



Submittal Data

Geo-Flo Magna3 Insulated Pump with Isolation Valves - 40 series



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

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:	Flo-Link XL (ships with two Flo-Link XL union x 2" FNPT ball valves)
Application:	Central pumping, primary-secondary, and one-pipe systems using built-in controls. Wireless communication for primary/backup or cascade (lead/lag) control is standard. BMS controls available.

Max. Fluid Temperature: 230°F [110°C]
Min. Fluid Temperature: 14°F [-10°C]
Max. Operating Press.: 175 psi [12 bar]
Min. Operating Press.: 1.5 psi [0.1 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. Insulated pump is designed for **indoor installation only**.

Model Nomenclature

1-3	4	11	12
M3S	040-180	B	C

Example: M3S040-180BC

1-3	Pump series:	M3S = Grundfos Magna3 single insulated pump (S)
		M3C = Grundfos Magna3 single insulated pump with check valve (C)
		M3H = Grundfos Magna3 dual insulated pumps in series - high head (H)
4-10	Available models:	040-080 Model 40-80, 2" isolation ball valves, 2" FNPT connections
		040-120 Model 40-120, 2" isolation ball valves, 2" FNPT connections
		040-180 Model 40-180, 2" isolation ball valves, 2" FNPT connections
11	Voltage:	A = 115/1/60
		B = 208-230/1/60
12	Mounting Options:	C = Standard product (cast iron volute), powder-coated steel cabinet, foam insulation, wall mounted

*Notes:

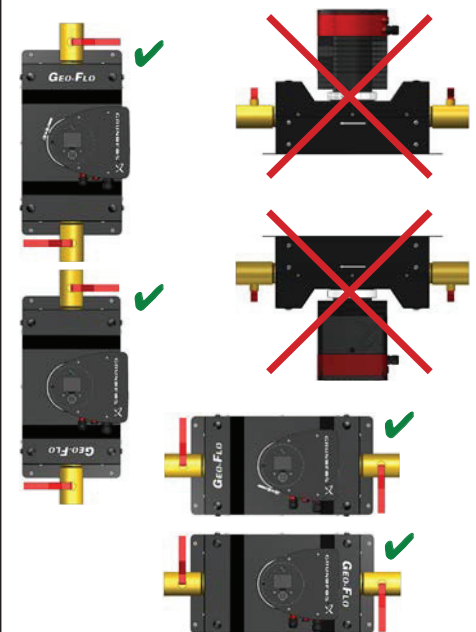
1. Use two model M3C pumps for parallel application (primary/backup or cascade mode).
2. Model M3H includes two Magna3 pumps with Flo-Link XL connection between pumps for series operation.

Electrical Data (per pump)

Model	Speed	Voltage / Frequency	Amps (Min. - Max.)	Watts (Min. - Max.)	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.
040-080	Variable	115/50-60	0.30 - 2.45	16 - 276	
		208-230/50-60	0.19 - 1.20	16 - 265	
040-120	Variable	115/50-60	0.26 - 3.88	16 - 442	
		208-230/50-60	0.19 - 1.95	16 - 440	
040-180	Variable	115/50-60	0.26 - 5.39	16 - 614	
		208-230/50-60	0.18 - 2.68	16 - 607	

