

Hydra-Cell®

Seal-less Pumps

Versatile, Reliable Pumps for a Wide Range of Applications



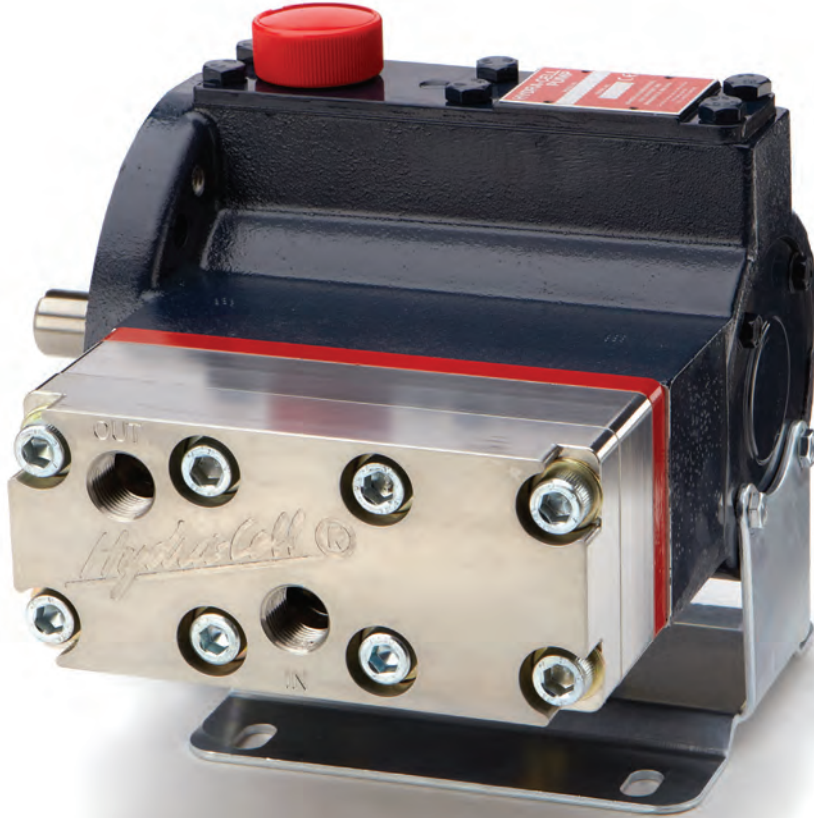
D04 Series

- Pumps the full spectrum of low-to-high viscosity fluids.
- Features a seal-less design and horizontal disk check valves that enable the pump to handle abrasives and particulates that might damage or destroy other types of pumps.
- Simple, compact design reduces initial investment and lowers maintenance costs.
- Operational efficiencies reduce energy costs.
- Able to run dry without damage (or additional maintenance) to the pump in case of accident or operator error.
- Tolerates non-ideal operating conditions.
- Minimizes maintenance and downtime because there are no seals, packing or cups to leak or replace.

D04 Series

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

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



D04 Shaft-driven with Stainless Steel pump head



D04 Shaft-driven with Brass pump head

D04 Series Performance

Capacities

Flow

| Model | Max. Input rpm | Max. Flow @ 2500 psi (172 bar) | |
|-------|----------------|--------------------------------|-------|
| | | gpm | l/min |
| D04-X | 1750 | 2.9 | 11.2 |
| D04-E | 1750 | 2.0 | 7.7 |
| D04-S | 1750 | 1.6 | 6.2 |

