

January 2020
Volume 8



B&D
MFG, INC.®

Full Line Product Catalog

- ♦Geothermal & HDPE Fittings
- ♦Hydronic Air Handlers
- ♦Residential & Commercial Equipment
- ♦Fusion Equipment



Contact your local
Distributor for pricing
and availability



THANK YOU FOR TAKING THE TIME TO LOOK THROUGH OUR CATALOG!!

We know the high quality products we supply in this catalog will spark interest with you!!

WE CAN SAVE YOU TIME AND SAVE YOU MONEY.

Give us a call on any questions you have. We are here to give you prompt service. Our number is **1-866-646-6724**. It will be a call that will improve your business from this point on.

B & D Mfg., Inc sells through wholesale distributors only. So call us at **1-866-646-6724** to have a credit application faxed or emailed to you today. You may return these by mail or fax us at **1-800-952-7101**.

Once we have reviewed your credit application you will be given a multiplier which will allow you to buy at a considerable discount. However, special pricing for large bid jobs may be applicable. Contact us for details.

Once again, thank you for your time and we hope to hear from you soon.

Sincerely,

B&D Mfg., Inc

Prices are subject to change without notice.

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FLOW CENTERS: BREAKDOWN OF SIZES



KT SS Flow Center – The “Knocked – Down” Cost Effective Solution
(Field Assembly Required)

Overall Size (in)

Part Number	# of cks	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet**/Outlet Size	Ht. (in)	Wdth (in.)	Dpth (in.)	Weight (lbs)
3-230KFCSS-G	1	3	230	2.7	1/6	1-1/4" FPT	42	6 1/2	18	37
3-230KFCSS-M	1	3	230	5.4	1/6	1-1/4" FPT	42	6 1/2	18	37

*Comes with Brass Union. Model Number Letter G=3-2699-3 Speed M=26-116F (1.8 Amps per Pump)

GT® SS Flow Center – The Industry Standard Solution

Overall Size (in)

With Pumps

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet*/Outlet Size	Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
NPFCSS	0	-	-	-	1" FPT	34	6 1/2	15 1/2	28
1-230PFCSS-G	1	230	.90	1/6	1" FPT	34	6 1/2	15 1/2	40
2-230PFCSS-G	2	230	1.8	1/6	1" FPT	34	6 1/2	15 1/2	53
1-230PFCSS-M	1	230	1.8	1/6	1" FPT	34	6 1/2	15 1/2	40
2-230PFCSS-M	2	230	3.6	1/6	1" FPT	34	6 1/2	15 1/2	53

*Comes with Brass Union. Model Number Letter G=3-2699-3 Speed M=26-116F (1.8 Amps per Pump)



GT® Flow Center



QT® Flow Center

QT® Flow Center – The Premium Choice for the Refined Customer

Overall Size (in)

With Pumps

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size	Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
N02-230QFC	0	-	-	-	1" Swivel (FPT)	34	7.5	14 3/4	33
1-230QFC-G	1	230	.90	1/6	1" Swivel (FPT)	34	7.5	14 3/4	40
2-230QFC-G	2	230	1.8	1/6	1" Swivel (FPT)	34	7.5	14 3/4	50
1-230QFC-M	1	230	1.8	1/6	1" Swivel (FPT)	34	7.5	14 3/4	40
2-230QFC-M	2	230	3.6	1/6	1" Swivel (FPT)	34	7.5	14 3/4	50

Model Number Letter G=3-2699-3 Speed M=26-116F (1.8 Amps per Pump)

*Dimensions are approximate

See Pump Curve Section in Back of Catalog for Pump Performance Data



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FLOW CENTERS: BREAKDOWN OF SIZES

XT Flow Center – When Normal Pumping Isn't Enough

Part Number	# of Pumps	Voltage	Amps Grundfos	HP (ea.)	Inlet**/Outlet Size	Overall Size (in)			Weight (lbs)
						Ht. (in.)	Wdth (in.)	Dpth (in.)	
2-230XTSS	2	230	3.4	1/6	1-1/4" FPT	48 1/2	10	22 1/2	99

**Grundfos - 43-100F (3 Speed Pump)



XT Flow Center



QT-EA Flow Center

QT® - EA Flow Center – The Premium Choice for the Refined Customer

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size	Overall Size (in)			Weight (lbs)
						Ht. (in.)	Wdth (in.)	Dpth (in.)	
1-1EASS230QFC-G	2	230	1.8	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	87
2-1EASS230QFC-G	3	230	2.7	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	92
2-2EASS230QFC-G	4	230	3.6	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	98
1-1EASS230QFC-M	2	230	3.6	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	87
2-1EASS230QFC-M	3	230	5.4	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	92
2-2EASS230QFC-M	4	230	7.2	1/6	1-1/4" Swivel (FPT)	43 1/2	14	21 1/2	98

*Comes with Brass Union.

Model Number Letter G=3-2699-3 Speed M=26-116F (1.8 Amps per Pump)

EA® Series SS Flow Center – Special 2 Circuit Applications (Field Assembly Required)

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size	Overall Size (in)			Weight (lbs)
						Ht. (in.)	Wdth (in.)	Dpth (in.)	
0-0EASS230KFC	0	-	-	-	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	41
1-1EASS230KFC-G	2	230	1.8	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	61
2-1EASS230KFC-G	3	230	2.7	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	72
2-2EA230SSKFC-G	4	230	3.6	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	83
1-1EASS230KFC-M	2	230	3.6	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	61
2-1EA230SSKFC-M	3	230	5.4	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	72
2-2EA230SSKFC-M	4	230	7.2	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	9 1/4	21	83

*Standard: IPT on Inlet Connection. Union can be special ordered. Model Number Letter G=3-2699-3 Speed M=26-116F (1.8 Amps per Pump)



EA® Flow Center

See Pump Curve Section in Back of Catalog for Pump Performance Data



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Features & Benefits

Non Pressurized Flow Center

- ~ Eliminates Callbacks
- ~ Fast Installation

Removable Lid

- ~ Easy to Fill
- ~ Check Flow Rates*
- ~ Add Anti-Freeze

Air Separation Chamber

- ~ Continually Performs Purging Function

Check Valve

- ~ Pump Protection

5 Year Warranty

Stainless Steel Canister

*Requires Service Tool (Part# WFT-17), sold separately

*Optional Flow Center Wrench for lid (Part# FCW), sold separately



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FLOW CENTERS: GT® FLOW CENTER

ONE COMPLETE PACKAGE

The non-pressurized GT® Flow Center pumping station is unlike other pump protection devices. For instance, the GT® Flow Center includes a built-in patented pump protection feature that eliminates the need for a flush cart when filling and flushing a closed-loop system when your manifolds are indoors. And since it is non-pressurized, it allows you to add fluids like anti-freeze or water, while automatically eliminating air from the closed-loop system.

SIMPLE INSTALLATION

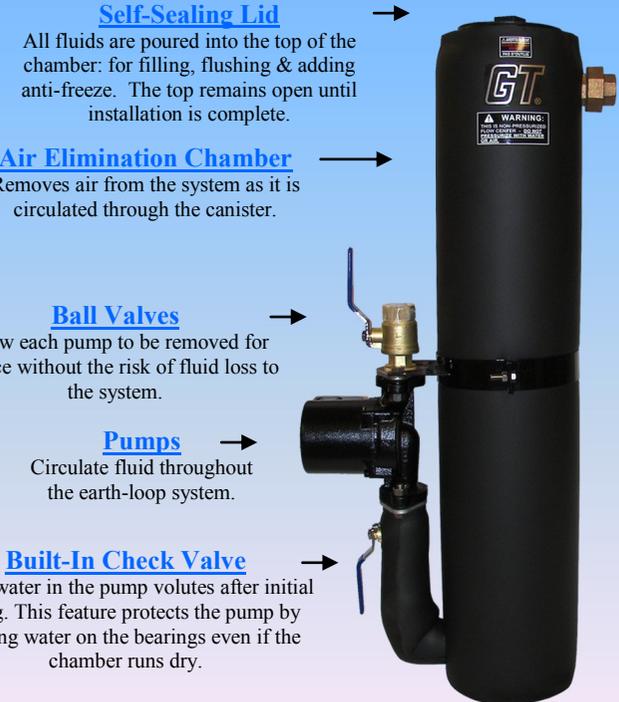
As a result of the GT® Flow Center being completely packaged at the factory, installation is simple. Just connect the return line from an earth loop to the GT® Flow Center, then connect a supply line from the GT® to the heat pump unit. Also available is the flow meter tool, an exclusive service tool, which provides a direct reading of system flow rate, and eliminating the uncertainty associated with current methods.

EASY TO OPERATE & MAINTAIN

The system includes a self-sealing feature that keeps dirt & debris out and water in. For you, that means trouble-free operation, easier installation, and fewer call backs. This also means added reliability for the homeowner. In addition, adding anti-freeze is easy, just remove the self-sealing lid and pour it into the air elimination chamber. Since the only moving part of this system are the pump(s), service is minimal. Each part is made to be removed for servicing, without risk of fluid loss or air entry into the system.

A SMART ADDITION TO WATER SOURCE TECHNOLOGY

A homeowner's initial investment in a water source system is slightly more than that of a conventional system. It's an investment that the homeowner will want to protect. Recommending the GT® Flow Center will not only add to the reliability of the closed-loop system, it will also add to the customer's satisfaction in the long run.



Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ca.)	Inlet*/Outlet Size
NPFCSS	0	-	-	-	1" FPT
1-230PFCSS-G	1	230	.90	1/6	1" FPT
2-230PFCSS-G	2	230	1.8	1/6	1" FPT
1-230PFCSS-M	1	230	1.8	1/6	1" FPT
2-230PFCSS-M	2	230	3.6	1/6	1" FPT

*Comes with Brass Union.
 Model Number Letter G=3-2699-3 Speed
 M=26-116F (1.8 Amps per Pump)

GT®'s Overall Size - 34" X 6 1/2" X 15 1/2"

*Dimensions are approximate

See Pump Curve Section in Back of Catalog for Pump Performance Data

Patent No. 5,244,037



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FEATURE/BENEFITS

Non Pressurized Flow Center

- ◊ Eliminates Callbacks
- ◊ Fast Installation

Removable Lid

- ◊ Easy to Fill
- ◊ Check Flow Rates*
- ◊ Add Anti-Freeze

Air Separation Chamber

- ◊ Continually Performs Purging Function

Foam Insulation

- ◊ Eliminates Unsightly Condensation

Solid Durable Construction

- ◊ Long Life

Check Valve

- ◊ Pump Protection

5 Year Warranty

- ◊ Customer Assurance

Swivel Connectors

- ◊ Fast and Flexible Installation

Wall Bracket

- ◊ Ease of Handling and Installation

*Requires Service Tool (Part# WFT-17), sold separately

*Optional Flow Center Wrench for lid (Part# fcw), sold separately



FLOW CENTERS: QT® FLOW CENTER

ONE COMPLETE PACKAGE

The non-pressurized QT® Flow Center pumping station is unlike other pump protection devices. For instance, the QT® Flow Center includes a built-in pump protection feature that eliminates the need for a flush cart when filling and flushing a closed-loop system when your manifolds are indoors. And since it is non-pressurized, it allows you to add fluids like anti-freeze or water, while automatically eliminating air from the closed loop system.

SIMPLE INSTALLATION

As a result of the QT® Flow Center being completely packaged at the factory, installation is simple. Just connect the return line from an earth loop to the QT® Flow Center, then connect a supply line from the QT® to the heat pump unit. Also available is the flow meter tool, an exclusive service tool, which provides a direct reading of system flow rate, and eliminating the uncertainty associated with current methods.



EASY TO OPERATE & MAINTAIN

The system includes a self-sealing feature that keeps dirt & debris out and water in. For you, that means trouble-free operation, easier installation, and fewer call backs. This also means added reliability for the homeowner. In addition, adding anti-freeze is easy, just remove the self-sealing lid and pour it into the air elimination chamber. Since the only moving part of this system are the pump(s), service is minimal. Each part is made to be removed for servicing, without risk of fluid loss or air entry into the system.

The QT® Flow Center is designed for years of operation!

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size
N02-230QFC	0	-	-	-	1" Swivel (FPT)
1-230QFC-G	1	230	.90	1/6	1" Swivel (FPT)
2-230QFC-G	2	230	1.8	1/6	1" Swivel (FPT)
1-230QFC-M	1	230	1.8	1/6	1" Swivel (FPT)
2-230QFC-M	2	230	3.6	1/6	1" Swivel (FPT)

Model Number Letter G=3-2699-3 Speed
M=26-116F (1.8 Amps per Pump)

QT®'s Overall Size - 34" X 7 1/2" X 14 1/2"

*Dimensions are approximate

SMART ADDITION TO WATER SOURCE TECHNOLOGY

A homeowner's initial investment in a water source system is slightly more than that of a conventional system. It's an investment that the homeowner will want to protect. Recommending the QT® Flow Center will not only add to the reliability of the closed-loop system, it will also add to the customer's satisfaction in the long run.

See Pump Curve Section in Back of Catalog for Pump Performance Data

Patent No. 5,244,037



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FLOW CENTERS: XT FLOW CENTER

The XT is designed to work with 7-12 ton single coil dual stage heat pumps.

Features & Benefits

Same Functionality as the QT® & GT® Series
 2 Year Limited Warranty

Construction:

The XT is a stainless steel canister with brass check valves below the pumps. The canister is placed in a metal box and insulated with foam. All sections are factory assembled. The pumps are Grundfos UPS 43-100F 3 Speed Pumps.

Check Valves:

The check valve is to help with proper flow and pump protection.

Insulation:

The canister is insulated by foam to help eliminate condensation and is encased by a box design.

Field Assembly:

The unit has 1 1/4" female port for any type of male connection. An easy disconnect fitting is recommended.

Isolation Ball Valves:

The unit has a pair of isolation ball valves, allowing for removal and service of individual heat pumps while maintaining operability of the rest of the systems. Also, makes removal of pumps for replacement simple.

Air Separation Chamber:

The chamber continually performs a purging function to eliminate air.



Part Number	# of Pumps	Voltage	Amps Grundfos 43-100	HP (ea.)	Inlet*/Outlet Size
2-230XTSS*	2	230	3.4	1/6	1 1/4" FPT

Grundfos *43-100F 3 Speed Pump
XT's Overall Size 48 1/2" x 10 x 22 1/2"

*Dimensions are approximate

See Pump Curve Section in Back of Catalog for Pump Performance Data



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FLOW CENTERS: PRESSURIZED SYSTEMS

Pressurized Operating Systems



Features & Benefits

5 Year Limited Warranty - *Customer Assurance*

Mounts to Wall - *Fast Installation*

Foam Insulation - *Eliminates Condensation*

Single & Dual Pumps Options - *Gives Multiple Pump Options*

3-Way Ball Valve Design - *Durable Long Lasting*

Plastic Durable Cabinet Construction - *Long Life*

1" FPT Swivel Connectors on Inlet & Outlet - *Flexible Installation*

Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size	Ht (in.)	Width (in.)	Dpth (in.)	Weight (lbs)
1-230POS-G	1	230	.90	1/6	1" Swivel (FPT)	12 1/2	12 1/2	8"	29
2-230POS-G	2	230	1.8	1/6	1" Swivel (FPT)	12 1/2	12 1/2	8"	37
1-230POS-M	1	230	1.8	1/6	1" Swivel (FPT)	12 1/2	12 1/2	8"	29
2-230POS-M	2	230	3.6	1/6	1" Swivel (FPT)	12 1/2	12 1/2	8"	37

Model Number Letter G=3-2699-3 Speed

M=26-116F (1.8 Amps per Pump)

See Pump Curve Section in Back of Catalog for Pump Performance Data



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FLOW CENTERS: QT®-EA SERIES

2 CIRCUIT FLOW CENTERS

DESIGNED FOR DUAL UNITS - PUMPS ON EACH CIRCUIT FOR ONE COMMON LOOP FIELD.

SIMPLE INSTALLATION

Because the QT® Flow Center is completely packaged at the factory, installation is simple. The system should be mounted on the floor. Simply connect a return line from the earth loop to the QT® Flow Center. Then connect a supply line from the QT® to the heat pump unit. That's all there is to adding reliable pump protection to any closed-loop system.

Features & Benefits

Check Valves Below the Pumps - *Pump Protection*

5 Year Limited Warranty - *Customer Assurance*

Solid Durable Construction - *Long Life*

Removable Lid - *Fast Installation, Easy to Fill*

Swivel Connectors on Outlet - *Flexible Installation*

Non Pressurized Flow Center - *Eliminates Callbacks*

Foam Insulation - *Eliminates Condensation*

Air Separation Chamber - *Continually Performs Purging Function*



Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size
0-0EASS230QFC-G	-	-	-	-	1-1/4" Swivel (FPT)
1-1EASS230QFC-G	2	230	1.8	1/6	1-1/4" Swivel (FPT)
2-1EASS230QFC-G	3	230	2.7	1/6	1-1/4" Swivel (FPT)
2-2EASS230QFC-G	4	230	3.6	1/6	1-1/4" Swivel (FPT)
1-1EASS230QFC-M	2	230	3.6	1/6	1-1/4" Swivel (FPT)
2-1EASS230QFC-M	3	230	5.4	1/6	1-1/4" Swivel (FPT)
2-2EASS230QFC-M	4	230	7.2	1/6	1-1/4" Swivel (FPT)

***Comes with Brass Union.**

Model Number Letter G=3-2699-3 Speed

M=26-116F (1.8 Amps per Pump)

See Pump Curve Section in Back of Catalog for Pump Performance Data



ALL THE "PUMP" YOU NEED AND MORE

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FLOW CENTERS: EA SERIES

2 CIRCUIT FLOW CENTERS

DESIGNED FOR DUAL UNITS - PUMPS ON EACH CIRCUIT FOR ONE COMMON LOOP FIELD.

SIMPLE INSTALLATION

The [EA Flow Center](#) is shipped to be assembled in the field. Installation is still simple. The system should be mounted on the floor. Wall bracket included. After mounting the pumps, simply connect a return line from the earth loop to the EA Flow Center. Then connect a supply line from the EA to the heat pump unit. That's all there is to adding reliable pump protection to any closed-loop system.

Features & Benefits

- Same Functionality as the QT® - EA Series
- 2 Year Limited Warranty
- Field Assembly Required
- Externally Mounted Pumps
- Foam Insulated Stainless Canister
- Mount Against Wall Style Unit (Bracket Included)



Part Number	# of Pumps	Voltage	Amps Grundfos (3 Speed)	HP (ea.)	Inlet/Outlet Size
0-0EASS230KFC	0	-	-	-	1-1/4" MPT/1-1/4" FPT
1-1EASS230KFC-G	2	230	1.8	1/6	1-1/4" MPT/1-1/4" FPT
2-1EASS230KFC-G	3	230	2.7	1/6	1-1/4" MPT/1-1/4" FPT
2-2EA230SSKFC-G	4	230	3.6	1/6	1-1/4" MPT/1-1/4" FPT
1-1EASS230KFC-M	2	230	3.6	1/6	1-1/4" MPT/1-1/4" FPT
2-1EA230SSKFC-M	3	230	5.4	1/6	1-1/4" MPT/1-1/4" FPT
2-2EA230SSKFC-M	4	230	7.2	1/6	1-1/4" MPT/1-1/4" FPT

Standard: MPT on Inlet Connection. Union can be Special Ordered.

Model Number Letter G=3-2699-3 Speed

M=26-116F (1.8 Amps per Pump)

See Pump Curve Section in Back of Catalog for Pump Performance Data



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FLOW CENTERS: MULTIZONE FLOW CENTER

2, 3 or 4 CIRCUIT MULTIZONE FLOW CENTER DESIGNED FOR MULTIPLE HEAT PUMPS WITH ONE COMMON LOOP FIELD.

It is a recognized fact that geothermal applications utilizing multiple heat pumps are optimized when a single consolidated earth loop is used. This consolidated earth loop approach capitalizes on load diversity and can reduce loop installation costs by up to 25%.

Until now, there were many reasons why an application did not use a consolidated earth loop. Typically, there may have been a need for individual tenant metering, as in a multi-tenant application. Or a centralized larger pump consumed too much energy. Or, in many cases the sophisticated control requirements led to excessive installation costs.

THOSE DAYS ARE GONE, YOU CAN NOW HAVE AN OPTIMIZED CONSOLIDATED LOOP WITH CONTROL SIMPLICITY AND INDIVIDUAL TENANT METERING, WHILE MAINTAINING A SIMPLE AND COST EFFICIENT INSTALLATION.

- **OPTIMIZED PERFORMANCE**

The benefits of taking advantage of load diversity are many, but perhaps the most significant is the impact on system performance/ installed cost. You have the flexibility to maximize operating efficiency or minimize installed costs, or compromise and have excellent efficiency with a reduced installation cost.

- **CONTROL SIMPLICITY**

The circuit pump(s) are controlled directly with a branch circuit from the heat pump that is connected to it. No need for relay boxes or other more complicated control strategies.

- **INDIVIDUAL METERING**

All energy consumed in a Multizone System is monitored through the meters supplying power to the heat pumps. For landlords, that translates into zero energy costs.

- **LOWER INSTALLED COSTS**

The simplicity of the system will result in fewer man-hours for installation as well as the significantly reduced earth loop size.

- **MAINTENANCE SIMPLICITY**

Simply by closing the pump isolation valves, turning off and disconnecting the electrical power and removing four bolts a pump can be removed and then replaced, and the total system does not have to be shut down during this procedure..... and for this the other tenants will be very thankful.



Call For Part Number & Configuration Help



ALL THE "PUMP" YOU NEED AND MORE

12

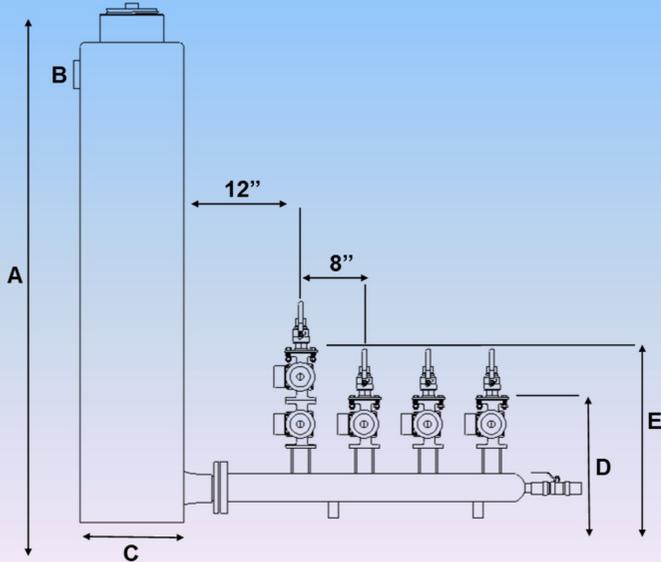
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FLOW CENTERS: MULTIZONE FLOW CENTER

MULTIZONE FEATURES



Multizone GT Flow Center Physical Dimensions (in.)

Tank Size	A	B	C	D	E	Volume (gal)
B	62	2" MPT	10"	30"	36 1/2"	17.5
C	70	3" MPT	12"	32"	38 1/2"	20.8

* B-Model - (3 circuit header max & single pump only)
 ** C-Model- (4 circuit header max)

NOTE: ALL MEASUREMENTS ARE APPROXIMATE

Sealable Lid – Provides for a closed sealed system while allowing for ease of access to sample fluid and measure flow rate.

Inlet Connection – Stainless Steel MPT connection provided as standard, with various transitions available upon request. Size based on canister size (see chart).

Check Valves – Check valves are provided in each pump circuit assuring proper flow and reliable pump operation.

Canister – Provides a standing column of water on the suction side of the pump(s) to insure a flooded volute and reliable pump operation. Size required is based on max load design flow rate (see chart).

Optional Ball Valve – Butterfly Valve is available as an option to isolate canister from pump manifold (not shown).

Pump Connection – 1 1/4" FPT Brass with isolation ball valve.

Pump Control – Pumps can be directly controlled with a branch circuit from the heat pump or controlled with a relay box.

Pump Circuits – Individual pump circuits consisting of one, two or three 1/6 HP circulating pumps. Capable of delivering up to 25 gpm @ 48 ft of H₂O head loss. Grundfos 2699/3 speed is standard with others available upon request. Voltage 230-1ph.

Pump Isolation – 1 1/4" Brass isolation ball valves provided above and below each pump (or set of pumps) allowing for service of one circulator while the rest of the system is functional.

Insulation – 3/8" Armaflex insulation factory installed to prevent condensation

Pump Manifold – Factory assembled manifold, including check valves, one isolation valve per circuit and drain valve at end of a 4 circuit manifold.

Manifold Connection – Flange provided to field assemble the pump manifold to the canister and allowing for installation of optional butterfly valve.

Drain Valve - Drain valve is installed on 4 circuit manifold only

See Pump Curve Section in Back of Catalog for Pump Performance Data



FLOW CENTERS: SMART PUMP MULTIZONE

For the applications that require a little more than its Multizone cousin can provide, the all New Smart Pump Multizone utilizes the latest in Variable Speed Technology. Designed for the high end residential or commercial applications, the Smart Pump Multizone can be used with single phase power to keep things simple. With no added controls to complicate your system the Smart Pump Multizone is very user friendly and is easily adjustable and customized for your source side geothermal systems.

- **EFFICIENT OPERATION**

When compared to multiple smaller pumps typically used for each heat pump zone you will notice the efficiency on smaller motors is in the range of 25-30% to yield a very inefficient operation. The Smart Pump Multizone utilizes efficient motor technology with its one single motor offering 60-80% efficient operation. In fact less horse power will be used with a single pump/motor combination verses several small circulators for your multizone heat pump system.

- **INSTALLATION SIMPLICITY**

With only one pump and motor to install, contractor installation time is reduced. All the work consists of setting the GT® canister, mounting the pump to the provided flange, mount the motor to the pump, mount the variable speed drive unit on the adjacent wall and the electrical power. Its that simple your system will be ready to run.

- **COMPETITIVE INSTALLED COSTS**

When you look at the cost of purchasing and installing several pumps switching to the Smart Pump Multizone will save more than just energy.

- **MAINTENANCE SIMPLICITY**

The Smart Pump Multizone utilizes one of the industries most popular in-line circulators. This bullet proof pump is very reliable however in the event of a pump failure, parts and qualified technicians are readily available.



*TWO-WAY CONTROL VALVES WILL NEED TO BE INSTALLED ON EACH HEAT PUMP CIRCUIT FOR PROPER VARIABLE SPEED PUMP OPERATION.

SMART PUMP FEATURES

Sealable Lid – Provides for a closed sealed system while allowing for ease of access to sample fluid and measure flow rate.

