

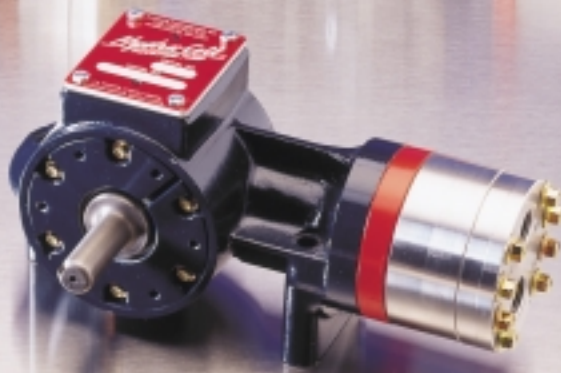
F-20 Series

Up to 1 gpm (3.8 l/min)



F-20 close coupled for 56C frame motors

F-22 flexible coupled to 56C frame motors



F-21 shaft-driven

Hydra-Cell[®]
SIMPLY BUILT TO LAST

F-20 Series Performance

flow

model*	max flow		max input rpm
	gpm	l/min	
F-20-X	1.00	3.79	1750
F-20-E	0.73	2.76	1750
F-20-S	0.55	2.08	1750
F-20-B	0.33	1.25	1750
F-20-G	0.20	0.76	1750

pressure

Maximum Inlet Pressure:

100 psi (6.9 bar)

Pressure Variable To:

Metallic Pump Heads:

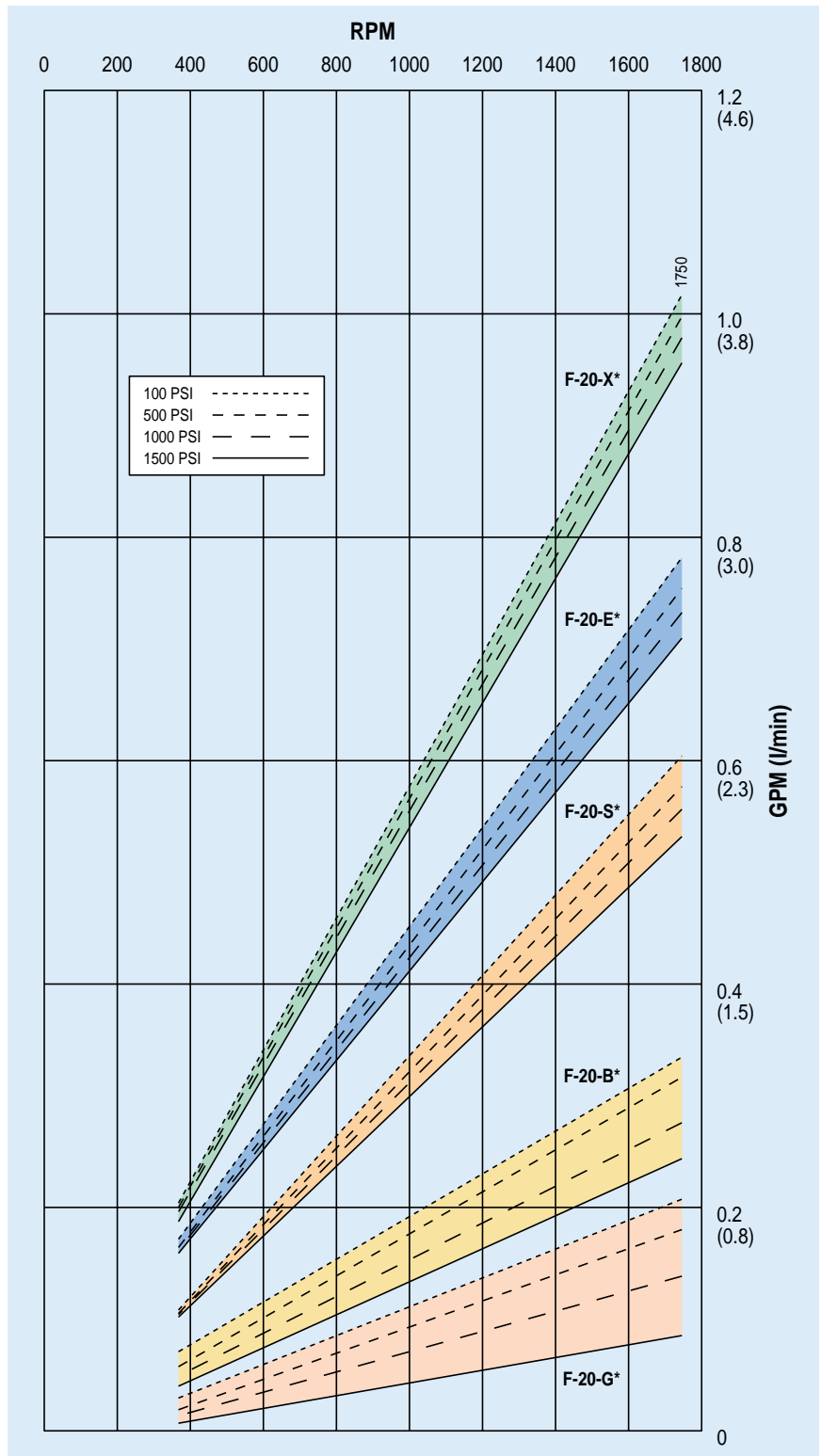
- F-20: 1000 psi (69 bar)
- F-21: 1500 psi (103 bar)
- F-22: 1500 psi (103 bar)