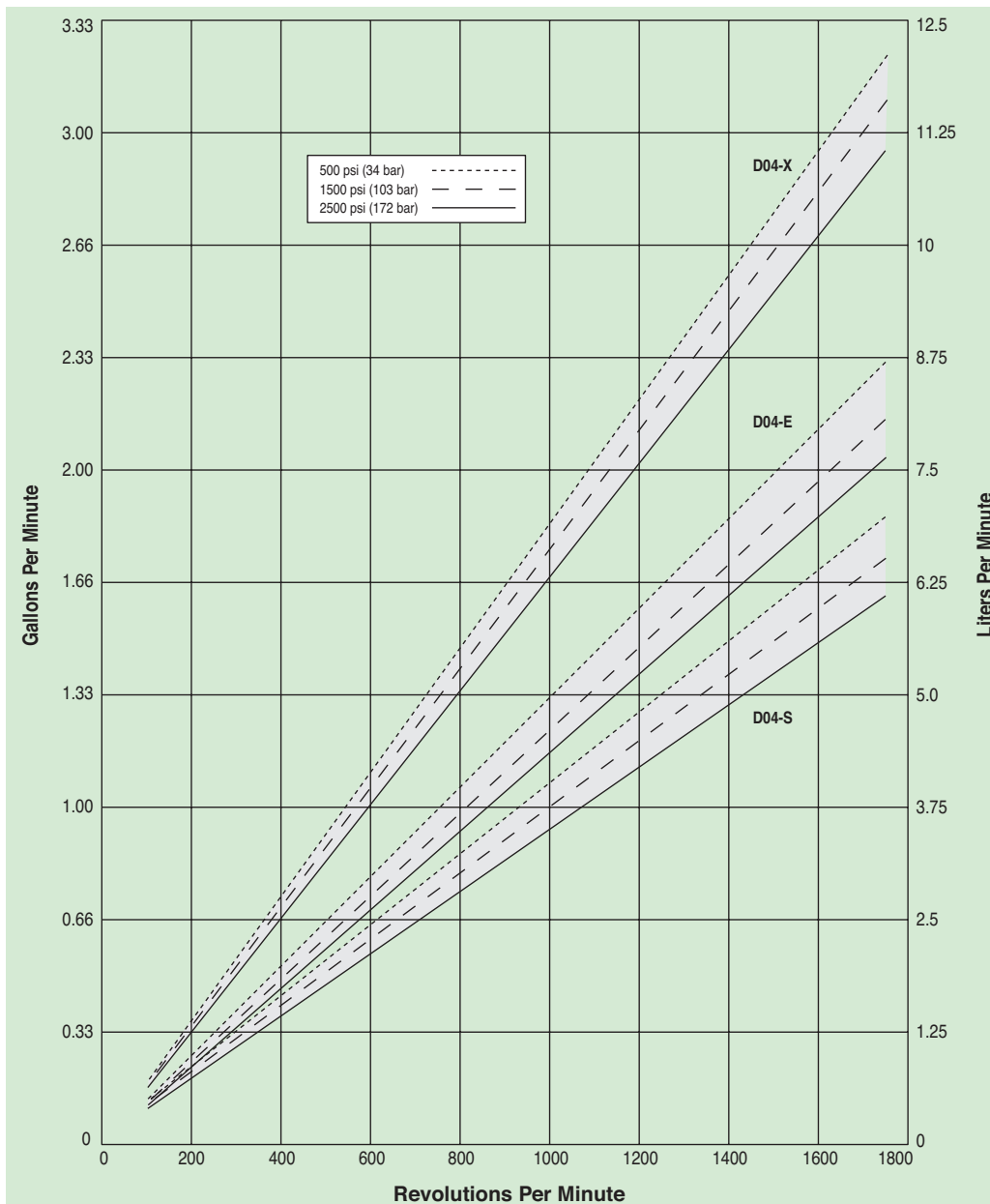
Pressure

Maximum Inlet Pressure
500 psi (34 bar)

Maximum Discharge Pressure
2500 psi (172 bar)

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

Maximum Flow at Designated Pressure



D04 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 |
| D04-S | 1750 | 1.63 | 6.19 |

