



Submittal Data

Geo-Flo Magna3 Insulated Pump with Isolation Valves - 65 series



Project Name:	Representative:	
Contractor:	Engineer:	
Ref/P.O.#:	Date:	
Submitted by:	Date:	
<u>Qty:</u>	<u>Part #:</u>	<u>Description</u>

Technical Data

Circulator:	Grundfos MAGNA3 Variable Speed, ECM Motor, 30% GF PES impeller
Cabinet:	Powder-coated steel
Insulation:	CFC-free, polyurethane foam
Pump Housing:	Cast iron (optional stainless steel)
Connections:	2" NPT female (ships with two 2" FNPT isolation ball valves, attached)
Application:	Central pumping, primary-secondary, and one-pipe systems using differential pressure control. Wireless communication for primary/backup or cascade (lead/lag) control is standard. BMS controls are available. INDOOR USE ONLY.

Max. Fluid Temperature: 230°F [110°C]
 Min. Fluid Temperature: 14°F [-10°C]
 Max. Operating Press.: 175 psi [12 bar]
 Min. Operating Press.: 5.8 psi [0.4 bar]*
 Ambient Air Temp: 32 to 140°F [0 to 40°C]
 Max. Sound Pressure: ≤ 43 dB(A)

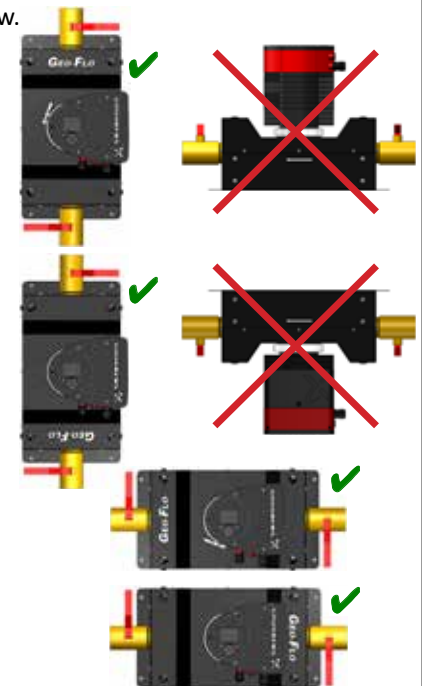
*At 167°F [75°C]. Increase the min. pressure by 1.45 psi [0.1 bar] for every 330 ft. (100m) above an altitude of 984 ft. (300m). Max installed altitude 6560 ft. (2000m).

Approved Antifreeze

Ethanol
 Methanol
 Propylene Glycol

Mounting

Always install pump with horizontal motor shaft and horizontal control as shown below.



Model Nomenclature

1-3	4 - 10	11	12	<i>Example: M3S065-150BC</i>	
M3S	065	-	150		B

1-3	Pump series:	M3S =	Grundfos Magna3 single insulated pump
		M3C =	Grundfos Magna3 single insul. pump w/ check valve
		M3H =	Grundfos Magna3 -- two pumps in series (includes floor stand)
4-10	Available models:	065-120 =	65-120 single head, 2" ball isol. valves, 2" NPT connections
		065-150 =	65-150 single head, 2" ball isol. valves, 2" NPT connections
11	Voltage:	A =	115/1/60 (65-120 only)
		B =	208-230/1/60 (all models)
		C =	Standard product (cast iron volute), factory insulated cabinet
12	Standard/Special:	N =	Stainless steel volute, factory insulated cabinet
		- =	Engineering special (dash, followed by special code)

Note: Use model M3C for two pumps in primary/backup or cascade mode. Model 65-150 is also available as a dual head pump (see submittal data for M3D065-150).

Electrical Data

Model	Speed	Voltage / Frequency	Amps (Min. - Max.)	Watts (Min. - Max.)
065-120	Variable	115/50-60	0.36 - 6.67	21 - 772
		208-230/50-60	0.18 - 3.38	21 - 769
065-150	Variable	208-230/50-60	0.30 - 5.68	29 - 1301

Additional Motor Information: Magna3 insulated pumps use ECM motor technology. Therefore, horsepower is not shown on the submittal, as it is not pertinent to pump performance, as compared to standard pumps with variable frequency drives. Contact Geo-Flo for more information.