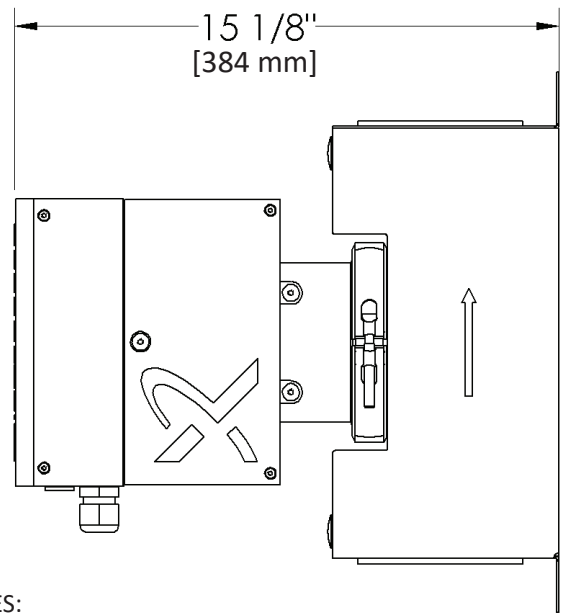
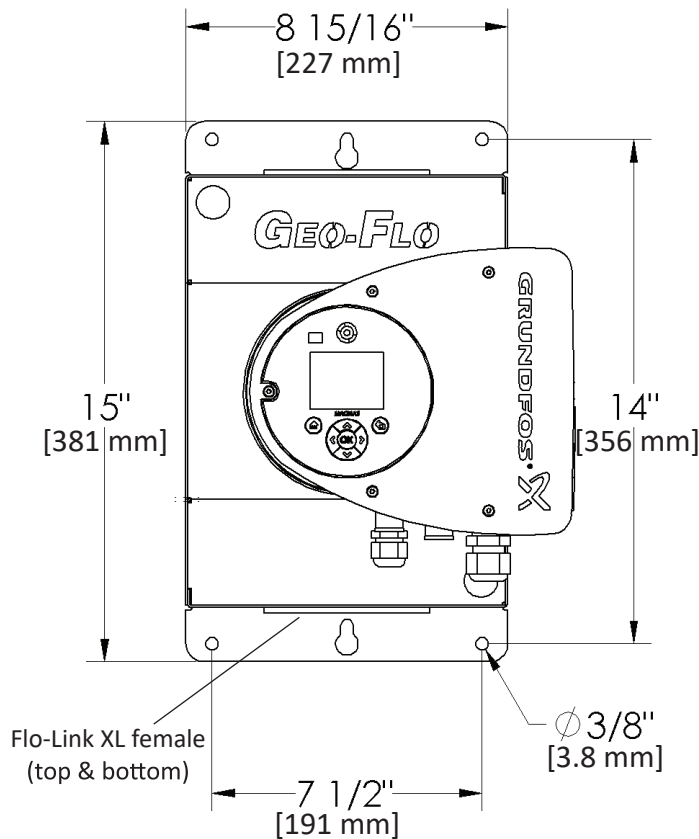
Notes:

1. Pump motor incorporates overload protection.
2. Approvals are ETL and FCC W_RADIAL.
3. Enclosure class Type 2, IEC 34-5: X4D; Insulation class Type F, IEC 85: F.



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Bedford, Indiana 47421 U.S.A.
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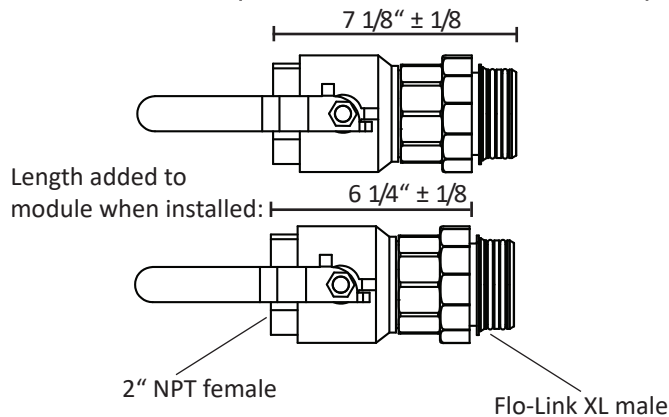
Physical and Dimensional Data: MAGNA3 Insulated Pump - 40 Series



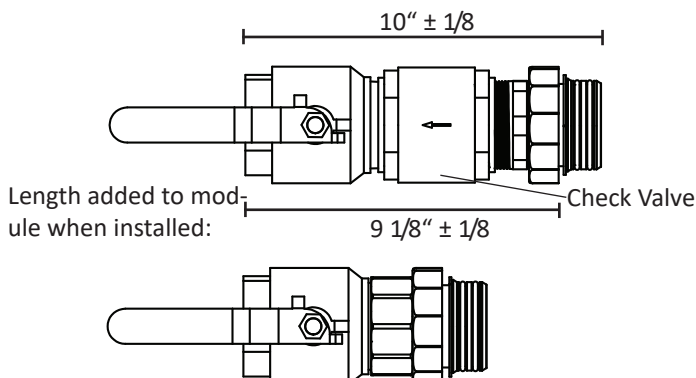
NOTES:

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.

