

# Hydra-Cell®

## Seal-less Pumps

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



## G03 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.

# G03 Series

Maximum Flow Rate: 3.1 gpm (11.7 l/min)  
Maximum Pressure: 1200 psi (83 bar) for Metallic Pump Heads  
350 psi (24 bar) for Non-metallic Pump Heads



*G03 close-coupled (hollow shaft) with Brass pump head.*



*G13 close-coupled (hollow shaft) with Polypropylene pump head.*



*G03 external shaft-driven with 316L Stainless Steel pump head.*

# G03 Series Performance

## Capacities

### Flow

Model	Max. Input rpm	Max. Flow @ 1000 psi (69 bar)	
		gpm	l/min
G03-X	1750	3.1	11.7
G03-E	1750	2.2	8.3
G03-S	1750	1.7	6.4
G03-B	1750	1.0	3.6
G03-G	1750	0.6	2.3
<b>@ 1200 psi (83 bar)</b>			
G03-E	1750	2.1	8.1
G03-S	1750	1.6	6.3
G03-B	1750	0.9	3.5
G03-G	1750	0.6	2.2

### Pressure

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

**Maximum Discharge Pressure**

Metallic Pump Heads:

G03-X to 1000 psi (69 bar)

G03-S, E, B, G to 1200 psi (83 bar)

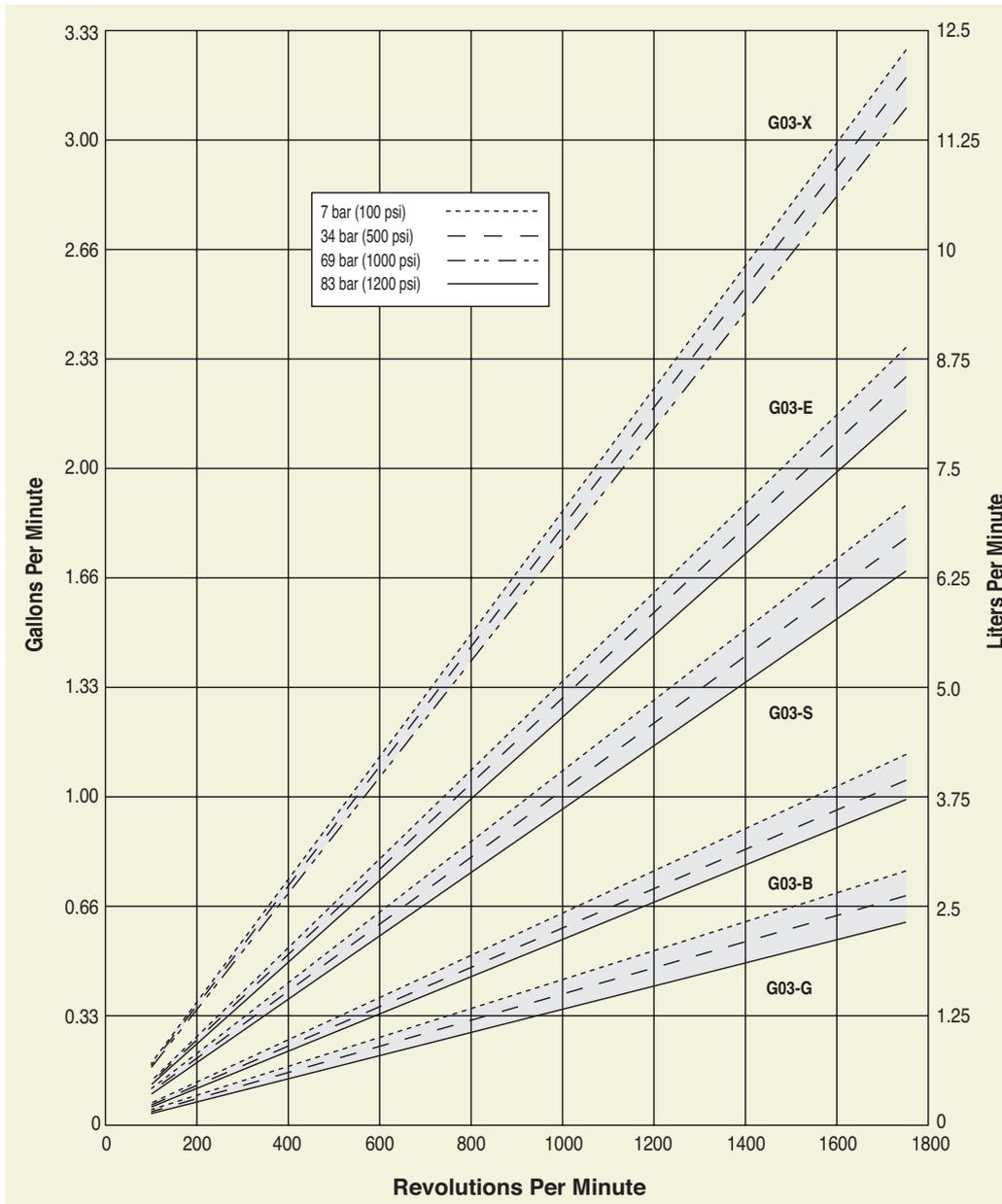
Non-metallic Pump Heads:

