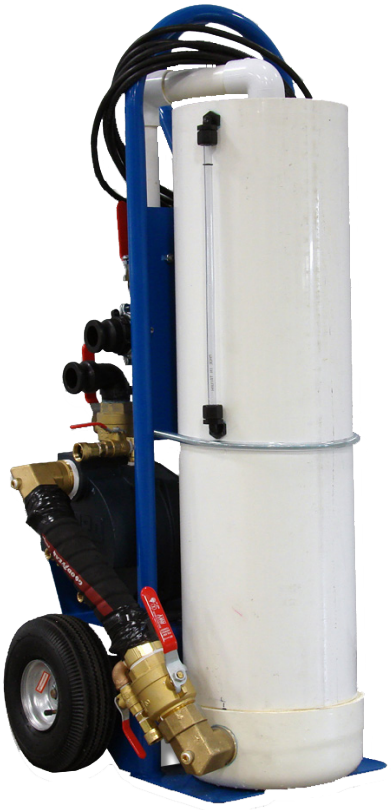
Geothermal System Components Catalog



Effective October 15, 2017

ICP Geothermal Accessories

ICP offers a wide variety of accessories for geothermal installations including flow centers (pressurized and non-pressurized), hose kits, fittings, unit mounting pads, auxiliary heaters, service tools and more. These products are listed in this Geothermal System Components Catalog (part number 22806110002).

On occasion, a geothermal installation may require components that are not currently offered by ICP. Examples of items available that are not currently supplied by ICP include: commercial flow centers and pumps, multi-circuit flow centers, hydraulic separators, butterfly valves, wye strainers, geothermal pipe and fittings, hydronic buffer tanks, and much more. Contact your ICP Distributor for information and pricing on additional geothermal accessories. Note that items not supplied by ICP are not covered by the ICP warranty.

Table of Contents

Contact **FAST Parts** for flow center replacement pumps, 3-way valve re-build kits, and other replacement parts for geothermal accessories (see page 28 for parts list).

Residential Flow Centers

Flo-Link & GPM series
Pressurized Flow Centers

Residential flow centers are available in a wide variety of combinations. Flo-Link double O-ring style flow centers are unsurpassed in ease of installation. Flo-Link double O-ring fittings provide leak-free union connections at the flow center, installed without tools (no need for pipe wrenches). Virtually any type of transition (fusion, thread, barb, PVC glue, etc.) is available for Flo-Link fittings. The full port 3-way flushing and isolation valves are designed for the wide range of temperatures experienced in ground loop applications.

Flo-Link series foamed flow center with high impact polystyrene cabinet (shown with variable speed Grundfos Magna GEO pump): Flo-Link flow centers are available in one pump and two pump configuration with variable speed (UPS32-140) and constant speed (UPS26-99) pump(s).

Flo-Link™ double O-ring fitting sets for union/transition to flow center: See Hose Kit/Fitting section for complete assortment of Flo-Link fittings.

Flo-Link flow centers include specially designed volutes, which allow the entire power head to be external to cabinet. This provides additional flexibility for installers and service technicians when a pump head needs to be rotated, or when a single pump flow center needs to be upgraded to a two pump flow center.

The GPM series flow centers utilize reliable 3-way valves with the same features and benefits as the Flo-Link valves, but have threaded FPT connections. GPM flow centers are available in one to four pump configurations. The cabinet is designed to allow pump heads to be rotated, or for upgrading/downgrading (i.e. adding/removing a pump).

Field upgradable to two pump flow center

GPM series foamed flow center with ABS plastic cabinet (shown as GPM-1, single pump--also available as GPM-2)

NP SERIES

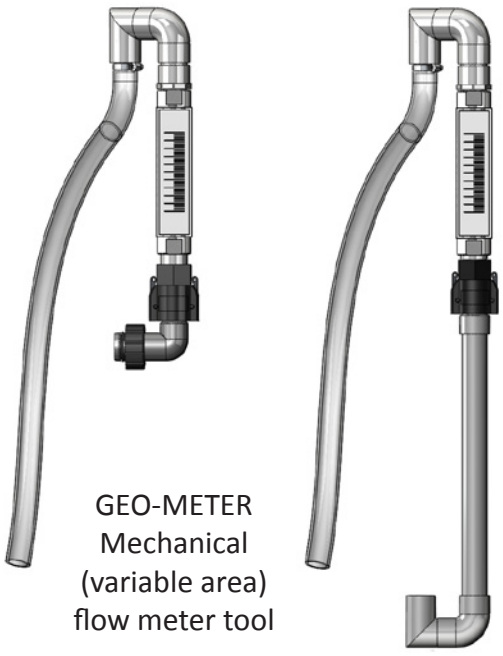
Non-Pressurized
Flow Center

The NP series non-pressurized flow center raises the bar for non-pressurized applications. Building upon the success of the 3-way flushing valves with Flo-Link connections, the NP series reduces installation time, and increases reliability. In fact, by incorporating flushing valves into the flow center, the ground loop may be flushed without adding external flush ports, saving installation time and additional cost. Plus, piping becomes much simpler. Flo-Link double O-ring include transition fittings for most any application (PE fusion, PVC, threaded, etc.). Top or side connections to the heat pump and ground loop add even more flexibility.

Pump selection for the new NP series is the ultimate in flexibility. The NP series is the first to use the redesigned UPS26-99 Grundfos 3-speed pump. Or, the new variable speed Magna GEO may be selected for even more operating costs savings. Current options are as follows:

- NP 1 -- Grundfos UPS26-99 or UP26-116
- NP 2 -- Two UPS26-99 (3-speed) or UP26-116 pumps
- NP V -- Variable speed Magna GEO
- NP V2 -- One Magna GEO and one UPS26-99

The NP series has many installation/service-friendly features. One of the best is the GEO-METER flow tool, shipped with both elbow and straight adapter fittings. For even more flexibility, an adapter is available to use this tool with the competition's flow center, providing a "one tool fits all" solution.



GEO-METER
Mechanical
(variable area)
flow meter tool

Flow meter tool
(shown with
adapter for
competitor's
product)

Adapter tube/
fittings

Residential Flow Centers

Geo-Prime Series
Hybrid Flow Centers

The Geo-Prime series is a hybrid system with a tank that may be added to a standard pressurized flow center or pump to create a non-pressurized system. In addition to its applicability in a non-pressurized system, the tank can be used as an add-on to traditional pressurized systems. In either case, the Geo-Prime ensures that the pumps receive only air-free loop fluid and provides enough additional make-up fluid to prevent call-backs associated with loop expansion during seasonal temperature changes.

The Geo-Prime Tank consists of a fluid reservoir, two bypass valves and an air-eliminating dip tube inside of a foam-insulated cabinet. The tank includes a sealing cap with integrated pressure and vacuum relief to prevent the reservoir from being over-pressurized or collapsing. The tank is mounted above the suction flange of the pump to ensure a flooded volute and to provide the necessary suction head pressure for the pump.

Benefits Include:

- HDPE construction with fused joints
- Single pass internal air separation
- Integrated pressure/vacuum relief in sealing cap
- Integrated bypass valves to allow ground loop system to be flushed with industry standard flush cart
- Utilizes Flo-Link double O-ring connections for easy installation
- Integrated “sight glass” for fluid level monitoring without removing cap
- Approx. 2.5 gallon fluid capacity
- Foam insulated high impact polystyrene cabinet
- Modular system: may be used with pressurized flow center or insulated pump.

Typical Application: Geo-Prime is installed above flow center. An insulated pump may also be used instead of a flow center when 3-way flushing valves are not needed (see picture to the left).

Flow Center Nomenclature

A wide range of both pressurized and non-pressurized products are available, saving installation time and providing the most reliable solutions for geothermal closed loop systems on the market today. The charts following this page show which model number combinations are available.

FC M 1 3 B D F

Flow Center

Type
P = Pressurized
N = Non-pressurized
D = Non-pressurized, dual circuit
M = Mounted on panel, pressurized
K = Variable speed kit, non-pressurized

Number of Pumps

Pump Type
1 = UPS26-99 (3 speed)
2 = UP26-116 (single speed)
3 = Magna Geo (variable speed)
4 = Magna Geo + UPS26-99

Additional Features
T = Panel mount temperature control
(used only with FM flow centers)
F = Panel mount flow & temp control
(used only with FM and FK flow centers)
OS = Flow center for outdoor split installation
(available as FCP11BDOS or FCP21BDOS)

Fitting
D = Double O-ring
F = FPT

Valve Type
B = Brass
C = Composite

FCP

FCM

FCN

Wiring Kits: All flow centers include a wiring kit for connecting pumps to heat pump controls.

Residential Flow Centers

Part Number	Description
	Flo-Link Foamed Cabinet (Double O-ring Connections -- Brass Valves)
FCP11BD	FL1-99 UPS26-99, 3-speed, 230V, Grundfos
FCP12BD	FL1-116 UP26-116, single speed, 230V, Grundfos
FCP13BD	FLV1, UPS32-140 (variable speed), 230V, Grundfos**
FCP21BD	FL2-99 UPS26-99, 3-speed, 230V, Grundfos, Qty 2
FCP22BD	FL2-116 UP26-116, single speed, 230V, Grundfos, Qty 2
FCP24BD	FLV2, one UPS32-140 (variable speed) and one UPS26-99 (3-speed), 230V, Grundfos**
Each unit contains: Mounting hardware and one set of Flo-Link by 1-1/4" fusion fittings (loop side). ****NOTE: Variable speed flow centers require a controller package (See Accessories section)**	
	Flo-Link Foamed Cabinet (Double O-ring Connections -- Composite Valves)
FCP11CD	FL1-99 UPS26-99, 3-speed, 230V Grundfos
FCP21CD	FL2-99 UPS26-99, 3-speed, 230V, Grundfos, Qty 2
Each unit contains: Mounting hardware and one set of Flo-Link by 1-1/4" fusion fittings (loop side).	

***Flo-Link Series* (Double O-ring) Pressurized Flow Centers**

NOTE: Part #s in *BOLD ITALIC* are stocking items

FCP1

FCP2

FCP1 var. speed

FCP2 var. speed

A controller kit is required for all variable speed flow centers (see Geothermal Accessories), or a **panel mount version (FCM) is available, which includes all necessary components.**

Flo-Link double O-ring fitting sets for union/transition to flow center: See Hose Kit/Fitting section for complete assortment of Flo-Link fittings.

Pressure Battery

Geo-Prime Tank

Loop Pressurization Accessories: A Pressure Battery expansion tank or Geo-Prime is recommended for all pressurized systems. See Geothermal Accessories section for loop pressurization options.