Non-Metallic Pump Heads:

All Models: 250 psi (17.3 bar)

* Note

Performance and specification ratings apply to F-20, F21 and F-22 configurations unless specifically noted otherwise.



F-20 Series Specifications

Maximum Capacity*

	rpm	gpm	l/min
F-20-X	1750	1.00	3.79
F-20-E	1750	0.73	2.76
F-20-S	1750	0.55	2.08
F-20-B	1750	0.33	1.25
F-20-G	1750	0.20	0.76

Delivery @ max Rated Pressure*

	revs/gal	revs/liter
F-20-X	1750	462
F-20-E	2397	635
F-20-S	3182	841
F-20-B	5303	1400
F-20-G	8750	2302

Max Inlet Pressure 100 psi (6.9 bar)

Pressure Variable to

Metallic Heads: F-20: 1000 psi (69 bar);
F-21 & F-22: 1500 psi (103 bar)
Non-Metallic Heads: All Models: 250 psi (17.3 bar)

Max Temperature 250°F (refer to engineering section, page 94 for temperatures above 180°F)

Inlet Port 1/2 inch NPT

Discharge Port 3/8 inch NPT

Shaft Diameter 5/8 inch

Shaft Rotation Bi-directional

Bearings Ball bearings

Oil Capacity 1/8 US quart (0.12 liters), see page 88 for oil selection and specification.

Weight

Metallic Heads: 12 lbs (5.5 kg)
Non-Metallic Heads: 9 lbs (4.1 kg)

Calculating Required Horsepower

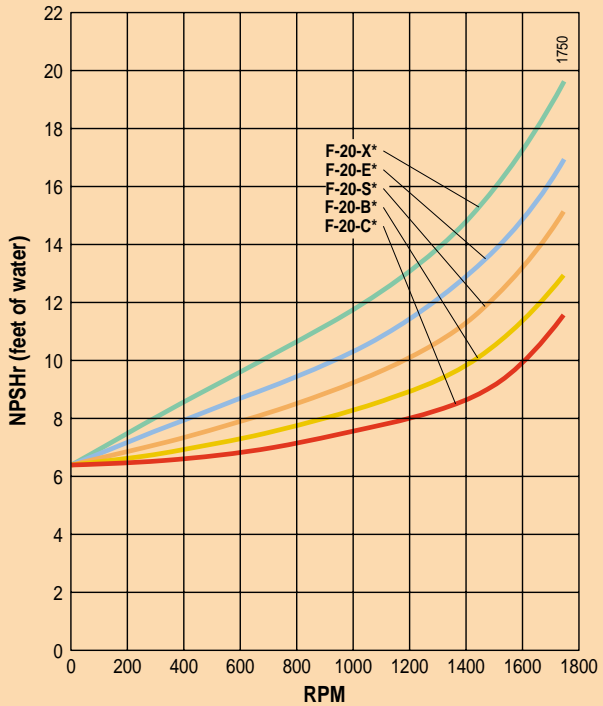
$$\frac{2 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor HP}$$

