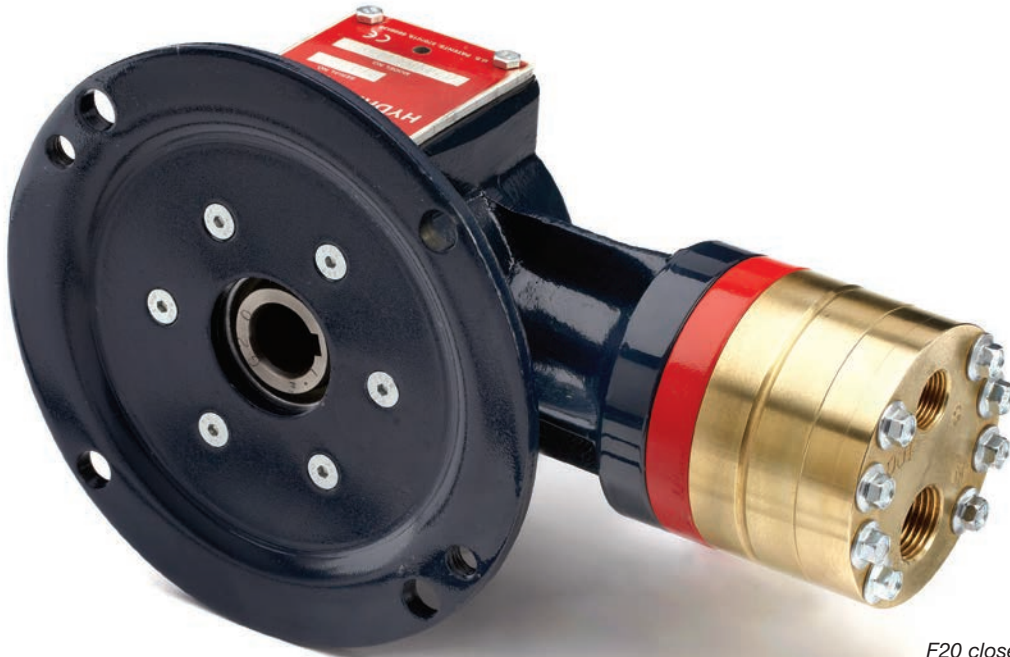


# F20 PRO SERIES

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.