Residential Flow Centers

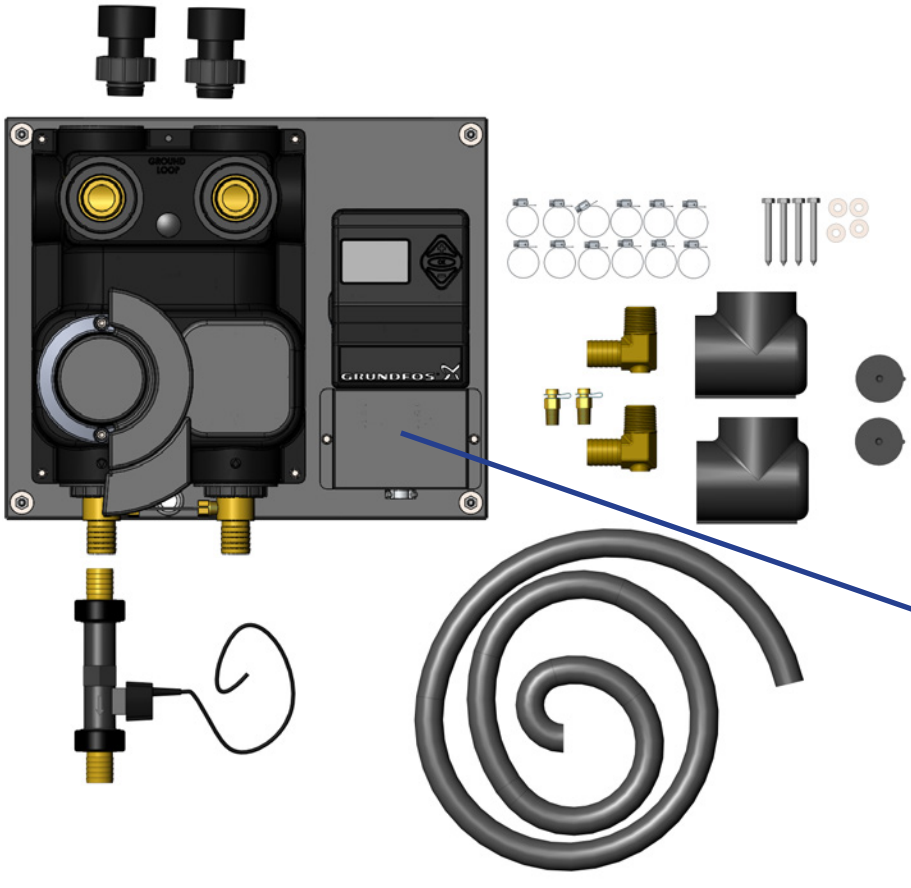
Panel Mount Variable Speed Flow Centers

In our ongoing efforts to create products that are easier to install and time-saving, there are several new packages for variable speed pumping options that completely eliminate the need for wiring the controller. The packages listed below include panel-mounted controls with a terminal strip for simply wiring the panel to the heat pump thermostat connections. Note that this option is for heat pumps with 24VAC thermostats.

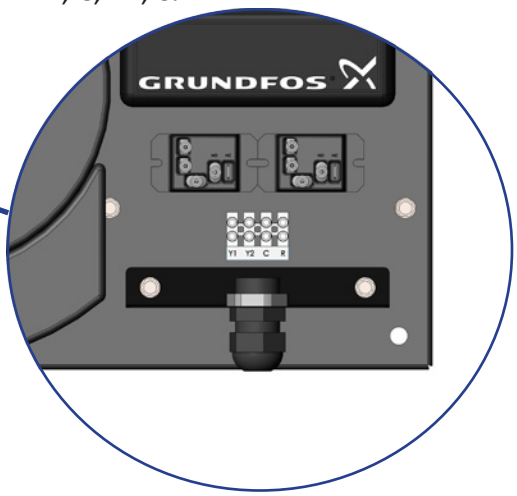
Part Number	Description		
	Variable Speed Pre-wired Packages (Panel Mounted)		
	Flow Center	Control	Connections
FCM13BDT	Magna GEO (var. spd.), brass valves	Temperature Difference	Hose kit / PE fusion**
FCM13BDF	Magna GEO (var. spd.), brass valves	Flow & Temperature Control	Hose kit / PE fusion**
FCM24BDT	1-Magna GEO + 1-UPS26-99, brass vlvs	Temperature Difference	Hose kit / PE fusion**
FCM24BDF	1-Magna GEO + 1-UPS26-99, brass vlvs	Flow & Temperature Control	Hose kit / PE fusion**

NOTE: Part #s in *BOLD ITALIC* are stocking items

**Kit includes all of the fittings necessary for connecting to the ground loop (1-1/4" PE fusion) and to the heat pump (1" MPT).



Terminal strip for connection to heat pump includes terminals R, C, Y1, & Y2.



Residential Flow Centers

GPM Series (FPT) Pressurized Flow Centers

Part Number	Description
	GPM-1 with Foamed Cabinet (FPT Connections)
FCP11BF	GPM-1 UPS26-99, 3-speed, 230V, Grundfos
FCP12BF	GPM-1 UP26-116, single speed 230V, Grundfos
Each unit contains: Mounting hardware.	
	GPM-2 with Foamed Cabinet (FPT Connections)
FCP21BF	GPM-2 UPS26-99, 3-speed, 230V, Grundfos, Qty 2
FCP22BF	GPM-2 UP26-116, single speed 230V, Grundfos, Qty 2
Each unit contains: Mounting hardware.	
	GPM-3 with Foamed Cabinet (FPT Connections)
FCP31BF	GPM-3 UPS26-99, 3-speed, 230V, Grundfos, Qty 3
FCP32BF	GPM-3 UP26-116, single speed 230V, Grundfos, Qty 3
Each unit contains: Mounting hardware.	
	GPM-4 with Foamed Cabinet (FPT Connections)
FCP41BF	GPM-4 UPS26-99, 3-speed, 230V, Grundfos, Qty 4
FCP42BF	GPM-4 UP26-116, single speed 230V, Grundfos, Qty 4
Each unit contains: Mounting hardware.	

NOTE: Part #s in *BOLD ITALIC* are stocking items

GPM-1

GPM-2

GPM-3

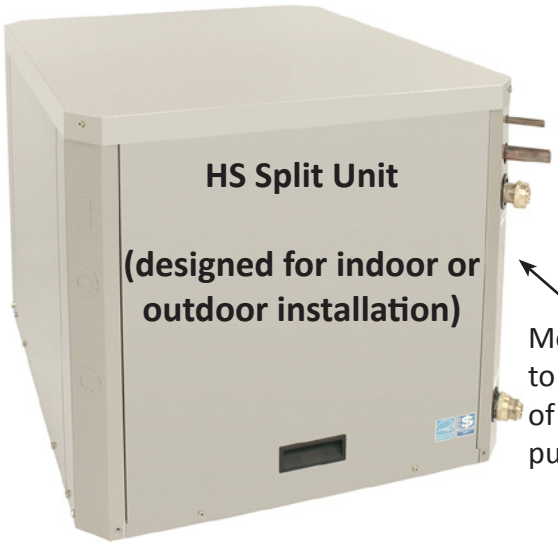
GPM-4

GPM series flow centers require 1” MPT adapter fittings. See Hose Kit/Fitting section for complete assortment of fittings.

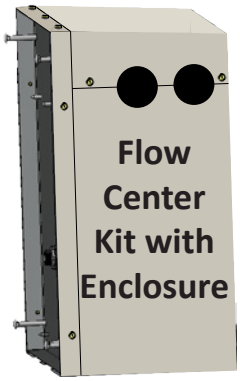
Residential Flow Centers

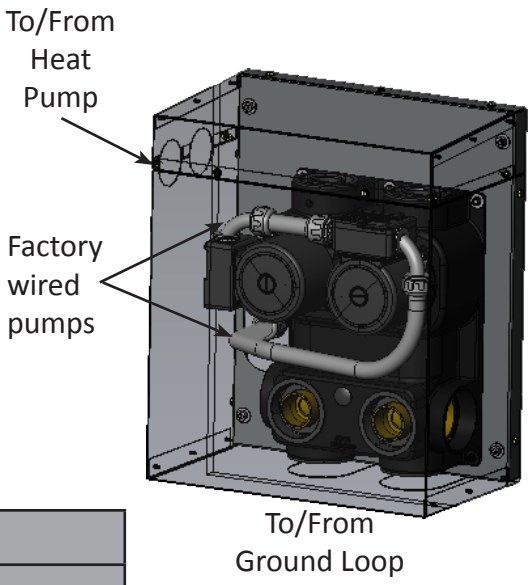
Outdoor split geothermal installations are great for retrofit applications, including dual fuel systems. The Outdoor flow center kit provides all of the components needed to connect the ground loop to the heat pump.

OS Series (Outdoor Split) Pressurized Flow Centers



NEW!

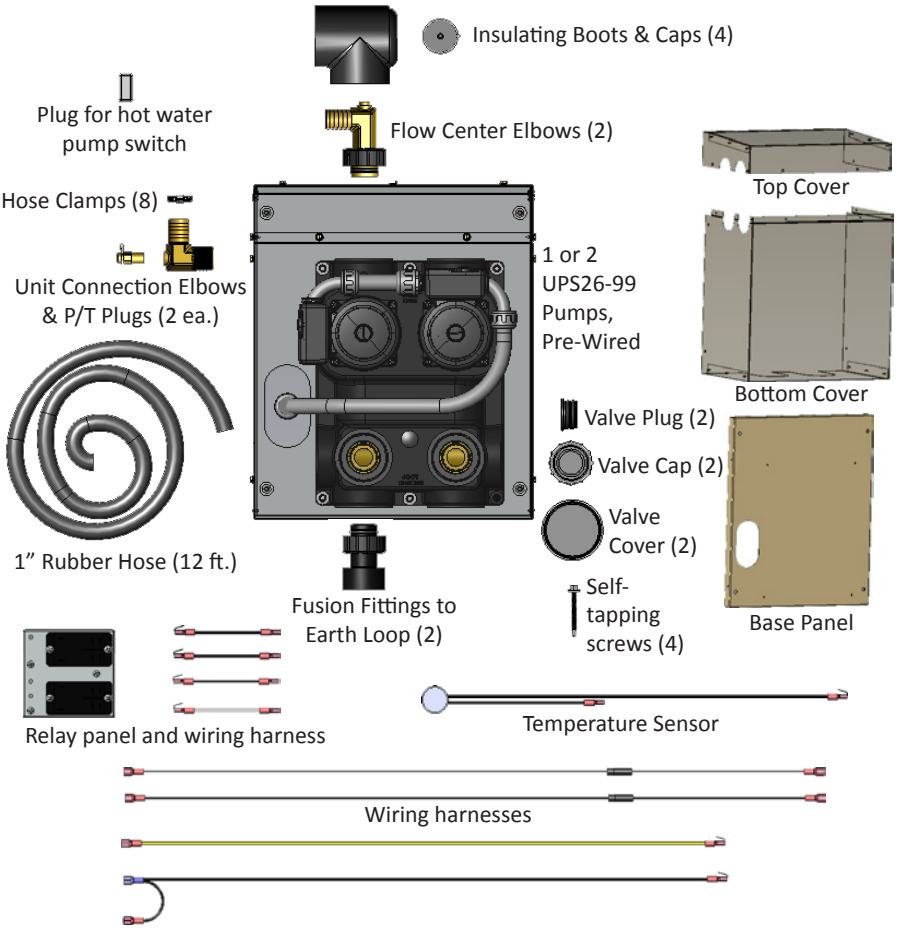




Part Number	Description
	Outdoor Split Flow Center Kit
FCP11BDOS	FL1-99 UPS26-99, 3-speed, 230V, Grundfos -- with outdoor enclosure
FCP21BDOS	FL2-99 UPS26-99, 3-speed, 230V, Grundfos, Qty 2 -- with outdoor enclosure
Each unit contains: See illustration, below	

OS Series (Outdoor Split) Flow Center Kit Components

The outdoor split flow center kit includes a panel-mounted flow center with outdoor enclosure, factory pre-wired. Relay panel/wiring harnesses, heat pump/flow center fittings, ground loop fusion connections, and hardware are included. Simply mount the panel to the side of the heat pump, and connect the relay panel. Built-in controls allow pump operation when the compressor is running and/or when outdoor temperatures fall below the temperature sensor setting.



