

Droplet8 Extension Package

- Brazed plate heat exchanger, single wall
- Circulator pump (select Option)
- Mechanical Room Controller
 - (4) Storage tank temperature sensors
 - PLC to communicate storage tank conditions with Droplet

Required Field Wiring

- Storage Tank temperature sensor in Tank thermowell (min. one landed)
- Start/Stop signal from Mech. Room Controller to Circulator Pump
- Temperature probe from pump to return pipe thermowell
 - Allows pump to adjust speed to maintain 140°F to Storage Tank
- Ethernet connection from Mech. Room Controller to remote Droplet8
- Mech. Room Controller whip plugged into standard 110VAC wall outlet
- *Optional:* Temp. probe from Mech. Room Controller to return pipe thermowell
 - Can be used to remotely monitor system performance

Heat Exchanger Performance

Heat Load		123,200 Btu/hr	36 kW
High-Lift Conditions	Temperature, Domestic Water (DW) IN	45°F	7.2°C
	Temperature, DW OUT	140°F	60°C
	Temperature, Heat Pump (HP) OUT	145°F	62.8°C
	Temperature, HP RETURN	54.4°F	12.4°C
	Flow, DW	2.61 US gpm	9.88 l/min
	Δp	0.31 ft	0.09 m
End-of-run (EOR) Conditions	Temperature, Domestic Water (DW) IN	115°F	46.1°C
	Temperature, DW OUT	140°F	60°C
	Temperature, Heat Pump (HP) OUT	145°F	62.8°C
	Temperature, HP Return	116.7°F	47.1°C
	Flow, DW	10.0 US gpm	37.9 l/min
	Δp	3.28 ft	1.00 m

Booster Pump Performance

Option 1	Max. Available Head*	16.4 ft	5.0 m
	Min. System Head Loss Required**	3.09 ft @ 2.61 gpm	0.94m @ 9.88 l/min
Option 2	Max. Available Head*	29.5 ft	9.0 m
	Min. System Head Loss Required**	3.09 ft @ 2.61 gpm	0.94m @ 9.88 l/min
Option 3	Max. Available Head*	36.1 ft	11.0 m
	Min. System Head Loss Required**	3.09 ft @ 2.61 gpm	0.94m @ 9.88 l/min
Option 4	Max. Available Head*	55.8 ft	17.0 m
	Min. System Head Loss Required**	3.09 ft @ 2.61 gpm	0.94m @ 9.88 l/min

*Max. Pump Head - Δp (HX) at EOR Flow

**System pressure drop at high-lift flow conditions to achieve stable deliver temperature at pump min. speed

NOTES:

Booster pump varies speed based on constant temperature (140°F at storage tank).
 Pump requires pipe thermowell/remote temp. sensor; start/stop signal from Droplet controller. See Pg.2 for detail.

SMALL PLANET SUPPLY
 TUMWATER, WA

TITLE:
DROPLET8 EXTENSION PACKAGE
 (TECHNICAL DATASHEET)