Isolation Ball Valves (included with M3S and M3H models):



Isolation Ball Valves & Check Valve (included w/M3C models):



Physical Data		
Model	Connections*	Shipping Weight, lbs. [kg]
M3C	Flo-Link XL double O-ring	67.6 [30.7]
M3S		62.6 [28.4]
M3H		115.8 [52.5]

*Notes:

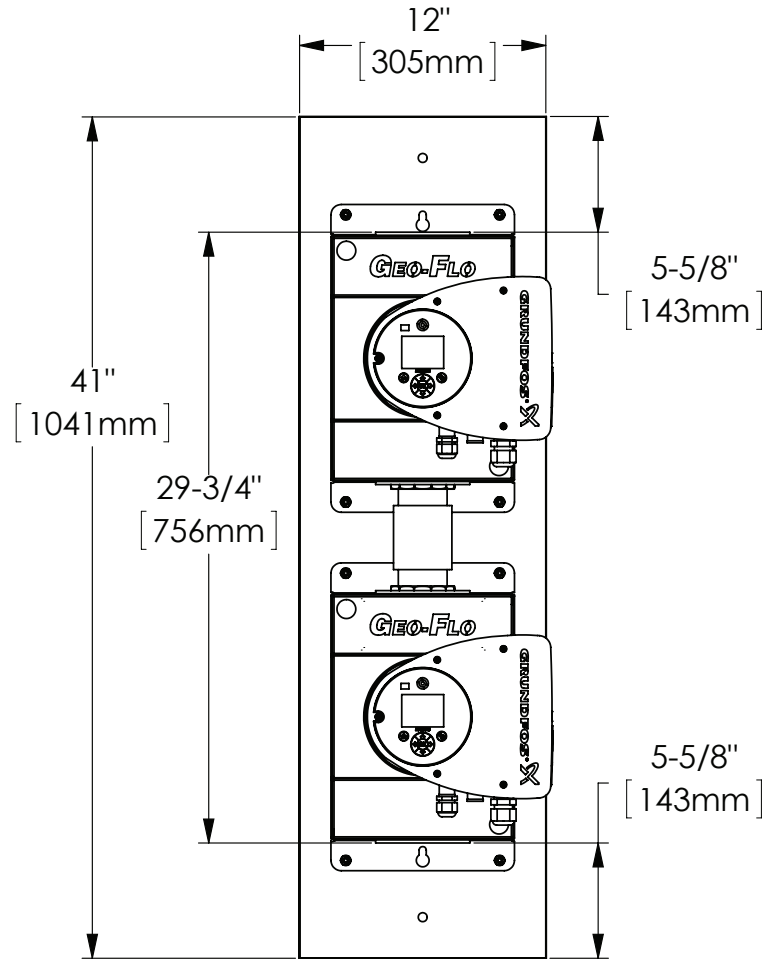
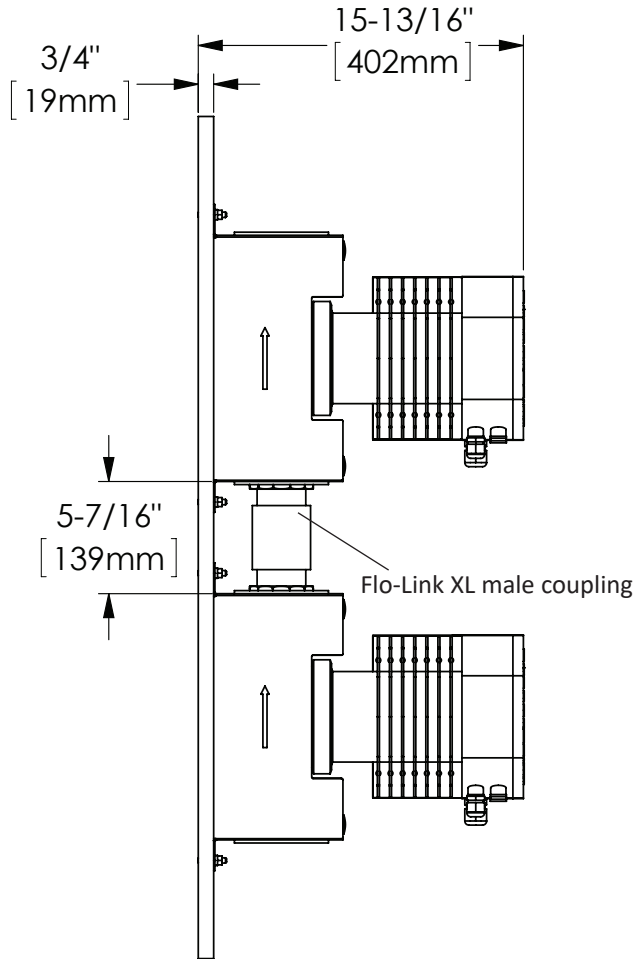
1. Flo-Link XL x 2" FNPT isolation ball valves are provided with M3C & M3S insulated pumps (see drawing at the right). Flo-Link XL fittings at the pump provide union connections. Field connections are 2" FNPT. M3C insulated pump also ships with a 2" brass spring check valve on the discharge of the pump.
2. M3H pumps include two Magna3 insulated pumps, two Flo-Link XL x 2" FNPT isolation ball valves, and one Flo-Link XL x Flo-Link XL connector that joins the two pumps in series (see drawing on next page).