Residential Flow Centers

Part Number	Description
	NP[1] with Foamed Cabinet (Flo-Link Double O-Ring Connections)
FCN11CD	NP[1] UPS26-99, 3-speed, 230V, Grundfos
FCN12CD	NP[1] UP26-116, single speed, 230V, Grundfos
Requires: Flo-Link adapter sets for all connections or connector kit (see Hose Kit/Fitting section)	
	NP[2] with Foamed Cabinet (Flo-Link Double O-Ring Connections)
FCN21CD	NP[2] UPS26-99, 3-speed, 230V, Grundfos, Qty 2
FCN22CD	NP[2] UP26-116, single speed, 230V, Grundfos, Qty 2
Requires: Flo-Link adapter sets for all connections or connector kit (see Hose Kit/Fitting section)	
	NP[V] & NP[V2] w/ Foamed Cabinet (Flo-Link Dbl O-Ring Connections)
FCN13CD	NP[V] Magna GEO (variable speed), 230V, Grundfos**
FCN24CD	NP[V2] one Magna GEO (variable spd.) & one UPS26-99 (constant spd.), 230V, Grundfos**
Requires: Flo-Link adapter sets for all connections or connector kit (see Hose Kit/Fitting section) ****NOTE: Variable speed flow centers require a controller package (See Accessories section)**	

NOTE: Part #s in *BOLD ITALIC* are stocking items

NP Series
Non-Pressurized Flow Center

NP Series
(Two-pump version shown)

A controller kit is required for all variable speed flow centers (see Geothermal Accessories) or a **Flow Center Kit (FCK) is available, which includes all necessary components.**

Also available with Magna GEO variable speed pump

Flo-Link double O-ring fitting sets for union/transition to flow center. See Hose Kit/Fitting section for complete assortment of Flo-Link fittings.

GEO-METER flow meter tool, adapters, and case
(see Tools section)

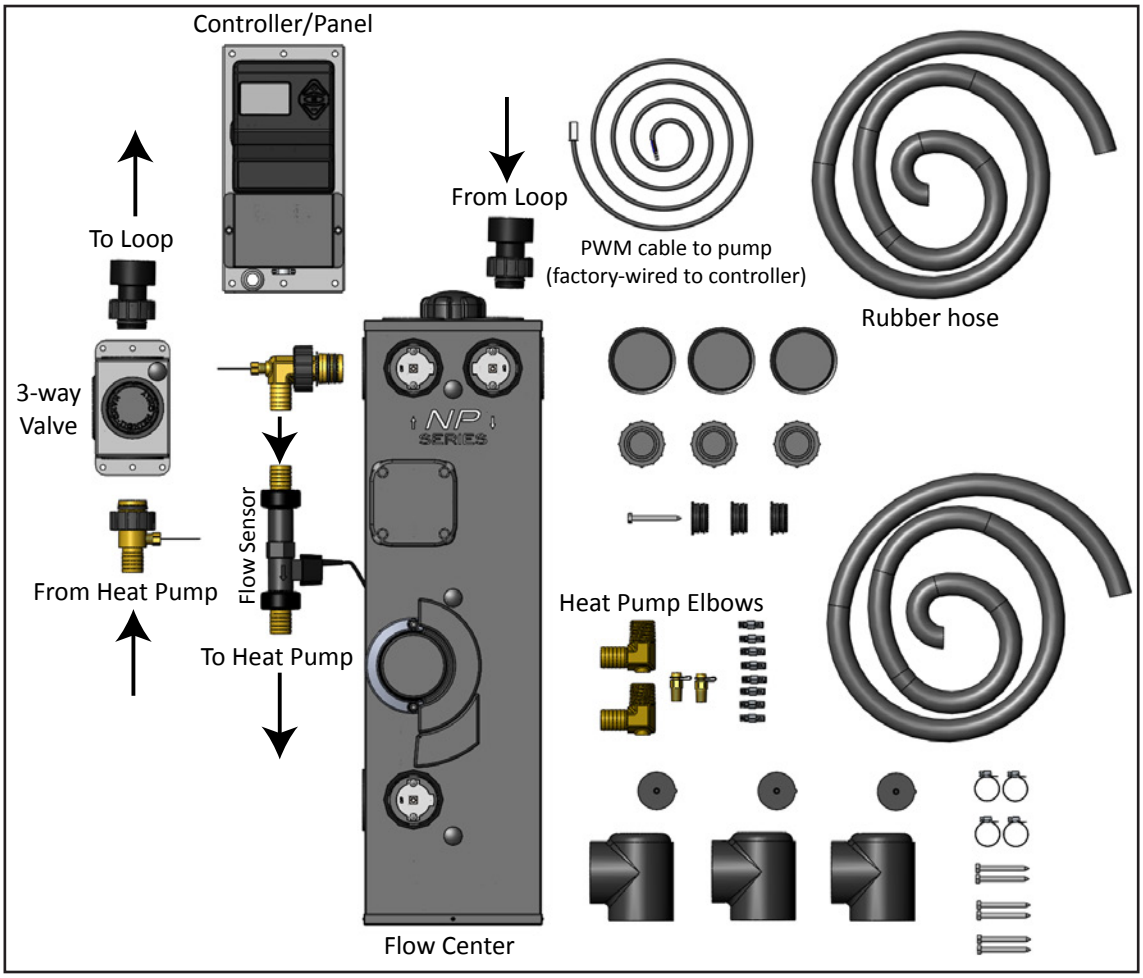
Non-Pressurized Variable Speed Flow Centers Kits

In our ongoing efforts to create products that are easier to install and time-saving, there are two new packages for variable speed pumping options that completely eliminate the need for wiring the controller. The packages listed below include variable speed control kits with a terminal strip for simply wiring the panel to the heat pump thermostat connections. Note that this option is for heat pumps with 24VAC thermostats.

Part Number	Description		
	Variable Speed Pre-wired Packages (Panel Mounted)		
	Flow Center	Control	Connections
FCK13BDF	Magna GEO (var. spd.), brass valves	Flow & Temperature Control	Hose kit / PE fusion**
FCK24BDF	1-Magna GEO + 1-UPS26-99, brass vlvs	Flow & Temperature Control	Hose kit / PE fusion**

**Kit includes all of the fittings necessary for connecting to the ground loop (1-1/4" PE fusion) and to the heat pump (1" MPT).

Kit Contents:



Terminal strip for connection to heat pump includes terminals R, C, ACC, & Y2.

Hose Kit Nomenclature

Hose kits provide a turn-key solution for connecting the geothermal heat pump to the flow center. They even include insulating boots for the elbow at the heat pump to help prevent condensation, and to lessen installation time.

HK 4 D M

Hose Kit
HK = Hose Kit

Fitting Size
3 = 3/4"
4 = 1"

Fitting Type at Heat Pump
M = MPT

Fitting Type at Flow Center
D = Double O-ring
M = MPT

Hose Kits with P/T Plugs at Heat Pump

HK4DM

HK4MM

Part Number	Description
	1" Hose Kit (Flo-Link Dbl O-ring @ Flow Cntr; MPT @ Heat Pump)
HK4DM	Hose kit contents: • Qty 1: 10 ft. 1" ID black hose • Qty 2: Insulating boot • Qty 2: Insulating boot caps • Qty 2: PT plug, 1/4" MPT • Qty 2: Fitting, Flo-Link x 1" hose barb (flow center) • Qty 2: Elbow, 1" MPT x 1" hose barb w/PT port (heat pump) • Qty 8: Hose clamps
	1" Hose Kit (MPT @ Flow Center & Heat Pump)
HK4MM	Hose kit contents: • Qty 1: 10 ft. 1" ID black hose • Qty 2: Insulating boot • Qty 2: Insulating boot caps • Qty 2: PT plug, 1/4" MPT • Qty 2: Fitting, 1" MPT x 1" hose barb (flow center) • Qty 2: Elbow, 1" MPT x 1" hose barb w/PT port (heat pump) • Qty 8: Hose clamps

NOTE: Part #s in *BOLD ITALIC* are stocking items

Fitting Nomenclature

FI S 4 D 4 B

Fitting

Direction
S = Straight
E = Elbow
Y = Y strainer
T = Tee
N = 45º Angle

Side 1 Diameter
3 = 3/4"
4 = 1"
5 = 1-1/4"
6 = 1-1/2"
8 = 2"

Side 1 Type
A = Insulated boot set for 1" brass elbows
B = Hose Barb
C = 1" Cam
D = Flo-Link Double O-ring (male)
E = Flo-Link Double O-ring (female)
F = FPT
G = Garden Hose (male)
H = Garden Hose (female)
J = Isolation Ball Valve
L = Flo-Link XL Double O-ring
M = MPT
P = PVC glue
R = MPT with 1/4" fitting for P/T port
S = Sweat
T = Flo-Link Double O-ring (male) with 1/4" fitting for P/T port
U = Socket Fusion
V = Hose Barb with Check Valve
W = Swivel
Z = Straight mechanical thread (male)

Side 2 Type
A = Insulated boot set for 1" brass elbows
B = Hose Barb
C = 1" Cam
D = Flo-Link Double O-ring (male)
E = Flo-Link Double O-ring (female)
F = FPT
G = Garden Hose (male)
H = Garden Hose (female)
J = Isolation Ball Valve
L = Flo-Link XL Double O-ring
M = MPT
P = PVC glue
S = Sweat
T = Flo-Link Double O-ring (male) with 1/4" fitting for P/T port
U = Socket Fusion
V = Hose Barb with Check Valve
W = Swivel
Z = Straight mechanical thread (male)

Side 2 Diameter
3 = 3/4"
4 = 1"
5 = 1-1/4"
6 = 1-1/2"
8 = 2"
S = 1-1/8" sweat

Fittings

Flo-Link double O-ring fittings are the geothermal industry's best transition/union fittings for connections to flow centers and heat pumps. The Flo-Link design provides a leak-free connection without the use of thread sealant, and saves installation time. All part numbers shown are for the set.