SIZE	DWG. NO.	REV
B	003-00041	A

SCALE: 1:1 SHEET 1 OF 4

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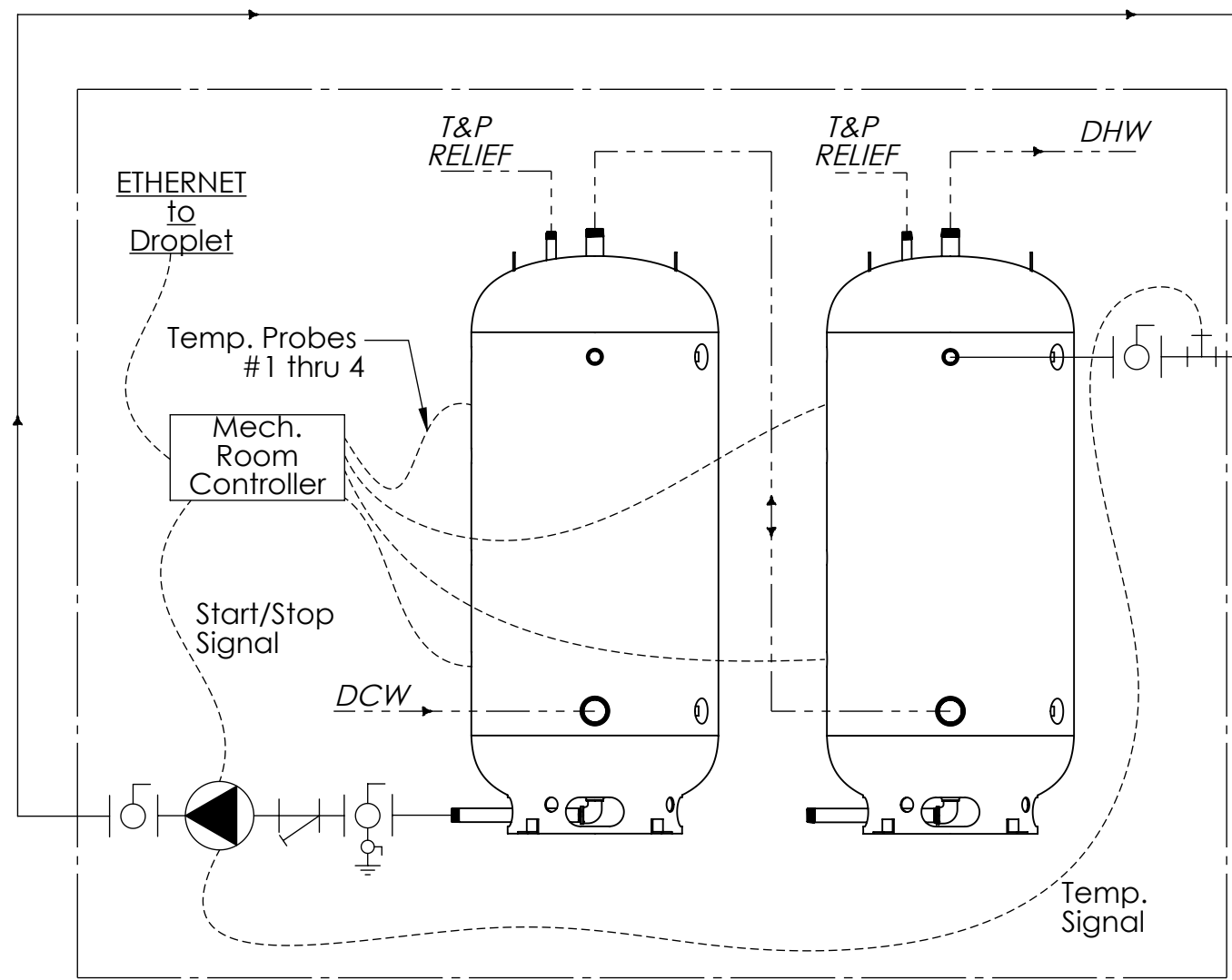
