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

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

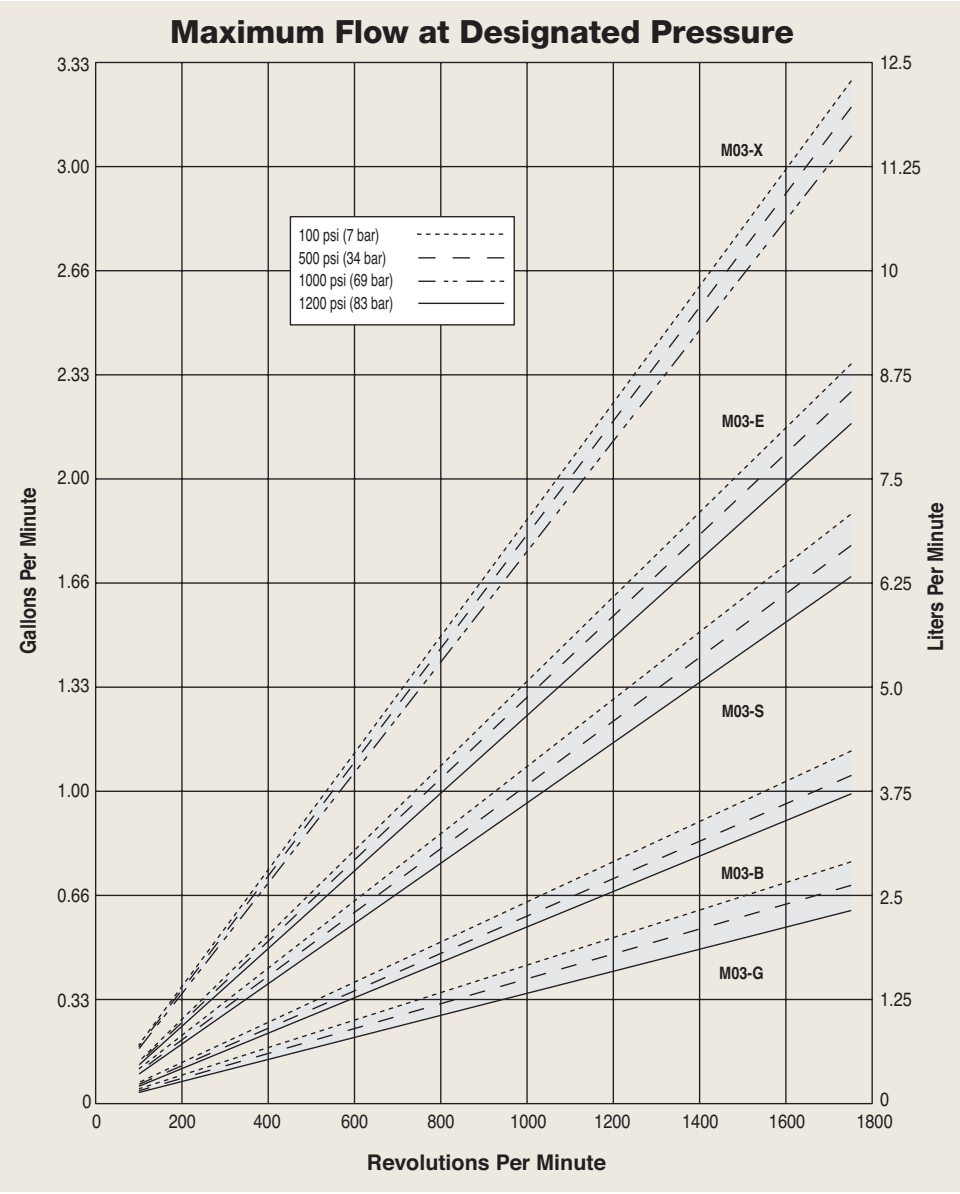
Versatile, reliable pumps for a wide range of applications.

- 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.

