

# Hydra-Cell<sup>®</sup>

## Seal-less Pumps

### Versatile, Reliable Pumps for a Wide Range of Applications



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

## G12 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 mechanical or dynamic seals, packing, or cups to leak, wear, or replace.

# G12 Series

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Maximum Flow Rate: 8.8 gpm (33.4 l/min)

Maximum Pressure: 1000 psi (69 bar) for Metallic Pump Heads



*G12 equipped with Model C62 Pressure Regulating Valve and Valve/Tube Accessory, shown with 316L Cast Iron pump head.*

# G12 Series Performance

## Capacities

### Flow

| model | Max. Input<br>rpm | Max. Flow<br>@ 1000 psi (69 bar) |       |
|-------|-------------------|----------------------------------|-------|
|       |                   | gpm                              | l/min |
| G12-X | 1450              | 8.1                              | 30.6  |
| G12-E | 1750              | 8.8                              | 33.4  |
| G12-S | 1750              | 6.0                              | 22.7  |
| G12-I | 1750              | 4.0                              | 15.0  |

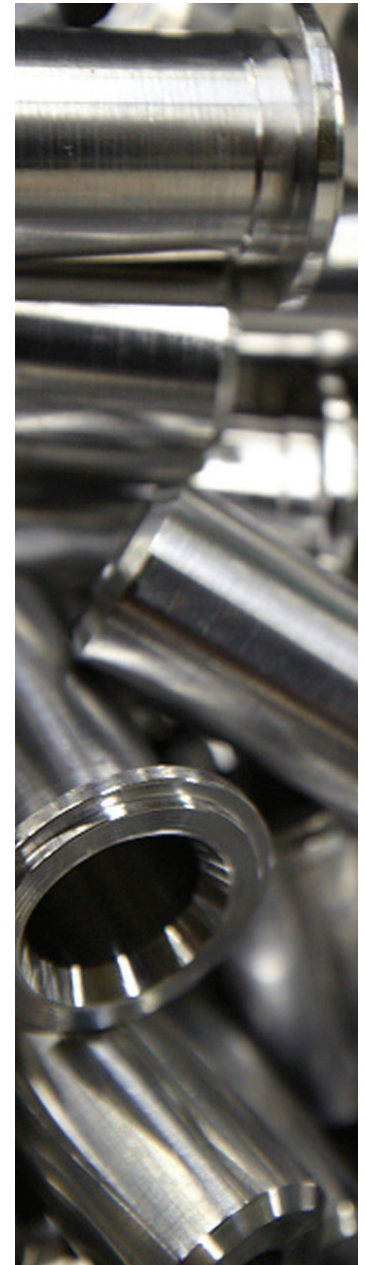
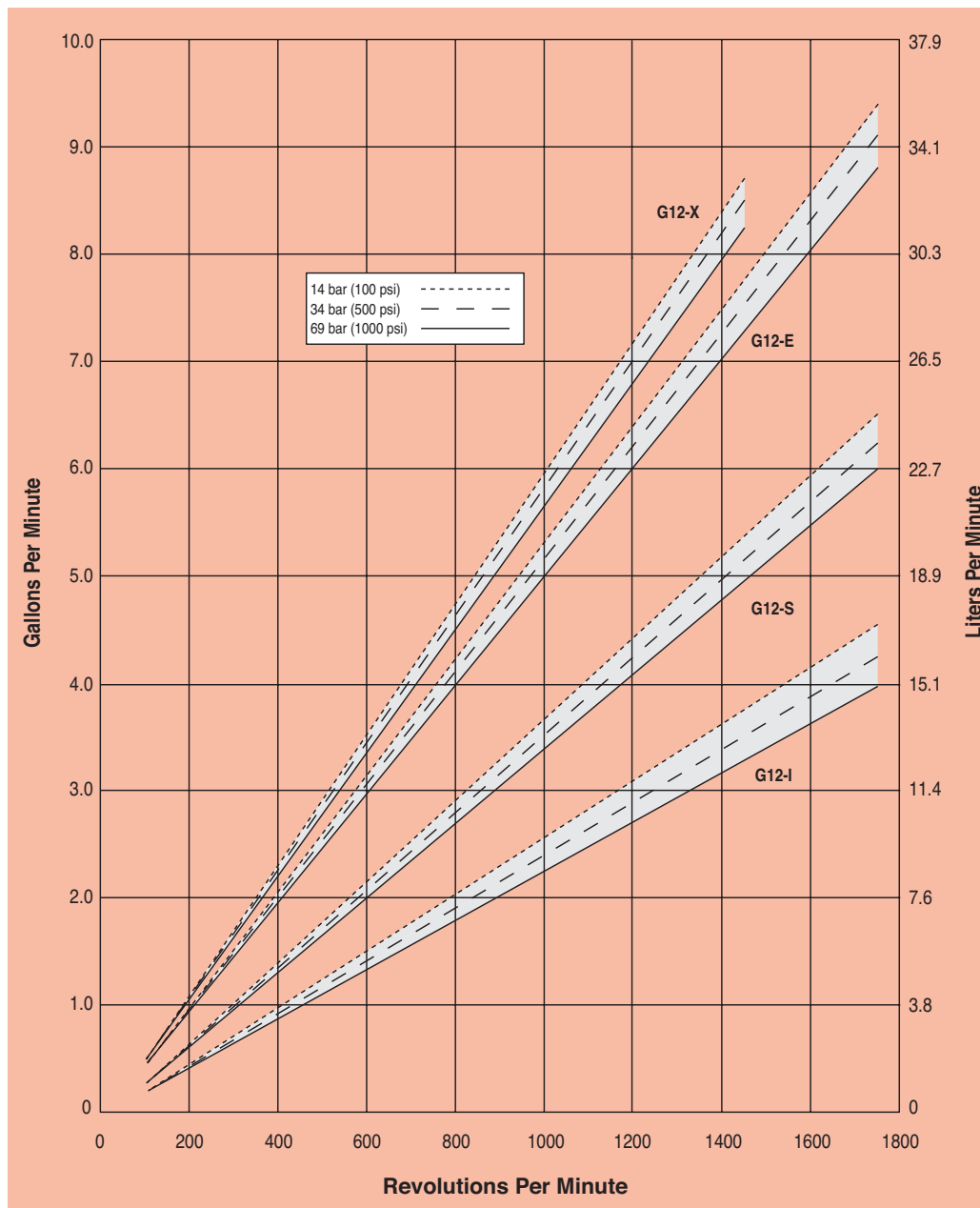
### Pressure