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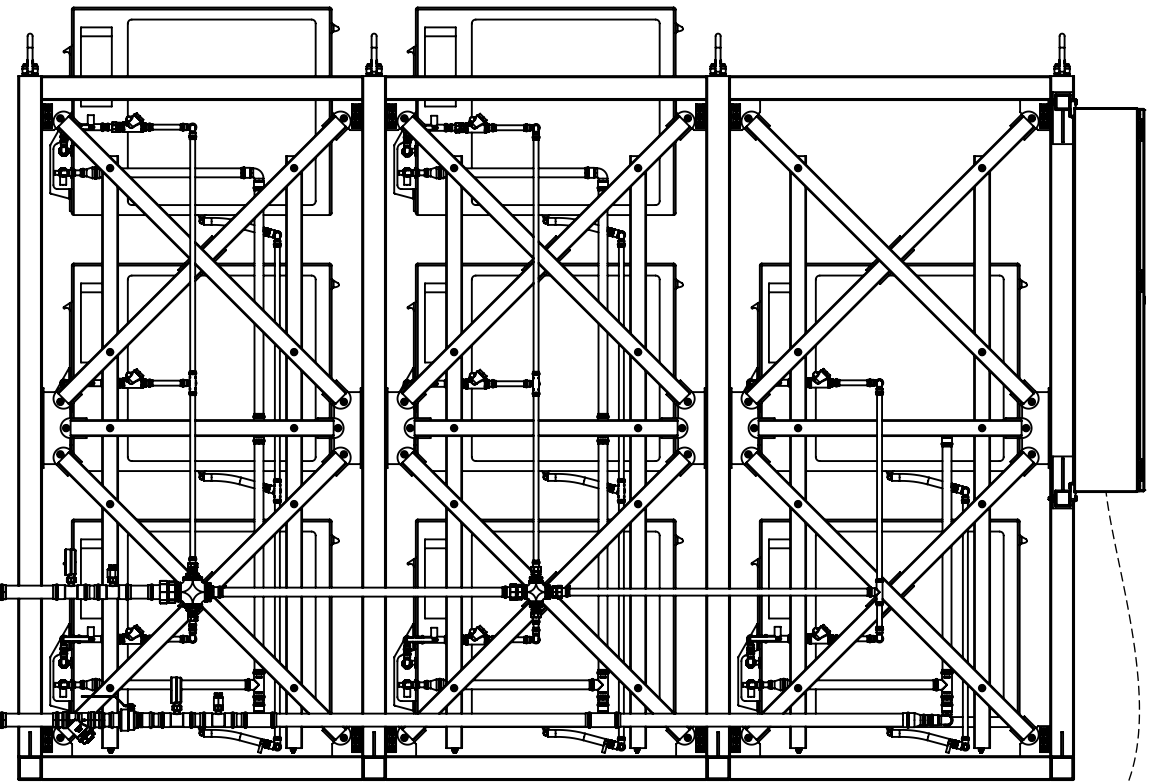
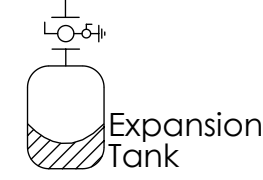


