



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.

Call **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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SIGN-UP TODAY FOR ONLINE PRICING

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- SEARCH BY PARTIAL OR COMPLETE PART #
RESULTS SHOW PART NUMBER, DESCRIPTION, LIST PRICE & DISTRIBUTOR PRICE
- STILL ONLY A PHONE CALL AWAY TO QUOTE YOUR FAB ITEMS (WHICH ARE NOT LISTED ONLINE)

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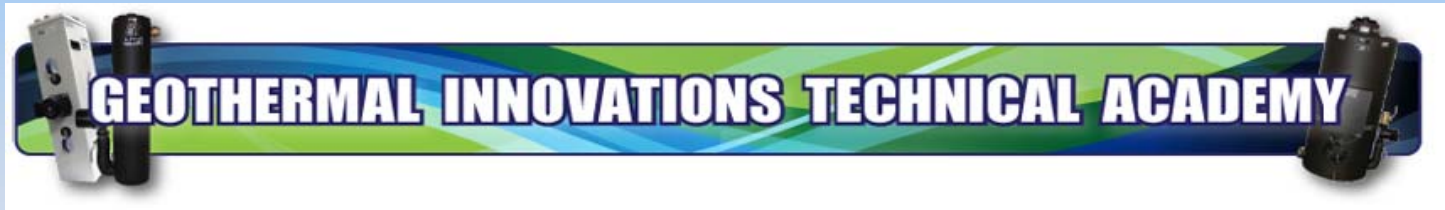
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SOMERSET, PA**



B&D PRODUCT TRAINING



Classes are open to inside and outside Salesman of B&D distributors, and their installers. (No Homeowners) Those who want or need to gain more knowledge about geothermal and how to properly apply the products they are buying to improve their sales.

Training Session to Include:

What a “Non-Pressurized System” really is.

- How it works
- Why it can be the system of choice
- How to select the right flow center for the job

Multi-zone Smart Pump Flow Centers

Proper applications for commercial & high-end residential

- New VFD Technology!
- Tear down and rebuild of a VFD System
- VFD Sizing and selection program

GT®/QT® Flow Centers

- How to select the size needed for a project
- Installation guidance
- Trouble Shooting
- Flow center selection Program

HSS® Buffer Tanks

- Mechanics behind the HSS® Series
- Proper pump & circuit selections
- Authorization to sell this series

B&D Catalog

- A detailed explanation of the B&D Catalog.
- The new and improved catalog

Warranty

- Overview of warranty on products and RMA forms

FOR MORE INFO VISIT OUR WEBSITE AT
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TRAINING SIGN-UP TAB



B&D TRAINING IN JEFFERSON IOWA CENTER IS LOCATED 90 MILES NORTHWEST OF THE DES MOINES AIRPORT



FUSION TRAINING



Classes are open to inside and outside Salesman of B&D distributors, and their installers. (No Homeowners) Those who want or need to gain more knowledge about geothermal and how to properly apply the products they are buying to improve their sales.

Training Session to Include:

What fusion really is.

- How it works
- Why it can be the system of choice
- How to select the right tool for the job

3/4"-2" Socket Fusion

- Installation guidance and procedures
- Trouble Shooting
- Hands on training

1"-24" Butt Fusion

- Installation guidance and procedures
- Mechanics behind fusion
- Trouble Shooting
- Hands on training

1"-24" Electrofusion

- Installation guidance and procedures
- Mechanics behind fusion
- Trouble Shooting
- Hands on training

Polyethylene Pipes and Fittings

- Knowledge of various: polyethylene pipes, fittings, & industries to target

B&D Catalog

- A detailed explanation of the B&D Catalog.
- The new and improved catalog

Warranty

- Overview of warranty on products and RMA forms

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NOTES:



ALL THE "PUMP" YOU NEED AND MORE

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NOTES:



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FLOW CENTERS: BREAKDOWN OF SIZES



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

| Part Number | # of ckts | # of Pumps | Voltage | Amps Grundfos (HI Spd) | HP (ea.) | Inlet**/Outlet Size | Overall Size (in) | | | |
|---------------|-----------|------------|---------|------------------------|----------|---------------------|-------------------|------------|------------|--------------|
| | | | | | | | Ht. (in.) | Wdth (in.) | Dpth (in.) | Weight (lbs) |
| 3-230KFC-S.S. | 1 | 3 | 230 | .90 | 1/6 | 1-1/4" FPT | 42 | 6 1/2 | 18 | 35 |

*Comes with Brass Union.

GT® SS Flow Center – The Industry Standard Solution

| GT [®] SS Flow Center – The Industry Standard Solution | | | | | | | | Overall Size (in) | With Pumps |
|---|------------|---------|------------------------|----------|--------------------|----------|------------|-------------------|--------------|
| Part Number | # of Pumps | Voltage | Amps Grundfos (HI Spd) | HP (ea.) | Inlet*/Outlet Size | Ht (in.) | Wdth (in.) | Dpth (in.) | Weight (lbs) |
| NPFC-SS | 0 | - | - | - | 1” FPT | 34 | 6 1/2 | 15 1/2 | 28 |
| 1-230PFC-SS | 1 | 230 | .90 | 1/6 | 1” FPT | 34 | 6 1/2 | 15 1/2 | 40 |
| 2-230PFC-SS | 2 | 230 | 1.8 | 1/6 | 1” FPT | 34 | 6 1/2 | 15 1/2 | 53 |
| 1-230PFC-SS-M | 1 | 230 | 1.8 | 1/6 | 1” FPT | 34 | 6 1/2 | 15 1/2 | 40 |
| 2-230PFC-SS-M | 2 | 230 | 3.6 | 1/6 | 1” FPT | 34 | 6 1/2 | 15 1/2 | 53 |

*Comes w/ Brass Union.



GT® Flow Center



QT® Flow Center

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

| QT® Flow Center – The Premium Choice for the Refined Customer | | | | | | | | Overall Size (in) | With Pumps |
|---|------------|---------|------------------------|----------|-------------------|----------|------------|-------------------|--------------|
| Part Number | # of Pumps | Voltage | Amps Grundfos (HI Spd) | HP (ea.) | Inlet/Outlet Size | Ht (in.) | Wdth (in.) | Dpth (in.) | Weight (lbs) |
| 1-230QFC | 1 | 230 | .90 | 1/6 | 1” Swivel (FPT) | 34 | 7.5 | 14 3/4 | 40 |
| 2-230QFC | 2 | 230 | 1.8 | 1/6 | 1” Swivel (FPT) | 34 | 7.5 | 14 3/4 | 50 |

*Dimensions are approximate



ALL THE “PUMP” YOU NEED AND MORE

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) | | | With Pumps |
|--------------|------------|---------|---------------|----------|---------------------|-------------------|------------|------------|--------------|
| | | | | | | Ht. (in.) | Wdth (in.) | Dpth (in.) | Weight (lbs) |
| 2-230XT-S.S. | 2 | 230 | 3.4 | 1/6 | 1-1/4" FPT | 48 1/2 | 10 | 22 1/2 | 99 |

**Grundfos - 43-100F



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 (HI Spd) | HP (ea.) | Inlet/Outlet Size | Overall Size (in) | | | With Pumps |
|------------------|------------|---------|------------------------|----------|---------------------|-------------------|------------|------------|--------------|
| | | | | | | Ht. (in.) | Wdth (in.) | Dpth (in.) | Weight (lbs) |
| 1-1E-A-SS-230QFC | 2 | 230 | 1.8 | 1/6 | 1-1/4" Swivel (FPT) | 43 1/2 | 14 | 21 1/2 | 87 |
| 2-1E-A-SS-230QFC | 3 | 230 | 2.70 | 1/6 | 1-1/4" Swivel (FPT) | 43 1/2 | 14 | 21 1/2 | 92 |
| 2-2E-A-SS-230QFC | 4 | 230 | 3.60 | 1/6 | 1-1/4" Swivel (FPT) | 43 1/2 | 14 | 21 1/2 | 98 |

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

| Part Number | Max GPM | # of Pumps | Voltage | Amps Grundfos (HI Spd) | HP (ea.) | Inlet/Outlet Size | Overall Size (in) | | | Weight (lbs) |
|---------------|---------|------------|---------|------------------------|----------|-----------------------|-------------------|------------|------------|--------------|
| | | | | | | | Ht. (in.) | Wdth (in.) | Dpth (in.) | |
| 0-0E-A-KFC-SS | 18* | 0 | - | - | - | 1-1/4" MPT/1-1/4" FPT | 42 1/2 | 9 1/4 | 21 | 41 |
| 1-1E-A-KFC-SS | 18* | 2 | 230 | 1.8 | 1/6 | 1-1/4" MPT/1-1/4" FPT | 42 1/2 | 9 1/4 | 21 | 61 |
| 2-1E-A-KFC-SS | 22* | 3 | 230 | 2.70 | 1/6 | 1-1/4" MPT/1-1/4" FPT | 42 1/2 | 9 1/4 | 21 | 72 |
| 2-2E-A-KFC-SS | 28* | 4 | 230 | 3.60 | 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.



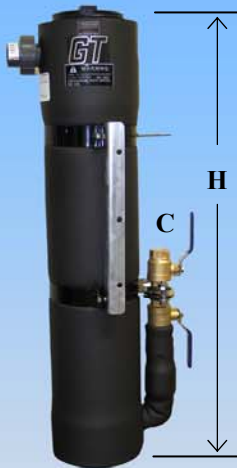
EA® Flow Center

*Dimensions are approximate

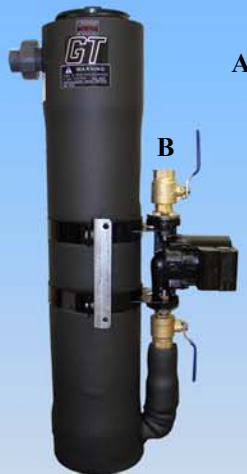


ALL THE "PUMP" YOU NEED AND MORE

FLOW CENTERS: NO PUMP, ONE PUMP, TWO PUMP STAINLESS STEEL PFC'S



MODEL NPFC-SS
28 lb.



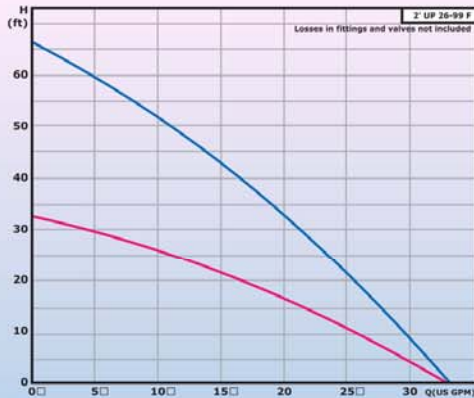
MODEL 1-230PFC-SS
40 lb.



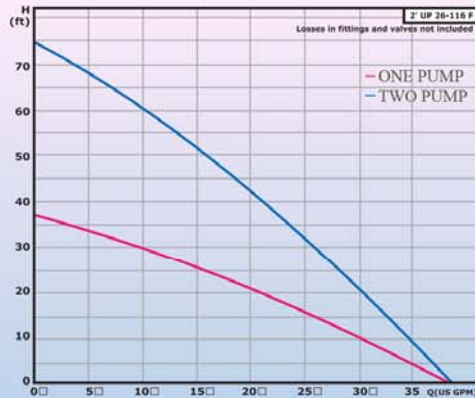
MODEL 2-230PFC-SS
53 lb.

ELECTRICAL: 1/60/230V
INSULATION: 3/8" VOLUME: 4.5 Gal
MATERIAL: 304L Stainless Steel Tubing

A=1" UNION (FPT) B=1" FPT C=1" FLANGE w/BALL VALVE H=34" D=15-1/2"



U.S. GPM
FLOW CHART FOR 1-230PFC-SS,
2-230PFC-SS (Grundfos 26-99-3 Speed)



U.S. GPM
FLOW CHART FOR 1-230PFC-SS,
2-230PFC-SS (Grundfos 26-116)

Patent No. 5,244,037



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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



FLOW CENTERS: GT® FLOW CENTER SPECIFICATIONS W/ PUMP CURVES

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.

Patent No. 5,244,037

Self-Sealing Lid
All fluids are poured into the top of the chamber: for filling, flushing & adding anti-freeze. The top remains open until installation is complete.

Air Elimination Chamber
Removes air from the system as it is circulated through the canister.

Ball Valves
Allow each pump to be removed for service without the risk of fluid loss to the system.

Pumps
Circulate fluid throughout the earth-loop system.

Built-In Check Valve
Holds water in the pump volutes after initial filling. This feature protects the pump by keeping water on the bearings even if the chamber runs dry.

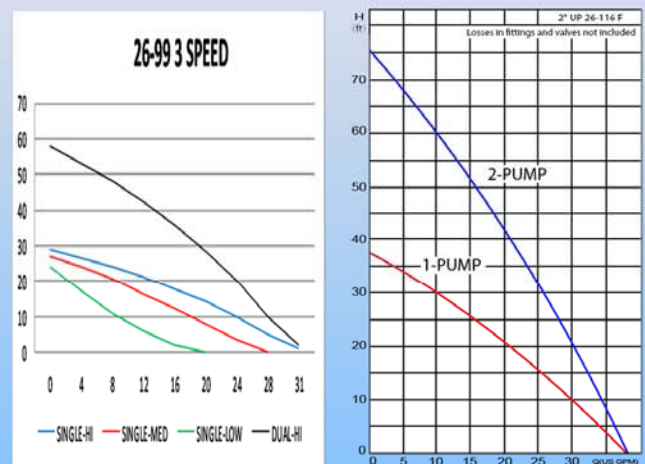


| Part Number | # of Pumps | Voltage | Amps Grundfos 3-Speed | HP (ea.) | Inlet*/Outlet Size |
|-------------|------------|---------|-----------------------|----------|--------------------|
| 1-230PFC-SS | 1 | 230 | .90 | 1/6 | 1" FPT |
| 2-230PFC-SS | 2 | 230 | 1.8 | 1/6 | 1" FPT |

Grundfos 26-99/3 Speed
GT®'s Overall Size - 34" X 6 1/2" X 15 1/2"

*Dimensions are approximate

NON-PRESSURIZED FLOW CENTER



26-116F PUMPS ARE SPECIAL ORDER ON A GT® FLOW CENTER



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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

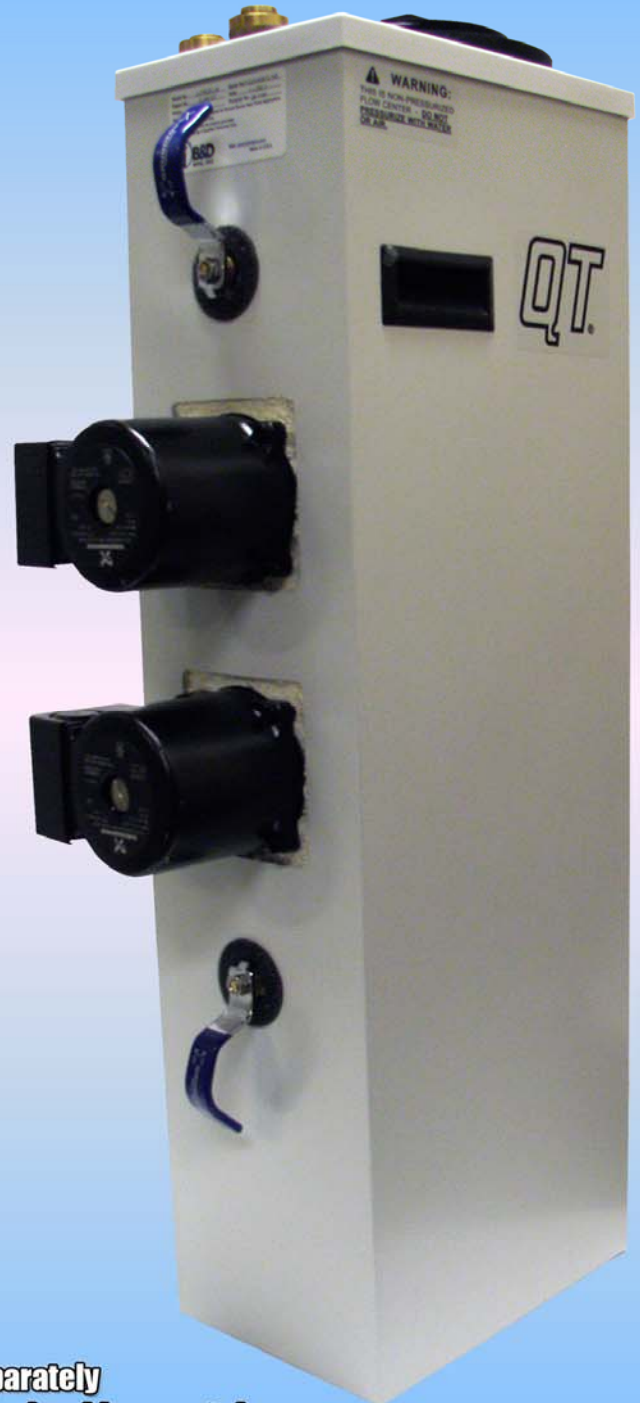
- ♦ Customer Assurance

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 SPECIFICATIONS W/ PUMP CURVES

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

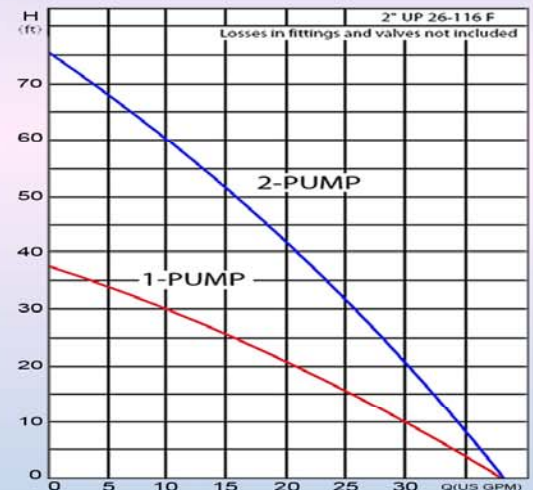
The system includes a self-sealing feature that keeps dirt & debris out and water in. For you, that means trouble-free operation, easier installation, and fewer call backs. This also means added reliability for the homeowner. In addition, adding anti-freeze is easy, just remove the self-sealing lid and 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!

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 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.

NON-PRESSURIZED FLOW CENTER



| Part Number | # of Pumps | Voltage | Amps Grundfos (HI Spd) | HP (ea.) | Inlet*/Outlet Size |
|-------------|------------|---------|------------------------|----------|--------------------|
| 1-230QFC* | 1 | 230 | .90 | 1/6 | 1" FPT SWIVEL |
| 2-230QFC* | 2 | 230 | 1.8 | 1/6 | 1" FPT SWIVEL |

Grundfos 26-99/3 Speed

QT®'s Overall Size 34" x 7 1/2" x 14 3/4"

*Dimensions are approximate

Patent No. 5,244,037



ALL THE "PUMP" YOU NEED AND MORE

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SPECIAL 2 CIRCUIT FLOW CENTER

DESIGNED FOR 6 TO 10 TON SPLIT COILS OR
TOTAL 28* GPM WITH 2 PUMPS ON EACH
CIRCUIT FOR ONE COMMON LOOP FIELD.

If you have ever installed 2 heat pumps and then were faced with trying to figure out the best way to connect them to the loop field, you will see the benefits of this flow center.

*** For Max Flow Use 116F Grundfos Pumps ***

180 DEGREE MODEL:

1-1EA®-230KFC-SS (total 2 pumps)

1 1/4" FPT ON PUMPS

1 1/4" S.S. IPT RETURN INLET
(FIELD ASSEMBLY REQUIRED)

| Part Number | Max GPM | # of Ckts | # of Pumps | Voltage | Amps Grundfos Hi Spd | HP (ea.) | Inlet*/Outlet Size |
|-----------------|---------|-----------|------------|---------|----------------------|----------|-----------------------|
| 0-0E-A-KFC-S.S. | 18* | 2 | 0 | - | - | - | 1 1/4" IPT/1-1/4" FPT |
| 1-1E-A-KFC-S.S. | 18* | 2 | 2 | 230 | 1.80 | 1/6 | 1 1/4" IPT/1-1/4" FPT |
| 2-1E-A-KFC-S.S. | 22* | 2 | 3 | 230 | 2.70 | 1/6 | 1 1/4" IPT/1-1/4" FPT |
| 2-2E-A-KFC-S.S. | 28* | 2 | 4 | 230 | 3.60 | 1/6 | 1 1/4" IPT/1-1/4" FPT |

*Standard: IPT on Inlet Connection. Union can be Special Ordered.