NOTE: Part #s in *BOLD ITALIC* are stocking items

PE and PVC Adapters

FIS4D5U: Flo-Link x 1-1/4" PE Fusion

FIS4D4U: Flo-Link x 1" PE Fusion

FIS4D5P: Flo-Link x 1-1/4" PVC Glue

Brass Adapters - Hose Barb

FIS4D4B: Flo-Link x 1" Hose Barb

FIS4D4V: Flo-Link x 1" Hose Barb (w/check valve)

FIS4D5B: Flo-Link x 1-1/4" Hose Barb

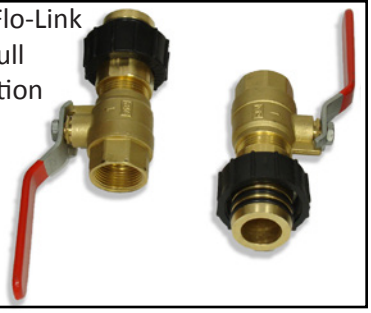
Brass Adapters - Threaded

FIS4D4M: Flo-Link x 1" MPT

FIS4D4F: Flo-Link x 1" FPT

FIS4E4M: Flo-Link (Female) x 1" MPT*

FIS4D4J: Flo-Link x 1" FPT full port isolation valves



Brass Adapters with Fitting for PT Port

FIS4T4B: Flo-Link x 1" Hose Barb w/fitting for PT port

FIE4T4B: Flo-Link Elbow x 1" Hose Barb w/ fitting for PT port

FIS4T4M: Flo-Link x 1" MPT with fitting for PT port

FIE4T4M: Flo-Link Elbow x 1" MPT w/ftg for PT port

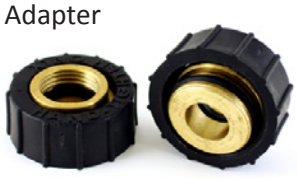
FIS4DSS: Flo-Link x 1-1/8" Sweat w/ftg for PT port

Installation/Service Adapters

FIE4D4C: Flo-Link x Male Cam Adapter

FIS4D3G: Flo-Link by Male Garden Hose Adapter

FIS4D3H: Flo-Link x Female Garden Hose Adapter



Fittings

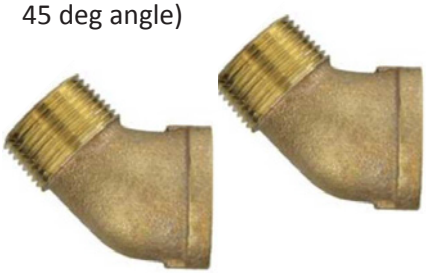
Threaded Fittings, Adapters, and Other Fitting Components

NOTE: Part #s in *BOLD ITALIC* are stocking items

FIE4M4B (ea.): 1" MPT Elbow x 1" Hose Barb w/ fitting for PT Port

FIS5U4M (ea.): 1" MPT x 1-1/4" socket fusion (use for GPM series threaded flow centers)

FIN4M4F (set): 1" MPT x 1" FPT 45 deg. Elbow (use with hose kit for heat pumps with fittings on 45 deg angle)



FIS4M4B and FIS4M5B (ea.): 1" MPT x 1" Hose Barb (4B) and 1" MPT x 1-1/4" Hose Barb (5B)

FIS4R4B (ea.): 1" MPT x 1" Hose Barb with 1/4" fitting for P/T port

FIE4M4F (set): 1" MPT x " FPT Elbow with P/T plugs (typically used for open loop systems)

FIE4A4A (set): Insulating boot set for 1" elbows

FIS4Z4W: Water Heater Adapters (use ASME rated water heater as buffer tank)

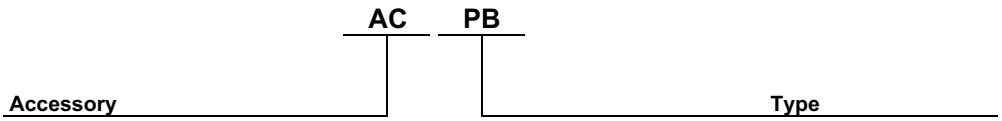
FIS4M4C (each): 1" MPT X 1" CAM, Aluminum

Dual Unit Connection Kit (Connect 2 heat pumps to 1 flow center)

FIT4D4E (set): Flo-Link double O-ring connections at flow center. Use H4KDM hose kit for heat pump connections or Flo-Link adapters if hard piping.

Accessory Nomenclature

Accessories include connection kits, pump controllers, and other items to add to the ease of installation for geothermal systems.



PB = Pressure Battery
GB = Geo-Booster
GP = Geo-Prime
PTP1 = 1/4" P/T plug
PTP2 = 1/2" P/T plug
VCT = Var. Spd. Controller for Magna GEO, temperature
VCFHB = Var. Spd. Controller for Magna GEO, flow & temp (hose barb)
VCFPVC = Var. Spd. Controler for Magna GEO, flow & temp (PVC)
CK4MM = 1" connector kit--MPT at heat pump & flow center (hose kit fittings w/o hose)
CK4DM = 1" connector kit--MPT at heat pump/Dbl O-ring @ flow cntr (hose kit fittings w/o hose)
CKNP = NP series connector kit with hose
PSRN = Pump sharing relay, NEMA enclosure
MP2436 = Unit mounting base pad, ¾" rubber, 24x36"
MP2836 = Unit mounting base pad, ¾" rubber, 28x36"
RH50 = Rubber hose, 1" diameter, 50' length

Geothermal Accessories

Pressure Battery Expansion Tank

Geo-Booster

Geo-Prime

Part Number	Description
	Loop Pressurization
ACPB	Pressure Battery (polyethylene expansion tank) -- up to 6 tons
ACGB	Geo-Booster (loop pressurization system -- 35 psig)
ACGP	Geo-Prime Tank*
*Use with Flo-Link flow centers or insulated pumps. May also be used with GPM flow centers with Flo-Link female x 1" MPT adapter (see Fittings section).	
	Pressure/Temperature Plugs
ACPTP1	1/4" P/T Plug (each)
ACPTP2	1/2" P/T Plug (each)
	Controllers for Variable Speed Flow Centers
ACVCT	Grundfos Magna GEO Controller (for NPV & NPV2) -- Temperature Control (hose kit or PVC connections -- 1/4" MPT immersion thermistors included)
ACVCFHB	Grundfos Magna GEO Controller (for NPV & NPV2) -- Temperature and Flow Control for hose kit connections
ACVCFPVC	Grundfos Magna GEO Controller (for NPV & NPV2) -- Temperature and Flow Control for PVC connections
	Two Heat Pump Flow Center Sharing Control
ACPSRN	Pump sharing relay (2 units; 1 flow center) w/NEMA encl.
	Additional Rubber Hose Lengths
ACRH50	1" ID Black 150 psi hose, 50 ft. length

NOTE: Part #s in *BOLD ITALIC* are stocking items

ACPTP1

ACPTP2

Pump Sharing Relay (Two heat pumps with one flow center) ACPSRN

Variable Speed Pump Controller (ACVCFHB shown)

Part Number	Description NP Series Hose Kit with 3-way Flushing/Purging Valve
ACCKNP	Hose kit contents: • Qty 1: 10 ft. 1” ID black hose. 150 psi • Qty 4: Insulating boot • Qty 2: Elbow, 1” MPT x 1” hose barb w/PT port (heat pump connection) • Qty 2: PT plug, 1/4” MPT • Qty 2: Elbow with 1/4” plugs, Flo-Link x 1” hose barb (flow center connection) • Qty 1: 3-way Valve, Single, Composite, Flo-Link fittings • Qty 1: 1-1/4” PE fusion x Flo-Link (3-way Valve connection to ground loop) • Qty 1: Flo-Link x 1” hose barb (3-way Valve connection to heat pump) • Qty 1: 1-1/4” PE fusion x 1” hose barb (ground loop connection to hose at flow center, RH side) • Qty 12: Hose clamps Compatible with NP series flow centers and heat pumps with 1” FPT connections.

NOTE: Part #s in *BOLD ITALIC* are stocking items

The vast majority of geothermal systems are installed indoors, which makes vibration and sound isolation important. Standard condenser pads are not designed for indoor packaged equipment. ACMP pads are made of high density SBR recycled rubber, which provides a high degree of vibration and sound absorption for compressor-bearing units installed indoors.

Part Number	Description
	Unit Mounting Pad
ACMP2436	3/4" high density rubber equipment pad, 24" x 36"
ACMP2836	3/4" high density rubber equipment pad, 28" x 36"

NOTE: Part #s in *BOLD ITALIC* are stocking items

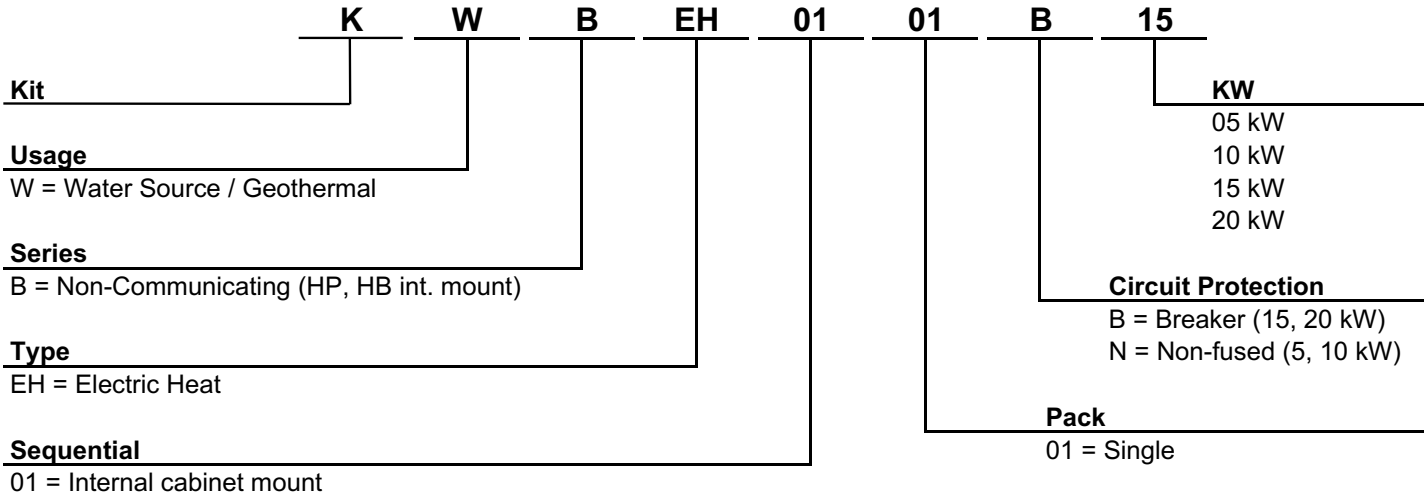
Size				
	HP Vertical	HB Vertical	HS	HW
018	N/A	ACMP2436	N/A	N/A
024	ACMP2436	ACMP2436	ACMP2436	ACMP2436
030	N/A	ACMP2436	N/A	N/A
036	ACMP2436	ACMP2436	ACMP2436	ACMP2436
042	N/A	ACMP2836	N/A	N/A
048	ACMP2436	ACMP2836	ACMP2436	ACMP2436
060	ACMP2836	ACMP2836	ACMP2836	ACMP2436
072	ACMP2836	N/A	N/A	ACMP2436

Equipment Pad Features:

- Absorbs low frequency sound/vibration (particularly suited for compressors)
- Environmentally friendly recycled material (SBR bonded black recycled rubber)
- High density (60 lbs/cu. ft.)
- Anti-skid texture
- Non-porous, both sides
- Rated for packaged unit weight (very little compression)
- May be trimmed as needed
- Individually boxed

Auxiliary Heater Nomenclature

The KW series heater package is a field Installable electric resistance heater kit designed for the HP and HB series heat pumps. The KW series heater package requires separate electrical service connection, independent from the heat pump's power supply. Installation of this heater package will convert the heat pump into a two point power connection. The heater package is available in four capacities, 5, 10, 15, and 20 kW. Unit tonnage vs. heater package capacity compatibility is shown in the table below.