* Note

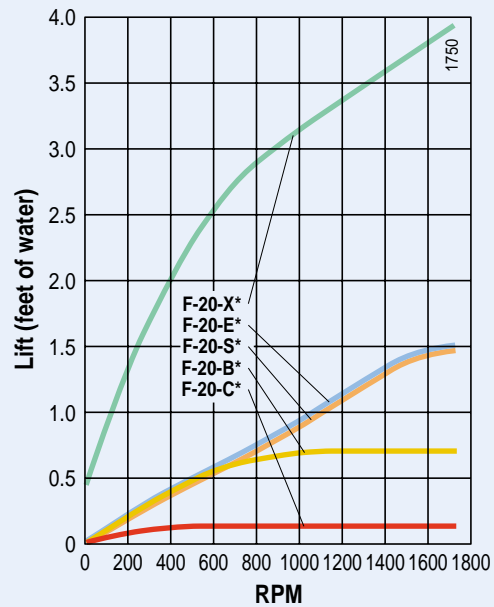
Performance and specification ratings apply to F-20, F21 and F-22 configurations unless specifically noted otherwise.

For installation guidelines and other pump selection design considerations, refer to pages 92-95.

Net Positive Suction Head (NPSHr)



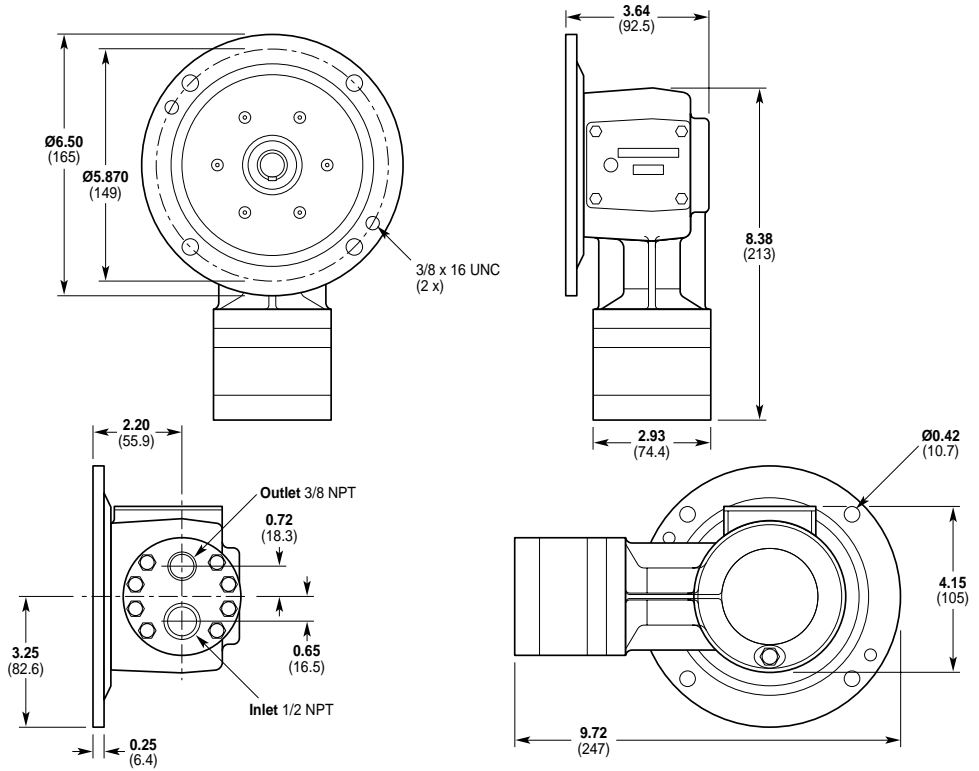
Dry Lift



F-20 Series Dimensions

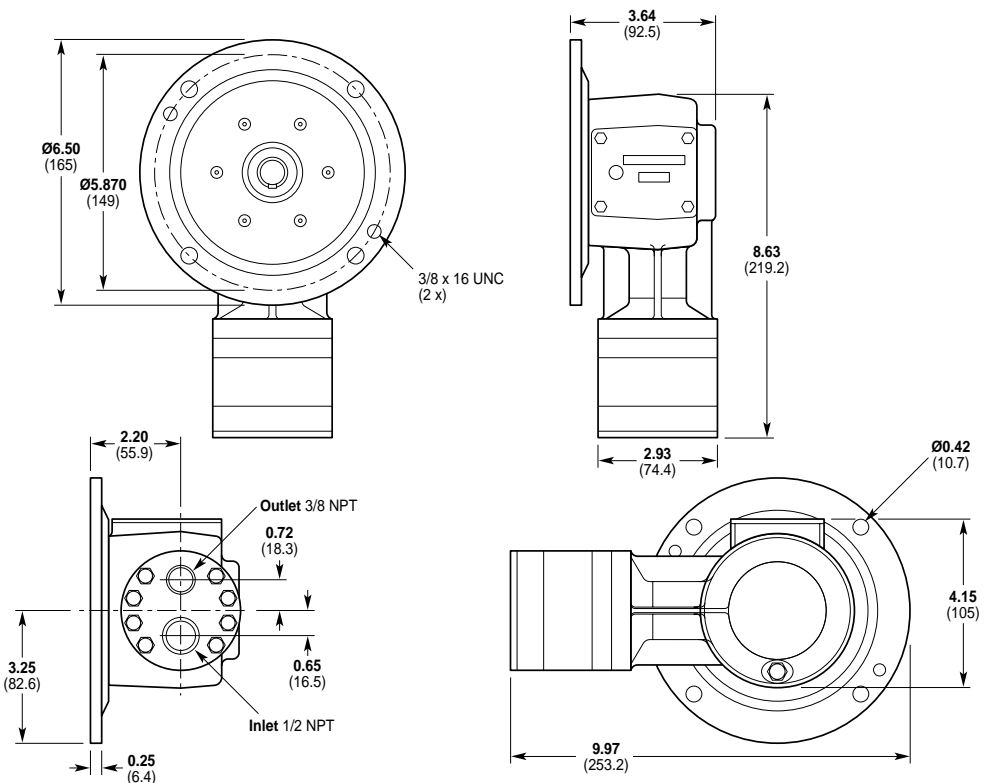
F-20 Models with Metallic Pumping Head

Brass
316 Stainless Steel
Hastelloy® C



F-20 Models with Non-metallic Pump Head

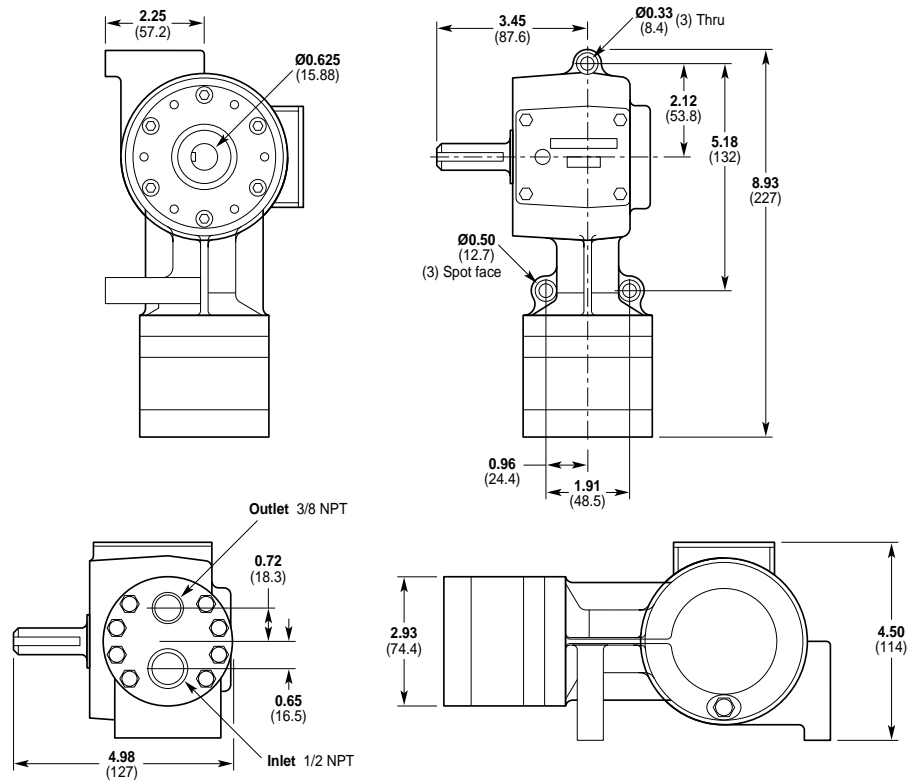
Kynar®
Polypropylene



F-20 Series Dimensions