ALL THE "PUMP" YOU NEED AND MORE

QT®-MAXX Flow Center

The pump is ECM technology that is controlled through an external control via PWM signal generation cable. The control operates the pump based off two sensors that are plumbed into the systems piping in the inlet and outlet to the heat pump. The controller then speeds the pump up or down based off of inputs defined at initial start-up by the installer. Initial inputs defined by the contractor are as follows. 1. Heating Delta T 2. Cooling Delta T 3. Safety Flow Rate 4. Anti-freeze type 5. Percentage of Antifreeze. The QT-MAXX will then try to maintain the user defined Delta T while the heat pump is active based on the temperature of the water. This will determine the pump is to maintain the heating or cooling Delta T. If for any reason the pump cannot maintain the Delta T specified the pump will then operate at the specified Safety Flow. The Controller will then indicate the gallons per minute being pumped through the heat pump and the earth loop. Also the Controller will indicate the power usage of the pump while running and via changing colors of the backlight display will indicate if there are any potential problems with the system. This information is critical in evaluating the performance of any geothermal system. Currently, the technician has to estimate the flow rate by measuring the pressure drop across the heat pump heat exchanger, and even then he has to have the correct product data with him in order to translate that pressure drop into gallons per minute.



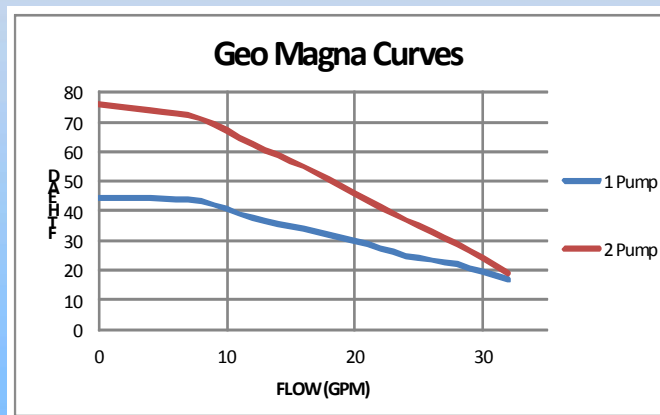
Features & Benefits

- * Remote speed controlled high efficiency ECM pump with permanent magnet rotor and frequency converter
- * Fit for cold antifreeze media containing glycol or ethanol
- * Fit for condensing environments
- * Conduit connection
- * Controlled via digital low voltage PWM signal
- * PWM feedback signal to system control: power consumption, under-voltage warning, under-voltage stop, locked rotor, internal failure
- * Uses up to 80% less electrical power compared to standard constant speed pumps
- * Uses up to 60% less electrical power compared to standard speed controlled pumps
- * Check Valve/Pump Protection
- * 2 Year Warranty/Customer Assurance

Physical/Electrical Data

| Part # | # of Pumps | Voltage | Amps | HP | Inlet/Outlet Size |
|----------|------------|---------|------|-----|-------------------|
| 1-230MAX | 1 | 230 | 1.7 | 1/6 | 1"Swivel(FPT) |
| 2-230MAX | 2 | 230 | 3.4 | 1/6 | 1"Swivel(FPT) |

**Controller is 24VAC powered through heat pump



DESIGNED FOR 6 TO 10 TON SPLIT COILS OR
TOTAL 28* GPM WITH 2 PUMPS ON EACH
CIRCUIT FOR ONE COMMON LOOP FIELD.

Features & Benefits

- Check Valve
Pump Protection
- 5 Year Limited Warranty
Customer Assurance
- Solid Durable Construction
Long Life
- Removable Lid
Fast Installation, Easy to Fill
- 1 1/4" Swivel Connectors on Pumps
Fast and Flexible Installation
- Non Pressurized Flow Center
Eliminates Callbacks
- Ease of Handling and Installation
- Foam Insulation
Eliminates Condensation
- Air Separation Chamber
Continually Performs Purging Function



180 DEGREE MODEL

1 1/4" Brass IPT Return Inlet



FLOW CENTERS: 2-2EA®-SS-QFC SPECIFICATIONS

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 system 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. Also available is the Flow Meter Tool, an exclusive service tool which provides a direct reading of system flow rate, eliminating the uncertainty associated with current methods.

Pump Curves



QT® Specifications

*Dimensions are approximate



ALL THE "PUMP" YOU NEED AND MORE

FLOW CENTERS: XT

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

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.

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 |
|-------------|------------|---------|----------------------------|-------------|--------------------|
| 2-230XT-SS* | 2 | 230 | 3.4 | 1/6 | 1 1/4" FPT |

*43-100F Pump

XT's Overall Size 48 1/2" x 10 x 22 1/2"

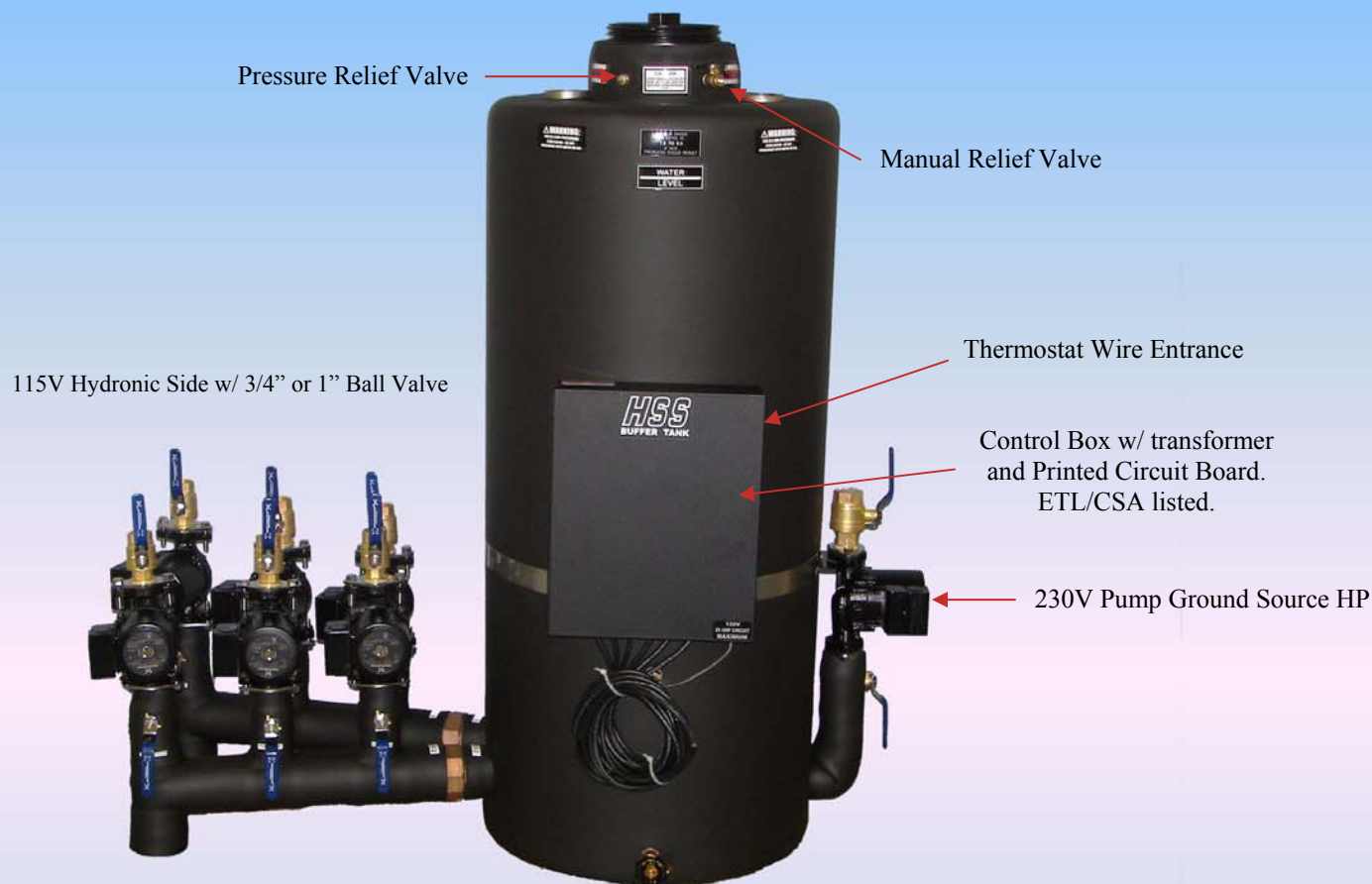
*Dimensions are approximate

For pump curves refer to page 109.



ALL THE "PUMP" YOU NEED AND MORE

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



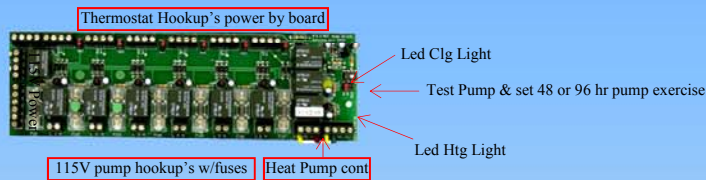
- Available Sizes: HSS®-12, HSS®-20, HSS®-30, HSS®-40, HSS®-60, HSS®-80
- Available in Heating Only or Heating & Cooling.
- 1 1/4", 1 1/2" or 2" inlet & 3/4" or 1" Ball Valve Outlets
- Water Temperature not to exceed 150 degree max.
- Designed for 6 to 10 gallons per ton.
- 115V Pump on Hydronic Heat Side
- 230V Pump on Water to Water Side.
- Two Stage Heat or Heating & Cooling built in.
- Hydronic 115V 26/99-3 is a three speed pump (low-med-hi)

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



ALL THE "PUMP" YOU NEED AND MORE

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

Hydronic circuit ball valve
3/4" on 15/58,
1" on 26/99-3 speed pump.
Water/Water Side
1-1/4" Ball Valve



ALL THE "PUMP" YOU NEED AND MORE

1-866-646-6724
712-652-3424
www.bdmfginc.com

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.

Here is a Multizone Flow Center designed for a 4 zone application.

Model: **CFCSS4000-3G**

CF - Commercial Flow Center

C - Size C

SS - Stainless Steel

4 - 4 Circuit

0 - No. 2 pump circuit

0 - NA

0 - No. 3530 Series pumps

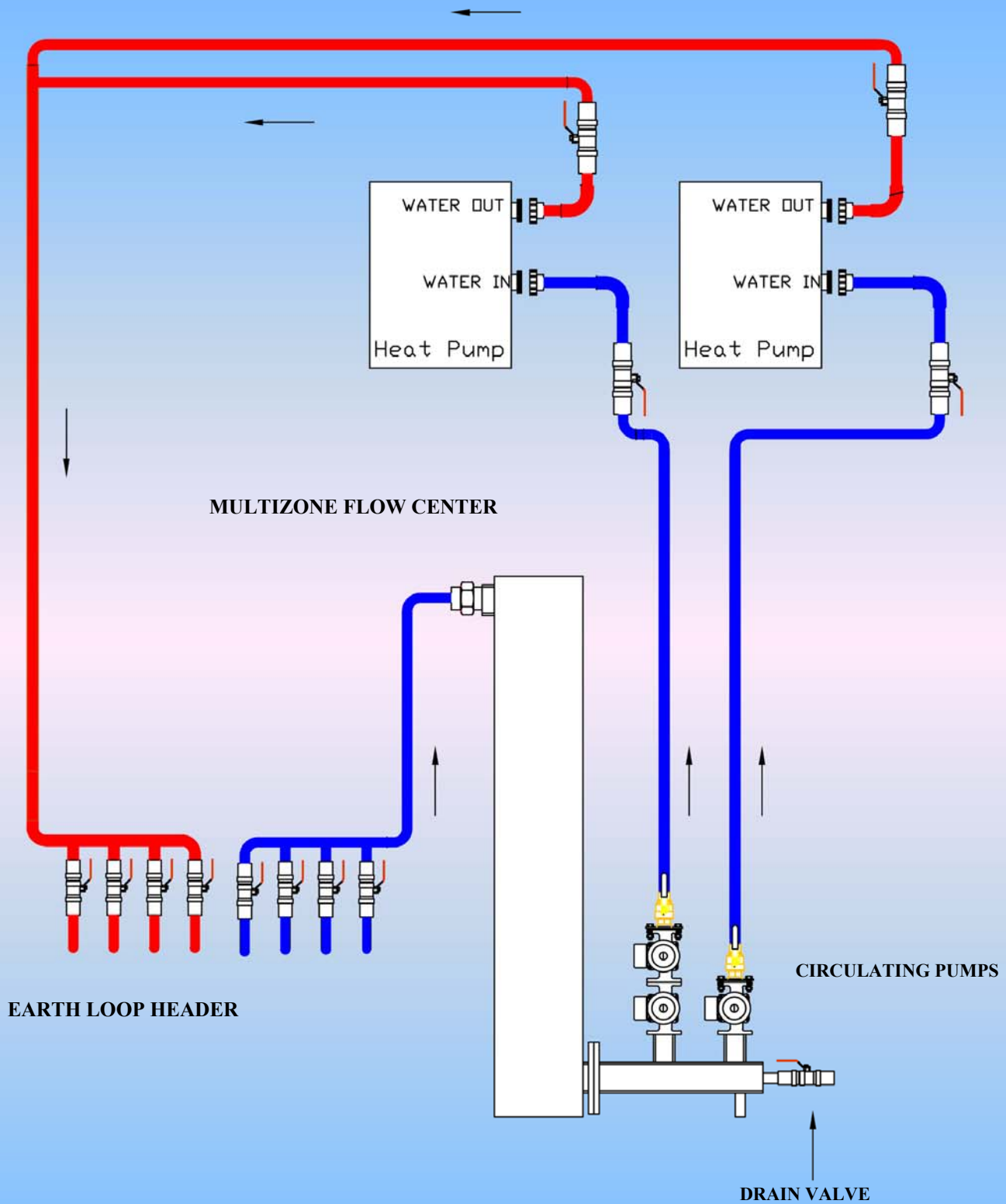
3 - 208/230 V Single phase

G - Grundfos Pumps

(*C-Model - (4 circuit header max)

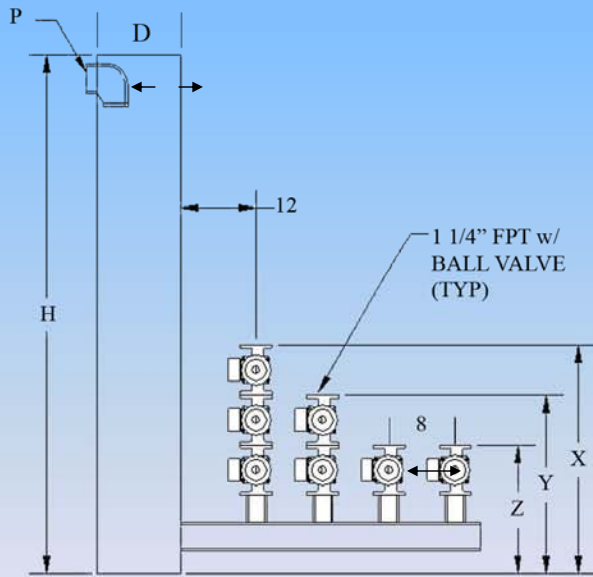


FLOW CENTERS: MULTIZONE FLOW CENTER SYSTEM PIPING SCHEMATIC



ALL THE "PUMP" YOU NEED AND MORE

FLOW CENTERS: MULTIZONE FLOW CENTER DIMENSIONS



| Multizone GT Flow Center Physical Dimensions (in.) | | | | | | | |
|--|----|----|----|--------|----|---------|--------------|
| Size | H | D | X | Y | Z | P (IPT) | Volume (gal) |
| B | 62 | 10 | 43 | 36 1/2 | 30 | 2 | 17.5 |
| C | 70 | 12 | 45 | 38 1/2 | 32 | 3 | 20.8 |

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

** C-Model- (4 circuit header max)

*** D-Model to be used with Smart Pump Systems only

<Limited custom configurations are available, call for help>

The best pumping solution for a geothermal heat pump system. Unsurpassed in delivering the following benefits:

Ease of Installation, Very Low Operating Costs, Ease of Maintenance, Individual Tenant Metering, Control Simplicity

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. For flow rates greater than 25 gpm larger end suction pumps are available. 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.



FLOW CENTERS: SMART PUMP MULTIZONE

For the applications that require a little more than it's 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.

VARIABLE SPEED TECHNOLOGY IS EASIER THAN EVER TO PROVIDE FOR YOUR APPLICATION. WHY COMPLICATE THINGS FOR YOUR END USER "KEEP IT SIMPLE".



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

- **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**

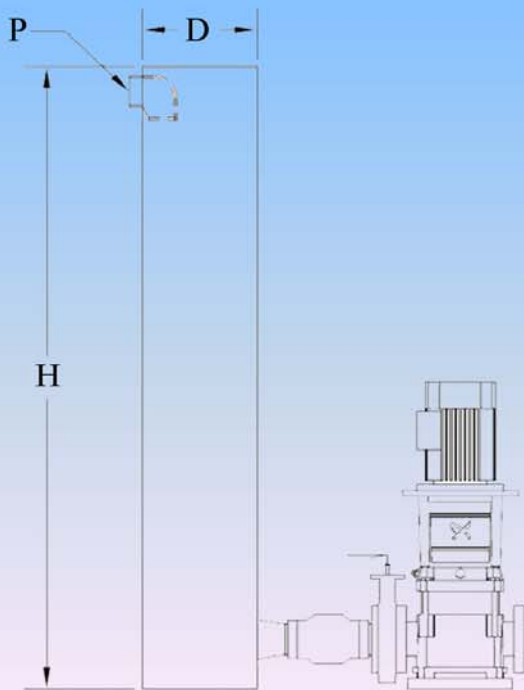
When you look at the cost of purchasing and installing several pumps switching to the Smart Pump Multizone will save more than just energy.

- **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.



FLOW CENTERS: SMART PUMP MULTIZONE DIMENSIONS W/ CURVES



The most energy efficient pumping system for any geothermal heat pump application. Unsurpassed in delivering the following benefits:

Ease of Installation, Very Low Operating Costs, Ease of Maintenance, Simple System Start Up

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.

