# D12 PRO SERIES

Maximum Flow Rate: 8.8 gpm (33.4 l/min)
Maximum Pressure: 1000 psi (69 bar) for Metallic Pump Head

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


**Now Featuring Optimized Valve Plate for Improved Performance, Pump Safety & Reliability.**

UK CA CE

*D12 equipped with Model C62 Pressure Regulating Valve and Valve/Tube Accessory, shown with Cast Iron pump head.*

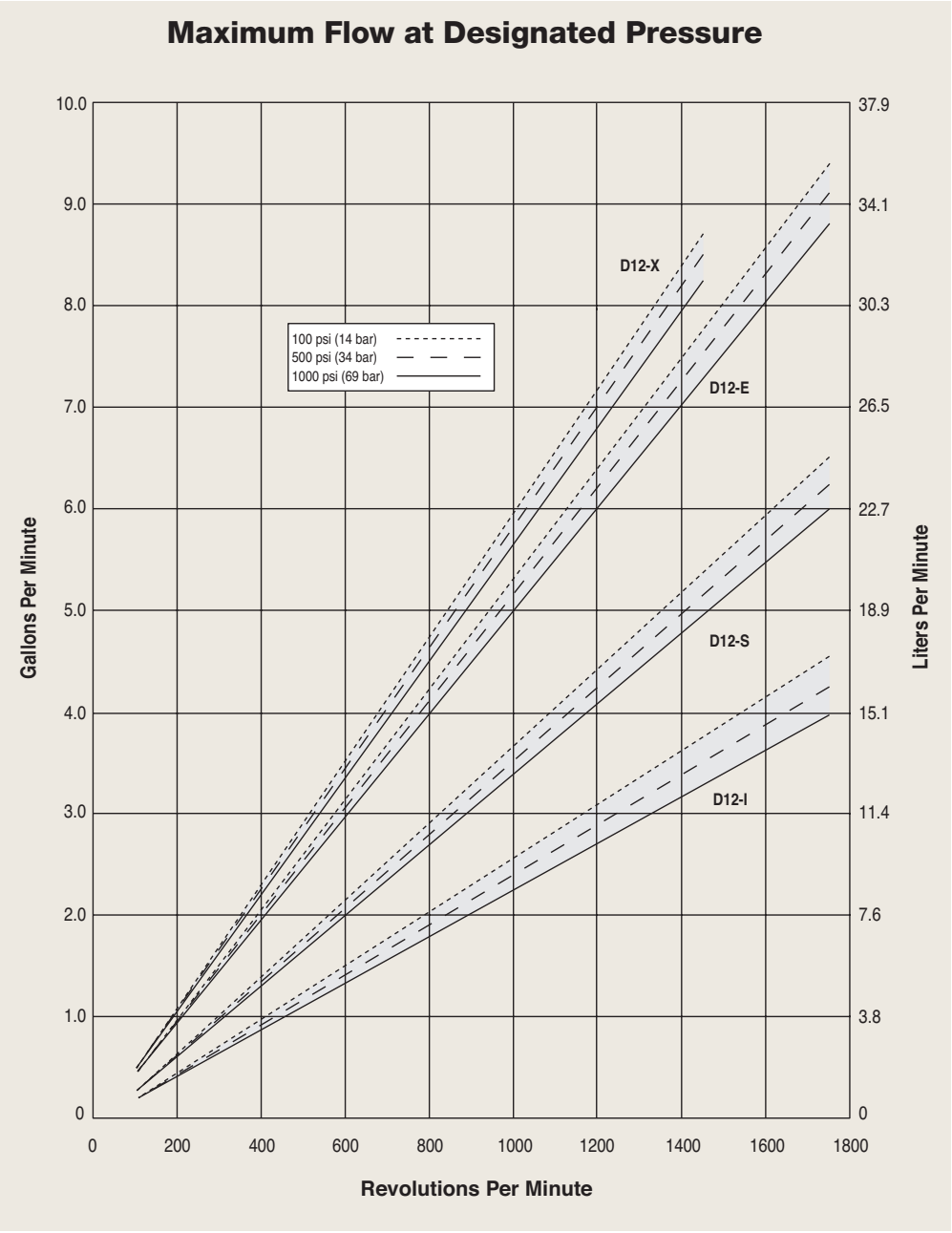
## Versatile, reliable pumps for a wide range of applications.