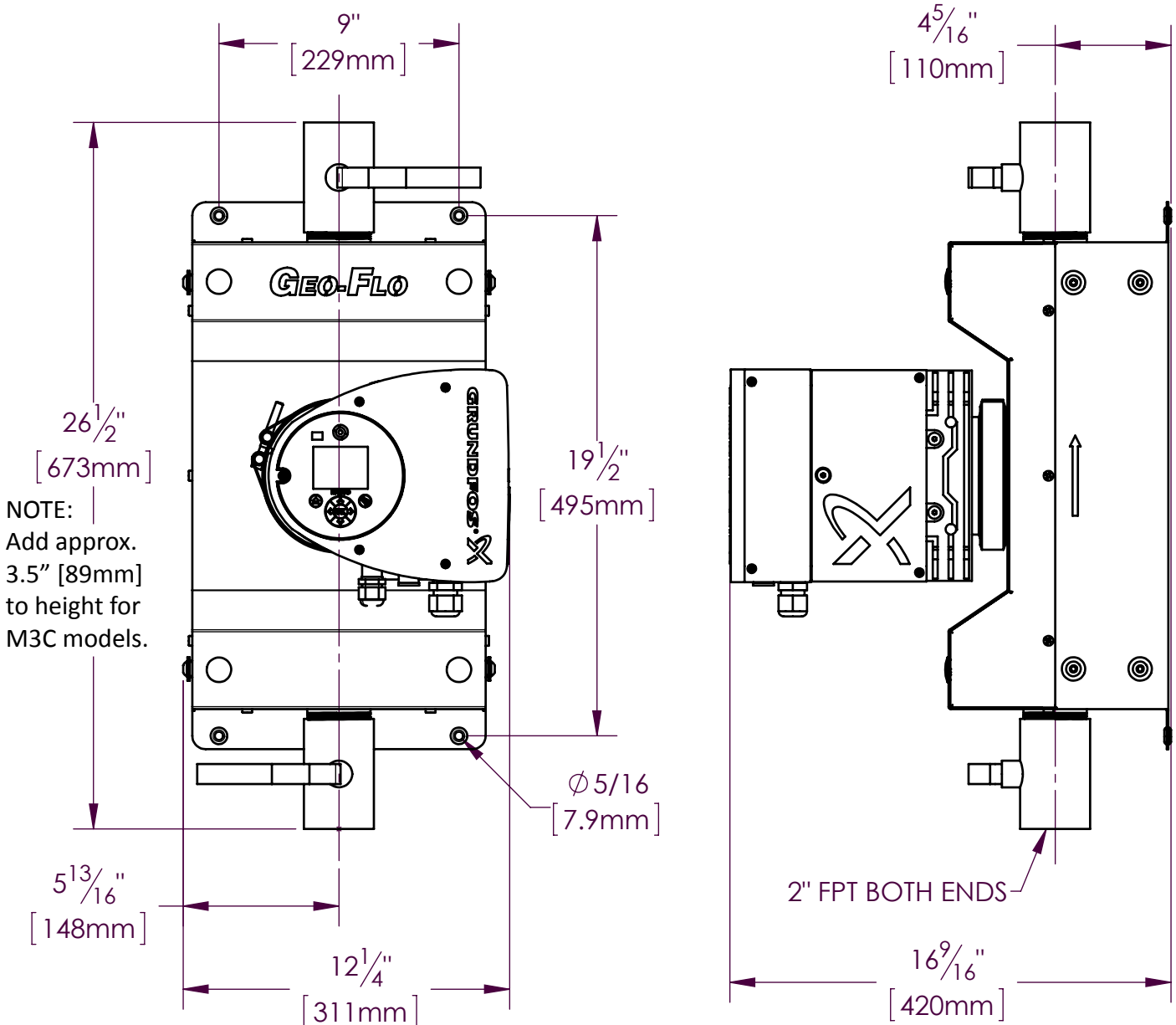
Notes:

1. Electrical data is per pump (2 for M3H series)
2. Pump motor incorporates overload protection.
3. Approvals are ETL and FCC W_RADIAL.
4. Enclosure class Type 2, IEC 34-5: X4D;
Insulation class Type F, IEC 85: F.