Delivery

| Model | gal/rev | | |
|-------|----------------------|------------------------|------------------------|
| | @500 psi (34 bar) | @1500 psi (103 bar) | @2500 psi (172 bar) |
| D04-X | 0.0019 | 0.0018 | 0.0017 |
| D04-E | 0.0013 | 0.0012 | 0.0012 |
| D04-S | 0.0011 | 0.0010 | 0.0009 |

| Model | liters/rev | | |
|-------|----------------------|------------------------|------------------------|
| | @500 psi (34 bar) | @1500 psi (103 bar) | @2500 psi (172 bar) |
| D04-X | 0.0070 | 0.0067 | 0.0064 |
| D04-E | 0.0050 | 0.0047 | 0.0044 |
| D04-S | 0.0041 | 0.0039 | 0.0035 |

Maximum Discharge Pressure

Metallic Heads: 2500 psi (172 bar)

Maximum Inlet Pressure 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 250 °F (121 °C).

Maximum Solids Size 200 microns

Inlet Port 1/2 inch NPT

Discharge Port 1/2 inch NPT

Shaft Diameter 7/8 inch (22.2 mm)

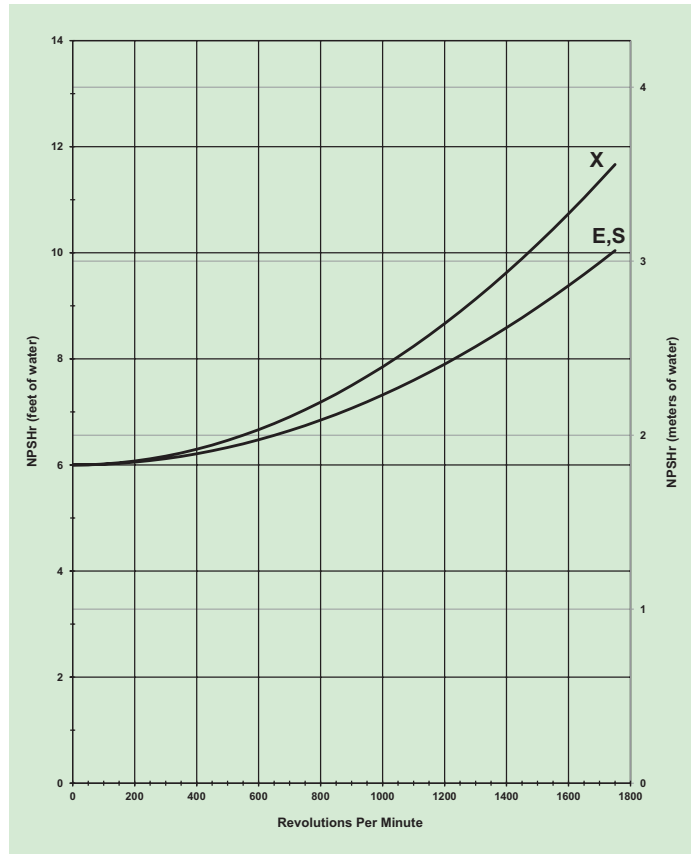
Shaft Rotation Reverse (bi-directional)

Bearings Precision ball bearings

Oil Capacity 1.1 US quarts (1.05 liters)

Weight 37 lbs. (16.8 kg)

Net Positive Suction Head (NPSHr)



Self-priming:

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 Installation & Service Manual. Compare those calculations to the NPSHr curves above.