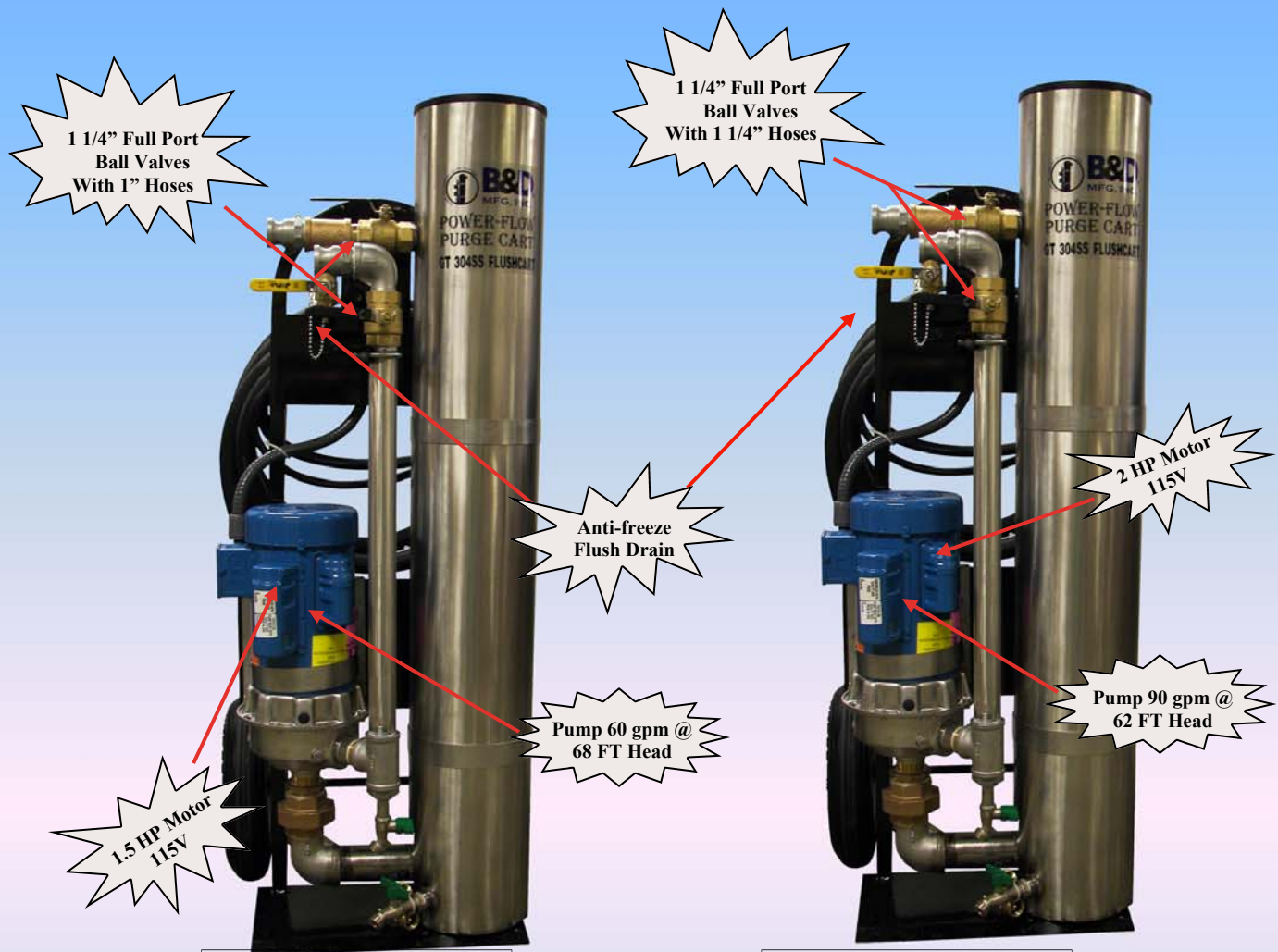
Insulation – 3/8" Armaflex insulation factory installed to prevent condensation.

| Smart Pump Multizone Dimensions (in.) | | | | | |
|---------------------------------------|--------------------|----|----|------------|-----------------|
| Size | MAX FLOW (gpm*) | H | D | P (IPT) | Volume (gal) |
| C | 130 | 70 | 12 | 3 | 20.8 |
| D | 180 | 70 | 14 | 3 | 29.5 |



ALL THE "PUMP" YOU NEED AND MORE

PURGE CARTS: 1.5 HP, 2 HP



304SS-1.5
WEIGHT: 192 lbs W/ HOSES

13" Flat Free Wheels
Pressure Drain
14 gauge Stainless Steel Tank
Stainless Steel Piping
2 - 10ft Hoses

304SS-2
WEIGHT: 196 lbs W/ HOSES

Gravity Drain
10 Gallon Tank Volume
Quick Connect Couplings
Lift Out Filter Screen

Water Tight Switch Box Located on Back of Cart. Flush System is factory mounted to heavy duty cart- with mounts on the back for hoses.

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



ALL THE "PUMP" YOU NEED AND MORE

PURGE CARTS: SUBMITTAL DATA



2 Horse Power

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

1 1/2 Horse Power

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

Flush System is factory mounted to heavy duty cart- with mounts on the back for hoses.

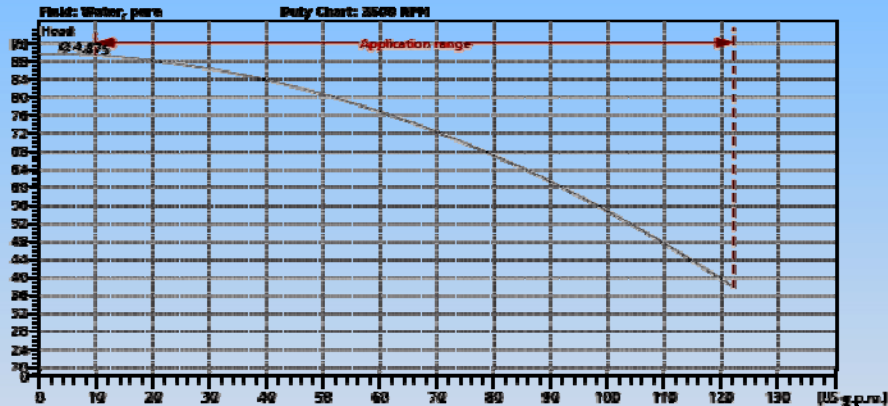
Data subject to change



ALL THE "PUMP" YOU NEED AND MORE

PURGE CARTS: SUBMITTAL DATA

2 Horse Power Motor



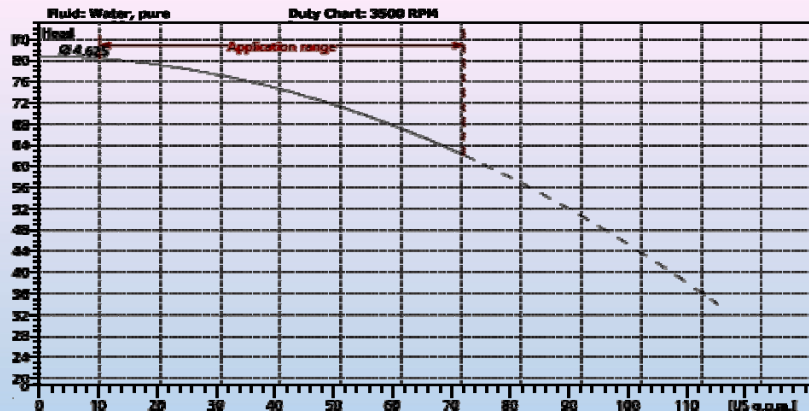
| Hydraulic Data | | | | | Motor Data | NPE Model | Quantity |
|----------------|--------------------|-------------|-------------------|-------------------|-------------------------|-----------|----------|
| Maximum Flow | Flow at Duty Point | Maximum TDH | TDH at Duty Point | NPSH _g | Voltage/Phase/Enclosure | | |
| 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
 System Input Power: 1~115V
 Electrical Enclosures: TEFC
 Impeller Size: 4-7/8"
 Impeller Type: Radial impeller

Max. Temperature: 400°F
 Max. Frequency: 60 HZ
 Motor Standard: NEMA
 Sense of Rotation: Clockwise from the drive end
 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
 System Input Power: 1~115V
 Electrical Enclosures: TEFC
 Impeller Type: Radial impeller
 Impeller Construction: Closed

Max. Temperature: 400°F
 Max. Frequency: 60 HZ
 Motor Standard: NEMA
 Impeller Size: 4-5/8"



ALL THE "PUMP" YOU NEED AND MORE

**PUMPS: GRUNDFOS PUMPS & FLANGES,
WEBSTONE FLANGES, BELL & GOSSETT PUMPS**

| Size | Part Number |
|---|-------------|
| GRUNDFOS PUMP 115V (COATED) HYDRONIC | G-15-58F |
| GRUNDFOS PUMP 230V 3 SPEED PUMP 43-100 | G-43-100F |
| GRUNDFOS PUMP-CLOSED SYSTEM MODEL- 115V/3 SPEED | G 1-2699/3 |
| GRUNDFOS PUMP 230V - 2699/ 3 SPEED PUMP | G 3-2699/3 |
| GRUNDFOS PUMP 230V - 116 | G2-116F |
| 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 I.V. GASKET | G510231 |
| GRUNDFOS 3/4" I.V.BRASS FLANGE | G519755 |
| GRUNDFOS 1" I.V.BRASS FLANGE | G595079 |
| WEBSTONE BALL VALVE GASKET | G40403 |
| 1 1/4" WEBSTONE ISO VALVE W/ HANDLE | G43405 |



GRUNDFOS

| Size | Part Number |
|---------------------------|-------------|
| 26 SERIES PUMP INSULATORS | G-26-INS |



BELL & GOSSETT

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



NRF36

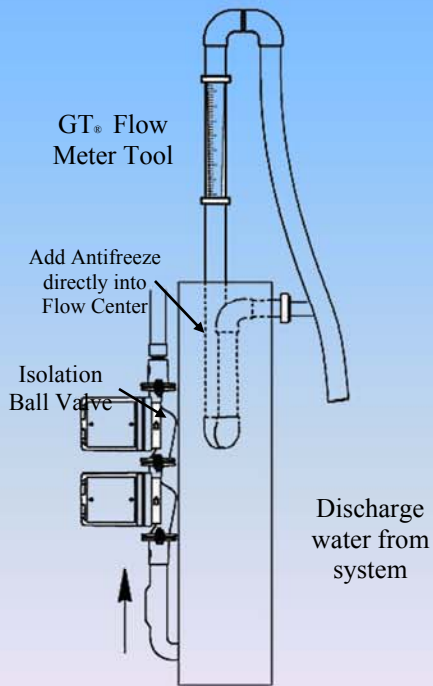
Call for availability of other sizes on
Commercial and Residential.
1/2 to 5 HP or Larger
Pumps to be used for replacement parts only.



ALL THE "PUMP" YOU NEED AND MORE

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712-652-3424
www.bdmfginc.com

FLOW CENTER ACCESSORIES: FLOWMETER TOOL



1-WFT17-A

Flowmeter Tool & Case

| Size | Part Number |
|--|-------------|
| FLOW METER TOOL with Case - (17 GAL) | 1-WFT17-A |
| FLOW METER TOOL- (3-30 GAL) | 1-WFT30-R |
| COMMERCIAL FLOW METER TOOL- (40 GAL) | 1-WFTC40 |
| FLOW CENTER WRENCH | 1-FCW |



1-FCW



ALL THE "PUMP" YOU NEED AND MORE

ACCESSORIES: FLOWMETERS

WF-400N SERIES IN-LINE FLOWMETERS

The **F-400N** units offer individual, handmade quality, combined with excellent accuracy and repeatability.

F-400N series flowmeters are machined of high quality, acrylic rod stock and carefully polished to a clear-as-glass finish. Easy to read scales are screen printed on the meter body. Adapters are reinforced with *aluminum stress rings for added strength, and O-ring seals are Viton.

WF-452 SERIES FLOWMETERS

The newest addition to our Polysulfone flowmeter line offers excellent accuracy and repeatability and pride-of-workmanship...all at a realistic price!

F-452 units have 2" FPT adapters, Viton O-ring seals, and #316 stainless steel internal parts. Half union connectors couple the meter body to the 2" FPT adapters at each end of the flowmeter.

The **F-452** series offers many of the capabilities of glass and metal flowmeters that cost many times more.

F-452 units are available specially equipped for harsh environments.

Calibration

| Size | Part Number | GPM | LPM | Adapter Size |
|---------------------------|--------------|-----------|-----------|--------------|
| WF-400N IN-LINE FLOWMETER | F-40750LN-12 | 1.0 to 10 | 4.0 to 38 | 3/4" FPT |
| WF-400N IN-LINE FLOWMETER | F-40750LN-16 | 1.0 to 10 | 4.0 to 38 | 1" FPT |
| WF-400N IN-LINE FLOWMETER | F-41017LN-12 | 1.0 to 17 | ... | 3/4" FPT |
| WF-400N IN-LINE FLOWMETER | F-41017LN-16 | 1.0 to 17 | ... | 1" FPT |
| WF-400N IN-LINE FLOWMETER | F-41000LN-12 | 2.0 to 20 | 8.0 to 78 | 3/4" FPT |
| WF-400N IN-LINE FLOWMETER | F-41000LN-16 | 2.0 to 20 | 8.0 to 78 | 1" FPT |

Calibration

| Size | Part Number | GPM | LPM | Adapter Size |
|------------------|-------------|------------|-----------|--------------|
| WF-452 FLOWMETER | F-452020LH* | 2.0 to 20 | ... | 2" FPT |
| WF-452 FLOWMETER | F-452060LH | 6.0 to 60 | 30 to 230 | 2" FPT |
| WF-452 FLOWMETER | F-452080LH* | 10 to 80 | 40 to 300 | 2" FPT |
| WF-452 FLOWMETER | F-452100LH | 5.0 to 100 | 20 to 380 | 2" FPT |
| WF-452 FLOWMETER | F-452130LH* | 15 to 130 | 60 to 500 | 2" FPT |
| WF-452 FLOWMETER | F-452175LH* | 20 to 175 | ... | 2" FPT |

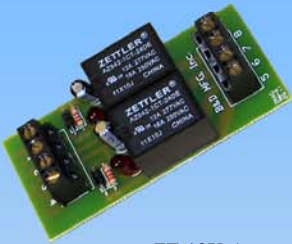


*Special Size Flowmeters -Special Order.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

HSS® SERIES: CONTROLS & ACCESSORIES



ZT-12X-A



WD17535



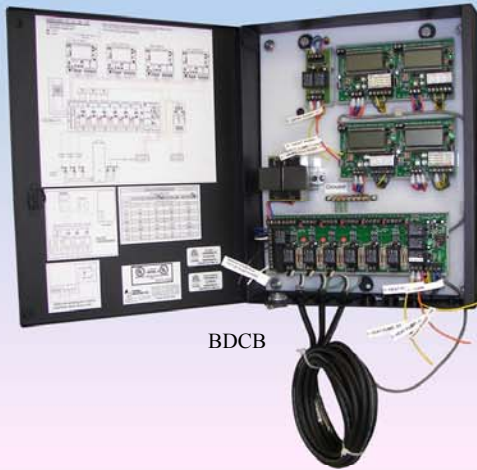
2876710



B1-30T



H2-2TC



BDCB



B3-6CR

| Size | Part Number |
|--|------------------|
| DIGITAL THERMOMETER | WD17535 |
| 30 MINUTE ADJUSTABLE DELAY TIMER | B1-30T |
| HSS®- 6 CIRCUIT CONTROL PRINTED CIRCUIT BOARD | B3-6CR |
| HSS® CONTROL BOX –CALL FOR CONFIGURATION QUOTE | CALL FOR PRICING |
| 2-STAGE ELECTRONIC TEMPERATURE CONTROLLER | H2-2TC |
| 50VA TRANSFORMER 110V | 2876710 |
| 3 CIRCUIT, 24V RELAY-1, HP CONTROL | ZT-12X-A |

Call for availability if extra fuses are needed.



ALL THE "PUMP" YOU NEED AND MORE

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



**MALE PIPE x
SWIVEL NUT ADAPTER**



GAUGE, PRESSURE PROBES, PT PLUG

| Size | Part Number | Bag Qty |
|----------------------------|-------------|---------|
| 3/4" MPT X 1" SWIVEL NUT | MSA45 | 10 |
| 1" MPT X 1" SWIVEL NUT | MSA55 | 10 |
| 1" MPT X 1 1/4" SWIVEL NUT | MSA56 | 10 |

| 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 |



PGNL25-100-G

Can be bought individually.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

1-866-646-6724
712-652-3424
www.bdmfginc.com

ACCESSORIES: HOSE KITS

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



| Size | Part Number |
|-------------------------------------|-------------|
| 1" RUBBER HOSE 200 PSI (PER FT) | WH01-200 |
| 1-1/4" RUBBER HOSE 150 PSI (PER FT) | WH0125-150 |



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



Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

1-866-646-6724
712-652-3424
www.bdmfginc.com

ACCESSORIES: HOSE KITS & PE COMPLETE INSTALLATION KITS

HOSE KIT COMPLETE INSTALLATION KITS



FC-CHK-KIT1-125
PARTS INCLUDED

- | | |
|---------------|------------------|
| (2) PEVT666S | (2) SPE66 |
| (2) RGSE10025 | (2) RBHE1000 |
| (12) WS13053 | (2) N76-02 |
| (2) BRC1PE6 | (12 FT) WH01-200 |

1" Hose Kit Complete Installation Kit



FC-HK-KIT1-125
PARTS INCLUDED

- | | |
|---------------|------------------|
| (2) PEVT666S | (6) SPE66 |
| (1) SPMA65N | (1) BRC1PE6 |
| (2) RGSE10025 | (1) RBHE1000 |
| (8) WS13053 | (2) N76-02 |
| | (10 FT) WH01-200 |

1" Conn w/ 1 1/4" Supply Return
Hose Kit Complete Install Kit

PE COMPLETE INSTALLATION KIT



FC-PE-KIT125
PARTS INCLUDED

- | | |
|--------------|--------------|
| (2) PEVT666S | (16) SPE66 |
| (2) SPMA65N | (2) SPMT356V |

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

ACCESSORIES: BRASS BARB FITTINGS



RGSE



RBCP



RBHE



RBMA / CRBMA



BRC



RBFA100

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

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

| 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 |

| BARB X BARB | Part Number |
|-------------------------------------|-------------|
| 3/4" INSERT X 1" INSERT BRASS | RBCP7510 |
| 1" INSERT X 1" INSERT BRASS | RBCP100 |
| 1" INSERT X 1 1/4" INSERT BRASS | RBCP1025 |
| 1 1/4" INSERT X 1 1/4" INSERT BRASS | RBCP125 |

| 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 |

Call for availability of other sizes.



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ACCESSORIES: GLYCOL TESTER

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



| Size | Part Number |
|---------------|-------------|
| GLYCOL TESTER | GT7084 |

New Expanded Scale...

Fast & Easy To Use —

Untrained personnel can make quick, accurate, repeatable tests with available light. A few drops of fluid and a couple seconds are all that is required.

Now Measure Antifreeze to 70% (-84 °F)

MISCO 7084

Glycol Tester

— Automatically Temperature Compensated —

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 anti-freeze. 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.



ALL THE "PUMP" YOU NEED AND MORE

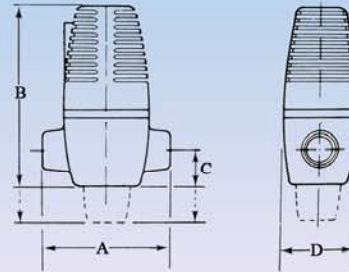
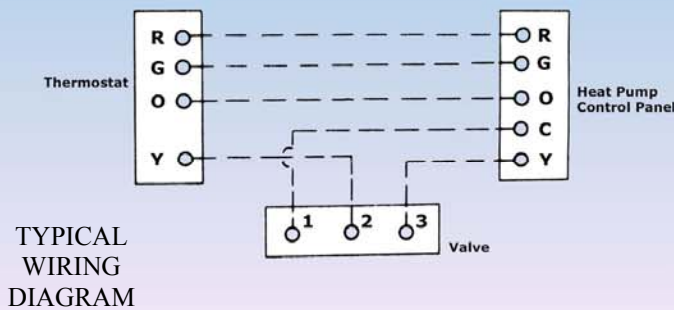
ACCESSORIES: GEOTHERMAL VALVES

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" T | T5101G2 | 3 3/8" | 5 3/8" | 1 9/16" | 2 | 2 1/4 |
| 1" SWT | T557G3 | 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" T | T5101G2 | 4 1/2 TO 6 | 20 | 150 | 125 | 40 TO 240 | 0.9 | 24V-60 Hz |
| 1" SWT | T557G3 | 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 |



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

Specifications available upon request

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

**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

FEATURES

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*



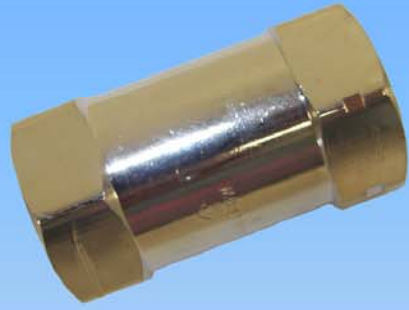
| Size | Part Number |
|----------------|-------------|
| SOLENOID VALVE | 205TF |

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*



ACCESSORIES: REGULATOR VALVES



| Size | Part Number |
|---------------------------------|-------------|
| 2 GAL. B. F. REGULATOR VALVE | WGC2F |
| 3 GAL. B. F. REGULATOR VALVE | WGC3F |
| 4 GAL. B. F. REGULATOR VALVE | WGC4F |
| 5 GAL. B. F. REGULATOR VALVE | WGC5F |
| 6 GAL. B. F. REGULATOR VALVE | WGC6F |
| 7 GAL. B. F. REGULATOR VALVE | WGC7F |
| 8 GAL. B. F. REGULATOR VALVE | WGC8F |
| 9 GAL. B. F. REGULATOR VALVE | WGC9F |
| 10 GAL. B. F. REGULATOR VALVE | WGC10F |
| 11.5 GAL. B. F. REGULATOR VALVE | WGC11.5F |
| 20 GAL. B. F. REGULATOR VALVE | WGC20F |