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Physical and Dimensional Data: MAGNA3 Insulated Pump - 65 Series



NOTE:
Add approx.
3.5" [89mm]
to height for
M3C models.

NOTES:

1. Dimensional data provided for informational purposes and is rounded to nearest 1/16".
2. Metric data is a simple conversion of imperial data and should not be considered more accurate.

Physical Data		
Model	Connections**	Shipping Weight, lbs. [kg]
M3S065-120	2" NPT Female	83 [42.2]
M3C065-120		88 [39.9]
M3S065-150		95 [43.1]
M3C065-150*		100 [45.4]

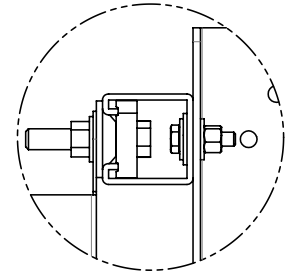
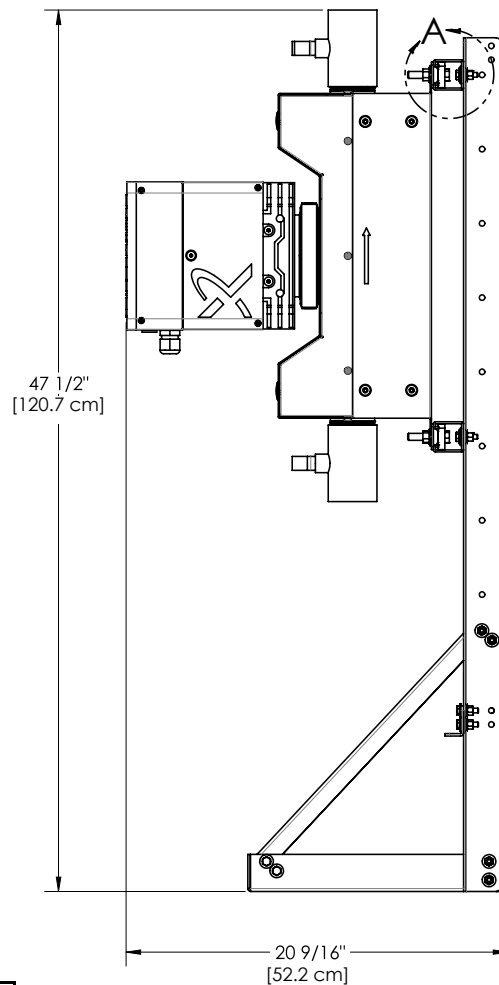
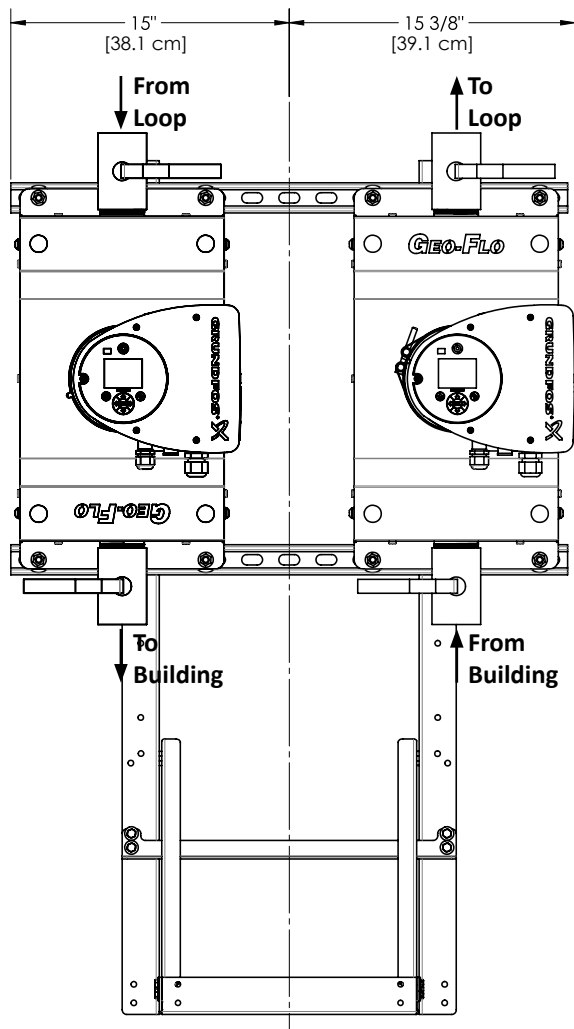
* Model 65-150 is also available in a dual head configuration. See M3D065-150 submittal.

