

Droplet3 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 Droplet3
- 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		46,200 Btu/hr	13.5 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	56.0°F	13.3°C
	Flow, DW	0.98 US gpm	3.71 l/min
	Δp	0.35 ft	0.11 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	117.1°F	47.3°C
	Flow, DW	3.7 US gpm	14.0 l/min
	Δp	3.67 ft	1.12 m

Booster Pump Performance

Option 1	Max. Available Head*	16.0 ft	4.9 m
	Min. System Head Loss Required**	3.0 ft @ 0.98 gpm	0.91m @ 3.71 l/min
Option 2	Max. Available Head*	29.1 ft	8.8 m
	Min. System Head Loss Required**	3.0 ft @ 0.98 gpm	0.91m @ 3.71 l/min
Option 3	Max. Available Head*	35.7 ft	10.9 m
	Min. System Head Loss Required**	3.0 ft @ 0.98 gpm	0.91m @ 3.71 l/min
Option 4	Max. Available Head*	55.4 ft	16.9 m
	Min. System Head Loss Required**	3.0 ft @ 0.98 gpm	0.91m @ 3.71 l/min

\*Max. Pump Head - Δp (HX) at EOR Flow

\*\*System pressure drop at high-lift flow conditions to acheive 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:  
**DROPLET3 EXTENSION PACKAGE**  
 (TECHNICAL DATASHEET)

SIZE	DWG. NO.	REV
<b>B</b>	<b>003-00038</b>	<b>A</b>

SCALE: 1:1 SHEET 1 OF 4

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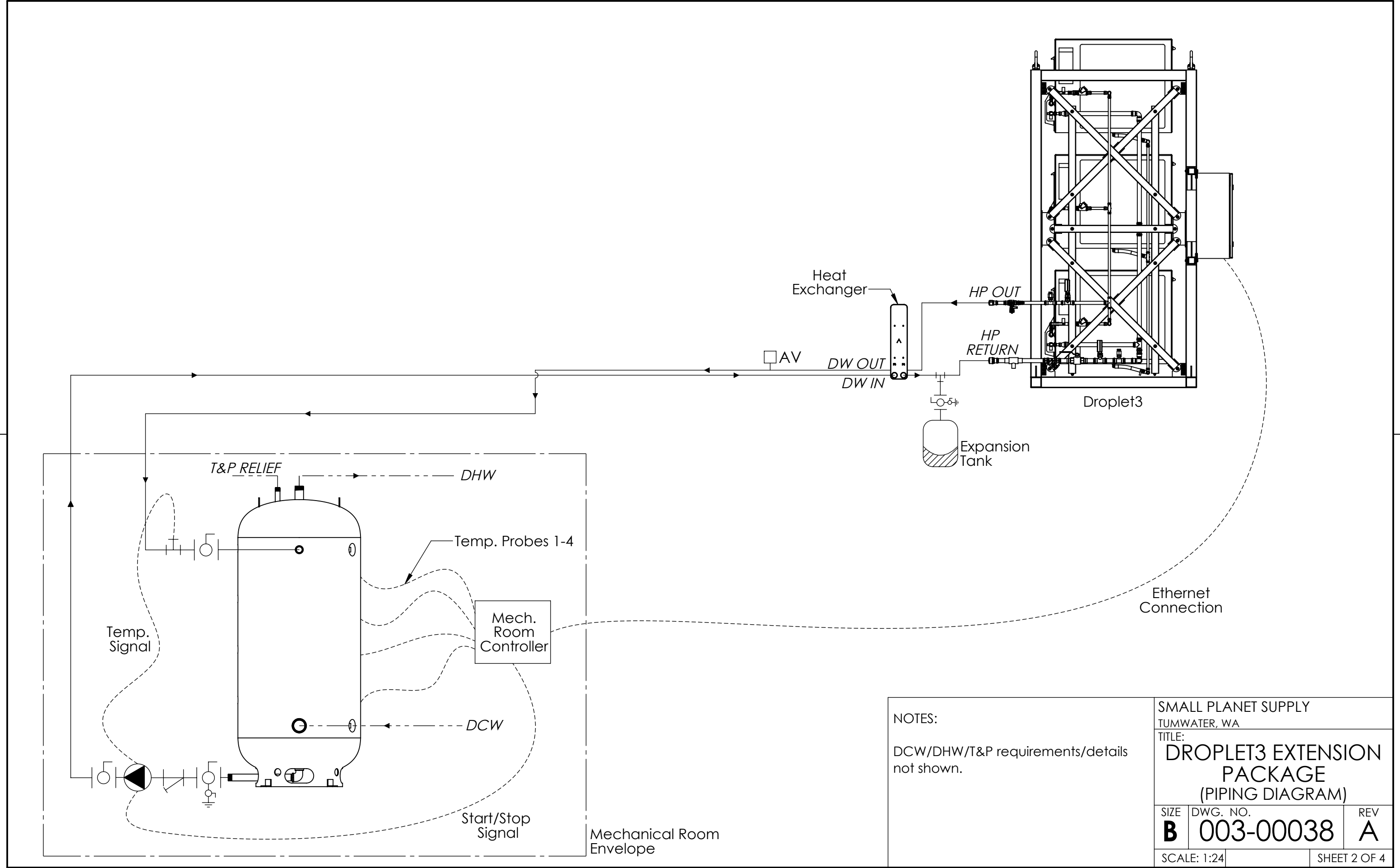
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B