Heat Exchanger

AV
DW OUT
DW IN

HP OUT

HP RETURN



Droplet8

ETHERNET from Mech. Room Controller

A

A

NOTES:		
DCW/DHW/T&P requirements/details not shown.		
Install HEAT EXCHANGER proximal to Droplet.		
SMALL PLANET SUPPLY TUMWATER, WA		
TITLE: DROPLET8 EXTENSION PACKAGE (PIPING DIAGRAM)		
SIZE	DWG. NO.	REV
B	003-00041	A
SCALE: 1:24		SHEET 2 OF 4

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Mechanical Room Envelope

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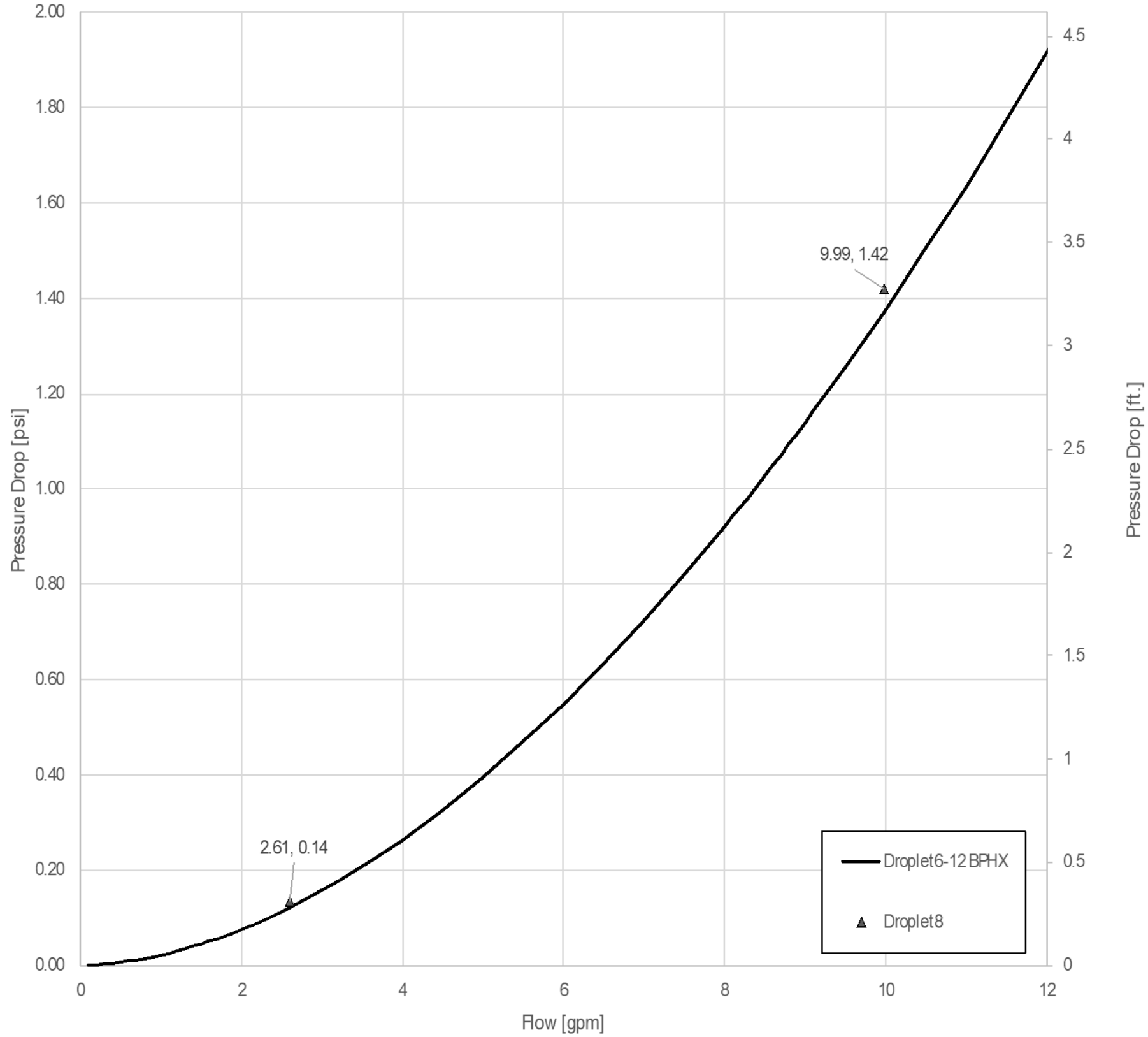
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Droplet8 Flow v. Pressure Drop (Building Side)

High Lift: 45°F→140°F, End-of-run: 115°F→140°F, Air Temp.: ≥5°F



NOTES:

Pressure drop of building-side heat exchanger at Droplet8 boundary conditions (high-lift & end-of-run).

SMALL PLANET SUPPLY
TUMWATER, WA

TITLE:
DROPLET8 EXTENSION PACKAGE
(BPHX PRESSURE DROP CURVE)