** 2" NPT female isolation ball valves are provided with M3S and M3C insulated pumps. Field connections are 2" NPT female. M3C insulated pump also ships with a 2" brass spring check valve on the discharge of the pump.

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Physical and Dimensional Data: MAGNA3 High Head Models - 65 Series



DETAIL A

FLOOR STAND:
Powder-coated 10 ga. steel frame with stainless steel hardware.

Physical Data		
Model	Connections	Shipping Weight, lbs. [kg]
M3H065-120	2" NPT female	226 [102.5]
M3H065-150		250 [113.4]

NOTES:

1. Dimensional data provided for informational purposes and is rounded to nearest 1/16".
2. Metric data is a simple conversion of imperial data and should not be considered more accurate.

OTHER CONFIGURATIONS AVAILABLE:*

1. Horizontal flow -- left to right (**top pump**: from Loop [left connection] / to building [right connection])
2. Horizontal flow -- right to left (**top pump**: to Loop [left connection] / from building [right connection])
3. Vertical flow inline (one pump on top of the other)

*Standard configuration is shown above in dimensional drawing (push/pull configuration). All other configurations are considered engineering specials, and must be quoted as such (non-standard part #).

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MAGNA3 Inputs/Outputs, Communications, and Accessories

MAGNA3 Inputs/Outputs

Two digital inputs:	External potential-free contact Contact load: 5V, 10mA Screened (shielded) cable Loop resistance: Maximum 130Ω
Analog input:	4-20mA (load: 150Ω) 0-10VDC (load >10kΩ)
Two relay outputs:	Internal potential-free changeover contact Maximum load: 250V, 2A, AC1 Minimum load: 5VDC, 20mA Screened (shielded) cable

MAGNA3 Communications (add-on interface modules)

BACnet MS/TP
LonWorks
Modbus RTU
GENibus
Profibus DP
Grundfos Remote Management (Dongle for smart phone)



CIM Modules

MAGNA3 Accessories

Geo-Flo Part Number	Description
	Pump Enable Control
3808	Pump enable control (up to 5 units w/one insul. pump or flow center), NEMA encl.
	External Controller for Magna3 for Delta-T Control -- Note 1 (see below)
4062	UPC GEO external controller, 1-10VDC output -- Note 1
3684	10k thermistor, 1/4" NPT insertion type -- Note 2
3760	AC wall adapter for 4062 -- Note 3
3807	Barrel connector for 3760 -- Note 3
	BMS Interface Modules for Magna3 / Dongle for Grundfos GO
CIM100	LonWorks Network Interface Module
CIM200	Modbus RTU Network Interface Module
CIM300	BACnet MS/TP Network Interface Module
MI204	Dongle for iPhone5
MI301	Dongle for Android (see Grundfos catalog for compatible models)