250 psi (17 bar) Polypropylene

350 psi (24 bar) PVDF

Performance and specification ratings apply to G03 Kel-Cell and G03 Shaft-driven configurations unless specifically noted otherwise.

## Maximum Flow at Designated Pressure



# G03 Series Specifications

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

Model	rpm	gpm	l/min
G03-X	1450	2.45	9.3
G03-E	1450	1.80	6.8
G03-S	1450	1.48	5.6
G03-B	1450	0.92	3.5
G03-G	1450	0.40	1.5

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

Model	rpm	gpm	l/min
G03-X	960	1.64	6.2
G03-E	960	1.18	4.5
G03-S	960	0.98	3.7
G03-B	960	0.60	2.3
G03-G	960	0.26	1.0

## Delivery @ 83 bar (1200 psi)

Model	gal/rev	liters/rev
G03-E	0.0012	0.0046
G03-S	0.0009	0.0036
G03-B	0.0005	0.0020
G03-G	0.0003	0.0013

## Delivery @ 69 bar (1000 psi)

Model	gal/rev	liters/rev
G03-X	0.0018	0.0067
G03-E	0.0013	0.0047
G03-S	0.0010	0.0037
G03-B	0.0005	0.0021
G03-G	0.0004	0.0013

## Maximum Discharge Pressure

Metallic Heads:	G03-X to 69 bar (1000 psi)
	G03-S, E, B to 83 bar (1200 psi)
Non-metallic Heads:	17 bar (250 psi) Polypropylene
	24 bar (350 psi) PVDF

## 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).
	Non-metallic Heads:
	60 °C (140 °F)

## Maximum Solids Size 200 microns

## Inlet Port

Primary:	1/2 inch BSPT
	1/2 inch NPT
Secondary:	3/8 inch BSPT (plugged from factory)
	3/8 inch NPT (plugged from factory)