B

A

A

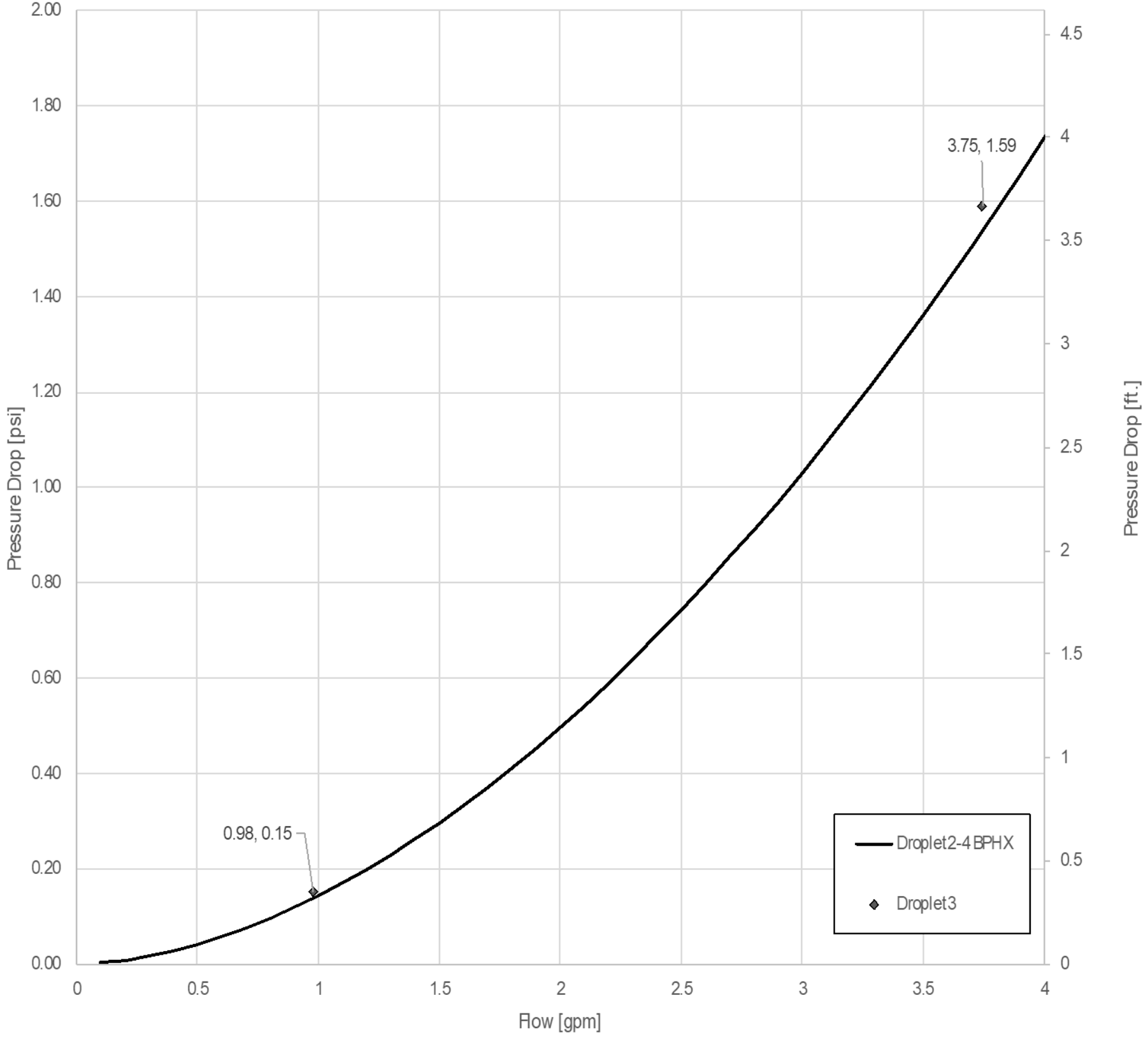


NOTES:  
DCW/DHW/T&P requirements/details not shown.

SMALL PLANET SUPPLY TUMWATER, WA		
TITLE: <b>DROPLET3 EXTENSION PACKAGE</b> (PIPING DIAGRAM)		
SIZE <b>B</b>	DWG. NO. <b>003-00038</b>	REV <b>A</b>
SCALE: 1:24		SHEET 2 OF 4

### Droplet3 Flow v. Pressure Drop (Building Side)

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



NOTES:			SMALL PLANET SUPPLY		
Pressure drop of building-side heat exchanger at Droplet3 boundary conditions (high-lift & end-of-run).			TUMWATER, WA		
			TITLE:		
			<b>DROPLET3 EXTENSION PACKAGE</b>		
			(BPHX PRESSURE DROP CURVE)		
SIZE	DWG. NO.	REV			
<b>B</b>	<b>003-00038</b>	<b>A</b>			
SCALE: 1:1				SHEET 3 OF 4	

