

# M03 PRO SERIES

Maximum Flow Rate: 3.1 gpm (11.7 l/min)

Maximum Pressure: 1200 psi (83 bar) for Metallic Pump Head  
350 psi (24 bar) for Non-metallic Pump Head

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

UK  
CA CE*M03 close-coupled (hollow shaft)  
with Brass pump head.*

### A higher standard of pump performance and efficiency.

- Seal-less design API 674 pumps that also exceed API 675 standards for accuracy, linearity and repeatability.
- True positive displacement pumping action achieves overall efficiency of >90%, targeting improvements at lower speeds and higher pressures.
- No mechanical dynamic seals, packing, or cups to leak, wear or replace – reduces maintenance, costs and downtime.
- Pumped liquid is 100% contained – prevents degradation, contamination and environmental risks.
- Patented hydraulic oil management system protects diaphragms under closed or restricted inlet conditions.
- Can run dry indefinitely without damage to the pump.
- Reliably handles a wide range of viscosities and shear sensitivities, corrosive liquids, abrasives, slurries and particulates.
- Reduced ownership costs in acquisition, operation, service, maintenance, and energy use.

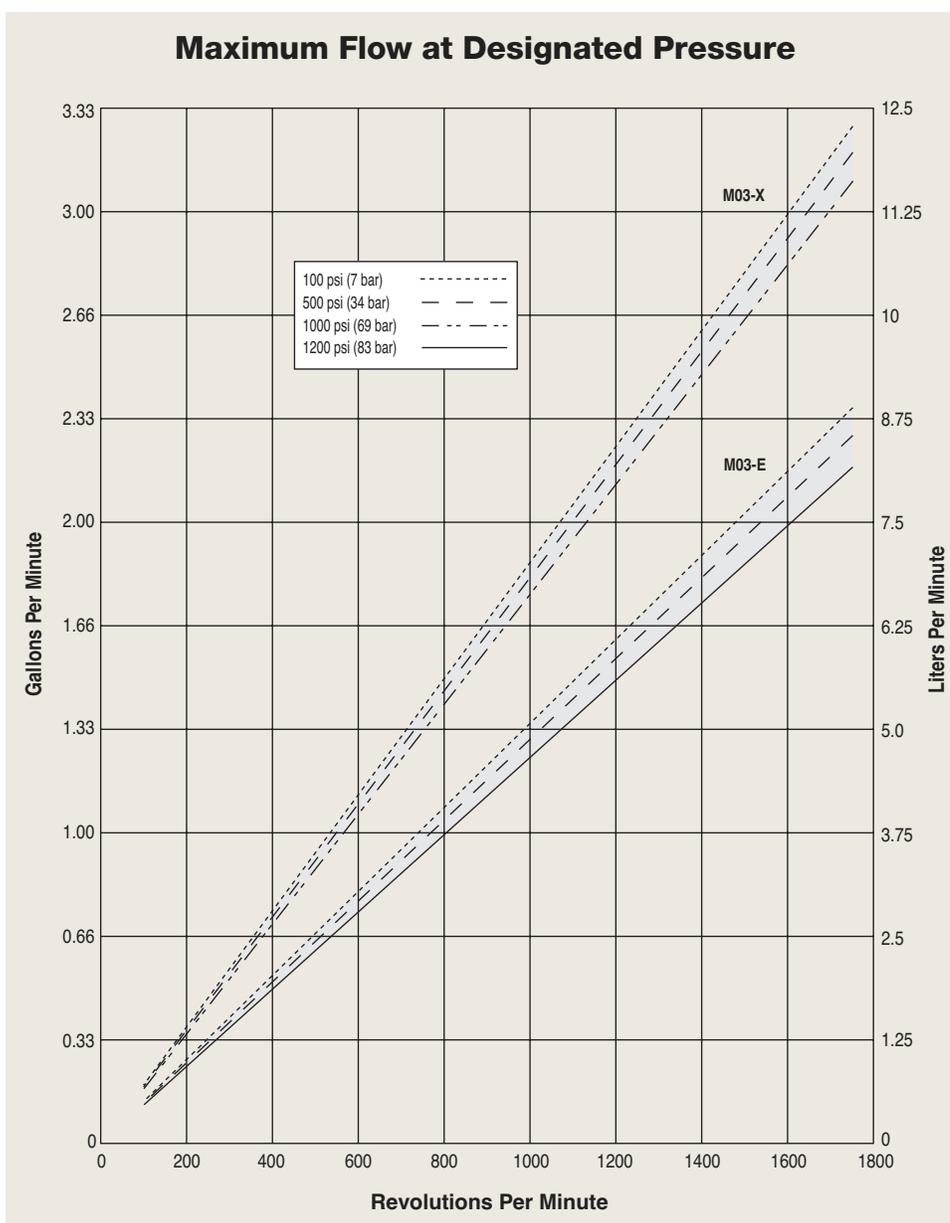


# M03 Pro Series | Performance

## Capacities

Model	Max. Input rpm	Max. Flow Capacities @1000 psi (69 bar)		Max. Flow Capacities @1200 psi (83 bar)		Max. Inlet Pressure		Max. Discharge Pressure					
		gpm	l/min	gpm	l/min	psi	bar	Metallic Heads psi	bar	Non-metallic Heads Polypropylene psi	bar	PVDF psi	bar
