

# Hydra-Cell<sup>®</sup>

## Seal-less Pumps

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



### **D66 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.

# D66 Series

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Maximum Flow Rate: 65.7 gpm (248.7 l/min)  
Maximum Pressure: 700 psi (48 bar) for Metallic Pump Heads  
250 psi (17 bar) for Non-metallic Pump Heads



*D66 with Ductile Iron pump head.*



*D66 with Polypropylene pump head.*

# D66 Series Performance

## Capacities

### Flow

Model	Max. Input rpm	Max. Flow @ 700 psi (48 bar)	
		gpm	l/min
D66-X	1000	65.7	248.7

### Pressure

#### Maximum Inlet Pressure

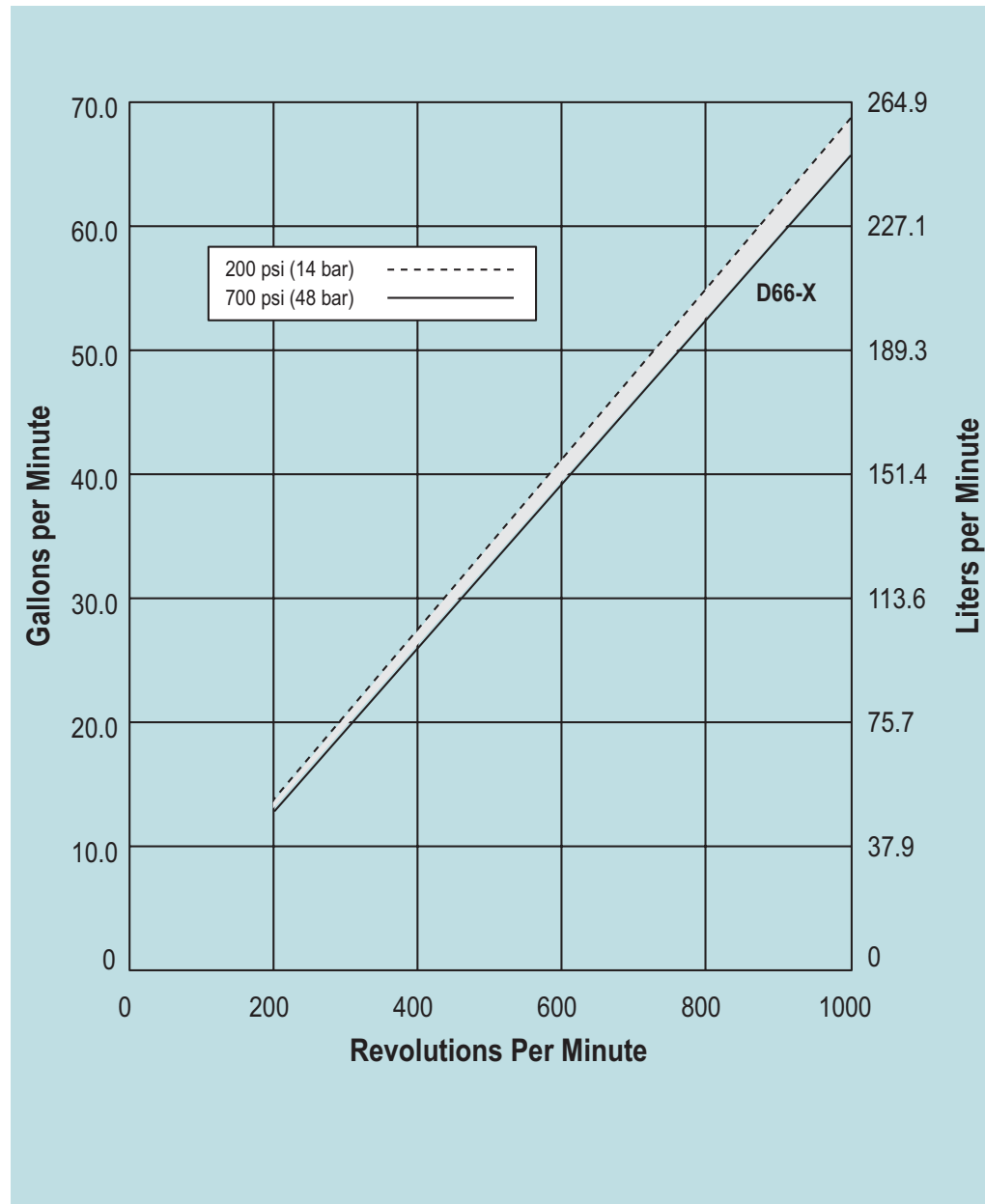
Metallic Pump Heads: 250 psi (17 bar)  
 Non-metallic Pump Heads: 50 psi (3.4 bar)

#### Maximum Discharge Pressure

Metallic Pump Heads:  
 700 psi (48 bar)  
 Non-metallic Pump Heads:  
 250 psi (17 bar) Polypropylene

Performance and specification ratings apply to D66 configurations unless specifically noted otherwise.