- 3/4" FNPT - Inlet/Outlet
- 1.0 to 11.5 GPM
- 8 oz. Net Weight

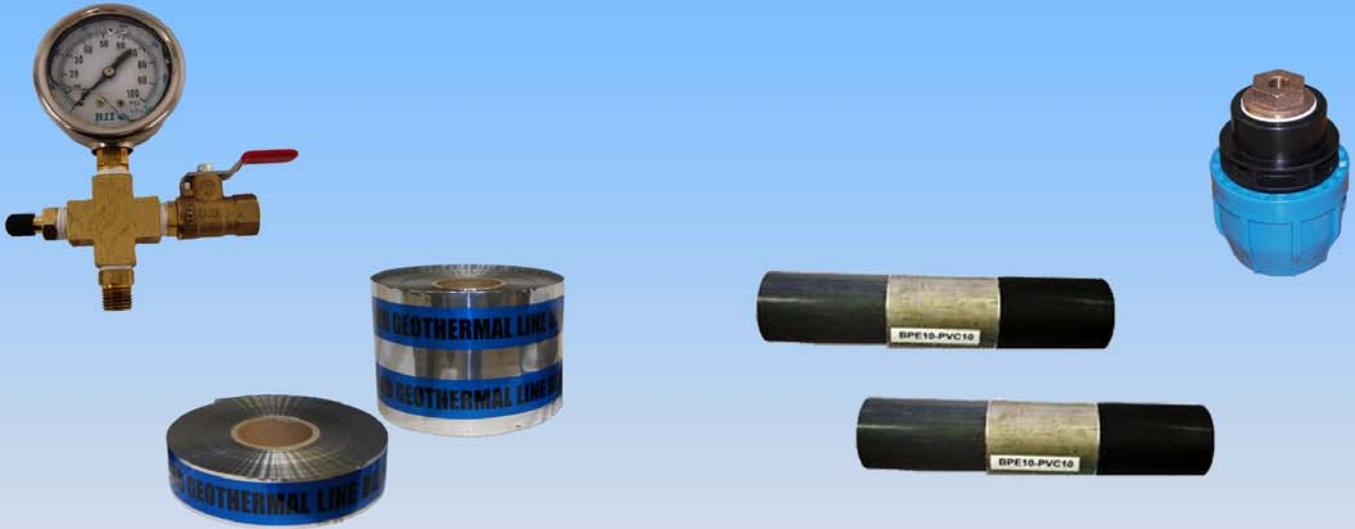
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**ACCESSORIES: TEST CAPS, DETECTABLE
TAPE, TRANSITION FITTINGS, TEST KIT**



| Size | Part Number |
|--|----------------|
| TEST CAP W/ 3/4" X 1/4" FPT | ELO-42-TC |
| TEST CAP W/ 1" X 1/4" FPT | ELO-52-TC |
| TEST CAP 1 1/4" X 1/4" FPT | ELO-62-TC |
| TEST CAP 1 1/2" X 1/4" FPT | ELO-72-TC |
| TEST CAP 2" X 1/4" FPT | ELO-82-TC |
| 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 |
| 1 1/4" SDR11 B FUSION X 1 1/4" SCH 80 PVC TRANSITION | BPE6-PVC6 |
| 2" SDR11 B FUSION X 2" SCH 80 PVC TRANSITION | BPE8-PVC8 |
| 3" SDR11 B FUSION X 3" SCH 80 PVC TRANSITION | BPE10-PVC10 |
| 4" SDR11 B FUSION X 4" SCH 80 PVC TRANSITION | BPE11-PVC11 |
| TEST KIT W/GAUGE, VALVE, HOSE HOOKUP | KIT-AGV |

****Refer to page 78 for more Test Cap Options****

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



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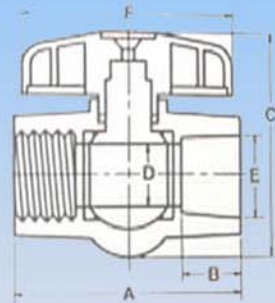
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ACCESSORIES: PVC BALL VALVES

FULL PORT I.P.S. AND SOCKET ENDS

PVC Compact ball valves are quarter-turn, quick-opening shut-off valves. Their large ports allow greater flow and a minimum of pressure drop or turbulence. They are manufactured with PVC material for corrosion resistance and are equipped with EPDM seats and O-rings. Each valve is tested twice; air underwater in the open and closed position.

NOT FOR USE ON COMPRESSED AIR.



DIMENSIONS IN INCHES

| Size | Part Number | A | B | C | D | E | F |
|------------------------|-------------|-------|-------|-------|-------|-------|-------|
| 3/4" PVC BALL VALVES | S 701-4 | 3.787 | 1.113 | 3.096 | 0.768 | 1.062 | 3.540 |
| 1" PVC BALL VALVES | S 701-5 | 4.165 | 1.185 | 3.715 | 0.970 | 1.330 | 3.957 |
| 1 1/4" PVC BALL VALVES | S 701-6 | 4.252 | 1.250 | 3.961 | 1.139 | 1.675 | 3.957 |
| 1 1/2" PVC BALL VALVES | S 701-7 | 5.111 | 1.389 | 4.543 | 1.421 | 1.918 | 4.291 |
| 2" PVC BALL VALVES | S 701-8 | 5.787 | 1.556 | 5.309 | 1.831 | 2.393 | 5.295 |
| 3" PVC BALL VALVES | S 701-10 | 9.031 | 1.874 | 7.507 | 2.982 | 3.523 | 8.803 |

PRESSURE RATING

150 PSI AT 73 °F

MAX. SERVICE TEMP. 140 °F

MATERIALS T-701/S-701

| PART NAME | MATERIAL |
|-----------|----------|
| BODY | PVC |
| SEATS | EPDM |
| BALL | PVC |
| STEM | PVC |
| O-RING | EPDM |
| HANDLE | PVC |
| DISC | ABS |

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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-ROLLER | WPR |

For Residential or Commercial Polyethylene Pipe.



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POLYETHYLENE PIPE: 20 FT LENGTHS

| Size | Part Number |
|--|-------------|
| 3/4" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-075020 |
| 1" P.E. STRAIGHT 20 FT LENGTHS -PE4710, SDR11 | 6-100020 |
| 1-1/4" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-125020 |
| 1-1/2" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-150020 |
| 2" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-200020 |
| 3" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-300020 |
| 4" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-400020 |
| 6" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-600020 |
| 8" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-800020 |
| 10" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-1000020 |
| 12" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-12000020 |
| 14" P.E. STRAIGHT 20 FT LENGTHS-PE4710, SDR11 | 6-14000020 |



| Size | Part Number |
|---|-------------|
| 1 1/2" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-150020 |
| 2" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-200020 |
| 3" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-300020 |
| 4" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-400020 |
| 6" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-600020 |
| 8" P.E. STRAIGHT 20 FT LENGTHS- PE4710(SDR15.5) | 1-800020 |

SDR 17 available by request up to 24".
Larger sizes available by request up to 24"
in SDR 11 and SDR 15.5.



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POLYETHYLENE PIPE: COILS

| Size | Part Number |
|--|-------------|
| 3/4" X 100 FT. P.E. COILS -PE4710, SDR11 | 6-750100 |
| 3/4" X 200 FT. P.E. COILS -PE4710, SDR11 | 6-750200 |
| 3/4" X 300 FT. COILS-PE4710, SDR11 | 6-750300 |
| 3/4" X 500 FT. COILS-PE4710, SDR11 | 6-750500 |
| 3/4" X 600 FT. COILS-PE4710, SDR11 | 6-750600 |
| 3/4" X 700 FT. P.E. COILS -PE4710, SDR11 | 6-750700 |
| 3/4" X 800 FT. COILS-PE4710, SDR11 | 6-750800 |
| 3/4" X 1000 FT. COILS-PE4710, SDR11 | 6-7501000 |
| 1" X 100 FT. P.E. COILS -PE4710, SDR11 | 6-100100 |
| 1" X 200 FT. P.E. COILS -PE4710, SDR11 | 6-100200 |
| 1" X 300 FT. COILS-PE4710, SDR11 | 6-100300 |
| 1" X 500 FT. COILS-PE4710, SDR11 | 6-100500 |
| 1 1/4" X 100 FT. COILS-PE4710, SDR11 | 6-125100 |
| 1 1/4" X 200 FT. COILS-PE4710, SDR11 | 6-125200 |
| 1 1/4" X 300 FT. COILS-PE4710, SDR11 | 6-125300 |
| 1 1/4" X 500 FT. COILS-PE4710, SDR11 | 6-125500 |
| 1 1/2" X 100 FT. COILS-PE4710, SDR11 | 6-150100 |
| 1 1/2" X 200 FT. COILS-PE4710, SDR11 | 6-150200 |
| 1 1/2" X 300 FT. COILS-PE4710, SDR11 | 6-150300 |
| 2" X 100 FT. COILS-PE4710, SDR11 | 6-200100 |
| 2" X 200 FT. COILS-PE4710, SDR11 | 6-200200 |
| 2" X 300 FT. COILS-PE4710, SDR11 | 6-200300 |
| 3" X 300 FT. P.E. COILS -PE4710, SDR11 | 6-300300 |
| 4" X 300 FT. P.E. COILS -PE4710, SDR11 | 6-400300 |



| Size | Part Number |
|---|-------------|
| 2" X 100 FT. P.E. COILS - PE4710(SDR15.5) | 1-200100 |
| 2" X 200 FT. P.E. COILS - PE4710(SDR15.5) | 1-200200 |
| 2" X 300 FT. P.E. COILS - PE4710(SDR15.5) | 1-200300 |
| 3" X 300 FT. P.E. COILS - PE4710(SDR15.5) | 1-300300 |
| 4" X 300 FT. P.E. COILS - PE4710(SDR15.5) | 1-400300 |

Call for availability of other sizes.
Certain sizes special order.



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POLYETHYLENE PIPE: U-BEND COILS SDR11



| Size | Part Number |
|--|--------------------|
| 3/4" X 2-155 FT COILS-PE4710,SDR11 U-BEND COILS | 6-075U310 |
| 3/4" X 2-175 FT COILS--PE4710,SDR11 U-BEND COILS | 6-075U350 |
| 3/4" X 2-205 FT COILS-PE4710,SDR11 U-BEND COILS REVERSE | 6-075U410-R |
| 3/4" X 2-205 FT COILS--PE4710,SDR11 U-BEND COILS | 6-075U410 |
| 3/4" X 2-255 FT COILS--PE4710,SDR11 U-BEND COILS REVERSE | 6-075U510-R |
| 3/4" X 2-255 FT COILS--PE4710,SDR11 U-BEND COILS | 6-075U510 |
| 1" X 2-205 FT COILS--PE4710,SDR11 U-BEND COILS | 6-100U410 |
| 1" X 2-255 FT COILS--PE4710,SDR11 U-BEND COILS | 6-100U510 |
| 1" X 2-305 FT COILS--PE4710,SDR11 U-BEND COILS REVERSE | 6-100U610-R |
| 1" X 2-305 FT COILS-PE4710,SDR11 U-BEND COILS | 6-100U610 |
| 1 1/4" X 2-305 FT COILS-PE4710,SDR11 U-BEND COILS | 6-125U610 |
| 1 1/4" X 2-355 FT COILS-PE4710,SDR11 U-BEND COILS | 6-125U710 |
| 1 1/4" X 2-405 FT COILS-PE4710,SDR11 U-BEND COILS | 6-125U810 |

Call for availability of other sizes.



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SOCKET FITTINGS: COUPLINGS

| Size | Part Number | Bag Qty |
|-----------------------------|-------------|---------|
| 3/4" x 3/4" | SPC44 | 50 |
| 1" X 3/4" | SPC54 | 25 |
| 1" X 1" | SPC55 | 25 |
| 1 1/4" X 3/4" | SPC64 | 25 |
| 1 1/4" X 1" | SPC65 | 25 |
| 1 1/4" X 1 1/4" (Slim Line) | SPC66SL | 25 |
| 1 1/4" X 1 1/4" | SPC66 | 25 |
| 1 1/2" X 3/4" | SPC74 | 15 |
| 1 1/2" X 1" | SPC75 | 15 |
| 1 1/2" X 1 1/4" | SPC76 | 15 |
| 1 1/2" X 1 1/2" | SPC77 | 15 |
| 2" X 3/4" | SPC84 | 10 |
| 2" X 1" | SPC85 | 10 |
| 2" X 1 1/4" | SPC86 | 10 |
| 2" X 1 1/2" | SPC87 | 10 |
| 2" X 2" | SPC88 | 5 |
| 2" X 2" (Slim Line) | SPC88-SL | 5 |
| 2" X 2" (Heavy Duty) | SPC88-HD | 5 |
| 3" X 3" | SPC1010 | 5 |



Can be bought individually.
Call for availability of other sizes.



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SOCKET FITTINGS: ELBOWS

FUSION ELBOWS (FUSION X FUSION)

| Size | Part Number | Bag Qty |
|-----------------|-------------|---------|
| 3/4" x 3/4" | SPE44 | 50 |
| 1" X 3/4" | SPE54 | 50 |
| 1" X 1" | SPE55 | 25 |
| 1 1/4" X 3/4" | SPE64 | 20 |
| 1 1/4" X 1" | SPE65 | 20 |
| 1 1/4" X 1 1/4" | SPE66 | 25 |
| 1 1/2" X 1 1/2" | SPE77 | 10 |
| 2" X 1 1/4" | SPE86 | 5 |
| 2" X 2" | SPE88 | 5 |



FUSION 45° ELBOWS (FABRICATED)

| Size | Part Number |
|-----------------------------------|-------------|
| 1" X 1" - 45° ELBOW (FAB) | SPE55-45 |
| 1 1/2" X 1 1/2" - 45° ELBOW (FAB) | SPE77-45 |



FUSION 45° ELBOW MOLDED-----NEW

| Size | Part Number |
|-----------------------------|-------------|
| 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 |



NEED A SPECIAL SIZE?
FABRICATED SIZES AVAILABLE!
CALL YOUR SALESMAN, TODAY!

Can be bought individually.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

SOCKET FITTINGS: TEES

| Size | Part Number | Bag Qty |
|--------------------------|-------------|---------|
| 3/4" x 3/4" X 3/4" | SPT444 | 25 |
| 1" X 1" X 3/4" | SPT554 | 15 |
| 1" X 1" X 3/4" | SPT554V | 15 |
| 1" X 1" X 1" | SPT555 | 15 |
| 1 1/4" X 3/4" X 3/4" | SPT644 | 10 |
| 1 1/4" X 3/4" X 3/4" | SPT644V | 10 |
| 1 1/4" X 1" X 1" | SPT655 | 10 |
| 1 1/4" X 1" X 1" | SPT655V | 10 |
| 1 1/4" X 1 1/4" X 3/4" | SPT664 | 10 |
| 1 1/4" X 1 1/4" X 3/4" | SPT664V | 10 |
| 1 1/4" X 1 1/4" X 1" | SPT665 | 10 |
| 1 1/4" X 1 1/4" X 1 1/4" | SPT666 | 10 |
| 1 1/2" X 3/4" X 3/4" | SPT744 | 10 |
| 1 1/2" X 1" X 1" | SPT755 | 10 |
| 1 1/2" X 1" X 1 1/2" | SPT757 | 10 |
| 1 1/2" X 1 1/4" X 3/4" | SPT764 | 10 |
| 1 1/2" X 1 1/4" X 1" | SPT765 | 10 |
| 1 1/2" X 1 1/4" X 1 1/4" | SPT766 | 10 |
| 1 1/2" X 1 1/2" X 3/4" | SPT774 | 10 |
| 1 1/2" X 1 1/2" X 1" | SPT775 | 10 |
| 1 1/2" X 1 1/2" X 1 1/4" | SPT776 | 10 |



| Size | Part Number | Bag Qty |
|--------------------------|-------------|---------|
| 1 1/2" X 1 1/2" X 1 1/2" | SPT777 | 5 |
| 2" X 1 1/4" X 3/4" | SPT864 | 5 |
| 2" X 1 1/4" X 1" | SPT865 | 5 |
| 2" X 1 1/4" X 1 1/4" | SPT866 | 5 |
| 2" X 1 1/2" X 3/4" | SPT874 | 5 |
| 2" X 1 1/2" X 1" | SPT875 | 5 |
| 2" X 1 1/2" X 1 1/4" | SPT876 | 5 |
| 2" X 2" X 3/4" | SPT884 | 5 |
| 2" X 2" X 1" | SPT885 | 5 |
| 2" X 2" X 1 1/4" | SPT886 | 5 |
| 2" X 2" X 2" | SPT888 | 5 |

NEED A SPECIAL SIZE?
FABRICATED SIZES AVAILABLE!
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Can be bought individually.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

SOCKET FITTINGS: FUSION END CAPS, SOCKET FUSION REDUCERS



| Size | Part Number | Bag Qty |
|---------------------------------------|-------------|---------|
| 3/4" SOCKET FUSION CAP | SPCP4 | 50 |
| 1" SOCKET FUSION CAP | SPCP5 | 50 |
| 1 1/4" SOCKET FUSION CAP | SPCP6 | 50 |
| 1 1/2" SOCKET FUSION CAP | SPCP7 | 25 |
| 2" SOCKET FUSION CAP | SPCP8 | 15 |
| 3" SOCKET FUSION CAP | SPCP10 | 15 |
| 1 1/4" X 3/4" SOCKET FUSION REDUCER | SPRB64 | 10 |
| 1 1/4" X 1" SOCKET FUSION REDUCER | SPRB65 | 10 |
| 1 1/2" X 3/4" SOCKET FUSION REDUCER | SPRB74 | 10 |
| 1 1/2" X 1" SOCKET FUSION REDUCER | SPRB75 | 10 |
| 1 1/2" X 1 1/4" SOCKET FUSION REDUCER | SPRB76 | 10 |
| 2" X 3/4" SOCKET FUSION REDUCER | SPRB84 | 10 |
| 2" X 1" SOCKET FUSION REDUCER | SPRB85 | 10 |
| 2" X 1 1/4" SOCKET FUSION REDUCER | SPRB86 | 10 |
| 2" X 1 1/2" SOCKET FUSION REDUCER | SPRB87 | 10 |

Can be bought individually.
Call for availability of other sizes.



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



Fusion U-Bend



Fusion U-Do Elbow

| 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 |
| 1 1/4" FUSION U-BEND | SFUB6 |
| 1 1/4" U-BEND WITH COUPLING | SFUB6C |

| Size | Part Number | Bag Qty |
|--------------------------------------|-------------|---------|
| USE W/ SPE44 (U-DO 3/4" U-BEND) | SPEU44 | 50 |
| USE W/ SPE55 (U-DO 1" U-BEND) | SPEU55 | 50 |
| USE W/ SPEU-66M (U-DO 1 1/4" U-BEND) | SPEU-66F | 10 |
| USE W/ SPEU-66F (U-DO 1 1/4" U-BEND) | SPEU-66M | 10 |

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Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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PE FUSION FITTINGS: MALE ADAPTERS, MNT COUPLINGS, BRASS FEMALE ADAPTERS

VIEGA

| Size | Part Number | Bag Qty |
|-------------------------------------|-------------|---------|
| 3/4" FUSION X 3/4" MALE ADAPTER | SPMA44V | 10 |
| 3/4" FUSION X 1" MALE ADAPTER | SPMA45V | 10 |
| 1" FUSION X 3/4" MALE ADAPTER | SPMA54V | 10 |
| 1" FUSION X 1" MALE ADAPTER | SPMA55V | 10 |
| 1 1/4" FUSION X 3/4" MALE ADAPTER | SPMA64V | 10 |
| 1 1/4" FUSION X 1" MALE ADAPTER | SPMA65V | 10 |
| 1 1/4" FUSION X 1 1/4" MALE ADAPTER | SPMA66V | 10 |
| 1 1/4" FUSION X 1 1/2" MALE ADAPTER | SPMA67V | 10 |
| 1 1/2" FUSION X 1 1/2" MALE ADAPTER | SPMA77V | 5 |
| 2" FUSION X 2" MALE ADAPTER | SPMA88V | 5 |
| 3/4" X 1" FUSION MNT COUPLING | SPMC45S | 25 |
| 1" X 1" FUSION MNT COUPLING | SPMC55S | 25 |
| 1 1/4" FUSION X 1 1/4" MNT COUPLING | SPMC66S | 25 |



SPMA



SPMC

NUPI

| Size | Part Number | Bag Qty |
|--|-------------|---------|
| 3/4" FUSION X 3/4" MALE ADAPTER | SPMA44 | 10 |
| 1" FUSION X 3/4" MALE ADAPTER | SPMA54 | 10 |
| 1" FUSION X 1" MALE ADAPTER | SPMA55 | 10 |
| 1 1/4" FUSION X 3/4" MALE ADAPTER | SPMA64 | 10 |
| 1 1/4" FUSION X 1" MALE ADAPTER | SPMA65 | 10 |
| 1 1/4" FUSION X 1 1/4" MALE ADAPTER | SPMA66 | 10 |
| 1 1/2" FUSION X 1 1/2" MALE ADAPTER | SPMA77 | 5 |
| 2" FUSION X 2" MALE ADAPTER | SPMA88 | 5 |
| 3/4" X 3/4" FUSION COUPLING FEMALE ADAPTER | SPFA44 | 10 |
| 1" X 3/4" FUSION COUPLING FEMALE ADAPTER | SPFA54 | 10 |
| 1" X 1" FUSION COUPLING FEMALE ADAPTER | SPFA55 | 10 |
| 1 1/4" X 3/4" FUSION COUPLING FEMALE ADAPTER | SPFA64 | 10 |
| 1 1/4" X 1" FUSION COUPLING FEMALE ADAPTER | SPFA65 | 10 |
| 1 1/4" X 1 1/4" FUSION COUPLING FEMALE ADAPTER | SPFA66 | 10 |
| 1 1/2" X 1 1/2" FUSION COUPLING FEMALE ADAPTER | SPFA77 | 5 |
| 2" X 1 1/2" FUSION COUPLING FEMALE ADAPTER | SPFA87 | 5 |
| 2" X 2" FUSION COUPLING FEMALE ADAPTER | SPFA88 | 5 |



SPMA



SPFA

Can be bought individually.
Call for availability of other sizes.