- 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 mechanical or dynamic seals, packing, or cups to leak, wear, or replace.

## 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 psi | bar |
|---|---|---|---|---|---|---|---|
| D12-X | 1450 | 8.1 | 30.6 | 250 | 17 | 1000 | 69 |
| D12-E | 1750 | 8.8 | 33.4 | 250 | 17 | 1000 | 69 |
| D12-S | 1750 | 6.0 | 22.7 | 250 | 17 | 1000 | 69 |
| D12-I | 1750 | 4.0 | 15.0 | 250 | 17 | 1000 | 69 |

*Performance and specification ratings apply to D12 configurations unless specifically noted otherwise.*




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

**Flow Capacities** @2500 psi (172 bar)

| Model | rpm | gpm | l/min |
|---|---|---|---|
| D12-X | 1450 | 8.10 | 30.6 |
| D12-E | 1750 | 8.83 | 33.4 |
| D12-S | 1750 | 6.00 | 22.7 |
| D12-I | 1750 | 3.96 | 15.0 |

**Delivery** @ 1000 psi (69 bar)

| Model | gal/rev | liters/rev |
|---|---|---|
| D12-X | 0.0056 | 0.0211 |
| D12-E | 0.0051 | 0.0191 |
| D12-S | 0.0034 | 0.0130 |
| D12-I | 0.0023 | 0.0086 |

**Maximum Discharge Pressure**
Metallic Heads: 1000 psi (69 bar)

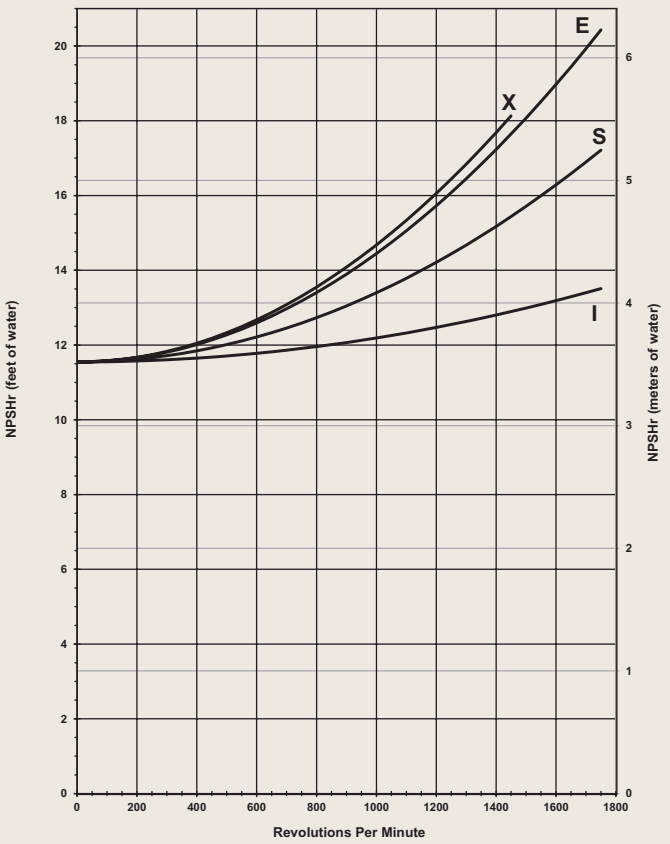
**Maximum Inlet Pressure**
Metallic Heads: 250 psi (17 bar)

**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** | 500 microns |
| **Inlet Port** | 1 inch NPT |
| **Discharge Port** | 3/4 inch NPT |

| | |
|---|---|
| **Shaft Diameter** | 7/8 inch (22.2 mm) |
| **Shaft Rotation** | Reverse (bi-directional) |
| **Bearings** | Tapered roller bearings |
| **Oil Capacity** | 1.5 US quarts (1.4 liters) |
| **Weight** | 63 lbs. (28.6 kg) |

### Net Positive Suction Head (NPSHr)




Positive inlet pressure required for:
A) All pumps with PTFE diaphragms
B) Pumps with I-cam (consult factory)