**Maximum Inlet Pressure**  
250 psi (17 bar)

**Maximum Discharge Pressure**  
1000 psi (69 bar)

Performance and specification ratings apply to G12 configurations unless specifically noted otherwise.

## Maximum Flow at Designated Pressure



# G12 Series Specifications

## Flow Capacities @ 69 bar (1000 psi) 4-pole Motor @ 50 Hz

| Model | rpm  | gpm  | l/min |
|-------|------|------|-------|
| G12-X | 1450 | 8.10 | 30.6  |
| G12-E | 1450 | 6.63 | 25.1  |
| G12-S | 1450 | 4.96 | 18.8  |
| G12-I | 1450 | 3.30 | 12.5  |

## Flow Capacities @ 69 bar (1000 psi) 6-pole Motor @ 50 Hz

| Model | rpm | gpm  | l/min |
|-------|-----|------|-------|
| G12-X | 960 | 5.19 | 19.6  |
| G12-E | 960 | 4.39 | 16.6  |
| G12-S | 960 | 3.28 | 12.4  |
| G12-I | 960 | 2.19 | 8.3   |

## Delivery @ 69 bar (1000 psi)

| Model | gal/rev | liters/rev |
|-------|---------|------------|
| G12-X | 0.0056  | 0.0211     |
| G12-E | 0.0051  | 0.0191     |
| G12-S | 0.0034  | 0.0130     |
| G12-I | 0.0023  | 0.0086     |

## Maximum Discharge Pressure

Metallic Heads: 69 bar (1000 psi)

## Maximum Inlet Pressure

17 bar (250 psi)

## Maximum Operating Temperature

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

## Maximum Solids Size

500 microns

## Inlet Port

1 inch BSPT  
1 inch NPT

## Discharge Port

3/4 inch BSPT  
3/4 inch NPT

## Shaft Diameter

22.2 mm (7/8 inch)

## Shaft Rotation

Reverse (bi-directional)

