HOME OF THE GT FLOW CENTER

B&D MFG, INC®

GEOTHERMAL FULL LINE CATALOG

"THE NO PRESSURE SOLUTION"

B & D Mfg., Inc.

ALL THE "PUMP" YOU NEED AND MORE!!

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

Fusion Training Center for certificate needs.

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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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 99E	HP (ea.)	Inlet**/Outlet Size	Overall Size (in) Ht. (in)	Wdth (in.)	Dpth (in.)	Weight (lbs)
3-230KFC-S.S.	1	3	230	3.21	1/6	1-1/4" FPT	42	9 1/4	18	39

Comes w/ Standard 2699 ***Comes with Brass Union. (116F– 1.8 AMPS PER PUMP.) Extra Charge for 116 pumps ea.

GT® SS Flow Center – The Industry Standard Solution

Part Number	# of Pumps	Voltage	Amps 99E	HP (ea.)	Inlet*/Outlet Size	Overall Size (in) Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
NPFC-SS	0	-	-	-	1" FPT	34	15 1/2	6 1/2	19
1-230PFC-SS-G	1	230	1.07	1/6	1" FPT	34	15 1/2	6 1/2	29
2-230PFC-SS-G	2	230	2.14	1/6	1" FPT	34	15 1/2	6 1/2	39
1-230PFC-SS-M	1	230	1.8	1/6	1" FPT	34	15 1/2	6 1/2	29
2-230PFC-SS-M	2	230	3.6	1/6	1" FPT	34	15 1/2	6 1/2	39

**Comes w/ Brass Union; **Quotations available on GT® Flow Centers w/ Bell & Gossett 3-speed pumps.

GT® Flow Center

QT® Flow Center

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

Part Number	# of Pumps	Voltage	Amps Grundfos	HP (ea.)	Inlet/Outlet Size	Overall Size (in) Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
1-230QFC *	1	230	1.07	1/6	1" Swivel (FPT)	34	14 3/4	7.5	34
2-230QFC *	2	230	2.14	1/6	1" Swivel (FPT)	34	14 3/4	7.5	44

*2699 Pump Standard; **Quotations available on QT® Flow Centers w/ Bell & Gossett 3-speed pumps.

*Dimensions are approximate

FLOW CENTERS: BREAKDOWN OF SIZES

XT Flow Center – When Normal Pumping Isn't Enough

Part Number	# of Pumps	Voltage	Amps Bell & Gossett	HP (ea.)	Inlet**/Outlet Size	Overall Size (in) Ht. (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
2-230XT-S.S.	2	230	4.8	2/5	1-1/4" FPT	48 1/2	22 1/2	10	87

**Bell & Gossett PL-55 Pump Only

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	HP (ea.)	Inlet/Outlet Size	Overall Size (in) Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
1-1E-A-SS-230QFC	2	230	2.14	1/6	1-1/4" Swivel (FPT)	43 1/2	21 1/2	14	78
2-1E-A-SS-230QFC	3	230	3.21	1/6	1-1/4" Swivel (FPT)	43 1/2	21 1/2	14	83
2-2E-A-SS-230QFC	4	230	4.28	1/6	1-1/4" Swivel (FPT)	43 1/2	21 1/2	14	89

*2699 Pump Standard

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

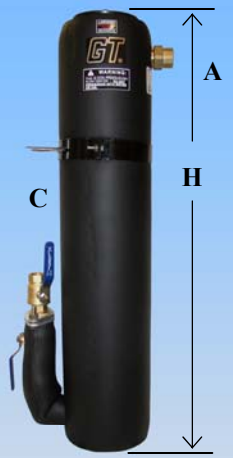
Part Number	Max GPM	# of Pumps	Voltage	Amps Grundfos	HP (ea.)	Inlet/Outlet Size	Overall Size (in) Ht (in.)	Wdth (in.)	Dpth (in.)	Weight (lbs)
0-0E-A-KFC-SS	18*	0	-	-	-	1-1/4" MPT/1-1/4" FPT	42 1/2	21	9 1/4	41
1-1E-A-KFC-SS	18*	2	230	2.14	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	21	9 1/4	61
2-1E-A-KFC-SS	22*	3	230	3.21	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	21	9 1/4	72
2-2E-A-KFC-SS	28*	4	230	4.28	1/6	1-1/4" MPT/1-1/4" FPT	42 1/2	21	9 1/4	83

*Standard: IPT on Inlet Connection. Union can be special ordered. *For Max Flow Use Grundfos 116F-1.8 AMPS per pump.