Inlet Connection – Stainless Steel MPT connection provided as standard, with various transitions available upon request. Size based on canister size (see chart).

Check Valve – A check valve is provided before the pump assuring proper flow and reliable pump operation.

Canister – Provides a standing column of water on the suction side of the pump to insure a flooded volute and reliable pump operation. Size required is based on max load design flow rate (see chart).

Optional Isolation Valve – An isolation valve is available on the pump discharge for ease of maintenance(not shown).

Variable Speed Pump Control – The Smart Pump Drive is robust and designed to operate in some of the harshest conditions.

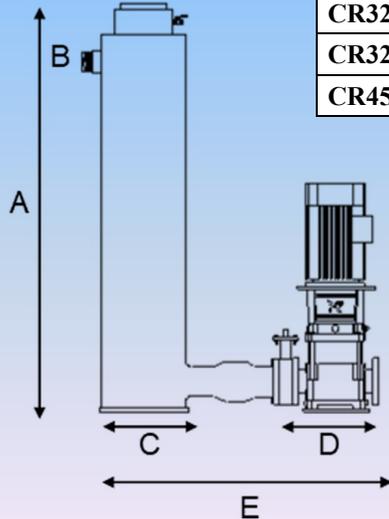
Insulation – 3/8” Armaflex insulation factory installed to prevent condensation.



FLOW CENTERS: SMART PUMP MULTIZONE

Smart Pump Flow Selection (Single Pump)

Smart Pump Model#	B & D Part#	Tank Size	Volume (gal)	Motor Size	Normal GPM Flow	Normal Head Pressure
CR10-2	SPFC-B122-2-230-1	B	17.5	2HP	40-62	30-50
CR32-1-1	SPFC-C13T-3-230-1	C	20.8	3HP	60-120	40-60
CR32-1	SPFC-C13S-5-230-1	C	20.8	5HP	65-130	50-70
CR45-1-1	SPFC-D14T-5-230-1	D	29.5	5HP	130-180	50-70

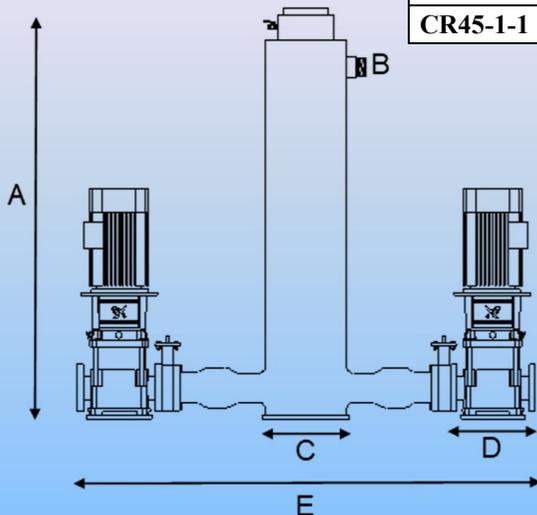


Smart Pump Flow Dimensions (Single Pump)

Pump End	A	B	C	D	E
CR10-2	62"	2" MPT	10"	11 1/2"	38"
CR32-1-1	69"	3" MPT	12"	12 1/2"	39"
CR32-1	69"	3" MPT	12"	12 1/2"	39"
CR45-1-1	69"	4" MPT	14"	13"	41"

Smart Pump Flow Selection (Redundant Pump)

Smart Pump Model#	B & D Part#	Tank Size	Volume (gal)	Motor Size	Normal GPM Flow	Normal Head Pressure
CR10-2	SPFC-C222-2-230-2	C	17.5	2HP	40-62	30-50
CR32-1-1	SPFC-D23T-3-230-2	D	20.8	3HP	60-120	40-60
CR32-1	SPFC-D23T-5-230-2	D	20.8	5HP	65-130	50-70
CR45-1-1	SPFC-D24T-5-230-2	D	29.5	5HP	130-180	50-70



Smart Pump Flow Dimensions (Redundant Pump)

Pump End	A	B	C	D	E
CR10-2	62"	2" MPT	10"	11 1/2"	66"
CR32-1-1	69"	3" MPT	12"	12 1/2"	69"
CR32-1	69"	3" MPT	12"	12 1/2"	69"
CR45-1-1	69"	4" MPT	14"	13"	69"

Call For Your Custom Quote Today



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AIR HANDLER: 1-5 TON



Left Side Configuration Shown

Size	Dimensions	Approx. Wt (lbs.)
1 Ton Unit	23"W x 24" x 28"D	100
2 Ton Unit	23"W x 24" x 28"D	105

See Next Page for Configuration Options and Model Numbers

**1 & 2 Ton
HSS® Air Handler Unit Information**

Swivel Connections

1" Inlet & 1" Outlet

Factory Installed Filter

Merv 8 Air Filter Included (18" x 22" x 1")

Drain Pan Connections

3/4" Primary 3/4" Secondary

1 Ton Electrical Strip Enclosure Options

Choice of None or 3Kw Factory Installed

2 Ton Electrical Strip Enclosure

Choice of None or 5Kw Factory Installed

All Electrical Heat Strip Units

Adjustable Time Delay on Heat Strip Start-up
Plug & Play Design to Add Later to All Units



Left Side Configuration Shown

Size	Dimensions	Approx. Wt (lbs.)
3 Ton Unit	28"W x 30" x 31"D	136
4 Ton Unit	28"W x 30" x 31"D	146
5 Ton Unit	28"W x 30" x 31"D	165

See Next Page for Configuration Options and Model Numbers

**3, 4 & 5 Ton
HSS® Air Handler Unit Information**

Swivel Connections

3 Ton = 1" Inlet & 1" Outlet
4 & 5 Ton = 1-1/4" Inlet & 1-1/4" Outlet

4 Row Water Coils

4 & 5 Tons Units Only

Factory Installed Filter

Merv 8 Air Filter Included (25" x 25" x 1")

Drain Pan Connections

3/4" Primary 3/4" Secondary

3 Ton Electrical Strip Enclosure Options

Choice of None or 10Kw Factory Installed

4 Ton Electrical Strip Enclosure Options

Choice of 10Kw or 15Kw Factory Installed

5 Ton Electrical Strip Enclosure Options

Choice of 10Kw or 15Kw Factory Installed

All Electrical Heat Strip Units

Includes a Circuit Breaker Disconnect Above 5Kw
Adjustable Time Delay on Heat Strip Start-up
Plug & Play Design to Add Later to All Units



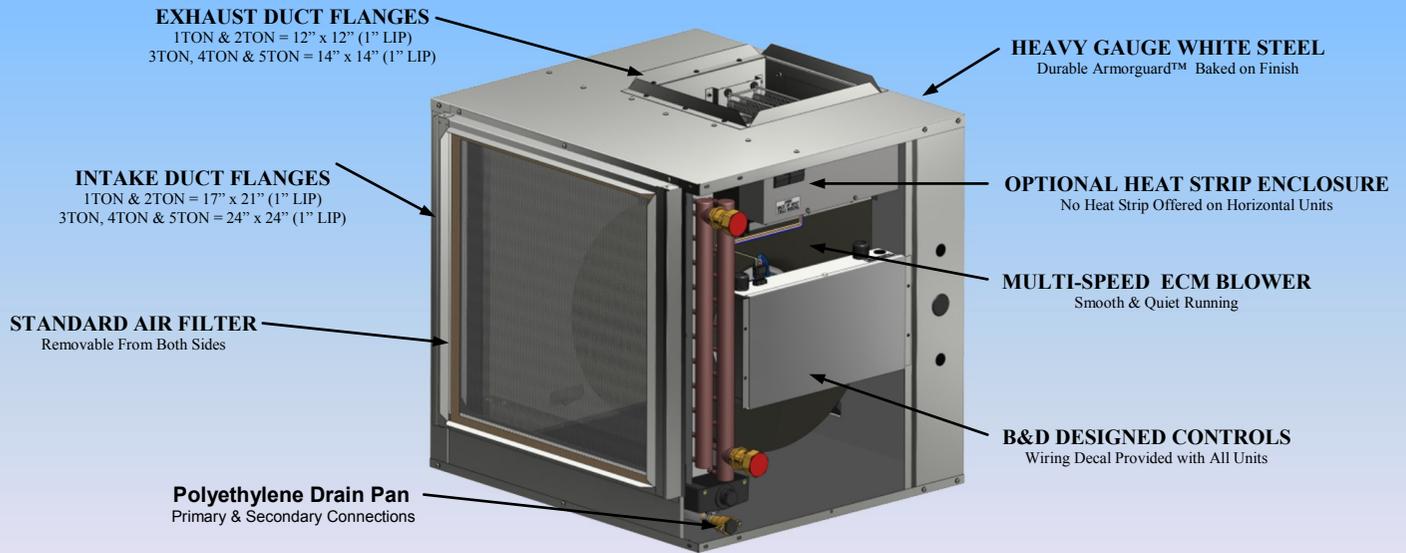
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AIR HANDLER: FEATURES & BENEFITS



HSS® Air Handler with Left Side Configuration Shown

Other Features

- ETL Listed / CSA Certified
- Fully insulated compact cabinets designs
- Low temperature design starting at 105° up to 180° E.W.T for Heating & 40° to 50° E.W.T for Cooling
- Built in 24V isolation relay to eliminate voltage feedback
- Factory programmed motors that are field adjustable to fine tune your desired CFM
- Programmable, 30 seconds to 35 minute time-delay on Blower Start-up to delay hot or cold start-up
- Programmable, 30 seconds to 35 minute time-delay for Strip Heat activation

HSS® AIR HANDLER MODEL NUMBER INFORMATION

BDAH-	E				1		
TONNAGE 01 = 1 TON 02 = 2 TON 03 = 3 TON 04 = 4 TON 05 = 5 TON	MOTOR TYPE E = ECM	CFM 05 = 500CFM 1 TON 09 = 950CFM 2 TON 13 = 1350CFM 3 TON 17 = 1750CFM 4 TON 21 = 2150CFM 5 TON	Kw 00 = None 03 = 3Kw 05 = 5Kw 10 = 10Kw 15 = 15Kw	VOLTAGE 1 = 240V / 208V 60Hz / 1Phase	LEFT/RIGHT RETURN CONFIGURATION A = Left (Standard) B = Right	Air Flow Direction Configuration U = Up flow (Standard) D = Down flow H = Horizontal Flow	NOTE: This is the Side the Filter will be Located on.
		MAX KW /UNIT 1 TON - 3Kw 2 TON - 5Kw 3 TON - 10Kw 4 TON - 10Kw or 15Kw 5 TON - 10Kw or 15Kw					

NOTE: Backup Heat not available on Horizontal Flow Units

Call For Price & Lead Times



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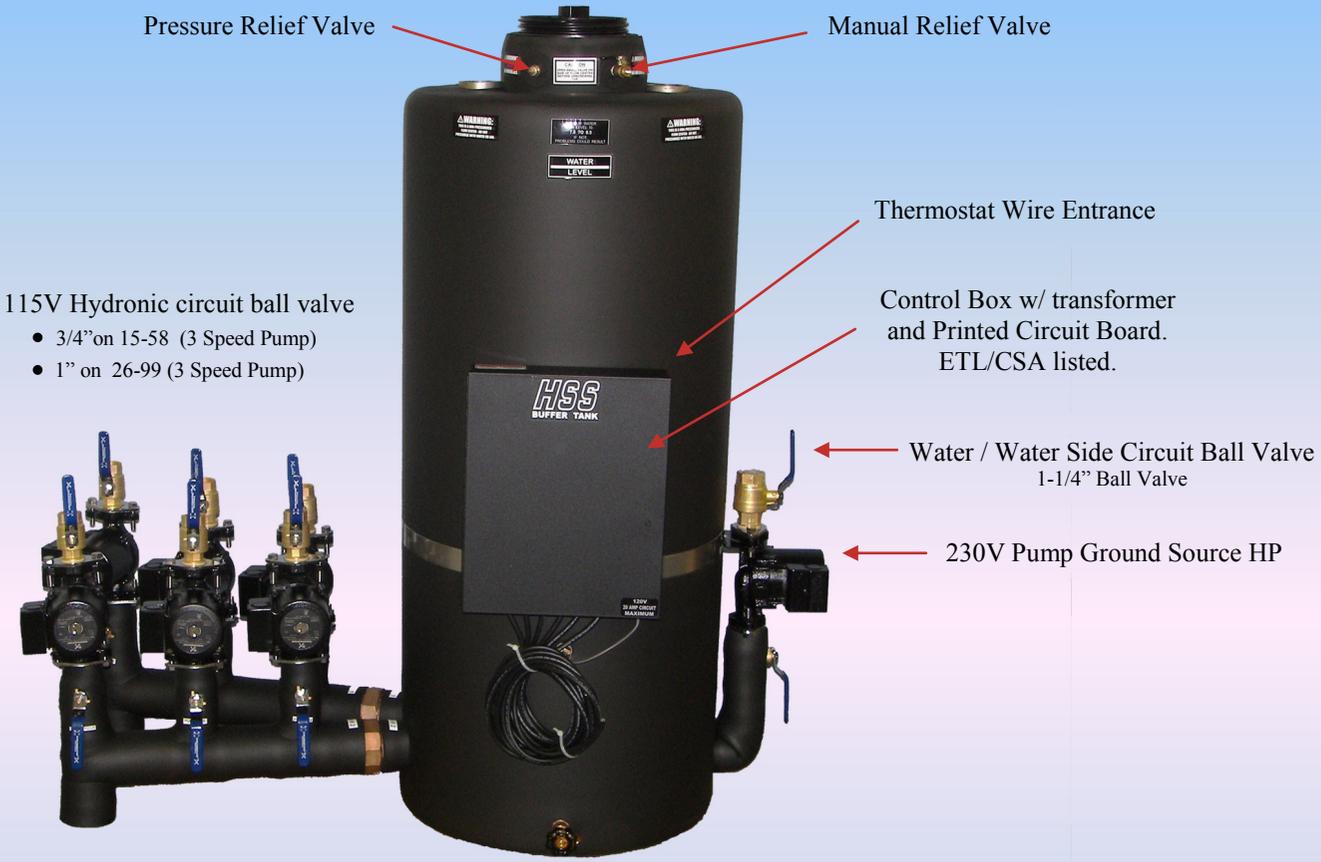
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FLOW CENTERS: HSS® SERIES

A NON-PRESSURIZED STAINLESS STEEL BUFFER TANK FOR HYDRONIC HEAT!



115V Hydronic circuit ball valve

- 3/4" on 15-58 (3 Speed Pump)
- 1" on 26-99 (3 Speed Pump)



*****CUSTOM TANKS MADE TO ORDER*****

- Available Sizes: 12, 20, 30, 40, 60 & 80 Gallon Tanks
- Available in Heating Only or Heating & Cooling Setups
- Single Stage or 2 Stage Controls Available.
- Water Temperature not to exceed 150 degree.
- Designed for 6 to 10 gallons per ton.
- 230V Pumps on Water to Water Side (Multiple Pump Options)
- 115V Pumps on Hydronic Side (Multiple Pump Options)

B&D Designed Controls



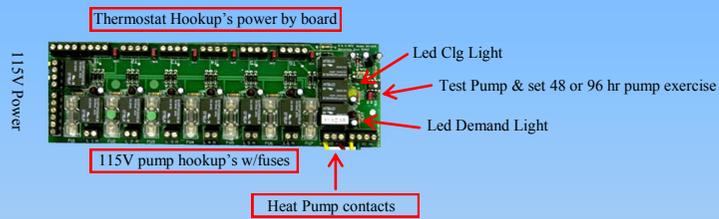
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FLOW CENTERS: HSS® SERIES SPECIFICATIONS



**Control Board Electrical Data:
115V/Single Phase 15 amp Circuit**



HSS® BUFFER TANK Flow Center Physical Dimensions (in.)*

Max Gallon Storage	Max Hydronic Circuits	Max Water/Water Circuits	G	H	I	J	K	L	M	N	O	P	Q	Wt Tank
12	3	1	21"	7 1/2"	7"	9"	24"	49"	57 1/2"	10"	17"	1-1/4" MPT	2" Union	30#
20	6	2	21"	7 1/2"	7"	9"	24"	49"	57 1/2"	13"	20"	1-1/4" MPT	2" Union	38#
30	9	3	21"	7 1/2"	7"	9"	24"	49"	54"	16"	23"	1 1/2" FPT	2" Union	52#
40	12	3	21"	7 1/2"	7"	9"	24"	49"	54"	18"	25"	2" FPT	2" Union	60#
60	12	4	21"	7 1/2"	7"	9"	24"	49"	54"	22"	29"	2" FPT	2" Union	84#
80	12	4	21"	7 1/2"	7"	9"	24"	49"	54"	25"	31"	2" FPT	2" Union	97#

* Dimensions are approximate

Warning: HSS® Buffer Tank should never be used with an outdoor wood boiler. Outdoor wood boilers can produce water temperatures above 150 degrees and will void ALL WARRANTIES.



ALL THE "PUMP" YOU NEED AND MORE

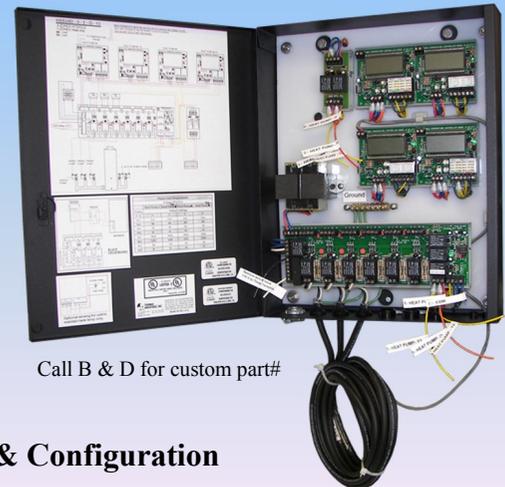
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HSS® CONTROL PANEL

Need just controls? We got you covered! The HSS Controls are available without a Tank purchase

HSS® Control Panel Details

- 1 Control package connects up to 4 devices
- Pre-wired to accommodate 2, 3 or 4 equipment applications
- Easy adjustment for rotating operation of 2, 3 or 4 devices
- Field adjustable settings for Dual-Stage time delay
- Easy-to-Mount for added location flexibility
- Control Box Dimensions 15" H x 12" W x 3" D
- Easy to install on pre-existing HSS Buffer Tank System
- B & D Designed Controls
- Wiring decal provided with all units



Call B & D for custom part#

Call for HSS® Control Panel Build Sheet & Configuration



ROTATIONAL CONTROL PANEL

Increase the functionality of your entire system by incorporating rotational start of equipment!

Rotational Control Panel Details

- 1 Control package connects up to 4 devices
- Pre-wired to accommodate 2, 3 or 4 equipment applications
- Easy adjustment for rotating operation of 2, 3 or 4 devices
- Field adjustable settings for Dual-Stage time delay
- Easy-to-Mount for added location flexibility
- Control Box Dimensions 15" H x 12" W x 3" D
- Easy to install on pre-existing HSS Buffer Tank System
- B & D Designed Controls
- Wiring decal provided with all units

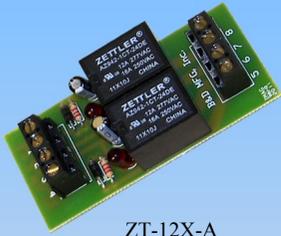


B & D PART# BDCB-RC4HP

Call for Additional Rotational Control Panel Information



HSS® SERIES: CONTROLS & ACCESSORIES



ZT-12X-A



WD17535



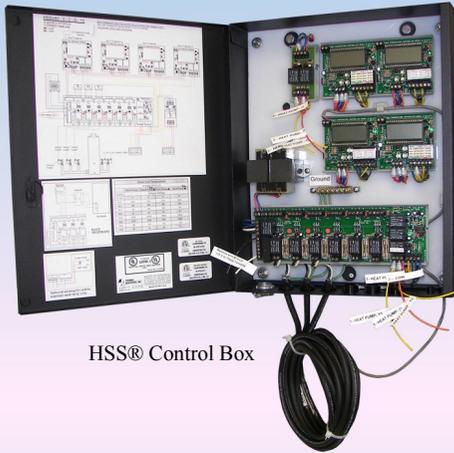
BC6



2876710



B2-30T



HSS® Control Box



H2-2TC



FUSE



B3-6CR

Size	Part Number
DIGITAL THERMOMETER	WD17535
30 MINUTE ADJUSTABLE TIMER (AIR HANDLER)	B2-30T
4 CIRCUIT, RELAY BOARD (AIR HANDLER)	ZT-4X-60
24V 50 VA 208/240V TRANSFORMER (AIR HANDLER)	HCT-09D0K04164
HSS® CONTROL BOX – CALL FOR CONFIGURATION QUOTE	CALL FOR PRICING
PUMP CONTROLLER RELAY (BUFFER TANK)	B3-6CR
2-STAGE ELECT TEMP CONTROLLER (BUFFER TANK)	H2-2TC
24V 50 VA 120V TRANSFORMER (BUFFER TANK)	2876710
2 CIRCUIT, RELAY BOARD (BUFFER TANK)	ZT-12X-A
THERMISTOR 6' CABLE	BC6
3 AMP FUSE	740-0551
1 AMP FUSE	740-5189

Call for availability if extra fuses are needed.



ALL THE "PUMP" YOU NEED AND MORE

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FLUSH CARTS: 1.5 HP, 2 HP

1 1/4" Full Port Ball Valves With 1" Hoses

1 1/4" Full Port Ball Valves With 1 1/4" Hoses

Anti-freeze Flush Drain

2 HP Motor 115V

1.5 HP Motor 115V

Pump 60 gpm @ 68 FT Head

Pump 90 gpm @ 62 FT Head

FLUSH CART 1.5HP
WEIGHT: 192 lbs W/ HOSES

FLUSH CART 2HP
WEIGHT: 196 lbs W/ HOSES

Flush Cart Features

- 10 Gallon Tank Volume
- 14 Gauge Stainless Steel Tank
- Lift Out Filter Screen
- Factory Mounted to Heavy Duty Cart
- 13" Flat Free Wheels
- Stainless Steel Piping
- Quick Connect Couplings
- 2 - 10ft Hoses
- Gravity Drain / Pressure Drain
- Water Tight On / Off Switch Box
- Hose Bracket Mount
- Accessories Available

Size	Part Number
SS FLUSH CART 1.5 HP	GT304SS1.5
SS FLUSH CART 2 HP	GT304SS2



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FLUSH CARTS: COMPONENTS & ACCESSORIES

Flush Cart Components

2 Horse Power Purge Cart

Cart Material: Mild Steel
 Tank Material: 304L Stainless Steel
 Piping: 304 Stainless, Red Brass
 Piping Size: 1 1/4"
 Valves: Yellow Brass
 Valve Size: 1 1/4"
 Drain Valves: Stainless (Hose Bib)
 Hoses: 150 PSI Rubber Hose
 Hose Size: 1 1/4"
 Pump: Refer to Add'l Page
 Electrical Plug: 20 Amp~115V
 Hose Connections: 1 1/4" Cam and Groove
 Total Weight: 196 LBS.
 Dimensions: H=53" W= 22 1/2"
 Tank Volume: 10 Gallons
 Filter: In Tank; Stainless Steel Screen
 Hose Parts: (1 1/4" 10 Ft Hose - Qty 2)
 1" Swivel X 1-1/4" Plug (PC65S) included (See below)
 1 1/4" X 1" Cam Coupling (CAM65) included (See below)

1 1/2 Horse Power Purge Cart

Cart Material: Mild Steel
 Tank Material: 304L Stainless Steel
 Piping: 304 Stainless, Red Brass
 Piping Size: 1 1/4"
 Valves: Yellow Brass
 Valve Size: 1 1/4"
 Drain Valves: Stainless (Hose Bib)
 Hoses: 200 PSI Rubber Hose
 Hose Size: 1"
 Pump: Refer to Add'l Page
 Electrical Plug: 20 Amp~115V
 Hose Connections: 1" Cam and Groove
 Total Weight: 192 LBS.
 Dimensions: H=57" W= 22 1/2"
 Tank Volume: 10 Gallons
 Filter: In Tank; Stainless Steel Screen
 Hose Parts: (1" 10 Ft Hose - Qty 2)
 1" Swivel X 1" Plug (PC55S) included (See below)

See Next Page for End Suction Pump Performance & Data

PURGE CART ASSESSORIES

Size	Part Number
1" Swivel X 1" Plug	PC55S
1" Swivel X 1 1/4" Plug	PC65S
1 1/4" X 1" Cam Coupling	CAM65



CAM65



PC55S / PC65S

PURGE CART REPLACEMENT PARTS

Size	Part Number
1-1/2" HP REPLACEMENT PUMP	G2ST1F4D4
2" HP REPLACEMENT PUMP	G2ST1G4C4
1" X (2) 10' HOSE W/CAM FITTINGS FOR FLUSH CART	GT304SS1.5HK10
1-1/4" X (2) 10' HOSE W/CAM FITTINGS FOR FLUSH CART	GT304SS2HK10

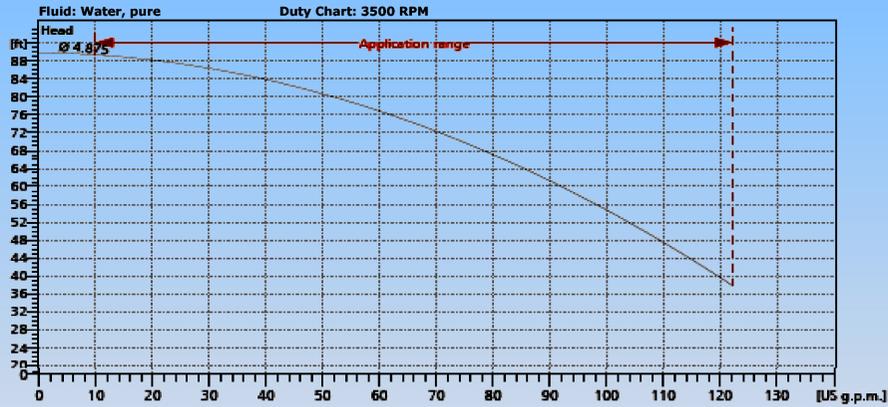


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FLUSH CARTS: SUBMITTAL DATA

2 Horse Power Motor

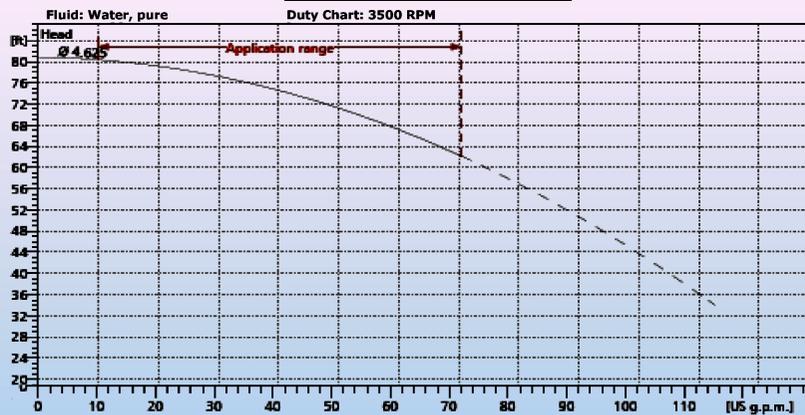


Hydraulic Data				Motor Data		NPE Model	Quantity
Maximum Flow	Flow at Duty Point	Maximum TDH	TDH at Duty Point	NPSH _g	Voltage/Phase/Enclosure		
122 US g.p.m.	0 US g.p.m.	90 ft	0 ft		115V 1Ph TEFC	2ST1G4C4	1

