

# Hydra-Cell<sup>®</sup>

## Seal-less Pumps

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



### **G35 Series**

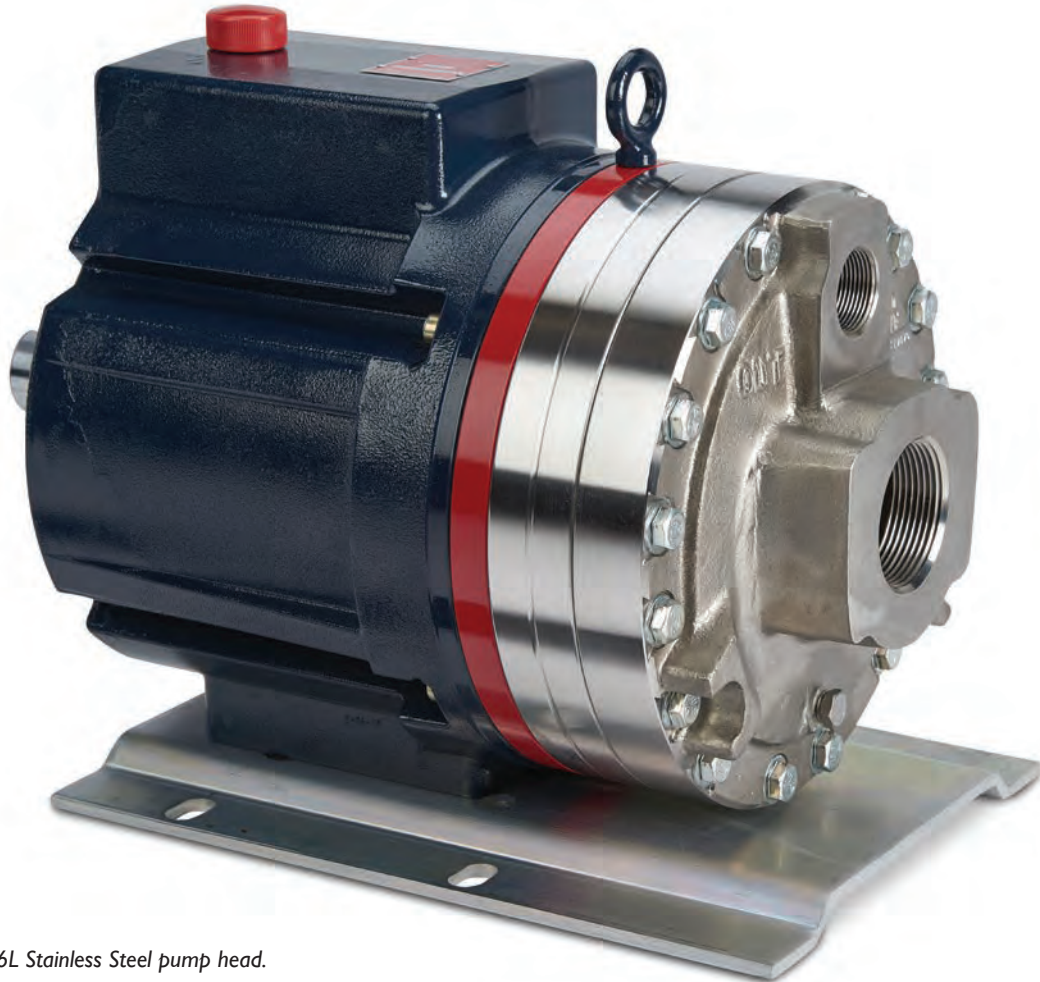
- Pumps the full spectrum of low-to-high viscosity fluids.
- Features a seal-less design and horizontal disk check valves that enable the pump to handle abrasives and particulates that might damage or destroy other types of pumps.
- Simple, compact design reduces initial investment and lowers maintenance 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.

