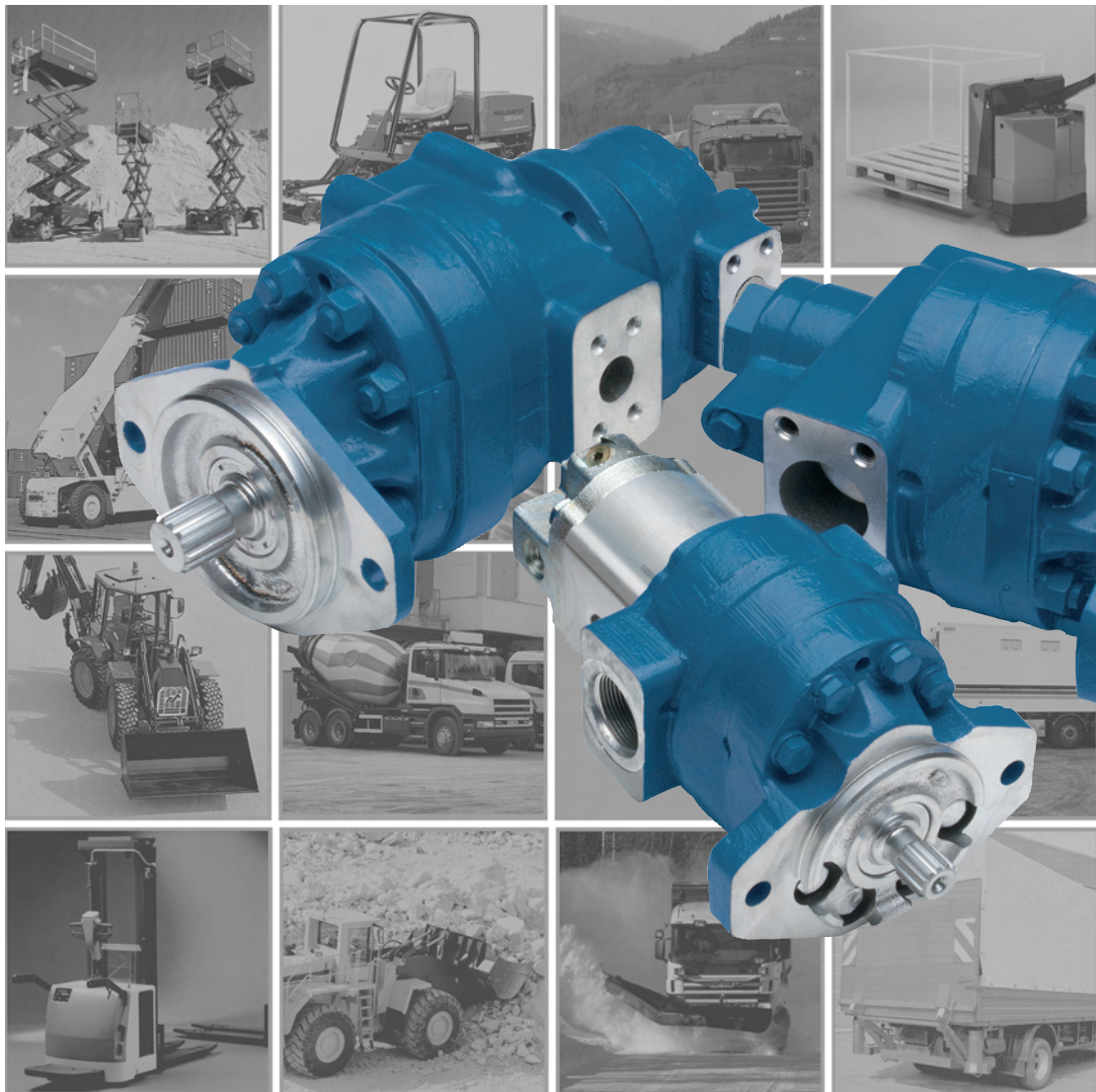




F20/F30 Ferra Series Hydraulic Pumps



DESCRIPTION, FEATURES AND BENEFITS

Reliable, efficient, serviceable design

Haldex external spur gear, positive displacement pumps are offered in single, double, triple and thru-drive versions.

Single and thru-drive pumps are of a three-section modular design. Front and rear covers are cast iron for reliability, strength, and sound reduction. A **cast iron center section** allows gear tips to generate their own run-in paths, creating minimum radial gear-tip clearance for high volumetric efficiency.

The thru-drive pump is a single pump with a mounting pad and coupling spline in its rear cover, allowing a second pump to be mounted and driven in tandem.

The double pump consists of two single pumps, each having its own outlet port but sharing a common inlet port and input shaft. This compact unit can, therefore, serve two separate hydraulic circuits, or supply greater volume to a single circuit through the combined delivery of both pumps.

Besides offering greater design flexibility to hydraulic system designers, thru-drive and double pumps reduce installation costs since they allow multiple pump operation from a single mounting and drive point. Also, double pumps require only one inlet line, compared to the two required when separate pumps are used.

Convenient, economical porting arrangements

A large selection of port sizes and positions allows greater system design flexibility, provides the means for reducing costs through simplified plumbing arrangements, and facilitates the interchangeability of Haldex and competitive pumps. SAE 4-bolt split flange ports and SAE straight thread ports are standard.

Choice of shafts, rotation and couplings

Splined SAE side-fit drive shafts are standard. Other popular shafts are available. Pumps are assembled for either clockwise or counterclockwise rotation.

Thru-drive pumps are provided with output drive couplings that mate with splined SAE side-fit drive shafts.

Meets many mounting requirements

SAE standard wet flange mountings and single or double shaft seals are available on all pumps. Mounting pads meet SAE standards and are available in several sizes and types to satisfy various mounting requirements and to facilitate interchangeability of Vickers and competitive units.

Double shaft seals are ideal for applications where the pump pilot and shaft extend into a transmission case or crankcase. If either seal fails, the pump fluid remains separated from the transmission or crankcase fluid. Leakage past either seals drains to the exterior of the pump.

The double seal feature thus reduces system downtime by preventing the mixing of different fluids and providing for visual detection of seal malfunction.

The inlet of the thru-drive pump is open to the pump's rear coupling area, requiring that mating pumps have a wet-flange mounting. If the rear mounting pad is capped instead of used to mount a pump, it must be sealed to prevent fluid leakage and entrance of air.

Heavy duty construction

The drive gear and drive shaft are one piece construction, as are the driven gear and shaft, to eliminate the potential problems of fretting and stress fatigue associated with two-piece construction. The one-piece design also allows the use of large diameter journals and bearings for greater load-carrying capacity.

Gears are of AISI 8620 alloy steel for greater shaft strength and a stronger gear assembly. Gears have ten teeth to minimize pressure ripple, and gear sides and shaft journals are carburized, hardened, and ground to a fine finish.

The pumps large teflon impregnated bronze bearings are installed in precision bored covers for optimum shaft alignment. They provide a large support area that keeps bearing pressures low enough to handle most indirect drives. For applications imposing very high side loads, consult your Haldex representative.

NOTE: This catalog features our most standard single, double and triple pump capabilities. Other pump options and multiple pump combinations are available. Please contact factory or your Haldex representative for information. See bottom of page 45 for contact information.

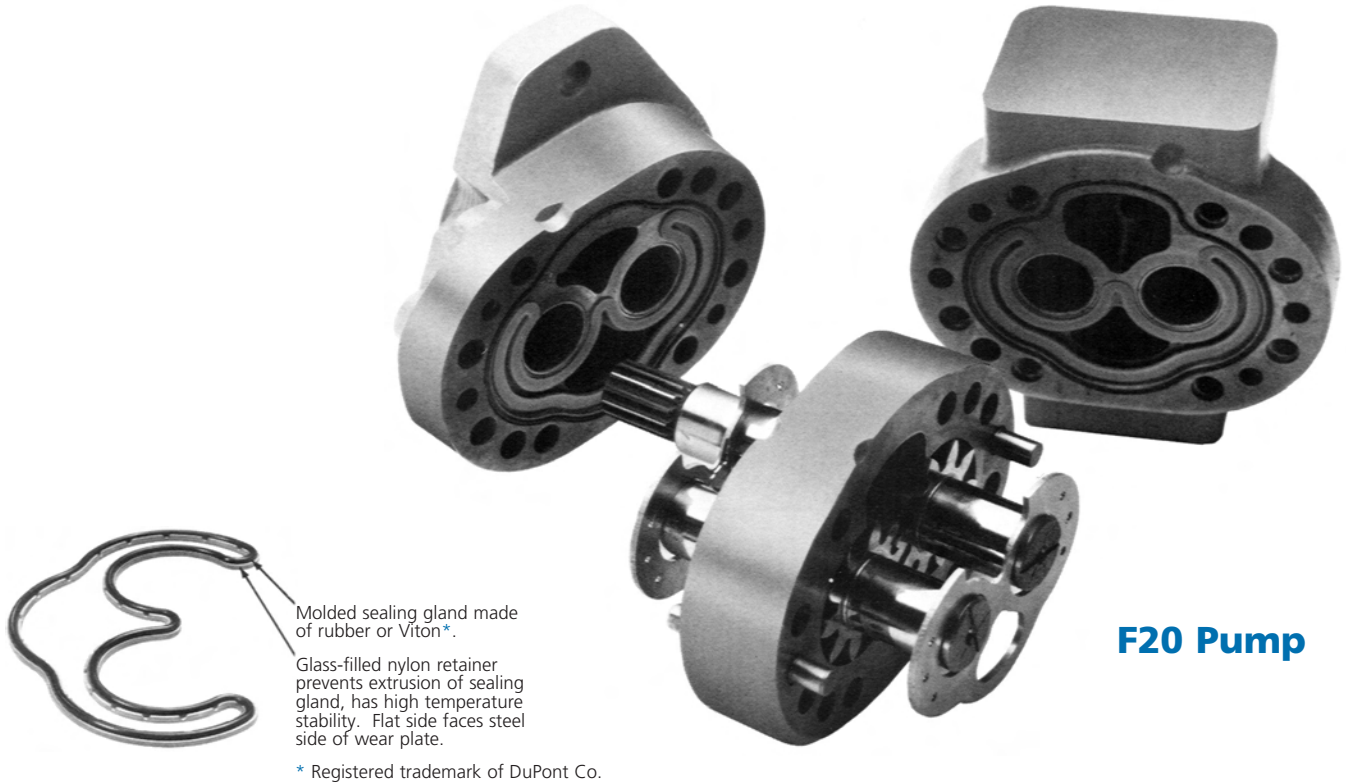
Pictures on front cover are used with the kind permission of eg: Atlet, BT, Huddig, Scania, Toro and Volvo Construction Equipment.

Minimum leakage and wear

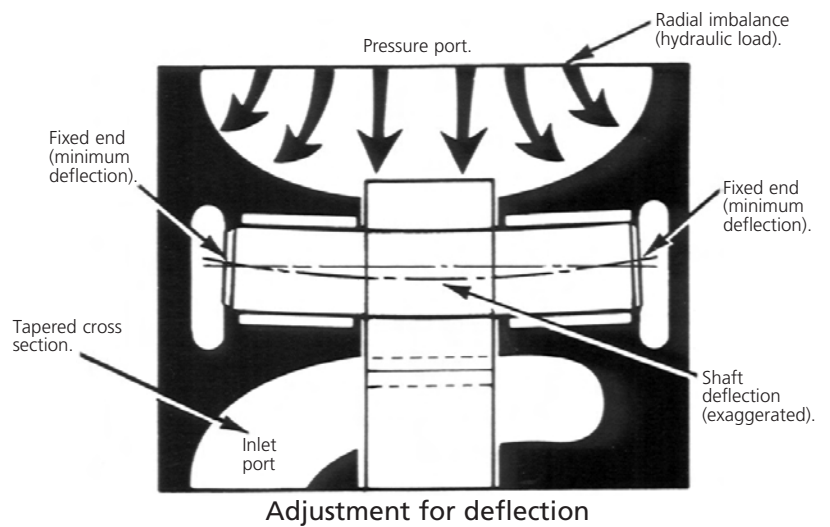
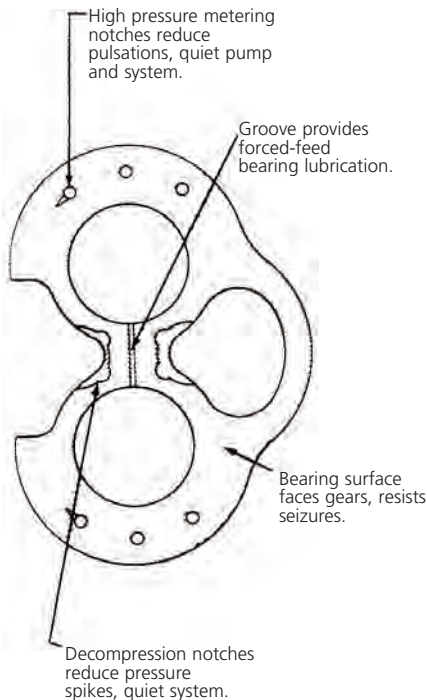
Haldex pumps utilize two seal packs and two wear plates to minimize leakage across the end faces of the gears and to reduce wear. During startup, the seal packs mechanically preload and seal a cantilever section of the plates against the ends of the gears.

The seal packs also establish the wear plate area exposed to system pressure, allowing axial pressure loading and balancing of the cantilever sections. As pressure increases, the sections deflect toward the gear faces to reduce clearances and balance opposing axial

forces. Running clearances are maintained small enough for minimum leakage across the faces, yet large enough to maintain the oil film required to minimize wear of mating surfaces.



LONG-LIFE BEARING SYSTEM



Bearings and support structures move in unison with, and adjust to, shafts that are deflected by high hydraulic loads. Optimum bearing alignment,

under load, maintains the large-area bearing support required for minimum wear and maximum life of bearings and pump.

4 PERFORMANCE SPECIFICATIONS FOR F20/F30 PUMPS

Single and thru-drive pumps	Model series	Pump size	Theoretical displacement per revolution		Rated pressure		Rated speed @ rated pressure & .17 bar (5" Hg) vacuum inlet	Minimum speed @ rated pressure	Typical delivery @ rated speed & pressure		Typical input power @ rated speed & pressure	
			cc	cu. in.	bar	psi	rpm	rpm*	l/min	gpm	kW	hp
F20 and FT20	7	23	1.41	276	4000	3600	1000	75.7	20	37	50	
	9	29	1.79	276	4000	3400	800	90.8	24	44	59	
	11	36	2.18	276	4000	3200	600	105.9	28	51	68	
	13	43	2.60	276	4000	3000	600	117.3	31	57	76	
	15	48	2.94	276	4000	2800	600	124.9	33	60	80	
	17	55	3.33	250	3625	2500	600	128.7	34	62	83	
	19	62	3.77	228	3300	2500	600	147.6	39	57	76	
	21	68	4.13	207	3000	2500	600	162.7	43	57	76	
24	77	4.71	190	2700	2500	600	185.4	49	53	71		
27	87	5.30	170	2375	2300	600	193.0	51	49	66		
F30 and FT30	18	58	3.54	276	4000	3000	600	166.5	44	77	104	
	21	68	4.13	276	4000	3000	600	193.0	51	90	121	
	25	80	4.91	276	4000	3000	600	230.9	61	107	144	
	28	91	5.51	276	4000	2750	600	214.0	57	95	128	
	30	97	5.89	276	4000	2500	600	230.9	61	98	131	
	32	104	6.30	250	3625	2500	600	245.0	65	99	133	
	35	113	6.88	250	3400	2500	600	272.5	72	95	127	
	40	129	7.86	228	2900	2400	600	299.0	79	104	139	
45	145	8.84	190	2550	2300	600	325.5	86	92	123		
50	161	9.82	170	2300	2200	600	344.4	91	87	116		

* Lower speeds are permissible when operating below rated pressure.

Double pump model series	Pump sizes and ratings †		† Rated speed of double pump is governed by pump with lower speed rating. If deliveries of both pumps are combined, rated pressure is governed by pump with lower pressure rating.
	Shaft-end pump	Cover-end pump	
F2020	Same as for F20 and FT20 above.	Same as for F20 and FT20 above.	
F3020	Same as for F30 and FT30 above.		
F3030		Same as for F30 and FT30 above.	

Efficiency

Depending on displacement, speed and pressure, volumetric efficiency is 81-98% and overall efficiency is 71-92% with SAE 10W oil at 49°C (120°F).

Inlet conditions

Pressure on the inlet should not exceed 1 bar (15 psi). Under continuous operation, inlet vacuum should not exceed 0.17 bar (5" Hg).

Operating temperature

Under continuous operation, a maximum of 96°C (205°F) is recommended. The maximum temperature for cyclic or intermittent operation is 107°C (225°F).

Fluids and filtration

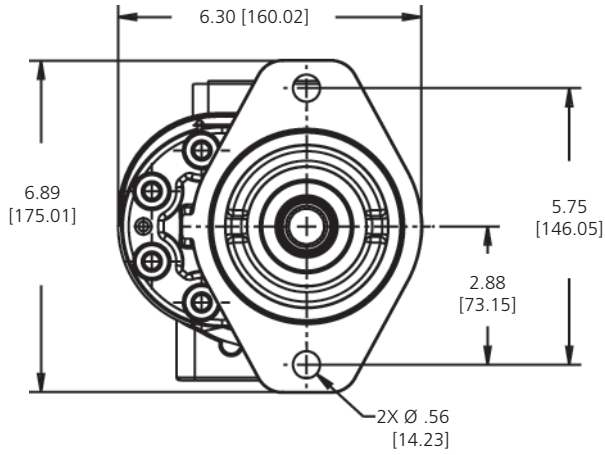
For applications requiring fire resistant fluids, water glycols, water in-oil emulsions and synthetics may be used at slightly reduced ratings. Fluid should be selected

with an operating viscosity similar to the petroleum oil described above. For application assistance, consult your Haldex representative.

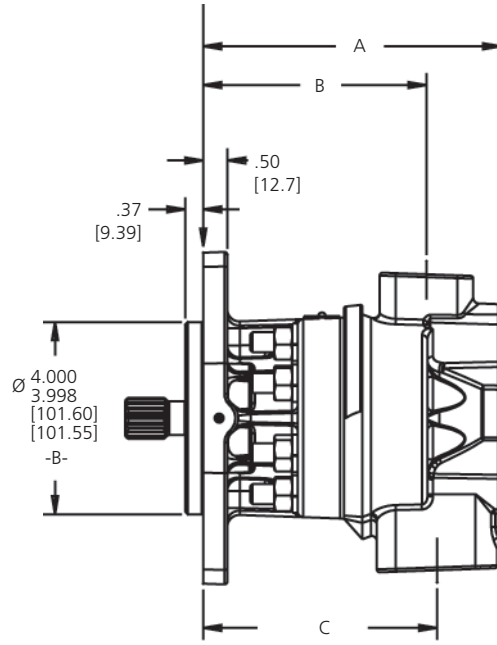
The system should be filtered to provide an ISO code (proposed) cleanliness level of 19/16. A 10-micron filter sized to accommodate full system return line flow, is recommended for most operating environments. Severe conditions may require greater efficiency from the filter.