SIZE	DWG. NO.	REV
B	003-00041	A

SCALE: 1:1 SHEET 3 OF 4

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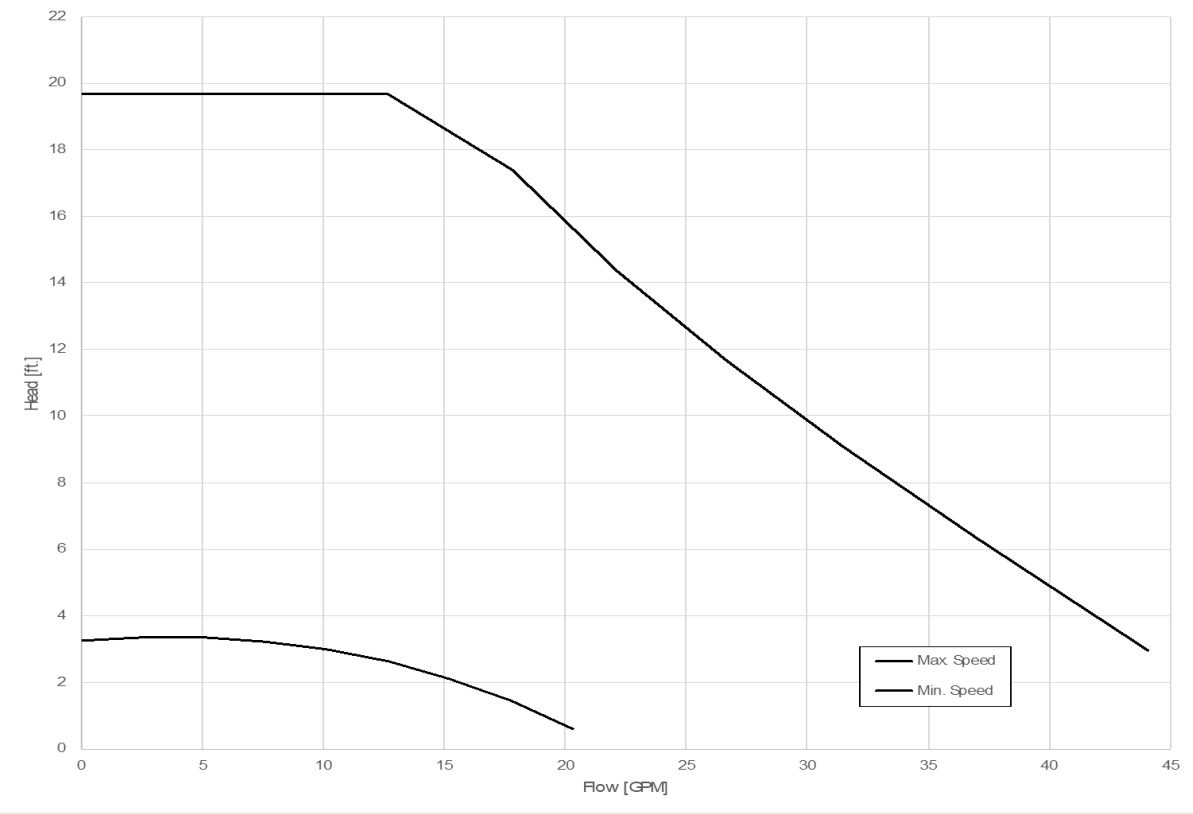
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