# G35 Series

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Maximum Flow Rate: 36.5 gpm (138 l/min)

Maximum Pressure: 1500 psi (103 bar) for Metallic Pump Heads



*G35 with 316L Stainless Steel pump head.*



*G35 with Brass pump head.*



*G35 with 316L Stainless Steel pump head and ANSI flanges.*

# G35 Series Performance

## Capacities

### Flow

Model	Max. Input rpm	Max. Flow	
		@ 1200 psi (83 bar) gpm	l/min
G35-X	1050	36.5	138
G35-E	1150	34.0	129
<b>@ 1500 psi (103 bar)*</b>			
G35-X	700	23.1	87.5

### Pressure

#### Maximum Inlet Pressure

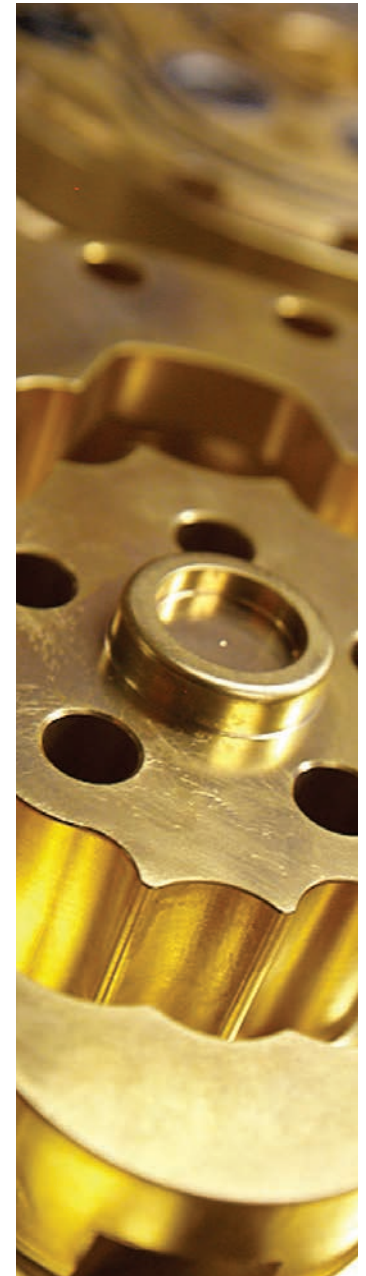
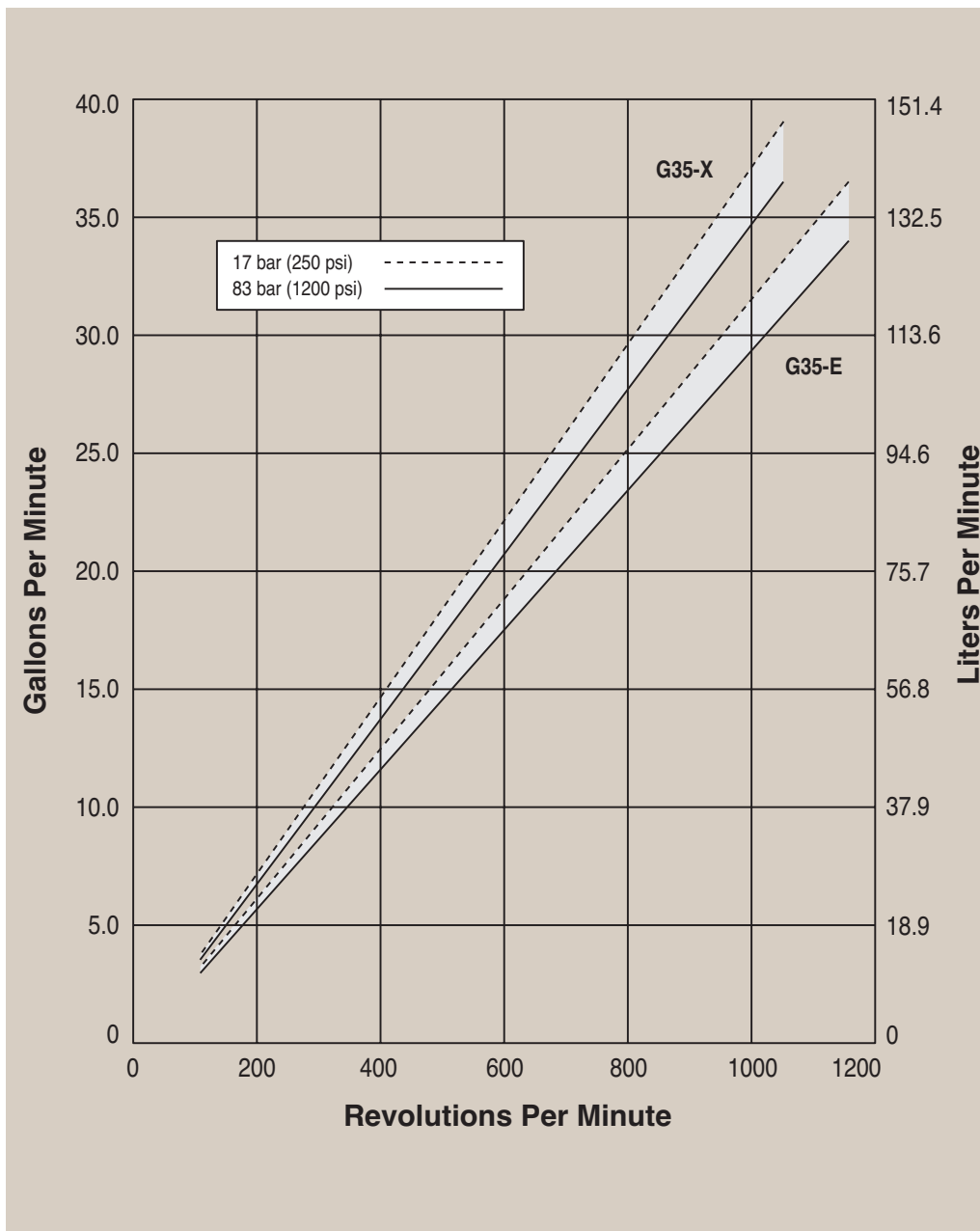
250 psi (17 bar) with 1500 psi (103 bar) maximum discharge pressure  
 500 psi (34 bar) with 1200 psi (83 bar) maximum discharge pressure