Calculating Required Power

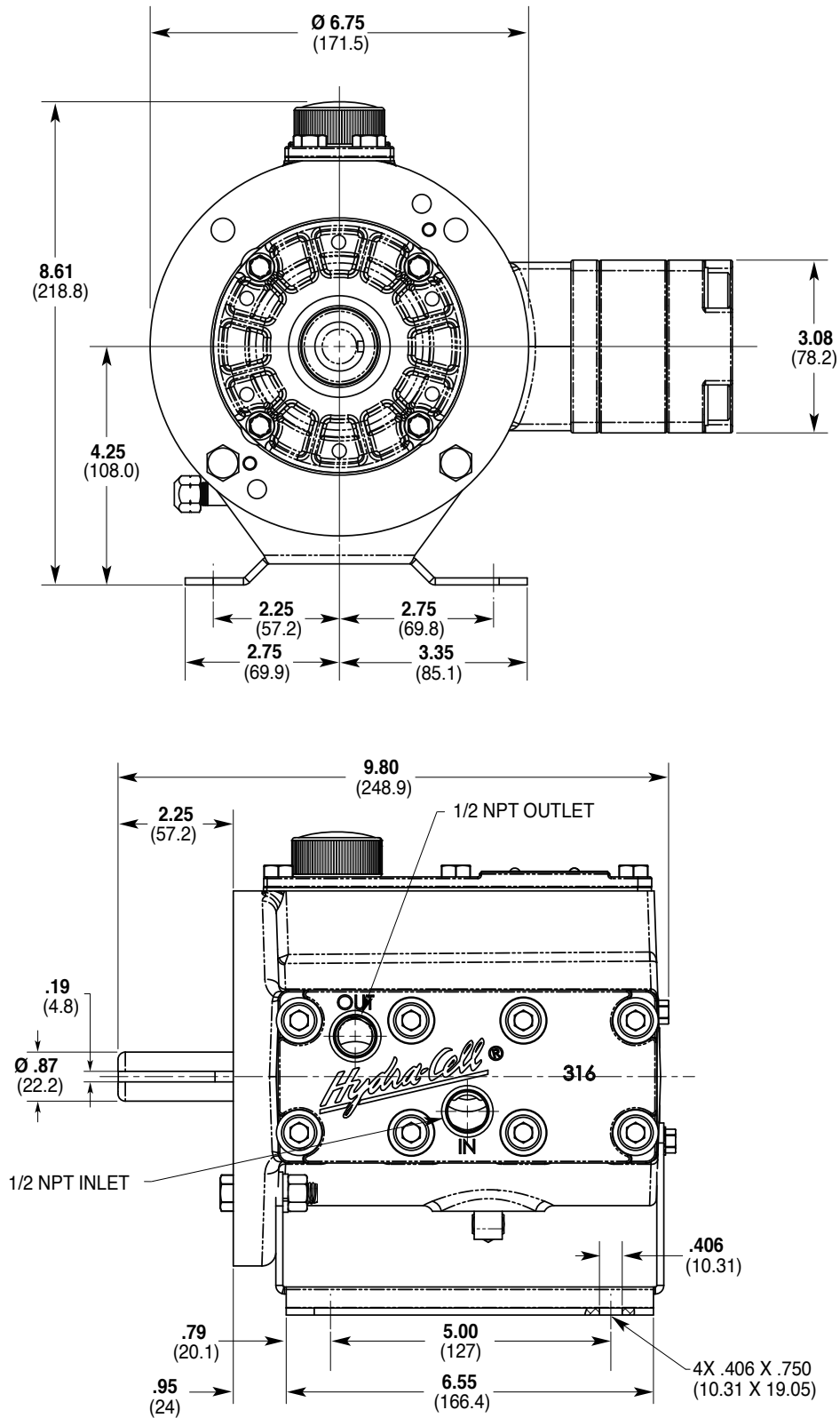
$$\frac{6 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}$$

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

When using a variable frequency controller (VFD) 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.

D04 Series Representative Drawings

D04 Models with Metallic Pump Head Inches (mm)



Note: Contact factory for additional drawings of specific models and configurations.