Pump Technical Data

Pump Code: 2ST1G4C4	Max. Temperature: 400°F
System Input Power: 1~115V	Max. Frequency: 60 HZ
Electrical Enclosures: TEFC	Motor Standard: NEMA
Impeller Size: 4-7/8"	Sense of Rotation: Clockwise from the drive end
Impeller Type: Radial impeller	Impeller Material: AISI 316 Stainless Steel

1 1/2 Horse Power Motor



Hydraulic Data				Motor Data		NPE Model	Quantity
Maximum Flow	Flow at Duty Point	Maximum TDH	TDH at Duty Point	NPSH _g	Voltage/Phase/Enclosure		
113 US g.p.m.	0 US g.p.m.	81 ft	0 ft		115V 1Ph TEFC	2ST1F4D4	1

Pump Technical Data

Pump Code: 2ST1F4D4	Max. Temperature: 400°F
System Input Power: 1~115V	Max. Frequency: 60 HZ
Electrical Enclosures: TEFC	Motor Standard: NEMA
Impeller Type: Radial impeller	Impeller Size: 4-5/8"
Impeller Construction: Closed	



ALL THE "PUMP" YOU NEED AND MORE

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PUMPS: GRUNDFOS PUMPS & FLANGES

Size	Part Number
15-58 GRUNDFOS 115V 3 SPEED PUMP	G15-58F
43-100 GRUNDFOS 230V 3 SPEED PUMP	G43-100F
26-99 GRUNDFOS 115V 3 SPEED PUMP	G1-2699/3
26-99 GRUNDFOS 230V 3 SPEED PUMP	G3-2699/3
26-116 GRUNDFOS 230V SINGLE SPEED	G2-116F
COVER PLATE FOR UP26 SERIES PUMP	UP26COVER
3/4" GRUNDFOS BRASS FLANGE BALL VALVE W/ HDLE	G591203
1" GRUNDFOS BRASS FLANGE BALL VALVE W/ HDLE	G591204
1 1/4" GRUNDFOS BRASS FLANGE BALL VALVE W/ HDLE	G591205
GRUNDFOS BALL VALVE GASKET (FLAT)	G510231
WEBSTONE BALL VALVE GASKET (FLAT)	G40403
1 1/4" WEBSTONE ISO VALVE W/ HANDLE	G41405
1" PROPRESS BY FLANGE BALL VALVE	G81404HV
1 1/4" PROPRESS BY FLANGE BALL VALVE	G81405HV
1" 3-WAY GEO VALVE BALL VALVE (PROPRESS BY FLANGE)	G81424HV
1" 3-WAY GEO VALVE BALL VALVE (SWIVEL NUT BY FLANGE)	G81424HV-FAB



G591204



G43405



G81424HV



G81424HV-FAB



G81405HV

BELL & GOSSETT

Size	Part Number
BELL & GOSSETT NRF36 230V-E-COATED (3 SPEED) - Replacement Only	NRF36



NRF36



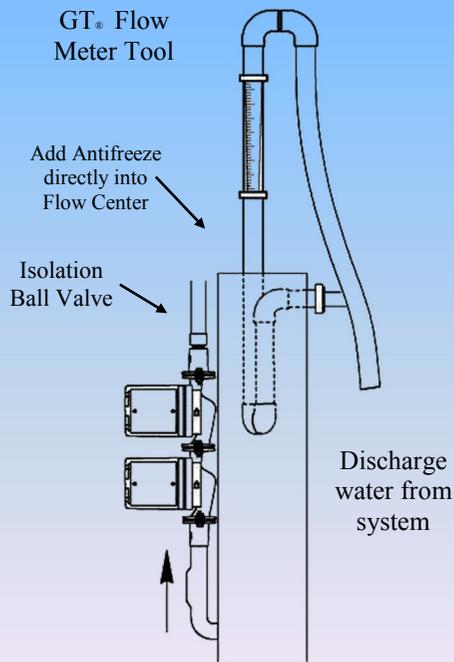
GRUNDFOS

Size	Part Number
26 SERIES PUMP INSULATORS	G26-INS

Call for availability of other sizes on Commercial and Residential.
1/2 to 5 HP or Larger
Pumps to be used for replacement parts only.



FLOW CENTER ACCESSORIES: FLOWMETER TOOL



1WFT17

Flowmeter Tool & Case

Size	Part Number
FLOW METER TOOL (17 GAL) (INCLUDES CASE)	1WFT17
FLOW METER TOOL (3-30 GAL) (WITHOUT CASE)	1WFT30R
FLOW METER TOOL (40 GAL) (WITHOUT CASE)	1WFTC40
FLOW CENTER WRENCH	1FCW



1FCW



ACCESSORIES: FLOWMETERS

410N IN-LINE FLOWMETER FEATURES

- Tough machined acrylic meter body, highly polished to a clear finish
- Direct reading permanent scale
- White back reflector for easy reading
- Sturdy adapters with high grade FKM o-ring seals
- 316 stainless steel float guide rods
- Acceptable in direct sunlight applications

410N SERIES IN-LINE FLOWMETER SPECIFICATIONS

- Max. Working Pressure - 150 psig (10.3 bar) @ 70° F (21° C)
- Max. Fluid Temperature - 150° F (65° C) @ 0 PSI
- Full scale accuracy - +/- 5%
- Meter body material - Machined acrylic

410N Series

Part Number	GPM	LPM	Connection
F40750LN-12	1.0 to 10	4.0 to 38	3/4" FPT
F40750LN-16	1.0 to 10	4.0 to 38	1" FPT
F41000LN-12	2.0 to 20	8.0 to 80	3/4" FPT
F41000LN-16	2.0 to 20	8.0 to 80	1" FPT



410N SERIES

451 & 452N IN-LINE FLOWMETER FEATURES

- Polysulfone meter body resists high temperatures and pressures
- 316 SS rod guided float
- Direct reading permanent scale
- Not recommended for direct sunlight

451 & 452N SERIES IN-LINE FLOWMETER SPECIFICATIONS

- Max. Working Pressure - 150 psig (10 bar) @ 70° F (21° C)
- Max. Fluid Temperature - 212° F (93° C) @ 0 PSI
- Full scale accuracy - +/- 3%
- Meter body material - Polysulfone

451 / 452N Series

Part Number	GPM	LPM	Connection
F451003LHN	3.0 to 30	10 to 110	1" FPT
F451004LHN	4.0 to 40	15 to 155	1" FPT
F452060LH	6.0 to 60	30 to 230	2" FPT



451 / 452 SERIES

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

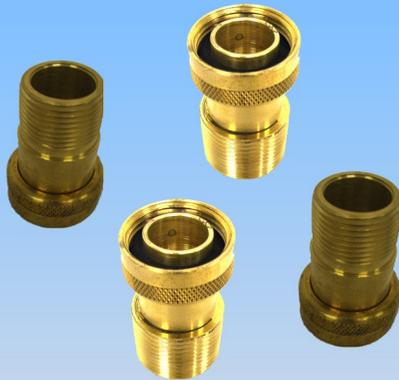
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PE ACCESSORIES: MALE PIPE x SWIVEL NUT ADAPTERS, P/T PLUGS, GAUGE



MALE PIPE x SWIVEL NUT ADAPTER



WP060



GA80-03XL

GAUGE, PRESSURE PROBES, PT PLUG

Size	Part Number
3/4" MPT X 1" SWIVEL NUT	MSA45
1" MPT X 1" SWIVEL NUT	MSA55-G

NOTE: Brass fittings are not lead free .

Size	Part Number
1/4" MPT P/T PLUG (BRASS)	N76-02
1/2" MPT P/T PLUG (BRASS)	N78-02
1/16" STAINLESS STEEL PRESSURE GAUGE PROBE	GA80-01
1/8" STAINLESS STEEL PRESSURE GAUGE PROBE	GA80-02
1/8" STAINLESS STEEL PRESSURE GAUGE PROBE EXTENDED LENGTH	GA80-03XL
4" PRESSURE GAUGE	WP060
2 1/2" PRESSURE GAUGE, LIQUID FILLED	PGNL25-100-G

NOTE: Brass fittings are not lead free .



PGNL25-100-G



ACCESSORIES: HOSE KITS

Size	Part Number
3/4" X 1" X 10 FT CLOSED LOOP HOSE KIT	HK3/4-1-10
3/4" X 1" x 12 FT CLOSED LOOP HOSE KIT	HK3/4-1-12
1" x 10 FT CLOSED LOOP HOSE KIT	HK1-10
1" x 12 FT CLOSED LOOP HOSE KIT	HK1-12
1-1/4" X 12 FT CLOSED LOOP HOSE KIT	HK1-1/4-12
1" x 1 1/4" x 10 FT CLOSED LOOP HOSE KIT	HK1-1-1/4-10
1" x 1 1/4" x 12 FT CLOSED LOOP HOSE KIT	HK1-1-1/4-12



(HK3/4-1-10) & (HK3/4-1-12) Parts Included

(2)CRBMA100	1" IPS x 1" BARB STRAIGHT
(2)RGSE10725	3/4" IPS x 1" BARB ELBOW W/PT
(2)N76-02	1/4" P/T PLUG
(4)WS13053	3/4" - 1-3/4" STAINLESS CLAMP
(1)HKWH01-200	1" BLACK 200 PSI HOSE

HOSE LENGTH IS DETERMINED ON HOSE KIT SELECTION

(HK1-10) & (HK1-12) Parts Included

(2)CRBMA100	1" IPS x 1" BARB STRAIGHT
(2)RGSE10025	1" IPS x 1" BARB ELBOW W/PT
(2)N76-02	1/4" P/T PLUG
(4)WS13053	3/4" - 1-3/4" STAINLESS CLAMP
(1)HKWH01-200	1" BLACK 200 PSI HOSE

HOSE LENGTH IS DETERMINED ON HOSE KIT SELECTION

HK1-1/4-12 Parts Included

(2)CRBMA125	1-1/4" MIP x 1-1/4" BARB STRAIGHT
(2)RGSE12525	1-1/4" IPS x 1-1/4" BARB ELBOW W/PT
(2)N76-02	1/4" P/T PLUG
(4)WS13053	3/4" - 1-3/4" STAINLESS CLAMP
(1)HKWH0125-150	1-1/4" BLACK 150 PSI HOSE

(HK1-1-1/4-10) & (HK1-1-1/4-12) Parts Included

(2)RBMA2510	1" MIP x 1-1/4" BARB STRAIGHT
(2)RBHE1025	1" MIP x 1-1/4" BARB ELBOW
(4)WS13053	3/4" - 1-3/4" STAINLESS CLAMP
(1)HKWH0125-150	1-1/4" BLACK 150 PSI HOSE

HOSE LENGTH IS DETERMINED ON HOSE KIT SELECTION

Need a Custom Hose Length...Call for Availability of other sizes.

Size	Part Number
1" RUBBER HOSE 200 PSI (PER FT)	HKWH01-200
1-1/4" RUBBER HOSE 150 PSI (PER FT)	HKWH0125-150



Size	Part Number
SIZE 20, 3/4" - 1-3/4" CLAMP DIAMETER S.S.	WS13053



See Next Page for Images of Brass Items Listed on This Page



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ACCESSORIES: BRASS BARB FITTINGS



RGSE



RBCP



RBHE



RBMA / CRBMA



BRC



RBFA100

FPT / MIP X BARB STRAIGHT	Part Number
1" FPT X 1" BARB STRAIGHT	RBFA100
3/4" MIP X 3/4" BARB STRAIGHT	RBMA75
1" MIP X 1" BARB STRAIGHT	CRBMA100
1" MIP X 1 1/4" BARB STRAIGHT	RBMA2510
1 1/4" MIP X 1" BARB STRAIGHT	CRBMA1025
1 1/4" MIP X 1 1/4" BARB STRAIGHT	CRBMA125

BARB X BARB	Part Number
3/4" INSERT X 3/4" INSERT	RBCP75
3/4" INSERT X 1" INSERT	RBCP7510
1" INSERT X 1" INSERT	RBCP100
1" INSERT X 1 1/4" INSERT	RBCP1025
1 1/4" INSERT X 1 1/4" INSERT	RBCP125

BARB X FUSION COUPLING	Part Number
1" BRASS BARB X 3/4" SOCKET FUSION	BRC1PE4
1" BRASS BARB X 1" SOCKET FUSION	BRC1PE5
1" BRASS BARB X 1 1/4" SOCKET FUSION	BRC1PE6
1" BRASS BARB X 1 1/2" SOCKET FUSION	BRC1PE7
1 1/4" BRASS BARB X 1 1/4" SOCKET FUSION	BRC125PE6
1" BRASS BARB X 2" SOCKET FUSION	BRC1PE8

MIP X BARB ELBOW	Part Number
3/4" MIP X 1" BARB ELBOW	RBHE100
1" MIP X 1" BARB ELBOW	RBHE1000
1" MIP X 1 1/4" BARB ELBOW	RBHE1025
1 1/4" MIP X 1 1/4" BARB ELBOW	RBHE125

MIP X BARB ELBOW W/PT PORT	Part Number
3/4" MIP X 1" BARB ELBOW W/PT PORT	RGSE10725
1" MIP X 1" BARB ELBOW W/PT PORT	RGSE10025
1 1/4" MIP X 1 1/4" BARB ELBOW W/ PT PORT	RGSE12525

NOTE: Brass fittings are not lead free .

Call for availability of other sizes.



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ACCESSORIES: GLYCOL TESTER, REGULATOR VALVE

MISCO 7084

Glycol Tester

Automatically Temperature Compensated —
Now Measure Antifreeze to 70% (-84 °F)

Checks Both Old & New Antifreeze Formulas —

You can also check other Ethylene and Propylene Glycol-based fluids, like aircraft de-icing fluids.

New Battery Scale —

You can now accurately test Specific Gravity from 1.095 to 1.400. The battery scale is also temperature corrected.

Temperature Compensation Is Automatic —

Temperature is automatically corrected when testing hot or cold fluids. No time wasted with temperature conversion tables and nothing to adjust or calibrate. Get correct reading immediately.

Rugged & Reliable —

Heavy vinyl encased body is built to withstand years of wear and tear – no glass tubes to shatter, no joints to leak, no moving parts or batteries.

Accurate —

Measures the refractive index of the antifreeze. This method is proven to be the most accurate of all conventional testing methods. Accurate readings will save antifreeze and extend the life of your engine and water pump.



Size	Part Number
GLYCOL TESTER	GT7084

- Eyepiece
- Dip Stick
- Syringe to Draw Fluids
- Hole for Wall Hanging
- High-Impact Housing
- ViewPoint[®] Illuminator



- 3/4" FNPT - Inlet/Outlet (2 GPM - 11.5 GPM)
- 1" FNPT - Inlet/Outlet (20 GPM)
- 8 oz. Net Weight

Size	Part Number
2 GALLON REGULATOR VALVE	WGC2F
3 GALLON REGULATOR VALVE	WGC3F
4 GALLON REGULATOR VALVE	WGC4F
5 GALLON REGULATOR VALVE	WGC5F
6 GALLON REGULATOR VALVE	WGC6F
7 GALLON REGULATOR VALVE	WGC7F
8 GALLON REGULATOR VALVE	WGC8F
9 GALLON REGULATOR VALVE	WGC9F
10 GALLON REGULATOR VALVE	WGC10F
11.5 GALLON REGULATOR VALVE	WGC11.5F
20 GALLON REGULATOR VALVE	WX20F



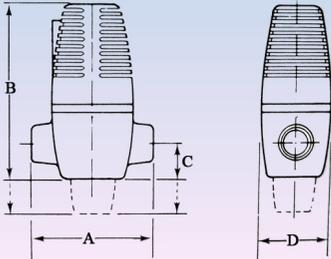
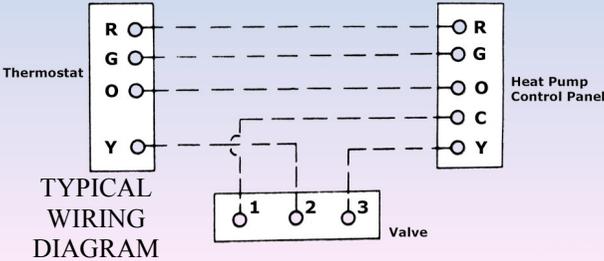
ACCESSORIES: GEOTHERMAL VALVES

Bronze body and corrosion resistant internal parts provide for long, trouble-free service.

Created especially to eliminate noisy water hammer. The Taco GT Whisper Guard operates in a totally different way from fast-acting solenoids. How? Because it closes slowly and no water hammer occurs. The unique end-switch design permits control of the heat pump by the valve. This allows movement of cold water into the coil before the heat pump actually starts. Taco GT Whisper Guard is available with: 3/4" thread (5101-G2) and 1" sweat (557-G2).

Offers long-term economy both in power consumption and maintenance. Taco Whisper Guard operates on a low 24V AC electrical current for minimum annual cost. It's fast and easy to service, too. There's no need to drain the system — just remove the power head. All it requires for removal is a slight twist. The gland assembly is replaceable.

Simple to install — with a choice of threaded or sweat connections. Installation is made easy because the power head does not have to be removed. Only 3 low-voltage wiring connections have to be made.



DIMENSIONS IN INCHES

Size	Part Number	A	B	C	D	Weight
3/4" Thread	T5101G-2	3 3/8"	5 3/8"	1 9/16"	2	2 1/4
1" Sweat	T557-G3	3 5/8"	5 3/8"	1 9/16"	2	2 1/2

Size	Part Number	Normal Flow Range, GPM	Press Drop Thru-Valve Ft. of Pipe Equiv.	Pump Head Ft. of Water	Maximum Work Press., PSI	Oper. Temp. Range, °F	AMP Rating	Volts Frequency
3/4" Thread	T5101-G2	4 1/2 TO 6	20	150	125	40 TO 240	0.9	24V-60 Hz
1" Sweat	T557-G3	6 TO 10	60	150	125	40 TO 240	0.9	24V-60 Hz

*For detailed specification data, write for Taco Submittal Data Sheet SD100-4.4.



Size	Part Number
3/4" Geothermal Head For Valve	T555-173RP

Call for availability of other sizes.



ACCESSORIES: PLASTIC SOLENOID VALVE, ZONE SENTRY VALVE

Electric Globe (Light Commercial)

Applications

The debris-tolerant operation of the 205 Series valves makes them an excellent choice for both clean and dirty water applications.

Size 1" plastic models

Performance

- Flow range from 5-25 GPM
- Pressure range from 10-150 psi
- Manual external bleed
- Debris-tolerant design
- High-flow, low friction loss design
- Optional flow control allows precise flow adjustment and manual shutoff

Quality Construction

- Heavy-duty, corrosion and UV-resistant PVC construction
- Stainless steel and fabric-reinforced synthetic rubber diaphragm
- Encapsulated solenoid
- Available in NPT or slip configuration for high-volume applications
- Removable, tamper-resistant flow control handle
- Easily serviced without removal from the system
- 1 year limited warranty



Size	Part Number
SOLENOID VALVE	205TF

ELECTRICAL SPECIFICATIONS

- Solenoid: 24 VAC
- Inrush volt-amp: 24 VAC-11.50 VA
- Inrush current: .4 amp
- Holding volt-amp: 24 VAC-5.75 VA
- Holding current: .2 amp

Zone Sentry® Zone Valve Zone Valves with Multi-function LED

The Taco Zone Sentry® Zone Valves provide on-off, normally open or normally closed control in both open and closed hydronic systems. The valves can be used in a wide variety of heating and non condensing cooling applications, primarily designed for use with baseboard, fan coils, radiators, convectors, air handlers, heat pumps and radiant applications.

Features

- Uses up to 93% less energy than other commonly installed zone valves
- Up to 12 valves on (1) 40VA transformer
- Multi function LED assists with troubleshooting
- Bidirectional flow (you can't install the valve backwards)
- The actuator mounts on the valve in either direction
- 125 PSI shut-off pressure with industry leading Cv's
- Quick release actuator mounting clip
- Manual override button
- Positional indicator shows the ball valve's actual position



Size	Part Number
Zone Sentry Valve 1" NPT 2-Way 24V	Z100AAT2
Zone Sentry Valve 3/4" NPT 2-Way 24V	Z075T2-1
Geo-Sentry Geothermal Zone Valve 3/4" NPT 2-Way 24V	V075TG-1

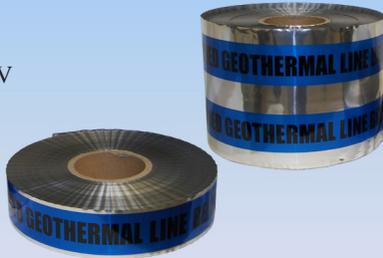
Specifications available upon request



ACCESSORIES: TEST CAPS, DETECTABLE TAPE, TRANSITION FITTINGS, TEST KIT



KIT-AGV



TEST CAPS

Size	Part Number
3/4" TEST CAP (3/4" X 1/4" FPT)	ELO42TC
1" TEST CAP (1" X 1/4" FPT)	ELO52TC
1-1/4" TEST CAP (1 1/4" X 1/4" FPT)	ELO62TC
2" TEST CAP (2" X 1/4" FPT)	ELO82TC
2" X 1000 FT UNDERGROUND DETECTABLE TAPE	UGDT1000-2
2" X 1000 FT UNDERGROUND DETECTABLE TAPE (12 Case)	UGDT1000-2-12C
3" X 1000 FT UNDERGROUND DETECTABLE TAPE	UGDT1000-3
3" X 1000 FT UNDERGROUND DETECTABLE TAPE (6 Case)	UGDT1000-3-6C
6" X 1000 FT UNDERGROUND DETECTABLE TAPE	UGDT1000-6
6" X 1000 FT UNDERGROUND DETECTABLE TAPE (4 Case)	UGDT1000-6-4C
3/4" SDR11 BF X 3/4" SCH 80 PVC SS TRANSITION	BPE4-PVC4
1" SDR11 BF X 1" SCH 80 PVC SS TRANSITION	BPE5-PVC5
1 1/4" SDR11 BF X 1 1/4" SCH 80 PVC SS TRANSITION	BPE6-PVC6
1 1/2" SDR11 BF X 1 1/4" SCH 80 PVC SS TRANSITION	BPE7-PVC7
2" SDR11 BF X 2" SCH 80 PVC SS TRANSITION	BPE8-PVC8
3" SDR11 BF X 3" SCH 80 PVC SS TRANSITION	BPE10-PVC10
4" SDR11 BF X 4" SCH 80 PVC SS TRANSITION	BPE11-PVC11
TEST KIT W/GAUGE, VALVE, HOSE HOOKUP	KIT-AGV

Refer to page 62 for more Test Cap Options



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* Non-Stock Item-Call for Availability.
Call for availability of other sizes.

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PIPE ACCESSORIES: POLY-ROLLER

Handle Polyethylene Pipes and Tubing in a neat, Orderly Manner with the Poly-Roller.

- ◇ Keeps product clean to work with...No disorderly lashing and unrolling.
- ◇ Lightweight—yet well constructed.
- ◇ Capacity up to two 700-foot rolls of 3/4-inch pipe... Adjustable to handle larger or smaller diameter rolls of pipe.
- ◇ Accommodates pipe up to 1 1/4-inch in diameter.
- ◇ Earth-coupled heating and cooling systems.
- ◇ Installing poly-pipe for sprinkling systems.
- ◇ Installing poly-pipe water lines.
- ◇ Poly-pipe conduits for electrical or fiber optics.
- ◇ Display dispensing of poly-pipe and tubing.
- ◇ Dispensing miscellaneous cables and ropes.
- ◇ Excellent for installing radiant heating systems in floors.
- ◇ Vertical guide to ensure orderly unrolling optional.
- ◇ On single roll, pipe is held in a stationary position by upright tubes...tubes are anchored by spring tension.
- ◇ Two-roll application doubles capacity and availability of product...This is particularly convenient when preparing loops for earth coupled heating and cooling systems.
- ◇ Basic unit weighs approximately 30 lbs.
- ◇ Unassembled size: 42 x 42 x 10 inches.
- ◇ Assembly requires only the four thumb screws provided & four bolts.



Size	Part Number
POLY PIPE ROLLER	WPR

For Residential or Commercial Polyethylene Pipe.



