

F20 PRO SERIES

Maximum Flow Rate: 1.0 gpm (3.8 l/min)

Maximum Pressure: 1000 psi (69 bar) for Metallic Pump Head
350 psi (24 bar) for Non-metallic Pump Head

WANNER™ HYDRA-CELL® PRO SEAL-LESS PUMP TECHNOLOGIES

UK
CA CE

*F20 close-coupled (hollow shaft)
for 56C frame motors, shown with
Brass pump head.*

A higher standard of pump performance and efficiency.

- Seal-less design API 674 pumps that also exceed API 675 standards for accuracy, linearity and repeatability.
- True positive displacement pumping action achieves overall efficiency of >90%, targeting improvements at lower speeds and higher pressures.
- No mechanical dynamic seals, packing, or cups to leak, wear or replace – reduces maintenance, costs and downtime.
- Pumped liquid is 100% contained – prevents degradation, contamination and environmental risks.
- Reliably handles a wide range of viscosities and shear sensitivities, corrosive liquids, abrasives, slurries and particulates.
- Reduced ownership costs in acquisition, operation, service, maintenance, and energy use.



Illinois Location:

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Minnesota Location:

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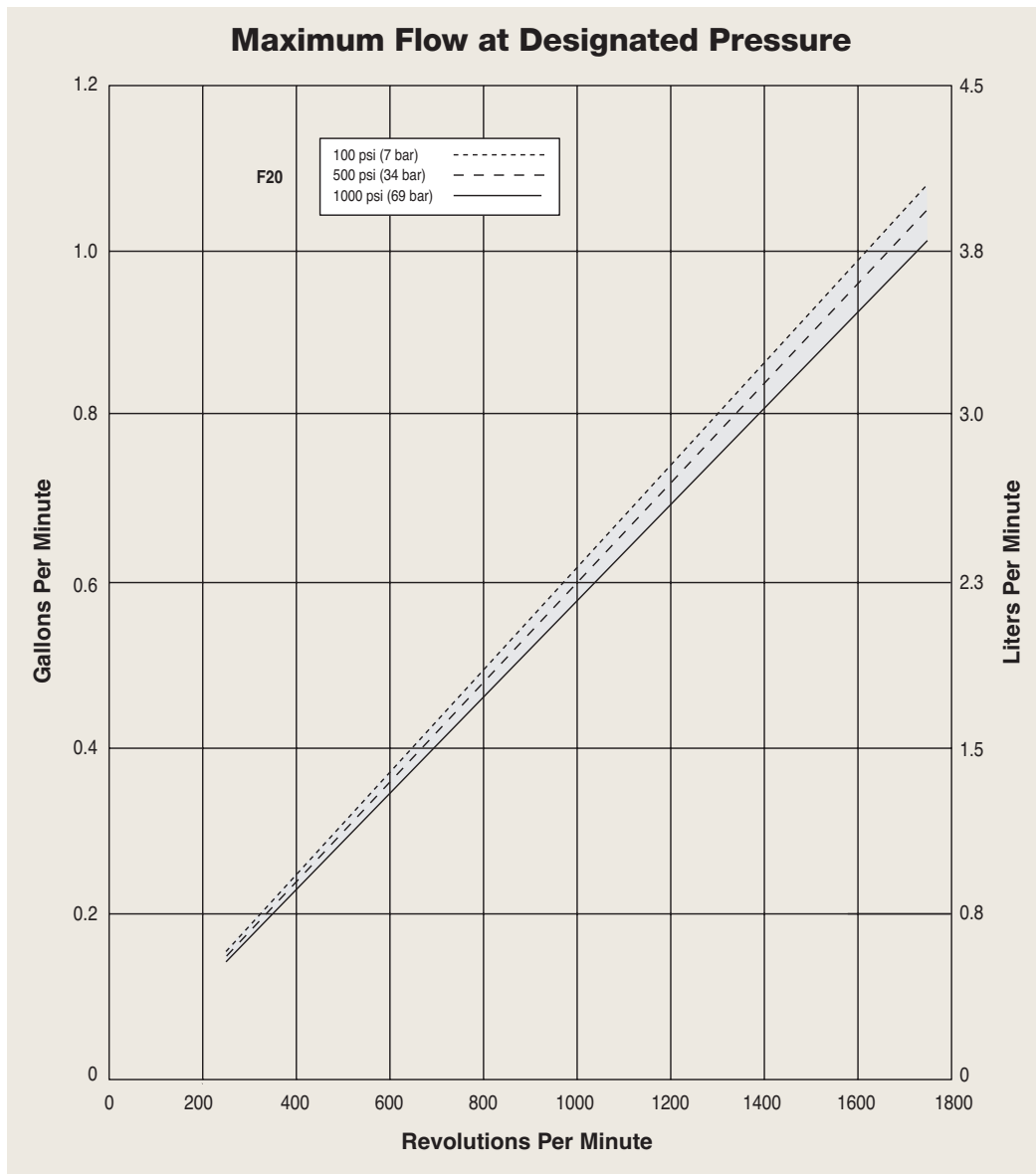
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F20 Pro Series | Performance