4

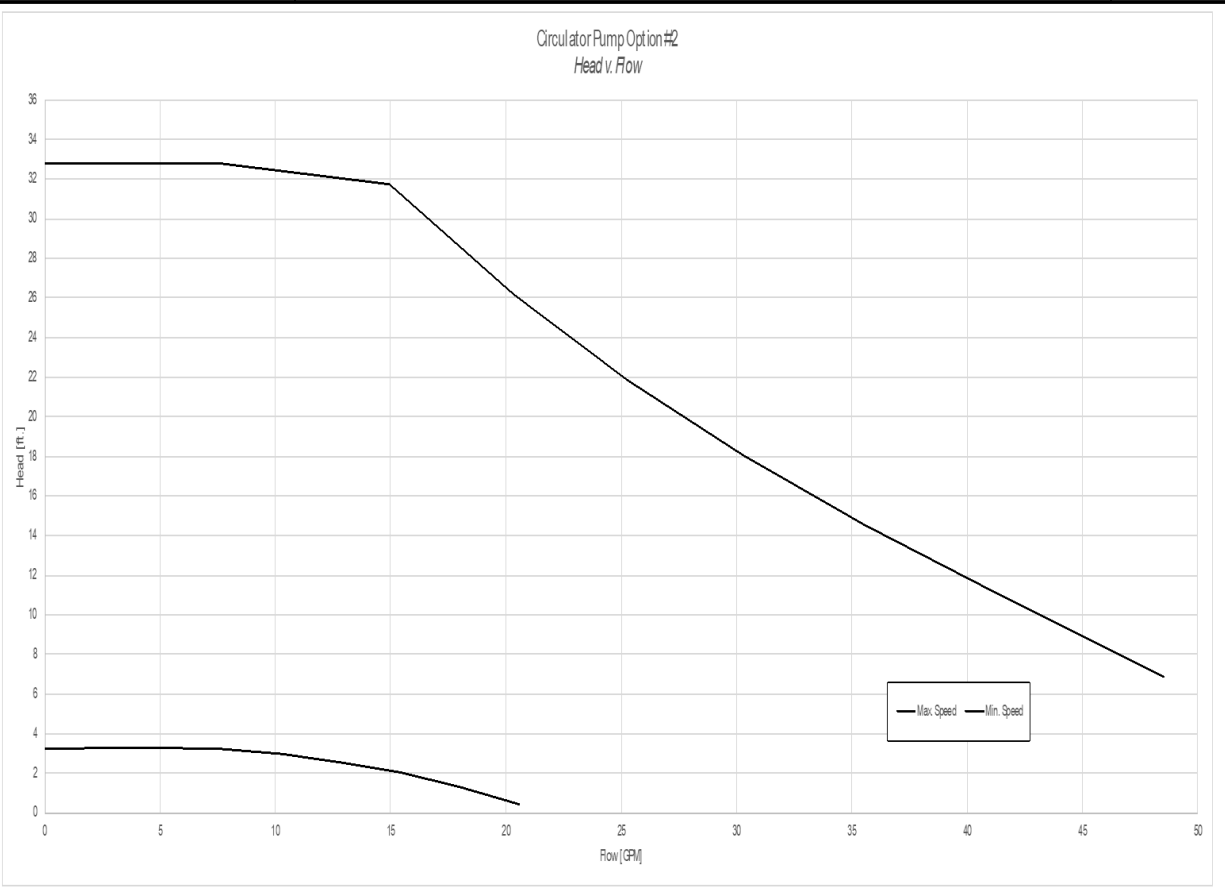
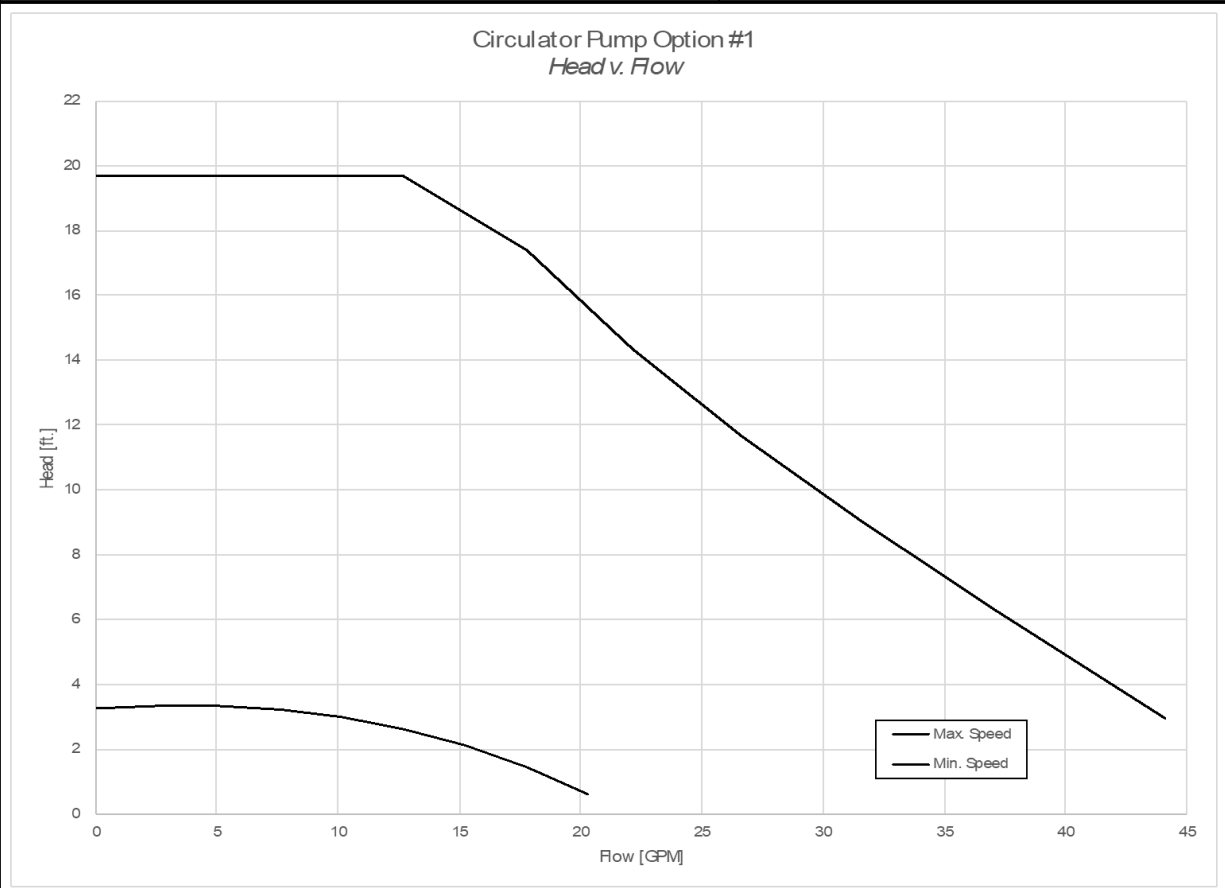
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