

M03 PRO MONO-BLOCK SERIES

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

Maximum Pressure: 1000 psi (69 bar) for Metallic Pump Head

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



UK
CA CE

*M03 Mono-Block close-coupled
(hollow shaft) with 316L Stainless
Steel 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.

WANNER™

WANNER ENGINEERING, INC.

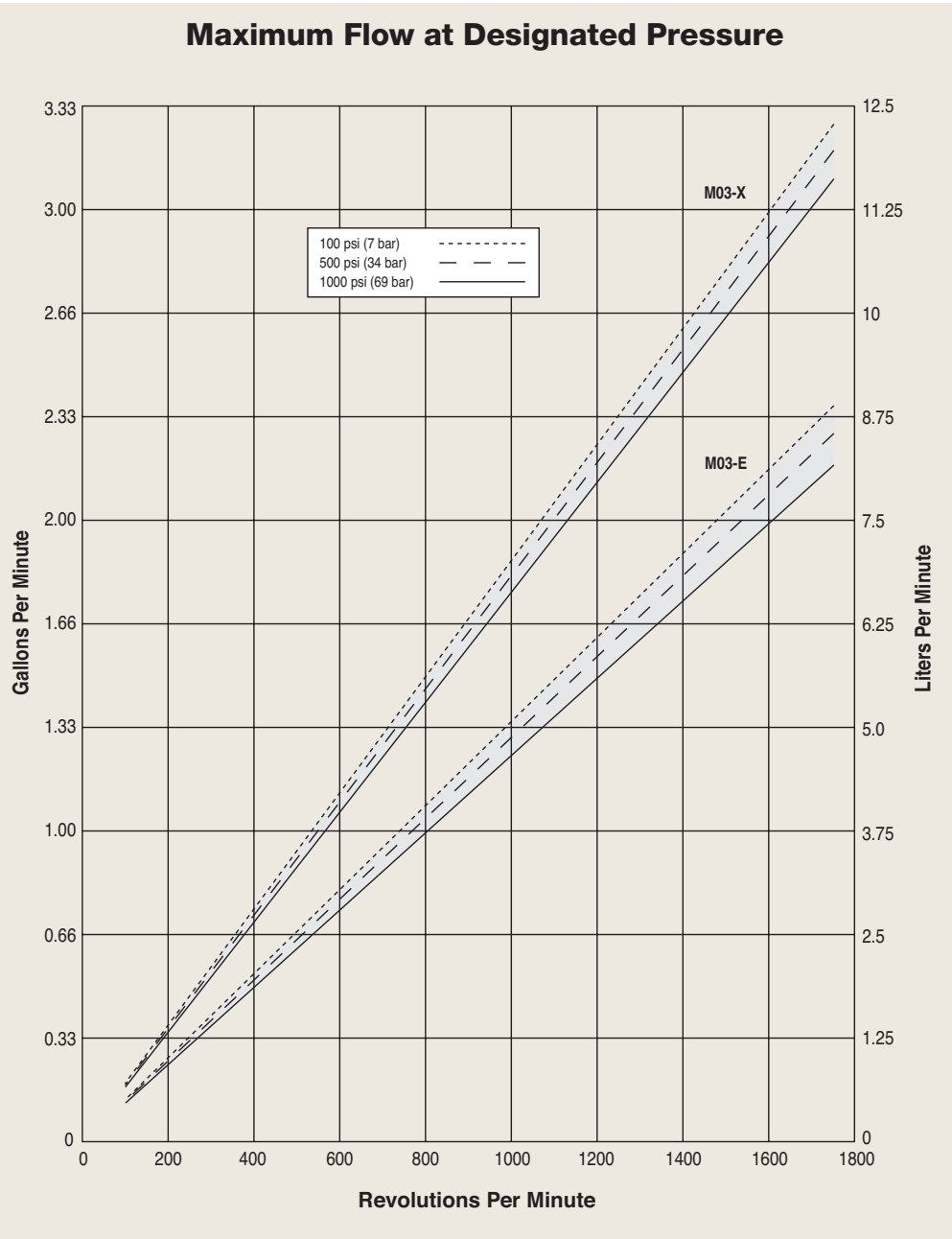
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M03 Mono-Block Pro Series | Performance

Capacities

Model	Max. Input rpm	Max. Flow Capacities @1000 psi (69 bar)		Max. Inlet Pressure		Max. Discharge Pressure Metallic Heads	
		gpm	l/min	psi	bar	psi	bar
M03-X	1750	3.1	11.7	250	17	1000	69
M03-E	1750	2.2	8.3	250	17	1000	69

Performance and specification ratings apply to M03 and D03 Mono-Block configurations unless specifically noted otherwise.