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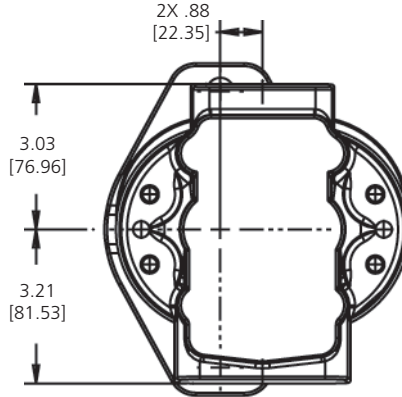
F20



FRONT VIEW



SIDE VIEW



REAR VIEW

5.30	87	27	7.95	201.9	6.40	162.6	6.62	168.1
4.71	77	24	7.70	195.6	6.15	156.2	6.37	161.8
4.13	68	21	7.43	188.7	5.88	149.4	6.10	154.9
3.77	62	19	7.26	184.4	5.71	145.0	5.93	150.6
3.33	55	17	7.06	179.3	5.51	140.0	5.73	145.5
2.94	48	15	6.89	175.0	5.34	135.6	5.56	141.2
2.60	43	13	6.73	170.9	5.18	131.6	5.40	137.2
2.18	36	11	6.54	166.1	4.99	126.7	5.21	132.3
1.79	29	9	6.36	161.5	4.81	122.2	5.03	127.8
1.41	23	7	6.18	157.0	4.63	117.6	4.85	123.2
CIR	CC	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F20 Series Single Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F20	F20 Series Single Gear Pump

3 (Mount Type)

Order Code	Description
D	Dry Mounting Flange (shorter length, single shaft seal)
W	Wet Mounting Flange (pilot diameter sealing and provides for optional double shaft seal)
S	Single Shaft Seal Short Mount

4 (Front Cover)

Order Code	Description
1	SAE "A" 2-Bolt Mount (G20W only)
2	SAE "B" 2-Bolt Flange
6	SAE B 2/4-Bolt Combination Mount (G20W only)
8	SAE C 2/4-Bolt Mount
31	SAE "A" 2-Bolt Mount w/Outboard Ball Bearing
32	SAE "B" 2-Bolt Mount w/Outboard Ball Bearing

5 (Inlet Port)

Order Code	Description
B	1.00", SAE 4-Bolt Split Flange
C	1.25", SAE 4-Bolt Split Flange
CM	1.25", SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50", SAE 4-Bolt Split Flange
DM	1.50", SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16" - 12) Straight Thread
W	#20 SAE (1 5/8" - 12) Straight Thread
X	#24 SAE (1 7/8" - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

7 (Outlet Port)

Order Code	Description
A	.750", SAE 4-Bolt Split Flange
B	1.00", SAE 4-Bolt Split Flange
BM	1.00", SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875 - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Cover)

Order Code	Description
1	Standard Single Pump Rear Cover (no options)

9 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

EXAMPLE:												
(F3)- F20- W- 2 -D- 15-B -1- A -12- A- 10 - L												
1	2	3	4	5	6	7	8	9	10	11	12	13
Special Seals	Series	Mount Type	Front Cover	Inlet Port	Displacements	Outlet Port	Rear Cover	Shaft Seal	Drive Shaft	Port Locations	Design	Rotation

10 (Drive Shaft)

Order Code	Description
1	SAE B Straight Keyed, .875 Diameter, 1.312 Ext.
3	Straight Keyed with Thread (.625" - 18 UNC)
5	Tapered Threaded (1.50" taper per foot)
7	Tapered Keyed/Threaded (.625" - 18 UNC, 1.50" taper per foot)
12	SAE B 13-Tooth Spline, Flat Root-Side Fit
17	SAE "A" 9-Tooth Spline, Flat Root-Side Fit
21	SAE "BB" Straight Keyed, 1.00" diameter, 1.50" ext.
99	SAE "BB" 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

11 (Port Locations)

Order Code	Description
A	Side Inlet / Side Outlet
B	Side Inlet / Rear Outlet
C	Rear Inlet / Side Outlet
D	Rear Inlet / Rear Outlet

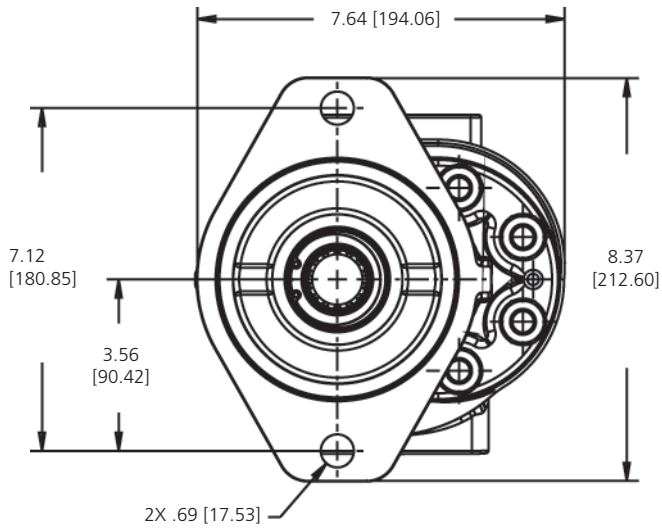
12 (Design Designation)

Order Code	Description
10	Standard

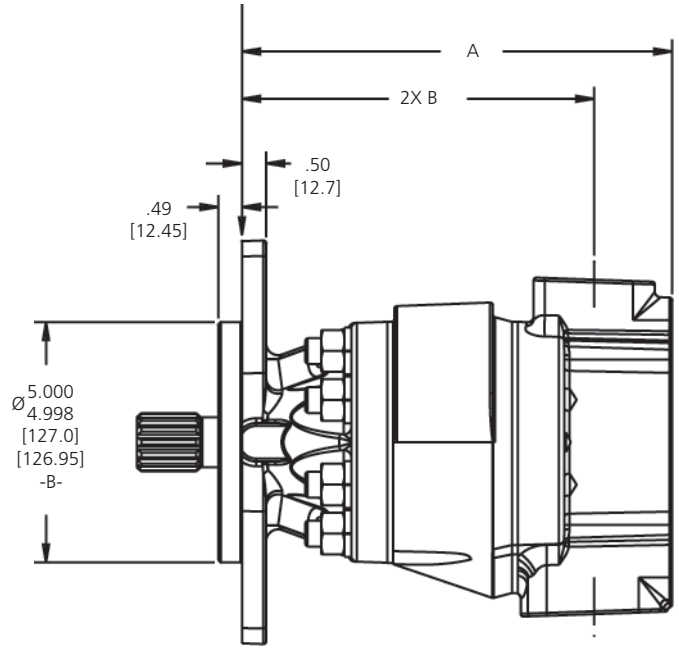
13 (Rotation)

Order Code	Description
Omit	Clockwise Rotation
L	Counterclockwise Rotation

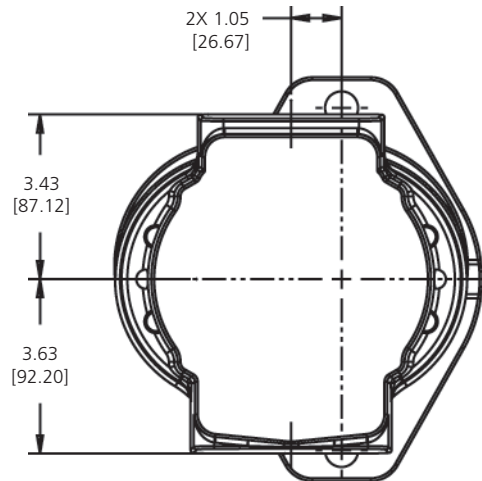
F30



FRONT VIEW



SIDE VIEW



REAR VIEW

161	9.82	50	9.56	242.8	7.94	201.7
145	8.84	45	9.25	235.0	7.63	193.8
129	7.86	40	8.94	227.1	7.32	185.9
113	6.88	35	8.63	219.2	7.01	178.1
103	6.30	32	8.45	214.6	6.83	173.5
97	5.89	30	8.33	211.6	6.71	170.4
90	5.51	28	8.21	208.5	6.59	167.4
81	4.91	25	8.02	203.7	6.40	162.6
68	4.13	21	7.77	197.4	6.15	156.2
58	3.54	18	7.58	192.5	5.96	151.4
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F30 Series Single Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F30	F30 Series Single Gear Pump

3 (Mount Type)

Order Code	Description
C	Standard Designation

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
6	SAE B 2/4-Bolt Combination Mount
7	SAE C 2-Bolt Mount
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread
Y	#30 SAE (2 1/2 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

7 (Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread
Y	#30 SAE (2 1/2 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Cover)

Order Code	Description
2	Standard Single Pump Rear Cover (no options)

9 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

EXAMPLE:

(F3)- F30- C- 4 - E-30-C - 2- A -12-A- 10 - L												
1	2	3	4	5	6	7	8	9	10	11	12	13
Special Seals	Series	Mount Type	Front Cover	Inlet Port	Displacements	Outlet Port	Rear Cover	Shaft Seal	Drive Shaft	Port Positions	Design	Rotation

10 (Drive Shaft)

Order Code	Description
1	SAE C Straight Keyed, 1.250 Diameter, 1.875 Ext.
5	Tapered Threaded (1.50" taper per foot)
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

11 (Port Positions)

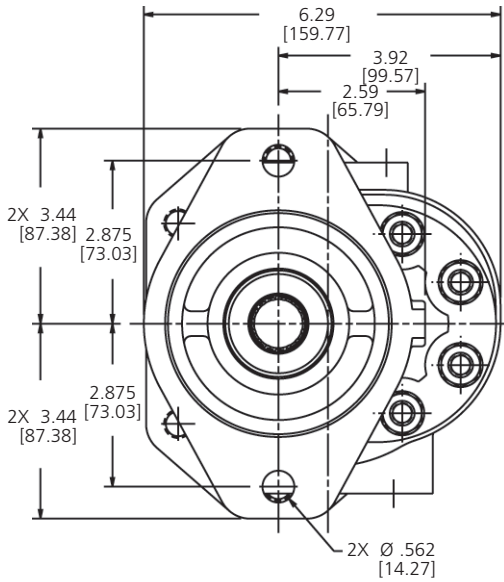
Order Code	Description
A	Side Inlet / Side Outlet
B	Side Inlet / Rear Outlet
C	Rear Inlet / Side Outlet
D	Rear Inlet / Rear Outlet

12 (Design Designation)

Order Code	Description
10	Standard

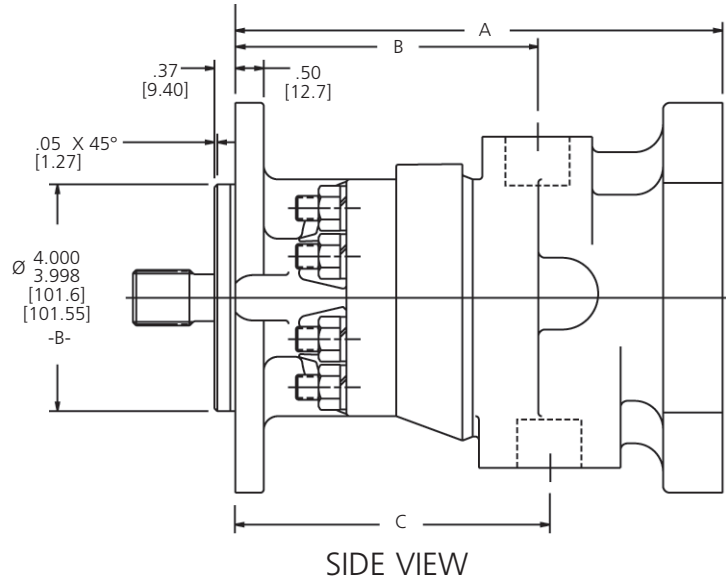
13 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

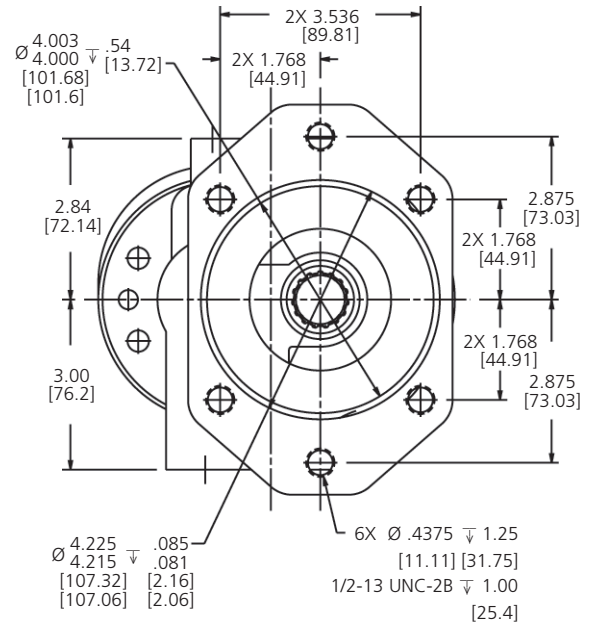


ROTATION
CW

FRONT VIEW



SIDE VIEW



REAR VIEW

87	5.30	27	9.68	245.9	6.42	163.1	6.64	168.7
77	4.71	24	9.41	239.0	6.15	156.2	6.37	161.8
68	4.13	21	9.14	232.2	5.88	149.4	6.10	154.9
62	3.77	19	8.97	227.8	5.71	145.0	5.93	150.6
55	3.33	17	8.78	223.0	5.51	140.0	5.73	145.5
48	2.94	15	8.60	218.4	5.34	135.6	5.56	141.2
43	2.60	13	8.44	214.4	5.18	131.6	5.40	137.2
36	2.18	11	8.25	209.6	4.99	126.7	5.21	132.3
29	1.79	9	8.07	205.0	4.81	122.2	5.03	127.8
23	1.41	7	7.90	200.7	4.63	117.6	4.85	123.2
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for FT20 Series Thru Drive Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
FT20	FT20 Thru Drive Series Single Gear Pump

3 (Mount Type)

Order Code	Description
W	Wet Mounting Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
1	SAE "A" 2-Bolt Mount
2	SAE B 2-Bolt Mount
4	SAE "C" 4-Bolt Mount (Contact Factory)
6	SAE B 2/4-Bolt Combination Mount (Wet Mount Only)
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
B	1.00", SAE 4-Bolt Split Flange
C	1.25", SAE 4-Bolt Split Flange
D	1.50", SAE 4-Bolt Split Flange
DM	1.50", SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16" - 12) Straight Thread
W	#20 SAE (1 5/8" - 12) Straight Thread
X	#24 SAE (1 7/8" - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

7 (Outlet Port)

Order Code	Description
A	.750", SAE 4-Bolt Split Flange
B	1.00", SAE 4-Bolt Split Flange
BM	1.00", SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875 - 14) Straight Thread
T	#12 SAE (1 1/16" - 12) Straight Thread
V	#16 SAE (1 5/16" - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Mounting Pad)

Order Code	Description
1	SAE "A" 2-Bolt Rear Mounting Pad
6	SAE "B" 2/4-Bolt Rear Mounting Pad

Note: A shorter length SAE "A" rear mounting pad option is available, contact factory for information.

9 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

EXAMPLE:

(F3)- FT20- W- 2 -D- 9-B - 1- A -12- A- 10 -L												
1	2	3	4	5	6	7	8	9	10	11	12	13
Special Seals	Series	Mount Type	Front Cover	Inlet Port	Displacements	Outlet Port	Rear Mounting Pad	Shaft Seal	Drive Shaft	Rear Coupling	Design	Rotation
F3	FT20	W	2	D	9	B	1	A	12	A	10	L

10 (Drive Shaft)

Order Code	Description
1	SAE B Straight Keyed, .875 diameter, 1.312 ext.
12	SAE B 13-Tooth Spline, Flat Root-Side Fit
21	SAE "BB" Straight Keyed, 1.00" diameter, 1.50" ext.
99	SAE "BB" 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

11 (Rear Coupling)

Order Code	Description
A	SAE "A" Coupling
B	SAE "B" Coupling
BB	SAE "BB" Coupling
G	SAE "A" Coupling 11-Tooth 16/32 DP, Flat Root-Side Fit
X	No Coupling

12 (Design Designation)

Order Code	Description
10	Standard

13 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

Model Code for FT30 Series Thru Drive Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
FT30	FT30 Thru Drive Series Gear Pump

3 (Mount Type)

Order Code	Description
C	Standard Designation

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
6	SAE B 2/4-Bolt Combination Mount
7	SAE C 2-Bolt Mount
8	SAE "C" 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread
Y	#30 SAE (2 1/2" - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

7 (Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Mounting Pad)

Order Code	Description
1	SAE "A" 2-Bolt Rear Mounting Pad
6	SAE "B" 2/4-Bolt Combination Rear Mounting Pad
8	SAE "C" 2/4-Bolt Combination Rear Mounting Pad

9 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

EXAMPLE:												
(F3)- FT30 -C- 4 - E- 30-C -6- A -12-B- 10 - L												
1	2	3	4	5	6	7	8	9	10	11	12	13
Special Seals	Series	Mount Type	Front Cover	Inlet Port	Displacements	Outlet Port	Rear Mounting Pad	Shaft Seal	Drive Shaft	Rear Coupling	Design	Rotation
F3	FT30	C	4	E	30	C	6	A	12	B	10	L

10 (Drive Shaft)

Order Code	Description
1	SAE C Straight Keyed, 1.250 diameter, 1.875 ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

11 (Rear Coupling)

Order Code	Description
A	SAE "A" Coupling
B	SAE "B" Coupling
BB	SAE "BB" Coupling
C	SAE "C" Coupling
X	No Coupling

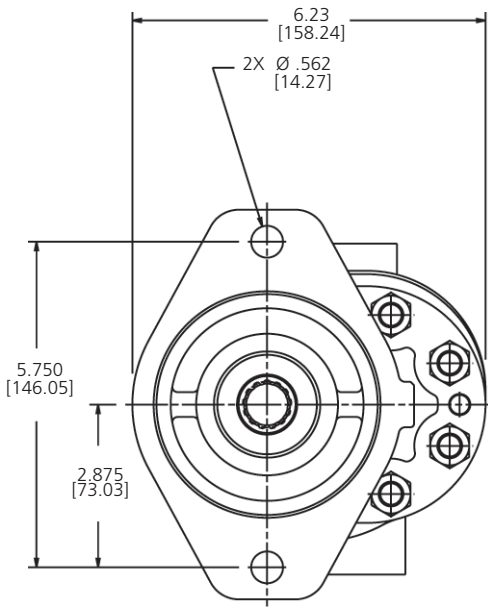
12 (Design Designation)

Order Code	Description
10	Standard

13 (Rotation)

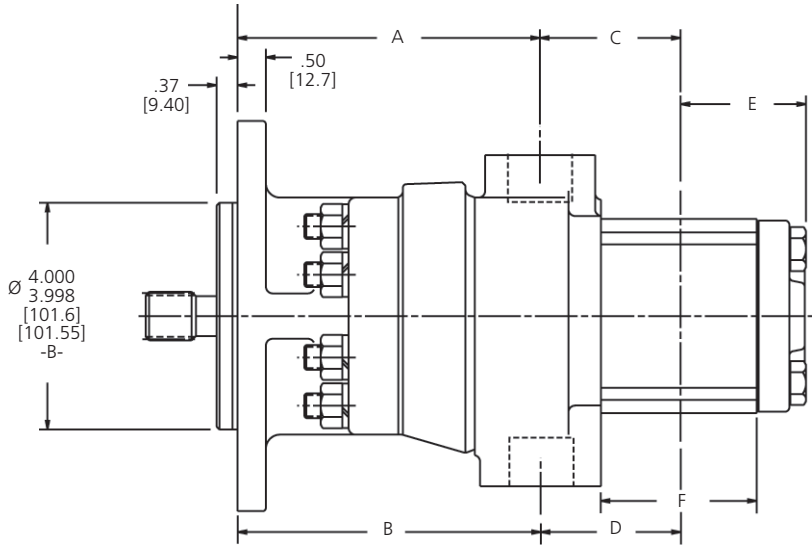
Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