EA® Flow Center

*Dimensions are approximate

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



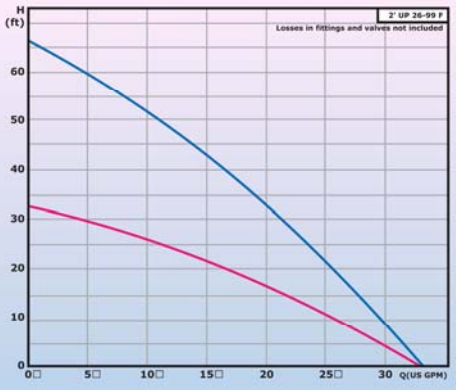
MODEL NPFC-SS
19 lb.

MODEL 1-230PFC-SS
29 lb.

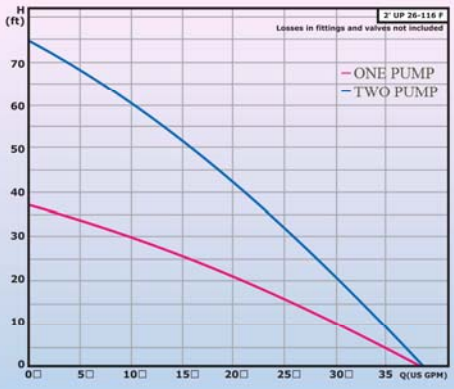
MODEL 2-230PFC-SS
39 lb.

ELECTRICAL: 1/60/115V OR 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" L=15-1/2"
LETTER AFTER MODEL NUMBER FOR PUMP NEEDED: GRUNDFOS 26-116: **M** GRUNDFOS 26-99: **G**



U.S. GPM
FLOW CHART FOR MODEL 1-230PFC-SS
2-230PFC-SS (GRUNDFOS 26-99)



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

PATENT NO. 5,244,037

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FLOW CENTERS: GT® FLOW CENTER

Features & Benefits

Non Pressurized Flow Center
- ~ Eliminates Callbacks
- ~ Fast Installation

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

Air Separation Chamber
- ~ Continually Performs Purging Function

Check Valve
- ~ Pump Protection

5 Year Warranty

Stainless Steel Canister

*Requires Service Tool (Part# WFT-17),sold separately
*Optional Flow Center Wrench for lid (Part# FCW),sold separately

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ALL THE "PUMP" YOU NEED AND MORE

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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.

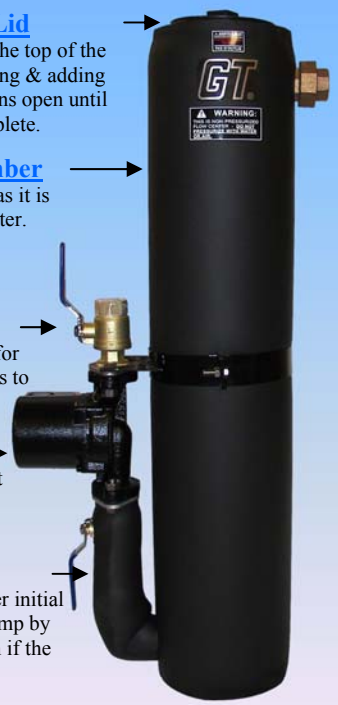
EASY TO OPERATE & MAINTAIN

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.

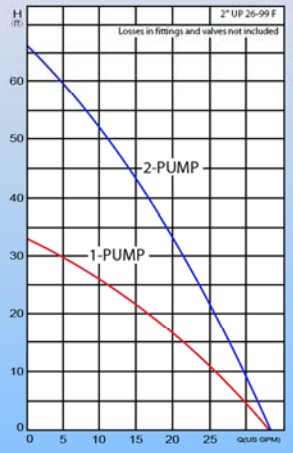
Pumps
Circulate fluid throughout the earth-loop system.

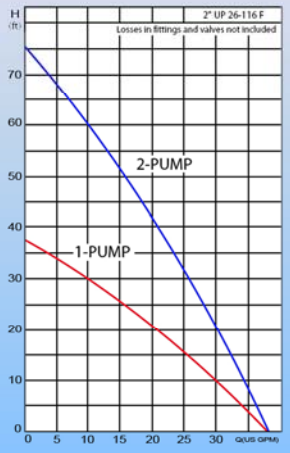
Built-In Check Valve
Holds water in the pump volutes after initial filling. This feature protects the pump by keeping water on the bearings even if the chamber runs dry.