Capacities

Model	Max. Input rpm	Max. Flow Capacities @1000 psi (69 bar) gpm l/min		Max. Inlet Pressure psi bar		Max. Discharge Pressure					
						Metallic Heads		Non-metallic Heads			
						psi	bar	Polypropylene		PVDF	
psi	bar	psi	bar	psi	bar	psi	bar				
F20-X	1750	1.01	3.82	250	17	1000	69	250	17	350	24

Performance and specification ratings apply to F20 configurations unless specifically noted otherwise.



Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

F20 Pro Series | Specifications

Flow Capacities @1000 psi (69 bar)

Model	rpm	gpm	l/min
F20-X	1750	1.01	3.82

Delivery @1000 psi (69 bar)

Model	gal/rev	liters/rev
F20-X	0.0006	0.0022

Maximum Discharge Pressure

Metallic Heads:	1000 psi (69 bar)
Non-metallic Heads:	250 psi (17 bar) Polypropylene 350 psi (24 bar) PVDF

Maximum Inlet Pressure 250 psi (17 bar)

Maximum Operating Temperature

Metallic Heads:	250°F (121°C) – Consult factory for correct component selection for temperature from 160°F (71°C) to 250°F (121°C).
Non-metallic Heads:	140°F (60°C)

Maximum Solids Size 200 microns

Inlet Port 1/2 inch NPT

Discharge Port 3/8 inch NPT

Shaft Diameter 5/8 inch hollow shaft

Shaft Rotation Reverse (bi-directional)

Bearings Precision ball bearings

Oil Capacity 0.125 US quart (0.12 liters)

Weight

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

Calculating Required Power

$$\frac{\text{rpm} + 1000}{7000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}$$

$$\frac{\text{rpm} + 1000}{9383} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

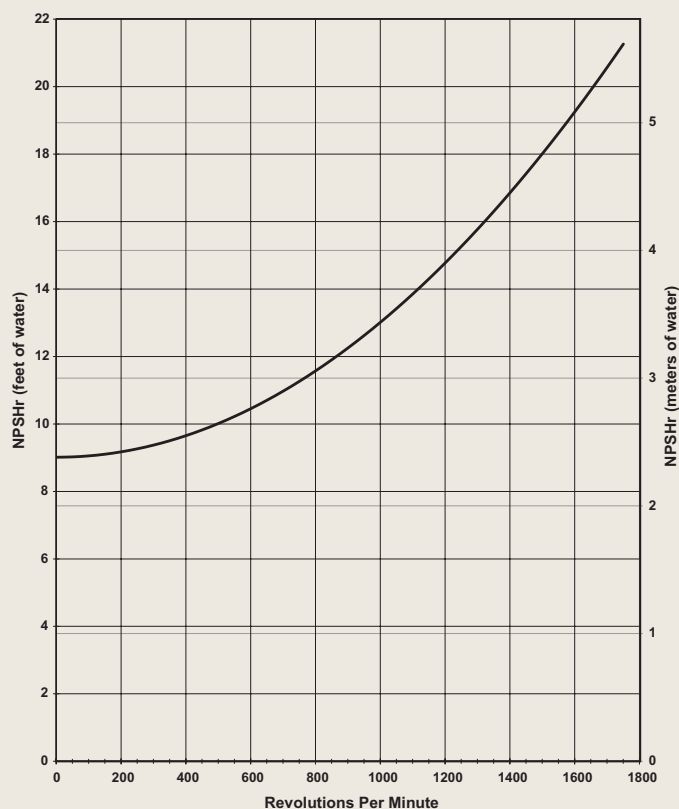
Attention!