#### Maximum Discharge Pressure

1200 psi (83 bar) @ 1150 rpm max.  
 1500 psi (103 bar) @ 700 rpm max.

Performance and specification ratings apply to G35 configurations unless specifically noted otherwise.

## Maximum Flow at Designated Pressure



\* Consult factory if operating above 1200 psi (83 bar).

# G35 Series Specifications

## Flow Capacities @ 83 bar (1200 psi) 6-pole Motor @ 50 Hz

Model	rpm	gpm	l/min
G35-X	960	33.50	127.00
G35-E	960	29.00	110.00

## Flow Capacities @ 83 bar (1200 psi) 8-pole Motor @ 50 Hz

Model	rpm	gpm	l/min
G35-X	730	25.50	96.60
G35-E	730	22.10	83.60

## Delivery @ 83 bar (1200 psi)

Model	gal/rev	liters/rev
G35-X	0.0347	0.1314
G35-E	0.0296	0.1120

## Delivery @ 103 bar 1500 psi

Model	gal/rev	liters/rev
G35-X	0.0330	0.1250

## Maximum Discharge Pressure

Metallc Heads: 83 bar (1200 psi) @ 1150 rpm max.  
103 bar (1500 psi) @ 700 rpm max. - Consult factory if operating above 83 bar (1200 psi).