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NEED A SPECIAL SIZE?
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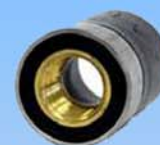
**PE FUSION FITTINGS: MALE THREADED TEE,
TEE W/ F. ADAPTER, COUPLING W/ F. ADAPTER**



SPMT



SPST



SPSC

| Size | Part Number | Bag Qty |
|--|-------------|---------|
| 1/2" FPT X 1" MNT X 1" SKT | SPMT355 | 10 |
| 3/4" X 1" FUSION MPT H.P. TEE | SPMT453 | 10 |
| 1"X 1" FUSION MPT H.P. TEE | SPMT553 | 10 |
| 1 1/4"SOC X 1 "SOC X 1" MNT - W/CAP | SPMT555 | 10 |
| 1 1/4"SOC X 1 1/4"SOC X 1" MNT - W/CAP | SPMT665S | 10 |
| 3/4"X 3/4" X 1/2" FUSION X FPT | SPST443 | 25 |
| 1"X 1" X 1/2" FUSION X FPT | SPST553 | 25 |
| 3/4" X 1/4" FUSION COUPLING FEMALE ADAPTER | SPSC42 | 50 |
| 3/4" X 1/2" FUSION COUPLING FEMALE ADAPTER | SPSC43 | 50 |
| 1" X 1/4" FUSION COUPLING FEMALE ADAPTER | SPSC52 | 10 |
| 1" X 1/2" FUSION COUPLING FEMALE ADAPTER | SPSC53 | 10 |
| 1" X 3/4" FUSION COUPLING FEMALE ADAPTER | SPSC54 | 10 |

| Size | Part Number | Bag Qty |
|---|-------------|---------|
| 1" FUSION ELBOW X 1" MALE ADAPTER | SPE-MA55 | 10 |
| 1 1/4" FUSION ELBOW X 1 1/4" MALE ADAPTER | SPE-MA66 | 10 |



Can be bought individually.
Call for availability of other sizes.



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PE FUSION FITTINGS: MALE THREADED ELBOW, FUSION BALL VALVE



SPME



SPEV66C



BPEV66

| Size | Part Number | Bag Qty |
|---------------------------------------|-------------|---------|
| 3/4" X 1" FUSION M.T. ELBOW | SPME45S | 25 |
| 1" X 1" FUSION M.T. ELBOW | SPME55S | 25 |
| 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 | - |

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ACCESSORIES: P.E. FLUSH VALVES



PEVT566S



SPMT665S



PEVT666S



PE2VT666S



HEAT PUMP
CONNECTION



PEVTM566S / PEVTM666S

| Size | Part Number |
|---|-------------|
| 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. FLOW CENTER FLUSH TEE STRAIGHT 1" x 1 1/4" FUSION | PEVT566S |
| P.E. FLOW CENTER 90 FLUSH TEE 1" x 1 1/4" FUSION | PEVT566E |
| P.E. STRAIGHT VALVED FLUSH TEE 1 1/4" x 1 1/4" FUSION | PEVT666S |
| P.E. FLUSH TEE, 2 VALVED 1 1/4" x 1 1/4" STRAIGHT | PE2VT666S |
| 1-1/4" SOC X 1" SOC X 1" MNT FUSION TEE - W/CAP | SPMT555 |
| 1-1/4" SOC X 1-1/4" SOC X 1" MNT FUSION TEE - W/CAP | SPMT665S |
| HEAT PUMP CONNECTION ASSEMBLY 1" W/ PT PORT | SPMT355V |
| HEAT PUMP CONNECTION ASSEMBLY 1 1/4" W/ PT PORT | SPMT356V |
| 1" PE BY-PASS ASSEMBLY W/ FLUSH PORTS | BPVA5 |
| 1 1/4" PE BY-PASS ASSEMBLY W/ FLUSH PORTS | BPVA6 |
| 2" PE BY-PASS ASSEMBLY W/ FLUSH PORTS | BPVA8 |



BPVA

NEED A SPECIAL SIZE?
FABRICATED SIZES AVAILABLE!
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Call for availability of other sizes.



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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 |

NEED A SPECIAL SIZE?
FABRICATED SIZES AVAILABLE!
CALL YOUR SALESMAN, TODAY!

PARALLEL HEADERS ARE SOLD INDIVIDUALLY , NOT AS A PAIR.



| Size | Part Number |
|------------------------------|-------------|
| 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 (3) 1" OUTLETS | SK855K02 |
| 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 |

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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 |



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

| 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 |

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ALL THE "PUMP" YOU NEED AND MORE

SOCKET FITTINGS: COMPLETE HEADER INSTALLATION KITS



FC-LK-3TON
PARTS INCLUDED

(2) SK644K02 (6) SPE66



FC-LK-4TON
PARTS INCLUDED

(2) SK644K03 (6) SPE66



FC-LK-5TON
PARTS INCLUDED

(2) SK644K04 (6) SPE66



FC-LK-6TON
PARTS INCLUDED

(2) SK644K05 (6) SPE66

Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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. Also, standard manifold will have 90-degree PVC to Compression P.E. Fittings or straight PVC to Compression P.E. Fittings. A = 90 degree, S = straight.

| 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.

Call for availability of other sizes.
Call for availability on non-insulated.



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MANIFOLDS: P.E. MANIFOLDS "SPECIAL ORDER ONLY"



All manifolds come in pairs when ordered.

A= 90 degree S= Straight

| 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

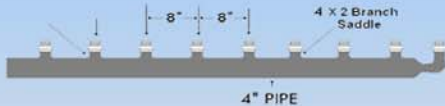
Call for availability of other sizes.



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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.



ALL THE "PUMP" YOU NEED AND MORE

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STAB FITTINGS: COUPLINGS, 90° ELBOW, STRAIGHT TEE, REPAIR SCOPE

GEO-STAB™ COUPLING

| Size | Part Number |
|--|-------------|
| 3/4" IPS SDR11 GEO-STAB™ FULL COUPLING | P1007754 |
| 1" IPS SDR11 GEO-STAB™ FULL COUPLING | P1007755 |
| 1 1/4" IPS SDR11 GEO-STAB™ FULL COUPLING | P1007756 |
| 1 1/2" IPS SDR11 GEO-STAB™ FULL COUPLING | P1007757 |
| 2" IPS SDR11 GEO-STAB™ FULL COUPLING | P1007758 |



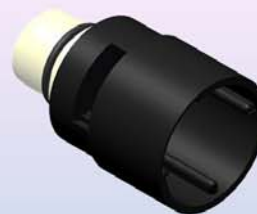
GEO-STAB™ HALF COUPLING X FOR SOCKET FUSION

| Size | Part Number |
|---|-------------|
| 1" IPS SDR11 X 1" SOCKET FUSION GEO-STAB™ HALF COUPLING | P1007726 |
| 1 1/4" IPS SDR11 X 1 1/4" SOCKET FUSION GEO-STAB™ HALF COUPLING | P1007727 |
| 1 1/2" IPS SDR11 X 1 1/2" SOCKET FUSION GEO-STAB™ HALF COUPLING | P1007728 |
| 2" IPS SDR11 X 2" SOCKET FUSION GEO-STAB™ HALF COUPLING | P1007729 |



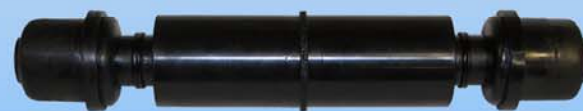
CHAMFER TOOL

| Size | Part Number |
|-------------------------------------|-------------|
| 3/4" IPS SDR-11 STAB CHAMFER TOOL | 33658013 |
| 1" IPS SDR-11 STAB CHAMFER TOOL | 33658014 |
| 1 1/4" IPS SDR-11 STAB CHAMFER TOOL | 33658010 |
| 1 1/2" IPS SDR-11 STAB CHAMFER TOOL | 33658016 |
| 2" IPS SDR-11 STAB CHAMFER TOOL | 33659017 |



GEO-STAB™ REPAIR SCOPE

| Size | Part Number |
|---|-------------|
| 3/4" IPS SDR11 GEO-STAB™ REPAIR SCOPE | P1007744 |
| 1" IPS SDR11 GEO-STAB™ REPAIR SCOPE | P1007745 |
| 1 1/4" IPS SDR11 GEO-STAB™ REPAIR SCOPE | P1007746 |
| 1 1/2" IPS SDR11 GEO-STAB™ REPAIR SCOPE | P1007747 |
| 2" IPS SDR11 GEO-STAB™ REPAIR SCOPE | P1007748 |



Call for availability of other sizes and fitting options.



ALL THE "PUMP" YOU NEED AND MORE

BUTT FUSION FITTINGS: REDUCERS, BUTT FUSION MALE ADAPTERS

REDUCERS

| Size | Part Number |
|-------------------------------------|-------------|
| 1" X 3/4" BUTT FUSION REDUCER | BFPRC-54 |
| 1 1/4" X 1" BUTT FUSION REDUCER | BFPRC-65 |
| 1 1/2" X 3/4" BUTT FUSION REDUCER | BFPRC-74 |
| 1 1/2" X 1" BUTT FUSION REDUCER | BFPRC-75 |
| 1 1/2" X 1 1/4" BUTT FUSION REDUCER | BFPRC-76 |
| 2" X 1" BUTT FUSION REDUCER | BFPRC-85 |
| 2" X 1 1/4" BUTT FUSION REDUCER | BFPRC-86 |
| 2" X 1 1/2" BUTT FUSION REDUCER | BFPRC-87 |
| 3" X 2" BUTT FUSION REDUCER | BFPRC-108 |
| 4" X 2" BUTT FUSION REDUCER | BFPRC-118 |
| 4" X 3" BUTT FUSION REDUCER | BFPRC-1110 |
| 6" X 3" BUTT FUSION REDUCER | BFPRC-1210 |
| 6" X 4" BUTT FUSION REDUCER | BFPRC-1211 |
| 8" X 6" BUTT FUSION REDUCER | BFPRC-1412 |
| 10" X 8" BUTT FUSION REDUCER | BFPRC-1614 |
| 12" X 10" BUTT FUSION REDUCER | BFPRC-1816 |



BUTT FUSION MALE ADAPTERS INTERNAL EPOXY COATED / BRASS

| Size | Part Number |
|---|-------------|
| 3/4" BUTT FUSION X 3/4" MALE ADAPTER EPOXY COATED | BFPMA44 |
| 1" BUTT FUSION X 1" MALE ADAPTER EPOXY COATED | BFPMA55 |
| 1 1/4" BUTT FUSION X 1" MALE ADAPTER (BRASS) | BFPMA65 |
| 1 1/4" BUTT FUSION X 1 1/4" MALE ADAPTER EPOXY COATED | BFPMA66 |
| 1 1/2" BUTT FUSION X 1 1/2" MALE ADAPTER (BRASS) | BFPMA77 |
| 2" BUTT FUSION X 2" MALE ADAPTER (BRASS) | BFPMA88 |
| 3" BUTT FUSION X 3" MALE ADAPTER EPOXY COATED | BFPMA-10 |
| 4" BUTT FUSION X 4" MALE ADAPTER EPOXY COATED | BFPMA-11 |
| 6" BUTT FUSION X 6" MALE ADAPTER EPOXY COATED | BFPMA-12 |



*All Butt Fusion Male Adapters available in epoxy or Brass.

Call for availability of other sizes.



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BUTT FUSION FITTINGS: SS MALE ADAPTERS, TEES, CAPS & WYES

STAINLESS STEEL BUTT FUSION MALE ADAPTERS

| Size | Part Number |
|--|-------------|
| 3/4" MPT SS X 3/4" PE 3408 BUTT FUSION | BFPSSMA-44 |
| 1" MPT SS X 1" PE 3408 BUTT FUSION | BFPSSMA-55 |
| 1 1/4" MPT SS X 1 1/4" PE 3408 BUTT FUSION | BFPSSMA-66 |
| 1 1/2" MPT SS X 1 1/2" PE 3408 BUTT FUSION | BFPSSMA-77 |
| 2" MPT SS X 2" PE 3408 BUTT FUSION | BFPSSMA-88 |



BUTT FUSION TEES

| Size | Part Number |
|------------------------|-------------|
| 1" BUTT FUSION TEE | BFPT-5 |
| 1 1/4" BUTT FUSION TEE | BFPT-6 |
| 1 1/2" BUTT FUSION TEE | BFPT-7 |
| 2" BUTT FUSION TEE | BFPT-8 |
| 3" BUTT FUSION TEE | BFPT-10 |
| 4" BUTT FUSION TEE | BFPT-11 |
| 6" BUTT FUSION TEE | BFPT-12 |
| 8" BUTT FUSION TEE | BFPT-14 |
| 10" BUTT FUSION TEE | BFPT-16 |
| 12" BUTT FUSION TEE | BFPT-18 |



BUTT FUSION CAPS

| Size | Part Number |
|---------------------|-------------|
| 2" BUTT FUSION CAP | BFPCP-8 |
| 3" BUTT FUSION CAP | BFPCP-10 |
| 4" BUTT FUSION CAP | BFPCP-11 |
| 6" BUTT FUSION CAP | BFPCP-12 |
| 8" BUTT FUSION CAP | BFPCP-14 |
| 10" BUTT FUSION CAP | BFPCP-16 |
| 12" BUTT FUSION CAP | BFPCP-18 |



BUTT FUSION WYES

| Size | Part Number |
|----------------------------------|-------------|
| 2" BUTT FUSION WYE | BFPY8 |
| 3" BUTT FUSION WYE - COMING SOON | BFPY10 |
| 4" BUTT FUSION WYE - COMING SOON | BFPY11 |



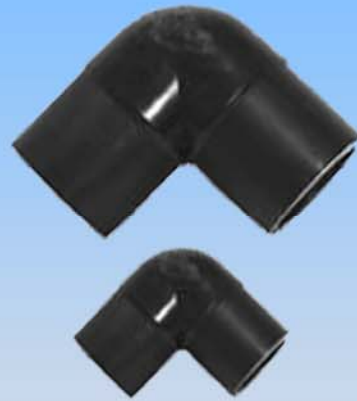
Call for availability of other sizes.



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BUTT FUSION FITTINGS: 90° ELBOWS, 45° ELBOWS

| Size | Part Number |
|--------------------------|-------------|
| 1" BUTT FUSION ELBOW | BFPE-5 |
| 1 1/4" BUTT FUSION ELBOW | BFPE-6 |
| 1 1/2" BUTT FUSION ELBOW | BFPE-7 |
| 2" BUTT FUSION ELBOW | BFPE-8 |
| 3" BUTT FUSION ELBOW | BFPE-10 |
| 4" BUTT FUSION ELBOW | BFPE-11 |
| 6" BUTT FUSION ELBOW | BFPE-12 |
| 8" BUTT FUSION ELBOW | BFPE-14 |
| 10" BUTT FUSION ELBOW | BFPE-16 |
| 12" BUTT FUSION ELBOW | BFPE-18 |



| Size | Part Number |
|---------------------------------|-------------|
| 2" LONG SWEEP BUTT FUSION ELBOW | BFPE8-SW |
| 3" LONG SWEEP BUTT FUSION ELBOW | BFPE10-SW |
| 4" LONG SWEEP BUTT FUSION ELBOW | BFPE11-SW |
| 6" LONG SWEEP BUTT FUSION ELBOW | BFPE12-SW |
| 8" LONG SWEEP BUTT FUSION ELBOW | BFPE14-SW |



| Size | Part Number |
|--------------------------------------|-------------|
| 1" BUTT FUSION 45 DEG EL PE 3408 | BFPE-5-45 |
| 1 1/4" BUTT FUSION 45 DEG EL PE 3408 | BFPE-6-45 |
| 1 1/2" BUTT FUSION 45 DEG EL PE 3408 | BFPE-7-45 |
| 2" BUTT FUSION 45 DEG EL PE 3408 | BFPE-8-45 |
| 3" BUTT FUSION 45 DEG EL PE 3408 | BFPE-10-45 |
| 4" BUTT FUSION 45 DEG EL PE 3408 | BFPE-11-45 |
| 6" BUTT FUSION 45 DEG EL PE 3408 | BFPE-12-45 |
| 8" BUTT FUSION 45 DEG EL PE 3408 | BFPE-14-45 |
| 10" BUTT FUSION 45 DEG EL PE 3408 | BFPE-16-45 |
| 12" BUTT FUSION 45 DEG EL PE 3408 | BFPE-18-45 |



Call for availability of other sizes.



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BUTT FUSION FITTINGS: ADAPTERS, BACK-UP RINGS

| Size | Part Number |
|--|-------------|
| 2" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-8-T |
| 3" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-10-T |
| 4" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-11-T |
| 6" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-12-T |
| 8" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-14-T |
| 10" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-16-T |
| 12" BUTT FUSION FLANGE ADAPTER-TAPERED | BFPFA-18-T |
| 14" BUTT FUSION FLANGE ADAPTER | BFPFA-20 |
| 16" BUTT FUSION FLANGE ADAPTER | BFPFA-22 |
| 18" BUTT FUSION FLANGE ADAPTER | BFPFA-24 |

**Un-tapered are special order



| Size | Part Number |
|---------------------------------|-------------|
| 2" IPS METAL BACK-UP RING 150# | DFIBR-8 |
| 3" IPS METAL BACK-UP RING 150# | DFIBR-10 |
| 4" IPS METAL BACK-UP RING 150# | DFIBR-11 |
| 6" IPS METAL BACK-UP RING 150# | DFIBR-12 |
| 8" IPS METAL BACK-UP RING 150# | DFIBR-14 |
| 10" IPS METAL BACK-UP RING 150# | DFIBR-16 |
| 12" IPS METAL BACK-UP RING 150# | DFIBR-18 |
| 14" IPS METAL BACK-UP RING 150# | DFIBR-20 |
| 16" IPS METAL BACK-UP RING 150# | DFIBR-22 |
| 18" IPS METAL BACK-UP RING 150# | DFIBR-24 |
| 24" IPS METAL BACK-UP RING 150# | DFIBR-30 |



**Do to variations in valve dimensions, the installer should verify proper function of the valve at the time of installation. Call for availability of other sizes.



