

# D04 PRO SERIES

Maximum Flow Rate: 2.9 gpm (11.2 l/min)

Maximum Pressure: 2500 psi (172 bar) for Metallic Pump Head

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



UK  
CA CE

*D04 shaft-driven with 316L  
Stainless Steel pump head.*

### **A higher standard of pump performance and efficiency.**

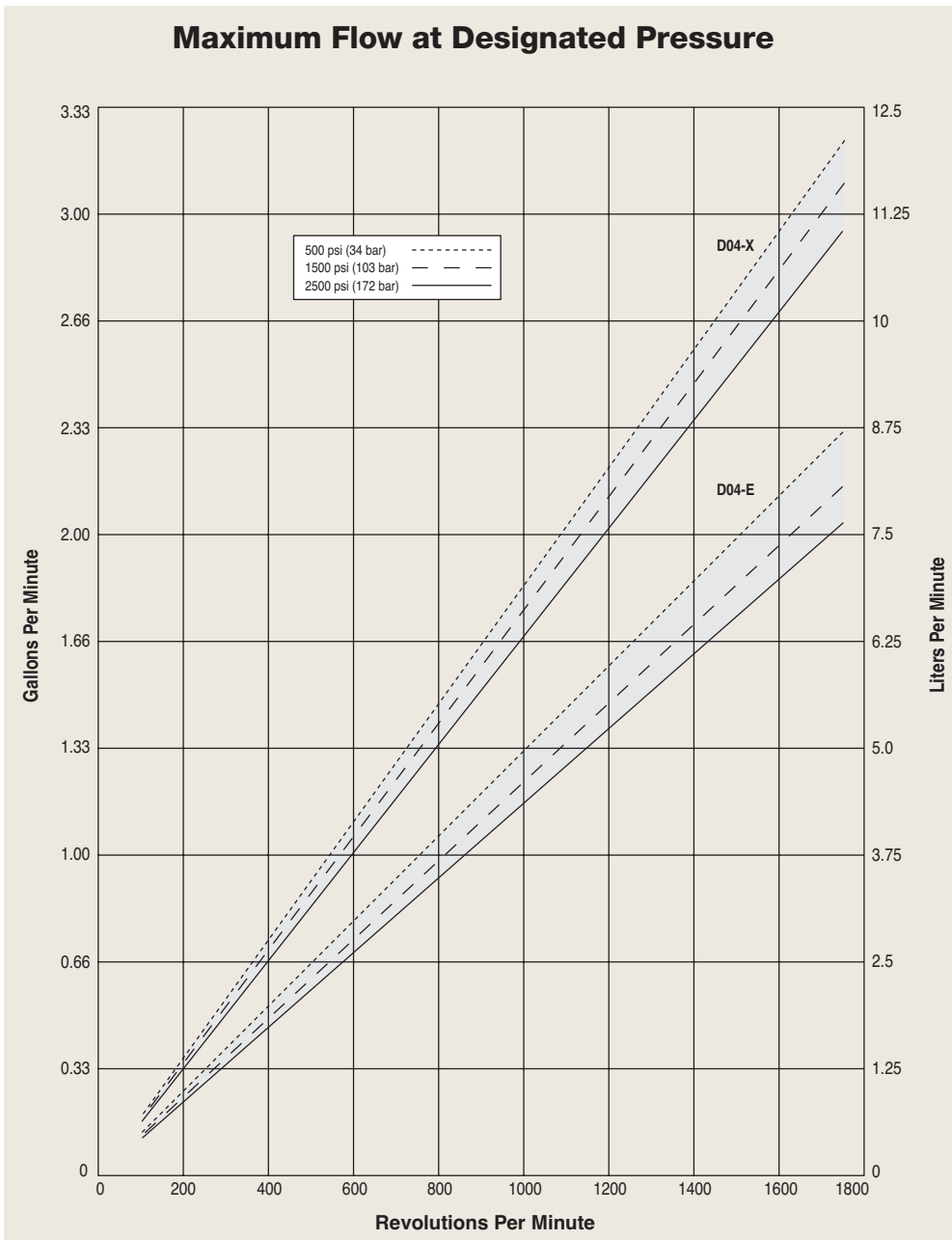
- Seal-less design API 674 pumps that also exceed API 675 standards for accuracy, linearity and repeatability.
- True positive displacement pumping action achieves overall efficiency of >90%, targeting improvements at lower speeds and higher pressures.
- No mechanical dynamic seals, packing, or cups to leak, wear or replace – reduces maintenance, costs and downtime.
- Pumped liquid is 100% contained – prevents degradation, contamination and environmental risks.
- Patented hydraulic oil management system protects diaphragms under closed or restricted inlet conditions.
- Can run dry indefinitely without damage to the pump.
- 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.