## Discharge Port 3/8 inch BSPT 3/8 inch NPT

## Shaft Diameter G13: 24 mm hollow shaft G03: 22.2 mm (7/8 inch)

## Shaft Rotation Reverse (bi-directional)

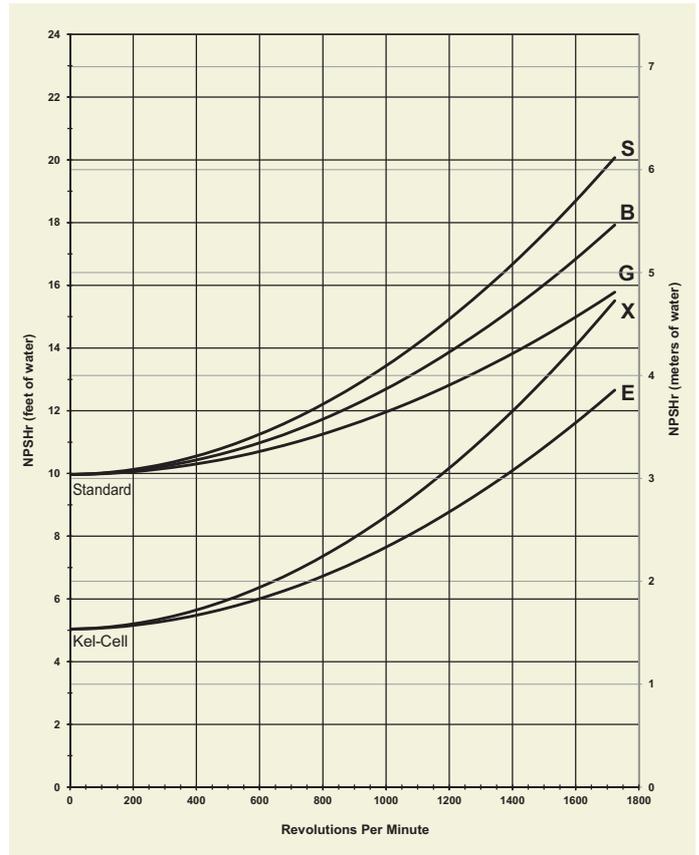
## Bearings Precision ball bearings

## Oil Capacity 0.95 liters (1.0 US quart)

## Weight

Metallic Heads:	12.7 kg (28 lbs.)
Non-metallic Heads:	8.6 kg (19 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

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

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

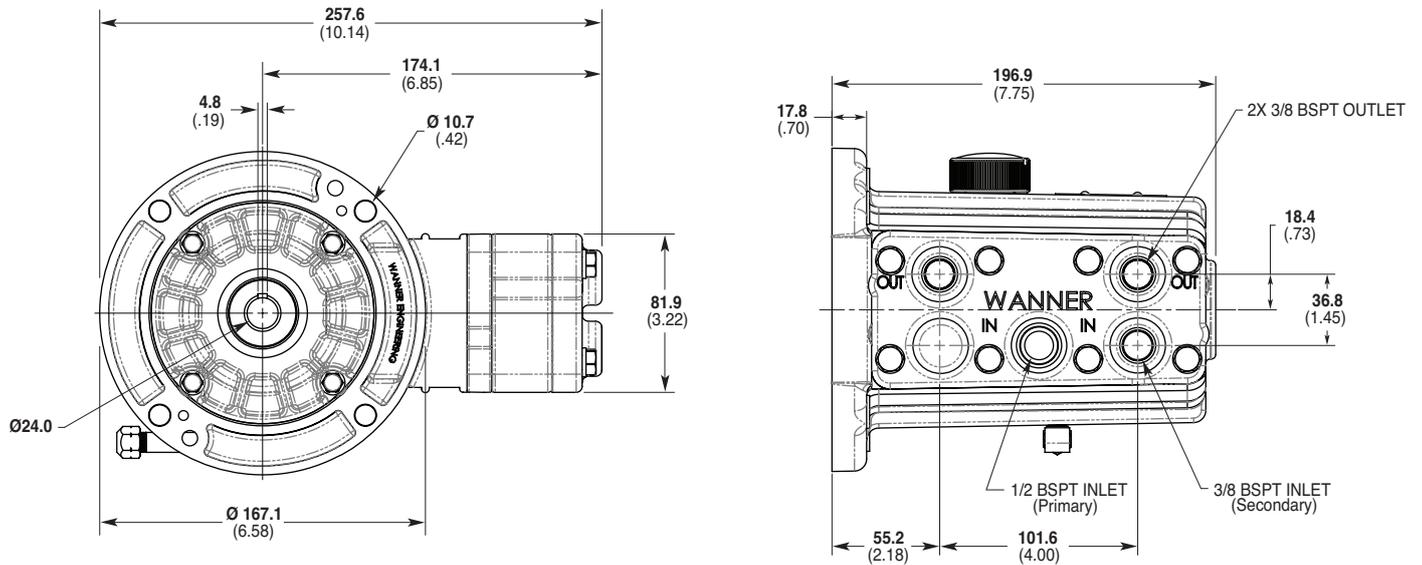
When using a variable frequency drive (VFD) controller calculate the hp or kW at minimum and maximum pump speed to ensure the correct hp or kW motor is selected. Note that motor manufacturers typically de-rate the service factor to 1.0 when operating with a VFD.