Part Number	# of Pumps	Voltage	Amps Grundfos 26-99	HP (ea.)	Inlet*/Outlet Size
1-230PFC-SS*	1	230	1.07	1/6	1" FPT
2-230PFC-SS*	2	230	2.14	1/6	1" FPT

*2699 Pump Standard
GT®'s Overall Size - 34" x 9 1/4" 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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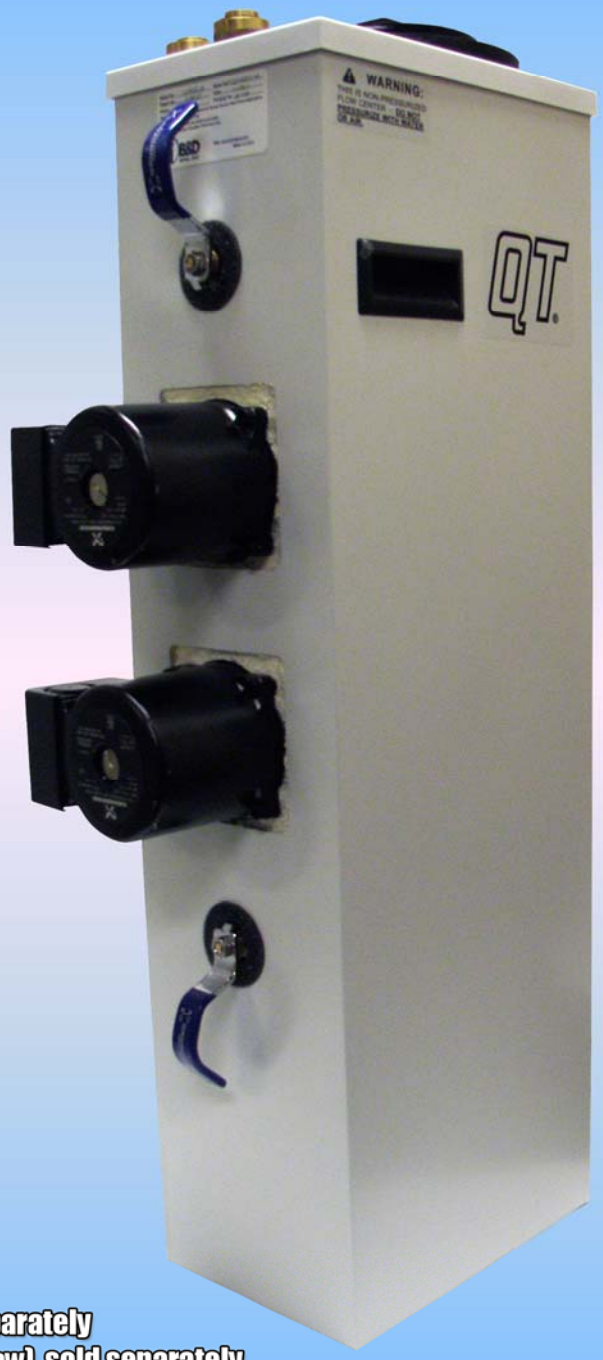
FEATURE/BENEFITS



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.

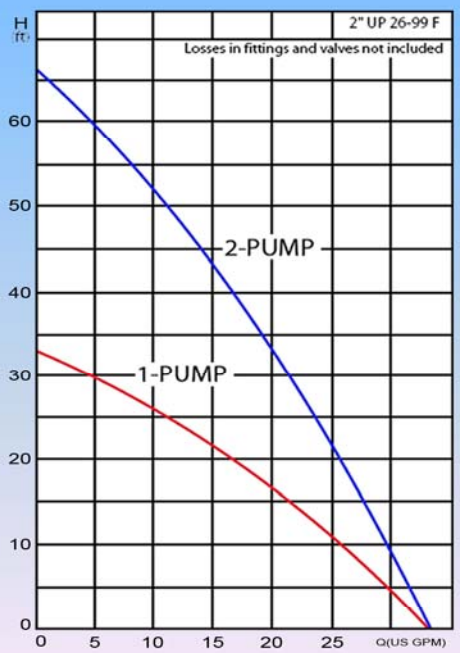
Part Number	# of Pumps	Voltage	Amps Grundfos 26-99	HP (ea.)	Inlet*/Outlet Size
1-230QFC*	1	230	1.07	1/6	1" FPT SWIVEL
2-230QFC*	2	230	2.14	1/6	1" FPT SWIVEL