F2009

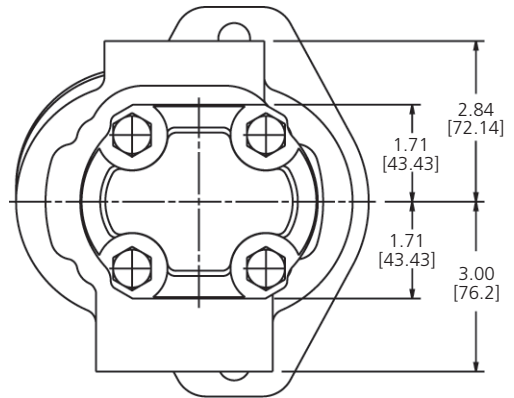


ROTATION
CCW

FRONT VIEW



SIDE VIEW



REAR VIEW

87	5.30	27	6.41	162.8	6.43	163.3
77	4.71	24	6.14	156.0	6.16	156.5
68	4.13	21	5.87	149.1	5.89	149.6
62	3.77	19	5.71	145.0	5.73	145.5
55	3.33	17	5.51	140.0	5.53	140.5
48	2.94	15	5.33	135.4	5.35	135.9
43	2.60	13	5.17	131.3	5.19	131.8
36	2.18	11	4.98	126.5	5.00	127.0
29	1.79	9	4.80	121.9	4.82	122.4
23	1.41	7	4.63	117.6	4.65	118.1
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)

G20 SECTIONS

28	1.709	28	2.73	69.3	2.72	69.1	2.52	64.0	3.30	83.8
27	1.647	27	2.70	68.6	2.69	68.3	2.49	63.2	3.24	82.3
23	1.403	23	2.58	65.5	2.57	65.3	2.38	60.5	3.01	76.5
19	1.159	19	2.47	62.7	2.46	62.5	2.26	57.4	2.78	70.6
16	.976	16	2.38	60.5	2.37	60.2	2.17	55.1	2.60	66.0
14	.854	14	2.32	58.9	2.31	58.7	2.12	53.8	2.49	63.2
11	.671	11	2.23	56.6	2.22	56.4	2.03	51.6	2.31	58.7
10	.610	10	2.20	55.9	2.19	55.6	2.00	50.8	2.25	57.2
8	.488	8	2.15	54.6	2.14	54.4	1.94	49.3	2.14	54.4
6	.366	6	2.09	53.1	2.08	52.8	1.86	47.2	2.02	51.3
CC	CIR	DISPLACEMENT CODE	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)	F (in.)	F (mm)

W900 SECTIONS

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F2009 Series Double Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F2009	F2009 Series Double Gear Pump

3 (Mount Type)

Order Code	Description
D	Dry Mounting Flange (shorter length, single shaft seal)
W	Wet Mounting Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
2	SAE "B" 2-Bolt Mount
4	SAE C 4-Bolt Mount (contact factory)
6	SAE B 2/4-Bolt Combination Mount (wet mount only)
8	SAE C 2/4-Bolt Mount (contact factory)

5 (Front Section Inlet Port)

Order Code	Description
C	1.250 , SAE 4-Bolt Split Flange
CM	1.250 , SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50 , SAE 4-Bolt Split Flange
DM	1.50 , SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
E	2.0 , SAE 4-Bolt Split Flange
EM	2.0 , SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

7 (Front Section Outlet Port)

Order Code	Description
B	1.00 , SAE 4-Bolt Split Flange
BM	1.00 , SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

NOTE: Metric ports available, contact factory. Contact factory for other requirements.

8 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
6-	6 cc/366 in. ³	16-	16 cc/976 in. ³
8-	8 cc/488 in. ³	19-	19 cc/1.159 in. ³
10-	10 cc/610 in. ³	23-	23 cc/1.403 in. ³
11-	11 cc/671 in. ³	27-	27 cc/1.647 in. ³
14-	14 cc/854 in. ³	28-	28 cc/1.709 in. ³

9 (Rear Section Inlet Port)

Order Code	Description
X	No Rear Inlet Port (single inlet for double pump)

Rear Inlet Port Options (dual inlet for double pump):

S	6 cc, #10 SAE (7/8" - 14) Straight Thread
T	8 cc, #12 SAE (1 1/16 - 12) Straight Thread
V	19 cc - 28 cc, #16 SAE (1 5/16 - 12) Straight Thread
A	16 cc - 19 cc, .750 , SAE 4-Bolt Split Flange
B	23 cc - 28 cc, 1.00 , SAE 4-Bolt Split Flange

NOTES: Split flange ports are not available for 6cc - 14 cc sizes. Metric ports available, contact factory.

EXAMPLE:

(F3)-F2009-W- 2 -W-13- T -23-X- A - X-12- E- C -10 - L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Special Seals	Series	Mount Type	Front Cover	Front Inlet Port	Displacements	Front Outlet Port	Displacements	Rear Inlet Port	Rear Outlet Port	Shaft Seal	Drive Shaft	Valve Options	Relief Valve Setting	Design	Rotation

10 (Rear Section Outlet Porting)

Order Code	Description
Q	6 cc, #8 SAE (3/4" - 16) Straight Thread
S	8 cc - 16 cc, #10 SAE (7/8" - 14) Straight Thread
T	19 cc - 28 cc, #12 SAE (1 1/16 - 12) Straight Thread
Y	16 cc - 19 cc, .500", SAE 4-Bolt Split Flange
A	23 cc - 28 cc, .750 , SAE 4-Bolt Split Flange

NOTES: Split flange ports are not available for 6cc - 14 cc sizes. Metric ports available, contact factory.

11 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

12 (Drive Shaft)

Order Code	Description
1	SAE B Straight Keyed, .875 Diameter, 1.312 Ext.
12	SAE B 13-Tooth Spline, Flat Root-Side Fit
21	SAE BB Straight Keyed, 1.00 Diameter, 1.50 Ext.
99	SAE BB 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

13 (Valve Options) **

Order Code	Description
A	Tunable Priority Flow Control Valve, Secondary Flow Loadable
B	Tunable Priority Flow Control Valve, Secondary Bypass to Pump Inlet
C	Tunable Priority Flow Control Valve w/Relief Valve on Priority Flow Only, Secondary Flow Loadable (> 4 GPM)
CC	Tunable Priority Flow Control Valve w/Relief Valve on Priority Flow Only, Secondary Flow Loadable (< 4 GPM)
D	Load Sense Priority Flow Control, Priority Flow Relief Bypass to Pump Inlet
E	Pilot-Operated Relief Valve, Bypass to Tank External
X	No Valve Option

** Contact factory for availability and minimum quantity requirements for above valve options.

14 (Relief Valve Setting)

Order Code	Description	Order Code	Description
A	69 BAR (1000 PSI)	G	190 BAR (2750 PSI)
B	103 BAR (1500 PSI)	H	207 BAR (3000 PSI)
C	121 BAR (1750 PSI)	I	224 BAR (3250 PSI)
D	138 BAR (2000 PSI)	J	241 BAR (3500 PSI)
E	155 BAR (2250 PSI)	K	250 BAR (3750 PSI)
F	172 BAR (2500 PSI)	L	275 BAR (4000 PSI)

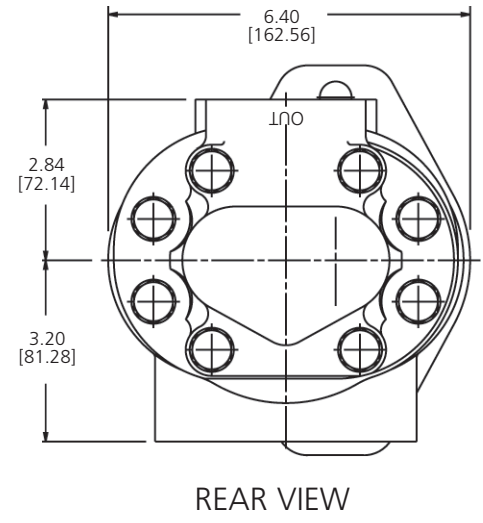
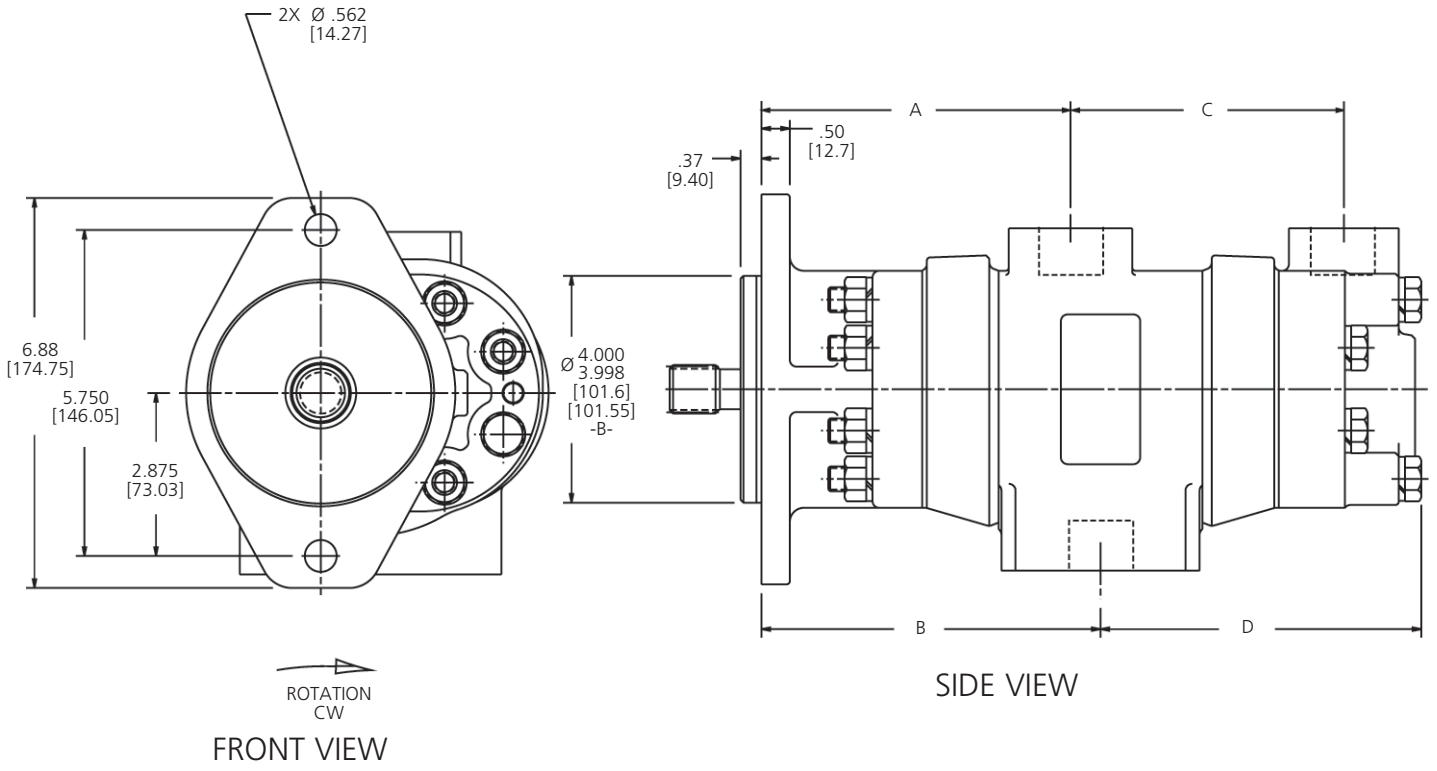
15 (Design Designation)

Order Code	Description
10	Standard

16 (Rotation)

Order Code	Description
Omit	Clockwise Rotation
L	Counterclockwise Rotation

F2020



87	5.30	27	6.54	166.1	7.07	179.6	5.90	149.9	6.74	171.2
77	4.71	24	6.27	159.3	6.80	172.7	5.68	144.3	6.47	164.3
68	4.13	21	6.00	152.4	6.53	165.9	5.36	136.1	6.20	157.5
62	3.77	19	5.83	148.1	6.36	161.5	5.21	132.3	6.05	153.7
55	3.33	17	5.63	143.0	6.16	156.5	5.01	127.3	5.85	148.6
48	2.94	15	5.46	138.7	5.99	152.1	4.82	122.4	5.66	143.8
43	2.60	13	5.30	134.6	5.83	148.1	4.67	118.6	5.51	140.0
36	2.18	11	5.11	129.8	5.64	143.3	4.47	113.5	5.31	134.9
29	1.79	9	4.93	125.2	5.46	138.7	4.30	109.2	5.14	130.6
23	1.41	7	4.85	123.2	5.28	134.1	4.03	102.4	5.02	127.5
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F2020 Series Double Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F2020	F2020 Series Double Gear Pump

3 (Mount)

Order Code	Description
W	Wet Mount Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
2	SAE "B" 2-Bolt Mount
3	SAE "B" 4-Bolt Mount (Contact Factory)
6	SAE B 2/4-Bolt Combination Mount (wet mount only)
8	SAE C 2/4-Bolt Mount

5 (Inlet Port)

Order Code	Description
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

SAE Rated Flow, GPM @ 1200 RPM, 100 PSI

7 (Front Section Outlet)

Order Code	Description
A	.750, SAE 4-Bolt Split Flange
AM	.750, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
S	#10 SAE (.875" - 12) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Section Inlet) (Contact factory)

Order Code	Description
+	None

9 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

SAE Rated Flow, GPM @ 1200 RPM, 100 PSI

EXAMPLE:

(F3)-F2020- W- 6 - E-15-B - + -11- B-12- A- 10 - L													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Special Seals	Series	Mount	Front Cover	Inlet Port	Displacements	Front Section Outlet	Rear Section Inlet	Displacements	Rear Section Outlet	Drive Shaft	Shaft Seal	Design Designation	Rotation

10 (Rear Section Outlet)

Order Code	Description
A	.750, SAE 4-Bolt Split Flange
AM	.750, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875" - 12) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

11 (Drive Shaft)

Order Code	Description
1	SAE B Straight Keyed, .875 Diameter, 1.312" Ext.
12	SAE B 14-Tooth Spline, Flat Root-Side Fit
21	SAE BB Straight Keyed, 1.00 Diameter, 1.50 Ext.
99	SAE BB 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

12 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

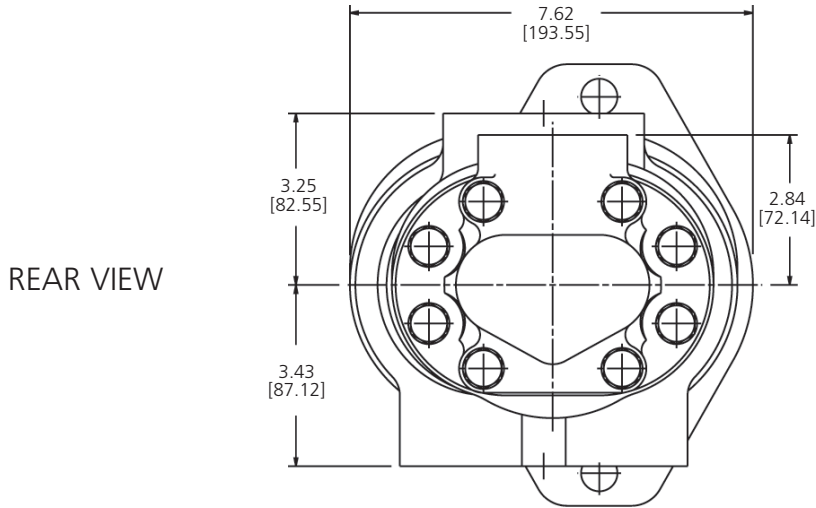
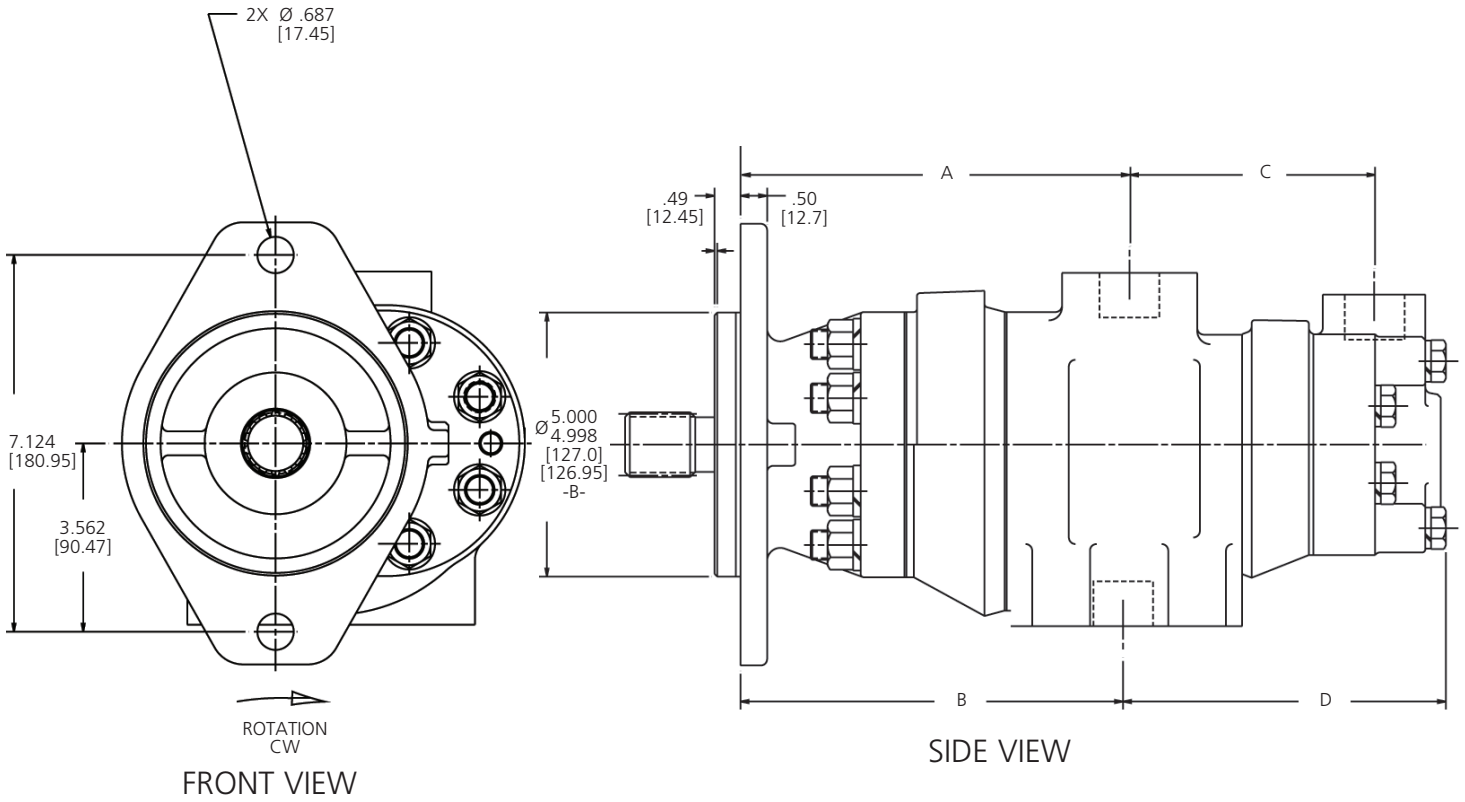
13 (Design Designation)

Order Code	Description
10	Standard

14 (Rotation)

Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation

F3020



All dimensions shown are for reference only. Consult factory for your specific configuration.