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35

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SOCKET FITTINGS: COUPLINGS

Size	Part Number
3/4" x 3/4"	SPC44
1" X 3/4"	SPC54
1" X 1"	SPC55
1 1/4" X 3/4"	SPC64
1 1/4" X 1"	SPC65
1 1/4" X 1 1/4" (Slim Line)	SPC66-SL
1 1/4" X 1 1/4"	SPC66
1 1/2" X 3/4"	SPC74
1 1/2" X 1"	SPC75
1 1/2" X 1 1/4"	SPC76
1 1/2" X 1 1/2"	SPC77
2" X 1"	SPC85
2" X 1 1/4"	SPC86
2" X 1 1/2"	SPC87
2" X 2"	SPC88
2" X 2" (Heavy Duty)	SPC88-HD
3" X 3"	SPC1010

NOTE: FITTINGS LISTED ABOVE ARE SDR11



SPC88-HD



Slim Line



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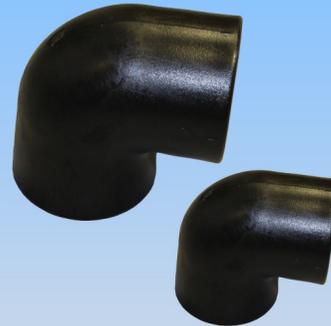
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SOCKET FITTINGS: ELBOWS

FUSION ELBOWS (FUSION X FUSION)

Size	Part Number
3/4" x 3/4"	SPE44
1" X 3/4"	SPE54
1" X 1"	SPE55
1 1/4" X 3/4"	SPE64
1 1/4" X 1"	SPE65
1 1/4" X 1 1/4"	SPE66
1 1/2" X 1 1/2"	SPE77
2" X 1 1/4"	SPE86
2" X 2"	SPE88



FUSION 45° ELBOWS (FABRICATED)

Size	Part Number
1 1/2" X 1 1/2" - 45° ELBOW (FAB)	SPE77-45



FUSION 45° ELBOW MOLDED

Size	Part Number
1" X 1" - 45° ELBOW	SPE55-45
1 1/4" X 1 1/4" - 45° ELBOW	SPE66-45
2" X 2" - 45° ELBOW	SPE88-45



FUSION ELBOWS (SLIM LINE)

Size	Part Number
1 1/4" X 1 1/4" (SLIM LINE)	SPE66SL



NOTE: ALL FITTINGS LISTED ABOVE ARE SDR11



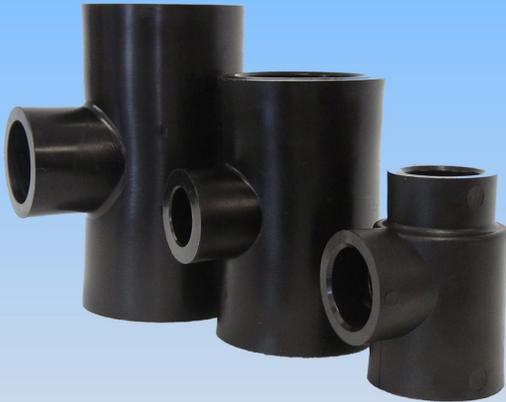
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SOCKET FITTINGS: TEES

Size	Part Number
3/4" x 3/4" X 3/4"	SPT444
1" X 1" X 3/4"	SPT554
1" X 1" X 1"	SPT555
1 1/4" X 3/4" X 3/4"	SPT644
1 1/4" X 1" X 1"	SPT655
1 1/4" X 1 1/4" X 3/4"	SPT664
1 1/4" X 1 1/4" X 1"	SPT665
1 1/4" X 1 1/4" X 1 1/4"	SPT666
1 1/2" X 3/4" X 3/4"	SPT744
1 1/2" X 1 1/4" X 3/4"	SPT764
1 1/2" X 1 1/4" X 1"	SPT765
1 1/2" X 1 1/4" X 1 1/4"	SPT766
1 1/2" X 1 1/2" X 3/4"	SPT774
1 1/2" X 1 1/2" X 1"	SPT775
1 1/2" X 1 1/2" X 1 1/4"	SPT776

NOTE: FITTINGS LISTED ABOVE ARE SDR11



Size	Part Number
1 1/2" X 1 1/2" X 1 1/2"	SPT777
2" X 1 1/4" X 3/4"	SPT864
2" X 1 1/4" X 1"	SPT865
2" X 1 1/4" X 1 1/4"	SPT866
2" X 1 1/2" X 3/4"	SPT874
2" X 1 1/2" X 1"	SPT875
2" X 1 1/2" X 1 1/4"	SPT876
2" X 2" X 3/4"	SPT884
2" X 2" X 1"	SPT885
2" X 2" X 1 1/4"	SPT886
2" X 2" X 2"	SPT888

NOTE: FITTINGS LISTED ABOVE ARE SDR11



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**SOCKET FITTINGS: FUSION END CAPS,
SOCKET FUSION REDUCERS**

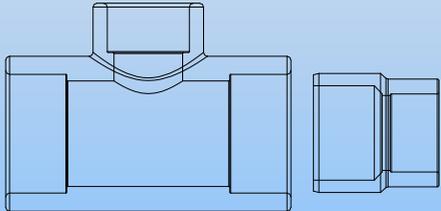
Size	Part Number
3/4" SOCKET FUSION CAP	SPCP4
1" SOCKET FUSION CAP	SPCP5
1 1/4" SOCKET FUSION CAP	SPCP6
1 1/2" SOCKET FUSION CAP	SPCP7
2" SOCKET FUSION CAP	SPCP8

NOTE: FITTINGS LISTED ABOVE ARE SDR11



Size	Part Number
1 1/4" X 3/4" SOCKET FUSION BUSHING	SPRB64
1 1/4" X 1" SOCKET FUSION BUSHING	SPRB65
1 1/2" X 3/4" SOCKET FUSION BUSHING	SPRB74
1 1/2" X 1" SOCKET FUSION BUSHING	SPRB75
1 1/2" X 1 1/4" SOCKET FUSION BUSHING	SPRB76
2" X 3/4" SOCKET FUSION BUSHING	SPRB84
2" X 1" SOCKET FUSION BUSHING	SPRB85
2" X 1 1/4" SOCKET FUSION BUSHING	SPRB86
2" X 1 1/2" SOCKET FUSION BUSHING	SPRB87

NOTE: FITTINGS LISTED ABOVE ARE SDR11



SOCKET FUSION TEE & SOCKET FUSION BUSHING REDUCER REPRESENTATION



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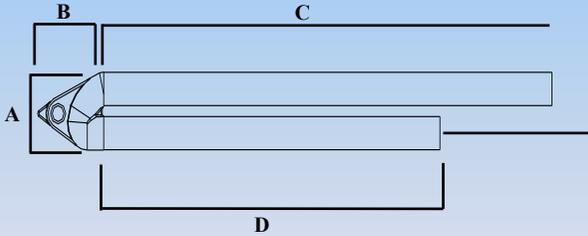
PE FUSION FITTINGS: FUSION U-DO ELBOW, FUSION U-BEND ASSEMBLY

Size	Part Number
3/4" U-BEND ASSEMBLY	SFUB4
3/4" U-BEND WITH COUPLING	SFUB4C
1" U-BEND ASSEMBLY	SFUB5
1" U-BEND WITH COUPLING	SFUB5C



U BEND ASSEMBLY DIMENSIONS

Size	A	B	C	D	E
3/4" U-BEND ASSEMBLY	3.11	3.84	24	16	1.75
1" U-BEND ASSEMBLY	3.15	3.84	24	16	1.82



Size	Part Number
USE W/ SPE44 (U-DO 3/4" U-BEND)	SPEU44
USE W/ SPE55 (U-DO 1" U-BEND)	SPEU55
USE W/ SPEU-66M (U-DO 1 1/4" U-BEND)	SPEU-66F
USE W/ SPEU-66F (U-DO 1 1/4" U-BEND)	SPEU-66M

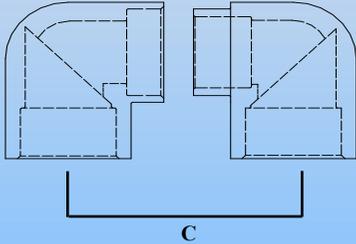


SPEU-66F

SPEU-66M

U DO ELBOW DIMENSIONS

Size	Center / Center After Fusion
3/4" U-DO ASSEMBLY	2"
1" U-DO ASSEMBLY	2.25"
1-1/4" U-DO ASSEMBLY	2.75"



NOTE: ALL FITTINGS LISTED ABOVE ARE SDR11



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PE FUSION FITTINGS: MALE ADAPTERS, BRASS FEMALE ADAPTERS

NUPI

Size	Part Number
3/4" FUSION X 3/4" MALE ADAPTER	SPMA44
1" FUSION X 3/4" MALE ADAPTER	SPMA54
1" FUSION X 1" MALE ADAPTER	SPMA55
1 1/4" FUSION X 3/4" MALE ADAPTER	SPMA64
1 1/4" FUSION X 1" MALE ADAPTER	SPMA65
1 1/4" FUSION X 1 1/4" MALE ADAPTER	SPMA66
1 1/2" FUSION X 1 1/2" MALE ADAPTER	SPMA77
2" FUSION X 2" MALE ADAPTER	SPMA88

NOTE: SDR11 FITTINGS LISTED ABOVE ARE NPT WITH MALE THREADS



NUPI

Size	Part Number
3/4" X 3/4" FUSION COUPLING FEMALE ADAPTER	SPFA44
1" X 3/4" FUSION COUPLING FEMALE ADAPTER	SPFA54
1" X 1" FUSION COUPLING FEMALE ADAPTER	SPFA55
1 1/4" X 3/4" FUSION COUPLING FEMALE ADAPTER	SPFA64
1 1/4" X 1" FUSION COUPLING FEMALE ADAPTER	SPFA65
1 1/4" X 1 1/4" FUSION COUPLING FEMALE ADAPTER	SPFA66
1 1/2" X 1 1/2" FUSION COUPLING FEMALE ADAPTER	SPFA77
2" X 1 1/2" FUSION COUPLING FEMALE ADAPTER	SPFA87
2" X 2" FUSION COUPLING FEMALE ADAPTER	SPFA88

NOTE: SDR11 FITTINGS LISTED ABOVE ARE NPT WITH FEMALE



NOTE: Brass fittings are not lead free



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**PE FUSION FITTINGS: MALE THREADED TEE,
TEE W/ F. ADAPTER, COUPLING W/ F. ADAPTER**

Size	Part Number
1/2" FPT X 1" MNT X 1" SOCKET FUSION TEE	SPMT355
1" SOCKET FUSION X 3/4" MNT X 1/2" FPT TEE	SPMT453
1" SOCKET FUSION X 1" MNT X 1/2" FPT TEE	SPMT553
1-1/4" SOC. FUSION X 1-1/4" SOC.FUSION X 1" MNT TEE - W/CAP	SPMT665S

NOTE: SDR11 FITTINGS LISTED ABOVE HAVE BOTH NPT WITH FEMALE THREADS & MNT WITH MALE THREADS
MNT THREADS ARE NOT COMPATIBLE WITH FPT THREADS.
MNT THREADS SHOULD ONLY BE USED WITH SWIVEL FITTINGS



SPMT355

Size	Part Number
3/4" SOCKET FUSION X 3/4" SOCKET FUSION X 1/2" FPT	SPST443
1" SOCKET FUSION X 1" SOCKET FUSION X 1/2" FPT	SPST553

NOTE: SDR11 FITTINGS LISTED ABOVE ARE NPT WITH FEMALE THREADS



Size	Part Number
3/4" X 1/4" FUSION COUPLING FEMALE ADAPTER	SPSC42
3/4" X 1/2" FUSION COUPLING FEMALE ADAPTER	SPSC43
1" X 1/4" FUSION COUPLING FEMALE ADAPTER	SPSC52
1" X 1/2" FUSION COUPLING FEMALE ADAPTER	SPSC53

NOTE: SDR11 FITTINGS LISTED ABOVE ARE NPT WITH FEMALE



Size	Part Number
1" FUSION ELBOW X 1" MALE MPT ADAPTER	SPE-MA55
1 1/4" FUSION ELBOW X 1 1/4" MPT MALE ADAPTER	SPE-MA66

NOTE: SDR11 FITTINGS LISTED ABOVE ARE NPT WITH MALE THREADS



NOTE: Brass fittings are not lead free



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**PE FUSION FITTINGS: MALE THREADED ELBOW,
FUSION BALL VALVE**



SPEV66C



BPEV66

Size	Part Number
1" VALVE ASSEMBLY WITH P.E. PIPE.	BPEV55
1 1/4" VALVE ASSEMBLY WITH P.E. PIPE.	BPEV66
1" FUSION BALL VALVE W/ 3/4" COUPLING	SPEV54C
1" FUSION BALL VALVE W/COUPLING	SPEV55C
1 1/4" FUSION BALL VALVE W/COUPLING	SPEV66C

NOTE: FITTINGS LISTED ABOVE ARE SDR11

Size	Part Number
3/4" MNT X 1" SOCKET FUSION ELBOW	SPME45S
1" MNT X 1" SOCKET FUSION ELBOW	SPME55S

NOTE: SDR11 FITTINGS LISTED ABOVE ARE MNT WITH MALE THREADS

NOTE: MNT THREADS ARE NOT COMPATIBLE WITH FPT THREADS.
THEY SHOULD ONLY BE USED WITH SWIVEL FITTINGS



Size	Part Number
3/4" MNT X 1" SOCKET FUSION COUPLING	SPMC45S
1" MNT X 1" SOCKET FUSION COUPLING	SPMC55S
1-1/4" MNT X 1-1/4" SOCKET FUSION COUPLING	SPMC66S

NOTE: SDR11 FITTINGS LISTED ABOVE ARE MNT WITH MALE THREADS

NOTE: MNT THREADS ARE NOT COMPATIBLE WITH FPT THREADS.
THEY SHOULD ONLY BE USED WITH SWIVEL FITTINGS



NOTE: Brass fittings are not lead free



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ACCESSORIES: P.E. FLUSH VALVES



PEVT566S



SPMT665S



PEVT666S



PE2VT666S



HEAT PUMP CONNECTION



PEVTM566S / PEVTM666S

Size	Part Number
P.E. FLOW CENTER FLUSH TEE STRAIGHT 1" x 1 1/4" FUSION	PEVT566S
P.E. STRAIGHT VALVED FLUSH TEE 1 1/4" x 1 1/4" FUSION	PEVT666S
P.E. 1" MALE FLUSH TEE STRAIGHT 1 1/4"x 1 1/4" FUSION	PEVTM566S
P.E. 1 1/4" MALE FLUSH TEE STRAIGHT 1 1/4"x 1 1/4" FUSION	PEVTM666S
P.E. STRAIGHT 2 VALVED FLUSH TEE 1 1/4" x 1 1/4"	PE2VT6665S
1-1/4" SOC X 1-1/4" SOC X 1" MNT FUSION TEE - W/CAP	SPMT665S
1" HEAT PUMP CONNECTION ASSEMBLY W/ PT PORT X 1" FUSION	SPMT355V
1" HEAT PUMP CONNECTION ASSEMBLY W/ PT PORT X 1-1/4" FUSION	SPMT356V
1-1/4" HEAT PUMP CONNECTION ASSEMBLY W/ PT X 1-1/4" FUSION	SPMT366V
1 1/4" PE BY-PASS ASSEMBLY W/ FLUSH PORTS (made with brass valves)	BPVA6
2" PE BY-PASS ASSEMBLY W/ FLUSH PORTS (made with polyball valves)	BPVA8

NOTE: FITTINGS LISTED ABOVE ARE SDR11



BPVA6

10" CENTER TO CENTER

NOTE: Brass fittings are not lead free



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BUTT FUSION FITTINGS: SS MALE ADAPTERS, REDUCERS

STAINLESS STEEL BUTT FUSION MALE ADAPTERS

Size	Part Number
3/4" MPT SS X 3/4" BUTT FUSION	BFPSSMA44
1" MPT SS X 1" BUTT FUSION	BFPSSMA55
1 1/4" MPT SS X 1 1/4" BUTT FUSION	BFPSSMA66
1 1/2" MPT SS X 1 1/2" BUTT FUSION	BFPSSMA77
2" MPT SS X 2" BUTT FUSION	BFPSSMA88
3" MPT SS X 3" BUTT FUSION	BFPSSMA10
4" MPT SS X 4" BUTT FUSION	BFPSSMA11

NOTE: FITTINGS LISTED ABOVE ARE SDR11

Not all sizes stock items. Call for Lead times



REDUCERS

Size	Part Number
1" X 3/4" BUTT FUSION REDUCER	BFPRC54
1 1/4" X 1" BUTT FUSION REDUCER	BFPRC65
1 1/2" X 3/4" BUTT FUSION REDUCER	BFPRC74
1 1/2" X 1" BUTT FUSION REDUCER	BFPRC75
1 1/2" X 1 1/4" BUTT FUSION REDUCER	BFPRC76
2" X 1" BUTT FUSION REDUCER	BFPRC85
2" X 1 1/4" BUTT FUSION REDUCER	BFPRC86
2" X 1 1/2" BUTT FUSION REDUCER	BFPRC87
3" X 2" BUTT FUSION REDUCER	BFPRC108
4" X 2" BUTT FUSION REDUCER	BFPRC118
4" X 3" BUTT FUSION REDUCER	BFPRC1110
6" X 3" BUTT FUSION REDUCER	BFPRC1210
6" X 4" BUTT FUSION REDUCER	BFPRC1211
8" X 6" BUTT FUSION REDUCER	BFPRC1412
10" X 8" BUTT FUSION REDUCER	BFPRC1614
12" X 10" BUTT FUSION REDUCER	BFPRC1816

NOTE: FITTINGS LISTED ABOVE ARE SDR11



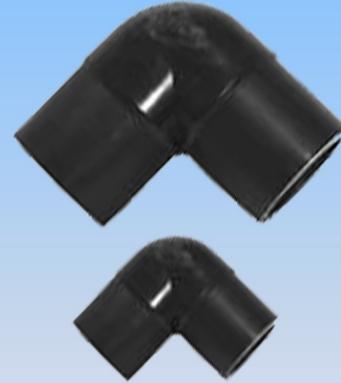
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BUTT FUSION FITTINGS: 90° ELBOWS, 45° ELBOWS, WYES

90° ELBOW

Size	Part Number
1" BUTT FUSION ELBOW	BFPE5
1 1/4" BUTT FUSION ELBOW	BFPE6
1 1/2" BUTT FUSION ELBOW	BFPE7
2" BUTT FUSION ELBOW	BFPE8
3" BUTT FUSION ELBOW	BFPE10
4" BUTT FUSION ELBOW	BFPE11
6" BUTT FUSION ELBOW	BFPE12
8" BUTT FUSION ELBOW	BFPE14
10" BUTT FUSION ELBOW	BFPE16
12" BUTT FUSION ELBOW	BFPE18



45° ELBOW

Size	Part Number
1" BUTT FUSION 45° ELBOW	BFPE5-45
1 1/4" BUTT FUSION 45° ELBOW	BFPE6-45
1 1/2" BUTT FUSION 45° ELBOW	BFPE7-45
2" BUTT FUSION 45° ELBOW	BFPE8-45
3" BUTT FUSION 45° ELBOW	BFPE10-45
4" BUTT FUSION 45° ELBOW	BFPE11-45
6" BUTT FUSION 45° ELBOW	BFPE12-45
8" BUTT FUSION 45° ELBOW	BFPE14-45
10" BUTT FUSION 45° ELBOW	BFPE16-45
12" BUTT FUSION 45° ELBOW	BFPE18-45



BUTT FUSION WYES

Size	Part Number
2" BUTT FUSION WYE	BFPY8



NOTE: ALL FITTINGS LISTED ABOVE ARE SDR11



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Call for availability of other sizes.

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BUTT FUSION FITTINGS: CAPS & TEES

BUTT FUSION CAPS

Size	Part Number
1 1/4" BUTT FUSION CAP	BFPCP6
2" BUTT FUSION CAP	BFPCP8
3" BUTT FUSION CAP	BFPCP10
4" BUTT FUSION CAP	BFPCP11
6" BUTT FUSION CAP	BFPCP12
8" BUTT FUSION CAP	BFPCP14
10" BUTT FUSION CAP	BFPCP16
12" BUTT FUSION CAP	BFPCP18

NOTE: FITTINGS LISTED ABOVE ARE SDR11



BUTT FUSION TEES

Size	Part Number
1" BUTT FUSION TEE	BFPT5
1 1/4" BUTT FUSION TEE	BFPT6
1 1/2" BUTT FUSION TEE	BFPT7
2" BUTT FUSION TEE	BFPT8
3" BUTT FUSION TEE	BFPT10
4" BUTT FUSION TEE	BFPT11
6" BUTT FUSION TEE	BFPT12
8" BUTT FUSION TEE	BFPT14
10" BUTT FUSION TEE	BFPT16
12" BUTT FUSION TEE	BFPT18

NOTE: FITTINGS LISTED ABOVE ARE SDR11



Call for availability of other sizes.



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MOLDED BUTT TEES

MOLDED TEES

Size	Part Number
2" BUTT x 2" BUTT x 3/4" BUTT	BFPT0804
2" BUTT x 2" BUTT x 1" BUTT	BFPT0805
2" BUTT x 2" BUTT x 1 1/4" BUTT	BFPT0806
3" BUTT x 3" BUTT x 1" BUTT	BFPT1010-5B
3" BUTT x 3" BUTT x 1 1/4" BUTT	BFPT1010-6B
3" BUTT x 3" BUTT x 2" BUTT	BFPT1010-8B
4" BUTT x 4" BUTT x 1 1/4" BUTT	BFPT1106
4" BUTT x 4" BUTT x 2" BUTT	BFPT1108
6" BUTT x 6" BUTT x 2" BUTT	BFPT1208
6" BUTT x 6" BUTT x 3" BUTT	BFPT1210
6" BUTT x 6" BUTT x 4" BUTT	BFPT1211
8" BUTT x 8" BUTT x 4" BUTT	BFPT1414-11B
8" BUTT x 8" BUTT x 6" BUTT	BFPT1412

NOTE: FITTINGS LISTED ABOVE ARE SDR11



Call for availability of other sizes.



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FABRICATED TEES: BUTT-BUTT-SOCKET TEES

MOLDED TEES W/SOCKET FUSION COUPLING

Size	Part Number
3" BUTT x 3" BUTT x 3/4" SOCKET	BFPT1010-4S
3" BUTT x 3" BUTT x 1" SOCKET	BFPT1010-5S
3" BUTT x 3" BUTT x 1 1/4" SOCKET	BFPT1010-6S
4" BUTT x 4" BUTT x 3/4" SOCKET	BFPT1111-4S
4" BUTT x 4" BUTT x 1" SOCKET	BFPT1111-5S
4" BUTT x 4" BUTT x 1 1/4" SOCKET	BFPT1111-6S
6" BUTT x 6" BUTT x 3/4" SOCKET	BFPT1212-4S
6" BUTT x 6" BUTT x 1" SOCKET	BFPT1212-5S
6" BUTT x 6" BUTT x 1 1/4" SOCKET	BFPT1212-6S
8" BUTT x 8" BUTT x 3/4" SOCKET	BFPT1414-4S
8" BUTT x 8" BUTT x 1" SOCKET	BFPT1414-5S
8" BUTT x 8" BUTT x 1 1/4" SOCKET	BFPT1414-6S

NOTE: FITTINGS LISTED ABOVE ARE SDR11



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Call for availability of other sizes.

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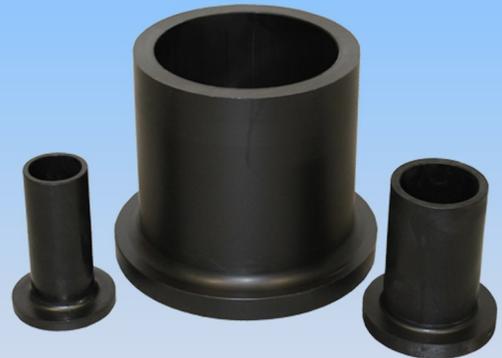
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BUTT FUSION FITTINGS: ADAPTERS, BACK-UP RINGS

Size	Part Number
1" BUTT FUSION FLANGE ADAPTER	BFPFA5
1-1/4" BUTT FUSION FLANGE ADAPTER	BFPFA6
1-1/2" BUTT FUSION FLANGE ADAPTER	BFPFA7
2" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA8-T
3" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA10-T
4" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA11-T
6" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA12-T
8" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA14-T
10" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA16-T
12" BUTT FUSION FLANGE ADAPTER-TAPERED	BFPFA18-T
14" BUTT FUSION FLANGE ADAPTER	BFPFA20
16" BUTT FUSION FLANGE ADAPTER	BFPFA22
18" BUTT FUSION FLANGE ADAPTER	BFPFA24
24" BUTT FUSION FLANGE ADAPTER	BFPFA30

NOTE: FITTINGS LISTED ABOVE ARE SDR11

****Un-tapered are special order**



Size	Part Number
1" IPS METAL BACK-UP RING 150#	DFIBR5
1-1/4" IPS METAL BACK-UP RING 150#	DFIBR6
1-1/2" IPS METAL BACK-UP RING 150#	DFIBR7
2" IPS METAL BACK-UP RING 150#	DFIBR8
3" IPS METAL BACK-UP RING 150#	DFIBR10
4" IPS METAL BACK-UP RING 150#	DFIBR11
6" IPS METAL BACK-UP RING 150#	DFIBR12
8" IPS METAL BACK-UP RING 150#	DFIBR14
10" IPS METAL BACK-UP RING 150#	DFIBR16
12" IPS METAL BACK-UP RING 150#	DFIBR18
14" IPS METAL BACK-UP RING 150#	DFIBR20
16" IPS METAL BACK-UP RING 150#	DFIBR22
18" IPS METAL BACK-UP RING 150#	DFIBR24
24" IPS METAL BACK-UP RING 150#	DFIBR30



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ACCESSORIES: BUTTERFLY VALVES / GASKETS

Size	Part Number
2" #150 RED RUBBER 1/8FF GASKET	GASREDF182
3" #150 RED RUBBER 1/8FF GASKET	GASREDF183
4" #150 RED RUBBER 1/8FF GASKET	GASREDF184
6" #150 RED RUBBER 1/8FF GASKET	GASREDF186
8" #150 RED RUBBER 1/8FF GASKET	GASREDF188



Size	Part Number
2" CASTIRON LUG W/EPDM 416 SS-SHAFT W/LEVER	NLJ300D
3" CASTIRON LUG W/EPDM 416 SS-SHAFT W/LEVER	NLJ300F
4" CASTIRON LUG W/EPDM 416 SS-SHAFT W/LEVER	NLJ300H
6" CASTIRON LUG W/EPDM 416 SS-SHAFT W/LEVER	NLJ300K
8" CASTIRON LUG W/EPDM 416 SS-SHAFT W/LEVER	NLJ300L
10" CASTIRON LUG W/EPDM 416 SS-SHAFT W/GEAR OPERATOR	NLJ310M
12" CASTIRON LUG W/EPDM 416 SS-SHAFT W/ GEAR OPERATOR	NLJ310N

NOTE:CASTIRON WAFERS AVAILABLE UPON REQUEST



Various items not in stock.
Call for availability of other sizes.



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BUTT FUSION FITTINGS: MJ ADAPTERS

MJ ADAPTERS WITHOUT STIFFENER SLEEVE

Size	Part Number
2" IPS x DIPS MJ Adapter SDR11	BFPMJ8
3" IPS x DIPS MJ Adapter SDR11	BFPMJ10
4" IPS x DIPS MJ Adapter SDR11	BFPMJ11
6" IPS x DIPS MJ Adapter SDR11	BFPMJ12
8" IPS x DIPS MJ Adapter SDR11	BFPMJ14
10" IPS x DIPS MJ Adapter SDR11	BFPMJ16
12" IPS x DIPS MJ Adapter SDR11	BFPMJ18*
14" IPS x DIPS MJ Adapter SDR11	BFPMJ20*
16" IPS x DIPS MJ Adapter SDR11	BFPMJ22*
18" IPS x DIPS MJ Adapter SDR11	BFPMJ24*
24" IPS x DIPS MJ Adapter SDR11	BFPMJ30*

Always DIPS on this side of MJ



IPS or DIPS
on this side
of MJ

MJ ADAPTERS WITHOUT STIFFENER SLEEVE

Size	Part Number
3" DIPS x DIPS MJ Adapter SDR11	BFPMJD10
4" DIPS x DIPS MJ Adapter SDR11	BFPMJD11
6" DIPS x DIPS MJ Adapter SDR11	BFPMJD12
8" DIPS x DIPS MJ Adapter SDR11	BFPMJD14
10" DIPS x DIPS MJ Adapter SDR11	BFPMJD16*
12" DIPS x DIPS MJ Adapter SDR11	BFPMJD18*
14" DIPS x DIPS MJ Adapter SDR11	BFPMJD20*
16" DIPS x DIPS MJ Adapter SDR11	BFPMJD22*
18" DIPS x DIPS MJ Adapter SDR11	BFPMJD24*
24" DIPS x DIPS MJ Adapter SDR11	BFPMJD30*

*Not a Stock Item.
Call for availability of other sizes.