# D04 Pro Series | Performance

## Capacities

Model	Max. Input rpm	Max. Flow Capacities @2500 psi (172 bar)		Max. Inlet Pressure		Max. Discharge Pressure Metallic Heads	
		gpm	l/min	psi	bar	psi	bar
D04-X	1750	2.9	11.2	500	34	2500	172
D04-E	1750	2.0	7.7	500	34	2500	172

Performance and specification ratings apply to D04 configurations unless specifically noted otherwise.



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

# D04 Pro Series | Specifications

## Flow Capacities @2500 psi (172 bar)

Model	rpm	gpm	l/min
D04-X	1750	2.95	11.16
D04-E	1750	2.04	7.71

## Delivery @ 500 psi (34 bar)

Model	gal/rev	liters/rev
D04-X	0.0019	0.0070
D04-E	0.0013	0.0050

## Delivery @ 1500 psi (103 bar)

Model	gal/rev	liters/rev
D04-X	0.0018	0.0067
D04-E	0.0012	0.0047

## Delivery @ 2500 psi (172 bar)

Model	gal/rev	liters/rev
D04-X	0.0017	0.0064
D04-E	0.0012	0.0044

## Maximum Discharge Pressure

Metallic Heads: 2500 psi (172 bar)

## Maximum Inlet Pressure

Metallic Heads: 500 psi (34 bar)

## Maximum Operating Temperature

Metallic Heads: 250°F (121°C)  
Consult factory for correct component selection for temperatures from 160°F (71°C) to 200°F (93.3°C).

## Maximum Solids Size 200 microns

**Inlet Port** 1/2 inch NPT  
600lb ANSI RF flange

## Calculating Required Power

$$\frac{6 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}$$

$$\frac{6 \times \text{rpm}}{84,428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

### 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

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

**Discharge Port** 1/2 inch NPT  
2500lb ANSI RF flange

**Shaft Diameter** 7/8 inch (22.2 mm)

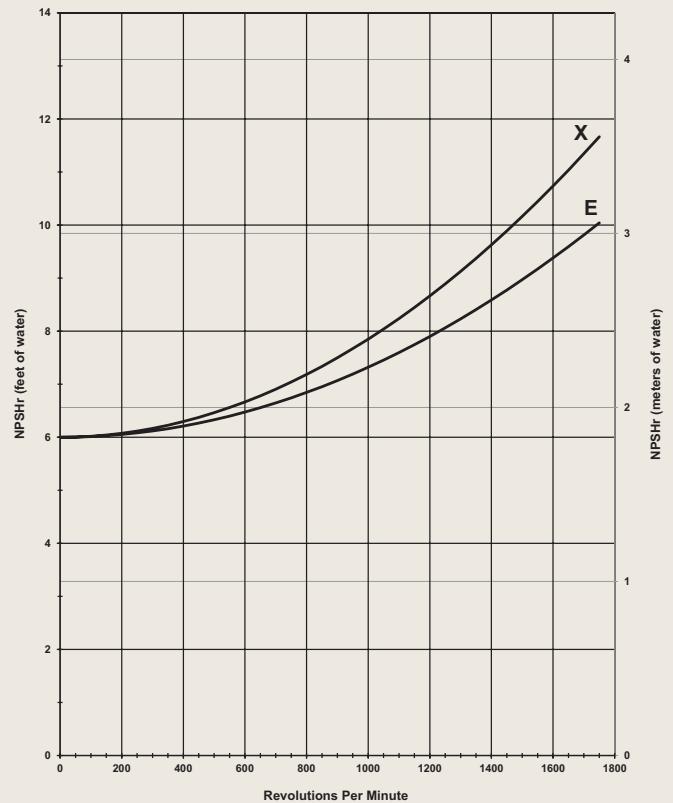
**Shaft Rotation** Reverse (bi-directional)