161	9.82	50	8.60	218.4	7.36	186.9
145	8.84	45	8.29	210.6	8.17	207.5
129	7.86	40	7.80	198.1	7.86	199.6
113	6.88	35	7.61	193.3	7.52	191.0
103	6.30	32	7.49	190.2	7.37	187.2
97	5.89	30	7.36	186.9	7.24	183.9
90	5.51	28	7.24	183.9	7.12	180.8
81	4.91	25	7.05	179.1	6.93	176.0
68	4.13	21	6.81	173.0	6.68	169.7
58	3.54	18	6.62	168.1	6.50	165.1
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)
G30 SECTIONS						

87	5.30	27	5.71	145.0	7.19	182.6
77	4.71	24	5.44	138.2	6.92	175.8
68	4.13	21	5.17	131.3	6.65	168.9
62	3.77	19	5.01	127.3	5.71	145.0
55	3.33	17	4.81	122.2	6.29	159.8
48	2.94	15	4.63	117.6	6.11	155.2
43	2.60	13	4.47	113.5	5.96	151.4
36	2.18	11	4.28	108.7	5.76	146.3
29	1.79	9	4.10	104.1	5.59	142.0
23	1.41	7	3.93	99.8	5.41	137.4
CC	CIR	DISPLACEMENT CODE	C (in.)	C (mm)	D (in.)	D (mm)
G20 SECTIONS						

Model Code for F3020 Series Double Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F3020	F3020 Series Double Gear Pump

3 (Mount)

Order Code	Description
W	Wet Mount Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount (contact factory)
7	SAE C 2-Bolt Mount (contact factory)
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3.00, SAE 4-Bolt Split Flange
GM	3.00, 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2 1/2 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

7 (Front Section Outlet)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	2.00, SAE 4-Bolt Split Flange
DM	2.00, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Inlet Port) (Contact Factory)

Order Code	Description
+	None

9 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

EXAMPLE:

(F3)-F3020- W- 7 - E-18-B - + -11-B -12- A- 10 - L													
1	2	3	4	5	6	7	8	9	10	11	12	13	
Special Seals	Series	Mount	Front Cover	Inlet Port	Displacements	Front Section Outlet	Rear Inlet Port	Displacements	Rear Section Outlet	Drive Shaft	Shaft Seal	Design Designation	Rotation

10 (Rear Section Outlet)

Order Code	Description
A	.750, SAE 4-Bolt Split Flange
AM	.750, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875" - 12) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

11 (Drive Shaft)

Order Code	Description
1	SAE C Straight Keyed, 1.250 Diameter, 1.875 Ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

12 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

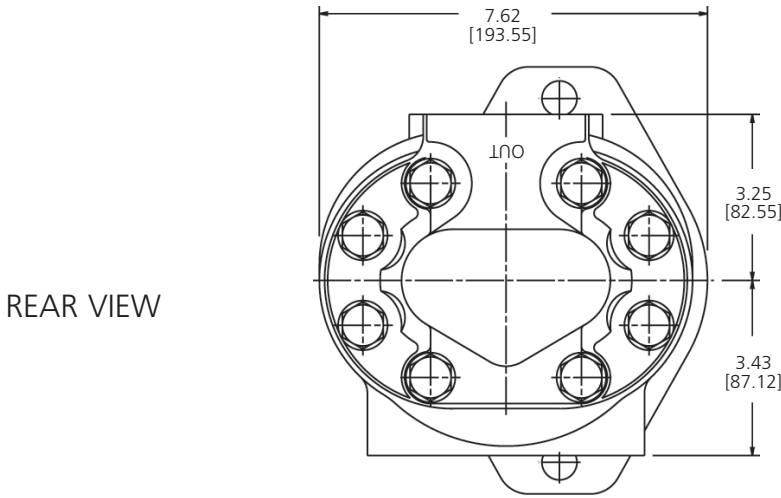
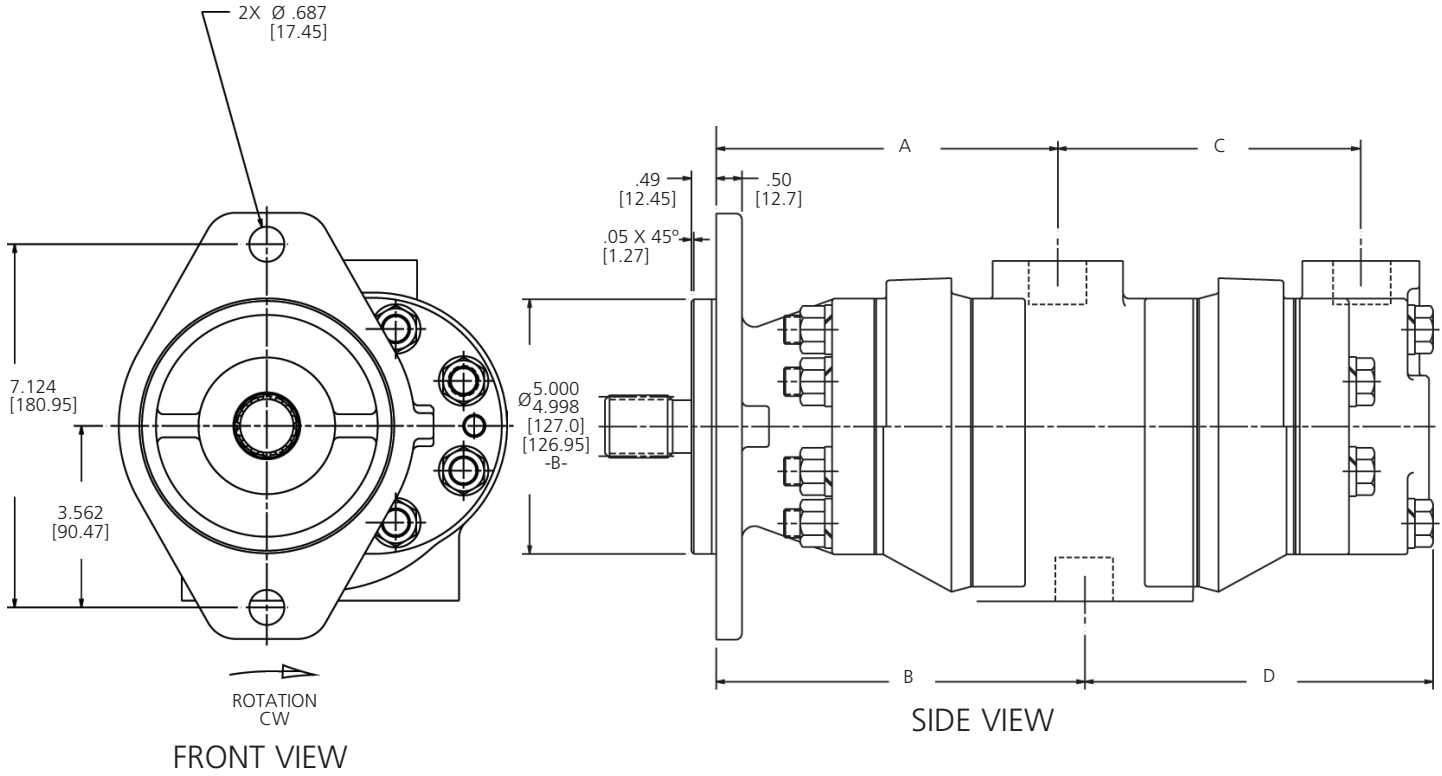
13 (Design Designation)

Order Code	Description
10	Standard

14 (Rotation)

Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation

F3030



161	9.82	50	7.94	201.7	8.48	215.4	7.19	182.6	8.07	205.0
145	8.84	45	7.63	193.8	8.16	207.3	6.89	175.0	7.77	197.4
129	7.86	40	7.33	186.2	7.86	199.6	6.57	166.9	7.46	189.5
113	6.88	35	7.02	178.3	7.55	191.8	6.26	159.0	7.15	181.6
103	6.30	32	6.84	173.7	7.37	187.2	6.08	154.4	6.97	177.0
97	5.89	30	6.71	170.4	7.24	183.9	5.95	151.1	6.84	173.7
90	5.51	28	6.59	167.4	7.12	180.8	5.83	148.1	6.72	170.7
81	4.91	25	6.40	162.6	6.93	176.0	5.64	143.3	6.53	165.9
68	4.13	21	6.15	156.2	6.68	169.7	5.40	137.2	6.29	159.8
58	3.54	18	5.96	151.4	6.50	165.1	5.22	132.6	6.10	154.9
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F3030 Series Double Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F3030	F3030 Series Double Gear Pump

3 (Mount)

Order Code	Description
W	Wet Mount Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount (contact factory)
7	SAE C 2-Bolt Mount (contact factory)
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3.00, SAE 4-Bolt Split Flange
GM	3.00, 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2 1/2 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

7 (Front Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	2.00, SAE 4-Bolt Split Flange
DM	2.00, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Rear Inlet Port) (Contact Factory)

Order Code	Description
+	None

9 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

EXAMPLE:

(F3)-F3030- W- 7 - E-30-B - + -30-B -12- A- 10 - L													
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Special Seals	Series	Mount	Front Cover	Inlet Port	Displacements	Front Outlet Port	Rear Inlet Port	Displacements	Rear Outlet Port	Drive Shaft	Shaft Seal	Design Designation	Rotation

10 (Rear Outlet Port)

Order Code	Description
A	.750, SAE 4-Bolt Split Flange
AM	.750, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

11 (Drive Shaft)

Order Code	Description
1	SAE C Straight Keyed, 1.250 Diameter, 1.875 Ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

12 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

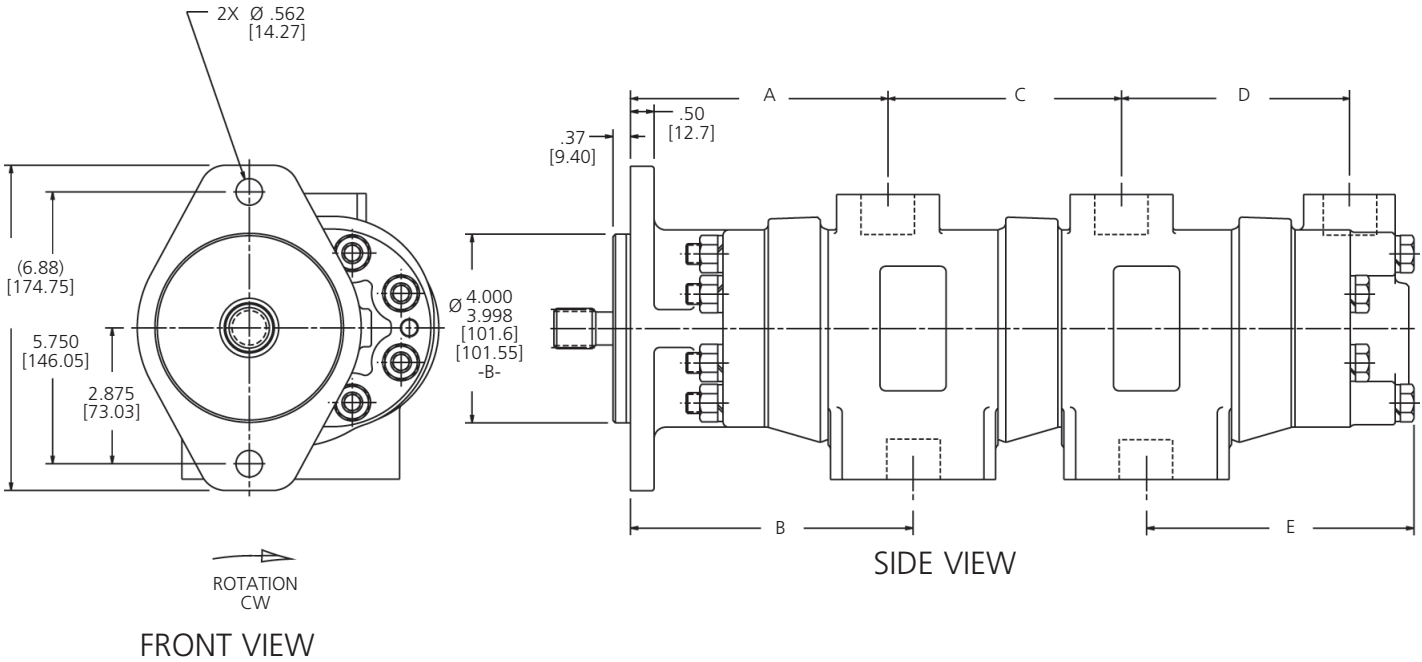
13 (Design Designation)

Order Code	Description
10	Standard

14 (Rotation)

Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation

F202020



All dimensions shown are for reference only. Consult factory for your specific configuration.

87	5.30	27	6.54	166.1	7.07	179.6	6.03	153.2	5.38	136.7	6.74	171.2
77	4.71	24	6.27	159.3	6.80	172.7	5.78	146.8	5.11	129.8	6.47	164.3
68	4.13	21	6.00	152.4	6.53	165.9	5.49	139.4	4.84	122.9	6.20	157.5
62	3.77	19	5.83	148.1	6.36	161.5	5.32	135.1	4.67	118.6	6.03	153.2
55	3.33	17	5.63	143.0	6.16	156.5	5.12	130.0	4.47	113.5	5.83	148.1
48	2.94	15	5.46	138.7	5.99	152.1	4.95	125.7	4.30	109.2	5.66	143.8
43	2.60	13	5.30	134.6	5.83	148.1	4.79	121.7	4.14	105.2	5.50	139.7
36	2.18	11	5.11	129.8	5.64	143.3	4.60	116.8	3.95	100.3	5.31	134.9
29	1.79	9	4.93	125.2	5.46	138.7	4.42	112.3	3.77	95.8	5.13	130.3
23	1.41	7	4.75	120.7	5.28	134.1	4.24	107.7	3.59	91.2	4.95	125.7
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)

Model Code for F2020 Series Triple Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F202020	F202020 Series Triple Gear Pump

3 (Mount)

Order Code	Description
W	Wet Mount Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
6	SAE B 2/4-Bolt Combination Mount (wet mount only)

5 (First Inlet Port)

Order Code	Description
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

7 (Front Section Outlet)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

8 (Second Section Inlet)

Order Code	Description
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)

Contact factory for other requirements.

9 (Displacements, Center Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

10 (Second Outlet)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

EXAMPLE:

(F3)F202020- W- 6 - E-15- B - E -11- B - + - 9 - B- 99- A- 10-L																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Special Seals	Series	Mount	Front Cover	First Inlet Port	Displacements	Front Section Outlet	Second Section Inlet	Displacements	Second Outlet	Third Section Inlet	Displacements	Third Outlet	Drive Shaft	Shaft Seal	Design	Rotation

11 (Third Section Inlet) (Contact Factory)

Order Code	Description
+	None

12 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

13 (Third Outlet)

Order Code	Description
A	.750, SAE 4-Bolt Split Flange
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
S	#10 SAE (.875" - 12) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

14 (Drive Shaft)

Order Code	Description
21	SAE BB Straight Keyed, 1.00 Diameter, 1.50 Ext.
99	SAE BB 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

15 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

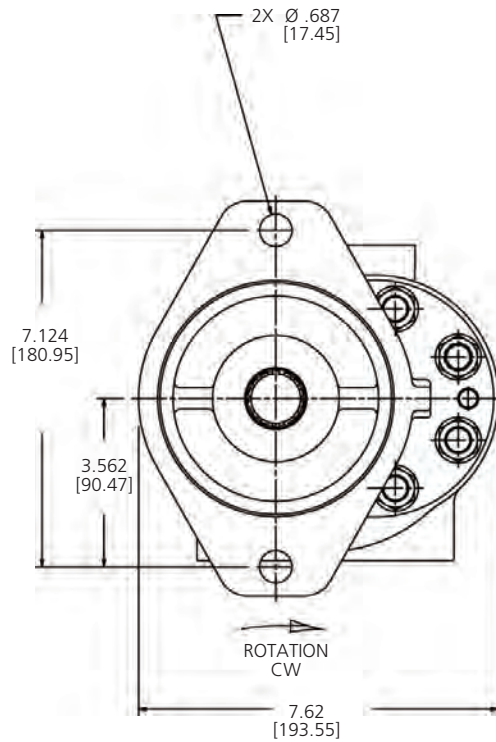
16 (Design Designation)

Order Code	Description
10	Standard

17 (Rotation)

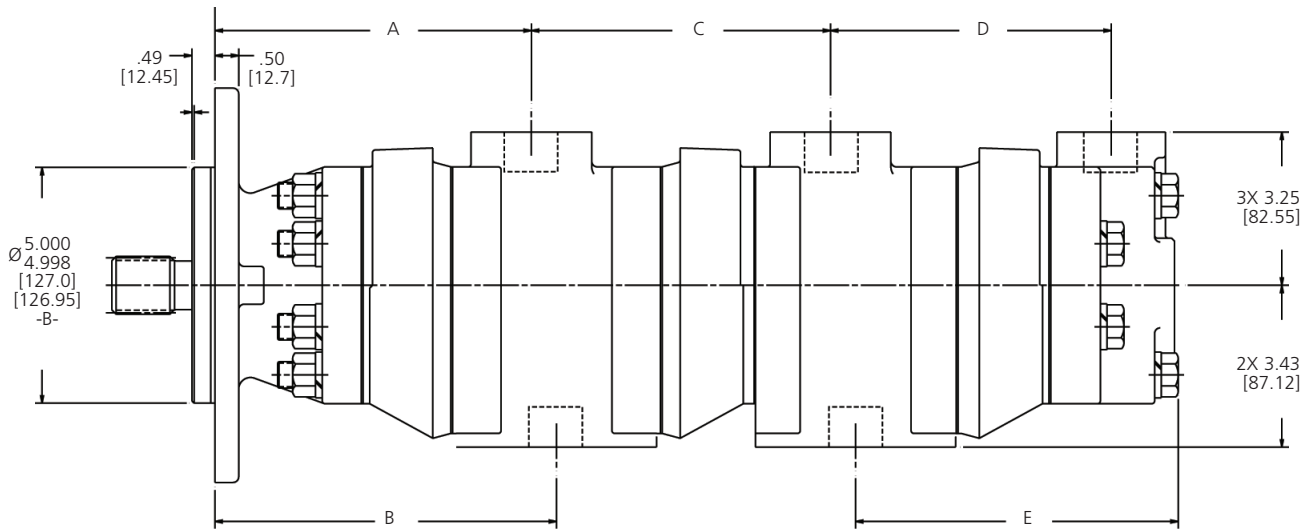
Order Code	Description
Omit	Clockwise Rotation
L	Counterclockwise Rotation

F303030



All dimensions shown are for reference only. Consult factory for your specific configuration.