## Maximum Inlet Pressure

17 bar (250 psi) with 103 bar (1500 psi) maximum discharge pressure  
34 bar (500 psi) with 83 bar (1200 psi) maximum discharge pressure

## Maximum Operating Temperature

Metallc 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

800 microns

## Inlet Port

2-1/2 inch BSPT  
2-1/2 inch NPT  
150lb or 600lb ANSI RF flange  
3 inch SAE flange

## Discharge Port

1-1/4 inch BSPT  
1-1/4 inch NPT  
600lb or 1500lb ANSI RF flange  
1-1/4 inch SAE flange

## Shaft Diameter

50.8 mm (2 inch)

## Shaft Rotation

Reverse (bi-directional)

## Bearings

Tapered roller bearings

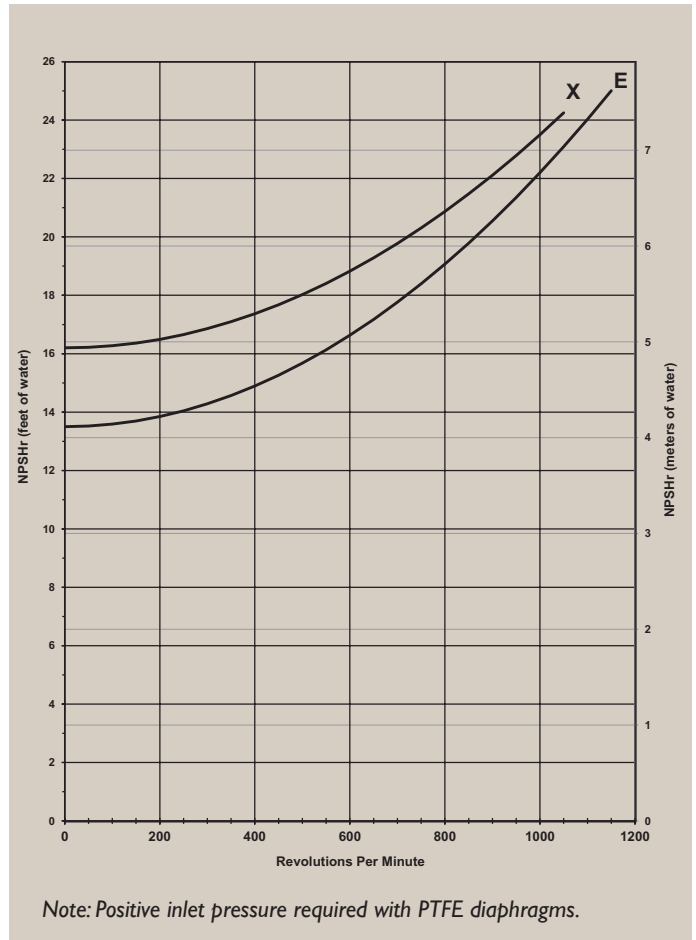
## Oil Capacity

7.3 liters (7.75 US quarts)

## Weight

Metallc Heads: 116.6 kg (257 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

$$\frac{100 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}$$

$$\frac{100 \times \text{rpm}}{84,428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