## Bearings

Tapered roller bearings

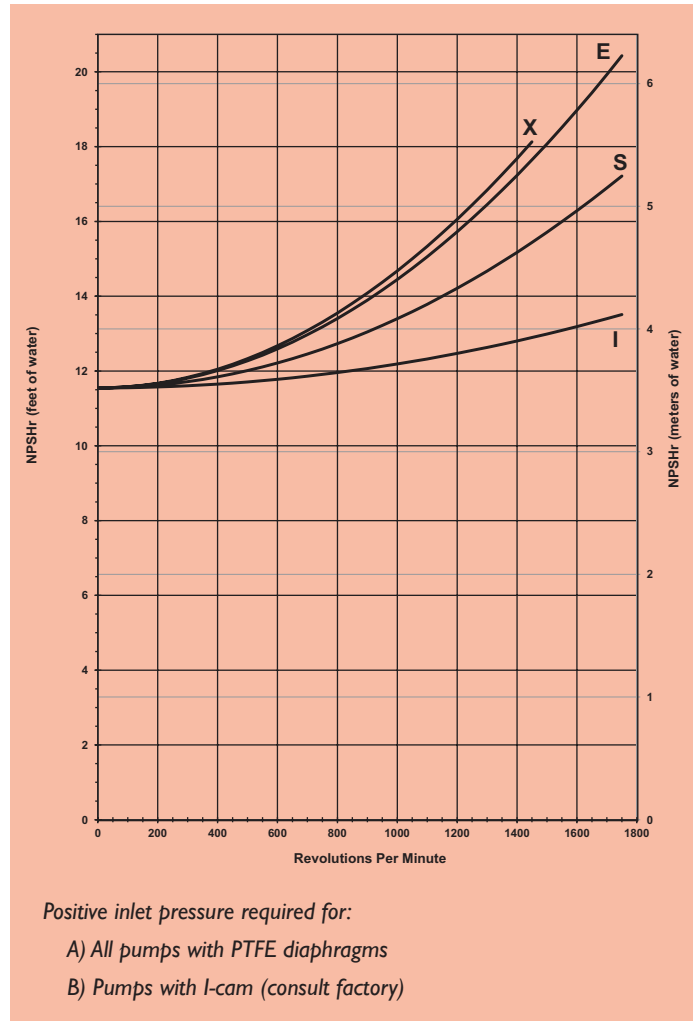
## Oil Capacity

1.4 liters (1.5 US quarts)

## Weight

Metallic Heads: 28.6 kg (63 lbs.)