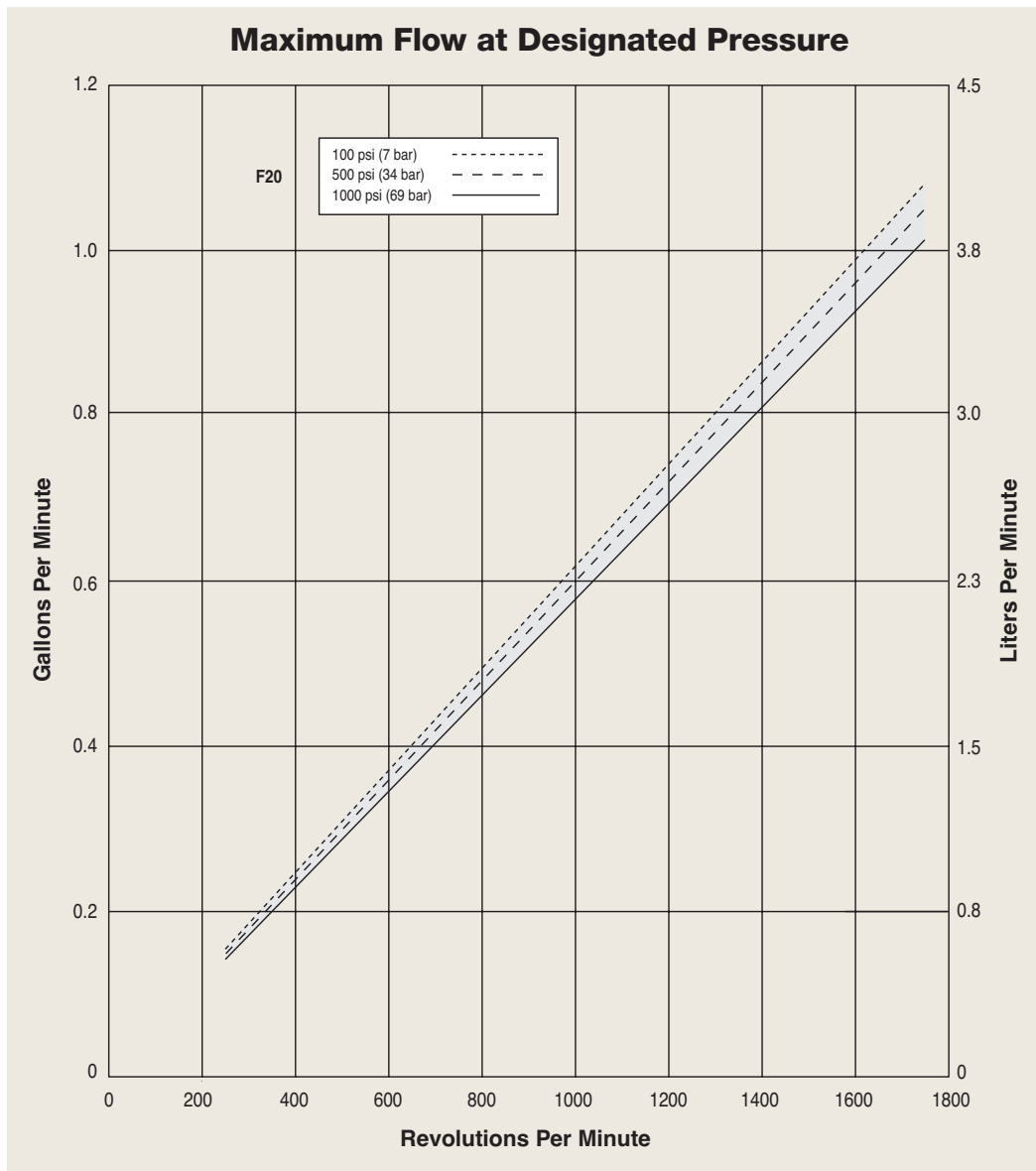
  
**WANNER™**

# 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

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

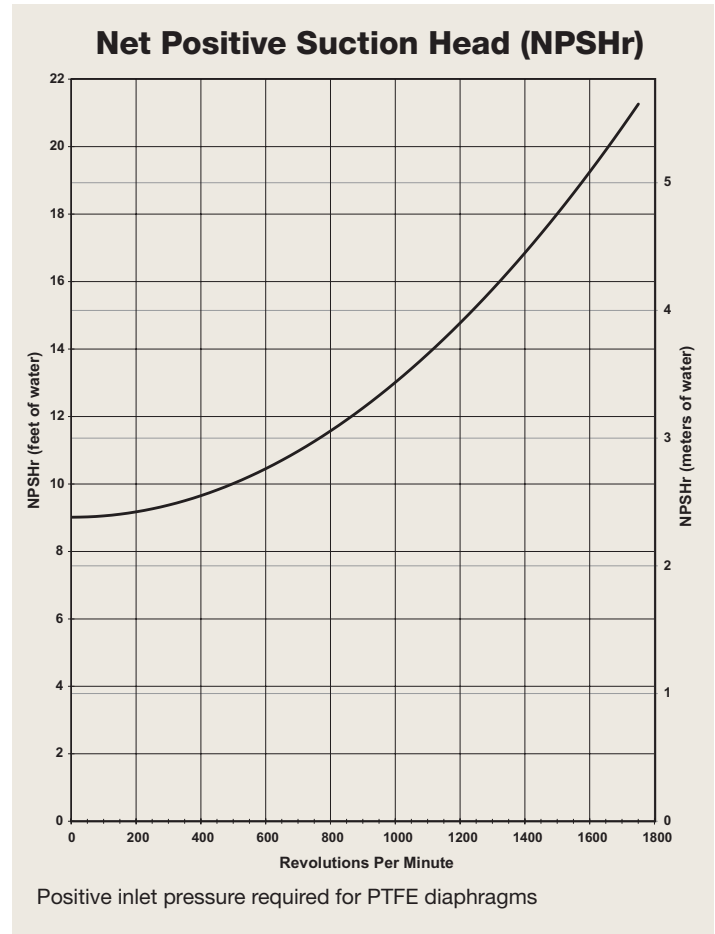
$$\frac{\text{rpm} + 1000}{9383} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