### Calculating Required Power

$$\frac{15 \times \text{rpm}}{63{,}000} + \frac{\text{gpm} \times \text{psi}}{1{,}460} = \text{electric motor hp}$$

$$\frac{15 \times \text{rpm}}{84{,}428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

**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.

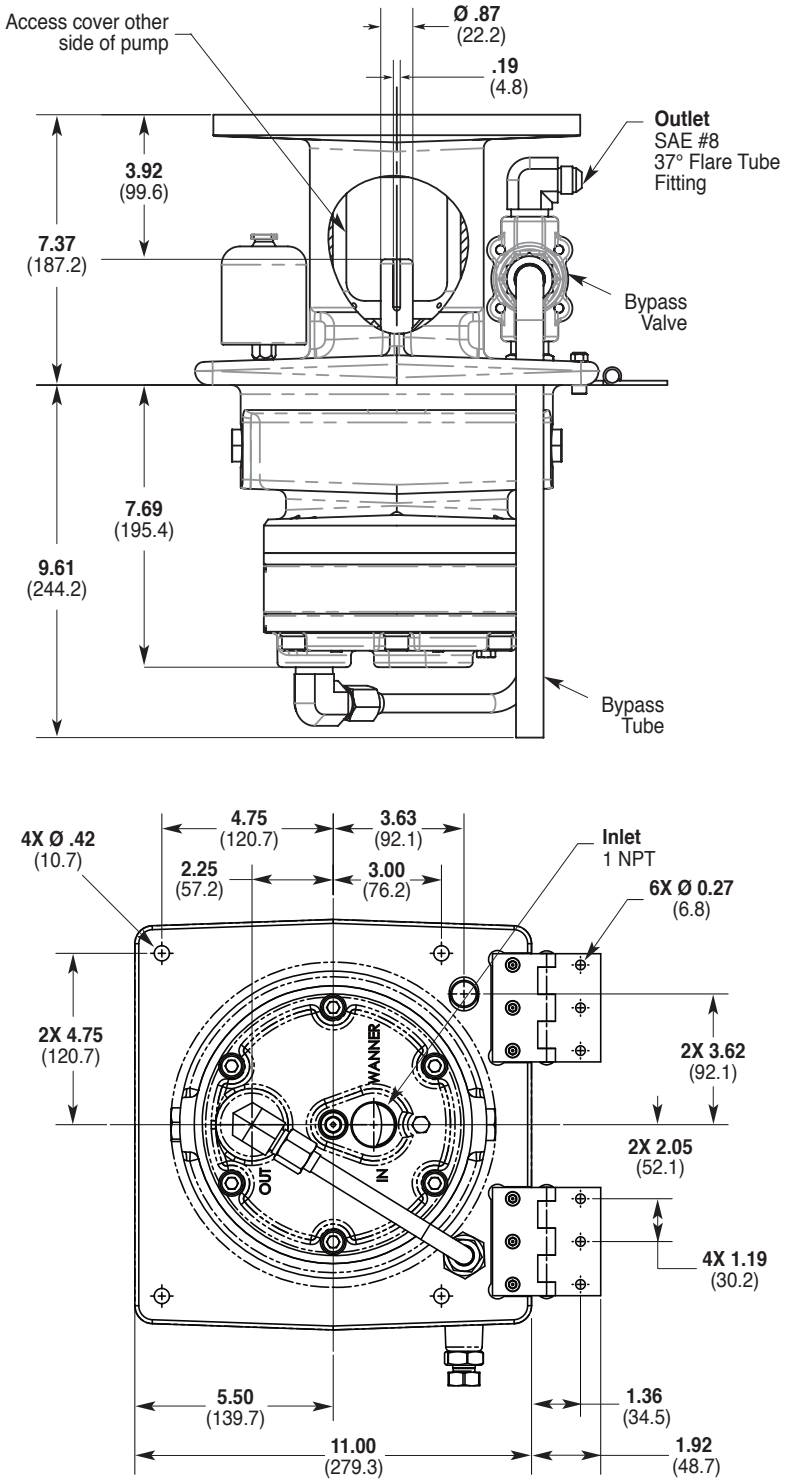
### Calculating Pulley Size

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

### Suction Lift

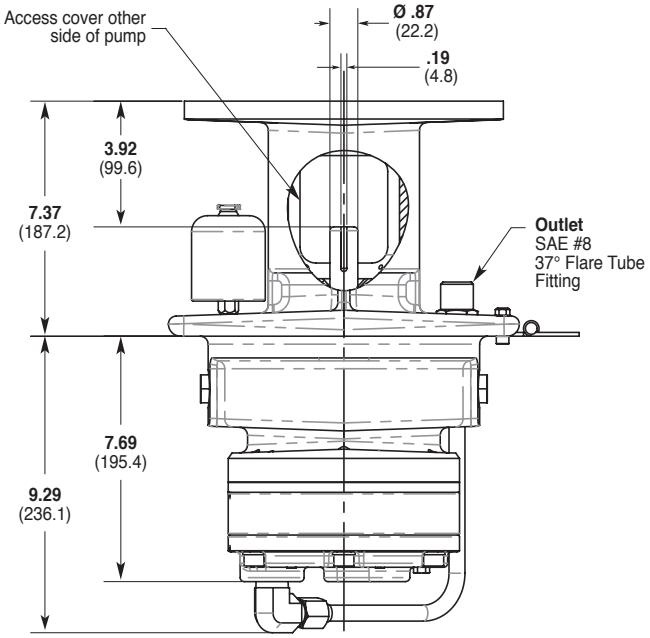