3808: Pump Enable Control



4062: External Controller

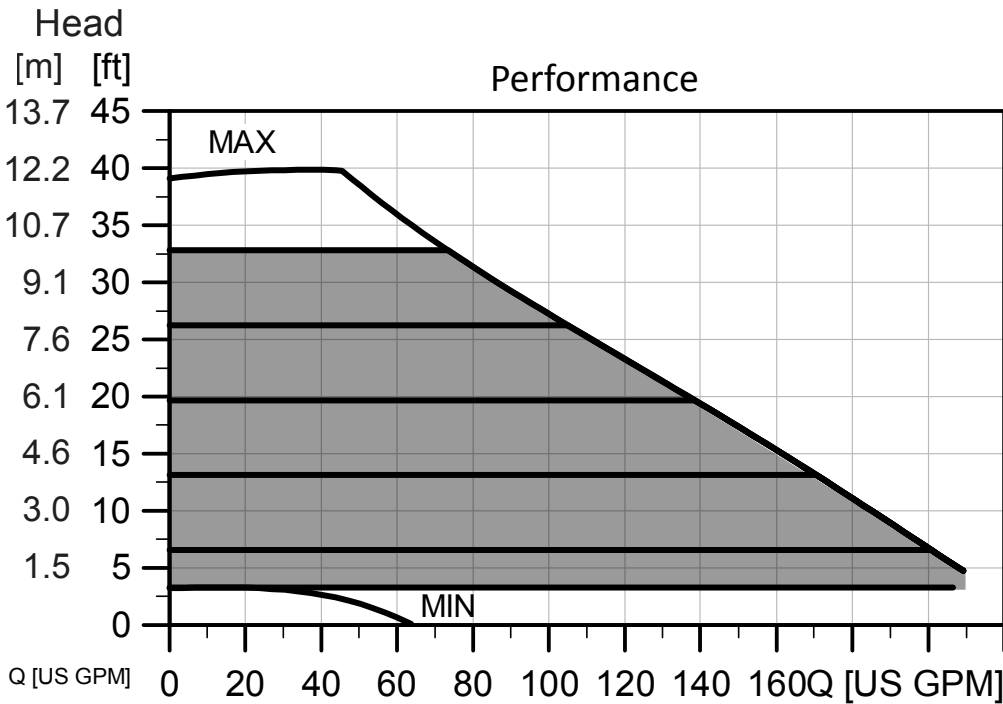
NOTES:

1. Use external controller for Magna3 Delta-T control for primary-secondary applications to provide separate heating and cooling Delta-T set points (2 required for M3H series -- settings must be identical for both pumps).
2. 4062 requires two thermistors.
3. Optional if 24VAC is available near 4062 location (e.g. from heat pump).

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Pump Performance Curves -- MAGNA3 M3S065-120, M3C065-120, & M3H065-120