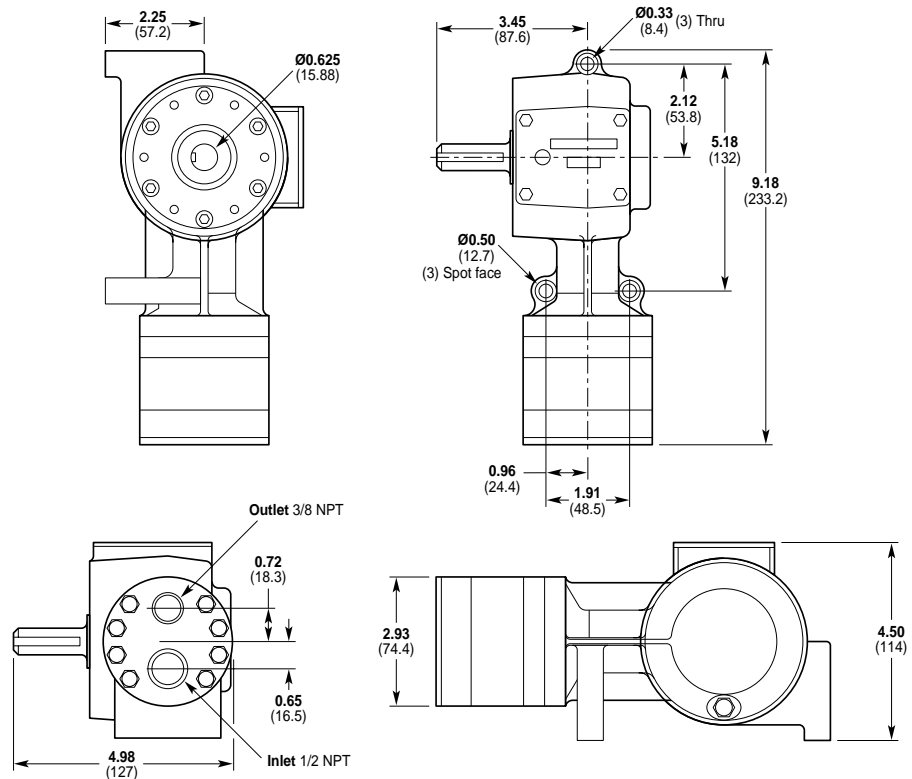
F-21 Models with Metallic Pumping Head

Brass
316 Stainless Steel
Hastelloy® C



F-21 Models with Non-metallic Pump Head

Kynar®
Polypropylene

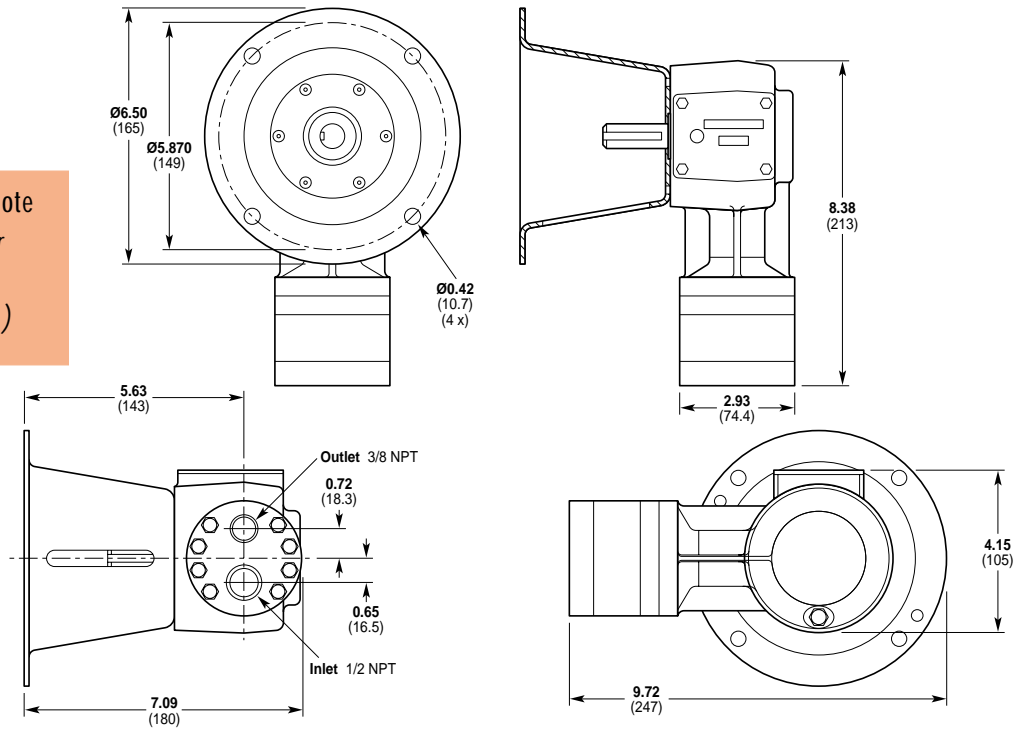


F-20 Series Dimensions

F-22 Models with Metallic Pumping Head

Brass
316 Stainless Steel
Hastelloy® C