**Bearings** Precision ball bearings

**Oil Capacity** 1.1 US quarts (1.05 liters)

**Weight** 37 lbs. (16.8 kg)

## Net Positive Suction Head (NPSHr)



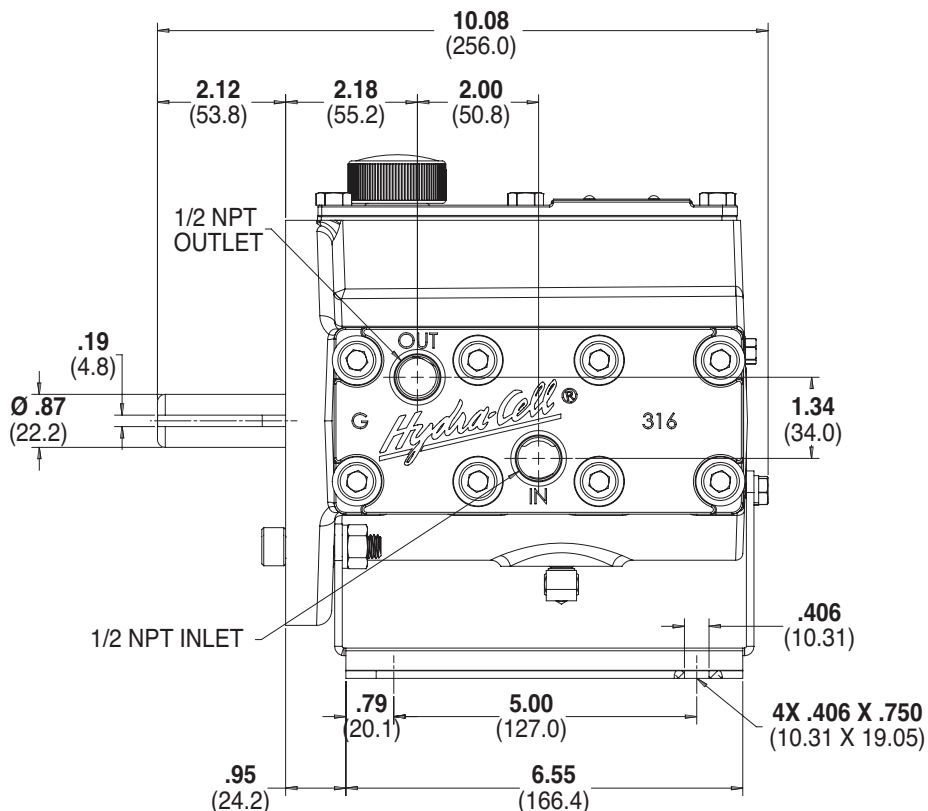
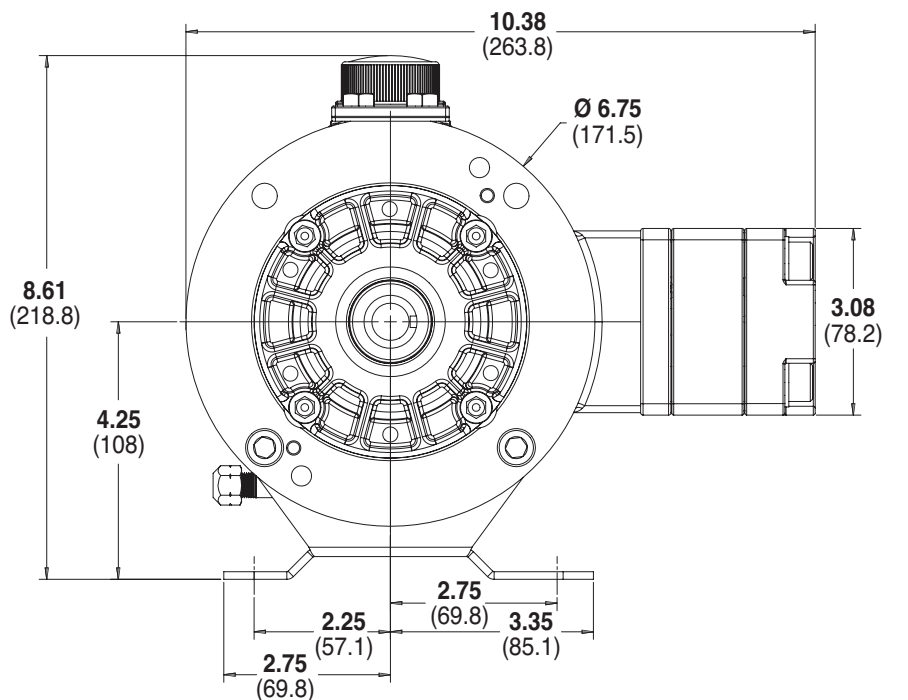
## Suction Lift

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.