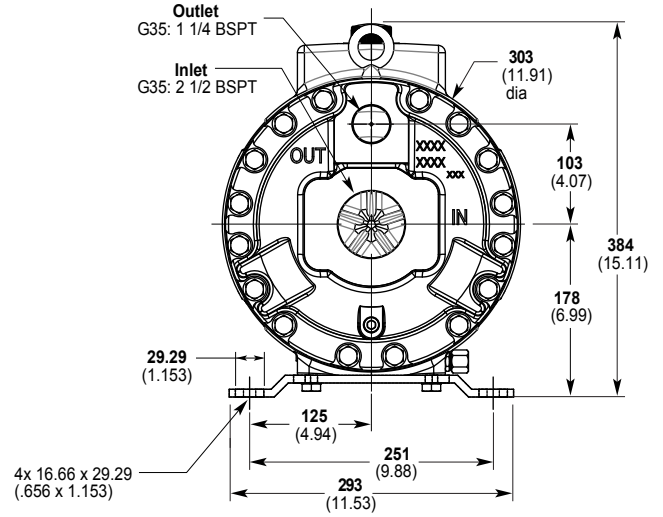
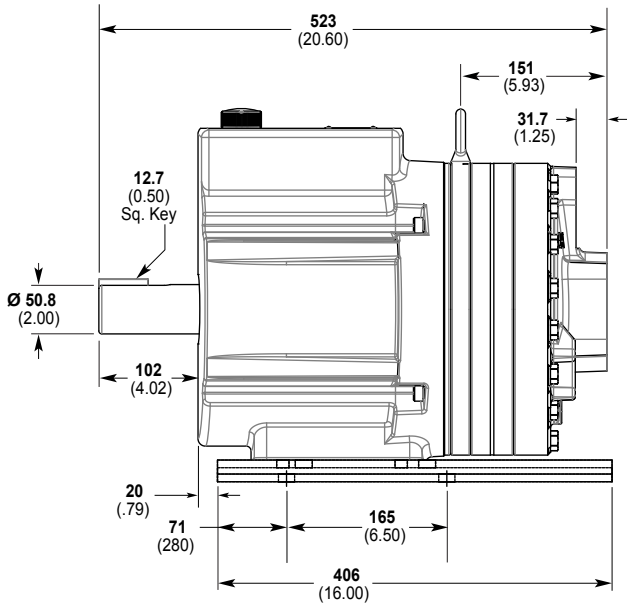
When using a variable frequency drive (VFD) controller calculate the hp or kW at minimum and maximum pump speed to ensure the correct hp or kW motor is selected. Note that motor manufacturers typically de-rate the service factor to 1.0 when operating with a VFD.

## Calculating Pulley Size

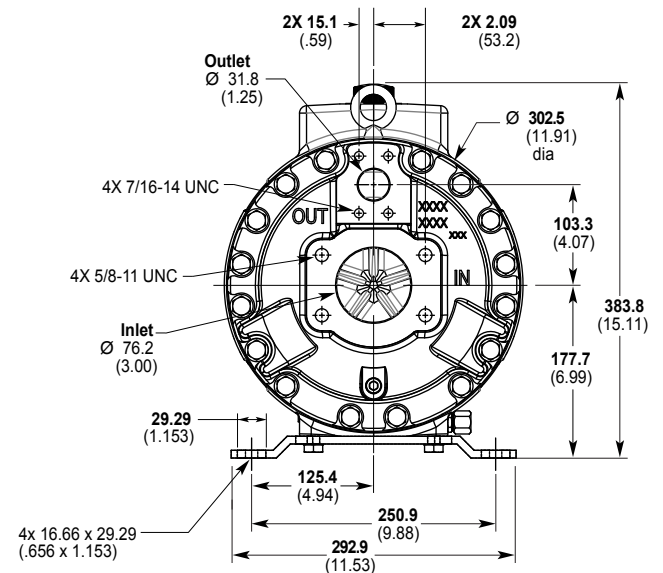
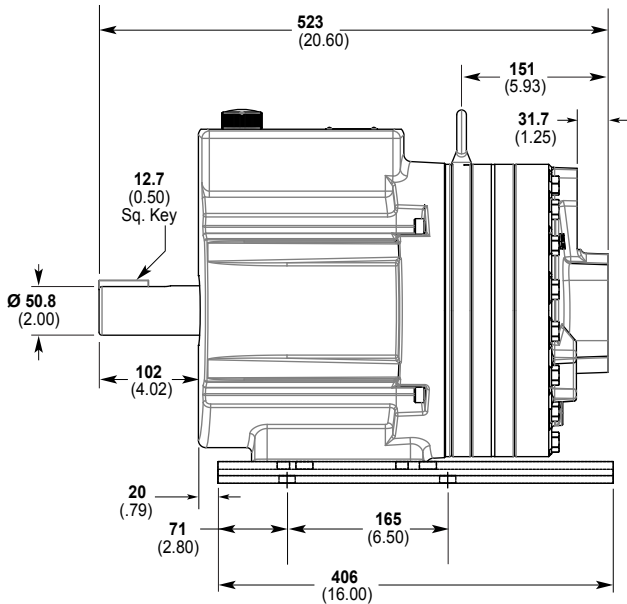
$$\frac{\text{motor pulley OD}}{\text{pump rpm}} = \frac{\text{pump pulley OD}}{\text{motor rpm}}$$