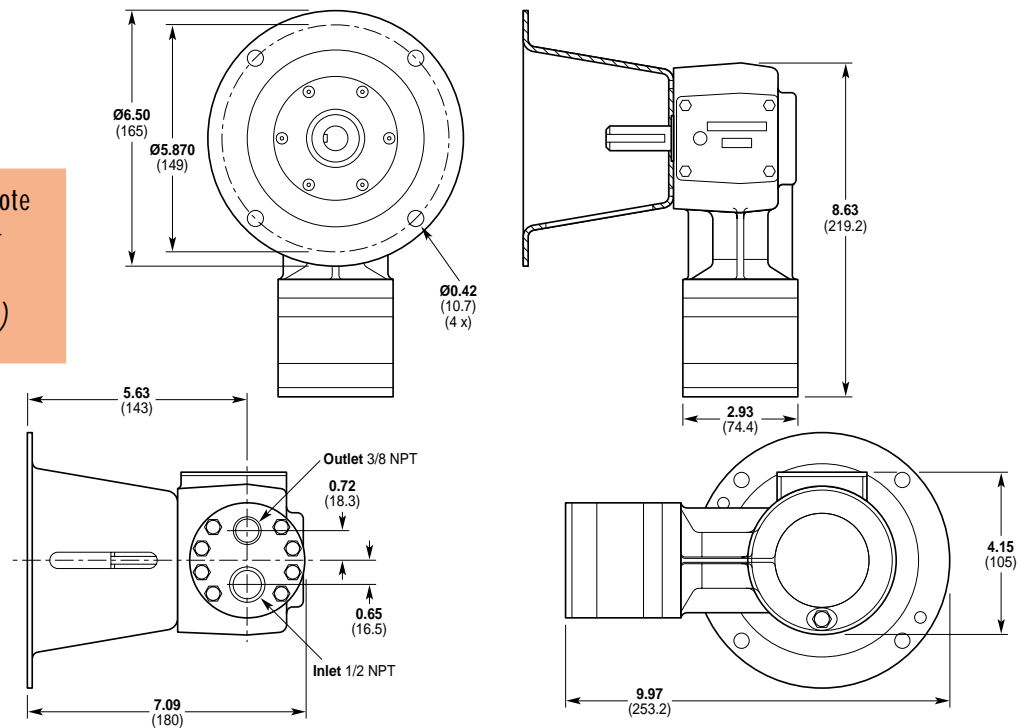
– Note
F-22 Pump/Motor Adapter
flange ordered separately
(see accessories, page 30.)



F-22 Models with Non-metallic Pump Head

Kynar®
Polypropylene

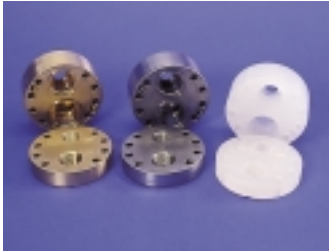
– Note
F-22 Pump/Motor Adapter
flange ordered separately
(see accessories, page 30.)