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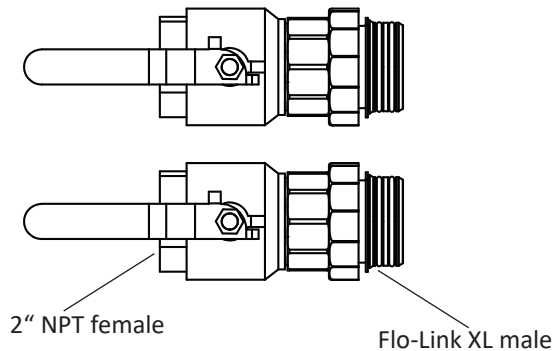
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Physical and Dimensional Data: MAGNA3 Insulated Pump - 40 Series

M3H Models (Two Pumps in Series)



Isolation Ball Valves (included with M3H models):



NOTES:

1. Overall dimensions shown on this page. See previous page for individual cabinet dimensions.
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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:

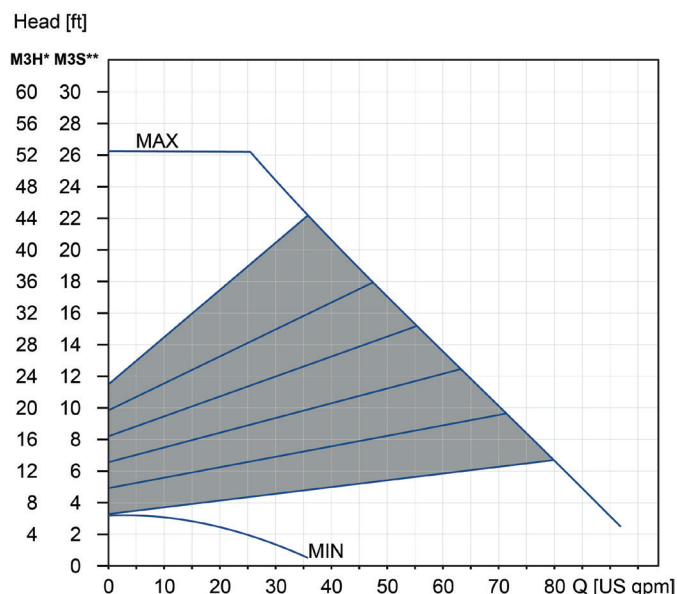
1. Use external controller for Magna3 Delta-T control for primary-secondary applications to provide separate heating and cooling Delta-T set points.
2. 4062 requires two thermistors.
3. Optional if 24VAC is not available near 4062 location.