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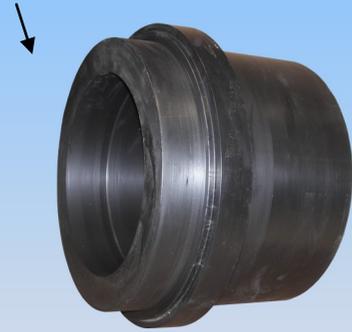
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BUTT FUSION FITTINGS: MJ ACCESSORY KITS

MJ ADAPTERS WITH STIFFENER SLEEVE

Size	Part Number
3" IPS x DIPS MJ Adapter SDR11	BFPMJ10SS
4" IPS x DIPS MJ Adapter SDR11	BFPMJ11SS
6" IPS x DIPS MJ Adapter SDR11	BFPMJ12SS
8" IPS x DIPS MJ Adapter SDR11	BFPMJ14SS
10" IPS x DIPS MJ Adapter SDR11	BFPMJ16SS
12" IPS x DIPS MJ Adapter SDR11	BFPMJ18SS*
14" IPS x DIPS MJ Adapter SDR11	BFPMJ20SS*
16" IPS x DIPS MJ Adapter SDR11	BFPMJ22SS*

Stiffener side of MJ



Size	Part Number
2" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK8
3" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK10
4" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK11
6" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK12
8" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK14
10" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK16
12" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK18
14" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK20
16" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK22
18" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK24
24" METAL MJ KIT C153-Includes Gland, Ring	DFIMJK30

NOTE: KITS ARE UNIVERSAL FOR IPS & DIPS



Call for availability of other sizes.

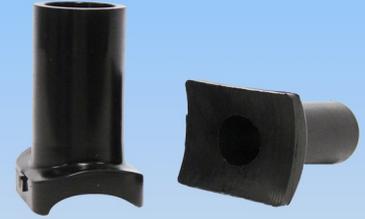


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SADDLE FITTINGS: SERVICE SADDLES

Size	Part Number
1 1/4" X 1/2" SOCKET FUSION 3/4" BUTT FUSION SERVICE SADDLE	BFPSS63S/64B
1 1/4" X 3/4" BUTT FUSION SERVICE SADDLE: BUTT FUSED OUTLET	BFPSS64B
1 1/4" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS64S/65B
1 1/4" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS65S
1 1/2" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS74S/75B
1 1/2" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS75S
2" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS84S/85B
2" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE	BFPSS85S/86B
2" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS86S
2" X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET	BFPSS87B
3" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS104S/105B
3" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE	BFPSS105S/106B
3" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS106S
3 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B.	BFPSS107B
4" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS114S/115B
4" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE	BFPSS115S/116B
4" X 1 1/4" SERVICE SADDLE: BUTT FUSED OUTLET	BFPSS116B
4" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS116S
4 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B.	BFPSS117B
6" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS124S/125B
6" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS125S
6" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS126S
6 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B.	BFPSS127B
8" X 3/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS144S
8" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE	BFPSS144S/145B
8" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS145S
10 X 1 1/4" SERVICE SADDLE: BUTT FUSED OUTLET	BFPSS166B



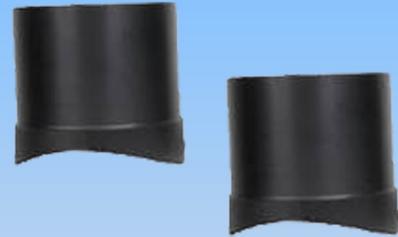
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SADDLE FITTINGS: BRANCH SADDLES



Size	Part Number
3" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS108
4" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS118
4" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1110
6" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS128
6" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1210
6" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1211
8" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS148
8" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1410
8" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1411
8" X 6" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1412
10" X 1 1/4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1606
10" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1608
10" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1610
10" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1611
12" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS1811
18" X 6" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B.	BFPBS2412

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ELECTROFUSION FITTINGS: COUPLINGS

NUPI

Size	Part Number
1/2" CTS ELECTROFUSION COUPLING	12EIME12C
3/4" IPS ELECTROFUSION COUPLING	12EIME34
1" IPS ELECTROFUSION COUPLING	12EIME01
1 1/4" IPS ELECTROFUSION COUPLING	12EIME114
1 1/2" IPS ELECTROFUSION COUPLING	12EIME112
2" IPS ELECTROFUSION COUPLING	12EIME02
3" IPS ELECTROFUSION COUPLING	12EIME03
4" IPS ELECTROFUSION COUPLING	12EIME04
6" IPS ELECTROFUSION COUPLING	12EIME06
8" IPS ELECTROFUSION COUPLING	12EIME08
10" IPS ELECTROFUSION COUPLING	12EIME10
12" IPS ELECTROFUSION COUPLING	12EIME12
14" IPS ELECTROFUSION COUPLING	12EIME14
16" IPS ELECTROFUSION COUPLING	12EIME16
18" IPS ELECTROFUSION COUPLING	12EIME18
20" IPS ELECTROFUSION COUPLING	12EIME20
24" IPS ELECTROFUSION COUPLING	12EIME24

NOTE:EF Couplings 14" thru 24" Special Order.



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ELECTROFUSION FITTINGS: BRANCH SADDLE

Size	Part Number
1-1/4" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL11401
2" X 3/4" IPS NUPI EF BRANCH SADDLE	12EICOL0234
2" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL0201
2" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL0202
3" X 3/4" IPS NUPI EF BRANCH SADDLE	12EICOL0334
3" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL0301
3" X 1 1/4" IPS NUPI EF BRANCH SADDLE	12EICOL03114
3" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL0302
4" X 3/4" IPS NUPI EF BRANCH SADDLE	12EICOL0434
4" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL0401
4" X 1 1/4" IPS NUPI EF BRANCH SADDLE	12EICOL04114
4" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL0402
4" X 3" IPS NUPI EF BRANCH SADDLE	12EICOL0403
6" X 3/4" IPS NUPI EF BRANCH SADDLE	12EICOL0634
6" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL0601
6" X 1 1/4" IPS NUPI EF BRANCH SADDLE	12EICOL06114
6" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL0602
6" x 3" IPS NUPI EF BRANCH SADDLE	12EICOL0603
6" x 4" IPS NUPI EF BRANCH SADDLE	12EICOL0604
8" X 3/4" IPS NUPI EF BRANCH SADDLE	12EICOL0834
8" X 1" IPS NUPI EF BRANCH SADDLE	12EICOL0801
8" X 1 1/4" IPS NUPI EF BRANCH SADDLE	12EICOL08114
8" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL0802
8" X 3" IPS NUPI EF BRANCH SADDLE	12EICOL0803
8" X 4" IPS NUPI EF BRANCH SADDLE	12EICOL0804
10" X 1 1/4" IPS NUPI EF BRANCH SADDLE	12EICOL10114
10" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL1002
10" X 3" IPS NUPI EF BRANCH SADDLE	12EICOL1003
10" X 4" IPS NUPI EF BRANCH SADDLE	12EICOL1004
12" X 2" IPS NUPI EF BRANCH SADDLE	12EICOL1202
12" X 3" IPS NUPI EF BRANCH SADDLE	12EICOL1203
12" X 4" IPS NUPI EF BRANCH SADDLE	12EICOL1204
12" X 6" IPS NUPI EF BRANCH SADDLE	12EICOL1206
14"- 24" X 2" IPS EF BRANCH SADDLE	12EICOL14242



Size	Part Number
NUPI 4.0MM TO 4.7MM ADAPTER	12E8202



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ELECTROFUSION FITTINGS: TEES, ELBOWS & REDUCERS

Size	Part Number
2" IPS ELECTROFUSION 90 DEGREE ELBOW	12EIGEM02
2" IPS ELECTROFUSION 45 DEGREE ELBOW	12EICEM02
3" IPS ELECTROFUSION ELBOW	12EIGEM03
2" IPS ELECTROFUSION TEE W/ SPIGOT END	12EITCE02



Size	Part Number
3" X 2" IPS ELECTROFUSION REDUCER	12EIRDE0302
4" X 2" IPS ELECTROFUSION REDUCER	12EIRDE0402
4" X 3" IPS ELECTROFUSION REDUCER	12EIRDE0403
6" X 4" IPS ELECTROFUSION REDUCER	12EIRDE0604



Size	Part Number
1 1/4" X 1/2" CTS ELECTROFUSION TAPPING TEE—BUTT	12EIPRES11412C
2" X 3/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0234
2" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0201
2" X 2" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0202
3" X 3/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0334
3" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0301
3" X 1 1/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES03114
3" X 2" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0302
4" X 3/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0434
4" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0401
4" X 1 1/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES04114
6" X 3/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0634
6" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0601
6" X 1 1/4" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES06114
6" X 2" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE -BUTT	12EIPRES0602
8" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES0801
12" X 1" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE - BUTT	12EIPRES1201
12" X 2" IPS ELECTROFUSION BRANCH SADDLE TAPPING TEE -BUTT	12EIPRES1202



12EIPRES0634



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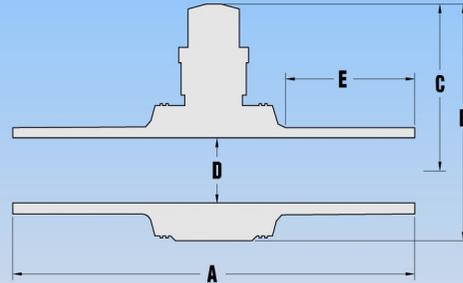
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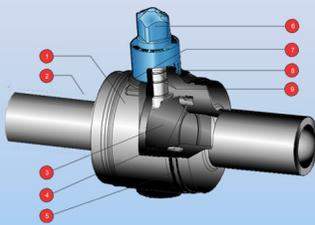
ACCESSORIES: POLYBALL VALVES

This robust American made polyethylene ball valve has a high strength polyethylene ball for a long life and low operating torque. A reliable Buna-N ball seat giving it a wide temperature range, dual o-rings and weather seal which protects from ground water and dirt. It is corrosion-free, maintenance-free and a valve with independent third party evaluation. Insuring the highest performance and reliability.



Valve Sizes and Dimensions (Approx. Inches) Full Port

Size	Part Number	A	B	C	D	E	Cv
1 1/4" FULL PORT POLYBALL SDR11 w / Socket Fusion Coupling (FAB)	SFPV66FP-K	13.8	6.9	5.2	1.38	4.2	49
2" FULL PORT POLYBALL SDR11 w / Socket Fusion Coupling (FAB)	SFPV66FP-K	21.0	9.7	7.0	1.90	7.4	180
1 1/4" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV66FP-K	11.8	6.9	5.2	1.38	3.2	49
2" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV88FP-K	19	9.7	7.0	1.90	6.4	180
3" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV1010FP-K	21	12.2	8.7	2.70	6.4	400
4" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV1111FP-K	25	14.8	10.2	3.63	7.6	710
6" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV1212FP-K	27	19.6	13.2	5.25	7.0	1900
8" FULL PORT POLYBALL SDR11 Butt Fusion	BFPV1414FP-K	28	25.5	17.2	6.70	5.3	3750



NO	Component	Material	Features and Benefits
1	Body	POLYETHYLENE	PE 4710, flat base, robust design
2	Ends	POLYETHYLENE	PE 4710, various SDR'S
3	Ball	POLYPROPYLENE	High strength, long life and low operating torque
4	Retainer	POLYPROPYLENE	Positive restraint under any condition; Retains seat under high differential pressure
5	Ball Seat	BUNA-N	Reliable sealing, 32°F to 140°F
6	Actuator	POLYPROPYLENE	2" operating square, positive position indication, over-torque protection
7	Weather Seal	BUNA-N	Protects from ground water and dirt
8	Stem	ACETAL	Excellent durability and strength, blowout proof*
9	Stem Seals	BUNA-N	Redundant sealing with dual o-rings

*Stem is SS on 1 1/2" FP & 1 1/4" FP sizes

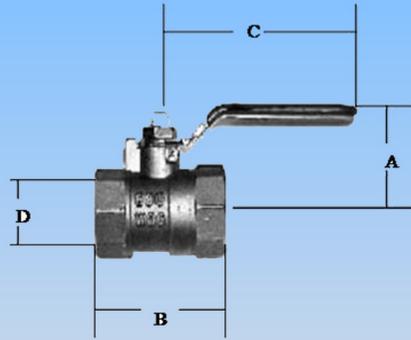
Size	Part Number
STREET KEY FOR POLYETHYLENE VALVE, 2 THRU 12"	PV-KEY-2



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ACCESSORIES: FULL PORT BRASS BALL VALVES



DIMENSIONS IN INCHES

Size	Part Number	A	B	C	D (Bore)	Weight
3/4" FPT BRASS BALL VALVE (Full Port)	BV004	2.06	2.39	3.74	.79	.64lbs
1" FPT BRASS BALL VALVE (Full Port)	BV007	2.31	2.87	4.53	.98	1.07lbs
1 1/4" FPT BRASS BALL VALVE (Full Port)	BV010	3.00	3.41	5.51	1.26	1.61lbs
1 1/2" FPT BRASS BALL VALVE (Full Port)	BV013	3.15	3.74	5.51	1.57	2.25lbs
2" FPT BRASS BALL VALVE (Full Port)	BV016	3.54	4.25	5.91	1.97	3.12lbs

PRESSURE RATING
1/2"-2" 600 W.O.G.

Body Material: 1/2" thru 1 1/4" = Forged Brass/
1 1/2" thru 4" = Cast brass

Handle Material: Steel

Ball Material: Machined Brass w/ Electroplated Chrome

Stem Material: Blow-out proof, machined brass w/ Dual O-ring Seals

Seal Material: Teflon (PTFE)

Pipe Threads: National Pipe Thread Standard

Suitable Medium: Water, Oil, Gas

Steam Rating: 125 PSIG Saturated Steam

Valve Sizes and Dimensions (approx) in.
Call for availability of other sizes.



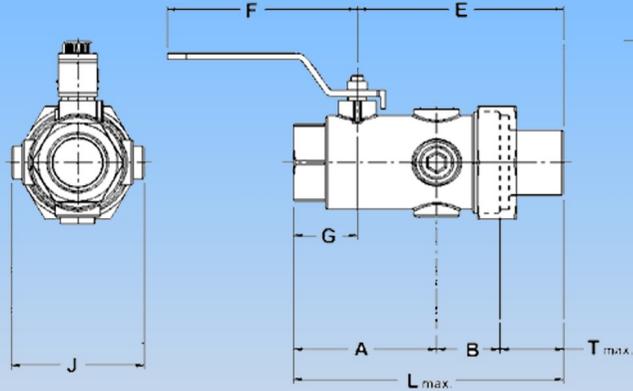
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ACCESSORIES: UNION FULL PORT BALL VALVE WITH P/T



DIMENSIONS IN INCHES

Size	Part Number	A	B	E	F	G	J	T(max)	L(max)	Weight
1" FPT BBV W/UNION P/T	BV-IBU3FF	2.35	0.88	4.14	4.00	1.08	2.28	2.00	5.23	2.9lbs
1 1/4" FPT BBV W/UNION P/T	BV-IBU4FF	3.30	1.09	4.94	5.38	1.45	3.04	2.00	6.39	3.9lbs
1 1/2" FPT BBV W/UNION P/T	BV-IBU5FF	4.01	1.12	5.76	5.50	1.90	3.60	2.52	7.65	5.2lbs
2" FPT BBV W/UNION P/T	BV-IBU6FF	4.20	1.21	6.97	6.00	1.59	4.13	3.14	8.55	7.7lbs

UBV is a combination full port shut-off valve and union for use in HVAC systems.

CONSTRUCTION:

- Body: Brass C37000
- Ball: Chrome Plated
- Ball Seal: Teflon
- Stem: Explosion Proof
- O-Rings: EPDM
- Handle: Chrome Plated Steel w/ Plastic Cover
- TAPS:** Comes with 3 Total

MAXIMUM WORKING PRESSURE
400 PSIG
MAXIMUM OPERATING TEMPERATURE
-4°F (-20°C) to 250°F (121°C)



1/4" MPT P/T PLUG (BRASS)	N76-02
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Valve Sizes and Dimensions (approx) in.
Call for availability of other sizes.



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COMPRESSION FITTINGS: ADAPTERS, TEST CAPS W/ BUSHING

Size	Part Number
3/4" COMPRESSION X 3/4" FEMALE FOR P.E.	ELO44FA
1" COMPRESSION X 1" FEMALE FOR P.E.	ELO55FA
1 1/4" COMPRESSION X 1 1/4" FEMALE FOR P.E.	ELO66FA
2" COMPRESSION X 2" FEMALE FOR P.E.	ELO88FA

Size	Part Number
3/4" COMPRESSION X 3/4" MALE FOR P.E.	ELO44MA
1" COMPRESSION X 1" MALE FOR P.E.	ELO55MA
1 1/4" COMPRESSION X 1 1/4" ADAPTER FOR P.E.	ELO66MA
2" COMPRESSION X 2" MALE FOR P.E.	ELO88MA

Size	Part Number
3/4" COMPRESSION END CAP FOR P.E.	ELO4EC
1" COMPRESSION END CAP FOR P.E.	ELO5EC
1 1/4" COMPRESSION END CAP FOR P.E.	ELO6EC
2" COMPRESSION END CAP FOR P.E.	ELO8EC

Size	Part Number
TEST CAP W/ 3/4" X 1/4" FPT	ELO42TC
TEST CAP W/ 1" X 1/4" FPT	ELO52TC
TEST CAP 1 1/4" X 1/4" FPT	ELO62TC
TEST CAP 2" X 1/4" FPT	ELO82TC

Size	Part Number
3/4" TEST CAP KIT	ELOTC4Kit
1" TEST CAP KIT	ELOTC5Kit
1-1/4" TEST CAP KIT	ELOTC6Kit
2" TEST CAP KIT	ELOTC8Kit
3/4" X 1-1/4" TEST CAP KIT	ELOTC46Kit



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Replacement parts available for compression fittings.

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COMPRESSION FITTINGS: COUPLINGS, END CAPS, ELBOWS, CONVERSION KITS

Size	Part Number
3/4" PE X 3/4" PVC COUPLING	PE4C-PVC4C
1" PE X 1" PVC COUPLING	PE5C-PVC5C
1 1/4" PE X 1 1/4" PVC COUPLING	PE6C-PVC6C



Size	Part Number
3/4" PE X 3/4" PE COUPLING	ELO44C
1" PE X 1" PE COUPLING	ELO55C
1 1/4" PE X 1 1/4" PE COUPLING	ELO66C
2" PE X 2" PE COUPLING	ELO88C



Size	Part Number
3/4" PE X 3/4" PVC ELBOW	PE4E-PVC4E
1" PE X 1" PVC ELBOW	PE5E-PVC5E
1 1/4" PE X 1 1/4" PVC ELBOW	PE6E-PVC6E



Size	Part Number
3/4" PE X 3/4" PE ELBOW	ELO44E
1" PE X 1" PE ELBOW	ELO55E
1 1/4" PE X 1 1/4" PE ELBOW	ELO66E
2" PE X 2" PE ELBOW	ELO88E



Size	Part Number
3/4" COMPRESSION WRENCH	OOCHIAVE025
1" COMPRESSION WRENCH	OOCHIAVE032
1-1/4" COMPRESSION WRENCH	OOCHIAVE040
1-1/2" COMPRESSION WRENCH	OOCHIAVE050
2" COMPRESSION WRENCH	OOCHIAVE063



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SOCKET FITTINGS: PARALLEL HEADERS

Size	Part Number
1-1/4" INLET X (3) 3/4" OUTLETS	SK644K02
1-1/4" INLET X (4) 3/4" OUTLETS	SK644K03
1-1/4" INLET X (5) 3/4" OUTLETS	SK644K04
1-1/4" INLET X (6) 3/4" OUTLETS	SK644K05
1-1/4" INLET X (7) 3/4" OUTLETS	SK644K06
1-1/4" INLET X (8) 3/4" OUTLETS	SK644K07

Size	Part Number
1-1/4" INLET X (3) 1" OUTLETS	SK655K02
1-1/4" INLET X (4) 1" OUTLETS	SK655K03
1-1/4" INLET X (5) 1" OUTLETS	SK655K04
1-1/4" INLET X (6) 1" OUTLETS	SK655K05
1-1/4" INLET X (7) 1" OUTLETS	SK655K06

Size	Part Number
1-1/2" INLET X (4) 3/4" OUTLETS	SK744K03
1-1/2" INLET X (5) 3/4" OUTLETS	SK744K04
1-1/2" INLET X (6) 3/4" OUTLETS	SK744K05
1-1/2" INLET X (7) 3/4" OUTLETS	SK744K06
1-1/2" INLET X (8) 3/4" OUTLETS	SK744K07

Size	Part Number
1-1/2" INLET X (3) 1" OUTLETS	SK755K02
1-1/2" INLET X (4) 1" OUTLETS	SK755K03
1-1/2" INLET X (5) 1" OUTLETS	SK755K04
1-1/2" INLET X (6) 1" OUTLETS	SK755K05
1-1/2" INLET X (7) 1" OUTLETS	SK755K06

PARALLEL HEADERS ARE SOLD INDIVIDUALLY , NOT AS A PAIR.



Size	Part Number
2" INLET X (4) 3/4" OUTLETS	SK844K03
2" INLET X (5) 3/4" OUTLETS	SK844K04
2" INLET X (6) 3/4" OUTLETS	SK844K05
2" INLET X (7) 3/4" OUTLETS	SK844K06
2" INLET X (8) 3/4" OUTLETS	SK844K07
2" INLET X (9) 3/4" OUTLETS	SK844K08
2" INLET X (10) 3/4" OUTLETS	SK844K09
2" INLET X (11) 3/4" OUTLETS	SK844K010
2" INLET X (12) 3/4" OUTLETS	SK844K011

Size	Part Number
2" INLET X (4) 1" OUTLETS	SK855K03
2" INLET X (5) 1" OUTLETS	SK855K04
2" INLET X (6) 1" OUTLETS	SK855K05
2" INLET X (7) 1" OUTLETS	SK855K06
2" INLET X (8) 1" OUTLETS	SK855K07
2" INLET X (9) 1" OUTLETS	SK855K08
2" INLET X (10) 1" OUTLETS	SK855K09



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SOCKET FITTINGS: ALT 180 HEADER

Size	Part Number
1-1/4" INLET X (3) 3/4" OUTLETS	SK644K02H
1-1/4" INLET X (4) 3/4" OUTLETS	SK644K03H
1-1/4" INLET X (5) 3/4" OUTLETS	SK644K04H
1-1/4" INLET X (6) 3/4" OUTLETS	SK644K05H
1-1/4" INLET X (7) 3/4" OUTLETS	SK644K06H

Size	Part Number
1-1/4" INLET X (3) 1" OUTLETS	SK655K02H
1-1/4" INLET X (4) 1" OUTLETS	SK655K03H
1-1/4" INLET X (5) 1" OUTLETS	SK655K04H
1-1/4" INLET X (6) 1" OUTLETS	SK655K05H
1-1/4" INLET X (7) 1" OUTLETS	SK655K06H

Size	Part Number
2" INLET X (8) 3/4" OUTLETS	SK844K07H
2" INLET X (9) 3/4" OUTLETS	SK844K08H
2" INLET X (10) 3/4" OUTLETS	SK844K09H
2" INLET X (11) 3/4" OUTLETS	SK844K010H
2" INLET X (12) 3/4" OUTLETS	SK844K011H

Size	Part Number
2" INLET X (8) 1" OUTLETS	SK855K07H
2" INLET X (9) 1" OUTLETS	SK855K08H
2" INLET X (10) 1" OUTLETS	SK855K09H



ALT 180 HEADERS ARE SOLD INDIVIDUALLY , NOT AS A PAIR.



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MANIFOLDS: PVC MANIFOLDS



 1 1/4" Main = 4 1/4" on center
 2" Main = 5" on center
 3" Main = 6" on center

NOTE: All manifolds come with plugs to make right or left hand option. Price is the same.
 PA-INS = Angled (PVC to Compression Elbow on Outlet)
 PS-INS = Straight (PVC to Compression Coupling on Outlet)

Size	Part Number
2 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) ANGLE	M232PA-INS
2 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) STRAIGHT	M232PS-INS
3 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) ANGLE	M332PA-INS
3 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) STRAIGHT	M332PS-INS
4 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) ANGLE	M432PA-INS
4 CIRCUIT 3/4" X 1-1/4" HEADER (INSULATED) STRAIGHT	M432PS-INS
5 CIRCUIT 3/4" X 1 1/4" HEADER (INSULATED) ANGLE	M532PA-INS
5 CIRCUIT 3/4" X 1 1/4" HEADER (INSULATED) STRAIGHT	M532PS-INS
6 CIRCUIT 3/4" X 1 1/4" HEADER (INSULATED) ANGLE	M632PA-INS
6 CIRCUIT 3/4" X 1 1/4" HEADER (INSULATED) STRAIGHT	M632PS-INS

Manifolds come in pairs when ordered.



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MANIFOLDS: HDPE MANIFOLDS



PA = Angled (Socket Fusion Elbow on Outlet)
 PS = Straight (Socket Fusion Coupling on Outlet)

Size	Part Number
1 1/4" HEADER x 2 CIRCUIT 3/4" STRAIGHT	MPE232PS
1 1/4" HEADER x 2 CIRCUIT 3/4" ANGLE	MPE232PA
1 1/4" HEADER x 3 CIRCUIT 3/4" STRAIGHT	MPE332PS
1 1/4" HEADER x 3 CIRCUIT 3/4" ANGLE	MPE332PA
1 1/4" HEADER x 4 CIRCUIT 3/4" STRAIGHT	MPE432PS
1 1/4" HEADER x 4 CIRCUIT 3/4" ANGLE	MPE432PA
1 1/4" HEADER x 5 CIRCUIT 3/4" STRAIGHT	MPE532PS
1 1/4" HEADER x 5 CIRCUIT 3/4" ANGLE	MPE532PA
1 1/4" HEADER x 6 CIRCUIT 3/4" STRAIGHT	MPE632PS
1 1/4" HEADER x 6 CIRCUIT 3/4" ANGLE	MPE632PA

Manifolds come in pairs when ordered.