Each Hydra-Cell pump has different lift capability depending on model size, cam angle, speed, and fluid characteristics. To ensure that your specific lift characteristics are met, refer to the inlet calculations regarding friction, and acceleration head losses in your Hydra-Cell Product Manual. Compare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

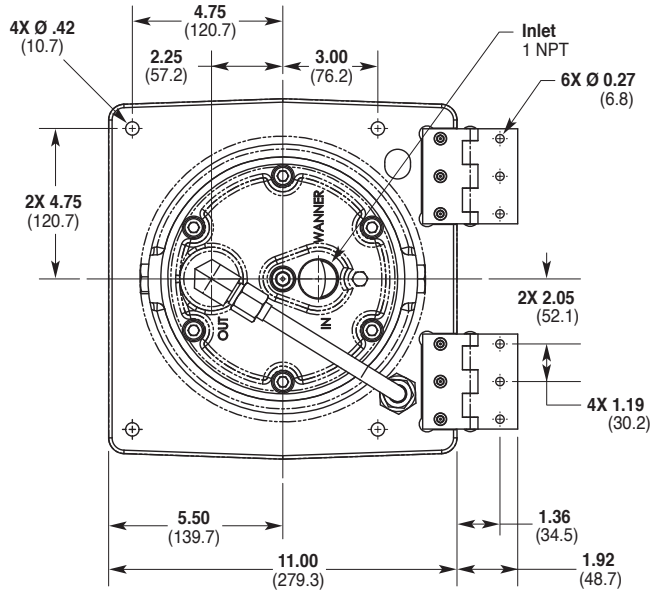
## **D12 Standard Configuration (Metallic Pump Head)** Inches (mm)