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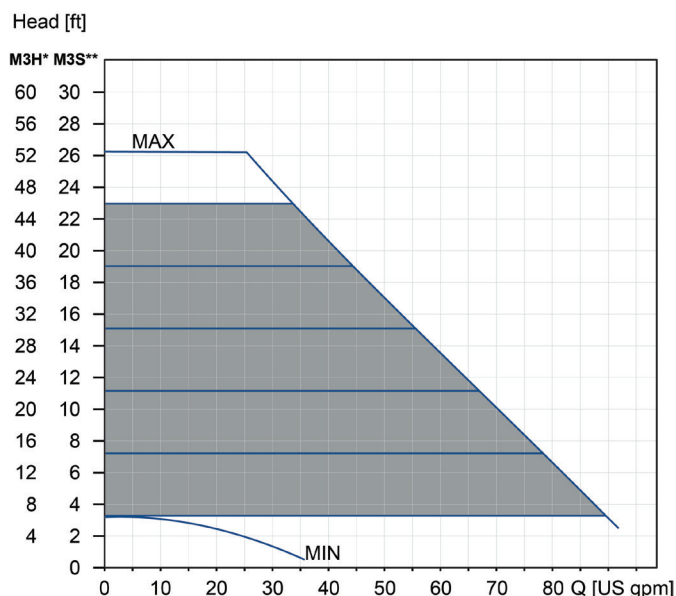
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Pump Performance Curves -- MAGNA3 M3C040-080 and M3S040-080

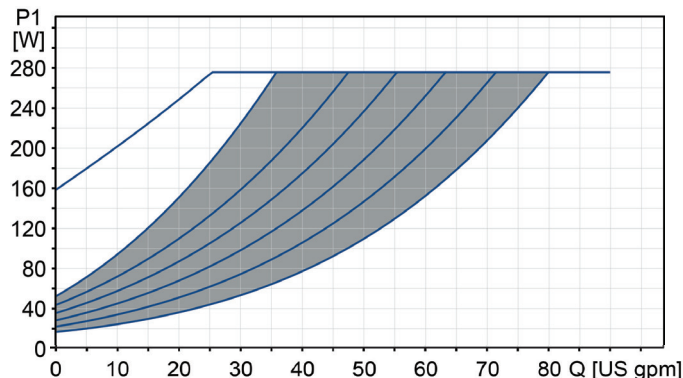
Proportional pressure (Performance)



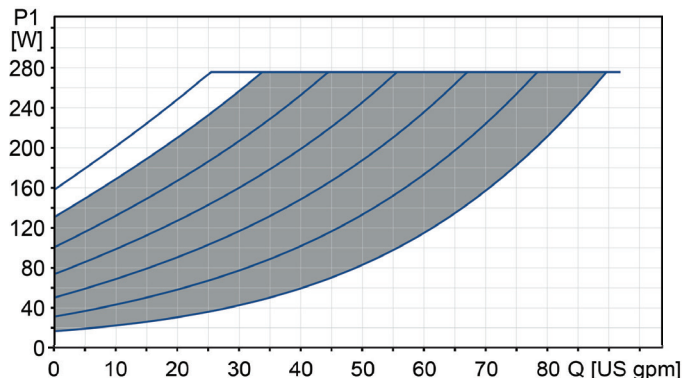
Constant Pressure (Performance)



Proportional pressure (Power) "per pump"



Constant Pressure (Power) "per pump"



Pump Curve Usage:

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

Notes:

*Two pumps in series

**Single pump or two pumps in parallel. Note: For two parallel pumps, double the flow rate for each head value.

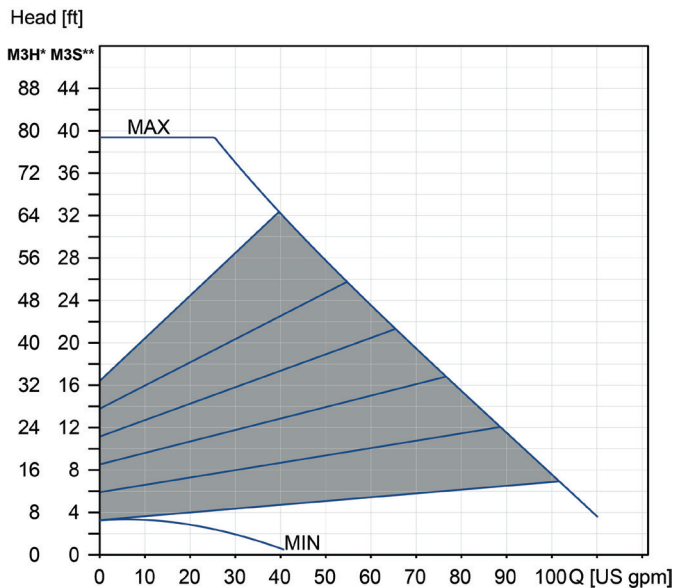
Curves are manufacturer's reported averages using water at 68°F [20°C].