FRONT VIEW



SIDE VIEW

161	9.82	50	7.94	201.7	8.48	215.4	7.58	192.5	7.19	182.6	8.08	205.2
145	8.84	45	7.63	193.8	8.16	207.3	7.27	184.7	6.88	174.8	7.77	197.4
129	7.86	40	7.33	186.2	7.86	199.6	6.96	176.8	6.57	166.9	7.46	189.5
113	6.88	35	7.02	178.3	7.55	191.8	6.65	168.9	6.26	159.0	7.15	181.6
103	6.30	32	6.84	173.7	7.37	187.2	6.47	164.3	6.08	154.4	6.97	177.0
97	5.89	30	6.71	170.4	7.24	183.9	6.34	161.0	5.95	151.1	6.84	173.7
90	5.51	28	6.59	167.4	7.12	180.9	6.23	158.2	5.84	148.3	6.72	170.7
81	4.91	25	6.40	162.6	6.93	176.0	6.04	153.4	5.65	143.5	6.53	165.9
68	4.13	21	6.15	156.2	6.68	169.7	5.79	147.1	5.40	137.2	6.28	159.5
58	3.54	18	5.96	151.4	6.50	165.1	5.60	142.2	5.21	132.3	6.10	154.9
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)

Model Code for F303030 Series Triple Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F303030	F303030 Series Triple Gear Pump

3 (Mount)

Order Code	Description
W	Wet Mount Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
7	SAE C 2-Bolt Mount
8	SAE C 2/4-Bolt Combination Mount

5 (First Inlet Port)

Order Code	Description
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3.00, SAE 4-Bolt Split Flange
GM	3.00, 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2 1/2 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

7 (First Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Second Inlet Port)

Order Code	Description
E	2.00, SAE 4-Bolt Split Flange
EM	2.00, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.50, SAE 4-Bolt Split Flange
FM	2.50, 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3.00, SAE 4-Bolt Split Flange
GM	3.00, 4-Bolt Metric Split Flange (M16 x 2.0 threads)

9 (Displacements, Center Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

EXAMPLE:

(F3)F303030-W-7-E-30-B-E-25-B-+-9-B-12-A-10-L																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Special Seals	Series	Mount	Front Cover	First Inlet Port	Displacements	First Outlet Port	Second Inlet Port	Displacements	Second Outlet Port	Third Inlet Port	Displacements	Third Outlet Port	Drive Shaft	Shaft Seal	Design	Rotation

10 (Second Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread

Contact factory for other requirements.

11 (Third Inlet Port) (Contact Factory)

Order Code	Description
+	None

12 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

13 (Third Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.250, SAE 4-Bolt Split Flange
CM	1.250, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread

Contact factory for other requirements.

14 (Drive Shaft)

Order Code	Description
1	SAE C Straight Keyed, 1.250 Diameter, 1.875 Ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements

15 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

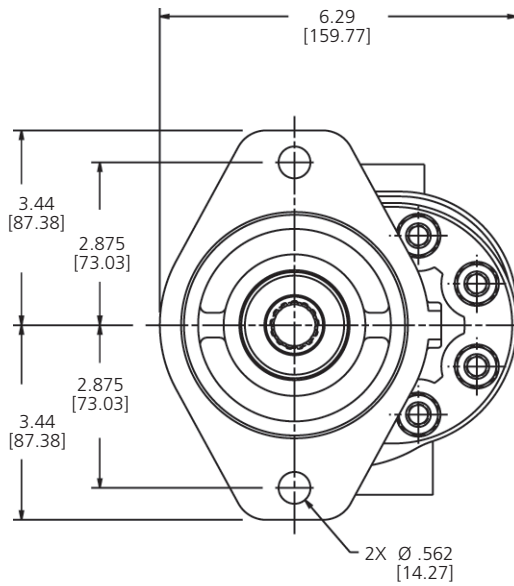
16 (Design Designation)

Order Code	Description
10	Standard

17 (Rotation)

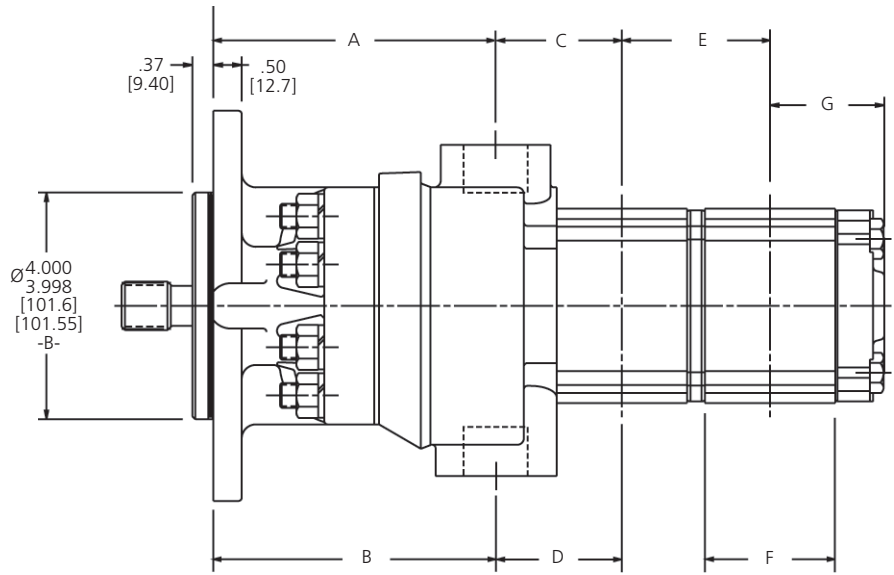
Order Code	Description
R	Clockwise Rotation
L	Counterclockwise Rotation

F200909



ROTATION
CW

FRONT VIEW

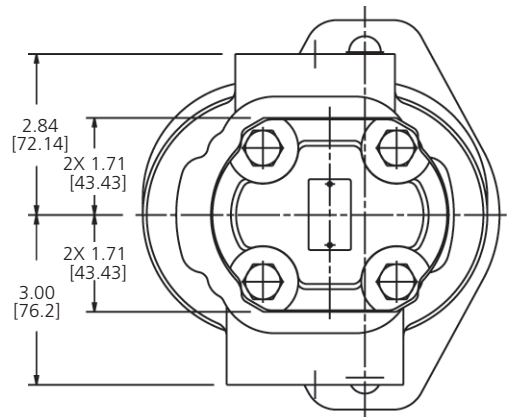


SIDE VIEW

87	5.30	27	6.41	162.8	6.43	163.3
77	4.71	24	6.14	156.0	6.16	156.5
68	4.13	21	5.87	149.1	5.89	149.6
62	3.77	19	5.71	145.0	5.73	145.5
55	3.33	17	5.51	140.0	5.53	140.5
48	2.94	15	5.33	135.4	5.35	135.9
43	2.60	13	5.17	131.3	5.19	131.8
36	2.18	11	4.98	126.5	5.00	127.0
29	1.79	9	4.80	121.9	4.82	122.4
23	1.41	7	4.63	117.6	4.65	118.1

CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)
----	-----	-------------------	---------	--------	---------	--------

G20 SECTIONS



REAR VIEW

All dimensions shown are for reference only. Consult factory for your specific configuration.

28	1.709	28	2.73	69.3	2.72	69.1	3.62	91.9	3.30	83.8	2.52	64.0
27	1.647	27	2.70	68.6	2.69	68.3	3.54	89.9	3.24	82.3	2.49	63.2
23	1.403	23	2.58	65.5	2.57	65.3	3.33	84.6	3.01	76.5	2.38	60.5
19	1.159	19	2.47	62.7	2.46	62.5	3.09	78.5	2.78	70.6	2.26	57.4
16	.976	16	2.38	60.5	2.37	60.2	2.91	73.9	2.60	66.0	2.17	55.1
14	.854	14	2.32	58.9	2.31	58.7	2.80	71.1	2.49	63.2	2.12	53.8
11	.671	11	2.23	56.6	2.22	56.4	2.61	66.3	2.31	58.7	2.03	51.6
10	.610	10	2.20	55.9	2.19	55.6	2.56	65.0	2.25	57.2	2.00	50.8
8	.488	8	2.15	54.6	2.14	54.4	2.44	62.0	2.14	54.4	1.94	49.3
6	.366	6	2.09	53.1	2.08	52.8	2.34	59.4	2.02	51.3	1.86	47.2

CC	CIR	DISPLACEMENT CODE	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)	F (in.)	F (mm)	G (in.)	G (mm)
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W900 SECTIONS

Model Code for F200909 Series Triple Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F200909	F200909 Series Triple Gear Pump

3 (Mount Type)

Order Code	Description
D	Dry Mounting Flange (shorter length, single shaft seal)
W	Wet Mounting Flange (pilot diameter sealing and provides for optional double shaft seal)

4 (Front Cover)

Order Code	Description
2	SAE "B" 2-Bolt Mount
4	SAE C 4-Bolt Mount (contact factory)
6	SAE B 2/4-Bolt Combination Mount (wet mount only)
8	SAE C 2/4-Bolt Mount (contact factory)

5 (Front Section Inlet Port)

Order Code	Description
C	1.250 , SAE 4-Bolt Split Flange
CM	1.250 , SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

7 (Front Section Outlet Port)

Order Code	Description
B	1.00 , SAE 4-Bolt Split Flange
BM	1.00 , SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

8 (Displacements, Center Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
6-	6 cc/366 in. ³	16-	16 cc/976 in. ³
8-	8 cc/488 in. ³	19-	19 cc/1.159 in. ³
10-	10 cc/610 in. ³	23-	23 cc/1.403 in. ³
11-	11 cc/671 in. ³	27-	27 cc/1.647 in. ³
14-	14 cc/854 in. ³	28-	28 cc/1.709 in. ³

GPM @ 1200 RPM, 100 PSI

9 (Rear Section Outlet Porting)

Order Code	Description
A	23 cc - 28 cc , .750 , SAE 4-Bolt Split Flange
Q	6 cc , #8 SAE (3/4" - 16) Straight Thread
S	8 cc - 16 cc , #10 SAE (7/8" - 14) Straight Thread
T	19 cc - 28 cc , #12 SAE (1 1/16 - 12) Straight Thread
Y	16 cc - 19 cc , .5" , SAE 4-Bolt Split Flange

Contact factory for other requirements.

EXAMPLE:

(F3)-F200909-W- 2 - W-13- T -23-Y- Q -11- A- 1 - B -10- L															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Special Seals	Series	Mount Type	Front Cover	Front Section Inlet Port	Displacements, Front Section	Front Section Outlet Port	Displacements, Center Section	Rear Section Outlet Porting	Center Section Outlet Porting	Displacements, Rear Section	Rear Section Outlet Port	Drive Shaft	Shaft Seal	Design Designation	Design Designation

10 (Center Section Outlet Porting)

Order Code	Description
A	23 cc - 28 cc , .750 , SAE 4-Bolt Split Flange
Q	6 cc , #8 SAE (3/4" - 16) Straight Thread
S	8 cc - 16 cc , #10 SAE (7/8" - 14) Straight Thread
T	19 cc - 28 cc , #12 SAE (1 1/16 - 12) Straight Thread
V	19 cc - 28 cc , #16 SAE (1 5/16 - 14) Straight Thread
Y	16 cc - 19 cc , .5" , SAE 4-Bolt Split Flange

11 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
6-	6 cc/366 in. ³	16-	16 cc/976 in. ³
8-	8 cc/488 in. ³	19-	19 cc/1.159 in. ³
10-	10 cc/610 in. ³	23-	23 cc/1.403 in. ³
11-	11 cc/671 in. ³	27-	27 cc/1.647 in. ³
14-	14 cc/854 in. ³	28-	28 cc/1.709 in. ³

GPM @ 1200 RPM, 100 PSI

12 (Rear Section Outlet Port)

Order Code	Description
A	23 cc - 28 cc , .750 , SAE 4-Bolt Split Flange
Q	6 cc , #8 SAE (3/4" - 16) Straight Thread
S	8 cc - 16 cc , #10 SAE (7/8" - 14) Straight Thread
T	19 cc - 28 cc , #12 SAE (1 1/16 - 12) Straight Thread
Y	16 cc - 19 cc , .5" , SAE 4-Bolt Split Flange

Contact factory for other requirements.

13 (Drive Shaft)

Order Code	Description
1	SAE B Straight Keyed, .875 Diameter, 1.312 Ext.
12	SAE B 13-Tooth Spline, Flat Root-Side Fit
21	SAE BB Straight Keyed, 1.00 Diameter, 1.50 Ext.
99	SAE BB 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

14 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

Contact Applications Engineer for Valve Options.

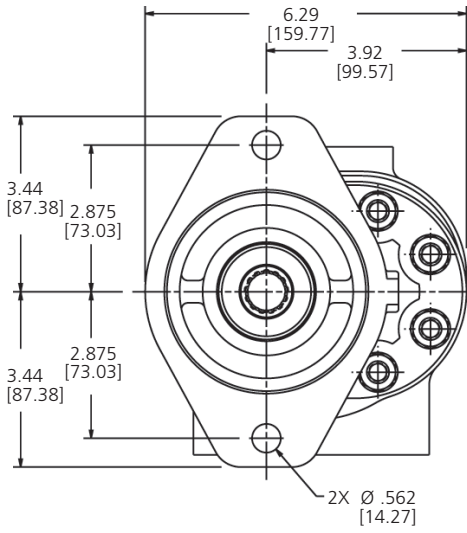
15 (Design Designation)

Order Code	Description
10	Standard
11	Sealed Between Sections

16 (Rotation)

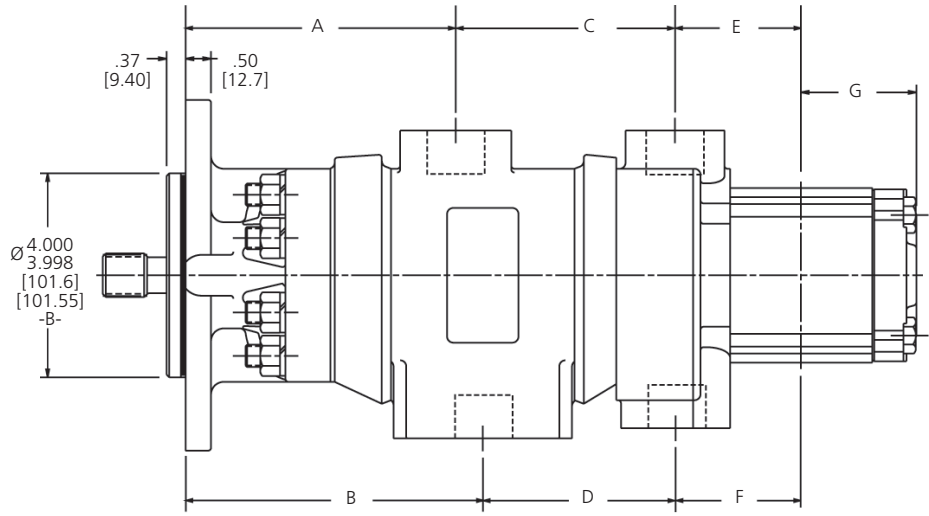
Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

F202009



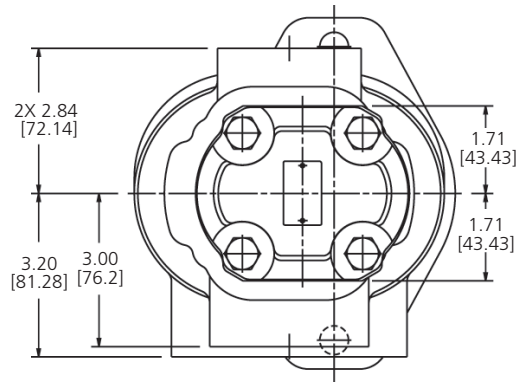
ROTATION
CW

FRONT VIEW



SIDE VIEW

28	1.709	28	2.73	69.3	2.72	69.1	2.52	64.0
27	1.647	27	2.70	68.6	2.69	68.3	2.49	63.2
23	1.403	23	2.58	65.5	2.57	65.3	2.38	6.05
19	1.159	19	2.47	62.7	2.46	62.5	2.26	57.4
16	.976	16	2.38	60.5	2.37	60.2	2.17	55.1
14	.854	14	2.32	58.9	2.31	58.7	2.12	53.8
11	.671	11	2.24	56.9	2.23	56.6	2.03	51.6
10	.610	10	2.21	56.1	2.49	63.2	2.00	50.8
8	.488	8	2.15	54.6	2.14	54.4	1.94	49.3
6	.366	6	2.09	53.1	2.08	52.8	1.86	47.2



REAR VIEW

All dimensions shown are for reference only. Consult factory for your specific configuration.

W90 SECTIONS

87	5.30	27	6.53	165.9	7.06	179.3	5.90	149.9	5.38	136.7
77	4.71	24	6.27	159.3	6.80	172.7	5.64	143.3	5.12	130.0
68	4.13	21	6.00	152.4	6.53	165.9	5.37	136.4	4.85	123.2
62	3.77	19	5.83	148.1	6.36	161.5	5.20	132.1	4.68	118.9
55	3.33	17	5.63	143.0	6.16	156.5	5.00	127.0	4.48	113.8
48	2.94	15	5.46	138.7	5.99	152.1	4.83	122.7	4.31	109.5
43	2.60	13	5.30	134.6	5.83	148.1	4.67	118.6	4.15	105.4
36	2.18	11	5.11	129.8	5.64	143.3	4.48	113.8	3.96	100.6
29	1.79	9	4.93	125.2	5.46	138.7	4.30	109.2	3.78	96.0
23	1.41	7	4.75	120.7	5.28	134.1	4.12	104.6	3.60	91.4
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)

G20 SECTIONS

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F20209	F20209 Series Triple Gear Pump

3 (Mount Type)

Order Code	Description
W	Wet Mounting Flange (pilot diameter sealing and provides for optional double shaft seal)
Contact factory for other requirements.	

4 (Front Cover)

Order Code	Description
2	SAE "B" 2-Bolt Mount
6	SAE B 2/4-Bolt Combination Mount (wet mount only)
8	SAE C 2/4-Bolt Mount

5 (Front Section Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
Contact factory for other requirements.	

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³
GPM @ 1200 RPM, 100 PSI			

7 (Front Section Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread
Contact factory for other requirements.	

8 (Displacements, Center Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³
GPM @ 1200 RPM, 100 PSI			

9 (Center Section Outlet Porting)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread
Contact factory for other requirements.	

EXAMPLE:

(F3)-F20209-W- 2 -F- 13- T 13- V- A -23- Q- 21 -B -10- L															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Special Seals	Series	Mount Type	Front Cover	Front Inlet Port	Displacements, Front Section	Front Outlet Port	Displacements, Center Section	Center Section Outlet Porting	Rear Section Inlet Port	Displacements, Rear Section	Rear Section Outlet Porting	Drive Shaft	Shaft Seal	Design Designation	Rotation
F3	F20209	W	2	F	13	T	13	V	A	23	Q	21	B	10	L

10 (Rear Section Inlet Port)

Order Code	Description
A	16 cc - 19 cc, .75, SAE 4-Bolt Split Flange
B	23 cc - 28 cc, 1", SAE 4-Bolt Split Flange Straight Thread
S	6 cc, #10 SAE (7/8" - 14) Straight Thread
T	8 cc - 16 cc, #12 SAE (1 1/16 - 12) Straight Thread
V	19 cc - 28 cc, #16 SAE (1 5/16 - 14) Straight Thread

11 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
6-	6 cc/.366 in. ³	16-	16 cc/.976 in. ³
8-	8 cc/.488 in. ³	19-	19 cc/1.159 in. ³
10-	10 cc/.610 in. ³	23-	23 cc/1.403 in. ³
11-	11 cc/.671 in. ³	27-	27 cc/1.647 in. ³
14-	14 cc/.854 in. ³	28-	28 cc/1.709 in. ³
GPM @ 1200 RPM, 100 PSI			

12 (Rear Section Outlet Port)

Order Code	Description
A	23 cc - 28 cc, .75, SAE 4-Bolt Split Flange
Q	6 cc, #8 SAE (3/4" - 16) Straight Thread
S	8 cc - 16 cc, #10 SAE (7/8" - 14) Straight Thread
T	19 cc - 28 cc, #12 SAE (1 1/16 - 12) Straight Thread
Y	16 cc - 19 cc, .5", SAE 4-Bolt Split Flange
Contact factory for other requirements.	