# G35 Series Representative Drawings

## G35 Models with BSPT Inlet/Outlet Ports mm (Inches)



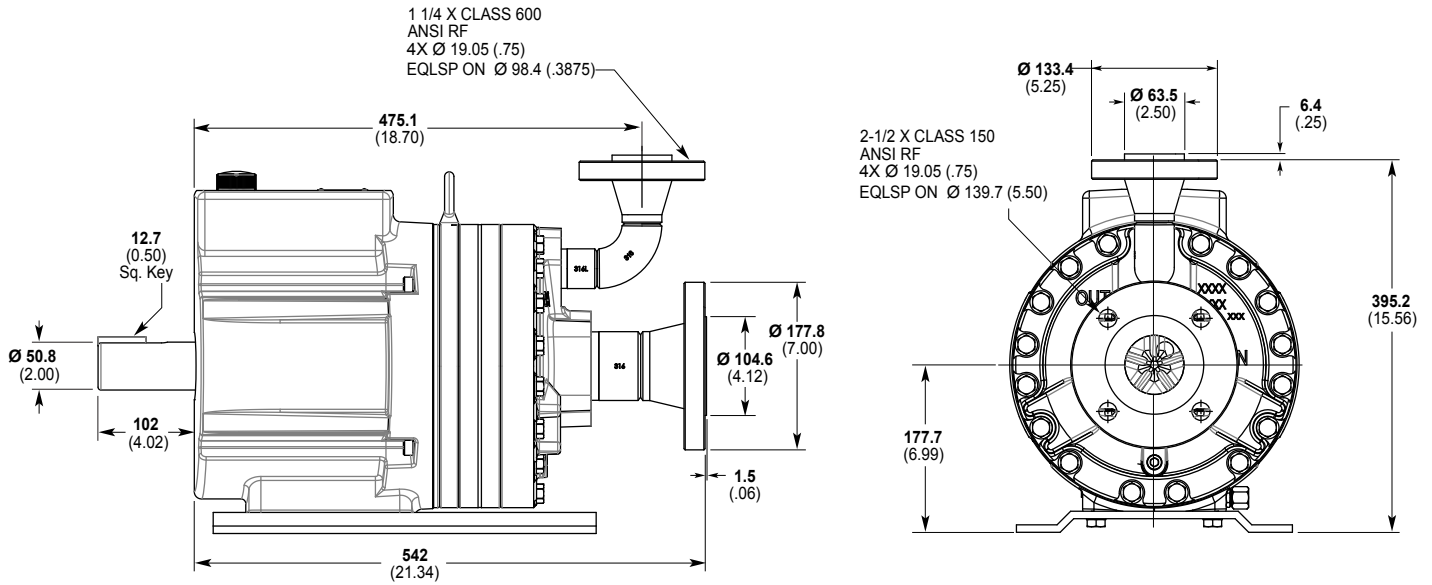
## G35 Models with SAE Flange Inlet/Outlet Ports mm (Inches)



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

# G35 Series Representative Drawings/Valves/Skids

## G35 Models with ANSI Flange Inlet/Outlet Ports mm (Inches)



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

### Valve Selection

A seal-less C64 Pressure Regulating Valve is recommended for Hydra-Cell G35 pumping systems, especially for high-pressure requirements or when handling dirty fluids.