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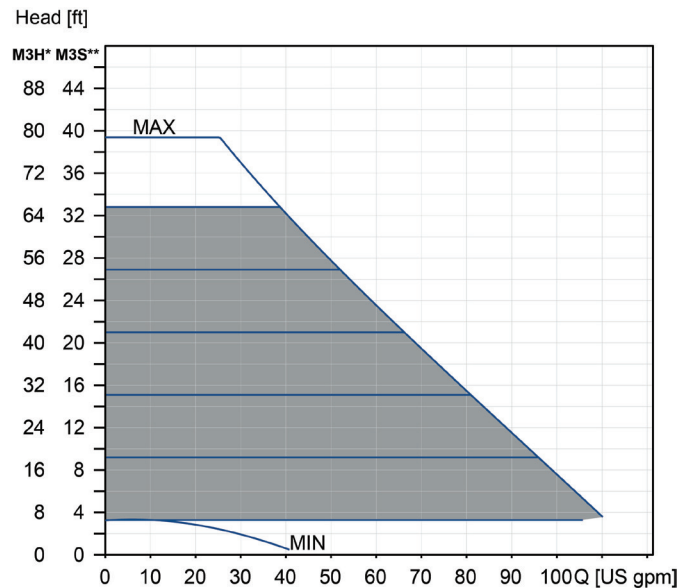
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Pump Performance Curves -- MAGNA3 M3C040-120 and M3S040-120

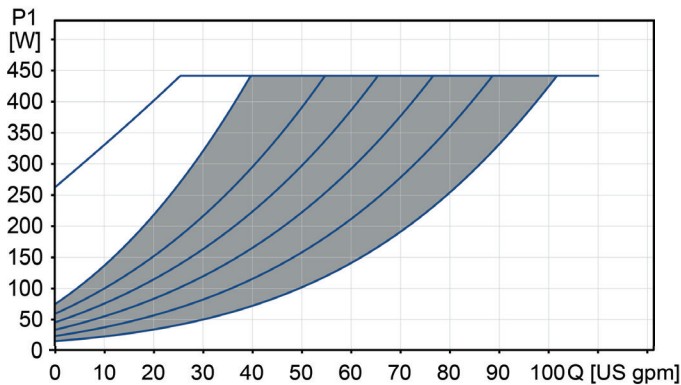
Proportional pressure (Performance)



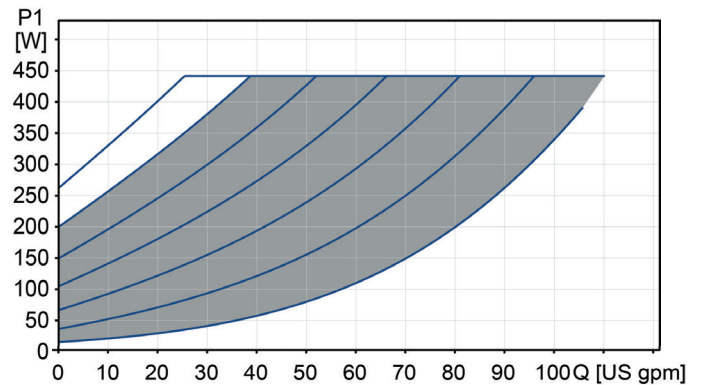
Constant Pressure (Performance)



Proportional pressure (Power) "per pump"



Constant Pressure (Power) "per pump"



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2. In Differential Pressure mode, pump operates between the MIN and MAX curves.

Notes:

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**Single pump or two pumps in parallel. Note: For two parallel pumps, double the flow rate for each head value.