## Calculating Pulley Size

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

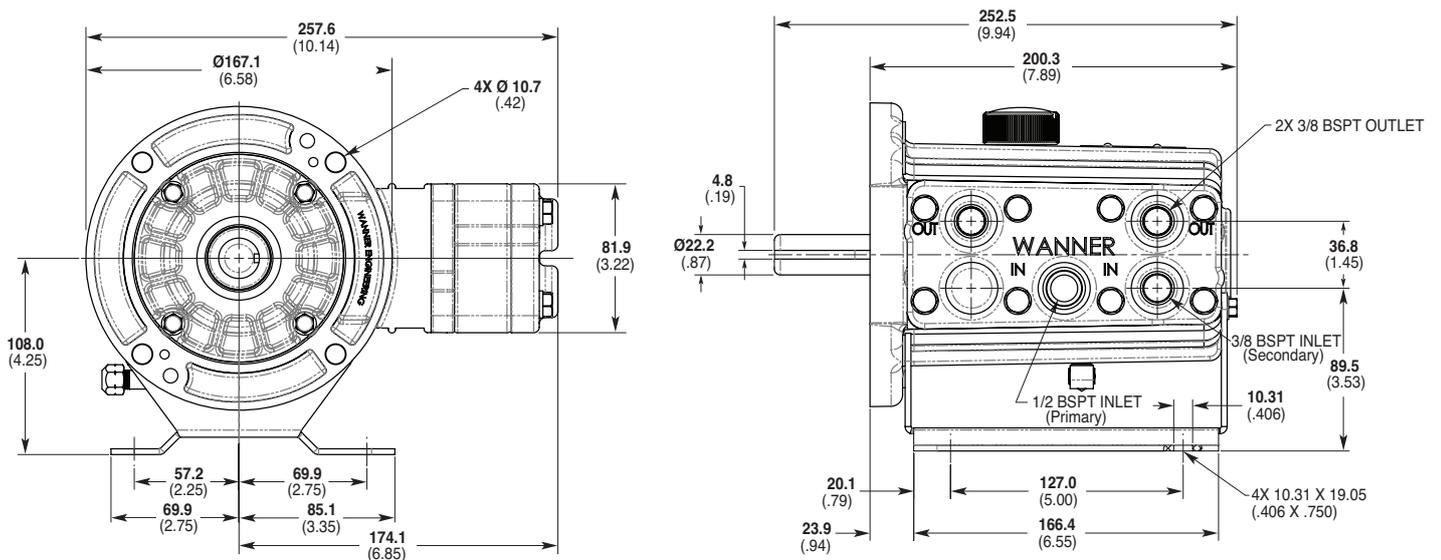
# G03 Series Representative Drawings

## G13 Models with Metallic Pump Head mm (Inches)



\* Add 9.65 mm (0.38") overall length where shown for manifold cover plate on non-metallic models and 5.08 mm (0.20") for bolt heads attaching the plate.

## G03 Models with Metallic Pump Head mm (Inches)



\* Add 9.65 mm (0.38") overall length where shown for manifold cover plate on non-metallic models and 5.08 mm (0.20") for bolt heads attaching the plate.

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

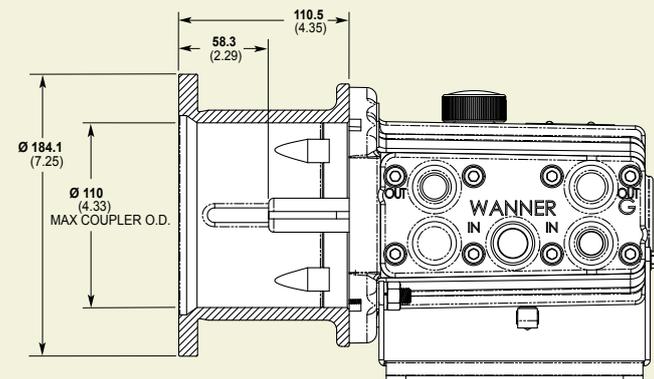
# G03 Series **Adapters/Valves**

## Pump/Motor Adapter mm (Inches)

### Part Number: **A04-003-1202**

Must be ordered separately for G03 models for use with IEC 80 - 90 frame motors, B5 flange.