F-20 Series Options

Materials of Construction

All F-20, F-21 and F-22 configurations of Hydra-Cell pumps are manufactured in a variety of heavy-duty materials to meet specific pumping needs. Refer to the design section for more information on appropriate material selection and chemical compatibility. Other customized materials are available by special order. Contact factory application engineering department for further information.



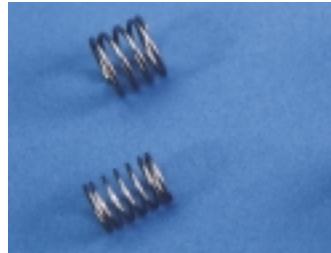
Pumping Head
 316 Stainless Steel
 Brass
 Kynar®
 Hastelloy® C
 Polypropylene



Valves
 17-4 PH Stainless Steel
 Ceramic
 Hastelloy® C
 Nitronic 50



Diaphragms & O-rings
 Buna-N-XS
 EPDM
 Neoprene
 Teflon®
 Viton®-XT



Valve Springs
 Elgiloy®
 Hastelloy® C



Valve Seats
 17-4 PH Stainless Steel
 316 Stainless Steel
 Ceramic
 Hastelloy® C



Valve Spring Retainers
 Celcon®
 Kynar®
 Nylon
 Polypropylene

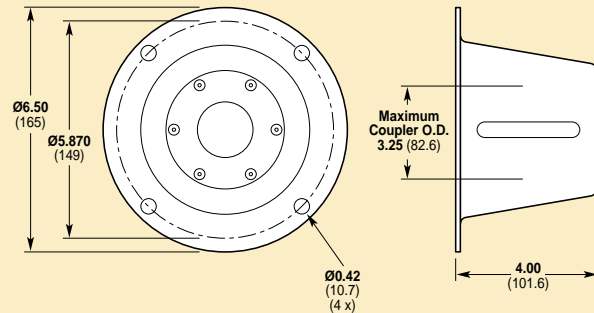
F-20 Series Accessories

Options, Accessories and Custom Designs

- Valves, page 78
- Hydra-Oil, page 88
- Couplers, page 87
- Hose Connectors, page 87
- Tool Kits, page 90



Pump/Motor Adapter



Part Number: A04-005-1200

Must be ordered separately for F-22 models for use with 56C frame motors.

F-20 Series How To Order

Ordering Information

A complete F-20 Series Model Number contains 12 digits including 9 customer-specified design options: for example F20XABGSNEPG

1	2	3	4	5	6	7	8	9	10	11	12
F	2			A							

3 Configuration

- 0 Close-coupled to 56C
- 1 Shaft-driven
- 2 Flexible coupled to 56C*

*F-22 Extended flange pump/motor adapter ordered separately, see accessories on facing page for ordering information.

4 Hydraulic End Cam

- X Max 1.00 gpm (3.79 lpm) @ 1750 rpm
- E Max 0.73 gpm (2.76 lpm) @ 1750 rpm
- S Max 0.55 gpm (2.08 lpm) @ 1750 rpm
- B Max 0.33 gpm (1.25 lpm) @ 1750 rpm
- G Max 0.20 gpm (0.76 lpm) @ 1750 rpm

6 Pumping Head Material

- B Brass
- M Kynar®
- P Polypropylene
- S 316 Stainless Steel
- T Hastelloy® C

7 Diaphragm & O-ring Material

- E EPDM (requires order code J- 20 wt EPDM-compatible oil)
- G Viton®-XT
- J Teflon® (available with X and E cams only; cannot be used with non-metallic heads)
- P Neoprene
- T Buna-N-XS

8 Valve Seat Material

- C Ceramic
- H 17-4 PH Stainless Steel
- S 316 Stainless Steel
- T Hastelloy® C

9 Valve Material

- C Ceramic
- H 17-7 PH Stainless Steel
- N Nitronic 50
- T Hastelloy® C

10 Valve Springs

- E Elgiloy®
- T Hastelloy® C

11 Valve Spring Retainers

- C Celcon
- M Kynar®
- P Polypropylene
- Y Nylon

12 Hydra-Oil

- G 5W30 standard & cold-temp severe duty oil
- J 20-wt EPDM-compatible oil
- K 20-wt food-contact oil