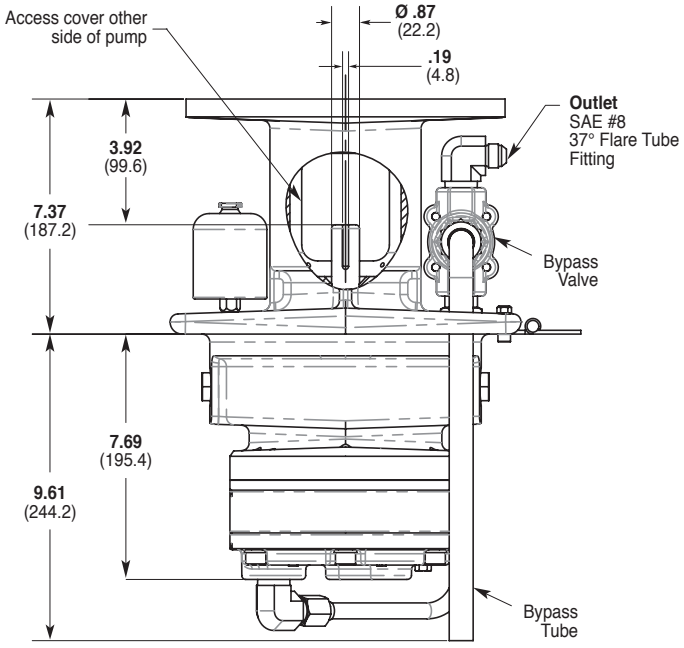

**Note:** Dimensions are for reference only. Contact factory for certified drawings.

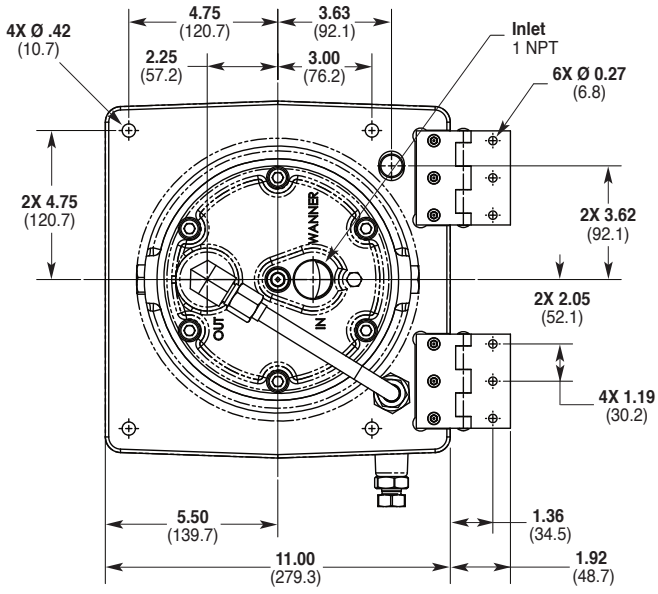
## **D12 with Tube Accessory** Inches (mm)