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

M03 Mono-Block 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	
Maximum Discharge Pressure			
Metallic Heads:		M/D03-X, E to 1000 psi (69 bar)	
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).	
Maximum Solids Size		200 microns	
Inlet Port		1/2 inch NPT	
Discharge Port		1/2 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)	

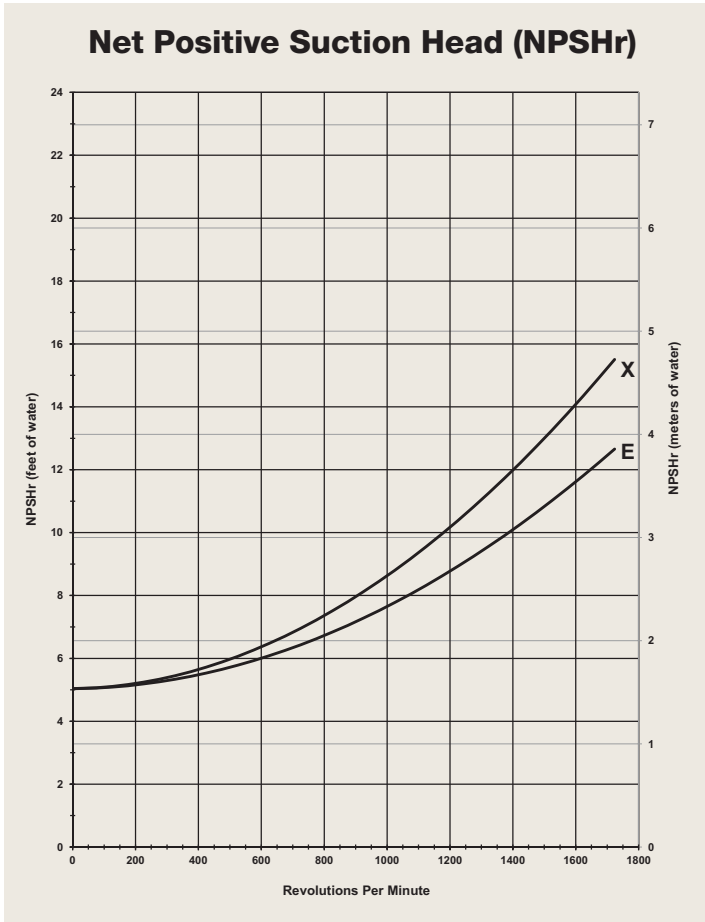
Calculating Required Power

$$\frac{6 \times \text{rpm}}{63,000} + \frac{\text{gpm} \times \text{psi}}{1,460} = \text{electric motor hp}$$
$$\frac{6 \times \text{rpm}}{84,428} + \frac{\text{l/min} \times \text{bar}}{511} = \text{electric motor kW}$$

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

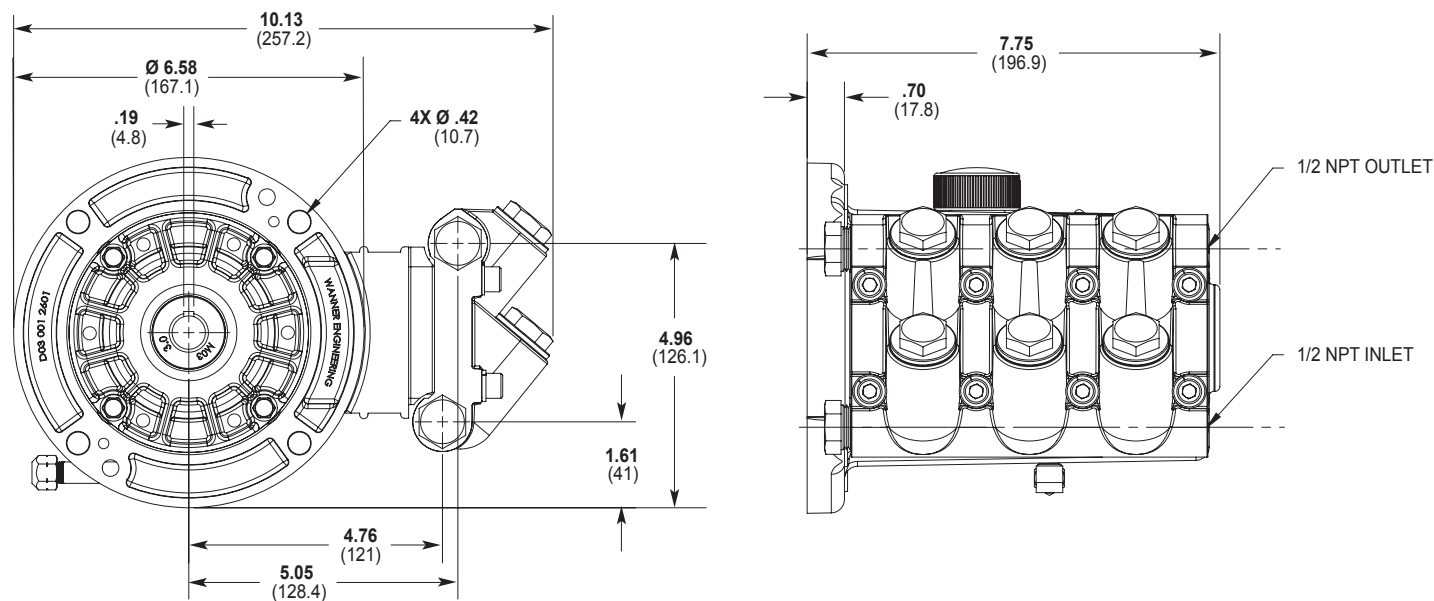
$$\frac{\text{motor pulley OD}}{\text{pump rpm}} = \frac{\text{pump pulley OD}}{\text{motor rpm}}$$