M03-X	1750	3.1	11.7	–	–	250	17	1000	69	250	17	350	24
M03-E	1750	2.2	8.3	2.1	8.1	250	17	1200	83	250	17	350	24

Performance and specification ratings apply to M03 Kel-Cell and D03 Shaft-driven configurations unless specifically noted otherwise.



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

# M03 Pro Series | Specifications

## Flow Capacities @1000 psi (69 bar)

Model	rpm	gpm	l/min
M03-X	1750	3.10	11.73
M03-E	1750	2.18	8.25

## Delivery @1000 psi (69 bar)

Model	gal/rev	liters/rev
M03-X	0.0018	0.0067
M03-E	0.0013	0.0047

## Delivery @1200 psi (83 bar)

Model	gal/rev	liters/rev
M03-E	0.0012	0.0046

## Maximum Discharge Pressure

Metallic Heads:	M03-X to 1000 psi (69 bar) M03-E to 1200 psi (83 bar)
Non-metallic Heads:	250 psi (17 bar) Polypropylene 350 psi (24 bar) PVDF

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

## Maximum Solids Size 200 microns

## Inlet Port

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

## Discharge Port 3/8 inch NPT

## Shaft Diameter

M03: 5/8 inch hollow shaft
D03: 7/8 inch (22.2 mm)

## Calculating Required Power

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

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

### 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

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

## Shaft Rotation

Reverse (bi-directional)
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## Bearings

Precision ball bearings
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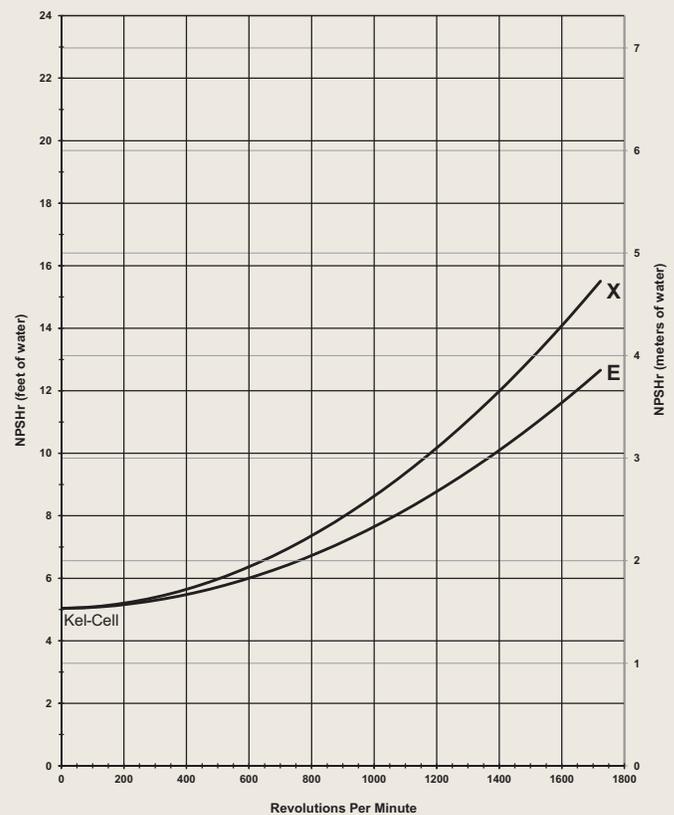
## Oil Capacity