Heater Series	GHP Model	Aux. Heat Size Compatibility			
		5 kW	10 kW	15 kW	20 kW
Series "B"	HP024	●	●	-	-
	HP036	●	●	-	-
	HP048	●	●	●	-
	HP060	●	●	●	●
	HP072	●	●	●	●
	HB018	●	-	-	-
	HB024	●	●	-	-
	HB030	●	●	-	-
	HB036	●	●	●	-
	HB042	●	●	●	-
	HB048	●	●	●	●
	HB060	●	●	●	●

● = Heater Kit compatible
-- = Heater Kit NOT compatible

Note: KWB series heaters are designed for internal mount only and will not fit inside units with side discharge air configuration. External duct heaters are required (supplied by others).

Open Loop Accessory Nomenclature

Solenoid valves and flow restrictors are essential for open loop systems to shut off the water when the heat pump is not running and to maintain proper water flow without wasting water.

MV BR 4 F

Motorized Valve

Valve Material
BR = Brass
BZ = Bronze
PL = Plastic
SS = Stainless Steel

Size
3 = 3/4"
4 = 1"

Fitting Type
F = FPT
S = Sweat

FR 6

Flow Regulator
3/4" FPT

GPM
2, 3, 4, 5, 6, 7, 8, 9

MVBR3F & MVBR4F

FR2 through FR9

Part Number	Description
	Motorized Solenoid Valves
MVBR3F	Valve, motorized solenoid, forged brass 3/4” FPT, 24V w/end sw
MVBR4F	Valve, motorized solenoid, forged brass 1” FPT, 24V w/end sw
	Flow Regulator Valves
FR2	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 2 GPM
FR3	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 3 GPM
FR4	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 4 GPM
FR5	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 5 GPM
FR6	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 6 GPM
FR7	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 7 GPM
FR8	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 8 GPM
FR9	Valve, flow regulator, 3/4” FPT x 3/4” FPT, 9 GPM

NOTE: Part #s in *BOLD ITALIC* are stocking items

Fusion and Service Tool Nomenclature

There are a number of specialized tools needed for proper geothermal system installation. Bryant offers a full range of fusion equipment, flush carts, and service jobs to get the job done right the first time.

TL **HFD**

Tools for Fusion & Service

Type	**Type**
HFD = Heat fusion tool double face	FHB = Heater bag
FKT = Complete fusion kit	PC4 = Pipe cutter 1"
SF3 = 3/4" socket face	PC5 = Pipe cutter, ratchet, 1-1/2"
SF4 = 1' socket face	PC8 = Pipe cutter, ratchet, 2"
SF5 = 1-1/4" socket face	GGO = Geo-Gooser
SF6 = 1-1/2" socket face	FLK = Flush kit
SF8 = 2" socket face	DTH = Digital thermometer
CR3 = 3/4" cold ring	PG1 = Pressure gauge, 100 psi
CR4 = 1" cold ring	GAD = Gauge adapter
CR5 = 1-1/4" cold ring	HYD = Hydrometer (alcohols)
CR6 = 1-1/2" cold ring	MFI = Magnetic field indicator
CR8 = 2" cold ring	FLC = Flush Cart
DG3 = 3/4" depth gauge / chamfer tool	FLC2 = Flush Cart with 1-1/4" ball valves on hose assy
DG4 = 1" depth gauge / chamfer tool	FLH1 = Flush cart hose assy set, 10 ft., 1" CAM ftgs (loop side)
DG5 = 1-1/4" depth gauge / chamfer tool	FLH2 = Flush cart hose assy set, 10 ft., 1" CAM ftgs (loop side), 1-1/4" ball valves included with hoses
DG6 = 1-1/2" depth gauge / chamfer tool	FLH3 = Flush cart hose assy set, 20 ft., 1-1/2" CAM ftgs (loop side)
DG8 = 2" depth gauge / chamfer tool	FB100 = Flush cart filter, 100 micron
FHO = Fitting holder	FB001 = Flush cart filter, 1 micron
FTI = Fusion timer	NPFMT = NP series flow meter tool
TS5 = Temp stick 500 deg.	NPBDA = Flow meter tool, B & D adapter
MBR = Mounting bracket	

Flush Cart

The professional's choice to purge air and flush debris from residential and light commercial geothermal ground loops, this premium Flush Cart includes all the important features required to safely flush and purge the loop including power flushing, power draining, pump and dump, and debris filtering. Its compact design utilizes standard components which allows for easy field service. The 1.5 HP self-priming 115V pump is mounted above the cart's axle, providing a well balanced system that is easy to maneuver.

TLFLC2

Part Number	Description
	Flush Cart & Accessories
TLFLC2	Flush cart*
TLFLH1	Hose assy, flush cart (set of 2, 10 ft.)--1" CAM ftgs (loop side)
TLFLH2	Hose assy, flush cart (set of 2, 10 ft.)--w/ 1-1/4" ball valves
TLFFLH3	Hose assembly (set of 2, 20 ft.)--1-1/2" CAM ftgs (loop side)**
TLFB100	Filter bag, 100 micron, for flush cart **(Each)**
TLFB001	Filter bag, One (1) micron, for flush cart **(Each)**

TLFLH2

TLFB001/
TLFB100

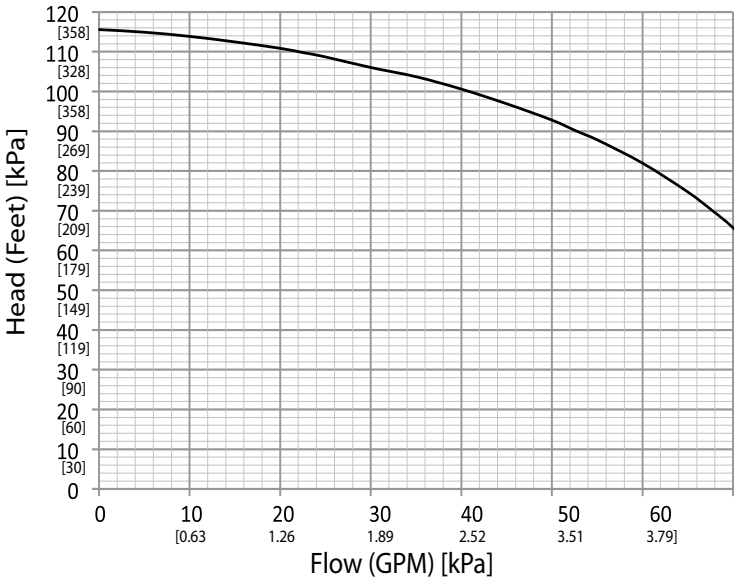
*Ships with hose set with 1-1/4" ball valves

**Ships with 2 - CAM male x male adapters. May be used as an extension set or with Flo-Link XL flow centers.

Features:

- ***ETL Safety Listing (Listed to UL Standard 778)***
- Tank: 10" Diameter, 13 gallon capacity
- Hand Truck: P-Handle, powder-coated steel
- Tires: 10" Pneumatic
- Wiring: 20' 12/3 SJO cord with 15 Amp male plug
- Power Switch: Weatherproof switch box with 20 Amp GFCI protected switch
- Filter: Removable/reusable, 5.5" Dia X 31"long, 100 micron, 90 GPM max.
- Power Flush Valve: Brass, 2" Full port
- Dead-Head Valve: Brass, 1.5" Full port
- Hose connections: 1.5" CAM male quick-connect
- Power Drain Valve: Brass, ½" Full port with garden hose swivel connection
- Pump & Dump Valve: Brass, ½" Full port with garden hose swivel connection
- Fill Valve: Brass, ½" Full port with garden hose swivel connection
- Pump Case Drain Port Valves: (2) ¼", Brass
- PT Port: Located on discharge side of pump; allows pressure measurement
- Pump/Tank Connection: 2" flexible wire-reinforced hose
- Sight tube: Flexible with O-ring; allows fluid level monitoring during dead-head
- Hoses: (2) 1.5" ID, Flexible PVC hose with rigid PVC helix with 1.5" CAM female quick connect fittings (pump side) and 1" CAM fittings (loop side)

Flush Cart Munro Pump Curve



Part Number	Description
	Loop Tools & Accessories
TLGGO	Geo-Gooser loop pressurization device
TLDTH	Thermometer, digital w/case
TLPG1	Pressure gauge, 0-100 psig, 3.5” dial w/PT adapter
TLGAD	Gauge adapter P/T plug w/guard
TLHYD	Hydrometer, alcohols
TLMFI	AC Magnetic Field Indicator (check pump operation)
TLFLK	Loop Service and Flush Kit

NOTE: Part #s in *BOLD ITALIC* are stocking items

Contact **FAST Parts** for flow center replacement pumps, 3-way valve re-build kits, and other replacement parts for geothermal accessories (see page 28 for parts list).

TLFLK

TLGGO

TLDTH

TLPG1

TLGAD

TLHYD

TLMFI

Part Number	Description
	GEO-METER Flow Meter Tool
TLNPFMT	Mechanical (variable area) flow meter tool
TLNPBDA	Adapter kit for B & D flow meter tool (allows B & D tool to be used with NP series flow centers)
Flow meter tool 3762 contains: Tool with fittings, 90° cam x Dbl O-ring adapter, straight cam x Dbl O-ring adapter, B & D adapter, and carrying case.	

TLNPBDA: Adapter kit for B & D flow meter tool

TLNPFMT: FLow meter tool (shown in and out of case)

Flow meter tool shown in use

TLHFD

TLFKT

Socket Face Set

Cold Ring Vise Grip Clamp

Depth Gauge/Chamfer Tool

Part Number	Description
	Fusion Tools
TLHFD	Heat fusion tool - double face
TLFKT	Fusion tool kit 3/4”, 1-1/4”, & 2” -- includes: • Complete fusion tool set (3/4”, 1-1/4” & 2”) • Heating tool w/cover, socket faces, cold rings, 1-1/4” & 2” chamfer tools, tool box • Timer, temple sticks, up to 2” ratchet cutter
	Socket Faces
TLSF3	3/4” IPS socket face set
TLSF4	1” IPS socket face set
TLSF5	1-1/4” IPS socket face set
TLSF6	1-1/2” IPS socket face set
TLSF8	2” IPS socket face set
	Cold Rings Vise Grip Clamp
TLCR3	3/4” IPS cold ring Vise Grip clamp
TLCR4	1” IPS cold ring Vise Grip clamp
TLCR5	1-1/4” IPS cold ring Vise Grip clamp
TLCR6	1-1/2” IPS cold ring Vise Grip clamp
TLCR8	2” IPS cold ring Vise Grip clamp
	Depth Gauge/Chamfer Tool
TLDG3	3/4” IPS depth gauge/chamfer tool
TLDG4	1” IPS depth gauge/chamfer tool
TLDG5	1-1/4” IPS depth gauge/chamfer tool
TLDG6	1-1/2” IPS depth gauge/chamfer tool
TLDG8	2” IPS depth gauge/chamfer tool
**	Replacement blade for all depth gauge/chamfer tools**

Available through **FAST Parts.

FLFHO

TLFTI

TLTS5

TLMBR

TLFHB

TLPC4

TLPC5

Part Number	Description
	Fusion Tools
TLFHO	Fitting holder - 2” IPS
TLFTI	Fusion timer
TLTS5	Temp stick - PE, 500°F
TLMBR	Mounting bracket for fusion tool
TLFHB	Fusion tool heater bag
	Pipe Cutters
TLPC4	PE cutter - up to 1”
**	Replacement blade for TPC4
TLPC5	PE ratchet cutter - up to 1-1/4”
**	Replacement blade for TPC5
TLPC8	PE ratchet cutter - up to 2”
**	Replacement blade for TPC8

Available through **FAST Parts.