Special Order - Non-Returnable Item

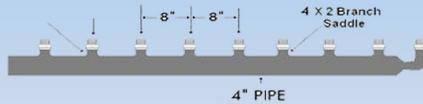


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SPECIALITY: HEADERS MADE TO ORDER



4" HEADER W/8 . 2" OUTLETS W/ 2" MALE ADAPTERS



The headers above are samples of previous headers designed. Call for design help on all of your header needs. Will need to supply a detailed shop drawing.



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FUSION KITS: RITMO R63TE FUSION KITS



Size	Part Number
3/4" & 1-1/4" SET	R63-46C-1K



Size	Part Number
3/4" THRU 2" SET	R63-48C-1K

The following kit items listed below contain the tools required to fuse the indicated pipe size with fittings.
The kit is packed in a tool box and contains the following:

R63-46C-1K (3/4" & 1 1/4" Set)

- R63 TFE Socket Fusion Tool
- Socket Face Set -3/4" and 1 1/4" IPS
- Chamfer/Depth Gauge - 3/4" and 1 1/4"
- Cold Rings - 3/4" and 1 1/4"
- Hex Key
- 1 1/4" Ratchet Cutter
- Tool Cover Bag
- Kwik Cutter
- Cotton Wipe Rag
- Fusion Tool Mounting Bracket
- Tempstik 475 & 525 F (one of each)
- Second Timer

R63-48C-1K (3/4" Thru 2" Set)

- R63 TFE Socket Fusion Tool
- Socket Face Set -3/4" thru 2" IPS
- Chamfer/Depth Gauge - 3/4" thru 2"
- Cold Rings - 3/4" thru 2"
- Hex Keys
- Roll Cutter 3/4" - 2"
- Tool Cover Bag
- Kwik Cutter
- Cotton Wipe Rag
- Fusion Tool Mounting Bracket
- Tempstik 475 & 525 F (one of each)
- Second Timer

R63 TFE socket fusion tool is practical, easy to handle and safe, thanks to the warning lights (main power is ON and working temperature OK), the plastic ergonomic handle and excellent thermal insulation provided by the stainless steel wiring enclosure.

The tool is supplied with an Electronic Thermo regulator with temperature set at 260°C (500°F) on the socket.
Two Year Limited Warranty on iron only.

***Notice:** Socket heat fusion should only be performed by a properly trained or certified individual.



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FUSION EQUIPMENT: HEATING EQUIPMENT



RT-1-H



RT-2-H

RITMO

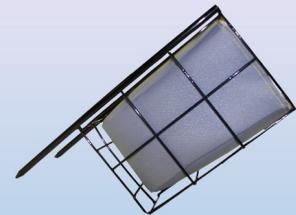
Size	Part Number
R63 TFE (120V) SOCKET FUSION TOOL DOUBLE ONLY	RT-1-H
R125Q-TE (120V) SOCKET FUSION TOOL MULTIPLE	RT-2-H

NOTE:HEATER BAG NOT INCLUDED



BDFB-1

Size	Part Number
B & D FUSION TOOL COVER FOR RITMO IRON	BDFB-1
DITCH BUDDY W/ BAG FOR RITMO IRON	DBUD
HEATER MUFF BAG W/ROPE - LARGE FOR CENTRAL IRON	CHM300



DBUD



CHM300

Call for availability of other heating equipment.
Various items not in stock.



SOCKET FUSION TOOLS: SOCKET FACES, DEPTH GAUGE, CHAMFER TOOL

VANGUARD

Size	Part Number
3/4" SOCKET FACE	FHSF4P
1" SOCKET FACE	FHSF5P
1 1/4" SOCKET FACE	FHSF6P
1 1/2" SOCKET FACE	FHSF7P
2" SOCKET FACE	FHSF8P



RITMO

Size	Part Number
3/4" IPS SOCKET FUSION FACE	RSP4
1" IPS SOCKET FUSION FACE	RSP5
1 1/4" IPS SOCKET FUSION FACE	RSP6
1 1/2" IPS SOCKET FUSION FACE	RSP7
2" IPS SOCKET FUSION FACE	RSP8



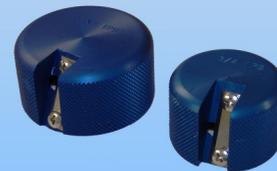
VANGUARD

Size	Part Number
3/4" DEPTH GAUGE	DG4A
1" DEPTH GAUGE	DG5A
1 1/4" DEPTH GAUGE	DG6A
1 1/2" DEPTH GAUGE	DG7A
2" DEPTH GAUGE	DG8A



RITMO

Size	Part Number
3/4" IPS CHAMFER TOOL/DEPTH GAUGE	CTDG4
1" IPS CHAMFER TOOL/DEPTH GAUGE	CTDG5
1 1/4" IPS CHAMFER TOOL/DEPTH GAUGE	CTDG6
1 1/2" IPS CHAMFER TOOL/DEPTH GAUGE	CTDG7
2" IPS CHAMFER TOOL/DEPTH GAUGE	CTDG8



****Re-coating of fusion plates and socket faces available up to 22".
Call for availability on other sizes.**



SOCKET FUSION TOOLS: COLD RINGS, FUSION TOOL COVER, MOUNTING BRACKET

VANGUARD

Size	Part Number
3/4" IPS COLD RING	FHCR4P
1" IPS COLD RING	FHCR5P
1 1/4" IPS COLD RING	FHCR6P
1 1/2" IPS COLD RING	FHCR7P
2" IPS COLD RING	FHCR8P



Size	Part Number
TEMPSTIK 475 DEGREES F	MSK-F-475-1
TEMPSTIK 525 DEGREES F	MSK-F-525-1



Size	Part Number
DIGITAL TIMER	V00864



Size	Part Number
SURFACE PYROMETER (check surface temp iron)	28-8559-1200-10



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FUSION EQUIPMENT: TUBING CUTTERS

Precision cutters ensure quick, square cutting of polyethylene pipe.



TC2QP



T-RS2



RS7290



CTBG8



C2-RC

Size	Part Number
3/4" TO 2" TUBING CUTTER FOR PLASTIC	TC2QP
LARGE RATCHET SHEAR FOR PLASTIC PIPE FOR 2"	T-RS2
SMALL RATCHET SHEAR FOR PLASTIC PIPE FOR 2"	RS7290
PIPE CUTTER (UP TO 1 3/8" IPS)	CTBG8
1 1/4" PIPE CUTTER RATCHET	C2-RC

Call for availability of other tubing cutters..
Various items not in stock.



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FUSION EQUIPMENT: RITMO RAM 14

RAM 14 (1" IPS - 4" DIPS)
Manual fusion machine designed to butt fuse pipe and fittings.

RAM 14 is supplied with electronic-adjustable heating plate and an electric facer. Aluminum made jaws, guarantee fusion force, strength and light weight. Ideal for in-ditch fusion. CTS, IPS, DIPS and metric inserts available.



Size	Part Number
RAM 14 (1" to 4") 110V	RAM 14 B.F. 1-4

Included with the **RAM 14** is a set of IPS liners of your choice.

Size	Pipe OD	Part Number
1" IPS INSERT LINERS (RAM 14)	1.32"	R77291461B
1 1/4" IPS INSERT LINERS (RAM 14)	1.66"	R77291721B
1 1/2" IPS INSERT LINERS (RAM 14)	1.90"	R77291811B
2" IPS INSERT LINERS (RAM 14)	2.38"	R77292331B
3" IPS INSERT LINERS (RAM 14)	3.50"	R77292871B
4" IPS INSERT LINERS (RAM 14)	4.50"	R77293161B

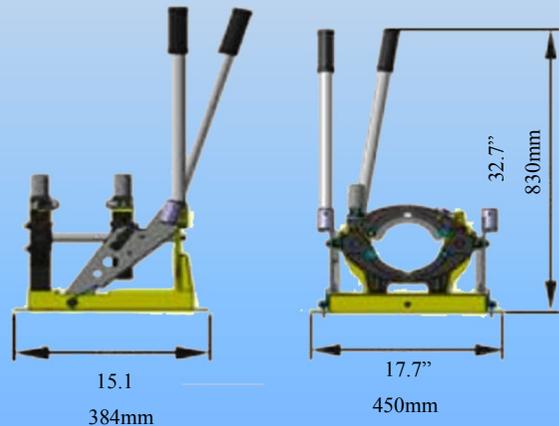


**DIPS available

TECHNICAL FEATURES

Working Range	Ø 1"IPS - 4"DIPS pipe (32-110 mm)
Weight	112 lb (51 Kg)
Power Supply	120 V, 50/60 Hz
Maximum absorbed power	1850W
Facer	850W
Heater	1000W
Pressure working range	0-2176 PSI (0-150 bar)

DIMENSIONS:



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FUSION EQUIPMENT: RITMO RAM 28

The **RAM 28** is an electro-hydraulic butt fusion machine with fusion capabilities ranging from 2" IPS to 8" DIPS pipe sizes. The machine is designed for in-field fusion of HDPE pipe and fittings and other plastic pipes.

The **RAM 28** is provided with unique and innovative programming and control system, Easy-Life. The Easy-Life system permits the operator to program and perform all of the fusion procedures quickly and easily. The program/control panel allows the operator to set the machine for heating temperature, facing pressure, heating time, soaking time, fusion pressure, fusion time, and cooling time.

The machine body and clamping system can be easily removed from 4-wheeled frame and chassis for in-ditch use, the Easy-Life program/control panel can also be removed from chassis to allow the operator to control the fusion procedures out of the ditch.

The **RAM 28** includes additional feature for operator safety and increased production.

The **RAM 28** can be equipped with an optional data-logging device.



Size	Part Number
RAM 28 (2"-8" DIPS)	RAM 28 B.F. 2-8

**NOTE: No Liners are Included with the RAM 28
All Liners are Sold Separately**

Size	Pipe OD	Part Number
INSERT LINERS 2" IPS (RAM 28)	2.38"	R87292305
INSERT LINERS 3" IPS (RAM 28)	3.50"	R87292731
INSERT LINERS 4" IPS (RAM 28)	4.50"	R87293238
INSERT LINERS 6" IPS (RAM 28)	6.63"	R87294047
INSERT LINERS 8" IPS (RAM 28)	8.63"	R87294622

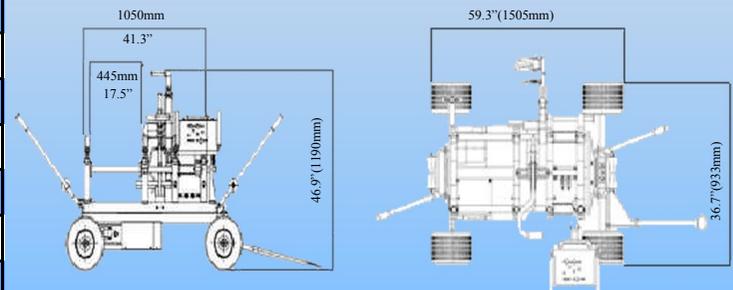
**DIPS available



TECHNICAL FEATURES

Working Range	2" IPS - 8" DIPS pipe (63-225 mm)
Overall cylinder section	1.45 in ² (9.36 cm ²)
Weight	441 lbs (200 kg)
Power Supply	230 V, 50-60 Hz - 1Ph
Maximum absorbed power	3810W
Easy Life hydraulic unit	1100W
Facer	710W
Heater	2000W
Pressure working range	0-2176 PSI (0-150 bar)
Heater working temperature	356 - 536°F (180 - 280° C)

DIMENSIONS:



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FUSION EQUIPMENT: RITMO RAM 414

The **RAM 414** is an independent and motorized electro-hydraulic butt fusion machine with fusion capabilities ranging from 4" IPS to 14" IPS pipe sizes. The machine is designed for in-field fusion of HDPE pipe and fittings and other plastic pipes.

The **RAM 414** is provided with Ritmo's unique and innovative programming and control system, Easy-Life. The Easy-Life system permits the operator to program and perform all the fusion procedures quickly and easily. The program/control panel allows the operator to set the machine for heating temperature, facing pressure, heating time, soaking time, fusion pressure, fusion time, and cooling time. It incorporates a data-logging device and GPS system for the easiest and absolute associability of fusion information and location of the pipeline joints thru the years. Easy-Life system can be connected to a PC or computer handbook to download all the fusion cycles and GPS information.

The **RAM 414** is powered by an on-board low vibration 15 HP gasoline engine, and the 4-wheel chassis is motorized for easy maneuvering of the equipment in all terrain conditions.

The machine is equipped with an **hydraulic pipe lift roller**.

The machine body and clamping system can be easily removed from the 4-wheeled framed and chassis for in-ditch use, the Easy-Life program/control panel can also be removed from the chassis to allow the operator to control the fusion procedures out of the ditch.

The **RAM 414** includes additional features designed for operator safety and increased production like the patented Quick-Click insert system that permits fast installation and removal of the pipe inserts. No "master inserts" are needed for smaller diameter pipe.



Size	Pipe OD	Part Number
INSERT LINERS 4" IPS (RAM 414)	4.50"	R87293354
INSERT LINERS 6" IPS (RAM 414)	6.63"	R87294153
INSERT LINERS 8" IPS (RAM 414)	8.63"	R87294643N
INSERT LINERS 10" IPS (RAM 414)	10.75"	R87295382N
INSERT LINERS 12" IPS (RAM 414)	12.75"	R87295803N

**DIPS available

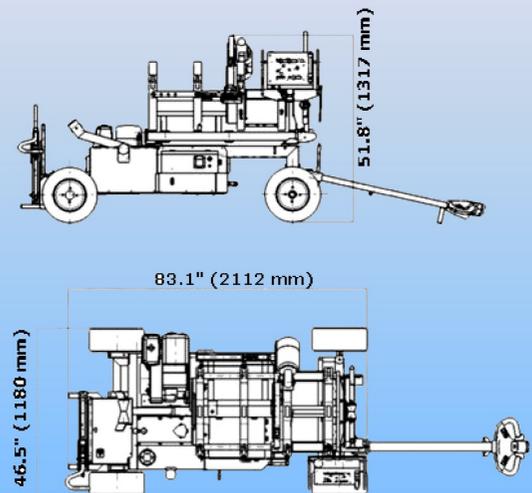
TECHNICAL FEATURES

Working Range	4" IPS - 14" IPS pipe (125-355 mm)
Overall cylinder section	3.47 in ² (22.38 cm ²)
Weight	992 lbs (450 kg)
Power Supply	Self contained/ independent gasoline engine 15HP
Pressure working range	0-2176 PSI (0-150 bar)
Heater working temperature	356 - 536°F (180 - 280° C)

Size	Part Number
RAM 414 (4"-14"DIPS)	RAM 14 B.F. 4-14

**NOTE: No Liners are Included with the RAM 414
All Liners are Sold Separately**

DIMENSIONS:



Accessories available. Please call for pricing.
Various items not in stock.



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ELECTROFUSION PROCESSORS: ELEKTRA LIGHT

Elektra Light is a multipurpose Machine (in low voltage 8 ÷ 48V) capable of fusing any brand of coupler available in the market for transport of gas, water and other fluids under pressure (HDPE, PP, PP-R) meeting the national and international welding standards.

Elektra Light is light and easy to carry.

Elektra Light has a memory that keeps track of 350 cycles of welding with the possibility to download them via adapter DB9M-USB (on request) to a USB stick or a serial printer.

Basic equipment supplied with the welding unit:

- Connectors Ø 4,0 mm, Ø 4,7 mm
- Carrying Case
- Manual Scraper
- Gun Scanner

On Request

- Kit transferring data from welding serial printer (including serial & printer cables) USB data transfer cable



Size	Part Number
ELEKTRA LIGHT	96906082

TECHNICAL FEATURES

Working Range	up to 6" (20-125/160mm)
Welding output voltage	8 ÷ 48V
Single phase/power supply	115v—60 Hz
Maximum absorbed power	2000W
Maximum output current	8A
60% Duty Cycle output	23A
Memory capacity	350 report
Protection degree	IP 54
Dimensions	200 x 250 x 210 mm
Weight	8 kg



ELECTROFUSION PROCESSORS: ELEKTRA 400 & ELEKTRA 800

Elektra is an electrofusion machine suitable for welding low voltage HDPE and PP couplings (from 8 to 48V) for high pressure conduits. The Elektra machine is made in accordance with the International standards and is composed of:

- Machine body surrounded by a tubular steel frame, thus creating a protective structure that gives to the welding design and functionality while also serving as transport handle and cable winding
- Large graphic display that stands out for the size and resolution of the icons, making them easy to read in the setting and welding stages
- Intuitive control panel that simplifies and speeds up the setting of the welder
- Universal connectors; no need of adapters
- GPS (on request) useful in jobsites where traceability is necessary a laser scan
- Barcode reading system that allows the automatic setting of the welding parameters.
- Two manual settings available: by setting the welding tension/time parameters, and by introducing the numerical code indicated under the bar code, in order to recognize automatically the welding parameters
- Internal memory of 4000 welds; the name of the operator among with the traditional welding data can be generated in PDF format. These reports can be downloaded to a PC through a USB port
- USB port allows updating the welder firmware, the reports download or a printer ESC-POS connection



STANDARD COMPOSITION

- Elektra 500
- Universal adapter Ø 4,0 - 4,7 mm
- Laser scanner
- Transport case
- Manual scraper

TECHNICAL FEATURES

- ON REQUEST (ACCESSORIES)
- GPS
 - Printer ESC-POS

Size	Part Number
ELEKTRA 500 (110V)	96906385
ELEKTRA 1000 (230V)	96906400

	ELEKTRA 500	ELEKTRA 1000
Working Range	Up to 18" IPS	Up to 36" IPS
Welding output voltage	8 ÷ 48V	8 ÷ 48V
Single phase/power supply	120V - 50/60 Hz or 230V, 50/60 Hz	230V - 50/60 Hz
Maximum absorbed power	3100W (120V) or 3500W (230V)	3500W
Maximum output current	100A (120V) or 120A (230V)	120A
Operating Modes	Barcode/Manual (numerical code or tension/time)	Barcode/Manual (numerical code or tension/time)
Memory capacity	4000 reports	4000 reports
Protection Rating	IP 54	IP 54
Outside T° Range	-4 ÷ 122° F	-4 ÷ 122° F
Dimensions	10" x 10.6" x 15"	10" x 10.6" x 15"
Weight	39.5 lb	44.0 lb
Warranty	2 years	2 years



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ELECTROFUSION EQUIPMENT: UNIVERSAL SCRAPERS



RTC315



RTC160



12RAT2

Size	Part Number
3" TO 12" UNIVERSAL SCRAPER	RTC 315
2" TO 6" UNIVERSAL SCRAPER	RTC 160
6" TO 24" REVOLVING SCRAPER	12RAT2



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**ELECTROFUSION EQUIPMENT:
RITMO TURBO SCRAPER, E-FUSION CLAMPS**

Size	Part Number
3/4" TURBO SCRAPER	99890007
1" TURBO SCRAPER	99890008
1 1/4" TURBO SCRAPER	99890009
1 1/2" TURBO SCRAPER	99890010
2" TURBO SCRAPER	99890011



Size	Part Number
1/2" thru 2" IPS UNIVERSAL ALIGNER 63 KIT	99500002
2" thru 5" IPS UNIVERSAL ALIGNER 160 LIGHT KIT	99520006

UNIVERSAL ALIGNER 63

This professional tool is essential to hold pipes still and aligned during electrofusion. The UNIVERSAL ALIGNER 63 is made almost entirely in a special Aluminium alloy and features a central joint for the fixed positions at 45° and 90°, four self-centering clamps that require no adapters. The possibility to remove one part of the axis that carries the clamps and one clamp it self, allows the use of tapping tees during the fusion.



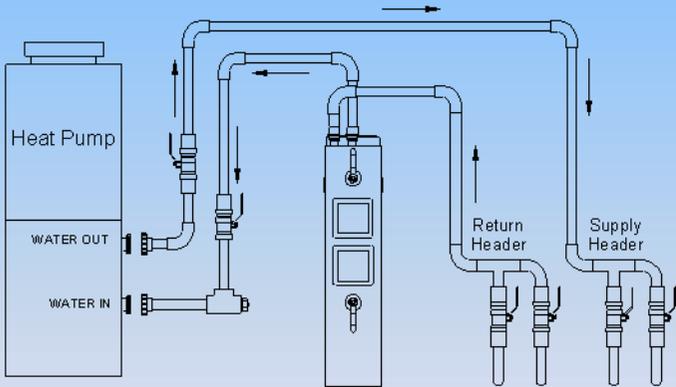
UNIVERSAL ALIGNER 160 light

The UNIVERSAL ALIGNER 160 light is made almost entirely in a special Aluminium alloy and features a central joint for the fixed positions at 45° and 90°, four self-centering clamps that require no adapters, and on request an additional axle complete with two clamps for welding the tees.