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

## Calculating Required Power

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

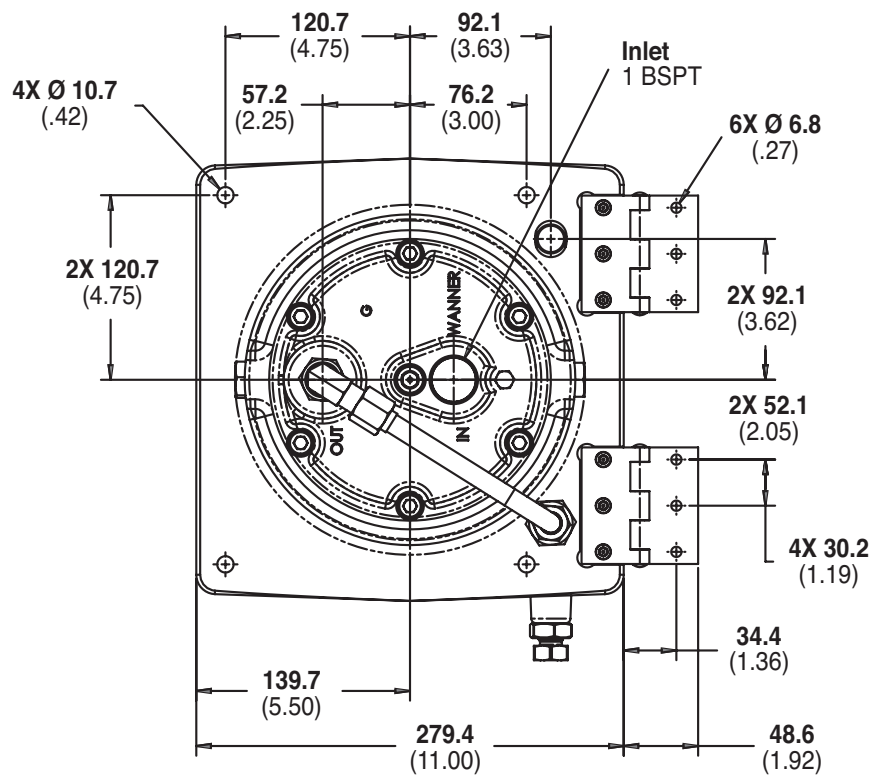
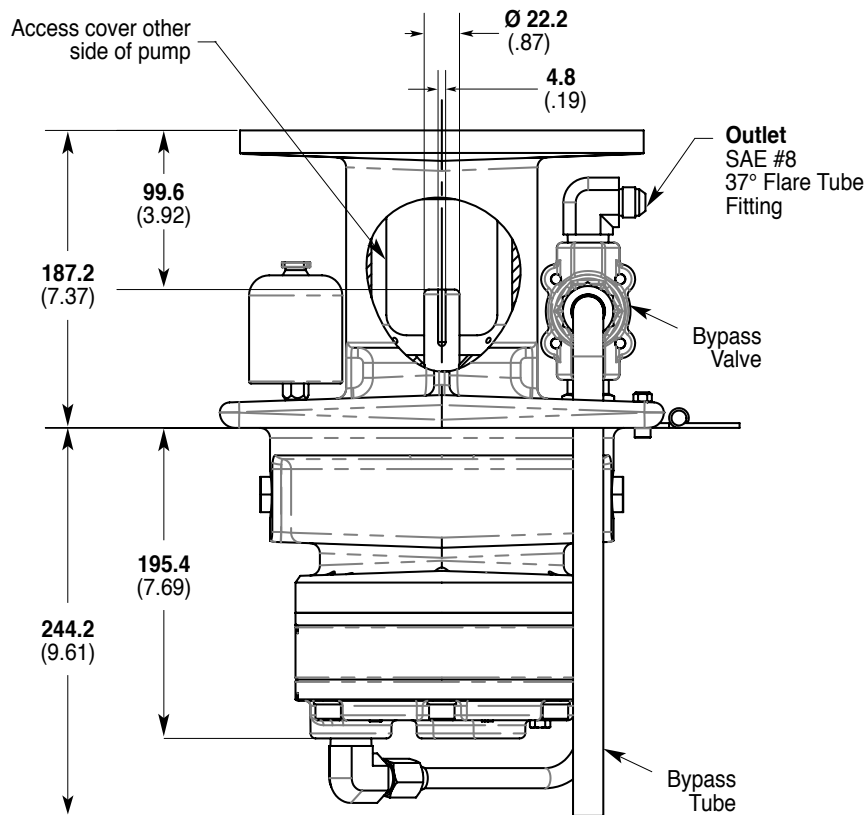
$$\frac{15 \times \text{rpm}}{84,428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

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.

# G12 Series Representative Drawings

## G12 Standard Configuration (Metallic Pump Heads)

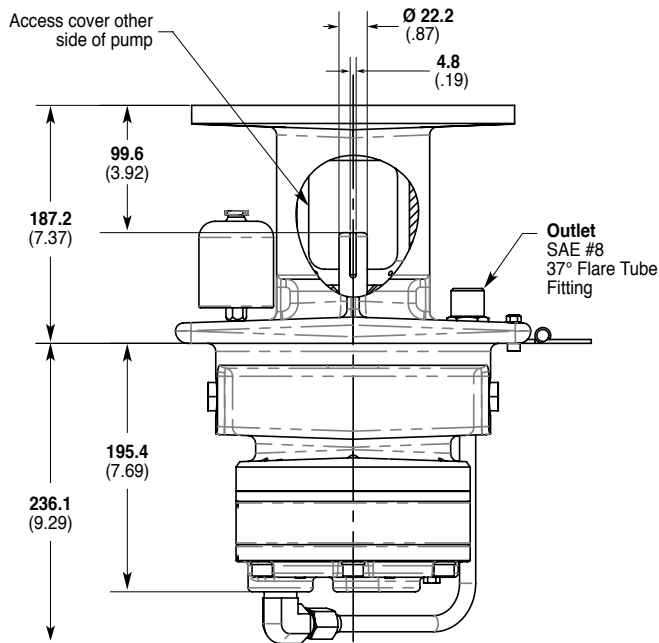
mm (Inches)