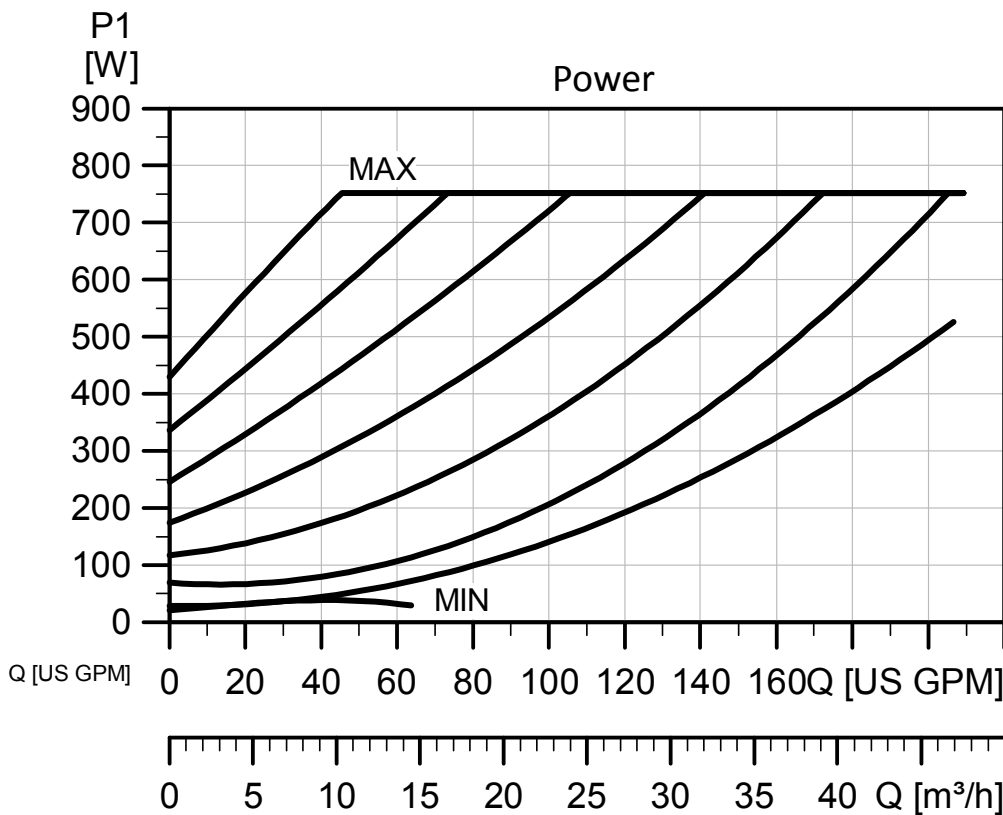


Pump Curve Usage:

1. In Constant Pressure (Differential Pressure) mode, pump operating range is the gray shaded area.
2. In Constant Curve mode, pump operates between the MIN and MAX curves.

M3H Models:

Double the head shown on the vertical axis for M3H065-120. For example, the M3H065-120 can provide approx. 55 ft. of hd. (27.5 x 2) @ 100 GPM.



M3H Models:

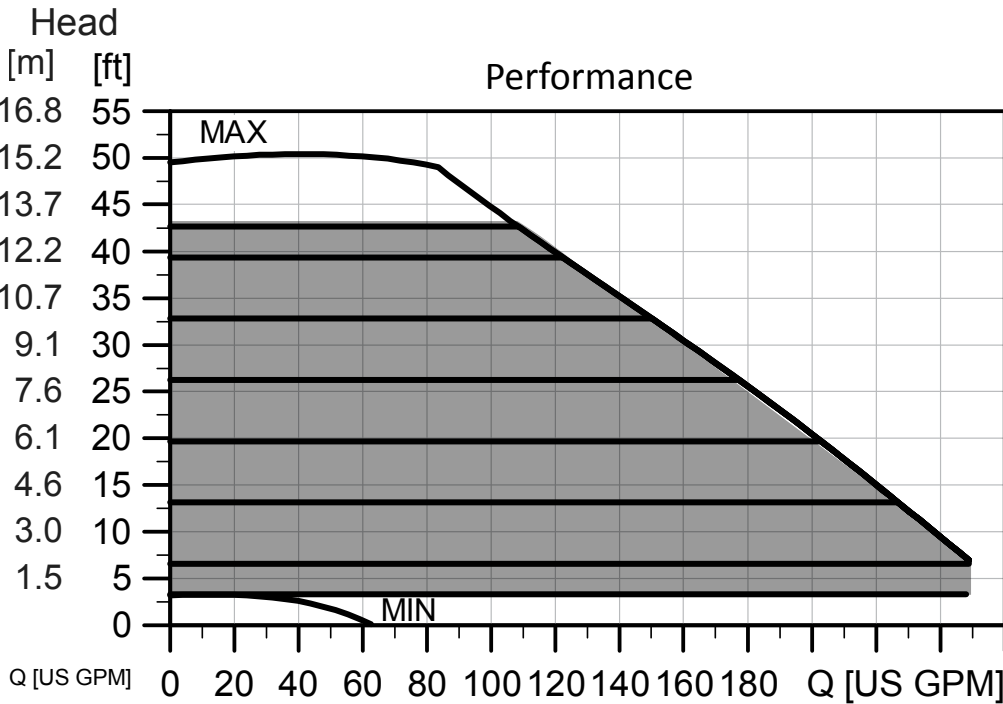
Double the Watts shown on the vertical axis for M3H065-120. For example, the max. Watts for the M3H065-120 is approx. 1500.