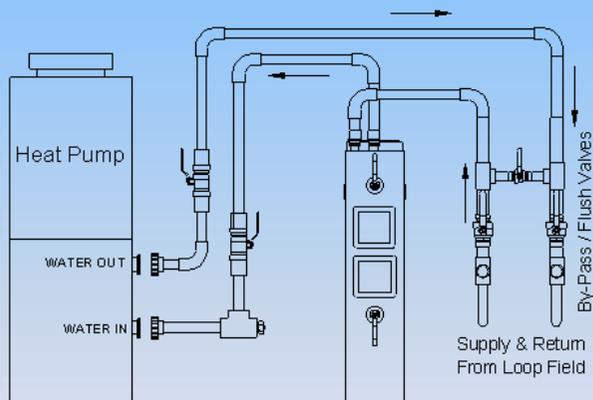


GENERIC PIPING DIAGRAMS

QT GENERIC PIPING DIAGRAM

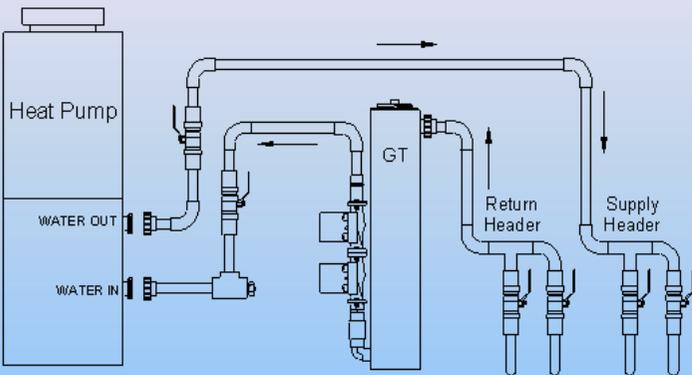


INSIDE HEADER INSTALLATION

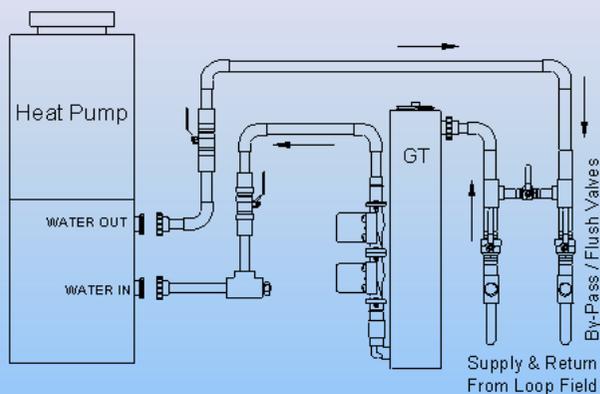


OUTSIDE HEADER INSTALLATION

GT GENERIC PIPING DIAGRAM



INSIDE HEADER INSTALLATION

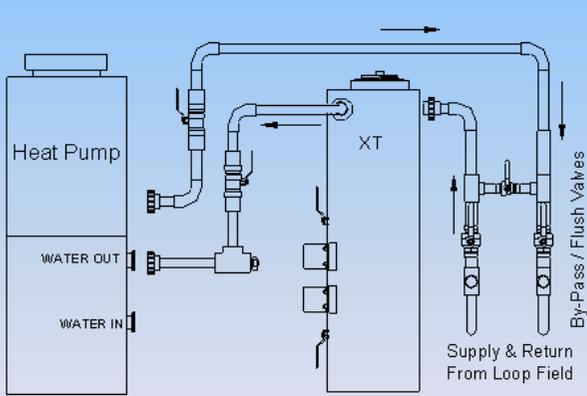


OUTSIDE HEADER INSTALLATION

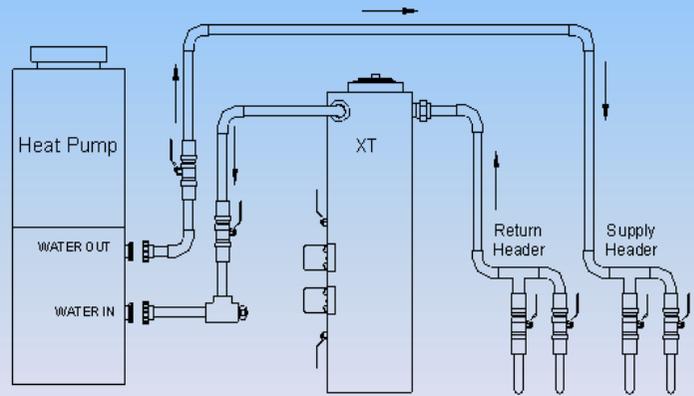


GENERIC PIPING DIAGRAMS

XT GENERIC PIPING DIAGRAM

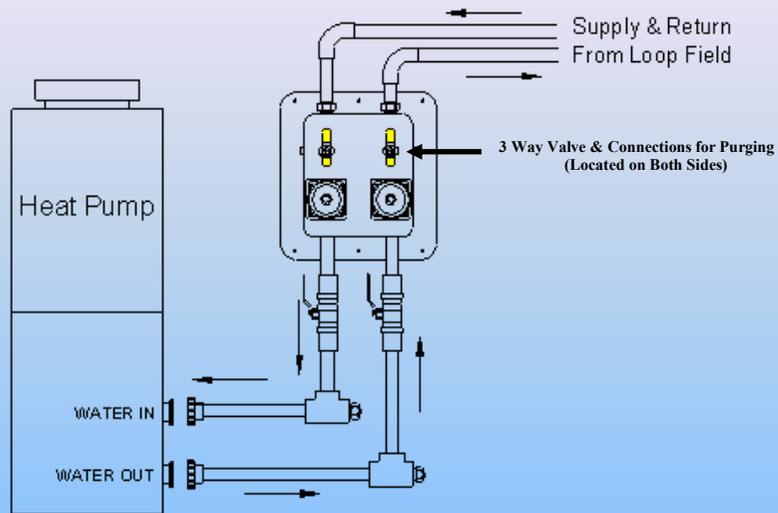


INSIDE HEADER INSTALLATION



OUTSIDE HEADER INSTALLATION

PRESSURIZED GENERIC PIPING DIAGRAM

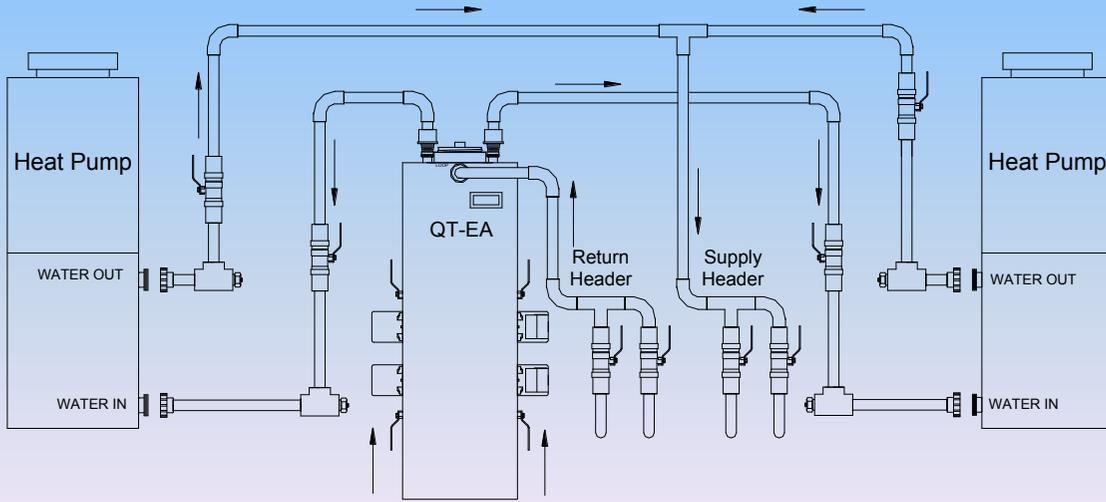


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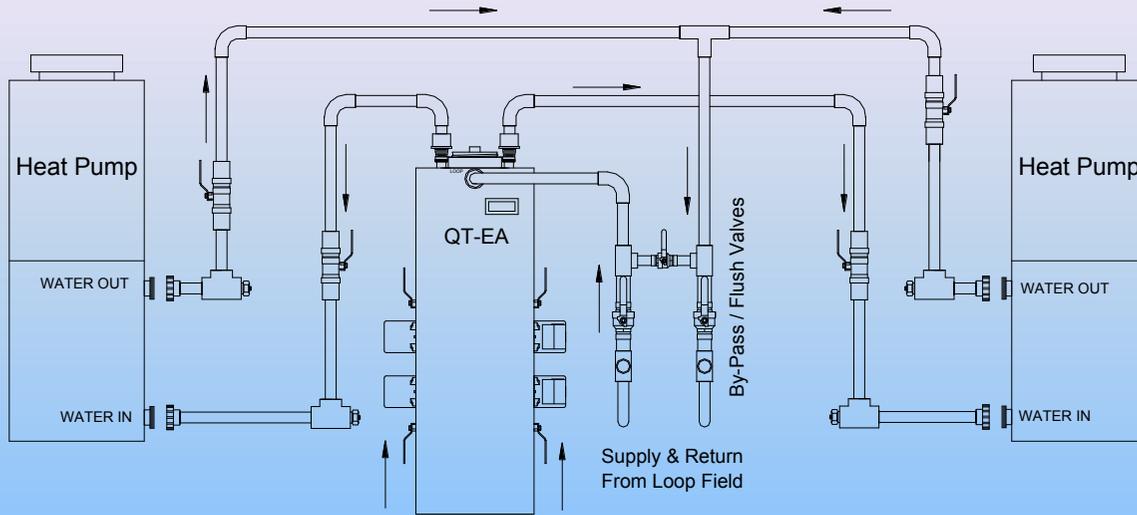
GENERIC PIPING DIAGRAMS

QT-EA GENERIC PIPING DIAGRAM



INSIDE HEADER INSTALLATION

QT-EA GENERIC PIPING DIAGRAM

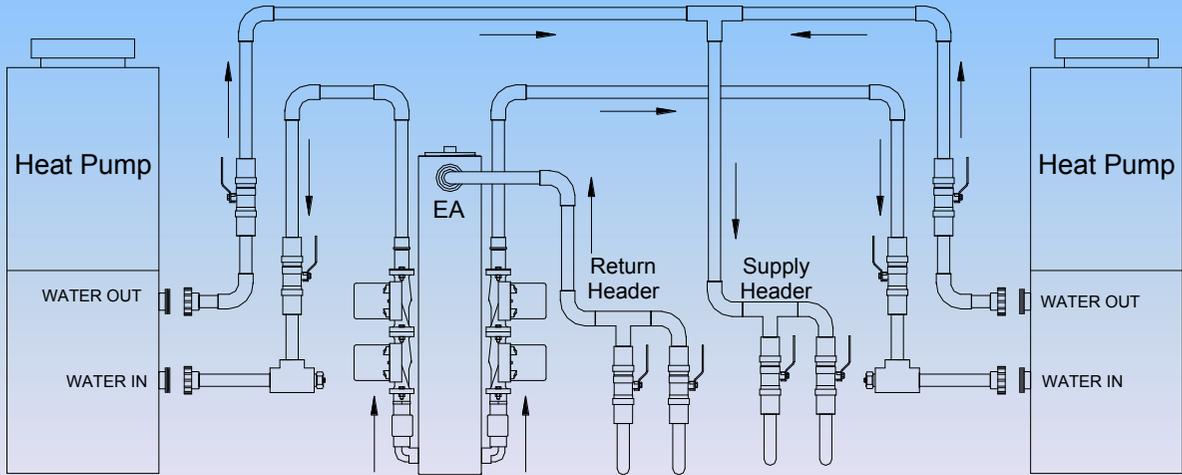


OUTSIDE HEADER INSTALLATION



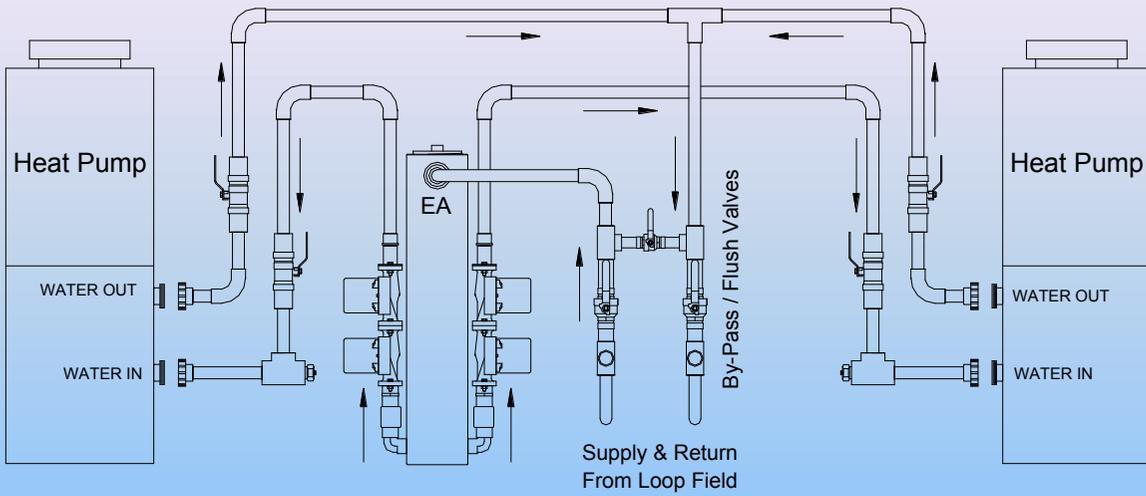
GENERIC PIPING DIAGRAMS

EA GENERIC PIPING DIAGRAM



INSIDE HEADER INSTALLATION

EA GENERIC PIPING DIAGRAM



OUTSIDE HEADER INSTALLATION

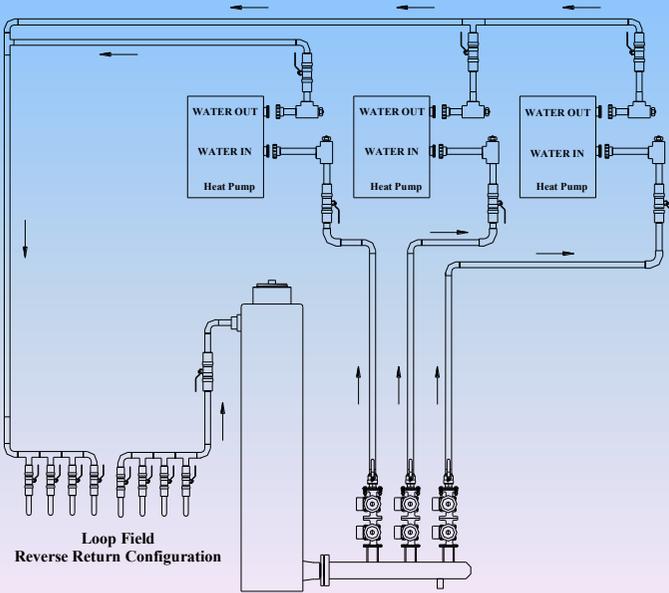


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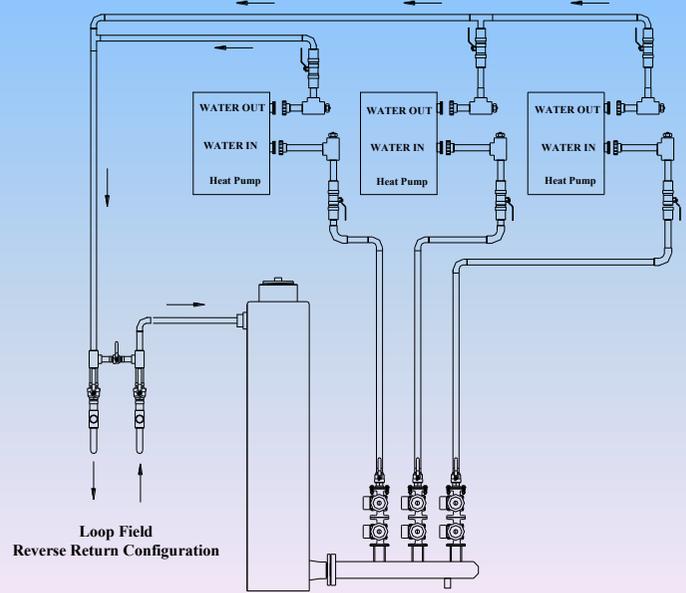
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GENERIC PIPING DIAGRAMS

MULTIZONE FLOW CENTER WITH 3 HEAT PUMP SET UP GENERIC PIPING DIAGRAM

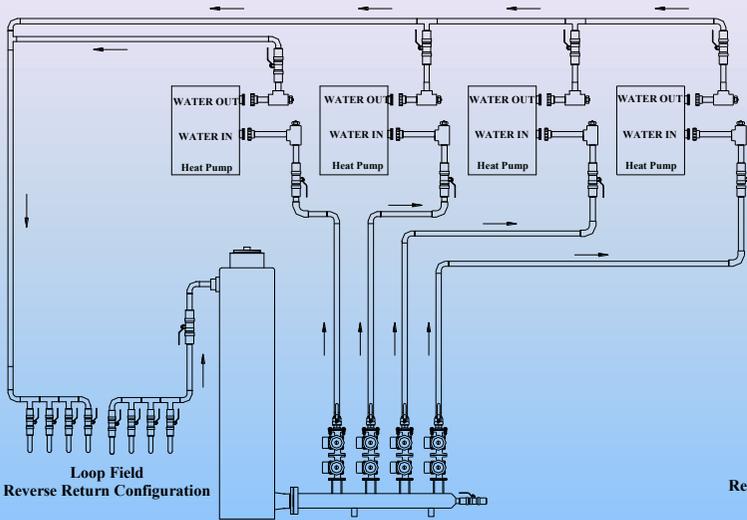


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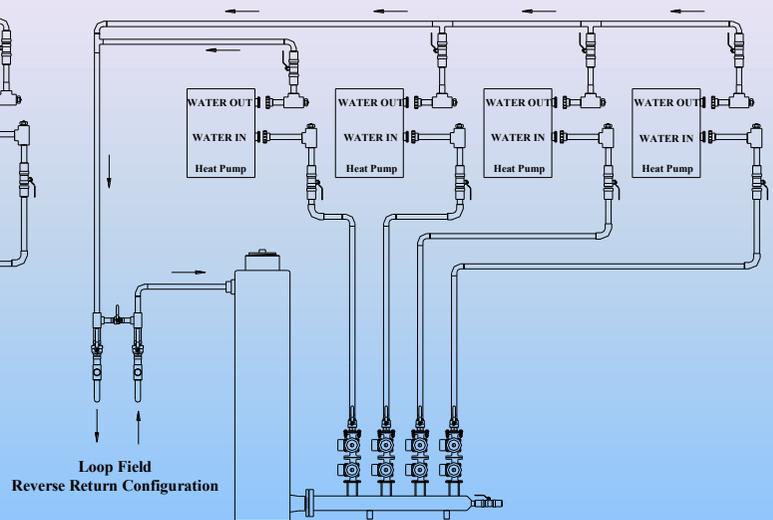


OUTSIDE HEADER INSTALLATION

MULTIZONE FLOW CENTER WITH 4 HEAT PUMP SET UP GENERIC PIPING DIAGRAM



INSIDE HEADER INSTALLATION



OUTSIDE HEADER INSTALLATION

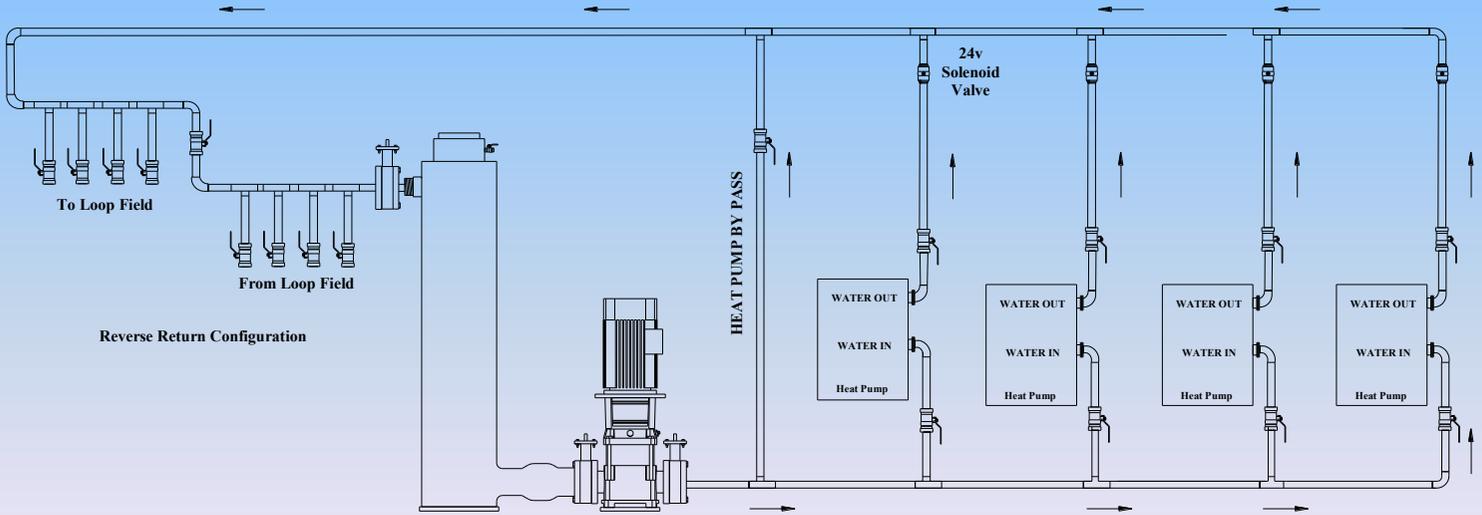


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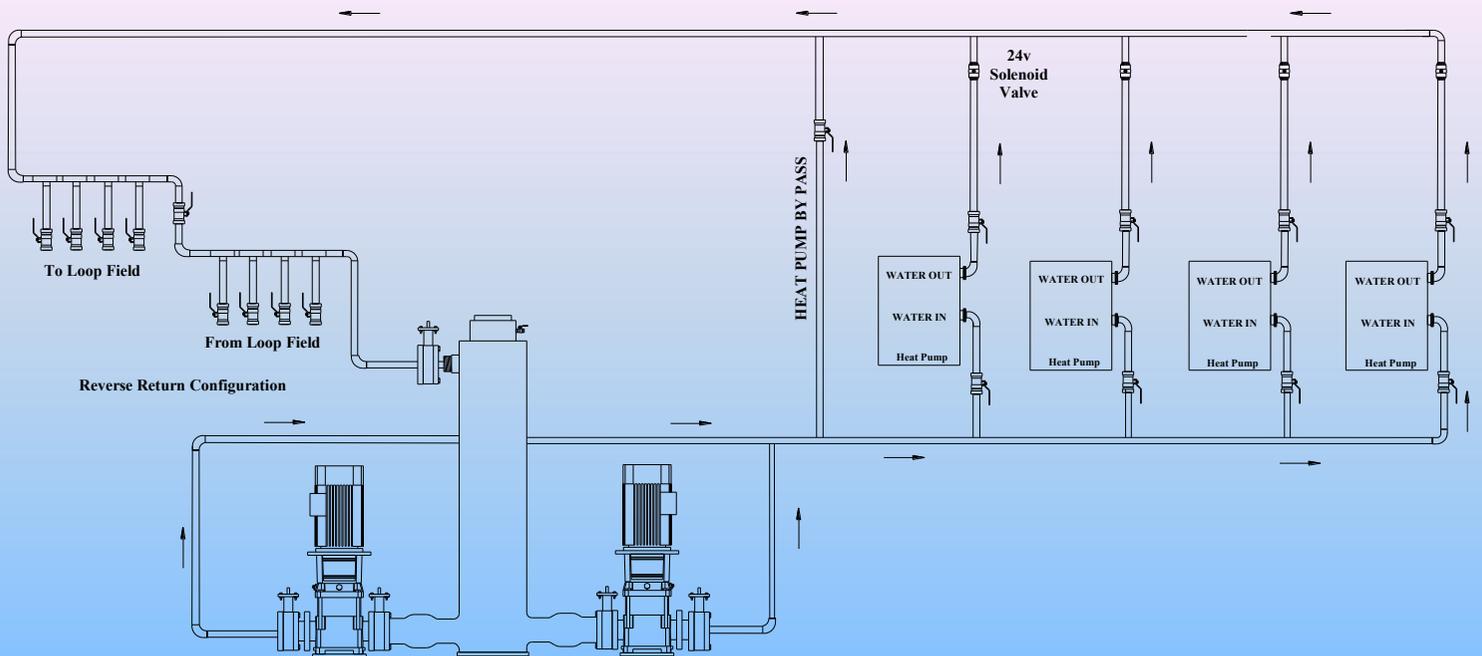
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GENERIC PIPING DIAGRAMS

SMART PUMP PIPING DIAGRAM (VFD SINGLE PUMP APPLICATION)



SMART PUMP PIPING DIAGRAM (VFD DUAL PUMP APPLICATION)

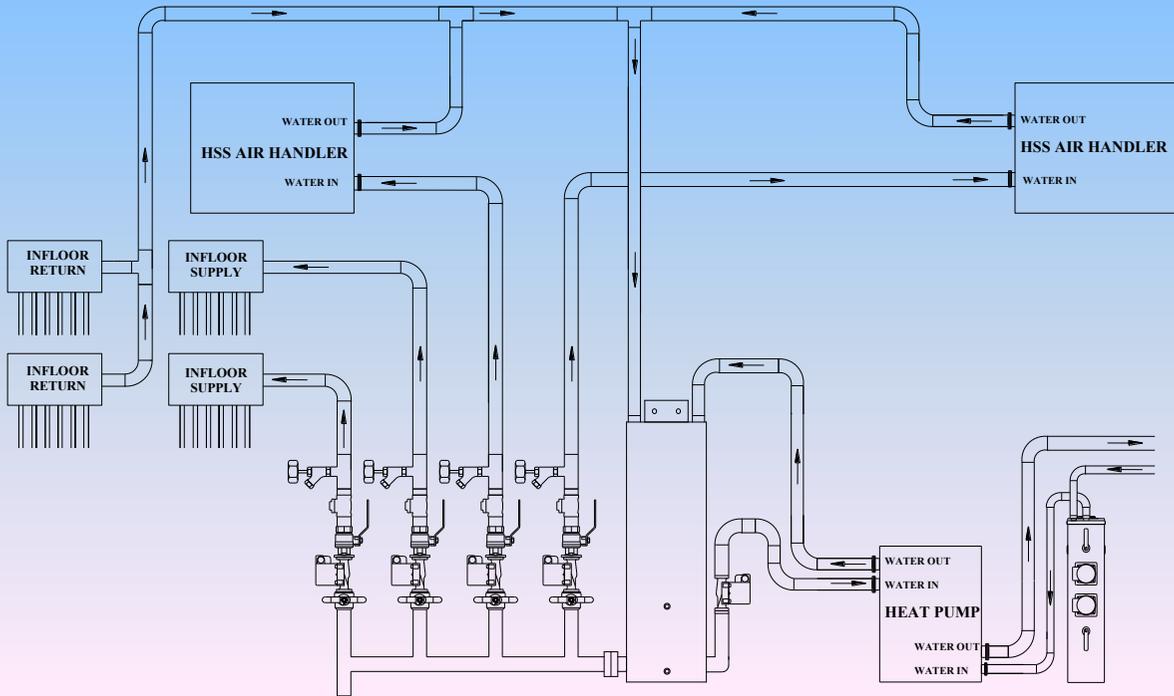


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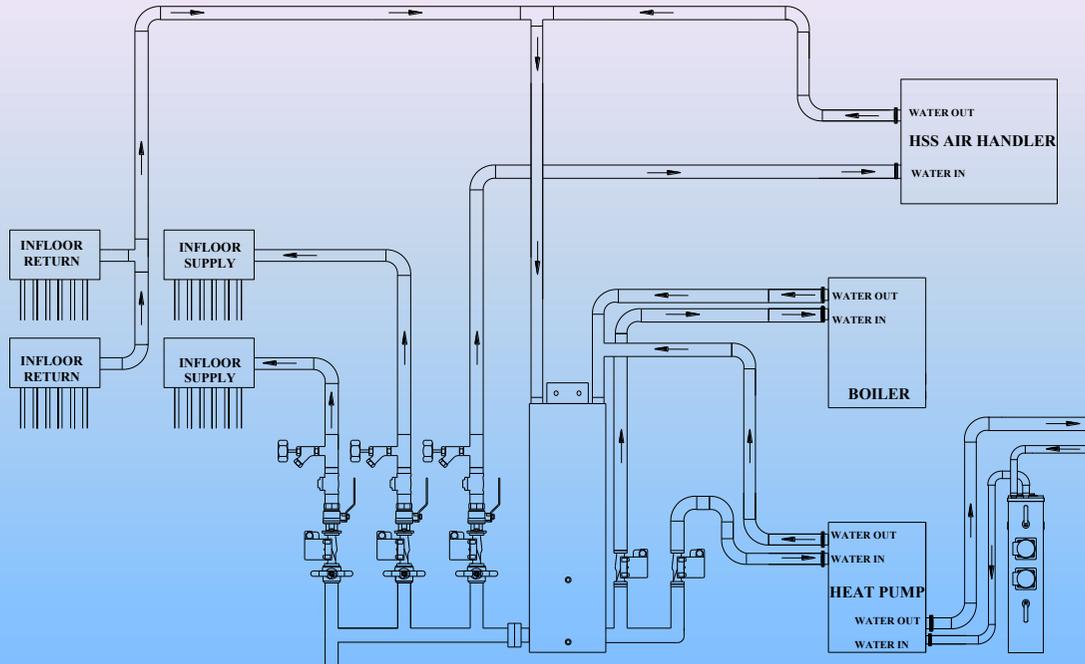
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GENERIC PIPING DIAGRAMS

HSS BUFFER TANK SET UP WITH INFLOOR & AIR HANDER ZONES



HSS BUFFER TANK SET UP WITH INFLOOR, AIR HANDER ZONES & BOILER BACKUP



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HDPE HEAD LOSS CHART

HEAD LOSS (FT. OF H₂O) PER 100' OF TUBING HDPE SDR11 PIPE

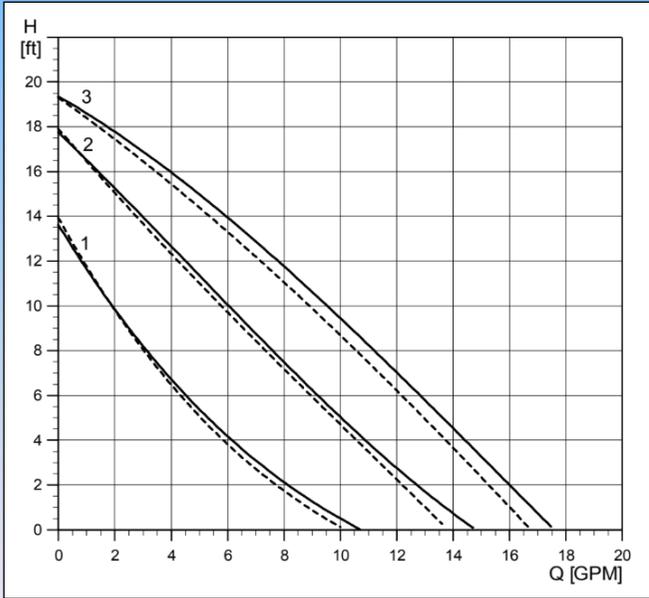
PIPE ID(IN.)	0.86	1.077	1.38	1.61	2.067	2.864	3.682
PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"
FLOW RATE	HEAD LOSS						
2 GPM	0.74	0.25	0.07				
3 GPM	1.60	0.50	0.16	0.07			
4 GPM	2.70	0.90	0.27	0.13			
5 GPM	4.00	1.40	0.40	0.19			
6 GPM	5.65	1.90	0.57	0.27	0.08		
7 GPM	7.52	2.50	0.75	0.36	0.11		
8 GPM	9.63	3.20	0.96	0.46	0.14		
9 GPM	11.98	4.00	1.20	0.57	0.17		
10 GPM	14.56	4.87	1.46	0.69	0.20		
12 GPM	20.41	6.83	2.04	0.97	0.29	0.06	
15 GPM	30.86	10.33	3.09	1.46	0.43	0.09	
18 GPM	43.25	14.47	4.33	2.05	0.61	0.12	
21 GPM		19.26	5.76	2.72	0.81	0.17	
24 GPM		24.66	7.38	3.49	1.03	0.21	0.06
27 GPM		30.67	9.18	4.34	1.29	0.26	0.08
30 GPM		37.28	11.16	5.27	1.56	0.32	0.09
35 GPM			14.85	7.01	2.08	0.43	0.13
40 GPM			19.01	8.98	2.66	0.54	0.16
45 GPM			23.64	11.17	3.31	0.68	0.20
50 GPM			28.74	13.57	4.02	0.82	0.24
55 GPM			34.29	16.20	4.80	0.95	0.29
60 GPM			40.28	19.03	5.64	1.15	0.34
70 GPM				25.31	7.51	1.54	0.45
80 GPM				32.42	9.61	1.97	0.58
90 GPM				40.32	11.95	2.45	0.72
100 GPM					14.53	2.97	0.88
110 GPM					17.33	3.55	1.04
120 GPM					20.37	4.17	1.23
130 GPM					23.62	4.83	1.42

WATER VOLUME PER 100' OF PIPE HDPE SDR11 PIPE

PIPE SIZE	GALLONS
3/4"	3.02
1"	4.73
1-1/4"	7.55
1-1/2"	9.93
2"	15.36
3"	33.47
4"	55.31

PUMP CURVES & TECHNICAL DATA

**B&D PART# G15-58F
GRUNDFOS 15-58 PUMP 3 SPEED (115V)**



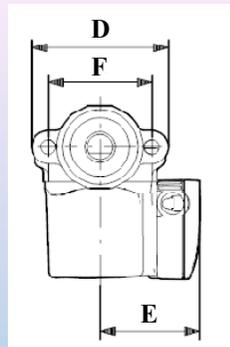
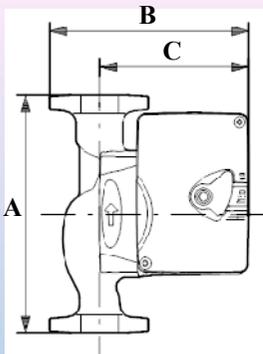
Flow Range: 0-17 gpm
Head Range: 0-19.5 feet
Motors: 2-pole, single-phase
Max. Liquid temperature 230 °F (110 °C)
Min. Liquid temperature 36 °F (2 °C)
Max. system pressure 145 psi (10 bar)

Speed	Volts	Amp s	Watts	Hp	Capacitor
3	115	0.75	87	1/25	10uF/180 V
2		0.66	80	1/25	
1		0.55	60	1/25	

———— Without check valve - - - - With check valve

NOTE: Refer to the Without check valve on the pump curve chart above for your desired flow capabilities on this pump.