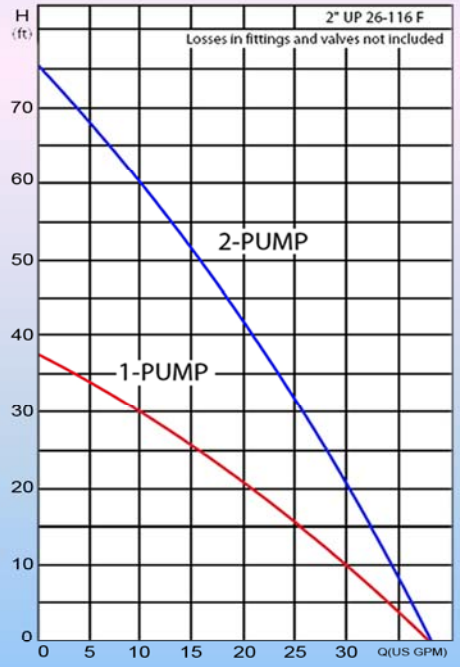
***2699 Pump Standard**
QT®'s Overall Size 34" x 7 1/2" x 14 3/4"

*Dimensions are approximate

Patent No. 5,244,037

NON-PRESSURIZED FLOW CENTER





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

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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 26-99	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	2.14	1/6	1 1/4"IPT/1-1/4"FPT
2-1E-A-KFC-S.S.	22*	2	3	230	3.21	1/6	1 1/4"IPT/1-1/4"FPT
2-2E-A-KFC-S.S.	28*	2	4	230	4.28	1/6	1 1/4"IPT/1-1/4"FPT

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

FLOW CENTERS: 2-2EA®-SS-QFC

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

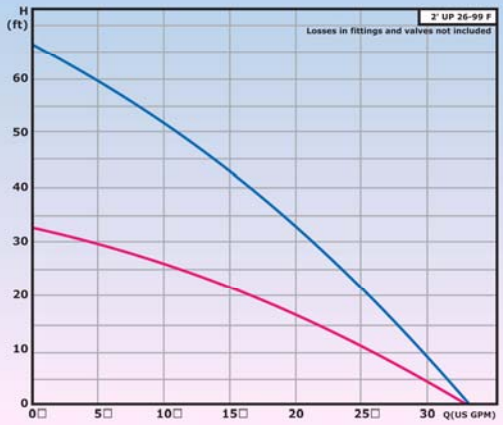
1 1/4" Brass IPT Return Inlet

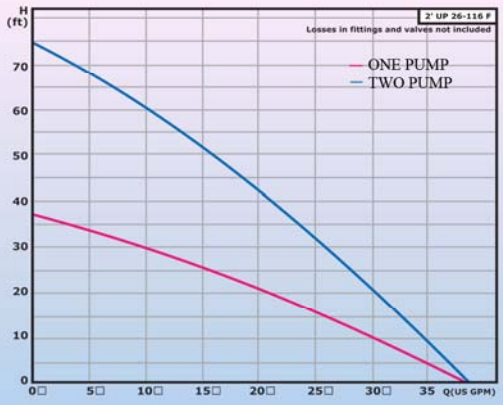
FLOW CENTERS:
2-2EA®-SS-QFC SPECIFICATIONS

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

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 Bell & Gossett PL-55.

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 ¼" 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 B & G PL-55	HP (ea.)	Inlet*/Outlet Size
2-230XT-SS-B*	2	230	4.8	2/5	1 1/4" FPT

***PL-55 Pump**
XT's Overall Size 48 1/2" x 22 1/2" x 10"

*Dimensions are approximate

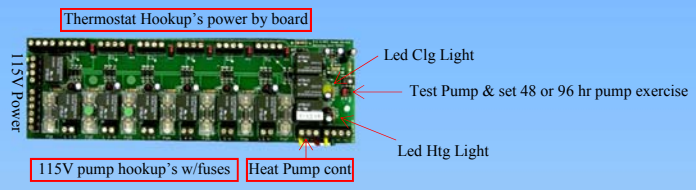
For pump curves refer to page 113.