1.0 US quart (0.95 liters)
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## Weight

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

## Net Positive Suction Head (NPSHr)



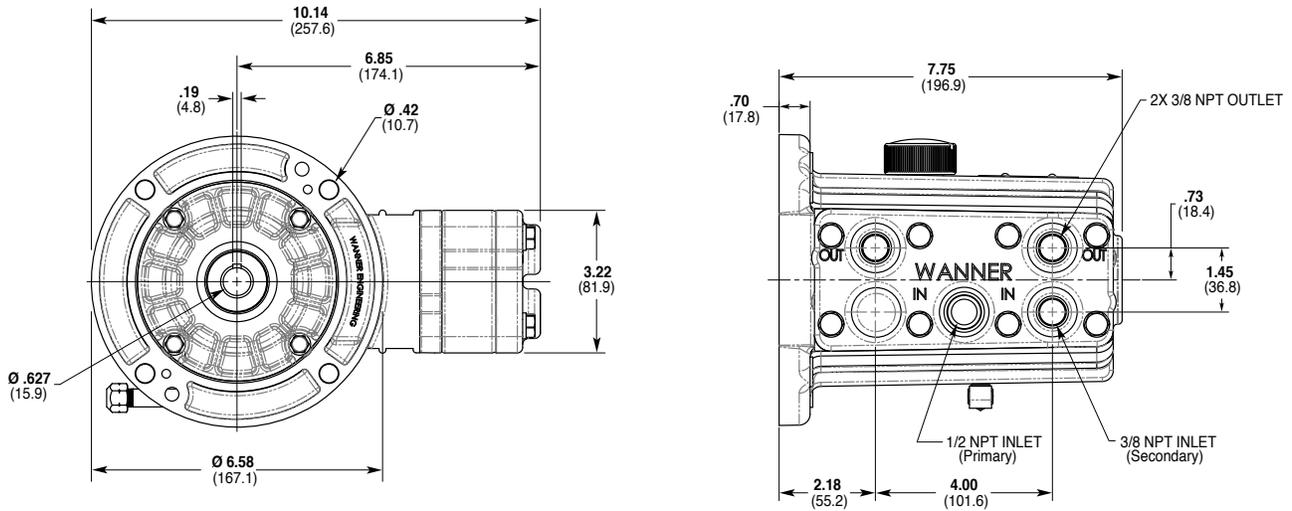
## Suction Lift

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 Product Manual. Compare those calculations to the NPSHr curves above.

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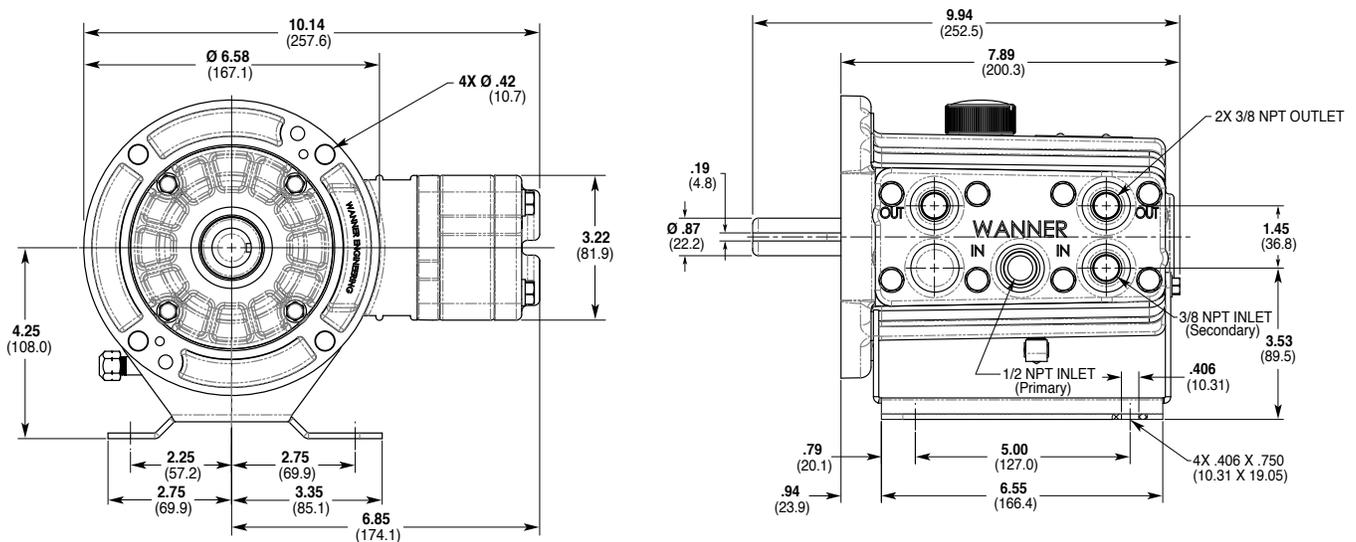
# M03 Pro Series | Representative Drawings