## **D12 with Valve / Tube Accessory** Inches (mm)

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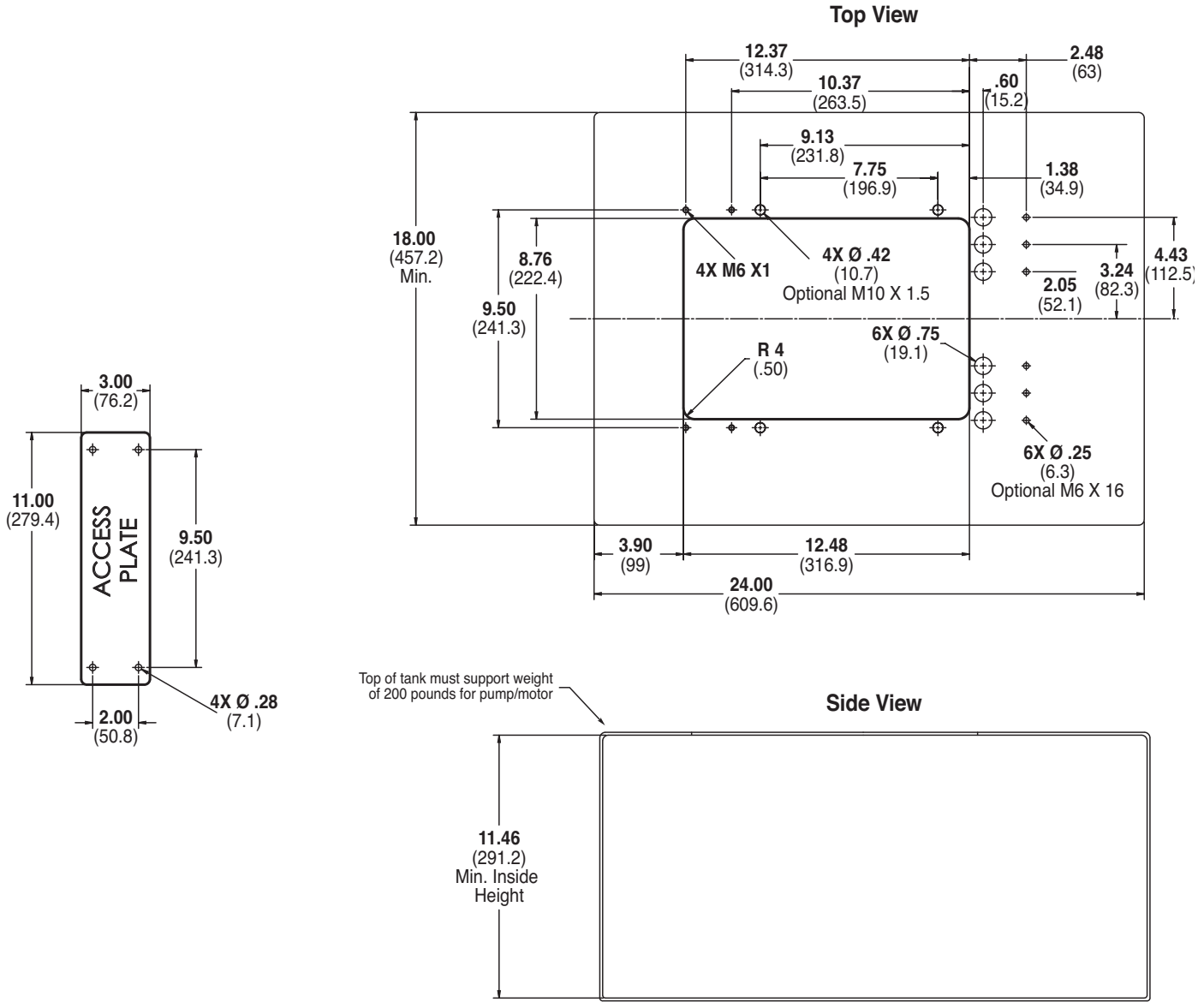
## D12 Models with Minimum Tank Size and Critical Installation Dimensions