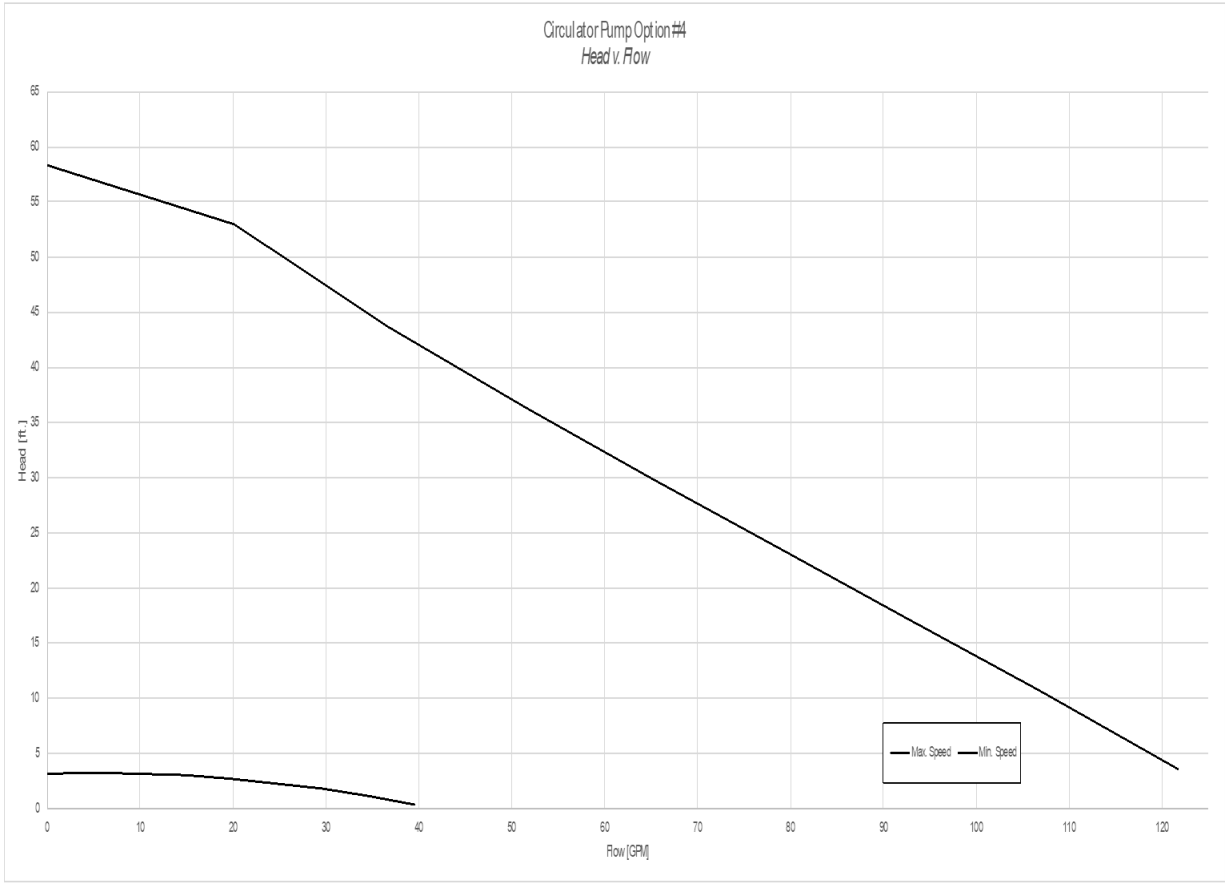
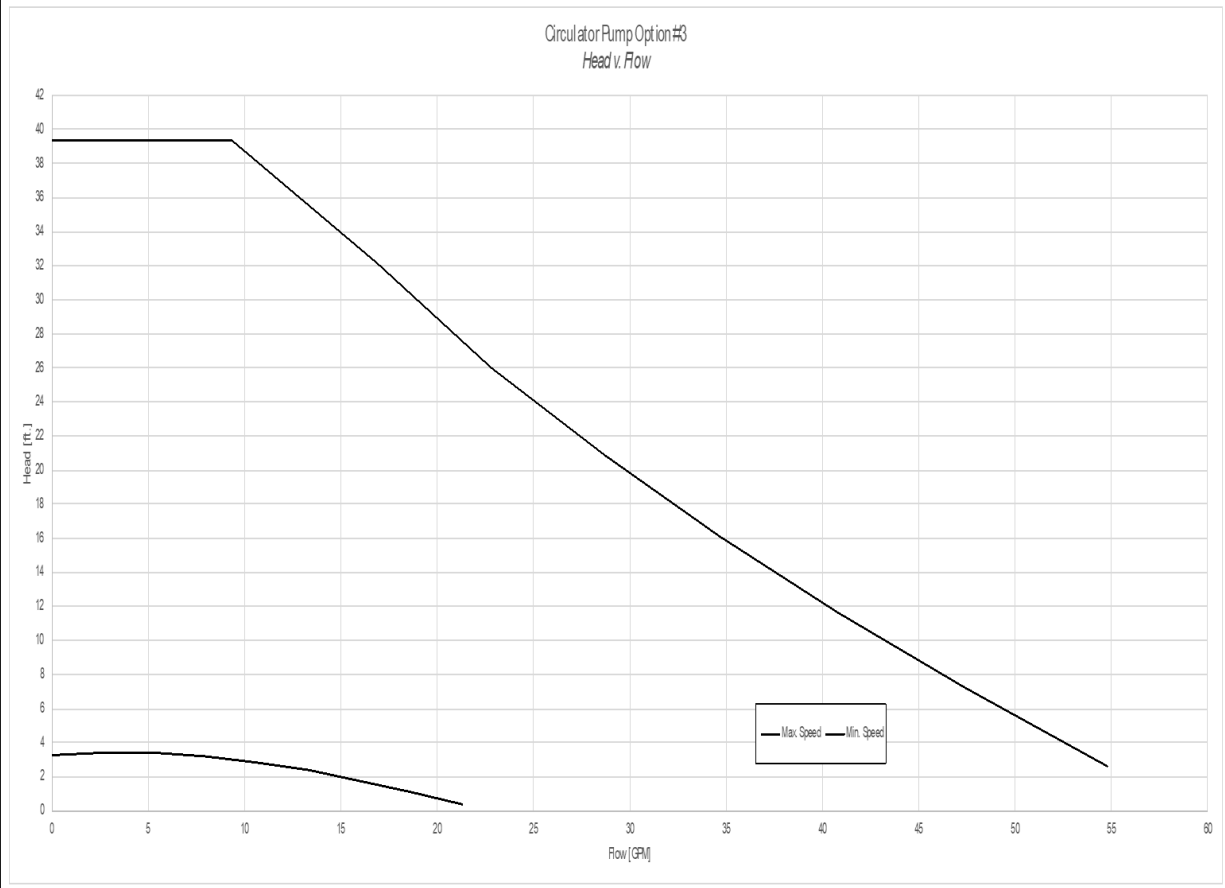
B

B



A

A



SMALL PLANET SUPPLY TUMWATER, WA		
TITLE: <b>DROPLET3 EXTENSION PACKAGE</b> (CIRCULATOR PUMP CURVES)		
SIZE <b>B</b>	DWG. NO. <b>003-00038</b>	REV <b>A</b>
SCALE: 1:1		SHEET 4 OF 4

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