Capacities

Model	Max. Input rpm	Max. Flow Capacities @1000 psi (69 bar) gpm	l/min	Max. Flow Capacities @1200 psi (83 bar) gpm	l/min	Max. Inlet Pressure psi	bar	Max. Discharge Pressure 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
M03-S	1750	1.7	6.4	1.6	6.3	250	17	1200	83	250	17	350	24
M03-B	1750	1.0	3.6	0.9	3.5	250	17	1200	83	250	17	350	24
M03-G	1750	0.6	2.3	0.6	2.2	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.

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
M03-S	1750	1.69	6.40
M03-B	1750	0.96	3.63
M03-G	1750	0.62	2.35

Delivery @1200 psi (83 bar)

Model	gal/rev	liters/rev
M03-E	0.0012	0.0046
M03-S	0.0009	0.0036
M03-B	0.0005	0.0020
M03-G	0.0003	0.0013

Delivery @1000 psi (69 bar)

Model	gal/rev	liters/rev
M03-X	0.0018	0.0067
M03-E	0.0013	0.0047
M03-S	0.0010	0.0037
M03-B	0.0005	0.0021
M03-G	0.0004	0.0013

Maximum Discharge Pressure

Metallic Heads: M03-X to 1000 psi (69 bar)
M03-S, E, B 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

Calculating Required Power

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

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

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

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

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)

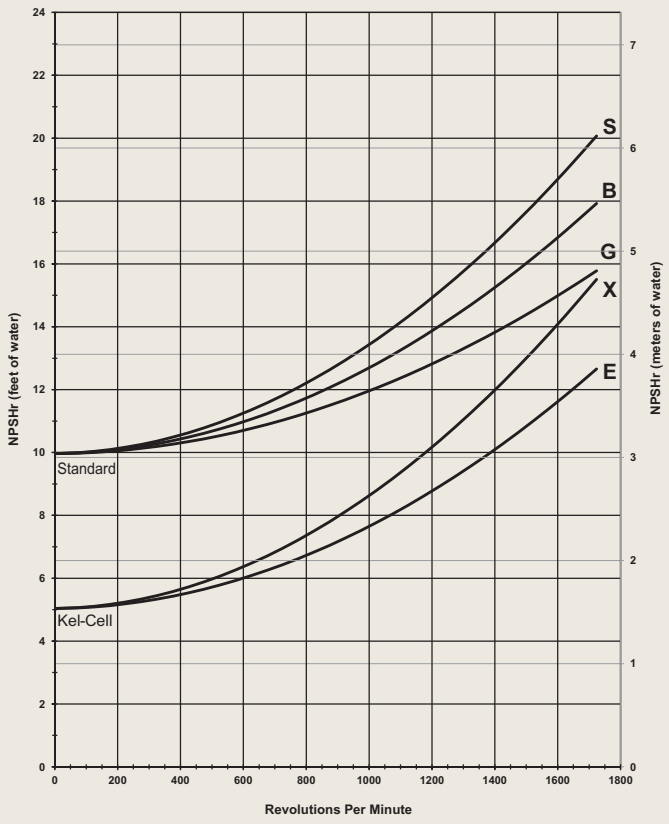
Shaft Rotation Reverse (bi-directional)

Bearings Precision ball bearings

Oil Capacity 1.0 US quart (0.95 liters)