Inches (mm)




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

The **Hydra-Cell D12 Tube and Valve/Tube Accessories** provide a pre-fabricated plumbing package for simplified installation.
(See page 6 for dimensions.)

**Ordering Information**

| | |
|---|---|
| Tube Accessory Part Number: | **A04-007-1200** |
| Valve/Tube Accessory Part Number: | **A04-008-1200** |

## Valve Selection

A seal-less **C62 Pressure Regulating Valve** is recommended for Hydra-Cell Pro D12 pumping systems, especially for high-pressure requirements or when handling dirty fluids.

A **C22 Pressure Regulating Valve** provides a capable, lower-cost alternative to C62 valves for Hydra-Cell D12 Pro pumping systems.

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

## Ordering Information

A complete D12 Series Model Number contains 12 digits including 8 customer-specified design and materials options, for example: D12XKCGHFECA.

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

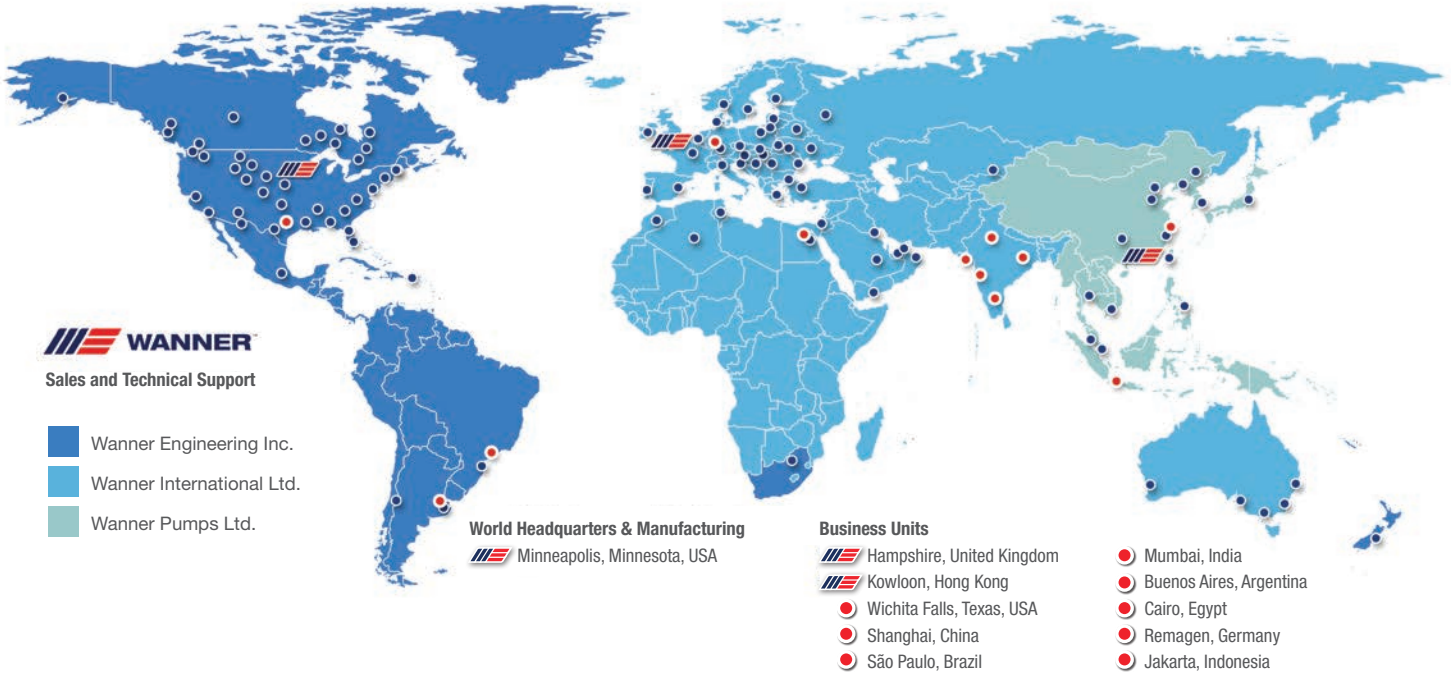
| Digit | Order Code | Description |
|---|---|---|
| **1-3** | | **Pump Configuration** |
| | D12 | Flanged for NEMA 182/184TC, 213/215TC (NPT Ports)*<br>*Tube Accessory Kits ordered separately. See previous page. |
| **4** | | **Hydraulic End Cam** |
| | X | Max 8.1 gpm (30.6 l/min) @ 1450 rpm |
| | E | Max 8.8 gpm (33.4 l/min) @ 1750 rpm |
| | S | Max 6.0 gpm (22.7 l/min) @ 1750 rpm |
| | I | Max 4.0 gpm (15.0 l/min) @ 1750 rpm |
| **5** | | **Pump Head Version** |
| | K | Kel-Cell NPT Ports |
| | R | Kel-Cell NPT Ports with Optimized Valve Pocket |
| **6** | | **Pump Head Material** |
| | B | Brass |
| | C | Cast Iron (Nickel-plated) |
| | S | 316L Stainless Steel |
| **7** | | **Diaphragm & O-ring Material** |
| | E | EPDM (requires EPDM-compatible oil – Digit 12 oil code J) |
| | G | FKM |
| | J | PTFE (available with E and S cams only; 1200 rpm max.) |
| | P | Neoprene |
| | T | Buna-N |
| **8** | | **Valve Seat Material** |
| | C | Ceramic |
| | D | Tungsten Carbide |
| | H | 17-4 Stainless Steel |
| | S | 316L Stainless Steel |
| **9** | | **Valve Material** |
| | C | Ceramic |
| | D | Tungsten Carbide |
| | F | 17-4 Stainless Steel |
| | N | Nitronic 50 |

| Digit | Order Code | Description |
|---|---|---|
| **10** | | **Valve Springs** |
| | E | Elgiloy |
| **11** | | **Valve Spring Retainers** |
| | C | Celcon |
| | H | 17-7 Stainless Steel |
| | M | PVDF |
| | P | Polypropylene |
| | Y | Nylon (Zytel) |
| **12** | | **Hydra-Oil** |
| | A | 10W30 standard-duty oil |
| | B | 40-wt for continuous-duty (use with 316L SST pump head – standard) |
| | C | EPDM-compatible oil |
| | E | Food-contact oil |
| | G | 5W30 cold-temp severe-duty synthetic 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

## Partners in over 70 countries

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