 (148.1)	5.67 (144.0)
F12-80	9.45 (240.0)	0.31 (7.9)	2.13 (54.1)	2.13 (54.1)	3.05 (77.5)	5.31 (134.9)	6.10 (154.9)	6.10 (154.9)	6.10 (154.9)
F12-90	9.45 (240.0)	0.31 (7.9)	2.13 (54.1)	2.13 (54.1)	3.05 (77.5)	5.31 (134.9)	6.10 (154.9)	6.10 (154.9)	6.10 (154.9)
F12-110	10.39 (263.9)	0.31 (7.9)	2.64 (67.1)	2.63 (66.8)	3.35 (85.1)	5.71 (145.0)	6.69 (169.9)	8.03 (204.0)	7.87 (199.9)
F12-125	10.39 (263.9)	0.31 (7.9)	2.64 (67.1)	2.63 (66.8)	3.35 (85.1)	5.71 (145.0)	6.69 (169.9)	8.03 (204.0)	7.87 (199.9)



Motors

F12 Model Ordering Code



Code	Displacement in³/rev (cc/rev)
030	1.83 in³/rev (30.0 cc/rev)
040	2.44 in³/rev (40.0 cc/rev)
060	3.65 in³/rev (59.8 cc/rev)
080	4.91 in³/rev (80.4 cc/rev)
090	5.68 in³/rev (93.0 cc/rev)
110	6.72 in³/rev (110.1 cc/rev)
125	7.63 in³/rev (125.0 cc/rev)
150	9.15 in³/rev (150.0 cc/rev)
250	14.77 in³/rev (242.0 cc/rev)

Code	Motor Function	30	40	60	80	90	110	125	150	250
M	Motor	x	x	x	x	x	x	x	x	—
H	Motor-High Pressure	—	—	—	—	—	—	—	x	—
Q	Quiet	—	—	—	—	—	—	—	—	x

Code	Main Ports	30	40	60	80	90	110	125	150	250
S	SAE Flange Code 62 6000 PSI (413.7 BAR)	x	x	x	x	x	x	x	—	—
U*	SAE, UN Threads	x	x	x	x	x	x	x	—	—
F	SAE 6000 PSI Flange	—	—	—	—	—	—	—	x	x

* Reduced pressure rating 350 bar

Code	Mounting Flange	30	40	60	80	90	110	125	150	250
S	SAE 4 bolt	x	x	x	x	x	x	x	x	x
T	SAE 2 bolt	x	x	x	—	—	—	—	—	—
X	SAE D 4 bolt	—	—	—	x	x	—	—	—	—

NOTE: ISO and cartridge mounting also available. See catalog on CD.

x: Available —: Not Available

¹Assigned by factory for special versions

²Order speed sensor kit# 3785190 separately.

Code	Shaft Seal	30	40	60	80	90	110	125	150	250
N	NBR*, Low Pressure	x	x	x	x	x	x	x	x	—
V	FPM**, High Pressure, High Temperature	x	x	x	x	x	x	x	x	x

* NBR - Nitrile rubber

** FPM - Fluorocarbon rubber

Code	Shaft	30	40	60	80	90	110	125	150	250
S	SAE Spline (std)	x	x	x	x	x	x	x	x	x
U	SAE Spline (opt.)	—	—	—	x	x	—	—	—	—
T	SAE Key (std)	x	x	x	x	x	x	x	x	—
K	Metric Key	—	—	—	—	—	—	—	x	x
F	SAE Spline	—	—	—	—	—	—	—	—	x
D	Spline, DIN 5480	—	—	—	—	—	—	—	—	x

Code	Option	30	40	60	80	90	110	125	150	250
000	Standard	x	x	x	x	x	x	x	x	x
L01	Integr. Flushing Valve	x	x	x	x	x	—*	—*	—	—
MVL	Make-up valve counter clockwise rotation	x	—	—	—	—	—	—	—	—
MVR	Make-up valve clockwise rotation	x	—	—	—	—	—	—	—	—

* F12-110 accessory valve block. See page 36 of catalog on CD.

Code	Speed Sensor Option	30	40	60	80	90	110	125	150	250
0	Standard	x	x	x	x	x	x	x	x	x
P	Prepared for Speed Sensor	x	x	x	x	x	x	x	—	—