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BUTT FUSION FITTINGS: MJ ADAPTERS

| Size | Part Number |
|---|-------------|
| 2" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ8 |
| 3" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ10 |
| 4" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ11 |
| 6" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ12 |
| 8" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ14 |
| 10" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ16* |
| 12" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ18* |
| 16" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ22* |
| 18" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ24* |
| 24" IPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ30* |



| Size | Part Number |
|--|-------------|
| 4" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ11 |
| 6" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ12 |
| 8" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ14 |
| 10" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ16* |
| 12" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ18* |
| 16" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ22* |
| 18" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ24* |
| 24" DIPS x DIPS MJ Adapter AWWA SDR11 HDPE-3408/4710 | BFPMJ30* |

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



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BUTT FUSION FITTINGS: MJ ACCESSORY KITS

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

| Size | Part Number |
|--------------------------------|-------------|
| 6" IPS AWWA M J ACCESSORY KITS | MJ12-KIT |
| 8" IPS AWWA M J ACCESSORY KITS | MJ14-KIT |



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

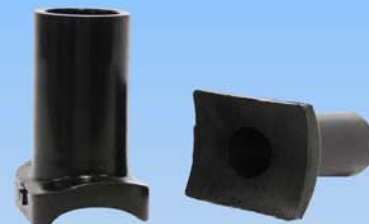


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SADDLE FITTINGS: SERVICE SADDLES

| Size | Part Number |
|---|-----------------|
| 1 1/4" X 1/2" SOCKET FUSION 3/4" BUTT FUSION SERVICE SADDLE | BFPSS-63S/64B |
| 1 1/4" X 3/4" BUTT FUSION SERVICE SADDLE: BUTT FUSED OUTLET | BFPSS-64B |
| 1 1/4" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-64S/65B |
| 1 1/4" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-65S |
| 1 1/2" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-74S/75B |
| 1 1/2" X 3/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-74S |
| 1 1/2" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-75S |
| 1 1/2" X 1 1/4" SERVICE SADDLE: BUTT FUSED OUTLET | BFPSS-76B |
| 2" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-84S/85B |
| 2" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE | BFPSS-85S/86B |
| 2" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-86S |
| 3" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-104S/105B |
| 3" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE | BFPSS-105S/106B |
| 3" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-106S |
| 3 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B. | BFPSS107B |
| 4" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-114S/115B |
| 4" X 1" SOCKET FUSION 1 1/4" BUTT FUSION SERVICE SADDLE | BFPSS-115S/116B |
| 4" X 1 1/4" SERVICE SADDLE: BUTT FUSED OUTLET | BFPSS-116B |
| 4" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-116S |
| 4 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B. | BFPSS117B |
| 6" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-124S/125B |
| 6" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-125S |
| 6" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-126S |
| 6 X 1 1/2" SERVICE SADDLE: BUTT FUSED OUTLET-ROUND B. | BFPSS-127B |
| 8" X 3/4" SOCKET FUSION 1" BUTT FUSION SERVICE SADDLE | BFPSS-144S/145B |
| 8" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET | BFPSS-145S |
| 10 X 1 1/4" SERVICE SADDLE: BUTT FUSED OUTLET | BFPSS166B |



Call for availability of other sizes.



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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. | BFPBS-1110 |
| 6" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-128 |
| 6" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1210 |
| 6" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1211 |
| 8" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-148 |
| 8" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1410 |
| 8" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1411 |
| 8" X 6" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1412 |
| 10" X 1 1/4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1606 |
| 10" X 2" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1608 |
| 10" X 3" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1610 |
| 10" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1611 |
| 12" X 4" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-1811 |
| 18" X 6" BRANCH SADDLE BUTT FUSED OUTLET-ROUND B. | BFPBS-2412 |

Call for availability of other sizes.



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MOLDED & FABRICATED TEES: BUTT TEES ONLY



FABRICATED TEES

| Size | Part Number |
|-------------------------------|----------------|
| 3"BUTT x 3"BUTT x 3/4" BUTT | BFPT 1010-4BF |
| 3"BUTT x 3"BUTT x 1 1/2" BUTT | BFPT 1010-7BF |
| 4"BUTT x 4"BUTT x 3/4"BUTT | BFPT 1111-4BF |
| 4"BUTT x 4"BUTT x 1"BUTT | BFPT 1111-5BF |
| 4"BUTT x 4"BUTT x 1 1/4"BUTT | BFPT 1111-6BF |
| 4"BUTT x 4"BUTT x 1 1/2"BUTT | BFPT 1111-7BF |
| 4"BUTT x 4"BUTT x 3"BUTT | BFPT 1111-10BF |
| 6"BUTT x 4"BUTT x 3"BUTT | BFPT 1211-10BF |
| 6"BUTT x 4"BUTT x 4"BUTT | BFPT 1211-11BF |
| 6"BUTT x 6"BUTT x 3/4"BUTT | BFPT 1212-4BF |
| 6"BUTT x 6"BUTT x 1"BUTT | BFPT 1212-5BF |
| 6"BUTT x 6"BUTT x 1 1/4"BUTT | BFPT 1212-6BF |
| 6"BUTT x 6"BUTT x 1 1/2"BUTT | BFPT 1212-7BF |
| 6"BUTT x 6"BUTT x 3"BUTT | BFPT 1212-10BF |
| 6"BUTT x 6"BUTT x 4"BUTT | BFPT 1212-11BF |
| 8"BUTT x 8"BUTT x 3/4"BUTT | BFPT 1414-4BF |
| 8"BUTT x 8"BUTT x 1"BUTT | BFPT 1414-5BF |
| 8"BUTT x 8"BUTT x 1 1/4"BUTT | BFPT 1414-6BF |
| 8"BUTT x 8"BUTT x 1 1/2"BUTT | BFPT 1414-7BF |
| 8"BUTT x 8"BUTT x 2"BUTT | BFPT 1414-8BF |
| 8"BUTT x 8"BUTT x 3"BUTT | BFPT 1414-10BF |
| 8"BUTT x 8"BUTT x 4"BUTT | BFPT 1414-11BF |



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 |

Non-Stock Items - Lead Time 14 days
Call for availability of other sizes.



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FABRICATED TEES: BUTT-BUTT-SOCKET TEES ONLY, BUTT-BUTT-MPT ADAPTER

| Size | Part Number |
|-----------------------------------|---------------|
| 3" BUTT x 3" BUTT x 3/4" SOCKET | BFPT 1010-4SF |
| 3" BUTT x 3" BUTT x 1" SOCKET | BFPT 1010-5SF |
| 3" BUTT x 3" BUTT x 1 1/4" SOCKET | BFPT 1010-6SF |
| 4" BUTT x 4" BUTT x 3/4" SOCKET | BFPT 1111-4SF |
| 4" BUTT x 4" BUTT x 1" SOCKET | BFPT 1111-5SF |
| 4" BUTT x 4" BUTT x 1 1/4" SOCKET | BFPT 1111-6SF |
| 6" BUTT x 6" BUTT x 3/4" SOCKET | BFPT 1212-4SF |
| 6" BUTT x 6" BUTT x 1" SOCKET | BFPT 1212-5SF |
| 6" BUTT x 6" BUTT x 1 1/4" SOCKET | BFPT 1212-6SF |
| 8" BUTT x 8" BUTT x 3/4" SOCKET | BFPT 1414-4SF |
| 8" BUTT x 8" BUTT x 1" SOCKET | BFPT 1414-5SF |
| 8" BUTT x 8" BUTT x 1 1/4" SOCKET | BFPT 1414-6SF |

| Size | Part Number |
|---|-----------------|
| 3" BUTT x 3" BUTT x 3/4" MALE PIPE THREAD | BFPT 1010-4-MPT |
| 3" BUTT x 3" BUTT x 1" MALE PIPE THREAD | BFPT 1010-5-MPT |
| 3" BUTT x 3" BUTT x 1 1/4" MALE PIPE THREAD | BFPT 1010-6-MPT |
| 3" BUTT x 3" BUTT x 2" MALE PIPE THREAD | BFPT 1010-8-MPT |
| 4" BUTT x 4" BUTT x 3/4" MALE PIPE THREAD | BFPT 1111-4-MPT |
| 4" BUTT x 4" BUTT x 1" MALE PIPE THREAD | BFPT 1111-5-MPT |
| 4" BUTT x 4" BUTT x 1 1/4" MALE PIPE THREAD | BFPT 1111-6-MPT |
| 4" BUTT x 4" BUTT x 2" MALE PIPE THREAD | BFPT 1111-8-MPT |
| 6" BUTT x 6" BUTT x 3/4" MALE PIPE THREAD | BFPT 1212-4-MPT |
| 6" BUTT x 6" BUTT x 1" MALE PIPE THREAD | BFPT 1212-5-MPT |
| 6" BUTT x 6" BUTT x 1 1/4" MALE PIPE THREAD | BFPT 1212-6-MPT |
| 6" BUTT x 6" BUTT x 2" MALE PIPE THREAD | BFPT 1212-8-MPT |
| 8" BUTT x 8" BUTT x 3/4" MALE PIPE THREAD | BFPT 1414-4-MPT |
| 8" BUTT x 8" BUTT x 1" MALE PIPE THREAD | BFPT 1414-5-MPT |
| 8" BUTT x 8" BUTT x 1 1/4" MALE PIPE THREAD | BFPT 1414-6-MPT |
| 8" BUTT x 8" BUTT x 2" MALE PIPE THREAD | BFPT 1414-8-MPT |



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ELECTROFUSION FITTINGS: COUPLINGS

CENTRAL

| Size | Part Number |
|--|-------------|
| 1" IPS 3408 ELECTROFUSION COUPLING | 5760024C |
| 1 1/4" IPS 3408 ELECTROFUSION COUPLING | 5760026C |
| 1 1/2" IPS 3408 ELECTROFUSION COUPLING | 5760028C |
| 2" IPS 3408 ELECTROFUSION COUPLING | 5760030C |
| 3" IPS 3408 ELECTROFUSION COUPLING | 10000358C |
| 4" IPS 3408 ELECTROFUSION COUPLING | 10000360C |
| 6" IPS 3408 ELECTROFUSION COUPLING | 10000359C |
| 8" IPS 3408 ELECTROFUSION COUPLING | 10000361C |
| 10" IPS 3408 ELECTROFUSION COUPLING | 100004579C |
| 12" IPS 3408 ELECTROFUSION COUPLING | 100004571C |



NUPI

| Size | Part Number |
|--|-------------|
| 1/2" CTS ELECTROFUSION COUPLING 230 PSI | 12EIME12C |
| 3/4" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME34 |
| 1" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME01 |
| 1" CTS ELECTROFUSION COUPLING 230 PSI | 12EIME01C |
| 1 1/4" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME114 |
| 2" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME02 |
| 3" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME03 |
| 4" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME04 |
| 6" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME06 |
| 8" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME08 |
| 10" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME10 |
| 12" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME12 |
| 14" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME14 |
| 16" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME16 |
| 18" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME18 |
| 20" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME20 |
| 24" IPS ELECTROFUSION COUPLING 230 PSI | 12EIME24 |



EF Couplings 14" thru 24" Special Order.
Ask how big we can go.

We also offer DIPS EF Couplings
Call for availability of other sizes.



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75

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ELECTROFUSION FITTINGS: BRANCH SADDLE

| Size | Part Number |
|---|--------------|
| 2" X 3/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0234 |
| 2" X 1" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0201 |
| 2" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL02114 |
| 2" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0202 |
| 3" X 3/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0334 |
| 3" X 1" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0301 |
| 3" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL03114 |
| 3" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0302 |
| 4" X 3/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0434 |
| 4" X 1" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0401 |
| 4" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL04114 |
| 4" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0402 |
| 6" X 3/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0634 |
| 6" X 1" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0601 |
| 6" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL06114 |
| 6" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0602 |
| 6" x 3" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0603 |
| 8" X 3/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0834 |
| 8" X 1" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0801 |
| 8" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL08114 |
| 8" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0802 |
| 8" X 3" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0803 |
| 8" X 4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL0804 |
| 10" X 1 1/4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL10114 |
| 10" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL1002 |
| 10" X 6" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL1006 |
| 12" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL1202 |
| 12" X 4" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL1204 |
| 12" X 6" IPS NUPI EF BRANCH SADDLE 230 PSI (Elofit) | 12EICOL1206 |
| NUPI to CENTRAL MALE & FEMALE CONNECTOR | 12E8202 |



12E8202

Call for availability of other sizes.



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ELECTROFUSION FITTINGS: TEES, ELBOWS & REDUCERS



| Size | Part Number |
|--|-------------|
| 2" IPS ELECTROFUSION ELBOW | 12EIGEM02 |
| 3" IPS ELECTROFUSION ELBOW | 12EIGEM03 |
| 2" IPS ELECTROFUSION TEE W/ SPIGOT END 230 PSI | 12EITCE02 |

| Size | Part Number |
|---|-------------|
| 3" X 2" IPS ELECTROFUSION REDUCER PE 4710/230 PSI | 12EIRDE0302 |
| 4" X 2" IPS ELECTROFUSION REDUCER PE 4710/230 PSI | 12EIRDE0402 |
| 6" X 4" IPS ELECTROFUSION REDUCER PE 4710/230 PSI | 12EIRDE0604 |



| Size | Part Number |
|---|--------------|
| 2" X 1" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0201 |
| 2" X 3/4" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0234 |
| 3" X 1" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0301 |
| 3" X 3/4" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0334 |
| 4" X 1" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0401 |
| 4" X 3/4" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0434 |
| 6" X 1" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0601 |
| 6" X 3/4" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0634 |
| 6" X 2" HIGH VOLUME IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0634 |
| 8" X 1" IPS ELECTROFUSION BRANCH SDLE TAPPING TEE - BUTT 230PSI | 12EIPRES0801 |



12EIPRES0634

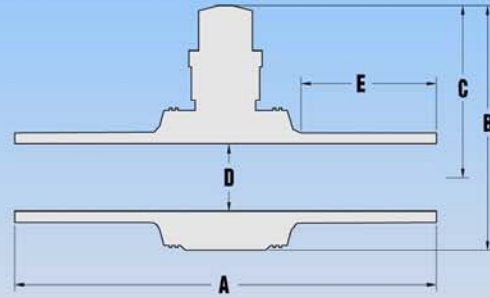
Call for availability of other sizes.



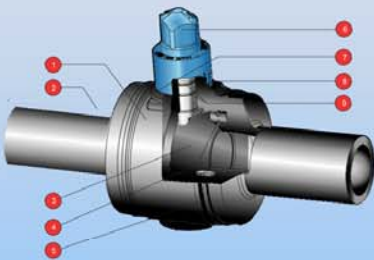
ALL THE "PUMP" YOU NEED AND MORE

ACCESSORIES: KEROTEST POLYBALL

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.



| Size | Part Number | Valve Sizes and Dimensions (Approx. Inches) | | | | | Full Port |
|--|--------------|---|------|------|------|-----|-----------|
| | | A | B | C | D | E | Cv |
| 1 1/4" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | BFPV66FP-K | 11.8 | 6.9 | 5.2 | 1.38 | 3.2 | 49 |
| 2" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | BFPV88FP-K | 19 | 9.7 | 7.0 | 1.90 | 6.4 | 180 |
| 3" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | BFPV1010FP-K | 21 | 12.2 | 8.7 | 2.70 | 6.4 | 400 |
| 4" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | BFPV1111FP-K | 25 | 14.8 | 10.2 | 3.63 | 7.6 | 710 |
| 6" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | BFPV1212FP-K | 27 | 19.6 | 13.2 | 5.25 | 7.0 | 1900 |
| 8" FULL PORT POLYBALL 4710-SDR11 Butt Fusion-NSF/ANSI 61 | 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



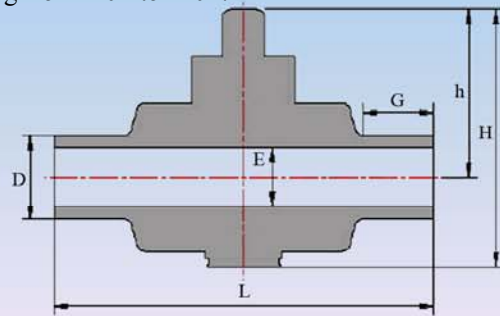
ALL THE "PUMP" YOU NEED AND MORE

ACCESSORIES: POLYBALL VALVES

Full-port design independently evaluated and tested. SDR11 standard. All plastic, corrosion-free with bi-directional sealing system. Temperature rated from -20°F to 140°F. Permanently marked fully traceable production information. Easy identification of open/closed position. Can be butt fused or electrofused. Gear actuation available.

MATERIALS:

| | | |
|------------------|----------|---|
| BODY: | PE RESIN | Black pre-blending bi-modal high density polyethylene resin. |
| ACTUATOR NUT: | ABS | High Strength, works with standard 2" square drive tool. |
| ACTUATOR STEM: | ABS | Durable, withstands high operating torque under demanding conditions. |
| BALL & RETAINER: | NYLON | High strength, tough, smooth surface for superior sealing. |
| BALL SEAT: | NBR | Reliable and durable sealing from -20F to 140F. |
| O-RINGS: | NBR | Reliable and durable sealing from -20F to 140F. |



DIMENSIONS IN INCHES

| Size | Part Number | D | E(Min) | G | h | H | L |
|---|-------------|---------|--------|-------|-------------|-------------|--------|
| 1 1/4" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV66FP | 1.66" | 1.33" | 2.75" | 4.75" | 7.125" | 12.60" |
| 2" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV88FP | 2.375" | 1.83" | 3.15" | 5.70" | 8.50" | 14.00" |
| 3" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1010FP | 3.5" | 2.50" | 3.15" | 7.90" | 11.50" | 14.00" |
| 4" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1111FP | 4.5" | 3.55" | 4.50" | 11.15" | 16.00" | 20.35" |
| 6" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1212FP | 6.625" | 4.75" | 3.60" | 12.50" | 18.50" | 20.00" |
| 8" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1414FP | 8.625" | 7.16" | 5.90" | 16.00" | 24.00" | 27.50" |
| 10" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1616FP | 10.750" | 9.05" | 5.35" | 15.55"/*23" | 25.75"/*33" | 27.00" |
| 12" FULL PORT POLYBALL 3408-SR11 Butt Fusion | BFPV1818FP | 12.750" | 9.05" | 5.35" | 15.55"/*23" | 25.75"/*33" | 27.00" |

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



Valve Sizes and Dimensions (approx) in.



ALL THE "PUMP" YOU NEED AND MORE

COMPRESSION FITTINGS: ADAPTERS, TEST CAPS W/ BUSHING

| Size | Part Number |
|---|-------------|
| 3/4" COMPRESSION X 3/4" FEMALE ADAPTER FOR P.E. | ELO-44-FA |
| 1" COMPRESSION X 1" FEMALE ADAPTER FOR P.E. | ELO-55-FA |
| 1 1/4" COMPRESSION X 1 1/4" FEMALE ADAPTER FOR P.E. | ELO-66-FA |
| 1 1/2" COMPRESSION X 1 1/2" FEMALE ADAPTER FOR P.E. | ELO-77-FA |
| 2" COMPRESSION X 2" FEMALE ADAPTER FOR P.E. | ELO-88-FA |



| Size | Part Number |
|---|-------------|
| 3/4" COMPRESSION X 3/4" MALE ADAPTER FOR P.E. | ELO-44-MA |
| 1" COMPRESSION X 1" MALE ADAPTER FOR P.E. | ELO-55-MA |
| 1 1/4" COMPRESSION X 1 1/4" MALE ADAPTER FOR P.E. | ELO-66-MA |
| 1 1/2" COMPRESSION X 1 1/2" MALE ADAPTER FOR P.E. | ELO-77-MA |
| 2" COMPRESSION X 2" MALE ADAPTER FOR P.E. | ELO-88-MA |



| Size | Part Number |
|-----------------------------|-------------|
| TEST CAP W/ 3/4" X 1/4" FPT | ELO-42-TC |
| TEST CAP W/ 1" X 1/4" FPT | ELO-52-TC |
| TEST CAP 1 1/4" X 1/4" FPT | ELO-62-TC |
| TEST CAP 1 1/2" X 1/4" FPT | ELO-72-TC |
| TEST CAP 2" X 1/4" FPT | ELO-82-TC |



| Size | Part Number |
|----------------------------|--------------|
| 3/4" TEST CAP KIT | ELO-TC4-Kit |
| 1" TEST CAP KIT | ELO-TC5-Kit |
| 1-1/4" TEST CAP KIT | ELO-TC6-Kit |
| 1-1/2" TEST CAP KIT | ELO-TC7-Kit |
| 2" TEST CAP KIT | ELO-TC8-Kit |
| 3/4" X 1-1/4" TEST CAP KIT | ELO-TC46-Kit |



Replacement parts available for compression fittings.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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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 | ELO-44C |
| 1" PE X 1" PE COUPLING | ELO-55C |
| 1 1/4" PE X 1 1/4" PE COUPLING | ELO-66C |
| 1 1/2" PE X 1 1/2" PE COUPLING | ELO-77C |
| 2" PE X 2" PE COUPLING | ELO-88C |



| Size | Part Number |
|-------------------------------------|-------------|
| 3/4" COMPRESSION END CAP FOR P.E. | ELO-4-EC |
| 1" COMPRESSION END CAP FOR P.E. | ELO-5-EC |
| 1 1/4" COMPRESSION END CAP FOR P.E. | ELO-6-EC |
| 1 1/2" COMPRESSION END CAP FOR P.E. | ELO-7-EC |
| 2" COMPRESSION END CAP FOR P.E. | ELO-8-EC |



| 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 | ELO-44E |
| 1" PE X 1" PE ELBOW | ELO-55E |
| 1 1/4" PE X 1 1/4" PE ELBOW | ELO-66E |
| 1 1/2" PE X 1 1/2" PE ELBOW | ELO-77E |
| 2" PE X 2" PE ELBOW | ELO-88E |



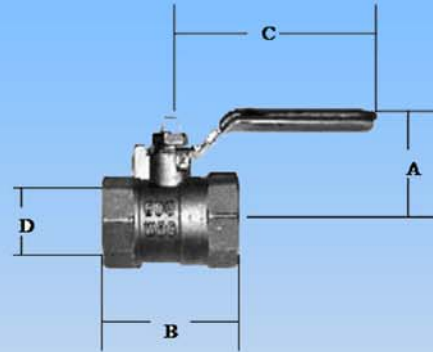
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

Replacement parts available for
compression fittings.