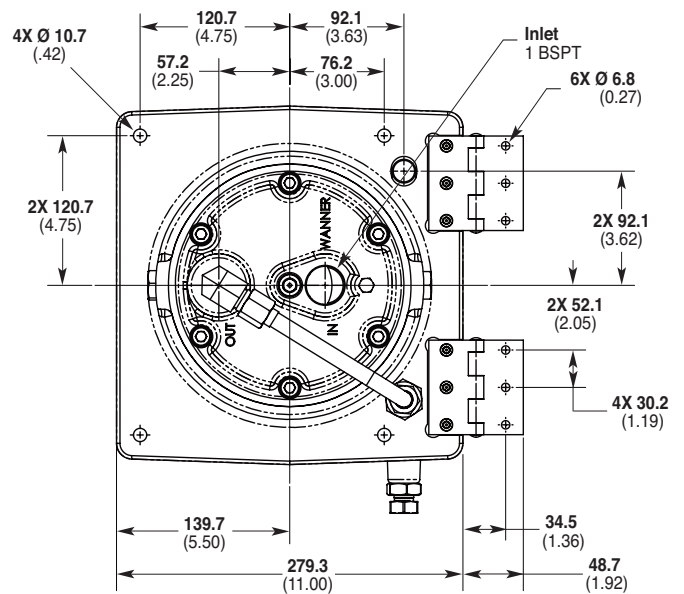
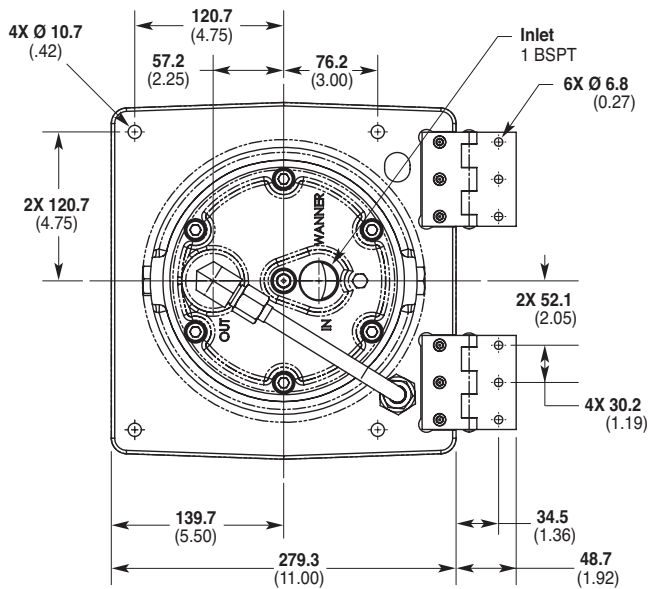
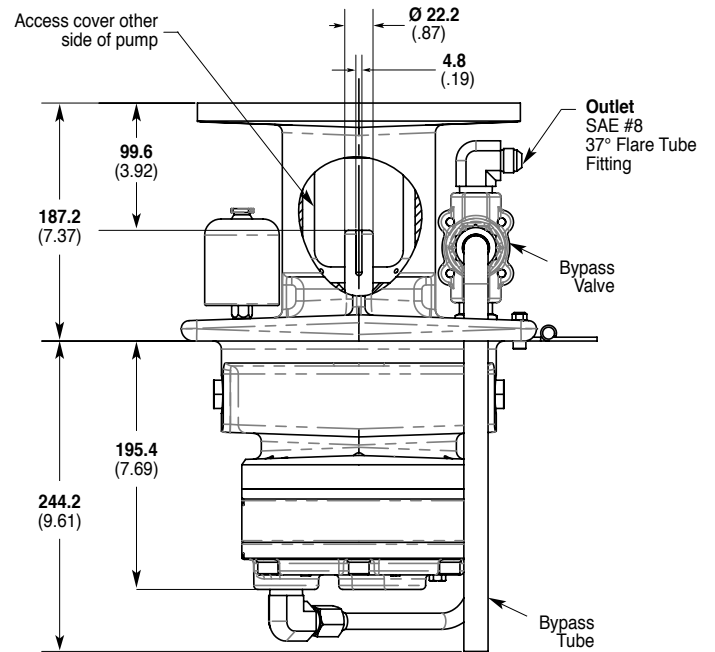
**Note:** Dimensions are for reference only. Contact factory for certified drawings.