When using a variable frequency drive (VFD) controller, calculate the hp or kW at minimum and maximum pump speed to ensure the correct hp or kW motor is selected. Note that motor manufacturers typically de-rate the service factor to 1.0 when operating with a VFD.

Calculating Pulley Size

$$\frac{\text{motor pulley OD}}{\text{pump rpm}} = \frac{\text{pump pulley OD}}{\text{motor rpm}}$$

Net Positive Suction Head (NPSHr)



Positive inlet pressure required for PTFE diaphragms

Suction Lift

Each Hydra-Cell pump has different lift capability depending on model size, cam angle, speed, and fluid characteristics. To ensure that your specific lift characteristics are met, refer to the inlet calculations regarding friction, and acceleration head losses in your Hydra-Cell Product Manual. Compare those calculations to the NPSHr curves above.



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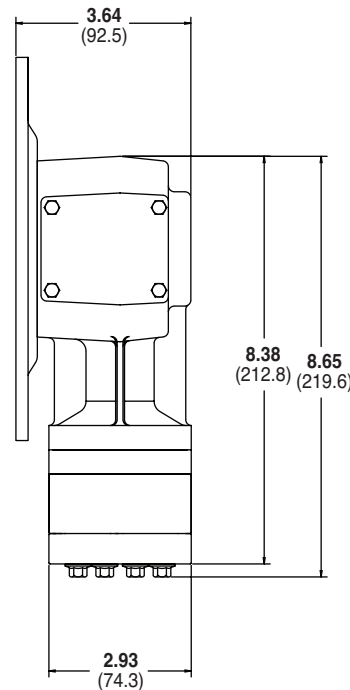
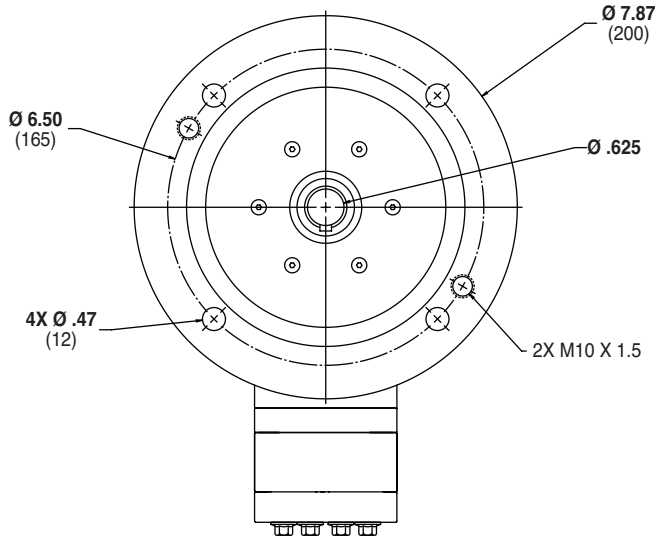
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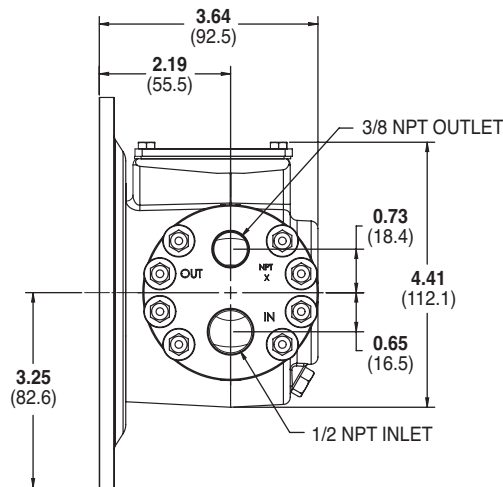
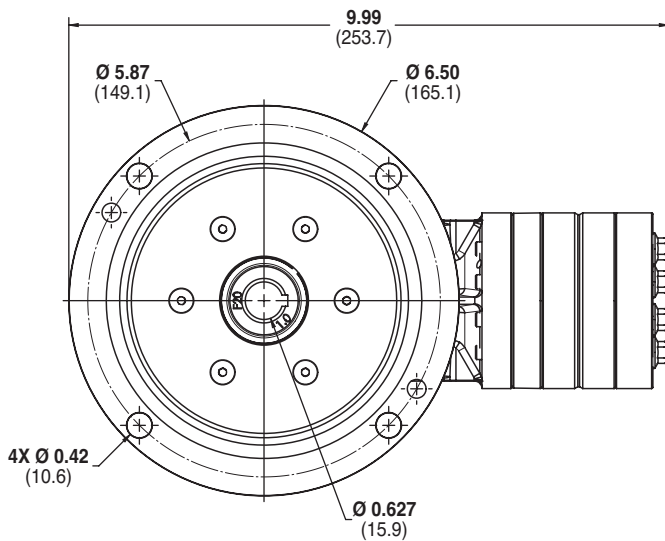
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F20 Pro Series | Representative Drawings