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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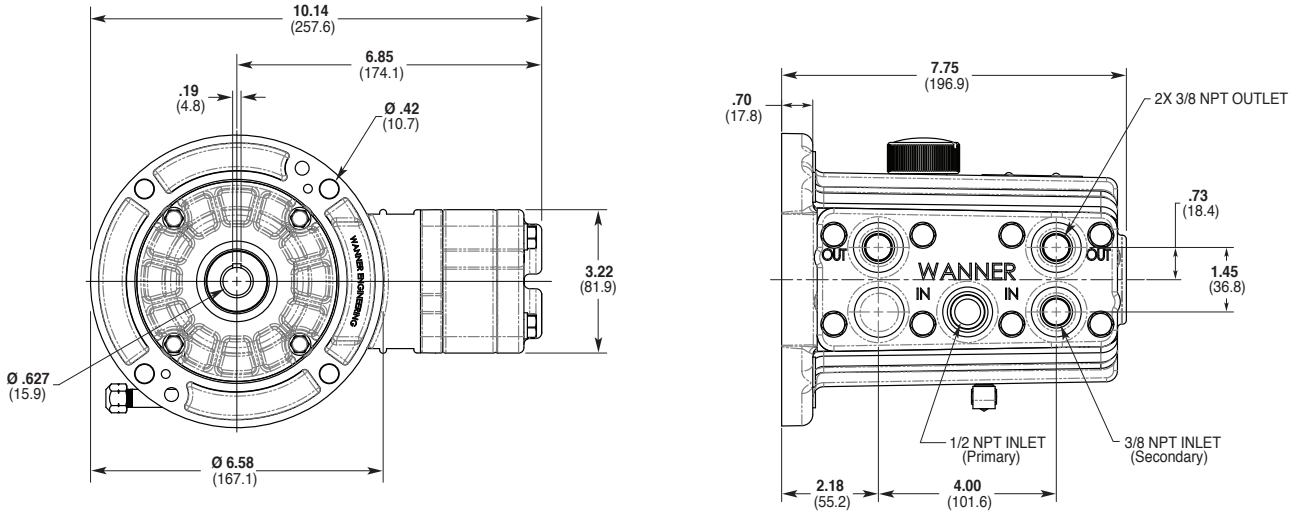
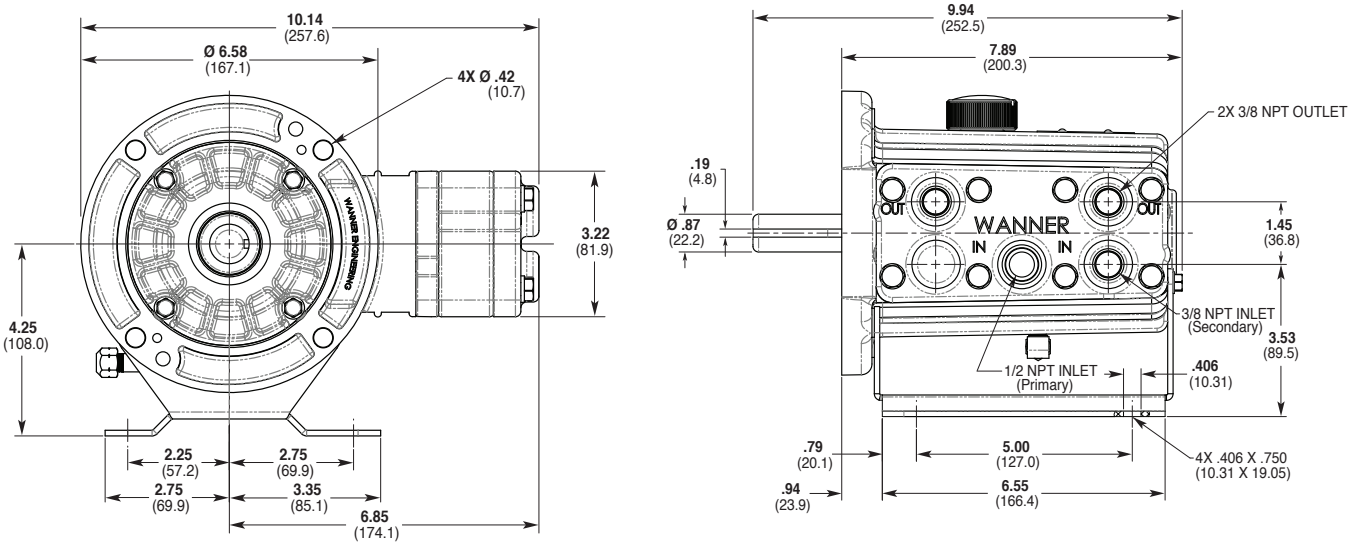
M03 Models with Metallic Pump Head Inches (mm)