13 (Drive Shaft)

Order Code	Description
21	SAE BB Straight Keyed, 1.00 Diameter, 1.50 Ext.
99	SAE BB 15-Tooth Spline, Flat Root-Side Fit
Contact factory for other requirements.	

14 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

15 (Design Designation)

Order Code	Description
10	Standard
11	Sealed Between G20 and 09 Sections

16 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation
Contact factory for other requirements.	

Model Code for F302020 Series Triple Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F302020	F302020 Series Triple Gear Pump

3 (Mount Type)

Order Code	Description
W	Wet Mounting Flange

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
7	SAE C 2-Bolt Mount
8	SAE "C" 2/4-Bolt Combination Mount

5 (First Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3, SAE 4-Bolt Split Flange
GM	3, SAE 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2-1/2" - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /in ³	Order Code	Cm ³ /in ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

GPM @ 1200 RPM, 100 PSI

7 (First Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Second Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)

Contact factory for other requirements.

9 (Displacements, Center Section)

Order Code	Cm ³ /in ³	Order Code	Cm ³ /in ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

EXAMPLE:

(F3)-F302020-W- 7 - E-25-B -E- 11- B- + - 9- B- 12 - A -10-L																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Special Seals	Series	Mount Type	Front Cover	First Inlet Port	Displacements, Front	First Outlet Port	Second Inlet Port	Displacements, Center	Second Outlet Port	Third Inlet Port	Displacements, Rear	Third Outlet Port	Drive Shaft	Shaft Seal	Design Designation	Rotation
F3	F302020	W	7	E	25	B	E	11	B	+	9	B	12	A	10	L

10 (Second Outlet Port)

Order Code	Description
A	.75, SAE 4-Bolt Split Flange
AM	.75, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875" - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

11 (Third Inlet Port)

Order Code	Description
+	None

12 (Displacements, Rear Section)

Order Code	Cm ³ /in ³	Order Code	Cm ³ /in ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

13 (Third Outlet Port)

Order Code	Description
A	.75, SAE 4-Bolt Split Flange
AM	.75, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875" - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

14 (Drive Shaft)

Order Code	Description
1	SAE "C" Straight Keyed, 1.25" Dia., 1.875" Ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

15 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

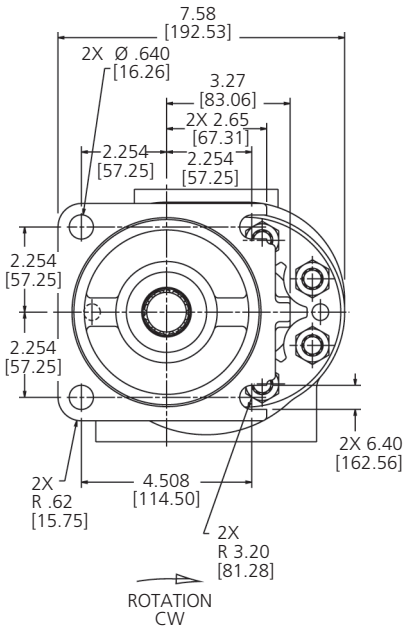
16 (Design Designation)

Order Code	Description
10	Standard

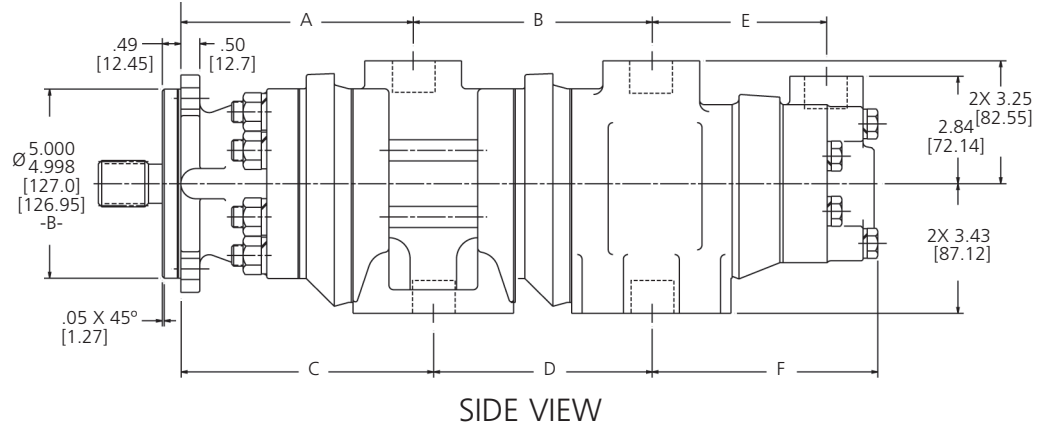
17 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

F303020



FRONT VIEW



SIDE VIEW

161	9.82	50	7.94	201.7	8.12	206.2	8.47	215.1	7.59	192.8
145	8.84	45	7.63	193.8	7.81	198.4	8.16	207.3	7.28	184.9
129	7.86	40	7.33	186.2	7.50	190.5	7.86	199.6	6.97	177.0
113	6.88	35	7.02	178.3	7.19	182.6	7.55	191.8	6.66	169.2
103	6.30	32	6.84	173.7	7.01	178.1	7.37	187.2	6.48	164.6
97	5.89	30	6.71	170.4	6.88	174.8	7.24	183.9	6.35	161.3
90	5.51	28	6.59	167.4	6.77	172.0	7.12	180.8	6.24	158.5
81	4.91	25	6.40	162.6	6.58	167.1	6.93	176.0	6.05	153.7
68	4.13	21	6.15	156.2	6.33	160.8	6.68	169.7	5.80	147.3
58	3.54	18	5.97	151.6	6.14	156.0	6.50	165.1	5.61	142.5

G30 SECTIONS

87	5.30	27	5.70	144.8	7.07	179.6
77	4.71	24	5.43	137.9	6.80	172.7
68	4.13	21	5.16	131.1	6.53	165.9
62	3.77	19	4.99	126.7	6.36	161.5
55	3.33	17	4.79	121.7	6.16	156.5
48	2.94	15	4.62	117.3	5.99	152.1
43	2.60	13	4.46	113.3	5.83	148.1
36	2.18	11	4.39	111.5	5.64	143.3
29	1.79	9	4.09	103.9	5.46	138.7
23	1.41	7	3.91	99.3	5.28	134.1
CC	CIR	DISPLACEMENT CODE	E (in.)	E (mm)	F (in.)	F (mm)

G20 SECTIONS

All dimensions shown are for reference only. Consult factory for your specific configuration.

Model Code for F303020 Series Triple Pumps

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
F303020	F303020 Series Triple Gear Pump

3 (Mount Type)

Order Code	Description
W	Wet Mounting Flange

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
7	SAE C 2-Bolt Mount
8	SAE "C" 2/4-Bolt Combination Mount

5 (First Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3, SAE 4-Bolt Split Flange
GM	3, SAE 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2-1/2" - 12) Straight Thread

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

GPM @ 1200 RPM, 100 PSI

7 (First Outlet Port)

Order Code	Description
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M10 x 1.5 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread

Contact factory for other requirements.

8 (Second Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3, SAE 4-Bolt Split Flange
GM	3, SAE 4-Bolt Metric Split Flange (M16 x 2.0 threads)

Contact factory for other requirements.

9 (Displacements, Center Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³

GPM @ 1200 RPM, 100 PSI

EXAMPLE:

(F3)-F303020-W- 7 -E- 30-B -E- 25- B- + - 9- B- I2 - A -10-L																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Special Seals	Series	Mount Type	Front Cover	First Inlet Port	Displacements, Front	First Outlet Port	Second Inlet Port	Displacements, Center	Second Outlet Port	Third Inlet Port	Displacements, Rear	Third Outlet Port	Drive Shaft	Shaft Seal	Design Designation	Rotation
F3	F303020	W	7	E	30	B	E	25	B	+	9	B	I2	A	10	L

10 (Second Outlet Port)

Order Code	Description
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.50, SAE 4-Bolt Split Flange
DM	1.50, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread

Contact factory for other requirements.

11 (Third Inlet Port) (Contact Factory)

Order Code	Description
+	None

12 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

13 (Third Outlet Port)

Order Code	Description
A	.75, SAE 4-Bolt Split Flange
AM	.75, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
B	1.00, SAE 4-Bolt Split Flange
BM	1.00, SAE 4-Bolt Metric Split Flange (M10 x 1.50 threads)
S	#10 SAE (.875" - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

14 (Drive Shaft)

Order Code	Description
1	SAE "C" Straight Keyed, 1.25" Dia., 1.875" Ext.
12	SAE C 14-Tooth Spline, Flat Root-Side Fit
34	SAE C 14-Tooth Spline

Contact factory for other requirements.

15 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

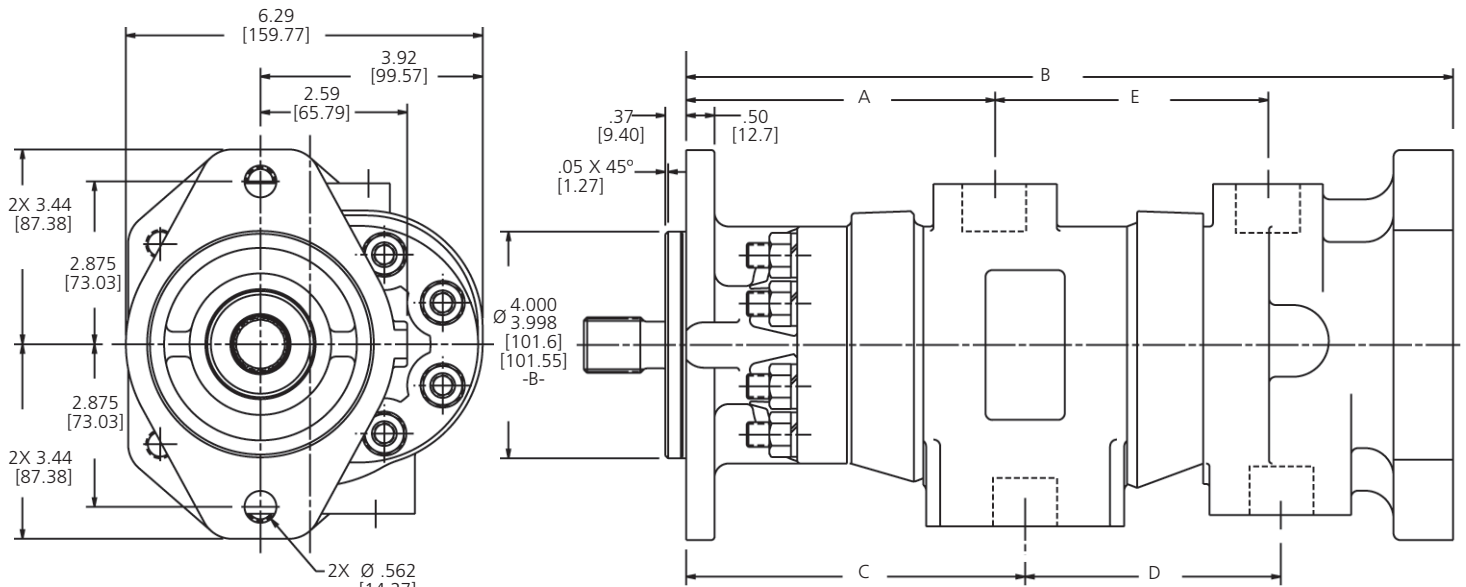
16 (Design Designation)

Order Code	Description
10	Standard

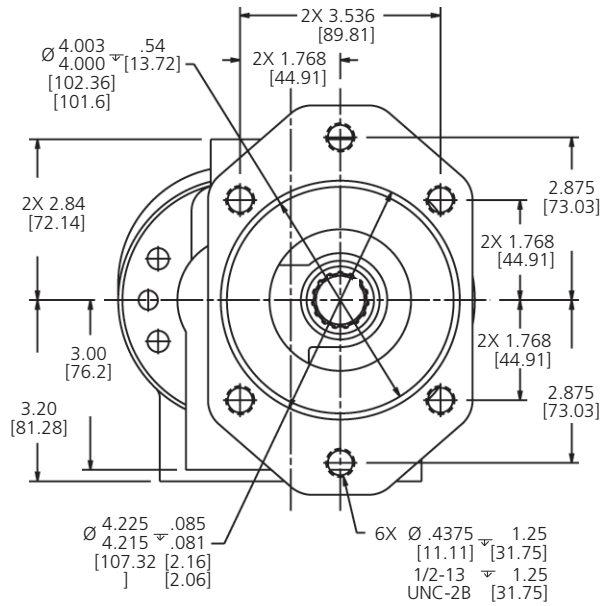
17 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

FT2020



ROTATION
CW
FRONT VIEW



REAR VIEW

87	5.30	27	6.54	166.1	5.91	150.1	7.07	179.6	5.60	142.2	15.70	398.8
77	4.71	24	6.27	159.3	5.64	143.3	6.80	172.7	5.33	135.4	15.17	385.3
68	4.13	21	6.00	152.4	5.37	136.4	6.53	165.9	5.06	128.5	14.63	371.6
62	3.77	19	5.83	148.1	5.20	132.1	6.36	161.5	4.89	124.2	14.30	363.2
55	3.33	17	5.63	143.0	5.00	127.0	6.16	156.5	4.69	119.1	13.90	353.1
48	2.94	15	5.46	138.7	4.83	122.7	5.99	152.1	4.52	114.8	13.55	344.2
43	2.60	13	5.30	134.6	4.67	118.6	5.83	148.1	4.36	110.7	13.23	336.0
36	2.18	11	5.11	129.8	4.48	113.8	5.64	143.3	4.17	105.9	12.84	326.1
29	1.79	9	4.93	125.2	4.30	109.2	5.46	138.7	3.99	101.3	12.49	317.2
23	1.41	7	4.75	120.7	4.12	104.6	5.28	134.1	3.81	96.8	12.14	308.4
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)
G20 SECTIONS												

All dimensions shown are for reference only. Consult factory for your specific configuration.

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
FT2020	FT2020 Series Double Thru Drive Pump

3 (Mount Type)

Order Code	Description
W	Wet Mounting Flange (pilot diameter sealing and provides for option double shaft seal)

4 (Front Cover)

Order Code	Description
1	SAE "A" 2-Bolt Mount
2	SAE B 2-Bolt Mount
4	SAE "C" 4-Bolt Mount (Contact Factory)
6	SAE B 2/4-Bolt Combination Mount
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)

Contact factory for other requirements.

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

7 (Outlet Port)

Order Code	Description
A	.75, SAE 4-Bolt Split Flange
B	1, SAE 4-Bolt Split Flange (M10 x 1.5 threads)
BM	1, SAE 4-Bolt Metric Split Flange (M10 x 1.5 threads)
S	#10 SAE (.875 - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

8 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
7-	23 cc/1.41 in. ³	17-	55 cc/3.33 in. ³
9-	29 cc/1.79 in. ³	19-	62 cc/3.77 in. ³
11-	36 cc/2.18 in. ³	21-	68 cc/4.13 in. ³
13-	43 cc/2.60 in. ³	24-	77 cc/4.71 in. ³
15-	48 cc/2.94 in. ³	27-	87 cc/5.30 in. ³

GPM @ 1200 RPM, 100 PSI

9 (Rear Section Outlet Port)

Order Code	Description
A	.75, SAE 4-Bolt Split Flange
B	1, SAE 4-Bolt Split Flange (M10 x 1.5 threads)
BM	1, SAE 4-Bolt Metric Split Flange (M10 x 1.5 threads)
S	#10 SAE (.875 - 14) Straight Thread
T	#12 SAE (1 1/16 - 12) Straight Thread
V	#16 SAE (1 5/16 - 12) Straight Thread

Contact factory for other requirements.

EXAMPLE:

(F3)-FT2020- W- 2 - E-13-T -21 -V- 1 -B - 11- A - 10- L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Special Seals	Series	Mount Type	Front Cover	Inlet Port	Displacements, Front Section	Outlet Port	Displacements, Rear Section	Rear Section Outlet Port	Rear Mounting Pad	Shaft Seal	Drive Shaft	Rear Coupling	Design Designation	Rotation

10 (Rear Mounting Pad)

Order Code	Description
1	SAE "A" 2-Bolt Rear Mounting Pad
6	SAE "B" 2/4-Bolt Rear Mounting Pad

Note: SAE "A" rear mounting pad is available with GT30 - 41st design. Contact factory for information.

11 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

12 (Drive Shaft)

Order Code	Description
1	SAE "B" Straight Keyed, .875" Dia., 1.312" Ext.
12	SAE "B" 13-Tooth Spline, Flat Root-Side Fit
21	SAE "BB" Straight Keyed, 1" Dia., 1.5" Ext.
99	SAE "BB" 15-Tooth Spline, Flat Root-Side Fit

Contact factory for other requirements.