A C24 Pressure Regulating Valve provides a capable, lower-cost alternative to C64 valves for Hydra-Cell G35 pumping systems.



Skid-mounted G35 with 20hp, 3-phase motor.



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

# G35 Series How to Order

## Ordering Information



A complete G35 Series Model Number contains 12 digits including 9 customer-specified design and materials options, for example: G35XKBTHFECA.

Digit	Order Code	Description
<b>1-3</b>	<b>G35</b>	<b>Pump Configuration</b> Shaft-driven (BSPT Ports or SAE or ANSI Flanges)
<b>4</b>	<b>X</b>	<b>Hydraulic End Cam</b> Max 127.0 l/min (33.5 gpm) @ 960 rpm
	<b>E</b>	Max 110.0 l/min (29.1 gpm) @ 960 rpm
<b>5</b>	<b>K</b>	<b>Pump Head Version</b> Kel-Cell BSPT Ports or ANSI Flanges
	<b>E</b>	Kel-Cell SAE Flanges
<b>6</b>	<b>B</b>	<b>Pump Head Material</b> Brass
	<b>C</b>	Ductile Iron (Nickel-plated)
	<b>G</b>	Duplex Alloy 2205 Stainless Steel (with Hastelloy C followers & follower screws)
	<b>Q</b>	316L Stainless Steel ANSI flange class 600 x 1500
	<b>R</b>	316L Stainless Steel ANSI flange class 150 x 600
	<b>S</b>	316L Stainless Steel - threaded or SAE ports
	<b>T</b>	Hastelloy CW12MW
<b>7</b>	<b>A</b>	<b>Diaphragm &amp; O-ring Material</b> Aflas diaphragm / PTFE o-ring
	<b>E</b>	EPDM (requires EPDM-compatible oil - Digit 12 oil code D)
	<b>G</b>	FKM
	<b>J</b>	PTFE (available with E cam only; 1050 rpm max.)
	<b>P</b>	Neoprene
	<b>T</b>	Buna-N
<b>8</b>	<b>C</b>	<b>Valve Seat Material</b> Ceramic
	<b>D</b>	Tungsten Carbide (900 rpm max.)
	<b>H</b>	17-4 Stainless Steel
	<b>N</b>	Nitronic 50
	<b>T</b>	Hastelloy C
<b>9</b>	<b>C</b>	<b>Valve Material</b> Ceramic
	<b>D</b>	Tungsten Carbide (900 rpm max.)
	<b>F</b>	17-4 Stainless Steel
	<b>N</b>	Nitronic 50
	<b>T</b>	Hastelloy C
<b>10</b>	<b>E</b>	<b>Valve Springs</b> Elgiloy
	<b>H</b>	17-7 Stainless Steel
	<b>T</b>	Hastelloy C

Digit	Order Code	Description
<b>11</b>	<b>C</b>	<b>Valve Spring Retainers</b> Celcon
	<b>H</b>	17-7 Stainless Steel
	<b>M</b>	PVDF
	<b>P</b>	Polypropylene
	<b>T</b>	Hastelloy C
	<b>Y</b>	Nylon (Zytel)
<b>12</b>	<b>A</b>	<b>Hydra-Oil</b> 10W30 standard-duty oil
	<b>B</b>	40-wt for continuous-duty oil (use with 316L SST or Hastelloy CW12MW pump head - standard)
	<b>D</b>	EPDM-compatible oil
	<b>E</b>	Food-contact oil
	<b>G</b>	5W30 cold-temp severe-duty synthetic oil
	<b>H</b>	15W50 high-temp severe-duty synthetic oil

G35 Pump Housing is standard as Cast Aluminum. Upgrade to Ductile Iron available.

### 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<sup>®</sup>

## Seal-less Pumps



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