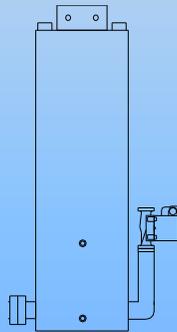
Approvals



Dimensions (inches)

A	B	C	D	E	F	Connection type and size	Shipping weight (lbs)
6-1/2	5-1/4	4	4-3/16	3	3-5/32	GF 15/26 flange (2) 1/2" dia. bolt holes	7-1/4

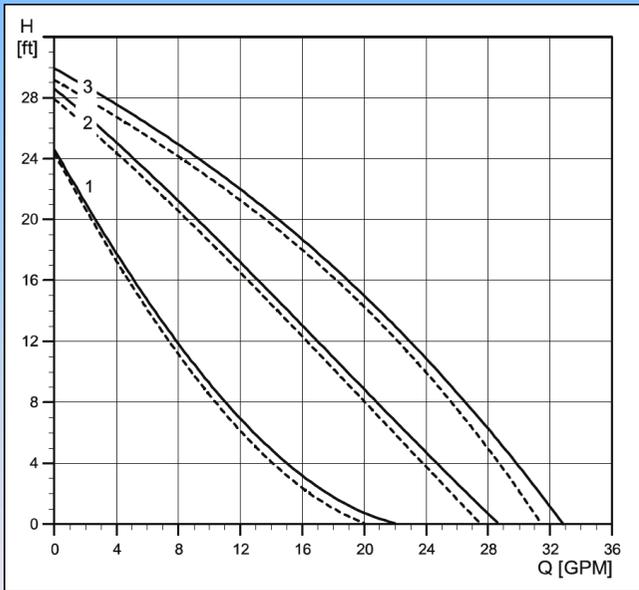
This Pump is Available on the Non Pressurized HSS Buffer Tank Pictured Below



**HSS BUFFER TANK
SERIES**

PUMP CURVES & TECHNICAL DATA

B&D PART# G1-2699/3
GRUNDFOS 2699 PUMP 3 SPEED (115V)



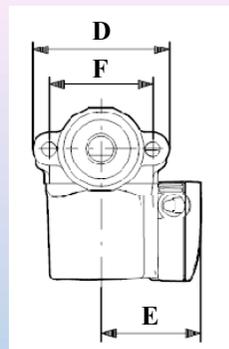
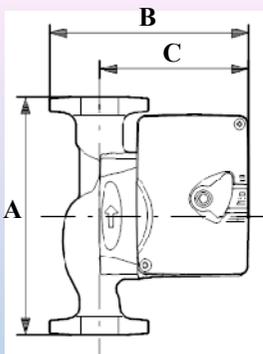
Flow Range: 0-33 gpm
Head Range: 0-29 feet
Motors: 2-pole, single-phase
Max. Liquid temperature 230 °F (110 °C)
Min. Liquid temperature 36 °F (2 °C)
Max. system pressure 145 psi (10 bar)

Speed	Volts	Amps	Watts	Hp	Capacitor
3	115	1.8	197	1/6	20uF/180 V
2		1.5	179	1/6	20uF/180 V
1		1.3	150	1/6	20uF/180 V

———— Without check valve - - - - With check valve

NOTE: Refer to the Without check valve on the pump curve chart above for your desired flow capabilities on this pump.

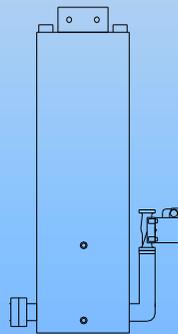
Approvals



Dimensions (inches)

A	B	C	D	E	F	Connection type and size	Shipping weight (lbs)
6-1/2	6	4-7/8	3-1/2	3-7/16	3-5/32	GF 15/26 flange (2) 1/2" dia. bolt holes	10.30

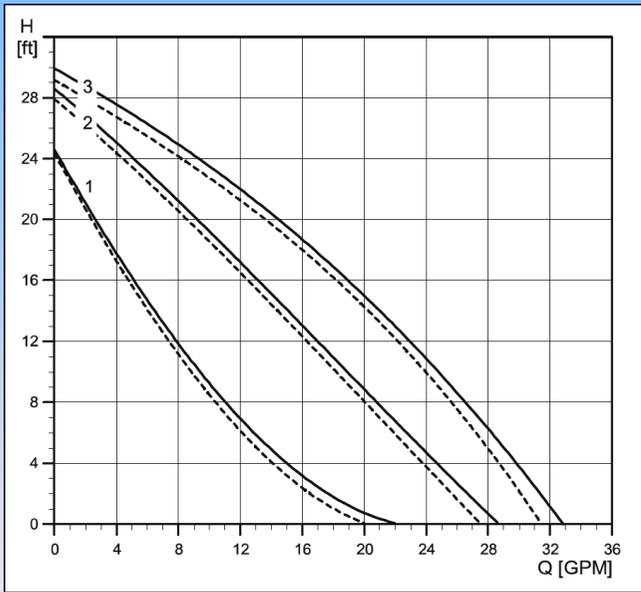
This Pump is Available on the Non Pressurized HSS Buffer Tank Pictured Below



**HSS BUFFER TANK
SERIES**

PUMP CURVES & TECHNICAL DATA

B&D PART# G3-2699/3
GRUNDFOS 2699 PUMP 3 SPEED (230V)



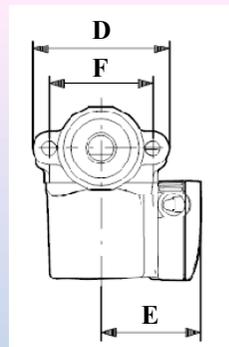
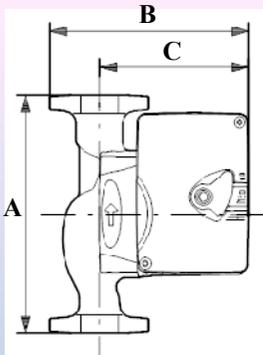
Flow Range: 0-33 gpm
Head Range: 0-29 feet
Motors: 2-pole, single-phase
Max. Liquid temperature 230 °F (110 °C)
Min. Liquid temperature 36 °F (2 °C)
Max. system pressure 145 psi (10 bar)

Speed	Volts	Amps	Watts	Hp	Capacitor
3	230	0.9	196	1/6	5uF/400V
2		0.8	179	1/6	5uF/400V
1		0.7	150	1/6	5uF/400V

— Without check valve - - - - With check valve

NOTE: Refer to the Without check valve on the pump curve chart above for your desired flow capabilities on this pump.

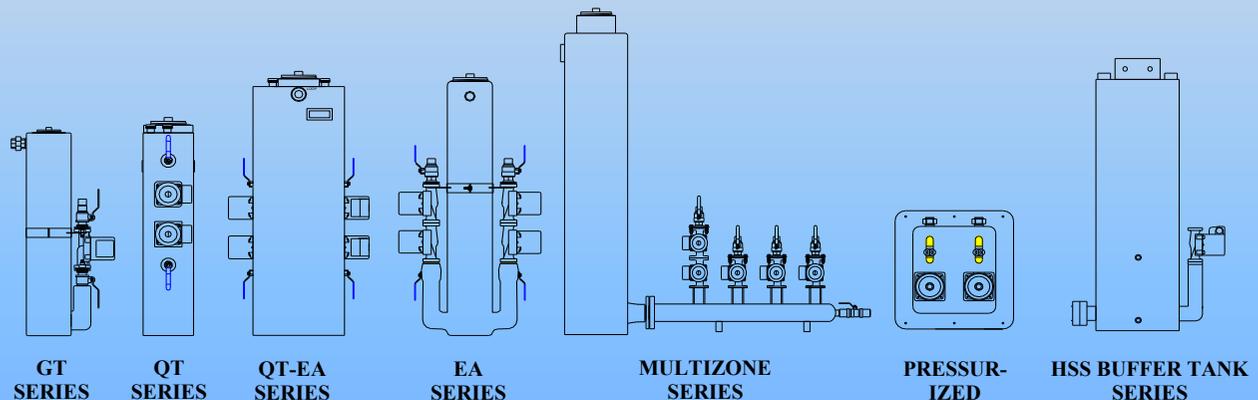
Approvals



Dimensions (inches)

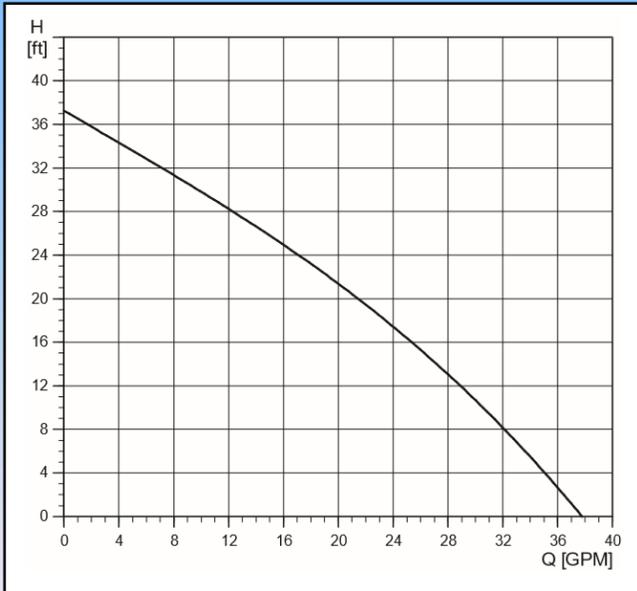
A	B	C	D	E	F	Connection type and size	Shipping weight (lbs)
6-1/2	6	4-7/8	3-1/2	3-7/16	3-5/32	GF 15/26 flange (2) 1/2" dia. bolt holes	10.30

This Pump is Available on the Non Pressurized & Pressurized Flow Centers Pictured Below



PUMP CURVES & TECHNICAL DATA

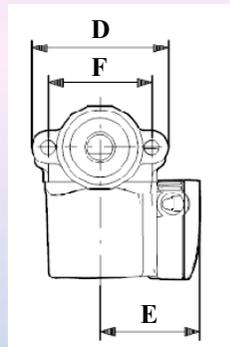
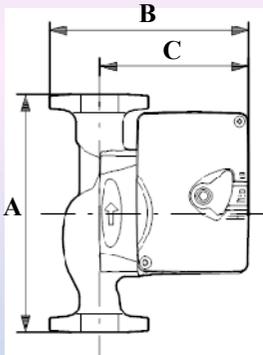
B&D PART# G2-116F
GRUNDFOS 26-116 SINGLE SPEED (230V)



Flow Range: 0-37 gpm
Head Range: 0-37 feet
Motors: 2-pole, single-phase
Max. Liquid temperature 150 °F (65 °C)
Min. Liquid temperature 32 °F (0 °C)
Max. system pressure 145 psi (10 bar)

Volts	Amps	Watts	Hp	Capacitor
230	1.8	385	1/6	2.5uF/380V

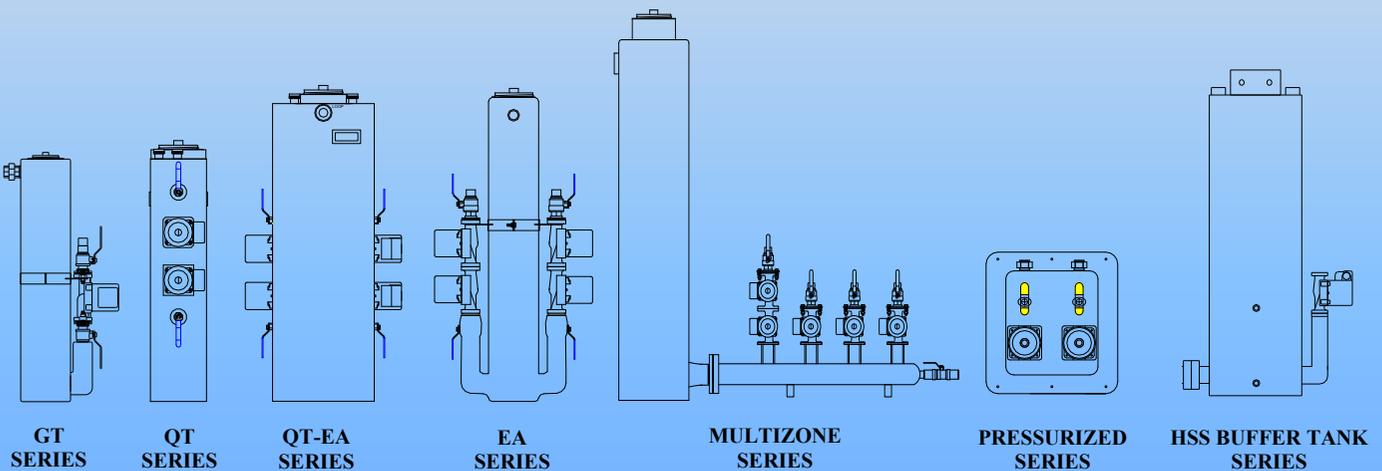
Approvals



Dimensions (inches)

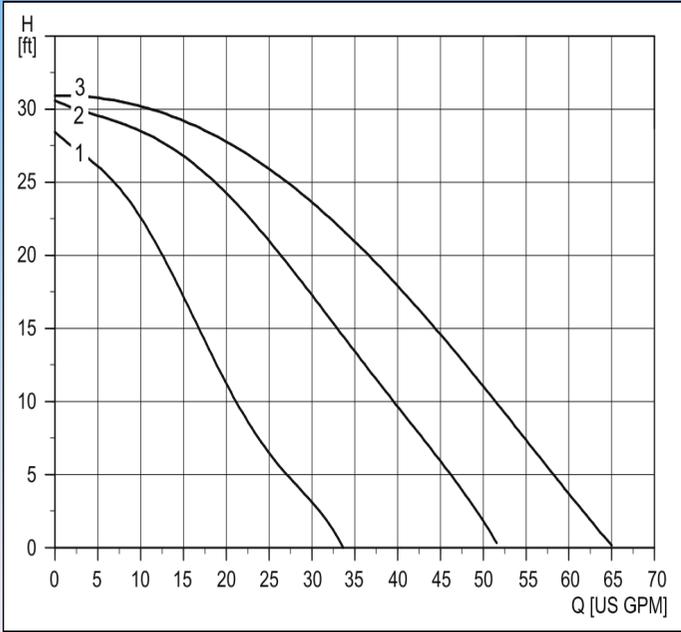
A	B	C	D	E	F	Connection type and size	Shipping weight (lbs)
6-1/2	6	4-7/8	3-1/2	3-7/16	3-5/32	GF 15/26 flange (2) 1/2" dia. bolt holes	10.30

This Pump is Available on the Non Pressurized & Pressurized Flow Centers Pictured Below



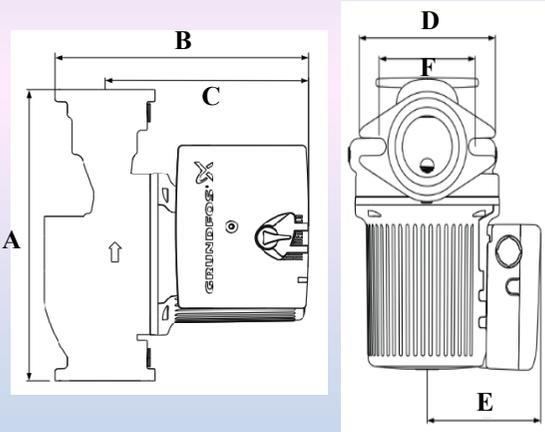
PUMP CURVES & TECHNICAL DATA

B&D PART# G43-100F
GRUNDFOS 43-100 PUMP 3 SPEED (230V)



Flow Range: 0-65 gpm
Head Range: 0-31 feet
Motors: 2-pole, single-phase
Max. Liquid temperature: 230 °F (110 °C)
Min. Liquid temperature: 36 °F (2 °C)
Max. system pressure: 145 psi (10 bar)

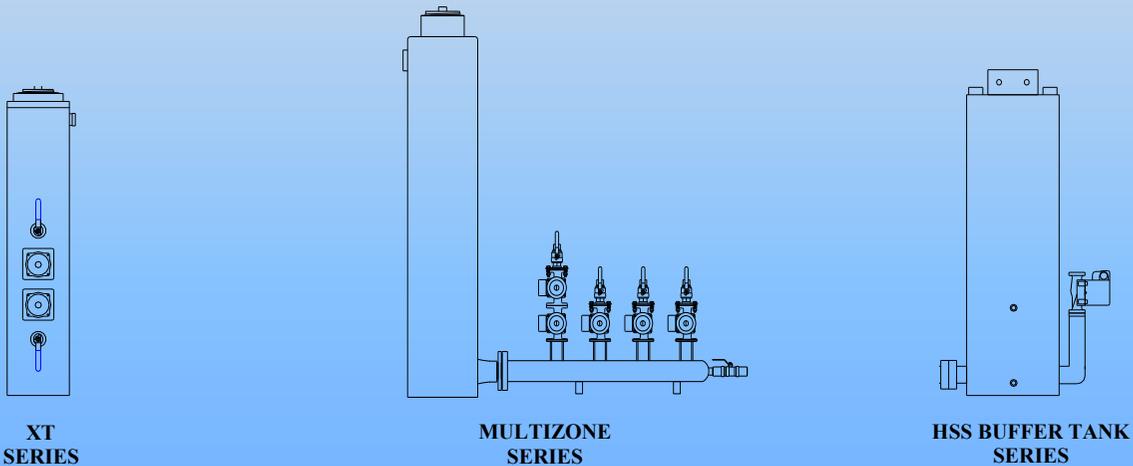
Speed	Volts	Amps	Watts	Hp	Capacitor
3	230	1.7	370	1/6	10uF/400V
2		1.5	335	1/6	10uF/400V
1		1.2	265	1/6	10uF/400V



Dimensions (inches)

A	B	C	D	E	F	Connection type and size	Shipping weight (lbs)
8-1/2	7-3/8	5-7/8	4-1/2	3-3/4	3-1/8	GF 40/43 flange (2) 1/2" dia. bolt holes	18.47

This Pump is Available on the Non Pressurized Flow Centers Pictured Below



WARRANTY STATEMENT

B & D MFG., INC. WARRANTY STATEMENT

5 YEAR WARRANTY EQUIPMENT

ALL RESIDENTIAL GT®, QT®, AND QT®-EA MODEL FLOW CENTERS

B & D Mfg., Inc. warrants for a period of sixty (60) months from the date of purchase, but not more than sixty-five (65) months from date of manufacture, that all Models GT®, QT®, and QT®-EA and Pressurized Flow Centers are free from defects in materials or workmanship.

All Flow Center defective parts will be repaired or replaced at the Manufacturer's discretion. No allowance for labor or property damage is implied.

HSS BUFFER TANKS

- B & D Mfg., Inc. warrants for a period of five (5) years from date of purchase that all HSS® Buffer Stainless Steel Tanks and Manifolds only, are free from defects in materials and workmanship.
- B & D Mfg., Inc. warrants for a period of five (5) years from date of purchase that all HSS® circuit boards and pumps on a complete system are free from defects in materials and workmanship. **Anything manufactured and sold before 3/1/2020 falls under the old 3 year warranty guideline.**

Warning: HSS® Buffer Tank should never be used with an outdoor wood boiler.

Outdoor wood boilers can produce water temperatures above 150 degrees and will void all warranties.

HSS CONTROLS PACKAGES

- B & D Mfg., Inc. warrants for a period of five (5) years from date of purchase that all HSS® Control Panels are free from defects in materials or workmanship. **Anything manufactured and sold before 3/1/2020 falls under the old 3 year warranty guideline.**

HSS AIR HANDLERS

- B & D Mfg., Inc. warrants for a period of five (5) years from date of purchase that all HSS® Air Handlers are free from defects in materials or workmanship. **Anything manufactured and sold before 3/1/2020 falls under the old 3 year warranty guideline.**

All defective HSS® Series parts will be repaired or replaced at the Manufacturer's discretion. No allowance for labor or property damage is implied.

2 YEAR WARRANTY EQUIPMENT

ALL RESIDENTIAL 3-Pump KFC, XT AND EA® MODEL FLOW CENTERS

B & D Mfg., Inc. warrants for a period of twenty-four (24) months from the date of purchase, but not more than thirty (30) months from date of manufacture, that all Models 3-Pump KFC, XT and EA® Flow Centers are free from defects in materials or workmanship.

All Flow Center defective parts will be repaired or replaced at the Manufacturer's discretion. No allowance for labor or property damage is implied.

MULTIZONE FLOW CENTERS

B & D Mfg., Inc. warrants for a period of twenty-four (24) months from the date of purchase, but not more than thirty (30) months from date of manufacture, that all products furnished by it are free from defects in materials and workmanship. Defective parts will be repaired or replaced at the manufacturer's discretion. No allowance for labor or property damage is implied.

WARRANTY STATEMENT CONTINUED

B & D MFG., INC. WARRANTY STATEMENT CONTINUED

1 YEAR WARRANTY EQUIPMENT

SMART PUMPS

B & D Mfg., Inc. warrants for a period of twelve (12) months from date of purchase, but not more than (18) months from date of manufacture that all products furnished by it are free from defects in materials and workmanship. Defective parts will be repaired or replaced at the manufacturer's discretion. No allowance for labor or property damage is implied.

PURGE CARTS

B & D Mfg., Inc. warrants for a period of twelve (12) months from date of purchase that all products furnished by it are free from defects in materials and workmanship. Defective parts will be repaired or replaced at the manufacturer's discretion. No allowance for labor or property damage is implied.

OTHER WARRANTY ITEMS

REPLACEMENT PUMPS

B & D Mfg., Inc. warrants for a period of twenty-four (24) months from the date of purchase, but not more than thirty (30) months from pumps date of manufacture. No allowance for labor or property damage is implied.

TERMS OF LIMITED WARRANTY

- Limited Warranty is only applicable to products installed for use in ground source heat pump systems using clean Potable Water.
- Complete unit replacements are not covered, defective parts will be repaired and/or replaced at the Manufacturer's discretion.
- Limited Warranty shall not apply if serial number or data plates have been removed or altered. Warranty will be null and void.
- Limited Warranty shall not apply if products are not installed and maintained according to instructions in the installation manual.
- Replacement and/or factory repaired parts are warranted only for the remainder of the original warranty period.
- B&D MFG, INC does not warrant products that have been modified from original design. Any product returned with design deviations will null and void any and all warranties.
- B&D MFG, INC is not responsible for any labor, shipping and transportation costs.
- In no event will liability exceed the purchase price of the product.

THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (AND IMPLIED CONDITIONS IN CANADA), EXPRESSED, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL SUCH WARRANTIES EXPRESS OR IMPLIED, ARE EXCLUDED AND SHALL NOT APPLY TO THE GOODS SOLD. IN NO EVENT SHALL THE WARRANTOR BE LIABLE FOR DIRECT, INDIRECT INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE GOODS EXCEPT TO THE EXTENT SET FORTH HEREIN.

REV FEB. 2020/Replaces All previous Warranty Statements



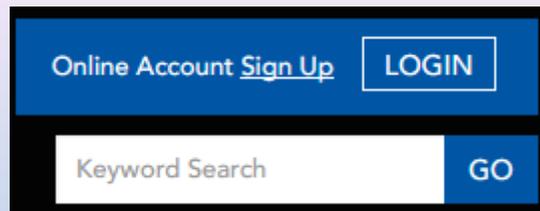
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“B&D Mfg. Inc.’s mission is to bring geothermal innovation to the forefront of green energy. Our goal is to utilize non-pressurized products, while meeting all geothermal product needs. We strive to always have the products our distributors need in stock. As one of the leaders in geothermal, B&D plans to grow with the industry and continue to push the industry with creative ideas, quality products, and great distributor service.”

B&D Mfg. Inc.’s Training Center



Iowa Training Center

Contact B&D to have a training session at your distributor location or at our Training Center.



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