# GI2 Series Representative Drawings

## GI2 with Tube Accessory mm (Inches)



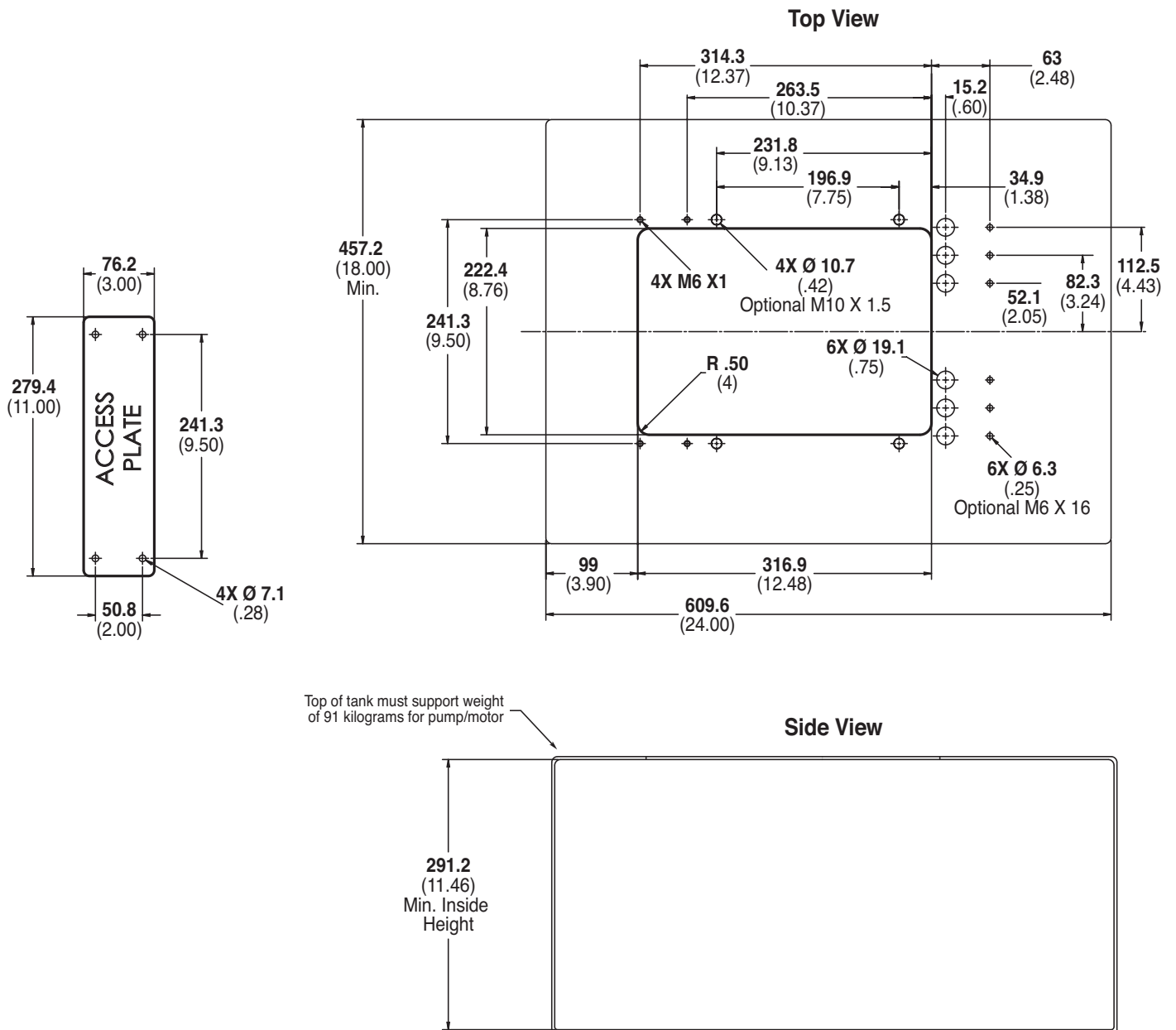
## GI2 with Valve/Tube Accessory mm (Inches)



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

# G12 Series Representative Drawings

## G12 Models with Minimum Tank Size and Critical Installation Dimensions mm (Inches)



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

# G12 Series **Valve/Tube Accessories**

The Hydra-Cell G12 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: A04-009-1200**

**Valve/Tube Accessory Part Number: A04-010-1200**



## Valve Selection

A seal-less C62 Pressure Regulating Valve is recommended for Hydra-Cell G12 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 G12 pumping systems.