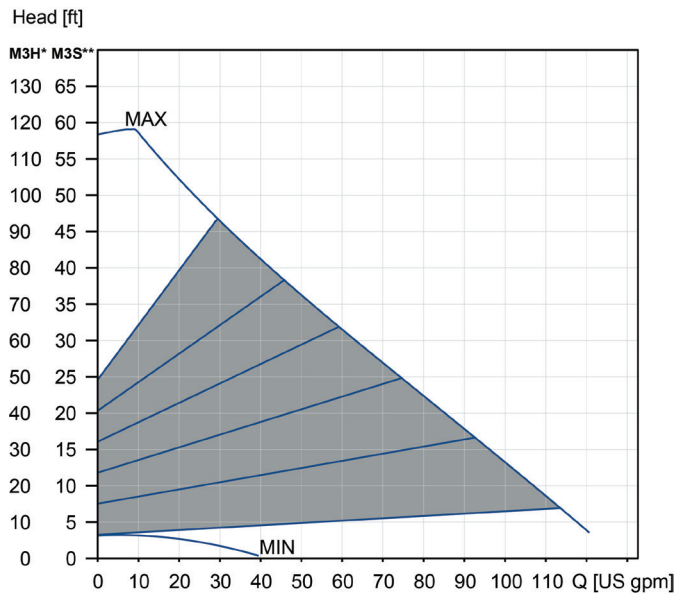
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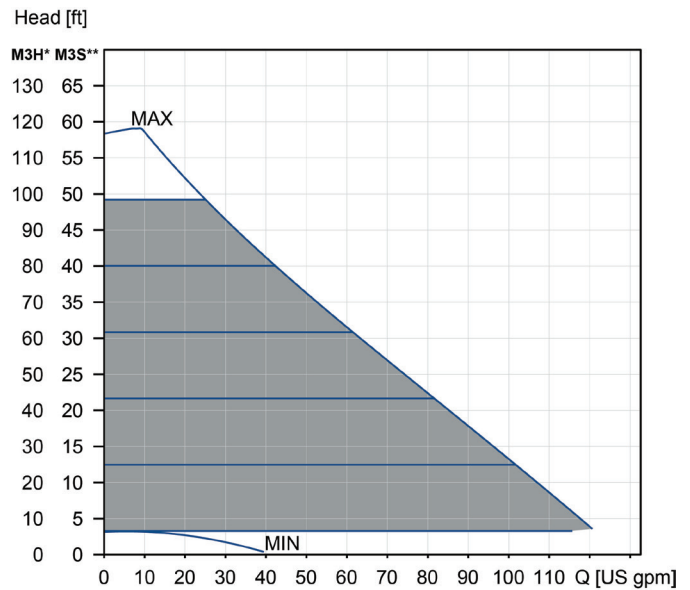
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Pump Performance Curves -- MAGNA3 M3C040-180 and M3S040-180

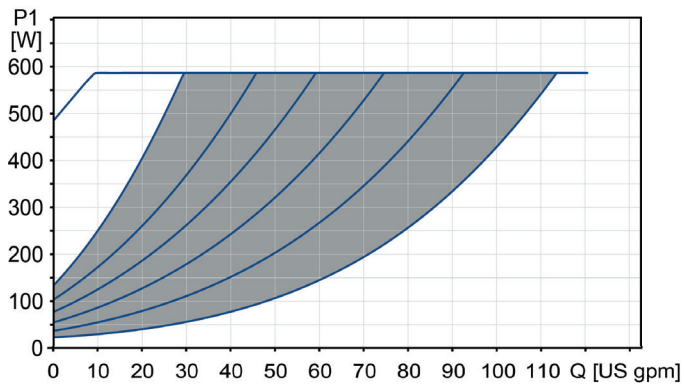
Proportional pressure (Performance)



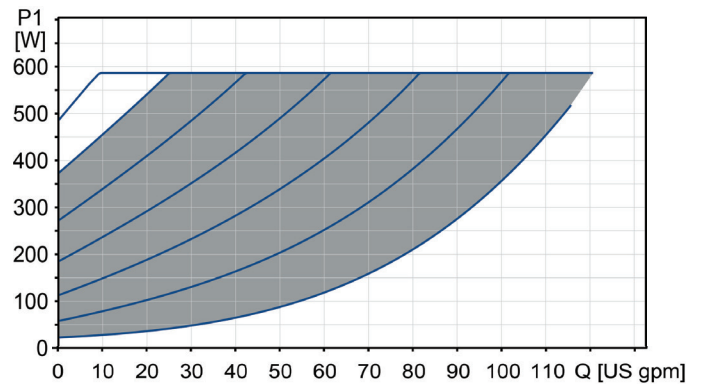
Constant Pressure (Performance)



Proportional pressure (Power) "per pump"



Constant Pressure (Power) "per pump"



Pump Curve Usage:

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

Notes:

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**Single pump or two pumps in parallel. Note: For two parallel pumps, double the flow rate for each head value.

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