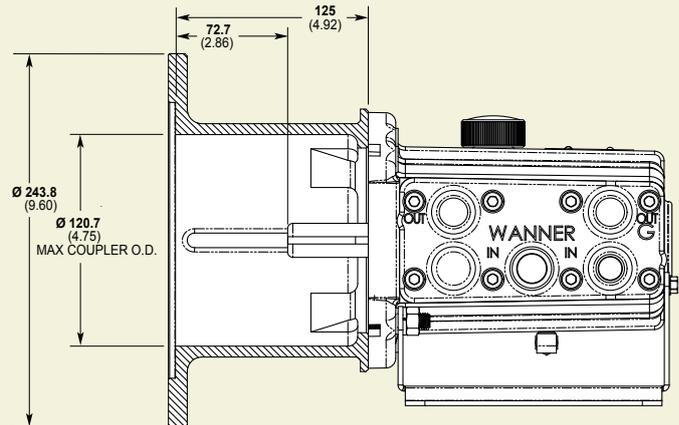
*NEMA adapter available - consult factory.*



### Part Number: **A04-004-1202**

Must be ordered separately for G03 models for use with IEC 100 - 112 frame motors, B5 flange.

*NEMA adapter available - consult factory.*



## Valve Selection

A Hydra-Cell G03 pumping system uses a C46 Pressure Regulating Valve.



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

# G03 Series **How to Order**

## Ordering Information

<b>1</b> <b>G</b>	<b>2</b>	<b>3</b> <b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
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A complete G03 Series Model Number contains 12 digits including 10 customer-specified design and materials options, for example: G03XKSTHFECA.

Digit	Order Code	Description
<b>1-3</b>		<b>Pump Configuration</b>
	<b>G03</b>	Shaft-driven (BSPT Ports)*
	<b>G13</b>	Close-coupled to IEC 90 footed motor (BSPT Ports) *Pump/motor adapters ordered separately. See previous page.
<b>4</b>		<b>Hydraulic End Cam</b>
	<b>X</b>	Max 9.9 l/min (2.6 gpm) @ 1450 rpm
	<b>E</b>	Max 6.8 l/min (1.8 gpm) @ 1450 rpm
	<b>S</b>	Max 5.6 l/min (1.5 gpm) @ 1450 rpm
	<b>B</b>	Max 3.5 l/min (0.9 gpm) @ 1450 rpm
	<b>G</b>	Max 1.5 l/min (0.4 gpm) @ 1450 rpm
<b>5</b>		<b>Pump Head Version</b>
	<b>D</b>	Standard BSPT Ports (S, B & G cams)
	<b>K</b>	Kel-Cell BSPT Ports (X & E cams)
<b>6</b>		<b>Pump Head Material</b>
	<b>B</b>	Brass
	<b>M</b>	PVDF
	<b>P</b>	Polypropylene
	<b>S</b>	316L Stainless Steel
	<b>T</b>	Hastelloy CW12MW
<b>7</b>		<b>Diaphragm &amp; O-ring Material</b>
	<b>A</b>	Aflas diaphragm/PTFE O-ring
	<b>E</b>	EPDM (requires EPDM-compatible oil - Digit 12 oil code J)
	<b>G</b>	FKM
	<b>J</b>	PTFE
	<b>P</b>	Neoprene
	<b>T</b>	Buna-N
<b>8</b>		<b>Valve Seat Material</b>
	<b>C</b>	Ceramic
	<b>D</b>	Tungsten Carbide
	<b>H</b>	17-4 Stainless Steel
	<b>S</b>	316L Stainless Steel
	<b>T</b>	Hastelloy C

Digit	Order Code	Description
<b>9</b>		<b>Valve Material</b>
	<b>C</b>	Ceramic
	<b>D</b>	Tungsten Carbide
	<b>F</b>	17-4 Stainless Steel
	<b>N</b>	Nitronic 50
	<b>T</b>	Hastelloy C
<b>10</b>		<b>Valve Springs</b>
	<b>E</b>	Elgiloy
	<b>S</b>	316L Stainless Steel
	<b>T</b>	Hastelloy C
<b>11</b>		<b>Valve Spring Retainers</b>
	<b>C</b>	Celcon
	<b>H</b>	17-7 Stainless Steel (used with metallic heads only)
	<b>M</b>	PVDF
	<b>P</b>	Polypropylene
	<b>T</b>	Hastelloy C (used with metallic heads only)
	<b>Y</b>	Nylon
<b>12</b>		<b>Hydra-Oil</b>
	<b>A</b>	10W30 standard-duty oil
	<b>G</b>	5W30 cold-temp severe-duty synthetic oil
	<b>J</b>	EPDM-compatible oil
	<b>K</b>	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®

## Seal-less Pumps

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