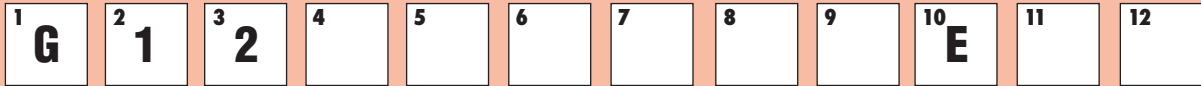


*For complete specifications and ordering information, consult the Hydra-Cell Master Catalog.*



# G12 Series **How to Order**

## Ordering Information



A complete G12 Series Model Number contains 12 digits including 8 customer-specified design and materials options, for example: G12XKCGHFECA.

| Digit      | Order Code | Description   |
|------------|------------|---|
| <b>1-3</b> | <b>G12</b> | <b>Pump Configuration</b><br>Flanged for IEC 100 - 112, B5 (BSPT Ports)*<br>*Tube Accessory Kits ordered separately. See previous page. |
| <b>4</b>   | <b>X</b>   | <b>Hydraulic End Cam</b><br>Max 29.0 l/min (7.7 gpm) @ 1450 rpm   |
|            | <b>E</b>   | Max 25.1 l/min (6.6 gpm) @ 1450 rpm   |
|            | <b>S</b>   | Max 22.7 l/min (6.0 gpm) @ 1750 rpm   |
|            | <b>I</b>   | Max 15.0 l/min (4.0 gpm) @ 1750 rpm   |
| <b>5</b>   | <b>K</b>   | <b>Pump Head Version</b><br>Kel-Cell BSPT Ports   |
|            | <b>R</b>   | Kel-Cell BSPT Ports with Optimized Valve Pocket   |
| <b>6</b>   | <b>B</b>   | <b>Pump Head Material</b><br>Brass  |
|            | <b>C</b>   | Cast Iron (Nickel-plated)   |
|            | <b>S</b>   | 316L Stainless Steel  |
| <b>7</b>   | <b>E</b>   | <b>Diaphragm &amp; O-ring Material</b><br>EPDM (requires EPDM-compatible oil - Digit 12 oil code C)                                     |
|            | <b>G</b>   | FKM   |
|            | <b>J</b>   | PTFE (available with E and S cams only; 1200 rpm max.)  |
|            | <b>P</b>   | Neoprene  |
|            | <b>T</b>   | Buna-N  |
| <b>8</b>   | <b>C</b>   | <b>Valve Seat Material</b><br>Ceramic   |
|            | <b>D</b>   | Tungsten Carbide  |
|            | <b>H</b>   | 17-4 Stainless Steel  |
|            | <b>S</b>   | 316L Stainless Steel  |
| <b>9</b>   | <b>C</b>   | <b>Valve Material</b><br>Ceramic  |
|            | <b>D</b>   | Tungsten Carbide  |
|            | <b>F</b>   | 17-4 Stainless Steel  |
|            | <b>N</b>   | Nitronic 50   |
| <b>10</b>  | <b>E</b>   | <b>Valve Springs</b><br>Elgiloy   |

| Digit     | Order Code | Description  |
|-----------|------------|--|
| <b>11</b> | <b>C</b>   | <b>Valve Spring Retainers</b><br>Celcon                            |
|           | <b>H</b>   | 17-7 Stainless Steel   |
|           | <b>M</b>   | PVDF   |
|           | <b>P</b>   | Polypropylene  |
|           | <b>Y</b>   | Nylon (Zytel)  |
| <b>12</b> | <b>A</b>   | <b>Hydra-Oil</b><br>10W30 standard-duty oil                        |
|           | <b>B</b>   | 40-wt for continuous-duty (use with 316L SST pump head - standard) |
|           | <b>C</b>   | EPDM-compatible oil  |
|           | <b>E</b>   | Food-contact oil   |
|           | <b>G</b>   | 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

# Hydra-Cell®

## Seal-less Pumps

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