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

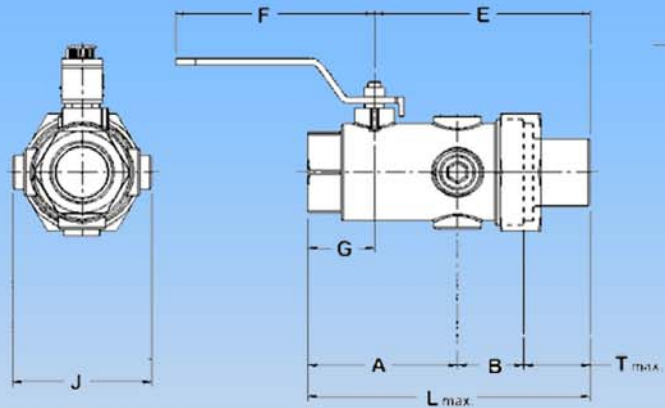
Valve Sizes and Dimensions (approx) in.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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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

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



ALL THE "PUMP" YOU NEED AND MORE

ACCESSORIES: BUTTERFLY VALVES

| 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 |



****CASTIRON WAFERS AVAILABLE
UPON REQUEST****



*Call for availability on Wafer Valves.
Various items not in stock.
Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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FUSION KITS: RITMO R63TE FUSION KITS



The following kit contains 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 TE 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 (up to 2" IPS)
- Cotton Wipe Rag
- Fusion Tool Mounting Bracket
- Tempstik 475 & 525 F (one of each)
- Second Timer

R63-48C-1K COMPLETE SET- 3/4" Thru 2" Set

- R63 TE 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 (up to 2" IPS)
- Cotton Wipe Rag
- Fusion Tool Mounting Bracket
- Tempstik 475 & 525 F (one of each)
- Second Timer

R 63 TE 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.



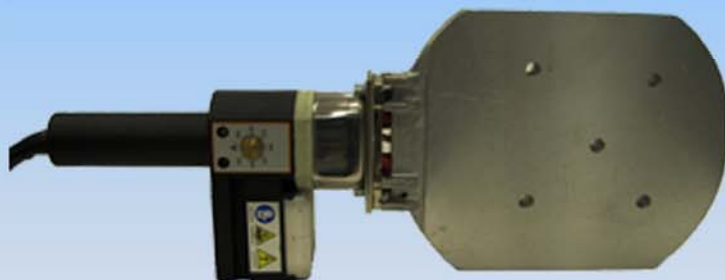
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FUSION EQUIPMENT: HEATING EQUIPMENT



RT-1-H



RT-2-H

RITMO

| Size | Part Number |
|---|-------------|
| R63 TFE (110V) SOCKET FUSION TOOL DOUBLE ONLY | RT-1-H |
| R125Q-TE (115V) SOCKET FUSION TOOL MULTIPLE | RT-2-H |

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



ALL THE "PUMP" YOU NEED AND MORE

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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 |



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

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 |



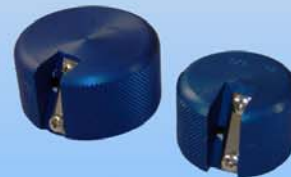
VANGUARD

| Size | Part Number |
|--------------------|-------------|
| 3/4" DEPTH GAUGE | DG4P |
| 1" DEPTH GAUGE | DG5P |
| 1 1/4" DEPTH GAUGE | DG6P |
| 1 1/2" DEPTH GAUGE | DG7P |
| 2" DEPTH GAUGE | DG8P |



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 |



Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

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

VANGUARD

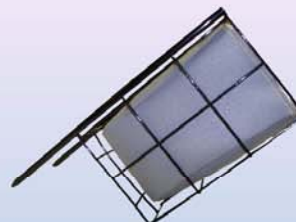
| Size | Part Number |
|----------------------|-------------|
| 3/4" IPS COLD RING | FHCR4P |
| 1" IPS COLD RING | FHCR5P |
| 1 1/4" IPS COLD RING | FHCR6P |
| 1 1/2" IPS COLD RING | FHCR7P |
| 2" IPS COLD RING | FHCR8P |



| Size | Part Number |
|--------------------------------|-------------|
| B & D FUSION TOOL COVER | BDFB-1 |
| HEATER MUFF BAG W/ROPE - LARGE | CHM300 |



| Size | Part Number |
|-----------------------------------|-------------|
| DITCH BUDDY W/ BAG FOR RITMO IRON | DBUD |



Call for availability of other sizes.



ALL THE "PUMP" YOU NEED AND MORE

1-866-646-6724
712-652-3424
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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 |
| KWIK 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.



ALL THE "PUMP" YOU NEED AND MORE

SOCKET FUSION TOOLS: TEMPSTIK, TIMER, SURFACE PYROMETER

| Size | Part Number |
|------------------------|-------------|
| TEMPSTIK 475 DEGREES F | MSK-F-475-1 |
| TEMPSTIK 500 DEGREES F | MSK-F-500-1 |
| TEMPSTIK 525 DEGREES F | MSK-F-525-1 |



| Size | Part Number |
|---------------|-------------|
| DIGITAL TIMER | V00864 |

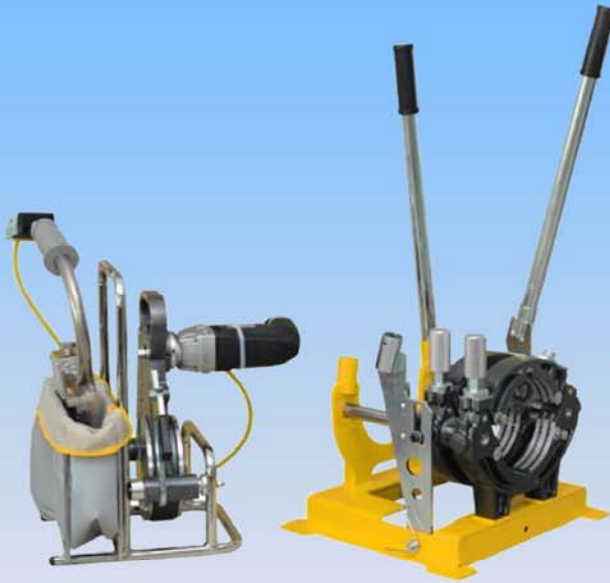


| Size | Part Number |
|---|-----------------|
| SURFACE PYROMETER (check surface temp iron) | 28-8559-1200-10 |



ALL THE "PUMP" YOU NEED AND MORE

FUSION EQUIPMENT: RITMO RAM 14



RAM 14 (1" IPS - 4" DIPS)

Manual fusion machine designed to butt fuse pipe and fittings. Included with the **RAM 14** is a set of 4" liners.

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, a 4 wheel-cart with pipe rollers is also supplied on request.

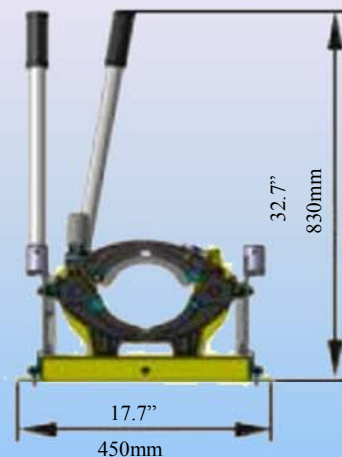
CTS, IPS, DIPS and metric inserts available.

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

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:



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



ALL THE "PUMP" YOU NEED AND MORE

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. Included with the **RAM 28** is a set of 8" liners.

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.

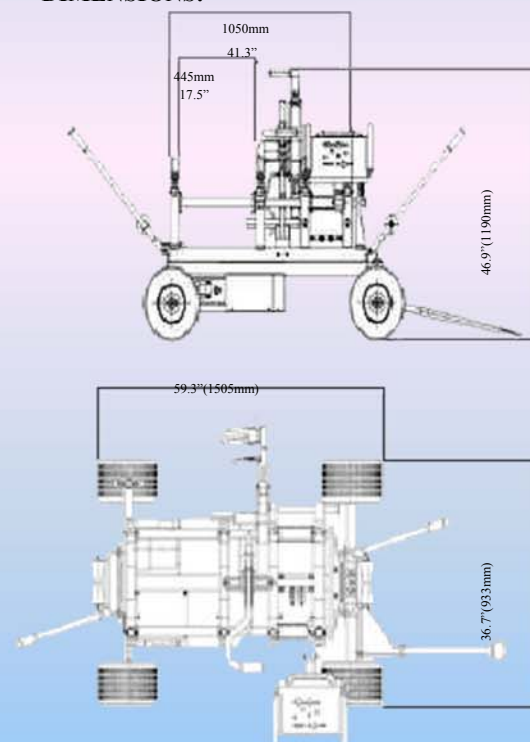
TECHNICAL FEATURES

| 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) |



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

DIMENSIONS:



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



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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.

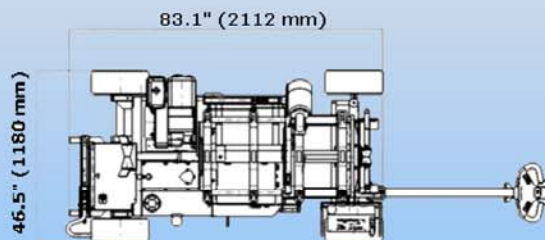
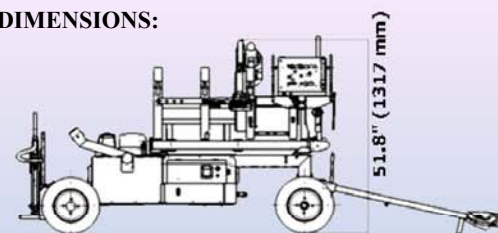


| Size | Part Number |
|----------------------|------------------|
| RAM 414 (4"-14"DIPS) | RAM 14 B.F. 4-14 |

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) |

DIMENSIONS:



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



ALL THE "PUMP" YOU NEED AND MORE

FUSION EQUIPMENT: RITMO RAM 14, RAM 28 & RAM 414 INSERT LINERS



| Size | Part Number |
|-----------------------------------|-------------|
| 1" IPS INSERT LINERS (RAM 14) | R-77291461B |
| 1 1/4" IPS INSERT LINERS (RAM 14) | R-77291721B |
| 1 1/2" IPS INSERT LINERS (RAM 14) | R-77291811B |
| 2" IPS INSERT LINERS (RAM 14) | R-77292331B |
| 3" IPS INSERT LINERS (RAM 14) | R-77292871B |
| 4" IPS INSERT LINERS (RAM 14) | R-77293161B |

**DIPS available

| IPS | Pipe OD |
|--------|---------|
| 1" | 1.32" |
| 1 1/4" | 1.66" |
| 1 1/2" | 1.90" |
| 2" | 2.38" |
| 3" | 3.50" |
| 4" | 4.50" |

RAM 14

RAM 28

| IPS | Pipe OD |
|-----|---------|
| 2" | 2.38" |
| 3" | 3.50" |
| 4" | 4.50" |
| 5" | 5.56" |
| 6" | 6.63" |
| 8" | 8.63" |

| Size | Part Number |
|-------------------------------|-------------|
| INSERT LINERS 2" IPS (RAM 28) | R-87292305 |
| INSERT LINERS 3" IPS (RAM 28) | R-87292731 |
| INSERT LINERS 4" IPS (RAM 28) | R-87293238 |
| INSERT LINERS 6" IPS (RAM 28) | R-87294047 |
| INSERT LINERS 8" IPS (RAM 28) | R-87294622 |

**DIPS available



| Size | Part Number |
|---------------------------------|-------------|
| INSERT LINERS 4" IPS (RAM 414) | R-87293354 |
| INSERT LINERS 6" IPS (RAM 414) | R-87294153 |
| INSERT LINERS 8" IPS (RAM 414) | R-87294643N |
| INSERT LINERS 10" IPS (RAM 414) | R-87295382N |
| INSERT LINERS 12" IPS (RAM 414) | R-87295803N |

**DIPS available

| IPS | Pipe OD |
|-----|---------|
| 4" | 4.50" |
| 5" | 5.56" |
| 6" | 6.63" |
| 8" | 8.63" |
| 10" | 10.75" |
| 12" | 12.75" |
| 14" | 14.00" |

RAM 414

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



ALL THE "PUMP" YOU NEED AND MORE

ELECTROFUSION PROCESSORS: ELEKTRA LIGHT

Elektra Light is a multipurpose Machine (in low voltage $8 \div 48V$) 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
- Pen Scanner

On Request

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



| Size | Part Number |
|---------------|-------------|
| ELEKTRA LIGHT | 96906080 |

TECHNICAL FEATURES

| | |
|---------------------------|-------------------------|
| Working Range | up to 6" (20-125/160mm) |
| Welding output voltage | $8 \div 48V$ |
| Single phase/power supply | 230v - 50/60 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 |



ALL THE "PUMP" YOU NEED AND MORE

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:

- A versatile machine body capable of adapting to different operational requests, inside as outside the ditch, thanks to a control panel that can be turned upward or be positioned horizontally to the ground, with protection degree IP 54 (protects against penetration of dust and water spray)
- An optic pen barcode-reading that allows the automatic setting of the welding parameters
- An internal storage with 4000 welding cycles and the possibility of transferring them to a computer, to an external storage or to a serial printer through USB port and a RS232
- A graphic display that, by using a specific software, shows all kind of information, even possible anomalies that might occur before or during the welding

Basic equipment supplied with the welding unit:

- Connectors Ø 4 mm, Ø 4 ÷ 4, 7 mm adapters
- Transport Case
- Manual Scraper
- Scanner Gun



| Size | Part Number |
|-------------|-------------|
| ELEKTRA 400 | 96906020 |
| ELEKTRA 800 | 96906321 |

TECHNICAL FEATURES

| | ELEKTRA 400 | ELEKTRA 800 |
|---------------------------|---|---|
| Working Range | Up to 16" IPS | Up to 32" IPS |
| Welding output voltage | 8 ÷ 48V | 8 ÷ 48V |
| Single phase/power supply | 110v - 50/60 Hz | 230v - 50/60 Hz |
| Maximum absorbed power | 2500W | 2700W |
| Maximum output current | 100A | 120A |
| Operating Modes | Barcode/Manual (numerical code or tension/time) | Barcode/Manual (numerical code or tension/time) |
| Connections | USB for external memory & RS232 serial printer | USB for external memory & RS232 serial printer |
| Memory capacity | 4000 reports | 4000 reports |
| Protection Rating | IP 54 | IP 54 |
| Outside T° Range | 23 ÷ 140° F | 23 ÷ 140° F |
| Dimensions | 14.09" x 11.22" x 11.88" | 14.09" x 11.22" x 11.88" |
| Weight | 43 lb | 49.60 lb |



ALL THE "PUMP" YOU NEED AND MORE

ELECTROFUSION PROCESSORS: NUPI BLUETOOTH

The Bluetooth Electrofusion Processor, manufactured in compliance with UNI 10566 standards, has been designed for the welding of electrofusion fittings utilizing the 24 digit barcode system (per ISO 13950). The unit has a peak amperage of 100 amps. The welding unit can be operated in five different languages (English, Italian, Spanish, French, and German). Data can be put in automatically with the optical pen or manually by entering welding data (time & voltage) related to the fitting in use.

During the welding cycle, the large backlit display shows the heating time, power consumption and energy used. The welding unit has the capacity to store the parameters of 300 welding cycles and to communicate with a PC or a printer by means of wireless Bluetooth technology.

The internal software, developed especially for this welding unit, enables the user to:

- Download welding reports (to PC or to printer)
- Record the traceability of the fitting
- Find the GPS coordinates of the fitting
- Test the pressurized fluid distribution networks

Welding range: 1/2" CTS-24" IPS (20mm-630mm)

Technical characteristics:

- Conforms with CE requirements
- Conforms with UNI 10566—POLYVALENT type
- Illuminated display with 4 lines, 20 characters each
- Memory for 300 welding cycles
- 8 memories of 500 parameters each for pressure tests
- Fittings working range up to 100 amp maximum peak
- Ambient temperature sensor
- Maximum power: 2500 VA
- Output voltage: from 5 to 42V
- Power cable: L=12 feet (3.8m)
- Welding Cable: L=9 feet (3m)
- Degree of protection: IP 54
- Working temperature: from -18° to +52°C F



| Size | Part Number |
|---------------------|-------------|
| BLUETOOTH PROCESSOR | 12E9002/110 |

Codes:

| | |
|-------------|------|
| 12E9001 | 230V |
| 12E9001/110 | 115V |
| 12E9001/48 | 48V |

Basic equipment supplied with the welding unit:

- User's handbook
- Shipping Box
- Includes 4.0 MM pin
- Optical pen for barcode input
- Adapters with 4.7 MM pins



ALL THE "PUMP" YOU NEED AND MORE

ELECTROFUSION EQUIPMENT: UNIVERSAL SCRAPERS

| Size | Part Number |
|-----------------------------|-------------|
| 3" TO 12" UNIVERSAL SCRAPER | RTC 315 |



| Size | Part Number |
|----------------------------|-------------|
| 2" TO 6" UNIVERSAL SCRAPER | RTC 160 |



| Size | Part Number |
|-----------------------------|-------------|
| 6" TO 24" REVOLVING SCRAPER | 12RAT2 |



ALL THE "PUMP" YOU NEED AND MORE

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.



45°



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.



45°



ALL THE "PUMP" YOU NEED AND MORE

ELECTROFUSION EQUIPMENT: SCRAPERS

| Size | Part Number |
|-----------------------|-------------|
| 2" IPS MOLDED SCRAPER | 5752118 |
| 3" IPS MOLDED SCRAPER | 5752122 |
| 4" IPS MOLDED SCRAPER | 5752119 |



| Size | Part Number |
|---------------------------|-------------|
| 3/4" IPS PENCIL SCRAPER | 5752125 |
| 1" IPS PENCIL SCRAPER | 5752127 |
| 1 1/4" IPS PENCIL SCRAPER | 5752143 |
| 1 1/2" IPS PENCIL SCRAPER | 5752139 |



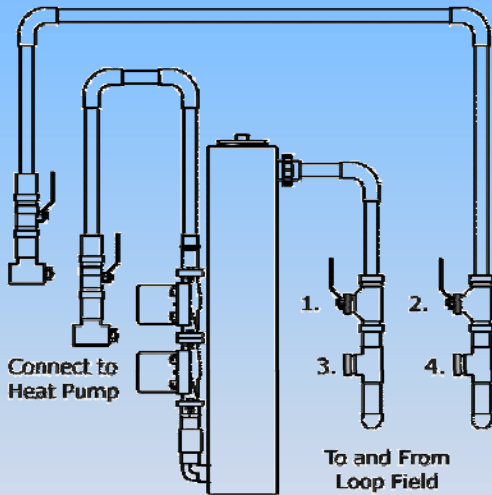
Various items not in stock.
Call for availability of other sizes.