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.
- Hydronic Pump Relay Standard Sensor for One Stage Heat, Two Stage Heat or Heating & Cooling built in.
- Hydronic 26/99-3 is a three speed pump (low-med-hi)

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

FLOW CENTERS: HSS® SERIES SPECIFICATIONS



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

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

Max Gal Storage	Max Hydronic Circuits	G	H	I	J	K	L	M	N	O	P	Q	Wt Tank
12	3	21"	7 1/2"	7"	9"	24"	49"	57 1/2"	10"	17"	1-1/4" MPT	1 1/4" U	30#
20	6	21"	7 1/2"	7"	9"	24"	49"	57 1/2"	13"	20"	1-1/4" MPT	1 1/4" U	38#
30	9	21"	7 1/2"	7"	9"	24"	49"	54"	16"	23"	1 1/2" FPT	1 1/4" or 2" U	52#
40	12	21"	7 1/2"	7"	9"	24"	49"	54"	18"	25"	2" FPT	1 1/4" or 2" U	60#
60	12	21"	7 1/2"	7"	9"	24"	49"	54"	22"	29"	2" FPT	2" U	84#
80	12	21"	7 1/2"	7"	9"	24"	49"	54"	25"	31"	2" FPT	2" U	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
*Water/Water Side only 3 heat pump circuit max.

FLOW CENTERS: MULTIZONE FLOW CENTER

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 suppling 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.

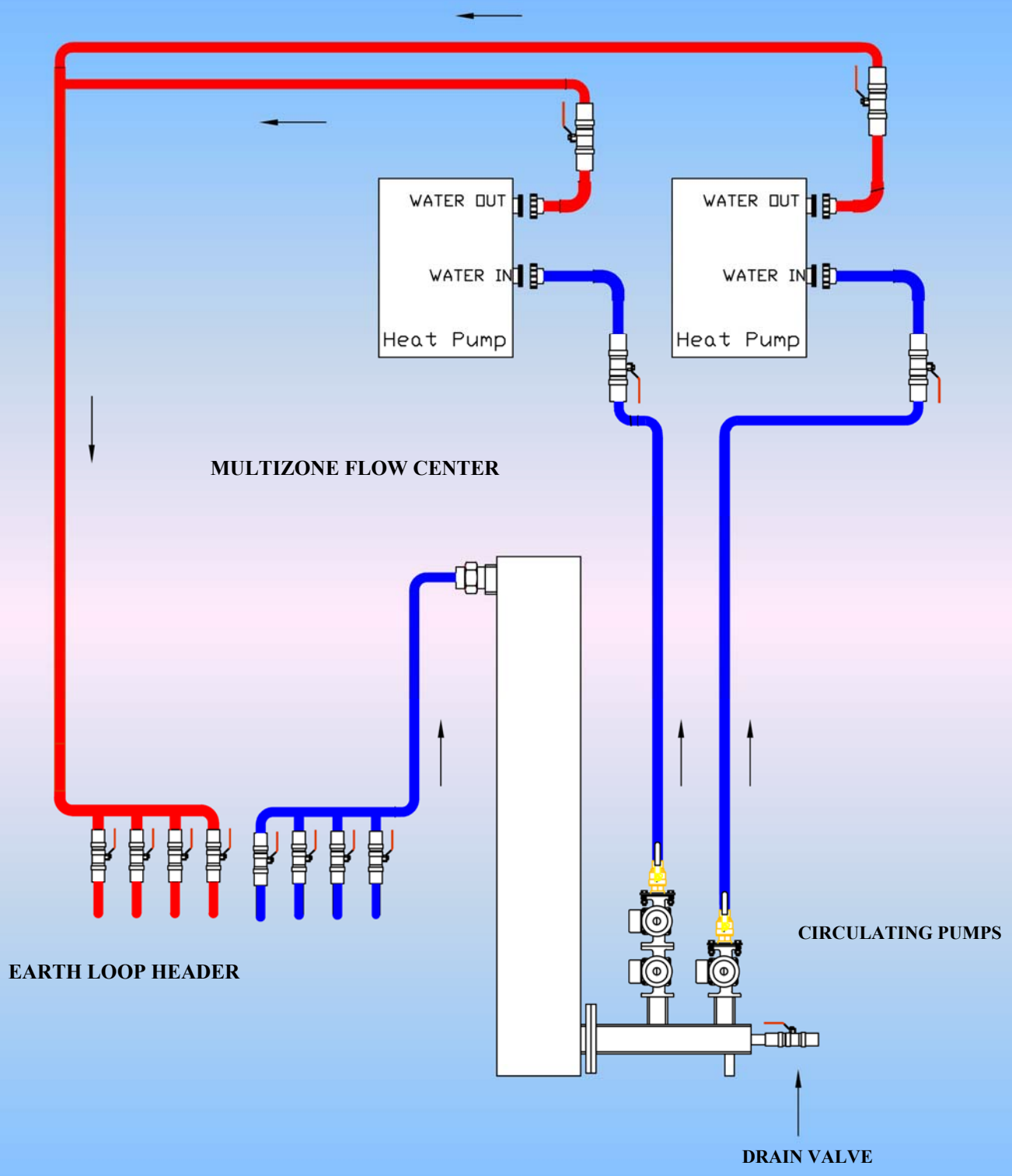
Here is a Multizone Flow Center designed for a 4 zone application.