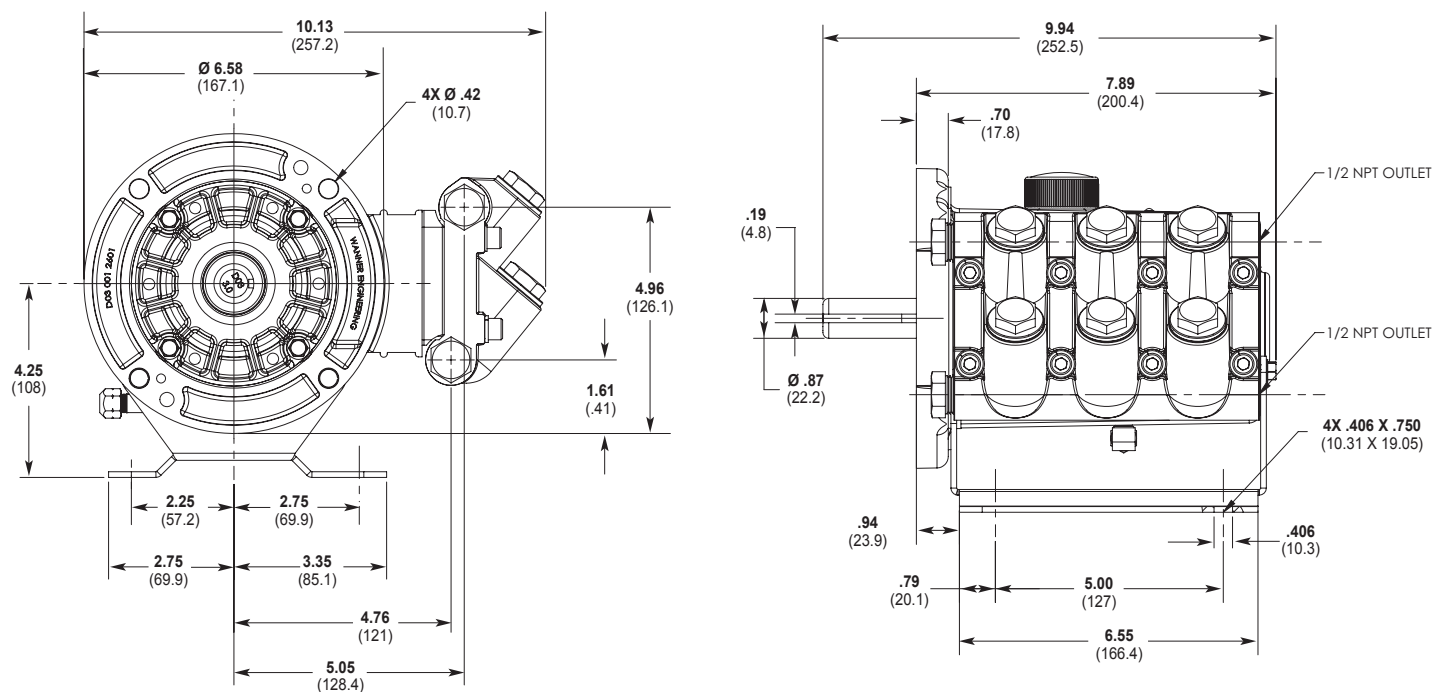
Suction Lift
Each Hydra-Cell pump has different lift capability depending on model size, cam angle, speed, and fluid characteristics. To ensure that your specific lift characteristics are met, refer to the inlet calculations regarding friction, and acceleration head losses in your Hydra-Cell Product Manual. Compare those calculations to the NPSHr curves above.