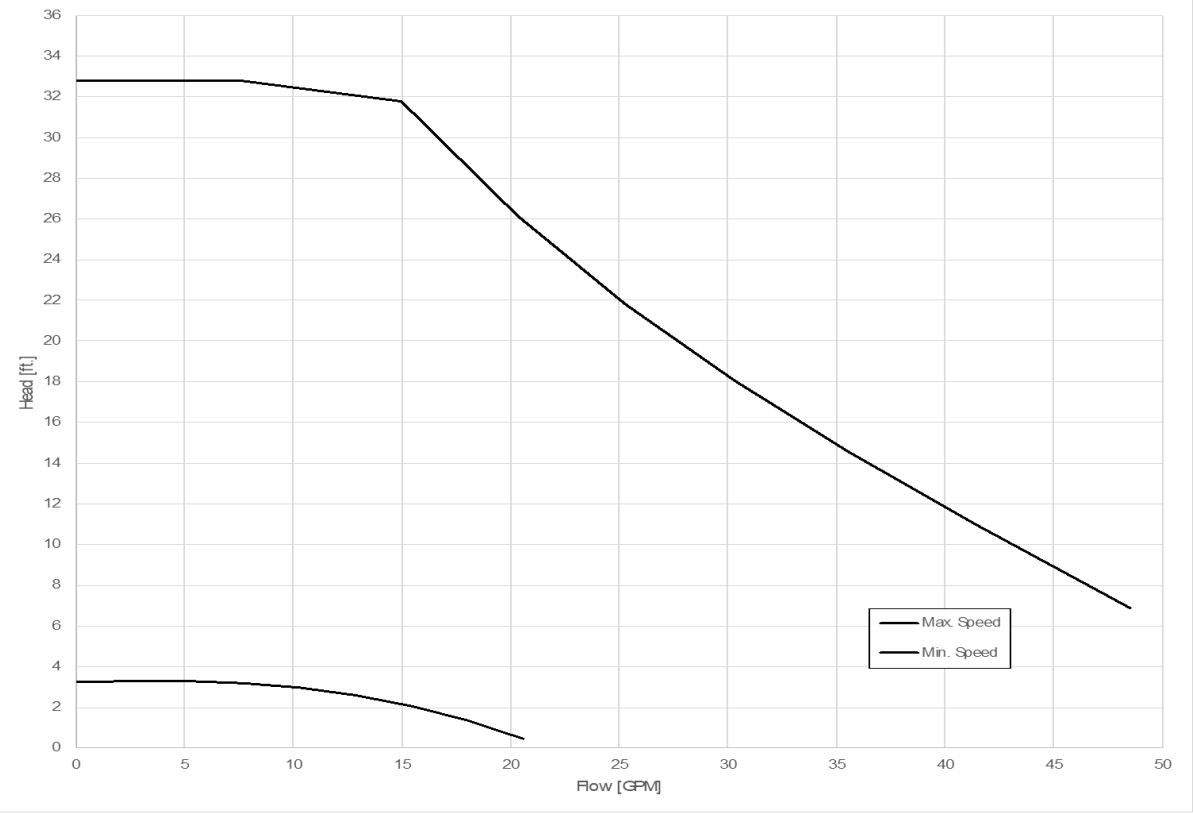
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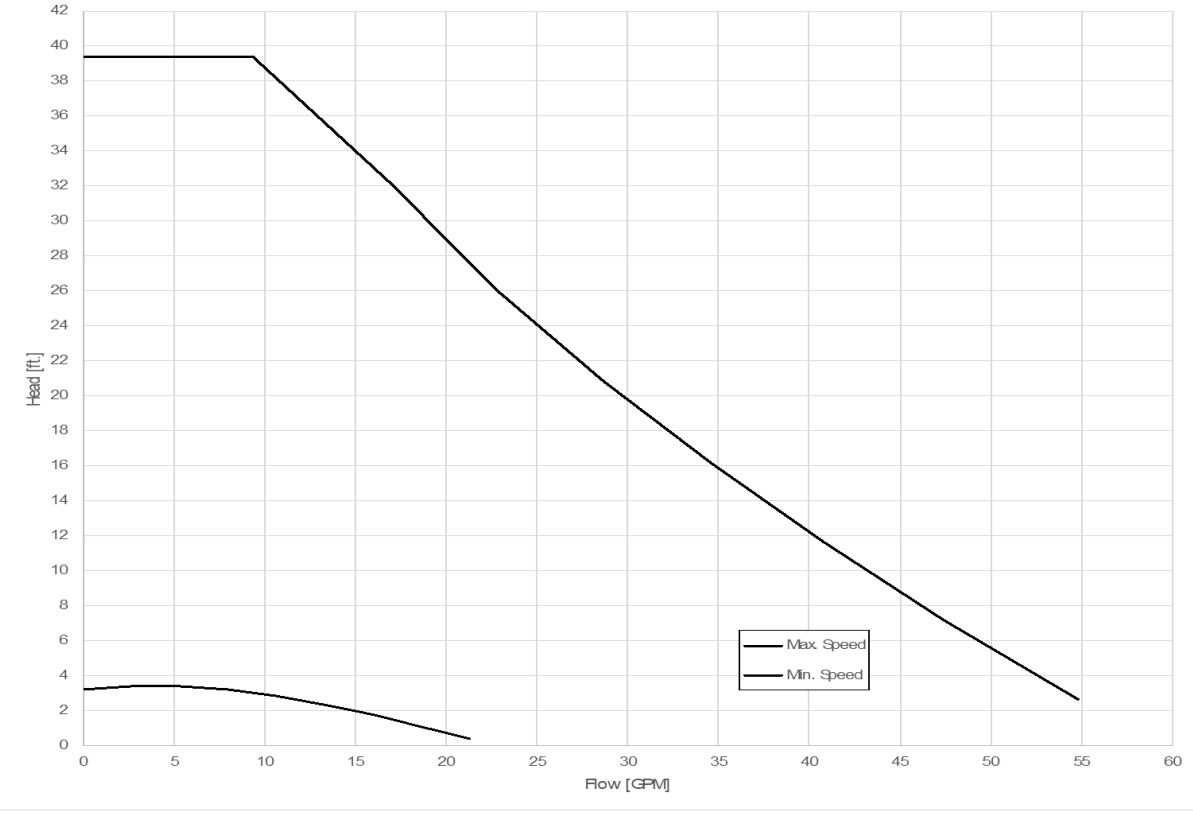
Circulator Pump Option #1
Head v. Flow