Curves are manufacturer's reported averages using water at 68°F [20°C].



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Pump Performance Curves -- MAGNA3 M3S065-150, M3C065-150, & M3H065-150

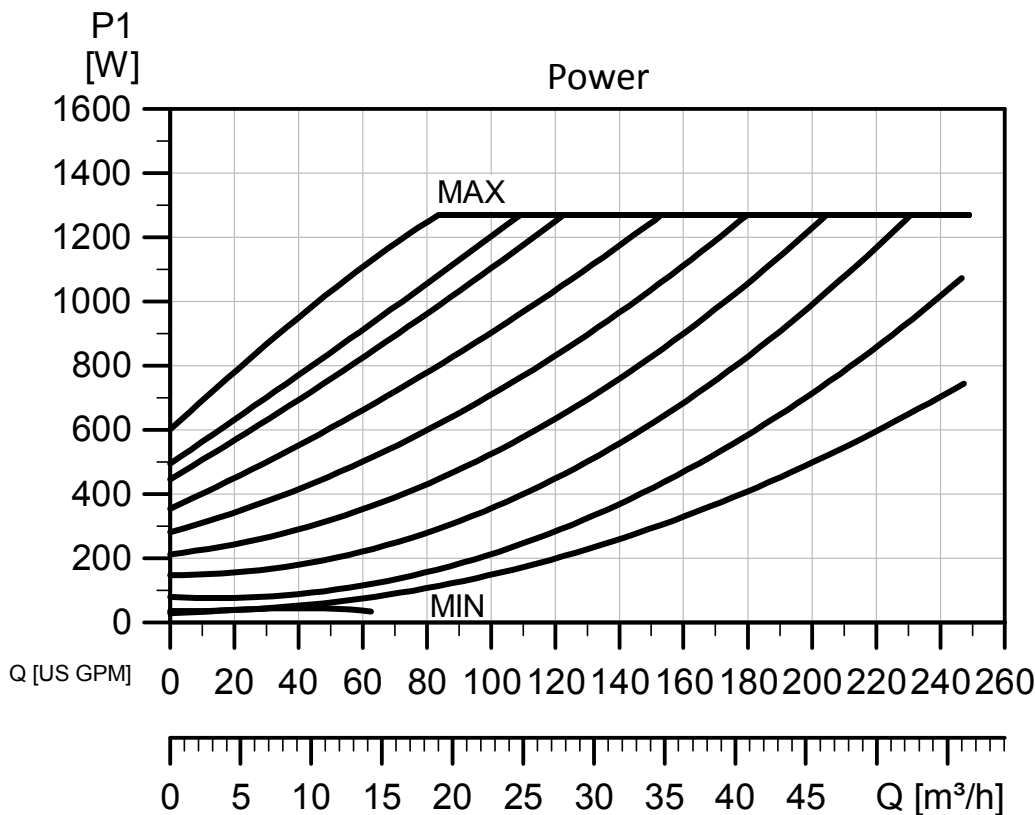


Pump Curve Usage:

1. In Constant Pressure (Differential Pressure) mode, pump operating range is the gray shaded area.
2. In Constant Curve mode, pump operates between the MIN and MAX curves.

M3H Models:

Double the head shown on the vertical axis for M3H065-150. For example, the M3H065-150 can provide approx. 80 ft. of hd. (40 x 2) @ 120 GPM.



M3H Models:

Double the Watts shown on the vertical axis for M3H065-150. For example, the max. Watts for the M3H065-150 is approx. 2520.

Curves are manufacturer's reported averages using water at 68°F [20°C].



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