### 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

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



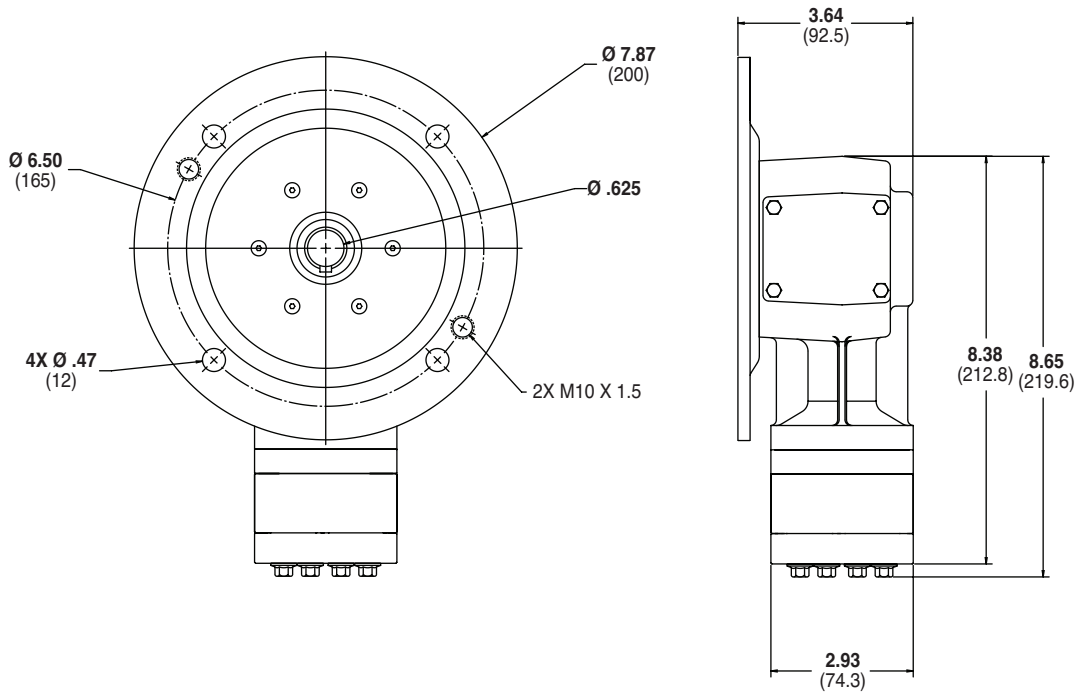
## Suction Lift

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.

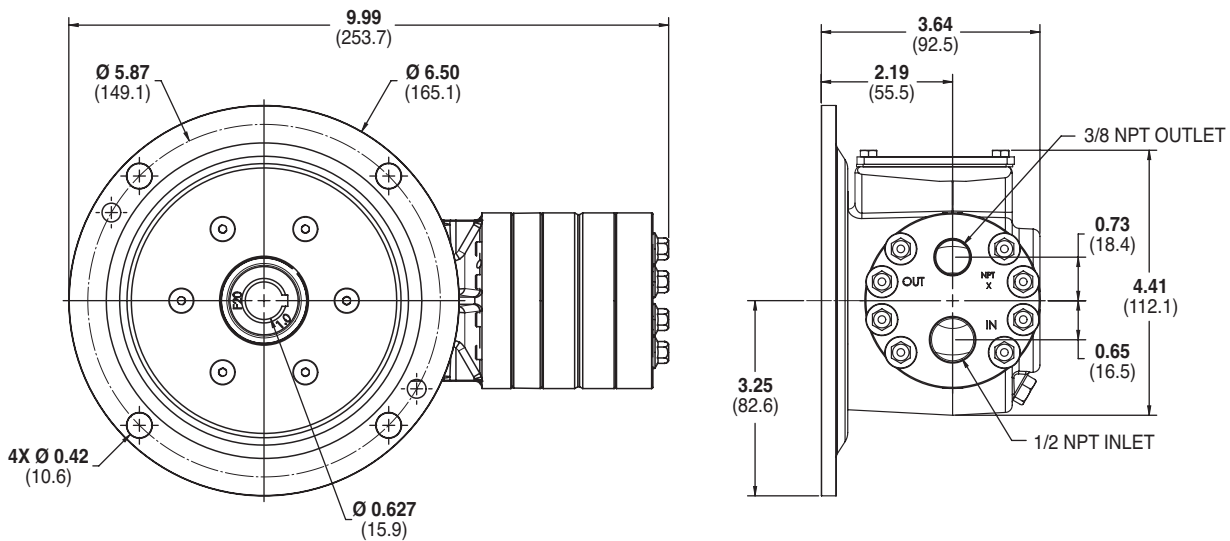
Due to the Wanner Engineering Continuous Improvement Program, specifications and other data are subject to change.

# 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.

## Valve Selection

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



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

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




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