Model: **CFCSS4000-3G**

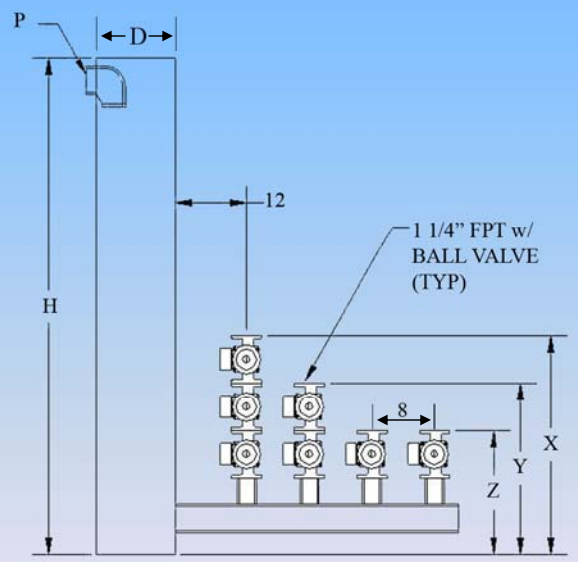
CF - Commercial Flow Center
C - Size C
SS - Stainless Steel
4 - 4 Circuit
0 - No. 2 pump circuit
0 - NA
0 - No. 3530 Series pumps
3 - 208/230 V Single phase
G - Grundfos Pumps

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

FLOW CENTERS: MULTIZONE FLOW CENTER SYSTEM PIPING SCHEMATIC



FLOW CENTERS: MULTIZONE FLOW CENTER DIMENSIONS



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

* C/B-Model - (3 circuit single pump only) 35lbs
** C-Model- (4 circuit header max) 36 lbs
*** 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 H_2O head loss. Grundfos 2699 is standard with others available upon request. For flow rates greater then 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.

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

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

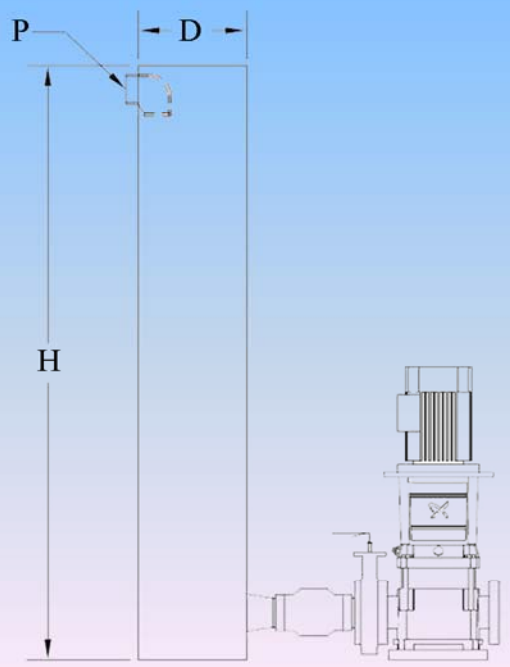
- **EFFICIENT OPERATION**
  When compared to multiple smaller pumps typically used for each heat pump zone you will notice the efficiency on smaller motors is in the range of 25-30% to yield a very inefficient operation. The Smart Pump Multizone utilizes efficient motor technology with its one single 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).