** 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.*

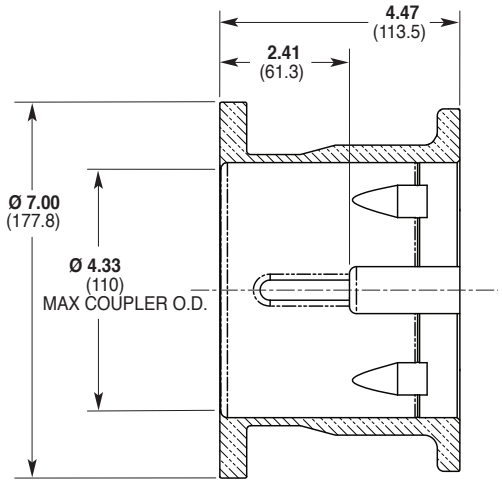
Note: Dimensions are for reference only. Contact factory for certified drawings.

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.

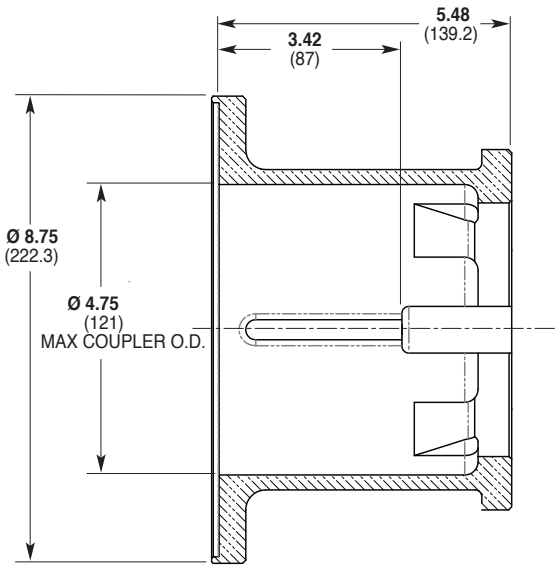
Metric adapter available - consult factory.



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.

Ordering Information

A complete M03 Series Model Number contains 12 digits including 10 customer-specified design and materials options, for example: M03XKSTHFECA.

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

Digit	Order Code	Description
1-3		**Pump Configuration**
	D03	Shaft-driven (NPT Ports)*
	M03	Close-coupled to NEMA 56C footed motor (NPT Ports) *Pump/motor adapters ordered separately. See previous page.
4		**Hydraulic End Cam**
	X	Max 3.1 gpm (11.7 l/min) @ 1750 rpm
	E	Max 2.2 gpm (8.3 l/min) @ 1750 rpm
	S	Max 1.7 gpm (6.4 l/min) @ 1750 rpm
	B	Max 1.0 gpm (3.6 l/min) @ 1750 rpm
	G	Max 0.6 gpm (2.3 l/min) @ 1750 rpm
5		**Pump Head Version**
	M	Standard NPT Ports (S, B & G cams)
	K	Kel-Cell NPT Ports (X & E cams)
6		**Pump Head Material**
	B	Brass
	M	PVDF
	P	Polypropylene
	S	316L Stainless Steel
	T	Hastelloy CW12MW
7		**Diaphragm & O-ring Material**
	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