Replacement Parts

Replacement pump head -- “NV” (no volute) part numbers*

9428/9405/9104*

9024

9424

3518

2938

3479/3480

3341

Gasket in 4026 (pack of 10)

Spiral Ring in 4282 (pack of 10)

3977

Swivel Nut in 4283 (pack of 4)

Contact FAST Parts for flow center replacement pumps, 3-way valve re-build kits, and other replacement parts for geothermal accessories.

Part Number	Description
	Replacement Pumps - Flow Centers
9425NV	UPS26-99 (3-speed), 230V Grundfos pump, no volute*
9428	UPS26-99F (3-spd), 230V Grundfos pump, cast iron volute
9405NV	UP26-116 (single speed), 230V Grundfos pump, no volute*
9405	UP26-116F (sngl spd), 230V Grundfos pump, cast iron volute
9104NV	UPS26-99 (3-speed), 115V Grundfos pump, no volute*
9104	UPS26-99F (3-spd), 115V Grundfos pump, cast iron volute
9024	Grundfos Magna GEO 32-140 var. speed, 230V, cast iron
	Replacement Pump - Flush Cart
9424	Munro 1.5 HP 115V/208-230V single phase
	Blank-off Plate Kits (convert 2-pump to 1-pump flow center)
3480	Blank-off Plate Kit, Flo-Link Double O-ring flow centers
3479	Blank-off Plate Kit, 1” FPT flow centers
	Flow Center 3-Way Valve Repair Kits
2938	Repair Kit, Composite Valve, Flo-Link Double O-ring
3518	Repair Kit, Brass Valve, Flo-Link Double O-ring
3341	Repair Kit, Brass Valve, FPT Connections
	Swivel Fitting Replacement Parts
4026	Pack of 10, 1” gaskets for swivel fittings at heat pump
4282	Pack of 10, spiral rings for swivel fittings at heat pump
4283	Pack of 4, female nuts for swivel fittings at heat pump
	Wiring KIts
3977	Wiring kit for residential flow centers (included w/flow centers)
	Replacement Parts for Variable Speed Flow Centers
3685	UPC GEO variable speed pump controller (replacement)
3683	Flow sensor and tube, VFS10-200 (replacement)
3986	Thermistor 10K, 1/4” MPT brass immersion (replacement)
3728	Isolation relay, 24VAC, SPST/NO (replacement)
3699	Wiring harness, Low Voltage, Magna GEO (replacement)

* Pump head only (does not include volute)

3683

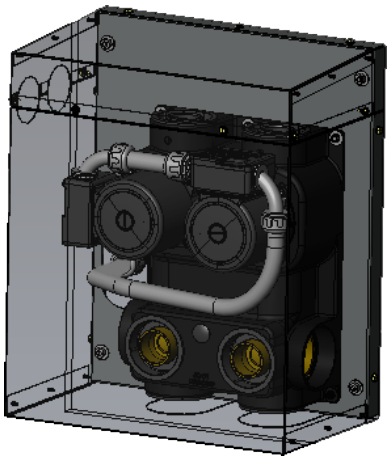
3986

3728

3699

3685

Replacement Parts



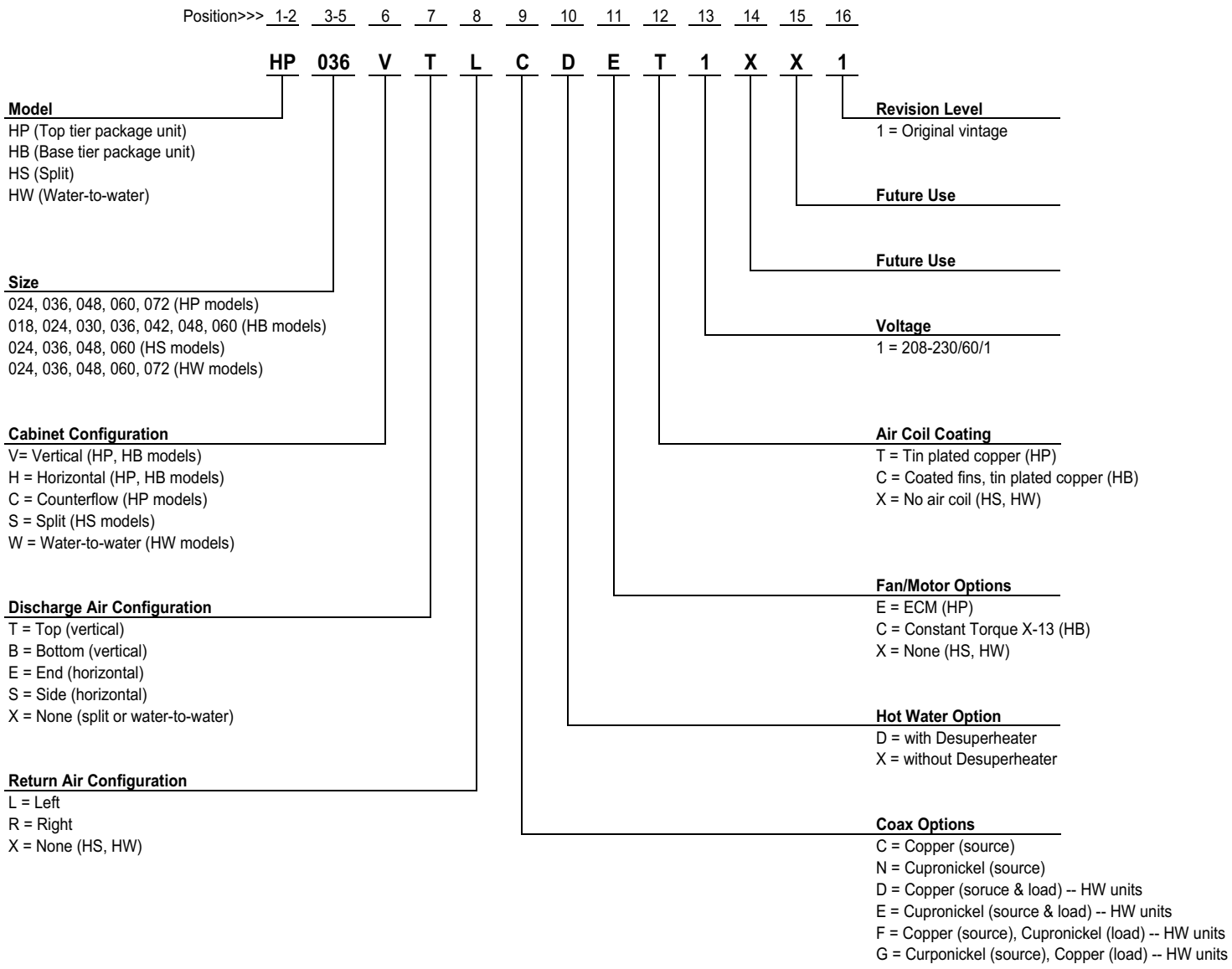
Flow Center Kit for Outdoor Split Application

Contact FAST Parts for flow center replacement parts.

Part Number	Description
	Replacement Parts - Outdoor Split Flow Center Kits
4258	Temperature sensor/switch
4404	Single pump wiring harness (FCP11BDOS)
4405	Double pump wiring harness (FCP21BDOS)
4301	Wiring kit for relays
4249	Base Panel
4416	Cover, Top and Bottom
4299	Desuperheater switch plug

Residential Unit Nomenclature - ICP Geothermal Units

Rev. March 2017



Specifications - ICP Geothermal Units

Model & Size	Stage	Performance Data							
		Open Loop / Well Water				Closed Loop			
		Cooling		Heating		Cooling		Heating	
		Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
HP024	Part	21000	30.0	18000	4.6	20000	24.5	15500	4.0
	Full	29000	24.0	25000	4.6	27500	18.7	19000	3.8
HP036	Part	27000	29.0	22500	4.5	27000	24.5	20500	4.0
	Full	42000	21.6	36000	4.2	38000	17.2	28000	3.8
HP048	Part	38000	24.0	32000	4.6	36000	21.8	28500	4.0
	Full	54000	19.0	48000	4.2	49000	15.5	38000	3.6
HP060	Part	48000	26.0	40000	4.6	45000	23.5	36500	4.0
	Full	68000	19.7	61000	4.3	62000	15.7	49000	3.6
HP072	Part	57000	25.2	47000	4.0	56000	21.8	42000	3.7
	Full	77000	19.6	68000	4.2	74000	16.3	53000	3.5
HB018	Full	21300	25.6	17700	4.5	20500	19.0	14800	3.8
HB024	Full	28400	28.1	23700	4.6	26000	21.1	18000	4.0
HB030	Full	31700	27.0	25000	5.2	28500	19.4	20500	4.3
HB036	Full	40200	25.9	34400	4.9	37500	19.7	26000	4.1
HB042	Full	45000	25.7	35000	5.1	42200	21.7	26800	4.1
HB048	Full	52900	26.1	40500	4.3	49500	20.0	33400	3.7
HB060	Full	66500	24.1	56700	4.9	61500	18.5	47000	4.2
HS024	Part	21100	28.0	17500	4.3	21100	28.0	15300	3.8
	Full	28000	23.8	23900	4.3	26100	18.0	19000	3.7
HS036	Part	27800	25.7	25000	4.4	27800	25.7	21700	3.8
	Full	36300	20.6	36100	4.3	29700	14.8	27300	3.6
HS048	Part	39200	25.6	34000	4.4	39200	25.6	30000	3.9
	Full	52000	20.1	46600	4.2	49000	15.8	36100	3.5
HS060	Part	51000	28.8	42900	4.6	51000	28.8	37800	4.1
	Full	66400	22.3	58800	4.5	63900	18.3	46000	3.8
HW024	Part	18500	25.7	17000	3.7	18000	22.1	15000	3.2
	Full	24500	21.2	25000	3.5	22500	15.9	19500	3.0
HW036	Part	25000	24.8	25000	3.6	24000	20.6	22000	3.2
	Full	34000	20.2	34000	3.5	30000	14.6	27000	3.0
HW048	Part	33500	23.6	34500	3.6	32500	20.1	30500	3.2
	Full	45000	19.7	47000	3.5	41000	14.9	37500	3.0
HW060	Part	42500	23.3	41500	3.6	41000	19.8	38000	3.3
	Full	55500	19.9	59500	3.5	51000	14.8	48000	3.0
HW072	Part	50500	21.8	52000	3.6	48500	18.7	44500	3.2
	Full	64000	18.8	70000	3.4	60000	14.8	53500	3.0