M03 Mono-Block Pro Series | Representative Drawings

M03 Models with Metallic Pump Head Inches (mm)



D03 Models with Metallic Pump Head Inches (mm)



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

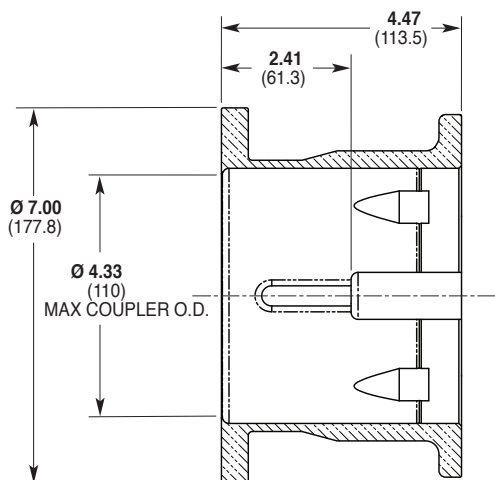
M03 Mono-Block Pro Series | Adapters / Valves

Pump/Motor Adapter Inches (mm)

Part Number: A04-001-1202

Must be ordered separately for M03 Mono-Block models for use with 56C, 143TC and 145TC frame motors.

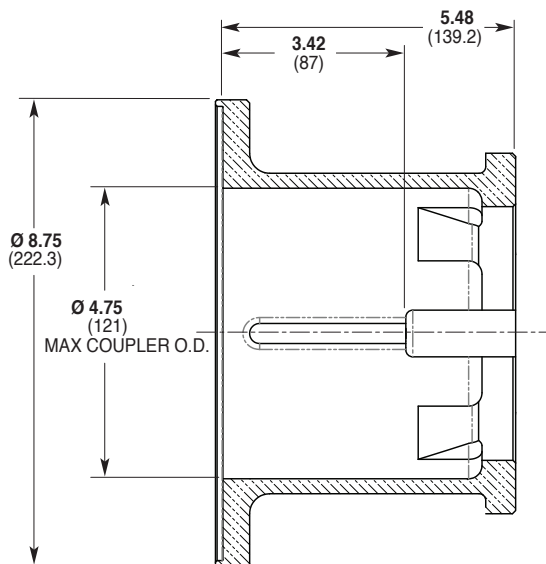
Metric adapter available - consult factory.



Part Number: A04-002-1202

Must be ordered separately for M03 Mono-Block models for use with 182TC, 184TC, 213TC and 215TC frame motors.

Metric adapter available - consult factory.



Valve Selection

A Hydra-Cell M03 Mono-Block Pro Series pumping system uses a **C46 Pressure Regulating Valve**.



M03 Mono-Block 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: M03EMBPSFEPG.

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

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
5		Pump Head Version
	M	Mono-Block, Kel-Cell NPT Ports
6		Pump Head Material
	B	Brass
	S	316L Stainless Steel
7		Diaphragm & O-ring Material
	E	EPDM (requires EPDM-compatible oil – Digit 12 oil code J)
	G	FKM
	P	Neoprene
	T	Buna-N
8		Valve Seat Material
	H	17-4 Stainless Steel
	S	316L Stainless Steel
9		Valve Material
	F	17-4 Stainless Steel
	N	Nitronic 50

Digit	Order Code	Description
10		Valve Springs
	E	Elgiloy
	S	316L Stainless Steel
11		Valve Spring Retainers
	M	PVDF
	P	Polypropylene
12		Hydra-Oil
	A	10W30 standard-duty oil
	G	5W30 cold-temp severe-duty synthetic oil
	J	EPDM-compatible oil
	K	Food-contact oil

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M03 Mono-Block 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

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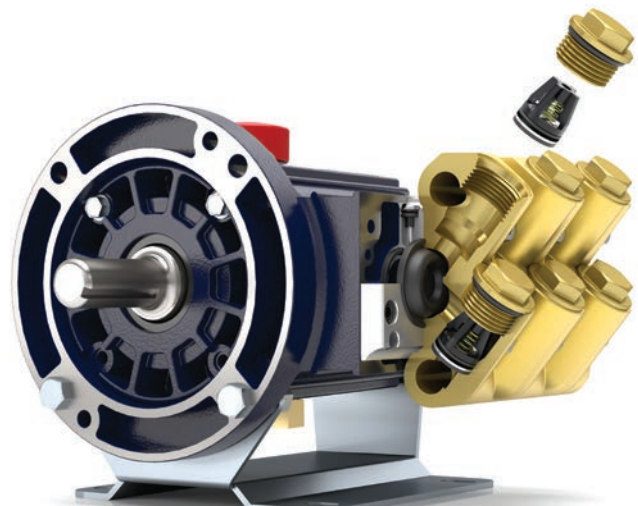
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M03 Mono-Block close-coupled (hollow shaft) with 316L Stainless Steel pump head.



D03 Mono-Block external shaft-driven with Brass pump head.



The Mono-Block pump head combines the valve plate and manifold into one component for servicing without disassembly or removal of plumbing.