13 (Rear Coupling)

Order Code	Description
A	SAE "A" Coupling
B	SAE "B" Coupling

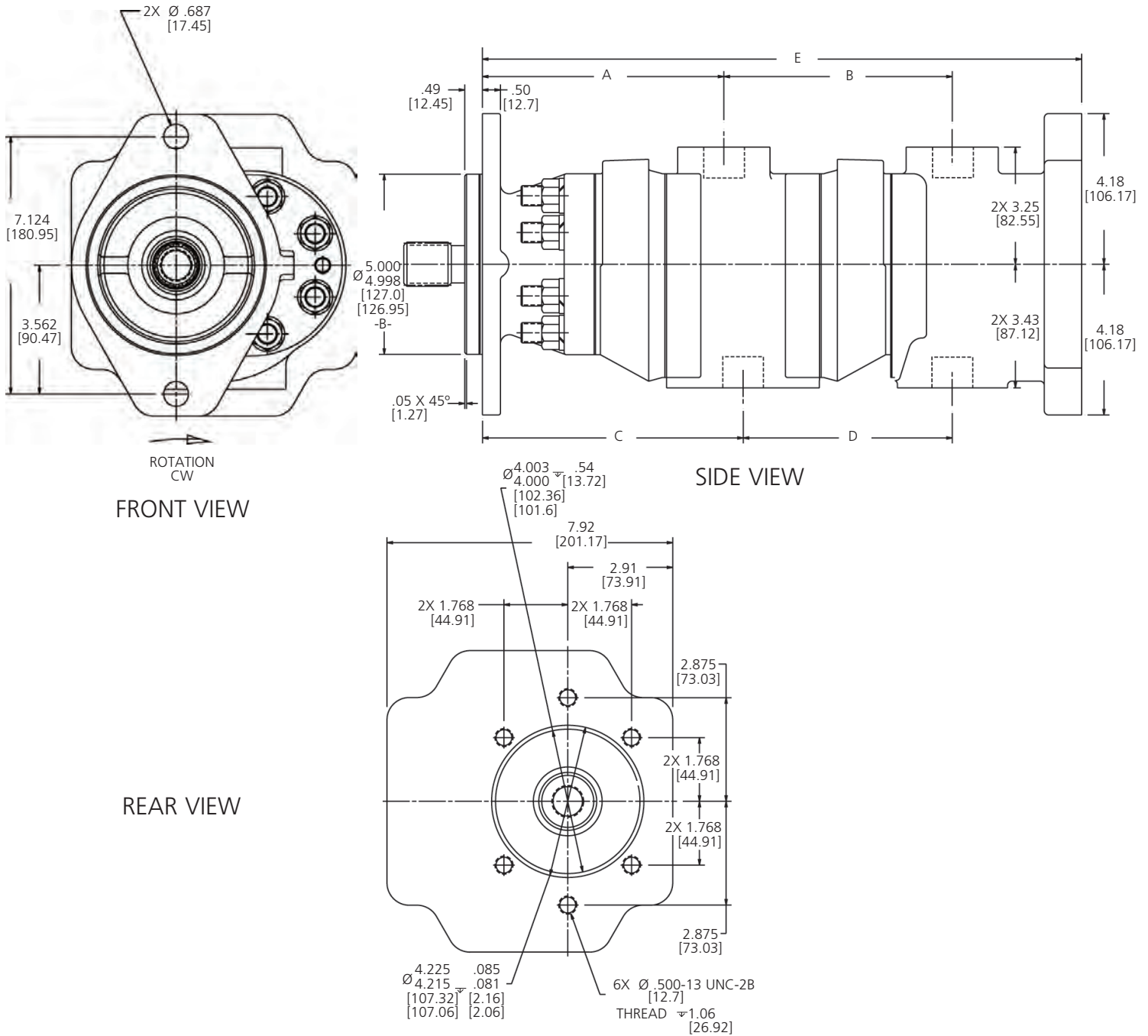
14 (Design Designation)

Order Code	Description
10	Standard

15 (Rotation)

Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

FT3030



161	9.82	50	7.94	201.7	7.58	192.5	8.48	215.4	6.81	173.0	19.13	485.9
145	8.84	45	7.63	193.8	7.27	184.7	8.17	207.5	6.50	165.1	18.51	470.2
129	7.86	40	7.33	186.2	6.96	176.8	7.86	199.6	6.19	157.2	17.89	454.4
113	6.88	35	7.02	178.3	6.65	168.9	7.55	191.8	5.89	149.6	17.27	438.7
103	6.30	32	6.84	173.7	6.47	164.3	7.37	187.2	5.70	144.8	16.92	429.8
97	5.89	30	6.71	170.4	6.34	161.0	7.24	183.9	5.58	141.7	16.65	422.9
90	5.51	28	6.59	167.4	6.23	158.2	7.12	180.8	5.46	138.7	16.41	416.8
81	4.91	25	6.40	162.6	6.04	153.4	6.93	176.0	5.27	133.9	16.03	407.2
68	4.13	21	6.15	156.2	5.79	147.1	6.69	169.9	5.02	127.5	15.54	394.7
58	3.54	18	5.97	151.6	5.60	142.4	6.50	165.1	4.83	122.7	15.17	385.3
CC	CIR	DISPLACEMENT CODE	A (in.)	A (mm)	B (in.)	B (mm)	C (in.)	C (mm)	D (in.)	D (mm)	E (in.)	E (mm)

All dimensions shown are for reference only. Consult factory for your specific configuration.

ORDERING INFORMATION

Each option has been assigned an order code -- listed in the tables below -- for placement in the sequence shown at right.

1 (Special Seals)

Order Code	Description
F3	Viton Seal
Omit	Standard

2 (Series)

Order Code	Description
FT3030	FT3030 Series Double Thru Drive Pump
Contact factory for other requirements.	

3 (Standard Designation)

Order Code	Description
C	Standard Designation

4 (Front Cover)

Order Code	Description
4	SAE C 4-Bolt Mount
7	SAE C 2-Bolt Mount
8	SAE C 2/4-Bolt Combination Mount

5 (Inlet Port)

Order Code	Description
E	2, SAE 4-Bolt Split Flange
EM	2, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
F	2.5, SAE 4-Bolt Split Flange
FM	2.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
G	3, SAE 4-Bolt Split Flange
GM	3, SAE 4-Bolt Metric Split Flange (M16 x 2.0 threads)
Y	#30 SAE (2 1/2 - 12) Straight Thread
Contact factory for other requirements.	

6 (Displacements, Front Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³
GPM @ 1200 RPM, 100 PSI			

7 (Front Section Outlet Port)

Order Code	Description
B	1, SAE 4-Bolt Split Flange
BM	1, SAE 4-Bolt Metric Split Flange (M10 x 1.5 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.5, SAE 4-Bolt Split Flange
DM	1.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
V	#16 SAE (1 5/16 - 12) Straight Thread
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread
Contact factory for other requirements.	

8 (Displacements, Rear Section)

Order Code	Cm ³ /In ³	Order Code	Cm ³ /In ³
18-	58 cc/3.54 in. ³	32-	104 cc/6.30 in. ³
21-	68 cc/4.13 in. ³	35-	113 cc/6.88 in. ³
25-	80 cc/4.91 in. ³	40-	129 cc/7.86 in. ³
28-	91 cc/5.51 in. ³	45-	145 cc/8.84 in. ³
30-	97 cc/5.89 in. ³	50-	161 cc/9.82 in. ³
GPM @ 1200 RPM, 100 PSI			

EXAMPLE:

(F3)-FT3030- C- 4 - E- 18-B -28 -X- 6 - A- 12- B -10- L

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Special Seals	Series	Standard Designation	Front Cover	Inlet Port	Displacements, Front Section	Front Section Outlet Port	Displacements, Rear Section	Rear Section Outlet Port	Rear Mounting Pad	Shaft Seal	Drive Shaft	Rear Coupling	Design Designation	Rotation

9 (Rear Section Outlet Port)

Order Code	Description
B	1, SAE 4-Bolt Split Flange
BM	1, SAE 4-Bolt Metric Split Flange (M10 x 1.5 threads)
C	1.25, SAE 4-Bolt Split Flange
CM	1.25, SAE 4-Bolt Metric Split Flange (M12 x 1.75 threads)
D	1.5, SAE 4-Bolt Split Flange
DM	1.5, SAE 4-Bolt Metric Split Flange (M14 x 2.0 threads)
W	#20 SAE (1 5/8 - 12) Straight Thread
X	#24 SAE (1 7/8 - 12) Straight Thread
Contact factory for other requirements.	

10 (Rear Mounting Pad)

Order Code	Description
1	SAE "A" 2-Bolt Rear Mounting Pad
6	SAE "B" 2/4-Bolt Rear Mounting Pad
8	SAE "C" 2/4-Bolt Rear Mounting Pad

11 (Shaft Seal)

Order Code	Description
A	Single
B	Double
J	Double, Outer Inverted
X	None

12 (Drive Shaft)

Order Code	Description
1	SAE "C" Straight Keyed, 1.25" Dia., 1.875" Ext.
12	SAE "C" 14-Tooth Spline, Flat Root-Side Fit
34	SAE "C" 14-Tooth Spline
Contact factory for other requirements.	

13 (Rear Coupling)

Order Code	Description
B	SAE "B" Coupling
C	SAE "C" Coupling

14 (Design Designation)

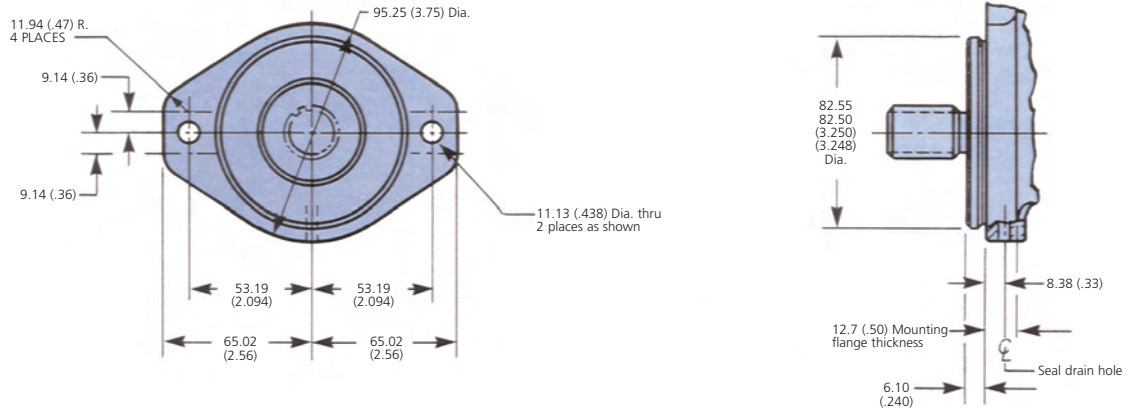
Order Code	Description
10	Standard

15 (Rotation)

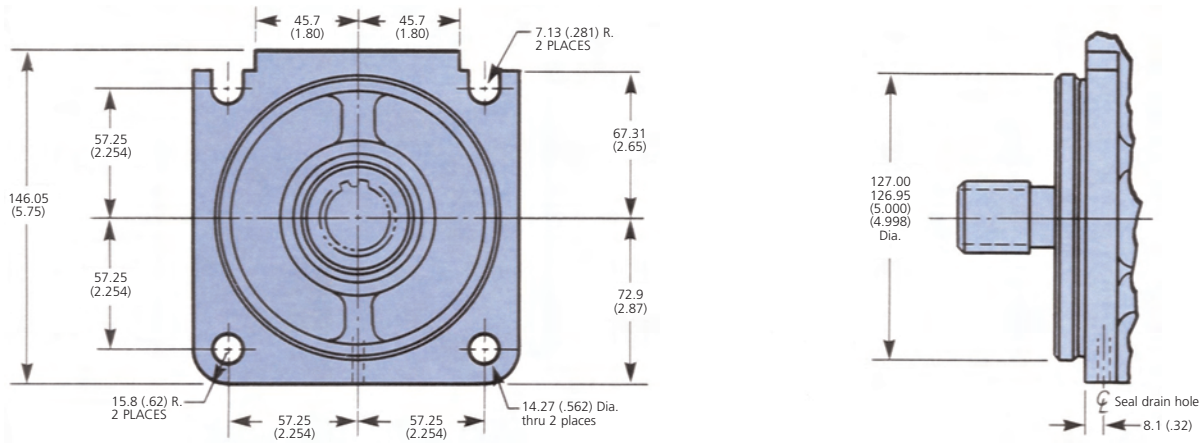
Order Code	Description
L	Counterclockwise Rotation
R	Clockwise Rotation

Mounting Flanges

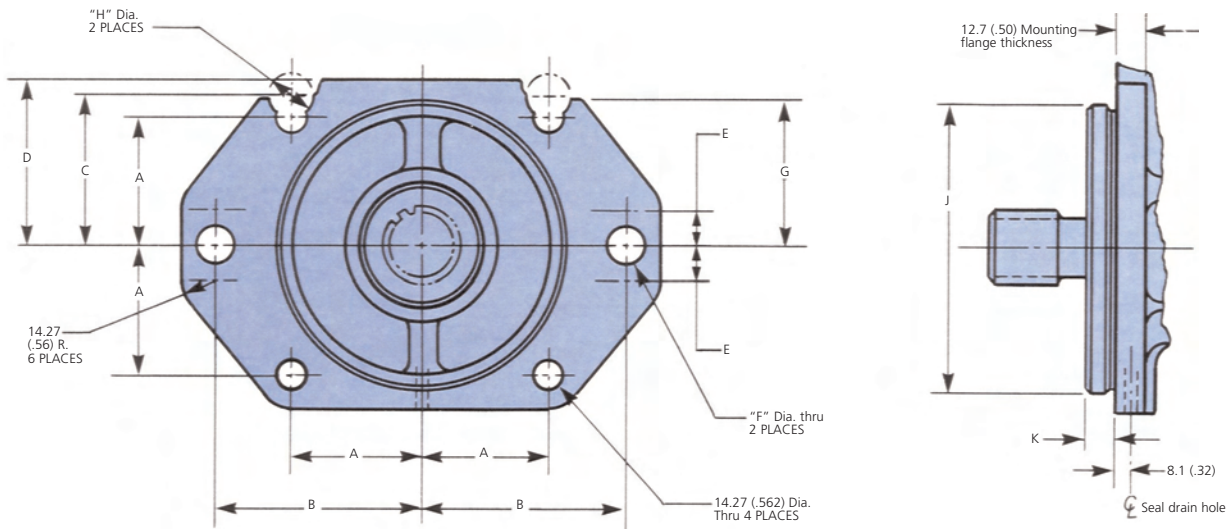
SAE "A" 2-BOLT



SAE "C" 4-BOLT



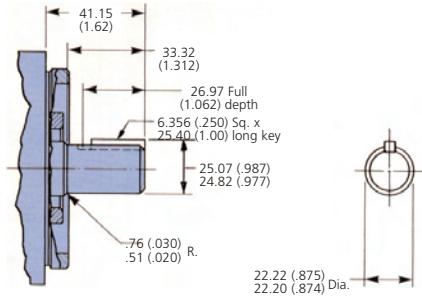
SAE 2/4-BOLT



Pump series	2-Bolt/4-Bolt combination flange	A	B	C	D	E	F	G	H	J	K
F20, F2020, FT20	SAE "B"	44.91 (1.768)	87.38 (3.44)	54.61 (2.15)	59.18 (2.33)	12.7 (.50)	14.27 (.562)	52.02 (2.048)	19.05 (.750)	101.60 101.54 (4.000) (3.998)	9.40 (.370)
F30, F3020, F3030, FT30	SAE "C"	57.25 (2.254)	90.48 (3.56)	67.30 (2.65)	72.90 (2.87)	15.5 (.61)	17.48 (.688)	65.99 (2.598)	19.94 (.785)	127.00 126.95 (5.000) (4.998)	12.45 (.490)

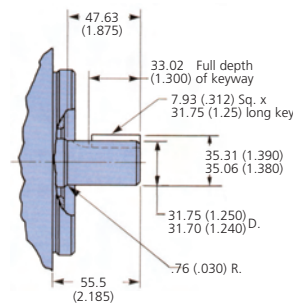
SAE "B" STRAIGHT KEY

Shaft No. 1: For F20, F2020 & FT20 Pumps
292.6 Nm (2590 in. lb.) torsional capacity.*



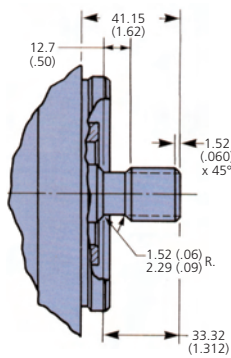
SAE "C" STRAIGHT KEY

Shaft No. 1: For F30, F3020, F3030 & FT30 Pumps
720.8 Nm (6380 in. lb.) torsional capacity.*



SAE "B" INVOLUTE SPLINE

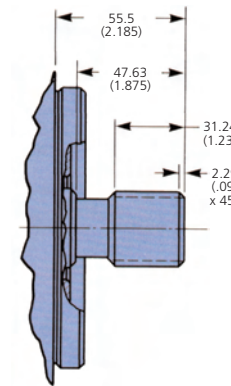
Shaft No. 12: For F20, F2020 & FT20 Pumps
279.6 Nm (2475 in. lb.) torsional capacity.*



Flat Root - Side Fit
No. of Teeth - 13
Diametral Pitch - 16/32
Pressure Angle - 30°

SAE "C" INVOLUTE SPLINE

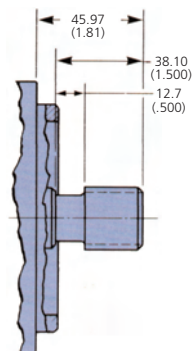
Shaft No. 12: For F30, F3020, F3030 & FT30 Pumps
819.1 Nm (7250 in. lb.) torsional capacity.*



Flat Root - Side Fit
No. of Teeth - 14
Diametral Pitch - 12/24
Pressure Angle - 30°

SAE "B-B" INVOLUTE SPLINE

Shaft No. 99: For F20, F2020 & FT20 Pumps
451.9 Nm (4000 in. lb.) torsional capacity.*



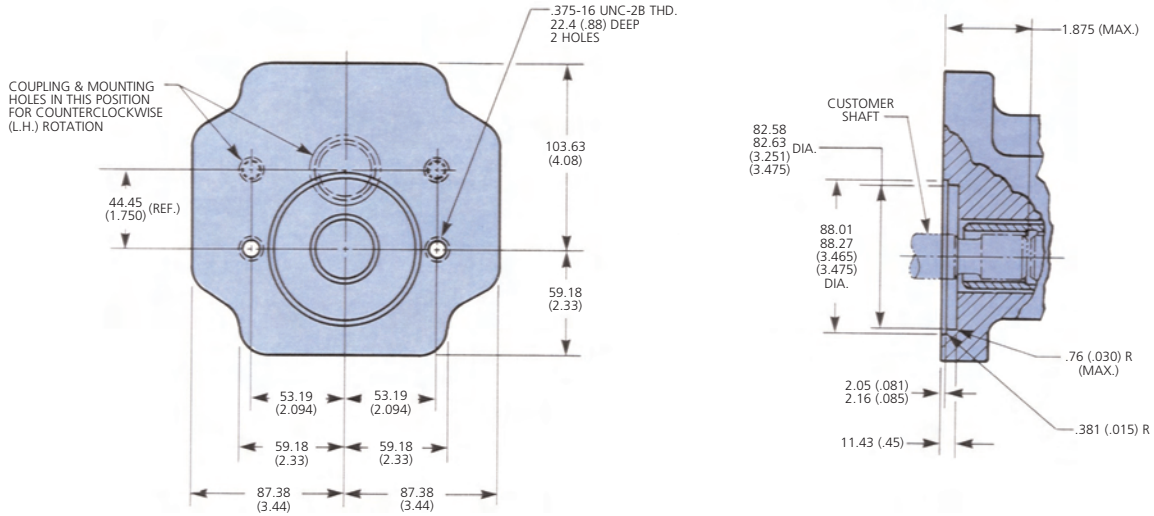
Flat Root - Side Fit
No. of Teeth - 15
Diametral Pitch - 16/32
Pressure Angle - 30°

* Applies to coaxial applications only. Consult representative if application requires greater capacity or has side loads.