## M03 Models with Metallic Pump Head Inches (mm)



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

## D03 Models with Metallic Pump Head Inches (mm)



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

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

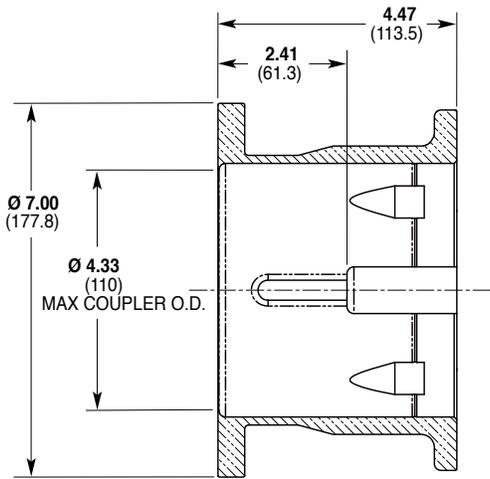
# M03 Pro Series | Adapters / Valves

## Pump/Motor Adapter Inches (mm)

### Part Number: A04-001-1202

Must be ordered separately for D03 models for use with 56C, 143TC and 145TC frame motors.

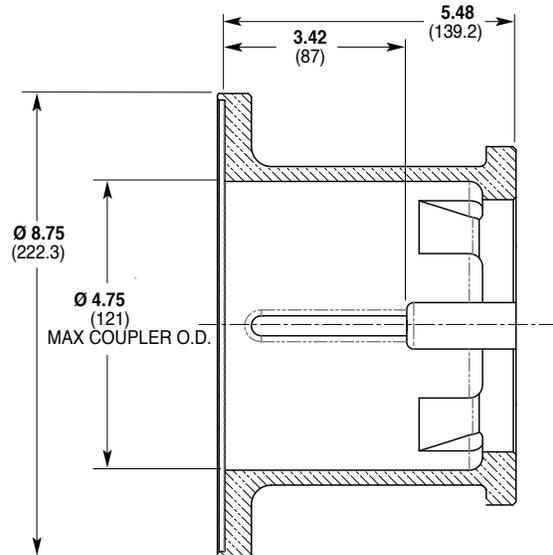
*Metric adapter available - consult factory.*



### Part Number: A04-002-1202

Must be ordered separately for D03 models for use with 182TC, 184TC, 213TC and 215TC frame motors.

*Metric adapter available - consult factory.*



## Valve Selection

A Hydra-Cell M03/D03 pumping system uses a **C46 Pressure Regulating Valve**.



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

# M03 Pro Series | Options

## 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



*M03 close-coupled (hollow shaft) with Brass pump head.*



*M03 close-coupled (hollow shaft) with Polypropylene pump head.*



*D03 external shaft-driven with 316L Stainless Steel pump head.*

# M03 Pro Series | How to Order

## Ordering Information

A complete M03 Series Model Number contains 12 digits including 9 customer-specified design and materials options, for example: M03XKBTHECA.

1	2	3	4	5	6	7	8	9	10	11	12
	0	3		K							

Digit	Order Code	Description
1-3		<b>Pump Configuration</b>
	D03	Shaft-driven (NPT Ports)*
	M03	Close-coupled to NEMA 56C footed motor (NPT Ports)
* Pump/motor adapters ordered separately. See page 5.		
4		<b>Hydraulic End Cam</b>
	X	Max 3.1 gpm (11.7 l/min) @ 1750 rpm
	E	Max 2.2 gpm (8.3 l/min) @ 1750 rpm
5		<b>Pump Head Version</b>
	K	Kel-Cell
6		<b>Pump Head Material</b>
	B	Brass
	M	PVDF
	P	Polypropylene
	S	316L Stainless Steel
	T	Hastelloy CW12MW
7		<b>Diaphragm &amp; O-ring Material</b>
	A	Aflas diaphragm/PTFE O-ring
	E	EPDM (requires EPDM-compatible oil – Digit 12 oil code J)
	G	FKM
	J	PTFE
	P	Neoprene
	T	Buna-N
8		<b>Valve Seat Material</b>
	C	Ceramic
	D	Tungsten Carbide
	H	17-4 Stainless Steel
	S	316L Stainless Steel
	T	Hastelloy C

Digit	Order Code	Description
9		<b>Valve Material</b>
	C	Ceramic
	D	Tungsten Carbide
	F	17-4 Stainless Steel
	N	Nitronic 50
	T	Hastelloy C
10		<b>Valve Springs</b>
	E	Elgiloy
	T	Hastelloy C
11		<b>Valve Spring Retainers</b>
	C	Celcon
	H	17-7 Stainless Steel (used with metallic heads only)
	M	PVDF
	P	Polypropylene
	T	Hastelloy C (used with metallic heads only)
	Y	Nylon
12		<b>Hydra-Oil</b>
	A	10W30 standard-duty oil
	G	5W30 cold-temp severe-duty synthetic oil
	J	20-wt EPDM-compatible oil
	K	Food-contact oil

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