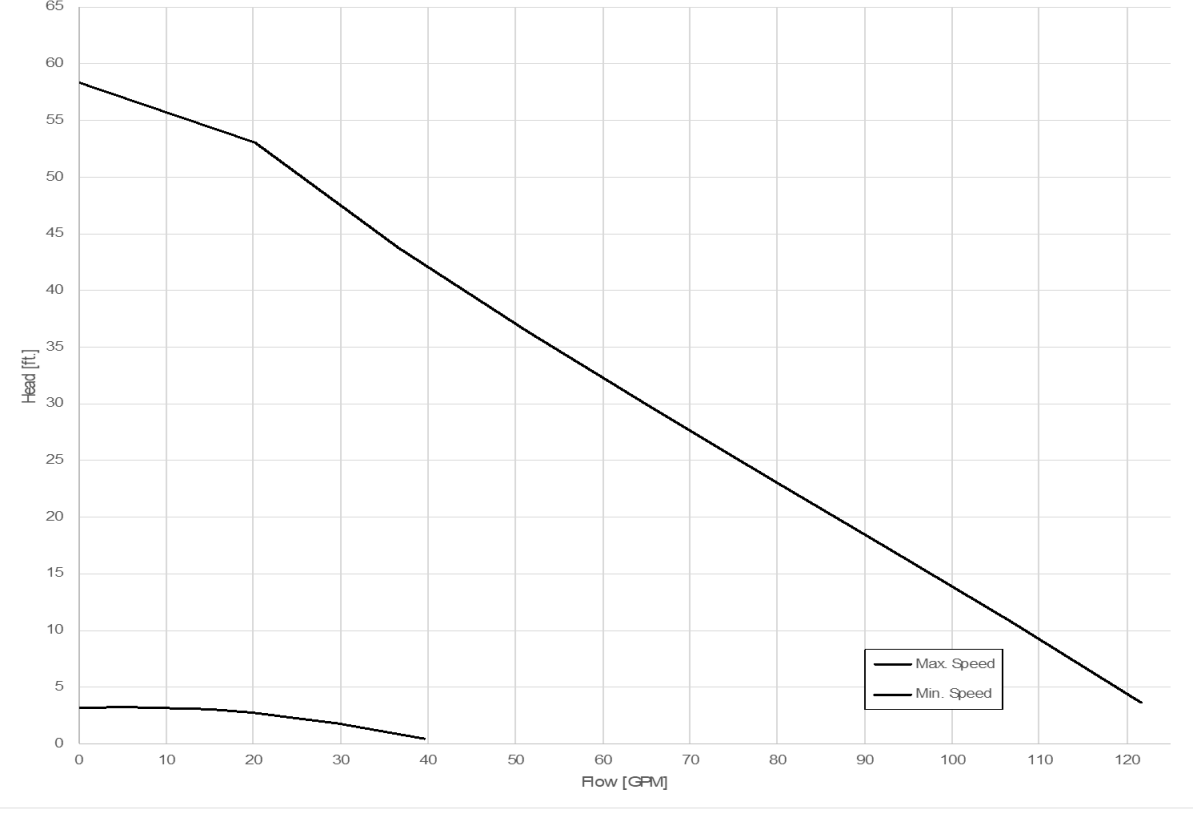
Circulator Pump Option #2
Head v. Flow



Circulator Pump Option #3
Head v. Flow



Circulator Pump Option #4
Head v. Flow



SMALL PLANET SUPPLY TUMWATER, WA		
TITLE: DROPLET8 EXTENSION PACKAGE (CIRCULATOR PUMP CURVES)		
SIZE B	DWG. NO. 003-00041	REV A
SCALE: 1:1		SHEET 4 OF 4

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