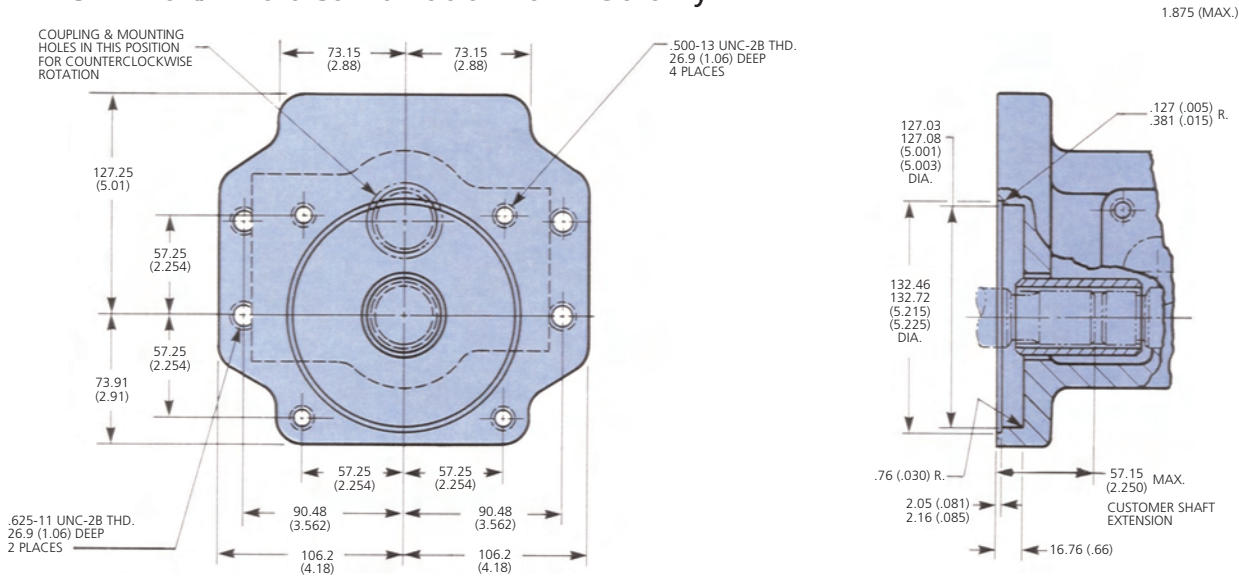
For shaft options not shown, contact factory for specific shaft information.

Rear Mounting Flanges for Thru-Drive Pumps

SAE "A" 2-Bolt

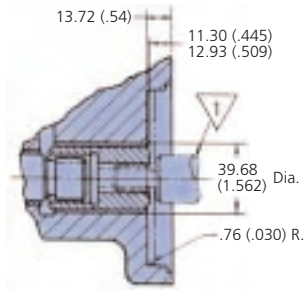


SAE "C" 2-Bolt/4-Bolt Combination for FT30 only



4-Bolt Flange Port Connections

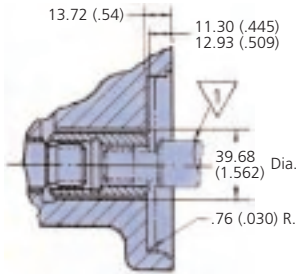
Port size (model code designation)	Dimensions - mm (inch)						
	H	J	K	L	M	N	P
A	19.05 (.750)	11.13 (.438)	22.22 (.875)	23.82 (.938)	47.62 (1.875)	(.375-16)	22.35 (.88)
B	25.40 (1.000)	13.09 (.515)	26.19 (1.031)	26.19 (1.031)	52.37 (2.062)	(.375-16)	22.35 (.88)
C	31.75 (1.250)	15.09 (.594)	30.18 (1.199)	29.36 (1.156)	58.72 (2.312)	(.438-14)	25.40 (1.00)
D	38.10 (1.500)	17.86 (.703)	35.71 (1.406)	34.93 (1.375)	69.85 (2.750)	(.500-13)	25.40 (1.00)
E	50.80 (2.000)	21.44 (.844)	42.87 (1.688)	38.89 (1.531)	77.77 (3.062)	(.500-13)	25.40 (1.00)
F	63.50 (2.500)	25.40 (1.000)	50.80 (2.000)	44.45 (1.750)	88.90 (3.500)	(.500-13)	30.23 (1.19)
G	76.20 (3.000)	30.96 (1.219)	61.93 (2.438)	53.19 (2.094)	106.38 (4.188)	(.625-11)	30.23 (1.19)



SAE "A" SIZE COUPLING

Coupling Spline Data - mm (inches)

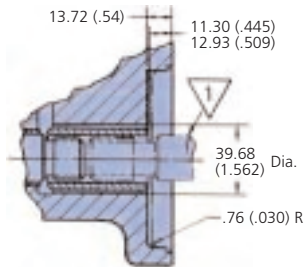
Internal Involute Spline
 Flat Root - Side Fit
 No. of Teeth - 9
 Diametral Pitch - 16/32
 Pressure Angle - 30°



SAE "B" SIZE COUPLING

Coupling Spline Data - mm (inches)

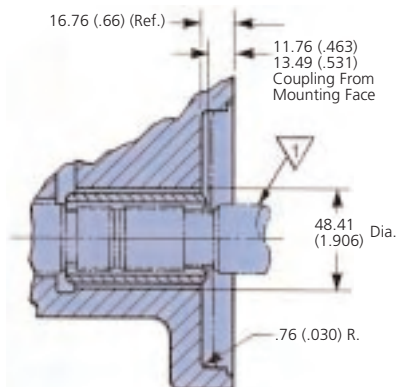
Internal Involute Spline
 Flat Root - Side Fit
 No. of Teeth - 13
 Diametral Pitch - 16/32
 Pressure Angle - 30°



SAE "B-B" SIZE COUPLING

Coupling Spline Data - mm (inches)

Internal Involute Spline
 Flat Root - Side Fit
 No. of Teeth - 15
 Diametral Pitch - 16/32
 Pressure Angle - 30°



SAE "C" SIZE COUPLING

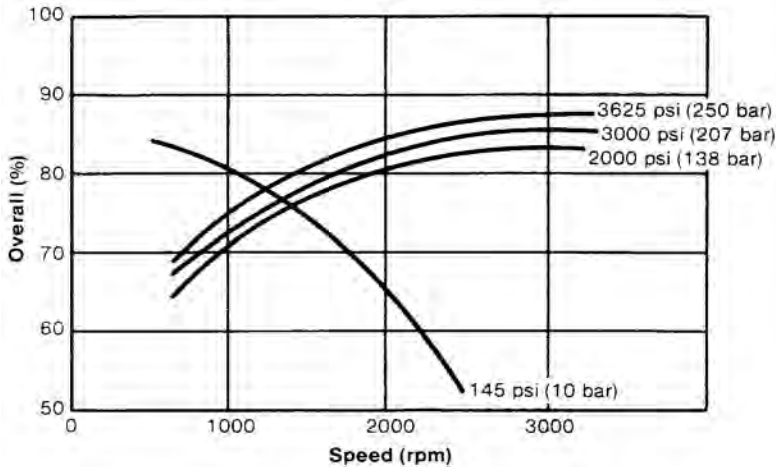
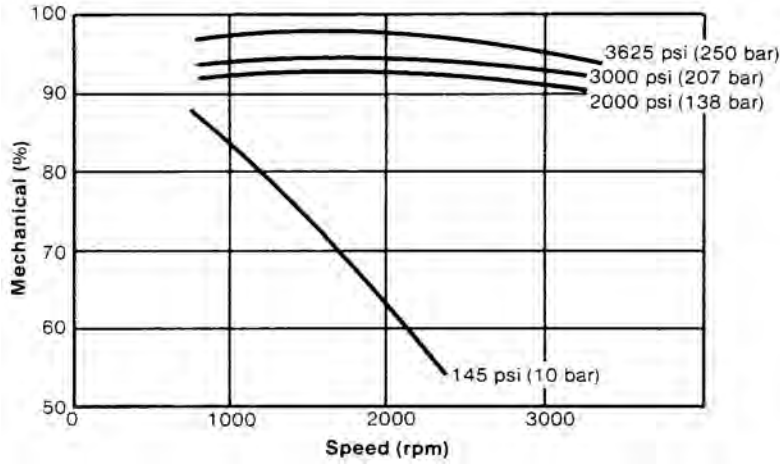
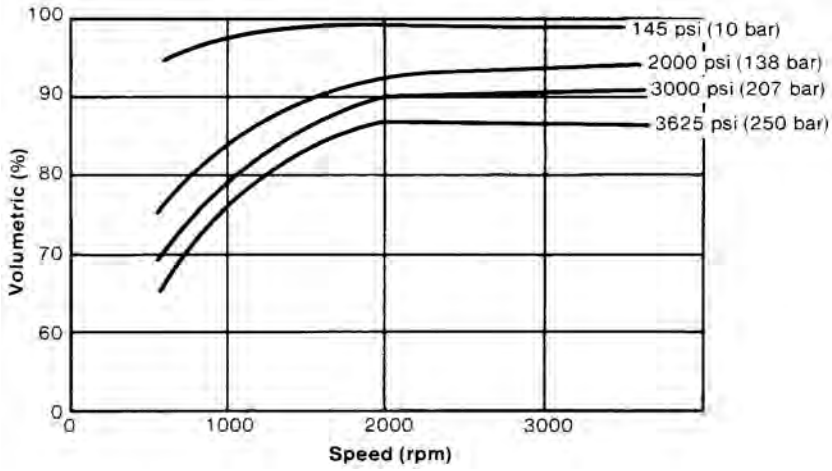
Coupling Spline Data - mm (inches)

Internal Involute Spline
 Flat Root - Side Fit
 No. of Teeth - 14
 Diametral Pitch - 12/24
 Pressure Angle - 30°

† The customer shaft extension must conform, in all respects, to SAE J744 "Hydraulic Pump Mounting & Drive Dimensions" standards as they apply to external splines.

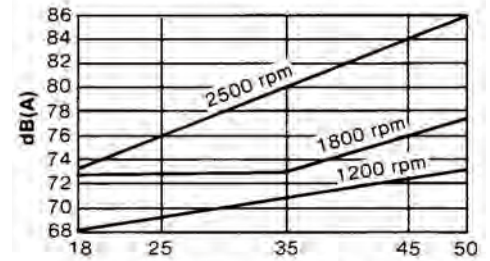
Technical Performance Data F20 & F30 Pumps

Typical efficiency



Sound levels dB(A)

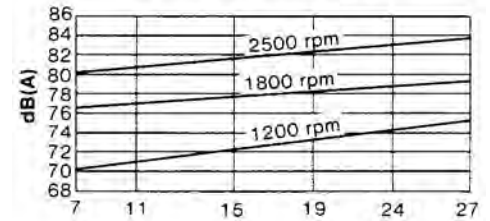
Data per NFPA T.3.9.70.12



F30 Single pump sizes (gpm)
@ 2000 psi, 5" hg

Sound levels dB(A)

Data per NFPA T.3.9.70.12



F20 Single pump sizes (gpm)
@ 2000 psi, 5" hg

Only Haldex offers this extensive range of pumps, hydraulic motors, power packs and flow dividers, worldwide.

GC Series Hydraulic Pumps

Compact cast iron gear pumps with a wide variety of integrated options provide custom systems capability and high-efficiency performance. Displacements from 0.065 to 0.711 cu. in. (1.066 to 11.65 cc) per revolution. Pressures to 4,000 psi (275 bar).

D Series Hydraulic Pumps

Compact, external gear pumps for use in pumping fluids with lubricating qualities. Suitable for use in a wide variety of applications, including agricultural, construction, transmission charge and lube, and diesel fuel transfer. Displacements from .232 cu. in. to 1.395 cu. in. (3.8 - 22.9 cc) per revolution. Pressures to 3,000 psi (207 bar).

H Series Hydraulic Pumps

Cast iron, external gear pumps for use in pumping fluids with lubricating qualities. Designed to provide reliable, long-life service under rugged conditions. Suitable for use in a wide variety of applications, including agricultural, construction, transmission charge and lube, and diesel fuel transfer. Displacements from 0.60 cu. in. to 2.40 cu. in. (9.8 - 39.4 cc) per revolution. Pressures to 3,000 psi (207 bar).

W Series Gear Pumps

Highly efficient pumps feature 4,000 psi continuous operation, speed range from 500 to 4,000 rpm, low noise operation and overall efficiency greater than 90%. Displacements from .03 to 3.05 cu. in. (.5 to 50 cc) per revolution. Other features include SAE, ISO and DIN shafts, flanges and ports; integrated valves and multiple pump configurations.

F20LS/F30LS Load Sense Variable Discharge Gear Pumps

Offers the horsepower conservation of a load sense system and the low cost reliability of a gear pump. Featuring cast iron construction and 4,000 psi continuous operation for severe-duty applications. Displacements from 1.41 to 9.82 cu. in. (23 to 161 cc).

F20 & F30 Series Gear Pumps

Rugged cast iron pumps offer high performance for severe-duty applications. Available in single, multiple and through-drive versions. Displacements from 1.41 to 9.82 cu. in. (23 to 161 cc) per revolution. Pressures to 4,000 psi (275 Bar) continuous.

F20 / F30 Specialty Products

- F20 / F30 PTO Pump Series. Specifically designed pump options and features for PTO (power take off) applications. Displacements from 1.41 to 9.82 cu. in. (23 to 161 cc).
- F20 / F30 two section flow dividers. Displacements from 1.41 to 9.82 cu. in. (23 to 161 cc) per section. Pressures to 4,000 psi continuous (275 Bar).

Gerotor Pumps

High-efficiency, low-maintenance design with quiet operation and uniform flow. Extremely tolerant of contamination. Displacements from 0.05 to 8.29 cu. in. (0.8 to 135.8 cc) per revolution. Pressures to 2,000 psi (136 Bar).

GC-9500 AC Hydraulic Power Units

AC power units offering the ultimate in design versatility and ordering flexibility. It can be ordered completely assembled or in kits. Standard options include: motors (1/2-5 hp, TEFC, open, and drip-proof); 4 reservoirs (5, 10, 15 and 20 gal.); and pumps (pressure balanced and high/low with flows to 28 gpm and pressures to 3500 psi).

HE Power Packs (AC & DC Hydraulic Power Packs)

Self-contained modular power systems in fully assembled or kit form; wide range of standard or high efficiency pumps, motors, switches, mounts, valves, and reservoirs. Custom options also available. Pressures to 4,000 psi (276 Bar). Flows from 0.20 to 7.0 GPM.

Hydraulic Motors

Available in the GC, W and F20 Series in unidirectional and birotational configurations. Motors available with modular valve, bearing, seal and shaft options for maximum flexibility. Displacements from 0.065 to 5.30 cu. in. (1.06 to 87.0 cc) per revolution. Pressures to 4,000 psi (275 Bar).

Two-Stage Hydraulic Pumps

External gear pumps designed for high-speed positioning coupled with maximum working pressure. High-pressure displacements from 0.258 to 1.395 cu. in. (4.23 to 22.86 cc) per revolution. Pressures to 4,000 psi (275 Bar). Flows from 5 to 28 GPM.

Rotary Flow Dividers

Rotary-gear units up to four sections for synchronized operation of multiple cylinders or motors, proportional division of output or intensified flow. Single-section displacements from 0.065 to 0.813 cu. in. (1.0 to 13.32 cc) per revolution. Pressures to 4,500 psi (306 Bar).

Call us for more information

For application assistance or detailed literature on any Haldex product line, call us toll-free: **1-800-572-7867**.
Visit our web site: <http://www.haldex.com>
E-mail us: info.hydraulics.us@haldex.com or
info.hydraulics.eu@haldex.com



PRODUCT RANGE

He Power Packs
12/24/48 VDC 0.8 - 3.5 kW and 0.75
- 3 kW AC modular power packs

Pressure Switches
5 - 350 bar connecting /
disconnecting

He Classic Power Packs
12/24/48 VDC modular
powerpacks in weatherproof boxes

W100 Hydraulic Pumps
0.5 - 2.0 cc/section, 227 bar

W300 Hydraulic Pumps
0.8 - 5.7 cc/section, 230 bar

W600 Hydraulic Pumps
4 - 12 cc/section, 276 bar

WM600 Hydraulic Motors
4 - 12 cc/section, 276 bar

W900 Hydraulic Pumps
5 - 31 cc/section, 276 bar

WM900 Hydraulic Motors
5 - 31 cc/section, 276 bar

WQ900 The Quiet Pump
5 - 27 cc/section, 230 bar

W1200 Hydraulic Pumps
25 - 33 cc/section, 214 bar

W1500 Hydraulic Pumps
19 - 50 cc/section, 276 bar

WM1500 Hydraulic Motors
19 - 50 cc/section, 276 bar

G25 Hydraulic Pumps
23 - 87 cc/section, 250 bar

GM25 Hydraulic Motors
23 - 87 cc/section, 250 bar

GPA Internal Gear Pumps
1.7 - 63 cc/section, 100 bar

GC Hydraulic Pumps/Fluid Motors
1.06 - 11.65 cc/section, 276 bar

II-Stage Hydraulic Pumps
4.2 - 22.8 cc/section, 276 bar

Rotary Flow Dividers
3.8 - 13.3 cc/section, 300 bar

D Hydraulic Pumps
3.8 - 22.9 cc/section, 207 bar

H Hydraulic Pumps
9.8 - 39.4 cc/section, 207 bar

F12 Hydraulic Pumps
16 - 41 cc/section, 276 bar

F15 Hydraulic Pumps
19 - 50 cc/section, 276 bar

F20/F30 Hydraulic Pumps
23 - 161 cc/section, 276 bar

FM20/FM30 Hydraulic Motors
23 - 161 cc/section, 276 bar

F20LS/F30LS Hydraulic Pumps
23 - 161 cc/section, 276 bar

Transmission Pumps

www.haldex.com/hbus



Haldex Hydraulics Corp.
2222 15th Street
ROCKFORD, IL 61104
USA
Tel: +1-815 398 4400
Fax: +1-815 398 5977
E-mail: info.hydraulics.us@haldex.com

Haldex Hydraulics GmbH
Seligenweg 12, Postfach 1507
D-95014 HOF
Germany
Tel: +49-9281 895-0
Fax: +49-9281 87133
E-mail: info.hydraulics.eu@haldex.com

Haldex Hydraulics Corp.
214 James Farm Road
STATESVILLE, NC 28625
USA
Tel: +1-704 873 2587
Fax: +1-704 878 0530
E-mail: info.hydraulics.us@haldex.com

Haldex International Trading (Shanghai) Co. Ltd.
16 A, Zhao Feng World Trade Building
No. 369 Jiang Su Road
CN-200050 SHANGHAI
China
Tel: +86 21 5240 0338
Fax: +86 21 5240 0177
E-mail: info.cn@haldex.com

Haldex Hydraulics AB
Ringvägen 3, Box 95
SE-280 40 SK. FAGERHULT
Sweden
Tel: +46-433 32400
Fax: +46-433 30546
E-mail: info.hydraulics.eu@haldex.com

Haldex Vehicle Products (Suzhou) Co., Ltd.
LongPu Road No.6
Suzhou Industrial Park
SUZHOU 215126
P. R. China
Tel: +86 512 8885 5301
Fax: +86 512 8765 6066

Haldex Hydraulics AB
Nymärsta Gränd 6, Box 511
SE-195 25 MÄRSTA
Sweden
Tel: +46-8 591 288 50
Fax: +46-8 591 288 60
E-mail: info.hydraulics.eu@haldex.com

Haldex Hydraulics (Qingzhou) Co. Ltd.
No.1789, Shidai Yi Road
Economy Development Zone
QINGZHOU 262500
P. R. China
Tel: +86 536 3296 598
Fax: +86 536 3296 410



Haldex (www.haldex.com), headquartered in Stockholm, Sweden, is a provider of proprietary and innovative solutions to the global vehicle industry, with focus on products in vehicles that enhance safety, environment and vehicle dynamics. Haldex is listed on the Nasdaq OMX Stockholm Stock Exchange and had net sales of nearly 8.5 billion SEK in 2008. The number of employees amounts to about 5,000.