F20 Models with Metallic Pump Head Inches (mm)



* Add 0.25" (6.35mm) where shown for manifold cover plate on non-metallic models.



Note: Dimensions are for reference only. Contact factory for certified drawings.



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F20 Pro Series | Valves / Options

Valve Selection

A Hydra-Cell F20 pumping system uses a **C46 Pressure Regulating Valve**.



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Consult the Hydra-Cell Master Catalog for:

- Motors, bases, couplings and other pump accessories
- Hydra-Oil selection and specification information
- Design considerations, installation guidelines, and other technical assistance in pump selection



F20 close-coupled (hollow shaft) for 56C frame motors, shown with Polypropylene pump head.

For complete specifications and ordering information, consult the Hydra-Cell Master Catalog.

F20 Pro Series | How to Order

Ordering Information

A complete F20 Series Model Number contains 12 digits including 7 customer-specified design and materials options, for example: F20XABTHFECG.

1	2	3	4	5	6	7	8	9	10	11	12
F	2	0	X	A							

Digit	Order Code	Description
1-3	F20	Pump Configuration Close-coupled to NEMA 56C footed motor (NPT Ports)
4	X	Hydraulic End Cam Max 1.01 gpm (3.8 l/min) @ 1750 rpm
5	A	Pump Head Version NPT Ports
6	B M P S T	Pump Head Material Brass PVDF Polypropylene 316L Stainless Steel Hastelloy C
7	A E G J P T	Diaphragm & O-ring Material Aflas diaphragm/PTFE O-ring EPDM (requires EPDM-compatible oil – Digit 12 oil code J) FKM PTFE (Positive inlet pressure required) Neoprene Buna-N
8	C D H S T	Valve Seat Material Ceramic Tungsten Carbide 17-4 Stainless Steel 316L Stainless Steel Hastelloy C
9	C D F N T	Valve Material Ceramic Tungsten Carbide 17-4 Stainless Steel Nitronic 50 Hastelloy C

Digit	Order Code	Description
10	E T	Valve Springs Elgiloy Hastelloy C
11	C H M P T Y	Valve Spring Retainers Celcon 17-7 Stainless Steel (used with metallic heads only) PVDF Polypropylene Hastelloy C (used with metallic heads only) Nylon
12	G J K	Hydra-Oil 5W30 cold-temp severe-duty synthetic oil 20-wt EPDM-compatible oil Food-contact oil



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