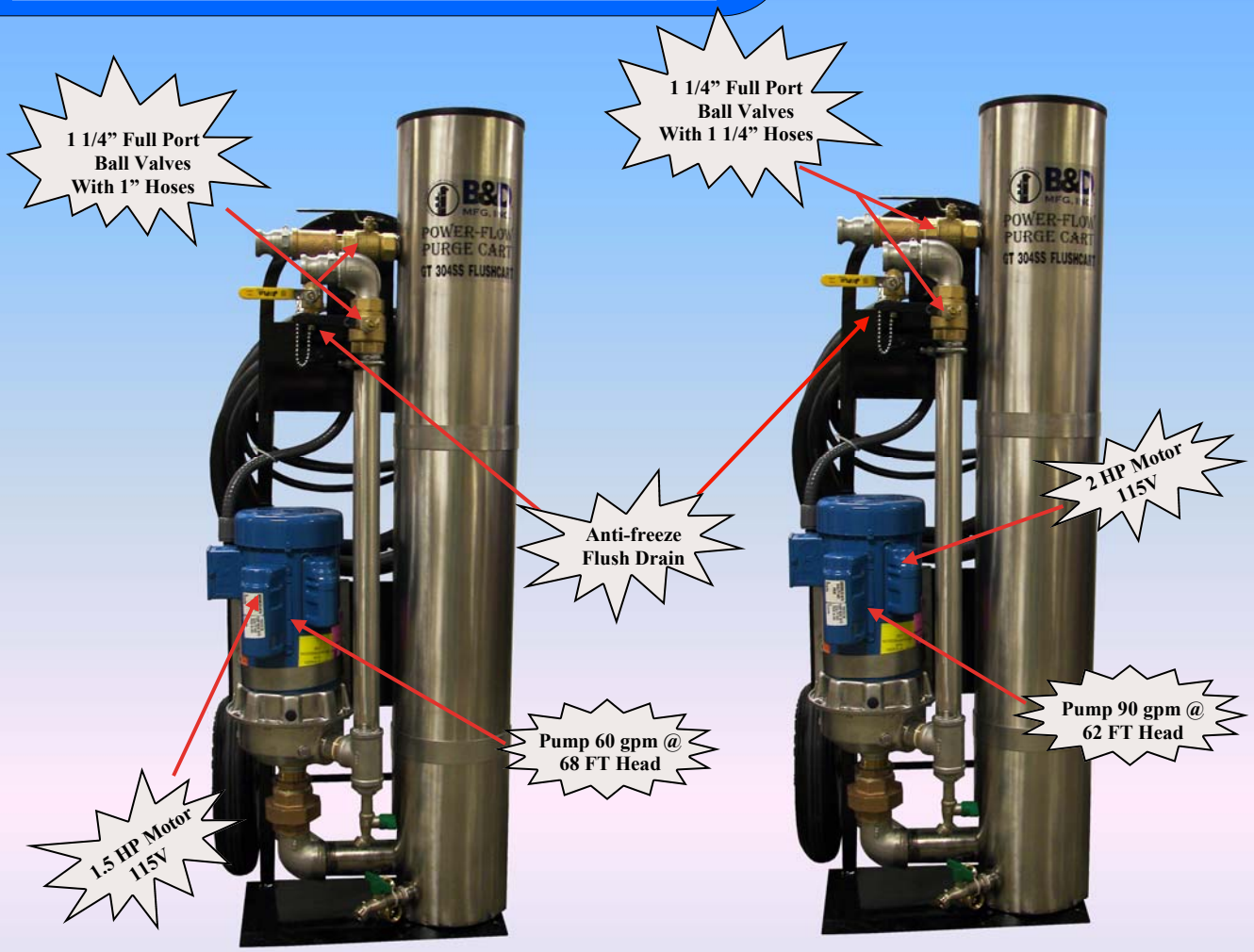
Optional Isolation Valve – An isolation valve is available on the pump discharge for ease of maintenance (not shown).