## Maximum Flow at Designated Pressure



# D66 Series Specifications

## Flow Capacities @ 200 psi (14 bar)

Model	rpm	gpm	l/min
D66-X (Metallic)	1000	67.8	256

## Flow Capacities @ 250 psi (17 bar)

Model	rpm	gpm	l/min
D66-X (Non-metallic)	1000	67.5	255

## Flow Capacities @ 700 psi (48 bar)

Model	rpm	gpm	l/min
D66-X (Metallic)	1000	65.7	248

## Delivery @ 200 psi (14 bar)

Model	gal/rev	liters/rev
D66-X (Metallic)	0.0678	0.256

## Delivery @ 250 psi (17 bar)

Model	gal/rev	liters/rev
D66-X (Non-metallic)	0.675	0.255

## Delivery @ 700 psi (48 bar)

Model	gal/rev	liters/rev
D66-X (Metallic)	0.657	0.248

## Maximum Discharge Pressure

Metallic Heads:	700 psi (48 bar) @1000 rpm
Non-metallic Heads:	250 psi (17 bar) Polypropylene

## Maximum Inlet Pressure

Metallic Heads: 250 psi (17 bar)

Non-metallic Heads: 50 psi (3.4 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).

Non-metallic Heads: 120 °F (49 °C) - Consult factory for temperatures above 120 °F (49 °C).

## Maximum Solids Size

800 microns

## Inlet Port

3 inch NPT  
2-1/2 inch SAE J518 Flange (Non-metallic)

3 inch SAE J518 Flange (Metallic)

## Discharge Port

1-1/2 inch NPT

1-1/2 inch SAE

## Shaft Diameter

2 inch (50.8 mm)

## Shaft Rotation

Reverse (bi-directional)

## Bearings

Tapered roller bearings

## Oil Capacity

8 US quarts (7.5 liters)

## Weight

Metallic Heads: 500 lbs. (226 kg)

Non-metallic Heads: 295 lbs. (133 kg)

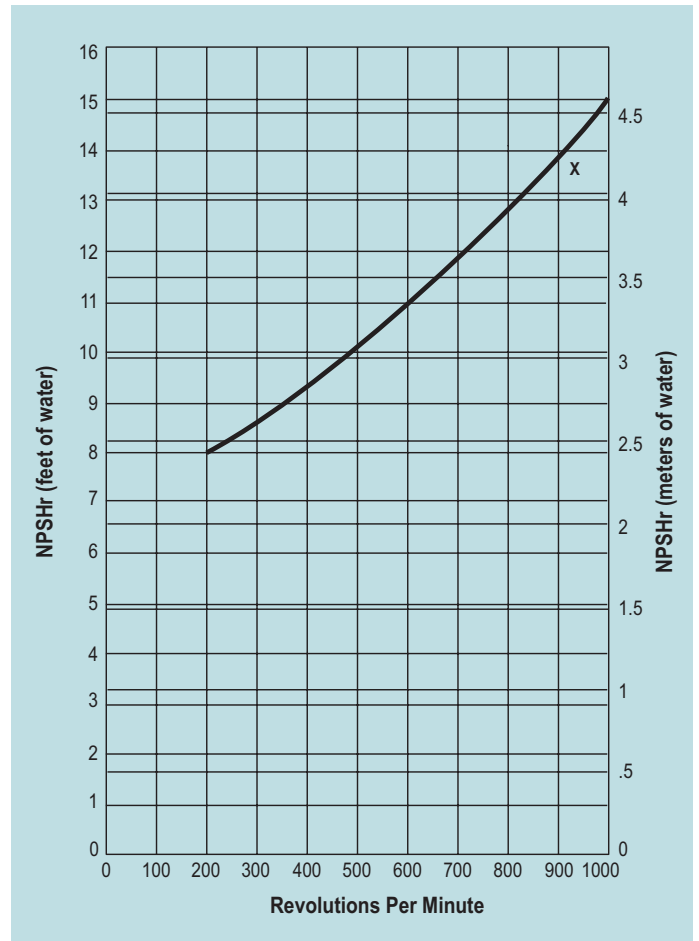
## Calculating Required Power

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

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

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.