Specifications - ICP Geothermal Units

Model & Size	Weight			Dimensional Data											
	Operating Lbs., *[Kg]*			Dimensions - Inches / *[centimeters]*											
				Vertical Upflow			Vertical Downflow			Horizontal			Split & Water-to-Water		
	Vertical	Horizontal	Split / W-W	Height	Width	Depth	Height	Width	Depth	Height	Width	Depth	Height	Width	Depth
HP024	290 *[132]*	290 *[132]*		47.25 *[120]*	21.5 *[54.6]*	26.0 *[66]*	47.25 *[120]*	21.5 *[54.6]*	26.0 *[66]*	21.75 *[55.2]*	26.0 *[66]*	54.5 *[138.4]*			
HP036	290 *[132]*	290 *[132]*		47.25 *[120]*	21.5 *[54.6]*	26.0 *[66]*	47.25 *[120]*	21.5 *[54.6]*	26.0 *[66]*	21.75 *[55.2]*	26.0 *[66]*	54.5 *[138.4]*			
HP048	318 *[145]*	318 *[145]*		47.25 *[120]*	24.0 *[61]*	32.75 *[83.2]*	47.25 *[120]*	24.0 *[61]*	32.75 *[83.2]*	21.75 *[55.2]*	30.0 *[76.2]*	68.0 *[172.7]*			
HP060	390 *[178]*	390 *[178]*		51.25 *[130.2]*	26.0 *[66]*	33.25 *[84.5]*	51.25 *[130.2]*	26.0 *[66]*	33.25 *[84.5]*	21.75 *[55.2]*	30.0 *[76.2]*	68.0 *[172.7]*			
HP072	450 *[205]*	450 *[205]*		58.25 *[148]*	26.0 *[66]*	33.25 *[84.5]*	58.25 *[148]*	26.0 *[66]*	33.25 *[84.5]*	21.75 *[55.2]*	30.0 *[76.2]*	78.0 *[198.1]*			
HB018	195 *[89]*	198 *[90]*		39.25 *[99.7]*	21.75 *[55.2]*	21.75 *[55.2]*				19.75 *[50.2]*	22.25 *[56.5]*	45.25 *[114.9]*			
HB024	229 *[104]*	307 *[140]*		47.25 *[120]*	21.75 *[55.2]*	26.25 *[66.7]*				22.0 *[55.9]*	26.25 *[66.7]*	54.75 *[139.1]*			
HB030	269 *[123]*	358 *[163]*		47.25 *[120]*	24.25 *[61.6]*	33.5 *[85.1]*				22.0 *[55.9]*	30.25 *[76.8]*	68.25 *[173.4]*			
HB036	281 *[128]*	369 *[168]*		47.25 *[120]*	24.25 *[61.6]*	33.5 *[85.1]*				22.0 *[55.9]*	30.25 *[76.8]*	68.25 *[173.4]*			
HB042	334 *[152]*	400 *[182]*		58.25 *[148]*	26.25 *[66.7]*	33.5 *[85.1]*				22.0 *[55.9]*	30.25 *[76.8]*	79.0 *[200.7]*			
HB048	340 *[155]*	405 *[184.7]*		58.25 *[148]*	26.25 *[66.7]*	33.5 *[85.1]*				22.0 *[55.9]*	30.25 *[76.8]*	79.0 *[200.7]*			
HB060	396 *[181]*	452 *[206]*		66.25 *[168.3]*	26.25 *[66.7]*	33.5 *[85.1]*				22.0 *[55.9]*	30.25 *[76.8]*	89.25 *[226.7]*			
HS024			189 *[86]*										21.5 *[54.6]*	24.0 *[61]*	27.4 *[69.6]*
HS036			189 *[86]*										21.5 *[54.6]*	24.0 *[61]*	27.4 *[69.6]*
HS048			189 *[86]*										21.5 *[54.6]*	24.0 *[61]*	27.4 *[69.6]*
HS060			261 *[119]*										23.3 *[59.2]*	27.0 *[68.6]*	33.4 *[84.8]*
HW024			250 *[114]*										24.12 *[61.3]*	32.5 *[82.6]*	24.0 *[61]*
HW036			270 *[123]*										24.12 *[61.3]*	32.5 *[82.6]*	24.0 *[61]*
HW048			290 *[132]*										24.12 *[61.3]*	32.5 *[82.6]*	24.0 *[61]*
HW060			340 *[155]*										24.12 *[61.3]*	32.5 *[82.6]*	24.0 *[61]*
HW072			360 *[164]*										24.12 *[61.3]*	32.5 *[82.6]*	24.0 *[61]*

LoopLink Geothermal Ground Loop Design Software

LoopLink RLC

RESIDENTIAL/LIGHT COMMERCIAL
GEOTHERMAL DESIGN
MADE SIMPLE

ICP GEOTHERMAL DESIGN SOFTWARE

Features

- **Effortlessly Up-to-date:** Web-based format means that every time you log in, you're assured to be working with the latest version.
- **Ready Where You Are:** Web-based format provides access from any device, anywhere you have an internet connection. Doesn't tie you down to a single workstation.
- **Accurate, Repeatable Results:** Design with confidence using the only software built on the calculations methods outlined in the IGSHPA Residential/Light Commercial Design Manual.
- **Demonstrate Your Expertise:** Using LoopLink gives you a competitive advantage over dealers who don't demonstrate this level of professionalism to potential customers.
- **Experience Applied:** LoopLink software programmers have over 50 years of cumulative geothermal design experience.
- **User Support:** LoopLink is intuitive and easy to use. But if you need assistance, phone support is available, Monday-Friday 8AM – 5PM central, or by e-mail 8AM - 10PM 7 days a week.

Includes

- **Capability to do projects with multiple heat pumps:** Up to 10 zones with any number of heat pumps per zone.
- **Load Estimator:** Use your own load calculators or the Load Estimator tool for a quick estimate.
- **Unit Sizing:** Includes all current ICP models. Once selection is made, the software displays efficiencies, capacities, run hours, energy usage etc. Warnings are displayed where equipment selection is insufficient.
- **Loop Sizing:** Many loop configurations are available. Let the software calculate the loop length or use the fixed length mode.
- **Dual Fuel:** Capability to size systems with geothermal splits and gas furnace back-up.
- **Economic Analysis:** Accurate cost estimates are just as important as getting the design right. LoopLink calculates simple payback, operating cost comparisons, ownership cost breakdowns, accrued 30-year savings.
- **Carbon Emissions Calculator:** Compares the upstream and point-of-use carbon emissions for those "green" customers.
- **Professional Reports:** Present your customers with professionally designed reports that take seconds to generate and can be saved as a PDF.

Work Online

- **Access:** Log in and work from anywhere, anytime you have an internet connection. Connect with your tablet, laptop or smart phone.
- **Ease of Ownership:** Never worry about updates or downloads.
- **Peace of Mind:** All your projects are stored remotely on secure mirrored servers running regular back-ups.

Don't Buy – Subscribe

- **Accountability:** Upgrades are included at no extra charge
- **Expert Support:** Free technical support
- **Affordability:** Select month-to-month or annual subscription plans

Annual Plan: $99/year (save $141)
Monthly Plan: $20/month

Check it out at http://arcoaire.looplinkrlc.com, http://comfortmaker.looplinkrlc.com, http://dayandnight.looplinkrlc.com, http://heil.looplinkrlc.com, http://keeprite.looplinkrlc.com, or http://tempstar.looplinkrlc.com

Geothermal Design Calculators

Geothermal System Design Calculators are available free of charge on the Geo-Flo website at www.geo-flo.com (Geo-Flo is the manufacturer of ICP flow centers). This comprehensive suite of calculators provides geothermal and hydronic design tools, concentrating on the hydronic portions of the system. From pressure drop calculation to pump sizing to flushing requirements, the design suite is just the starting point for new services continually being developed. Calculators available on the website are as follows:

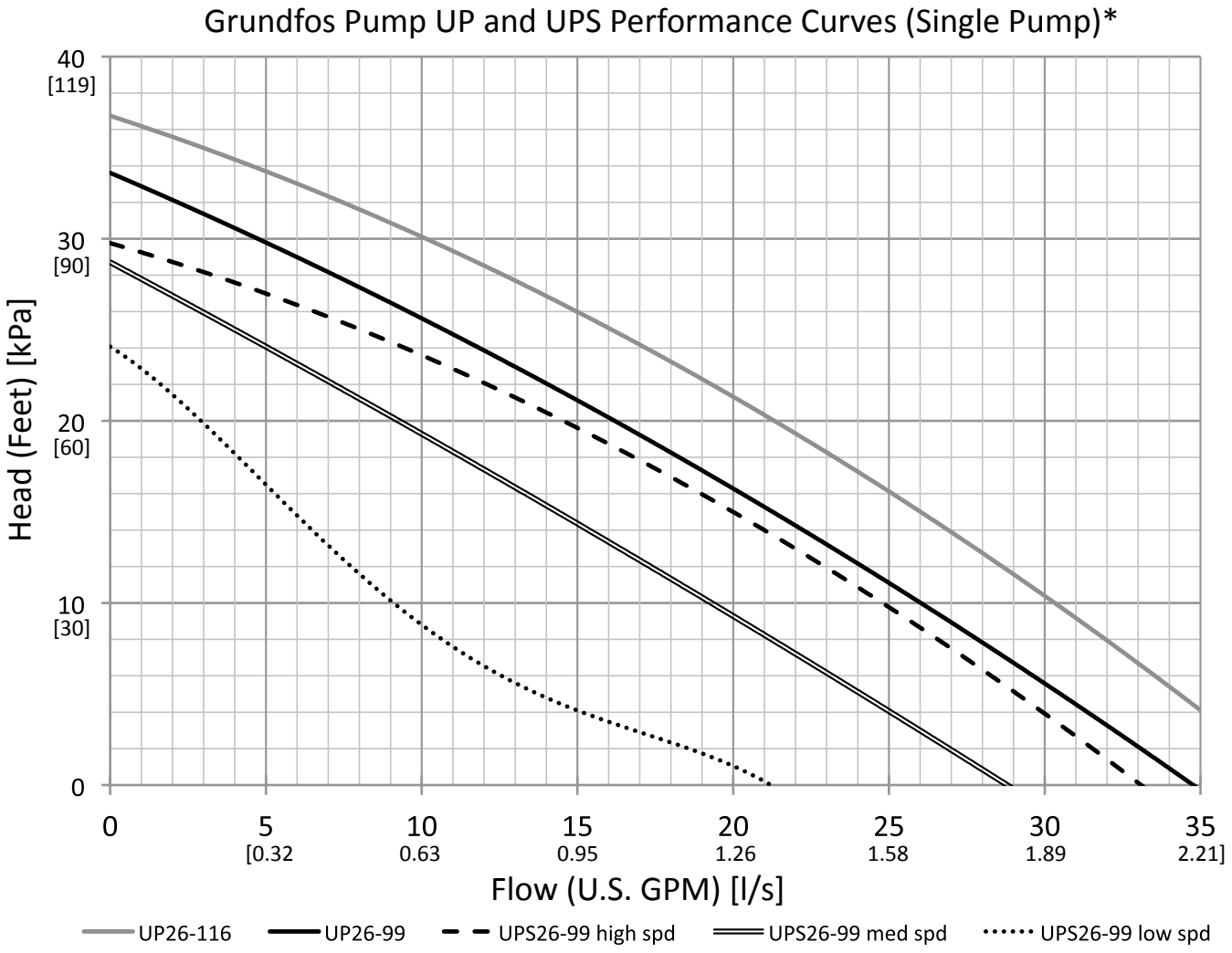
- Residential/light commercial pressure drop Calculators:
  - Single unit, outside header or inside header
  - Central pumping, up to five units
  - Distributed pumping (flow center per heat pump), up to five units
  - Dual unit (NPD) flow center
  - Multi unit (NPM) flow center
- Commercial pressure drop Calculators:
  - Pipe segment pressure drop, up to 6” pipe
  - Flow rate/pump affinity laws
  - Cv calculator
- Pump sizing Calculators:
  - Flow centers, up to 100 U.S. GPM
  - Series/Parallel pump Calculator
  - Reynolds number Calculator
  - Magna3 pump sizing
  - Geothermal expansion tank Calculator
- Flush cart calculator
- Hydronic Calculators:
  - Buffer Tank Sizing Calculator
  - Heat pump load sizing piping (heat pump to buffer tank) pressure drop
  - Radiant floor/fan coil piping pressure drop
  - Expansion tank Calculator (radiant and fan coil systems)
- Pond loop coil Calculator
- Service Calculators (mobile device friendly!):
  - Flow Rate calculator (calculates flow rate based upon heat exchanger pressure drop)
  - HE-HR calculator (calculates Heat of Extraction or Heat of Rejection)

To learn more about the design suite, go to www.geo-flo.com, and select “Design Calculators.” Sign up for an account, and gain instant access.