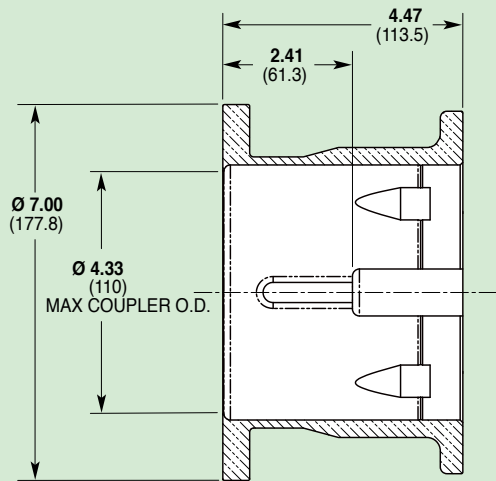
D04 Series Representative Drawings

Pump/Motor Adapter Inches (mm)

Part Number: A04-001-I202

Must be ordered separately for D04 models for use with 56C, I43TC, and I45TC frame motors.

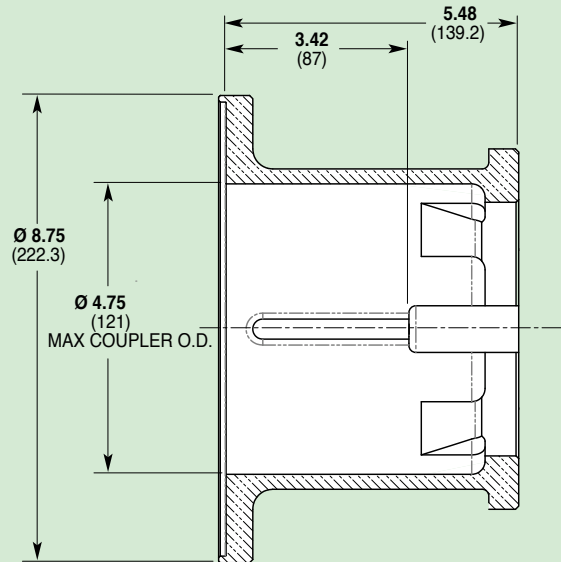
Metric adapter available - consult factory.



Part Number: A04-002-I202

Must be ordered separately for D04 models for use with I82C, I84TC, and 2I3TC and 2I5TC frame motors.

Metric adapter available - consult factory.



Valve Selection

A seal-less C62 Pressure Regulating Valve is recommended for Hydra-Cell 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 Series **How to Order**

Ordering Information

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|----|----|----|

A complete D04 Series Model Number contains 12 digits including 9 customer-specified design and materials options, for example: D04SABTHFECG.

| Digit | Order Code | Description |
|------------|------------|--|
| 1-3 | D04 | Pump Configuration Shaft-driven (NPT Ports)* *Pump/motor adapters ordered separately. See previous page. |
| 4 | X | Hydraulic End Cam Max 2.9 gpm (11.2 l/min) @ 1750 rpm |
| | E | Max 2.0 gpm (7.7 l/min) @ 1750 rpm |
| | S | Max 1.6 gpm (6.2 l/min) @ 1750 rpm |
| 5 | A | Pump Head Version NPT Ports |
| 6 | B | Pump Head Material Brass |
| | R | 304 Stainless Steel |
| | S | 316L Stainless Steel |
| 7 | E | Diaphragm & O-ring Material EPDM (requires EPDM-compatible oil - Digit 12 oil code J) |
| | G | FKM |
| | P | Neoprene |
| | T | Buna-N |
| 8 | D | Valve Seat Material Tungsten Carbide |
| | H | 17-4 Stainless Steel |
| | S | 316L Stainless Steel |
| 9 | D | Valve Material Tungsten Carbide |
| | F | 17-4 Stainless Steel |
| | N | Nitronic 50 |
| 10 | E | Valve Springs Elgiloy |
| | S | 316L Stainless Steel |

| Digit | Order Code | Description |
|-----------|------------|--|
| 11 | | Valve Spring Retainers |
| | C | Celcon |
| | H | 17-7 Stainless Steel |
| | M | PVDF |
| | P | Polypropylene |
| | Y | Nylon |
| 12 | | Hydra-Oil |
| | G | 5W30 cold-temp severe-duty synthetic oil |
| | J | EPDM-compatible oil |
| | K | Food-contact oil |

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

Hydra-Cell[®]

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