Digit	Order Code	Description
8		**Valve Seat Material**
	H	17-4 Stainless Steel
	S	316L Stainless Steel
9		**Valve Material**
	C	Ceramic
	D	Tungsten Carbide
	F	17-4 Stainless Steel
	N	Nitronic 50
	T	Hastelloy C
10		**Valve Springs**
	E	Elgiloy
	S	316L Stainless Steel
	T	Hastelloy C
11		**Valve Spring Retainers**
	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		**Hydra-Oil**
	A	10W30 standard-duty oil
	G	5W30 cold-temp severe-duty synthetic oil
	J	EPDM-compatible oil
	K	Food-contact oil

Consult the Hydra-Cell Master Catalog for:

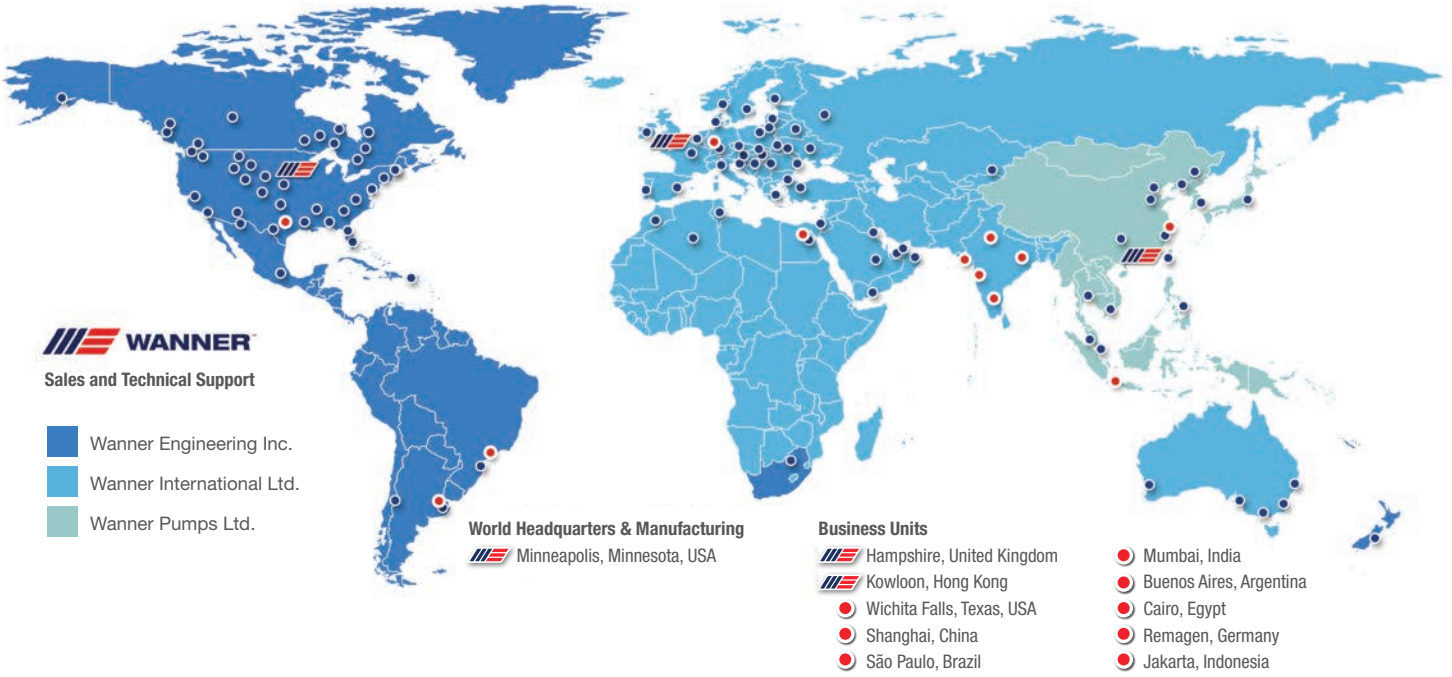
- Motors, bases, couplings and other pump accessories
- Hydra-Oil selection and specification information
- Design considerations, installation guidelines, and other technical assistance in pump selection

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.

Partners in over 70 countries



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