Pump Curves

Grundfos UPS26-99, UP26-99, and UP26-116

UPS26-99 (3-speed) and UP26-116 (single speed) pumps are used on current residential flow centers. UP26-99 (single speed) pumps are still in use on older flow centers.



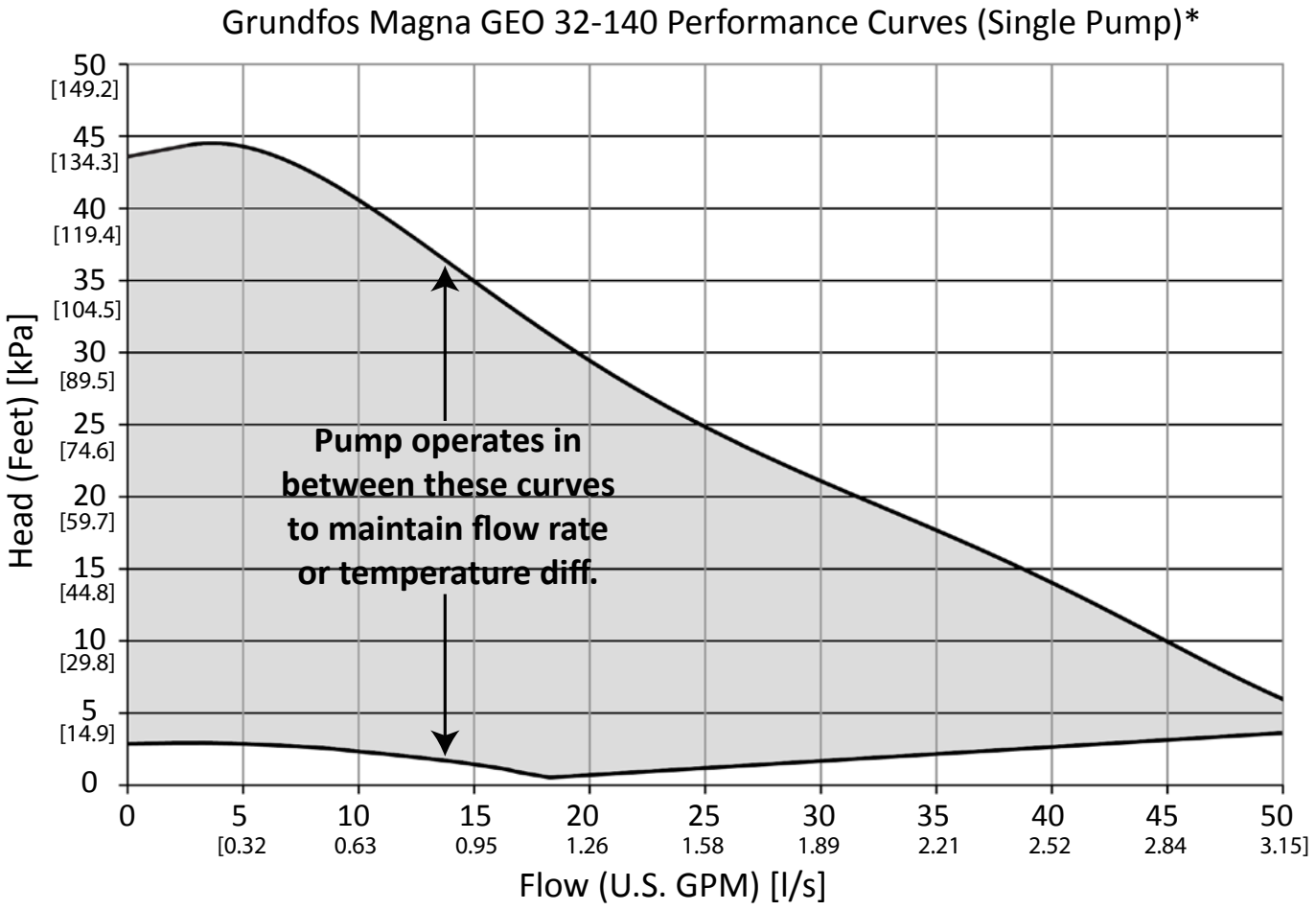
*Above pump curves are for a single pump. Pumps for two-pump flow centers are piped in series. To determine the pressure drop with multiple pumps, multiply the head shown on the chart by the number of pumps. For example, one UP26-116 pump can produce 24 ft. of head at 15 GPM; two UP26-116 pumps in series can produce 48 ft. of head.

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

Pump Curves

Grundfos Magna GEO Variable Speed

The Magna GEO pump is used on residential Flo-Link (double O-ring) pressurized flow centers and on NP series non-pressurized flow centers. For two-pump variable speed flow centers, use the graph on the next page.



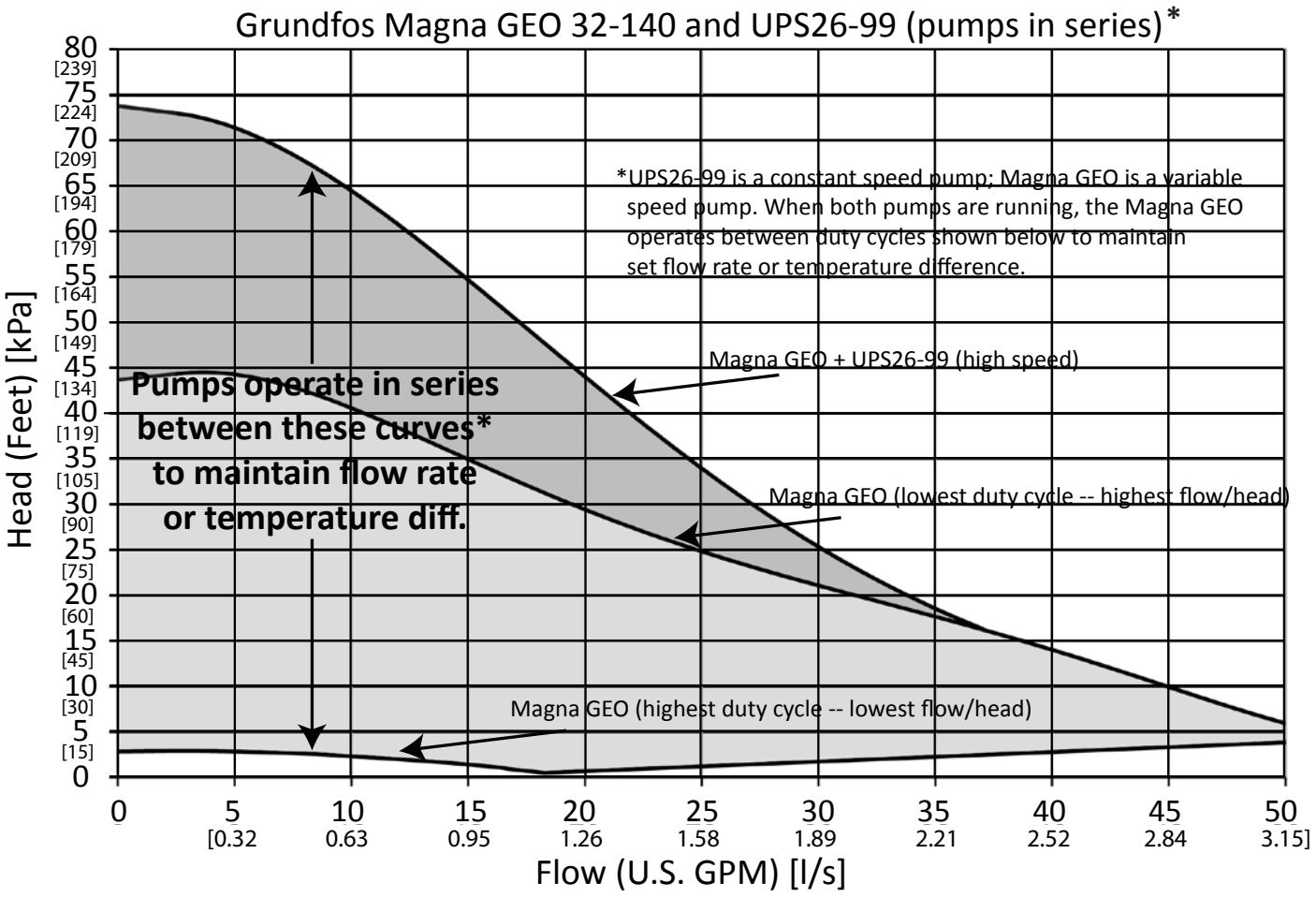
*Above pump curves are for a single pump. The Magna GEO (variable speed) pump adjusts speed (when used with a controller) to maintain flow rate or temperature difference. The pump can operating anywhere between the upper and lower curves to provide the flow rate set point.

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

Pump Curves

Grundfos Magna GEO Variable Speed with Second Pump in Series (UPS 26-99)

The Magna GEO pump is used on residential Flo-Link (double O-ring) pressurized flow centers and on NP series non-pressurized flow centers. The graph below is for two-pump flow centers.



*When the Magna GEO pump is used with a second pump in series, the second pump is constant speed. The Magna GEO (variable speed) pump adjusts speed (when used with a controller) to maintain flow rate or temperature difference. The controller energizes the constant speed pump (UPS26-99) when the Magna GEO cannot meet set point, and adjusts the Magna GEO pump accordingly.

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

Updates Table

Date	**Description of Changes**	Pages
September 19, 2017	Added flow center kit for outdoor split installation	1,5,9,29
August 8, 2017	Added information on geothermal components not included in the catalog.	Inside front cover
	Added FIS5U4M 1-1/4” socket fusion x 1” MPT adapter	14
	Added replacement parts for swivel fittings & var. speed flow centers	27
	Added pages for geothermal heat pump nomenclature/features	28
	Added page for LoopLink geothermal ground loop design software	31
	Added page for Geothermal Design Calculators	32
May 13, 2016	Updated picture of FIS4M4B and FIS4M5B	8,14
	Corrected hose kit descriptions	11
	Updated fitting nomenclature	12
	Added FIS4R4B fitting (1” MPT x 1” hose barb w/port for P/T plug)	14
	Added FIT4D4E Dual Unit Connection Kit	
	Updated auxiliary heater nomenclature and compatibility table	19
	Updated picture of flow regulator valve	20
Dec. 10, 2015	Updated notes on wiring kit	Various
Nov. 24, 2015	First Published	All

Contact **FAST Parts** for flow center replacement pumps, 3-way valve re-build kits, and other replacement parts for geothermal accessories (see page 28 for parts list).

Geothermal System Components Catalog

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