# D04 Pro Series | Representative Drawings

## D04 Models with Metallic Pump Head Inches (mm)



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

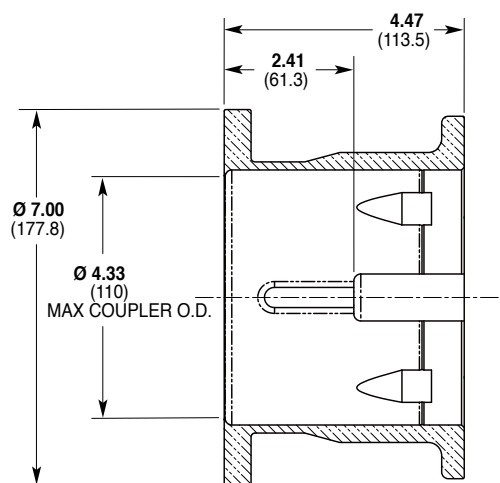
# D04 Pro Series | Adapters / Valves

## Pump/Motor Adapter Inches (mm)

### Part Number: A04-001-1202

Must be ordered separately for D04 models for use with 56C, 143TC and 145TC frame motors.

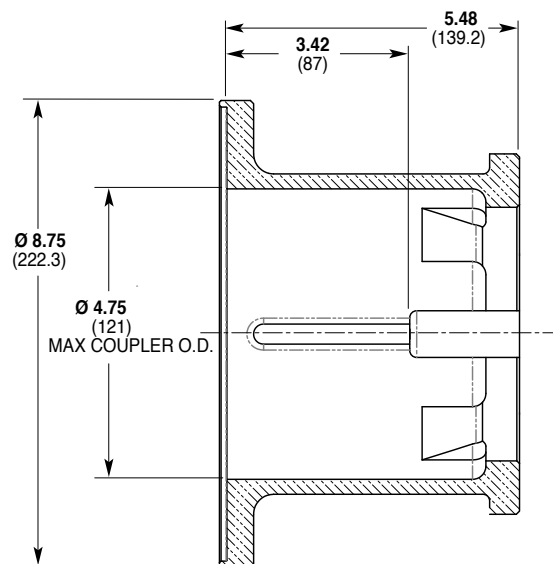
*Metric adapter available - consult factory.*



### Part Number: A04-002-1202

Must be ordered separately for D04 models for use with 182TC, 184TC, 213TC and 215TC frame motors.

*Metric adapter available - consult factory.*



## Valve Selection

A seal-less **C62 Pressure Regulating Valve** is recommended for Hydra-Cell Pro D04 pumping systems, especially for high-pressure requirements or when handling dirty fluids.



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

# D04 Pro Series | Options

## 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



*D04 shaft-driven with 316L Stainless Steel pump head.*



*D04 shaft-driven with Brass pump head.*

# D04 Pro Series | How to Order

## Ordering Information

A complete D04 Series Model Number contains 12 digits including 8 customer-specified design and materials options, for example: D04XABTHFECG.

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

Digit	Order Code	Description
1-3	D04	<b>Pump Configuration</b> Shaft-driven (NPT Ports)* *Pump/motor adapters ordered separately. See page 5.
4	X	<b>Hydraulic End Cam</b> Max 2.9 gpm (11.2 l/min) @ 1750 rpm
	E	Max 2.0 gpm (7.7 l/min) @ 1750 rpm
5	A	<b>Pump Head Version</b> NPT Ports
6	B	<b>Pump Head Material</b> Brass
	S	316L Stainless Steel
	T	Hastelloy C
7	E	<b>Diaphragm &amp; O-ring Material</b> EPDM (requires EPDM-compatible oil – Digit 12 oil code J)
	G	FKM
	J	PTFE
	P	Neoprene
	T	Buna-N
8	D	<b>Valve Seat Material</b> Tungsten Carbide
	H	17-4 Stainless Steel
	N	Nitronic 50
	T	Hastelloy C
9	D	<b>Valve Material</b> Tungsten Carbide
	F	17-4 Stainless Steel
	N	Nitronic 50
	T	Hastelloy C


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

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