## Net Positive Suction Head (NPSHr)

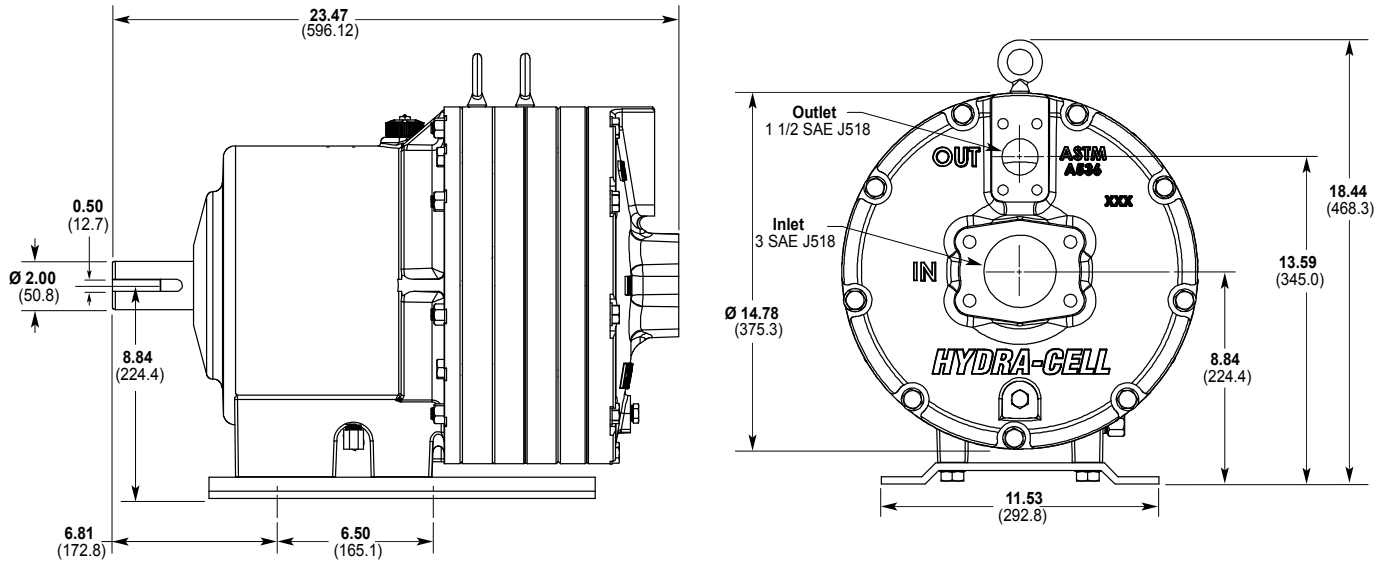


## Self-priming:

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.

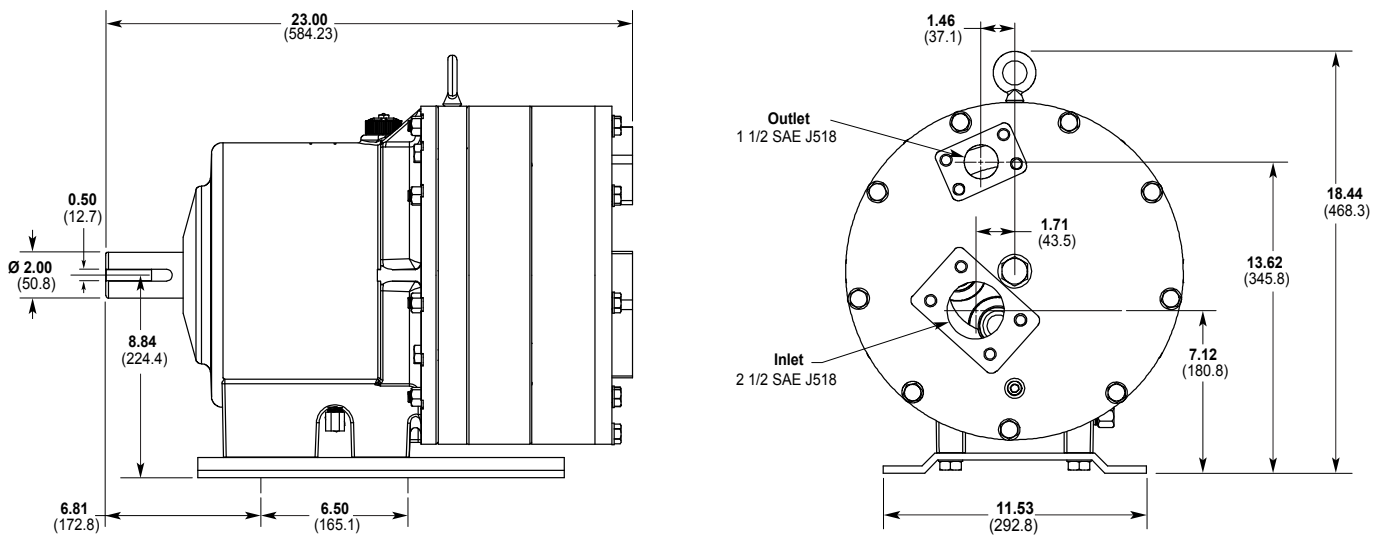
# D66 Series Representative Drawings

## D66 Models with SAE Flange Inlet/Outlet Ports Inches (mm)



Metallic pump head models shown.