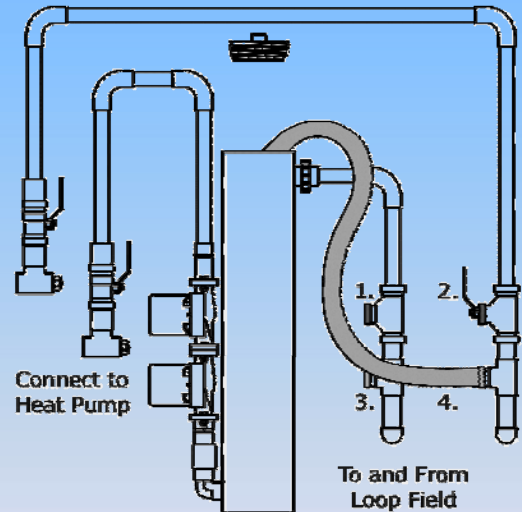
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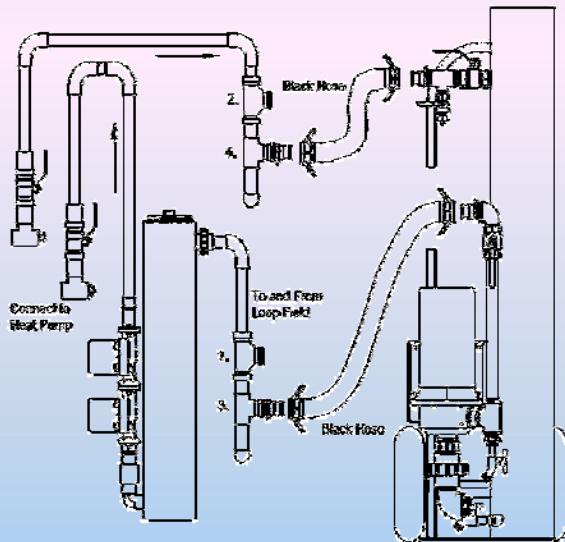
FLOW CENTERS: HOW TO FLUSH A EARTH LOOP WITH A BURIED MANIFOLD



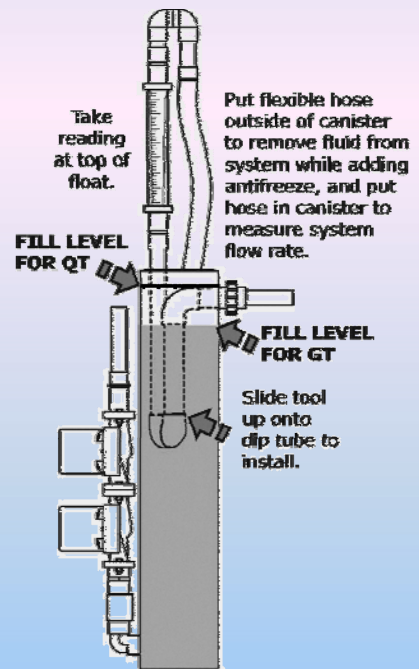
1. Close valves 1. and 2., located on lines to and from the loop field.
2. Remove screw caps from tees 3. and 4. and connect flush cart hoses to 1" MNT.
3. Flush and purge loop field thoroughly with flush cart.



7. Close valve 2. and disconnect hose from tee 4.; screw cap back on.
8. Open valve 1. and 2.; start system.



4. Disconnect hoses from tees 3. and 4. Put cap back on Tee 3.
5. Connect 1" clear hose with swivel connector to tee 4., put hose into top of flow center.
6. Open valve 2. and turn on flow center; flush inside piping and heat pump with the GT®/QT® flow center pump(s).



9. Any small amounts of air remaining in the system will become trapped and isolated in the GT®/QT® flow center
10. Check the flow with a flow meter tool. Fill flow center to bottom of dip tube elbow on a GT® flow center or to the top of the elbow on a QT® flow center.



ALL THE "PUMP" YOU NEED AND MORE

B & D TERMS & CONDITIONS OF SALE

APPROVED OPEN ACCOUNT

Standard terms are “Net 30 Days”; meaning payment should be made within 30 days from date of invoice. The credit department must approve all open account terms. Discount terms for early payment may be allowed under approved credit conditions. B & D Mfg., Inc sells through wholesale distributors only.

C.O.D.

All accounts not established with the credit department will be shipped C.O.D. terms, unless paid in advance.

OVERDUE ACCOUNTS

A delinquency charge of 1 ½ percent per month (18% per annum, or according to state maximum allowed by law) will be added to all past accounts. Once your accounts are past due, it will be reviewed and could become C.O.D.

PRICES

All prices contained herein become effective immediately and supersede all prior published prices and quotations. All prices subject to change without notice.

SHIPPING WEIGHTS

Standards herein are approximate and not guaranteed.

FREIGHT

All shipments are F.O.B. Scranton (IA), Fort Smith (AR), and Somerset (PA) and is up to our discretion. Shipments will be motor freight Prepaid and Fed Ex unless otherwise specified. Arkansas Warehouse and Pennsylvania Warehouse are Fed Ex only. The buyer must initial all freight claims. If your shipment arrived with a shortage or is damaged, you are responsible to the freight agent to note the exact product missing or the extent of the damage on the freight bill. All shipping orders for one day air or two day air will automatically have an additional delivery surcharge up to \$50. This charge is in addition to regular delivery charges.

RETURNS/DISCREPANCIES

All returns are required to have a RMA form with issued approval number and must be received in good sellable condition. Special Orders and Fabricated Fittings are non-returnable items and subject to refusal. B & D Mfg., Inc. does not allow returns on pipe. B&D Mfg., Inc. must be notified of any discrepancy in shipment, order, and/or invoice within 10 days after receipt. Items returned to stock will be evaluated for resale condition. Returns will be charged a \$25 processing fee, plus a restock fee up to 25%. For further instructions please refer to RMA sheet.



LIMITED 5 YEAR WARRANTY

ALL RESIDENTIAL GT®, QT®, AND QT®-EA MODEL FLOW CENTERS bought after November 1st, 2010.

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 Flow Centers are free from defects in materials or workmanship.

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 product 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.

FORM 1003
REV Nov 2010/Replaces All previous Warranty Statements



WARRANTY: B & D LIMITED WARRANTY

B & D MFG., INC. LIMITED WARRANTY STATEMENT

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

ALL WARRANTY PRODUCTS MUST BE RETURNED WITHIN 30 DAYS OF RECEIPT OF REPLACEMENT TO RECEIVE CREDIT.

ALL COMMERCIAL MULTIZONE FLOW CENTERS and 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.

Seller's liability for any breach of this Warranty shall be limited solely to replacement or repair, and the sole option of seller, of any part or parts found to be defective during the Warranty period provided the Product is properly installed and is being used as originally intended. Buyer must notify Seller of any breach of this Warranty within the aforementioned Warranty period: defective parts must be shipped by Buyer to Seller with transportation charges prepaid.

It is expressly agreed that this shall be the sole and exclusive remedy of the buyer. Under no circumstances shall seller be liable for any costs, loss expenses damages, special damages, incidental damages of manufacture, sale, use or repair of the product whether based upon warranty, contract, negligence or strict liability. In no event will liability exceed the purchase price of the product.

The warranty and limits of liability contained herein are in lieu of all other warranties and liabilities, expressed or implied. All implied warranties of merchantability and fitness for a particular purpose are hereby disclaimed by seller and excluded from this warranty.

Seller neither assumes nor authorizes any person to assume for it, any other Warranty obligation in connection with the sale of the Product. This Warranty shall not apply to any Product or parts of Products which (a) have been repaired or altered outside of seller's facilities: or (b) have been subject to misuse, negligence or accidents: or (c) have been used in a manner contrary to seller's instructions.

PURGE CARTS

The Power-Flow Purge Cart is warranted for one year from date of sale. Alleged defective product must be returned to B&D Mfg., Inc., 901 9th Street, Scranton, Iowa 51462, for inspection via prepaid freight. Defective parts will be repaired or replaced at the manufacturer's discretion. No allowance for labor or property damage is implied. Warranty of performance is limited to the table provided with the unit.

FORM IWS
REV Nov 2010/Replaces All previous Warranty Statements



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WARRANTY: HSS® LIMITED WARRANTY

B & D Mfg., Inc. warrants for a period of three (3) years from date of purchase that all HSS® Flow Center pumps and circuit boards 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® Flow Center, Stainless Steel Tanks only, are free from defects in materials and workmanship. B & D Mfg., Inc. warrants for a period of one (1) year from date of purchase that all other parts 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.



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 WARRANTY PRODUCTS MUST BE RETURNED WITHIN 30 DAYS OF RECEIPT OF REPLACEMENT TO RECEIVE CREDIT.

Seller's liability for any breach of this Warranty shall be limited solely to replacement or repair, and the sole option of seller, of any part or parts found to be defective during the Warranty period provided the Product is properly installed and is being used as originally intended. Buyer must notify Seller of any breach of this Warranty within the aforementioned Warranty period: defective parts must be shipped by Buyer to Seller with transportation charges prepaid.

It is expressly agreed that this shall be the sole and exclusive remedy of the buyer. Under no circumstances shall seller be liable for any costs, loss expenses damages, special damages, incidental damages of manufacture, sale, use or repair of the product whether based upon warranty, contract, negligence or strict liability. In no event will liability exceed the purchase price of the product.

The warranty and limits of liability contained herein are in lieu of all other warranties and liabilities, expressed or implied. All implied warranties of merchantability and fitness for a particular purpose are hereby disclaimed by seller and excluded from this warranty.

Seller neither assumes nor authorizes any person to assume for it, any other Warranty obligation in connection with the sale of the Product. This Warranty shall not apply to any Product or parts of Products which (a) have been repaired or altered outside of seller's facilities: or (b) have been subject to misuse, negligence or accidents: or (c) have been used in a manner contrary to seller's instructions.

FORM IWS
REV Nov 2010/Replaces All previous Warranty Statements



ALL THE "PUMP" YOU NEED AND MORE

1-866-646-6724
712-652-3424
www.bdmfginc.com

PIPE: WATER VOLUME, TEMPERATURE LIMITS

Water Volume Per 100' of Pipe Geo-Black Polyethylene Pipe

| NOMINAL PIPE SIZE | GALLONS | LITERS |
|-------------------|---------|--------|
| 3/4 SDR-11 | 3.02 | 11.42 |
| 1" SDR-11 | 4.73 | 17.91 |
| 1-1/4" SDR-11 | 7.55 | 28.56 |
| 1-1/2" SDR-11 | 9.93 | 37.58 |
| 2" SDR-11 | 15.36 | 58.12 |
| 3" SDR-11 | 33.47 | 126.67 |
| 4" SDR-11 | 55.31 | 209.36 |

Temperature Limits

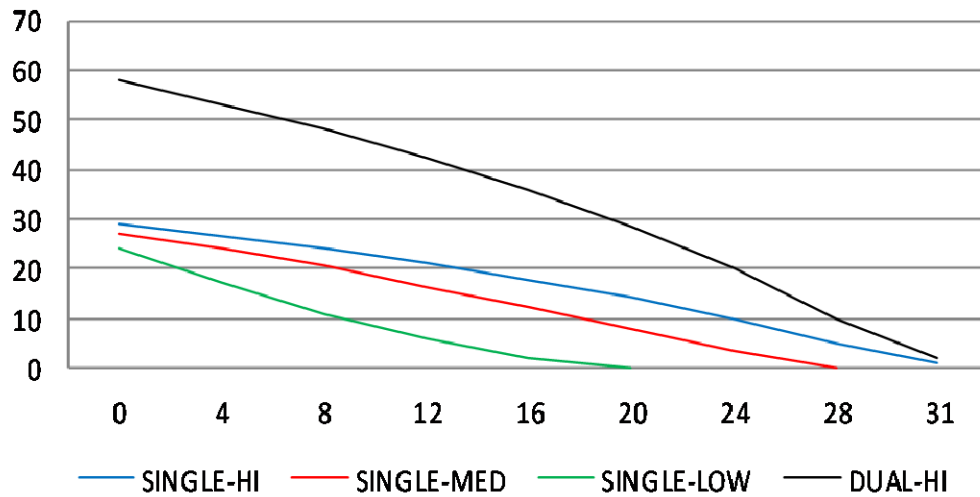
GEO-BLACK is recommended for continuous use below 100 °F but can be exposed for limited periods to temperatures up to 120 °F. For design purposes, derating pressure factors for higher temperature installations are shown below:

| OPERATING TEMPERATURE, °F | De-Rating Factor |
|---------------------------|------------------|
| 73 | 1.00 |
| 100 | 0.75 |
| 140 | 0.50 |

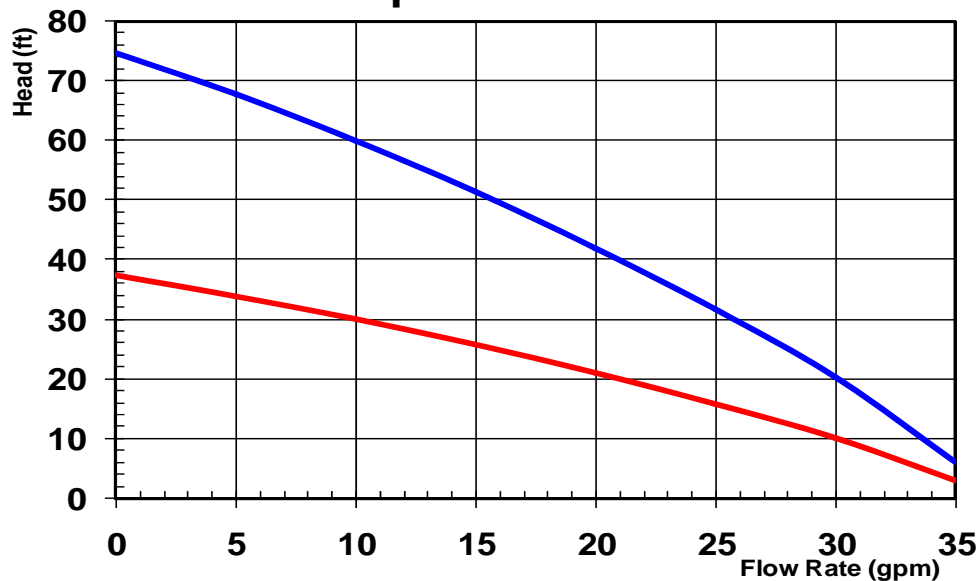


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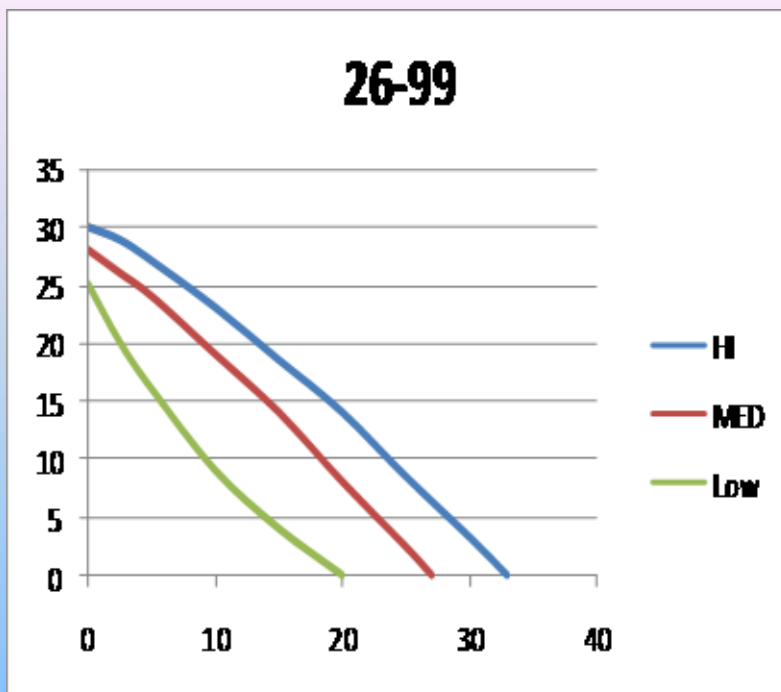
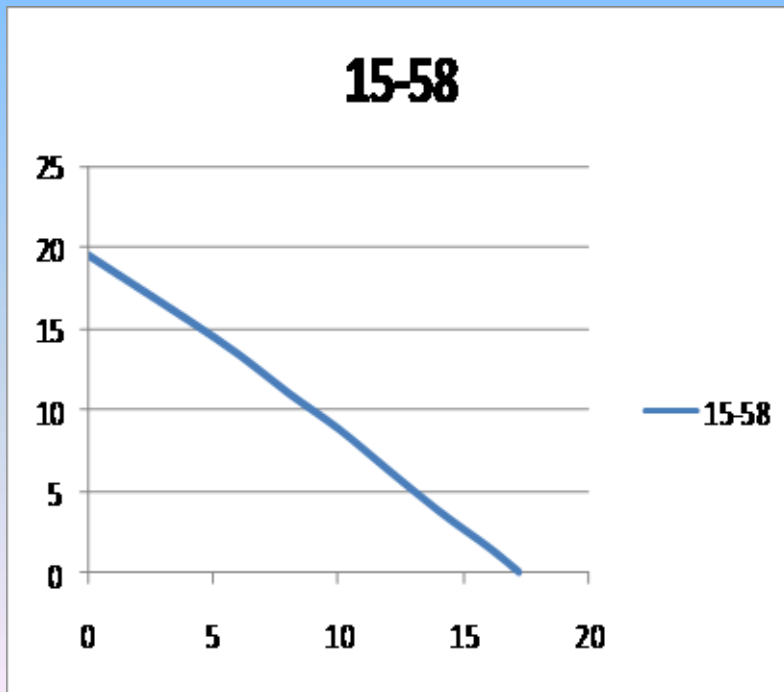
26-99 3 SPEED



116 Pump Performance Curve



**FLOW CENTERS: PUMP CURVES 15-58 &
26-99 3-SPEED (115V)**

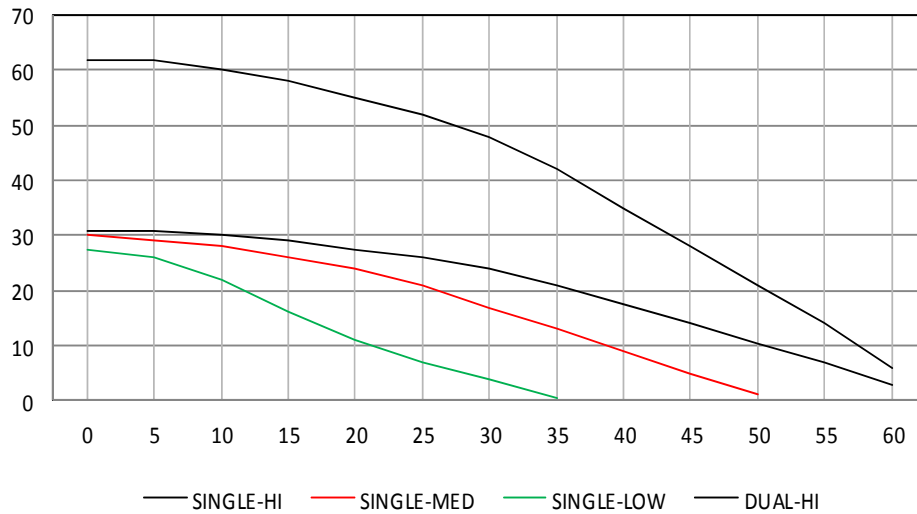


ALL THE "PUMP" YOU NEED AND MORE

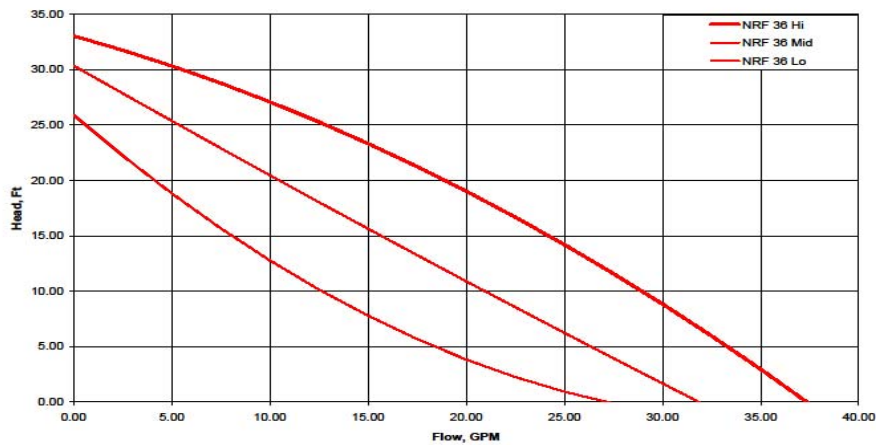
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UPS43-100 (3 SPEED)

HEAD FT.



NRF-36 Performance Curves



NOTES:



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NOTES:



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