## D66 Models with SAE Flange Inlet/Outlet Ports Inches (mm)

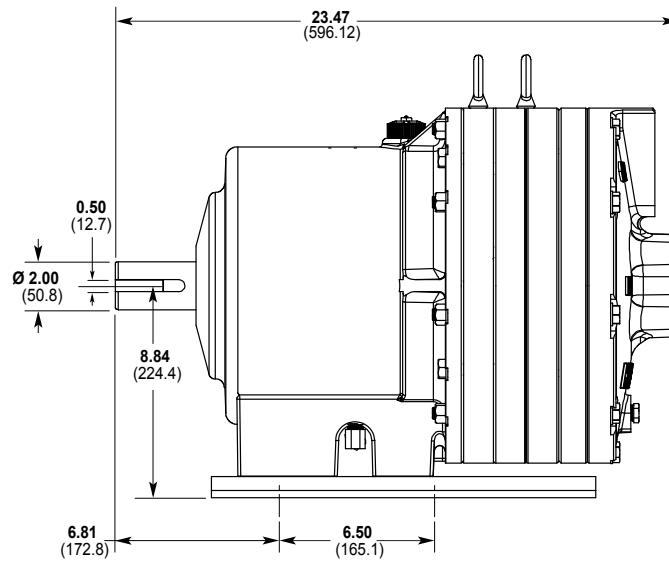
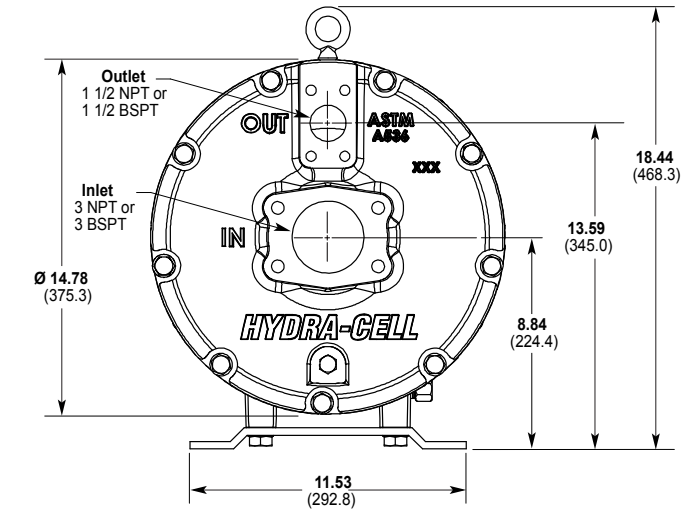


Non-metallic pump head models shown.

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

# D66 Series Representative Drawings

## D66 Models with NPT Inlet/Outlet Ports Inches (mm)



*Metallic pump head models shown.*

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

# D66 Series How to Order

## Ordering Information

1	2	3	4	5	6	7	8	9	10	11	12
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A complete D66 Series Model Number contains 12 digits including 9 customer-specified design and materials options, for example: D66XKDGHFPEA.

Digit	Order Code	Description
<b>1-3</b>	<b>D66</b>	<b>Pump Configuration</b> Shaft-driven (NPT Ports)
<b>4</b>	<b>X</b>	<b>Hydraulic End Cam</b> Max 65.7 gpm (248.7 l/min) @ 1000 rpm
<b>5</b>	<b>K</b>	<b>Pump Head Version</b> Kel-Cell NPT Ports or SAE Flanges
<b>6</b>	<b>B</b> <b>D</b> <b>N</b> <b>P</b> <b>S</b>	<b>Pump Head Material</b> Brass Ductile Iron (Nickel-plated) Polypropylene (with Hastelloy C followers and follower screws) Polypropylene (with 316 SST followers and follower screws) 316L Stainless Steel
<b>7</b>	<b>G</b> <b>T</b>	<b>Diaphragm &amp; O-ring Material</b> FKM Buna-N
<b>8</b>	<b>H</b> <b>N</b> <b>T</b>	<b>Valve Seat Material</b> 17-4 Stainless Steel Nitronic 50 Hastelloy C
<b>9</b>	<b>F</b> <b>N</b> <b>T</b>	<b>Valve Material</b> 17-4 Stainless Steel Nitronic 50 Hastelloy C
<b>10</b>	<b>E</b> <b>H</b>	<b>Valve Springs</b> Elgiloy 17-7 Stainless Steel
<b>11</b>	<b>C</b> <b>M</b> <b>P</b>	<b>Valve Spring Retainers</b> Celcon PVDF Polypropylene
<b>12</b>	<b>A</b> <b>H</b>	<b>Hydra-Oil</b> 10W30 standard-duty oil 15W50 high-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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