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

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

PURGE CARTS: SUBMITTAL DATA

2 Horse Power

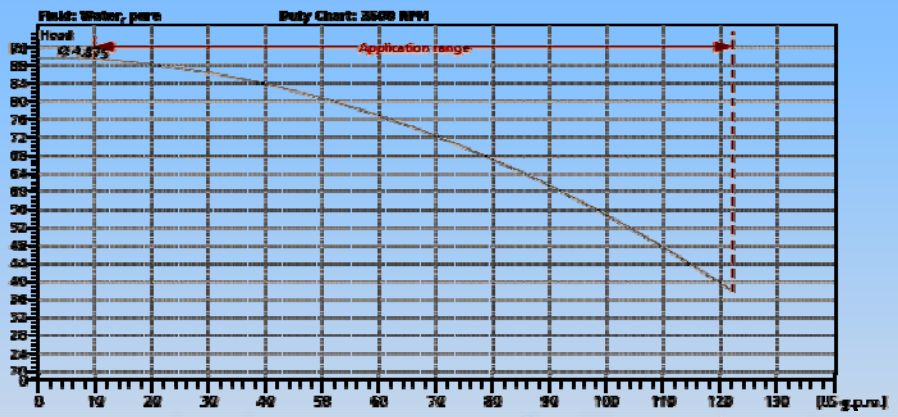
Cart Material: Mild Steel
Tank Material: 304L Stainless Steel
Piping: 304 Stainless, Red Brass
Piping Size: 1 1/4”
Valves: Yellow Brass
Valve Size: 1 1/4”
Drain Valves: Stainless (Hose Bib)
Hoses: 150 PSI Rubber Hose
Hose Size: 1 1/4”
Pump: Refer to Add’l Page
Electrical Plug: 20 Amp~115V
Hose Connections: 1 1/4” Cam and Groove
Total Weight: 196 LBS.
Dimensions: H=53” W= 22 1/2”
Tank Volume: 10 Gallons
Filter: In Tank; Double Woven 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; Double Woven Screen

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

2 Horse Power Motor



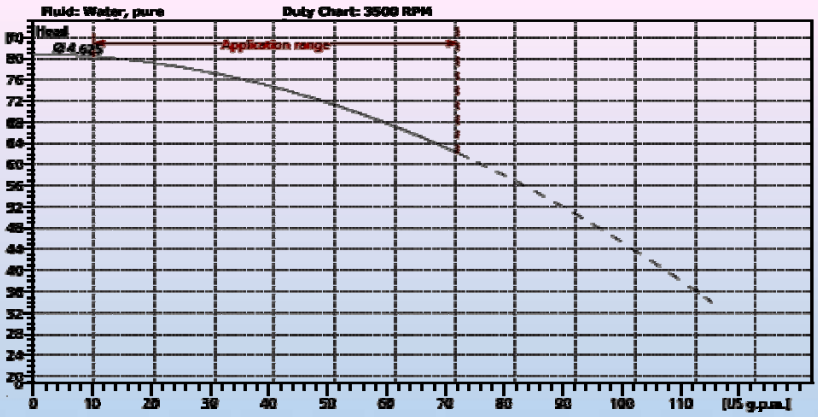
Hydraulic Data					Motor Data	NPE Model	Quantity
Maximum Flow	Flow at Duty Point	Maximum TDH	TDH at Duty Point	$NPSH_R$	Voltage/Phase/Enclosure		
122 US g.p.m.	0 US g.p.m.	90 ft	0 ft		115V 1Ph TEFC	2ST1G4C4	1

Pump Technical Data

Pump Code: 2ST1G4C4
System Input Power: 1~115V
Electrical Enclosures: TEFC
Impeller Size: 4-7/8”
Impeller Type: Radial impeller
Impeller Construction: Closed

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
Shaft Seal: Carbon/Sil-Carbide/Viton

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	$NPSH_R$	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”

PUMPS: GRUNDFOS PUMPS & FLANGES, BELL & GOSSETT PUMPS

GRUNDFOS

Size	Part Number
GRUNDFOS PUMP 115V (COATED) HYDRONIC	G-15-58F-E-1
GRUNDFOS PUMP-CLOSED SYSTEM MODEL- 115V/3 SPEED	G 1-2699/3
GRUNDFOS PUMP 230V	G 2-2699
GRUNDFOS PUMP 230V	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

GRUNDFOS

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

BELL & GOSSETT

Size	Part Number
BELL & GOSSETT PL55 230V-E-COATED (air cool)	G-1BL062
BELL & GOSSETT NRF36 230V-E-COATED (3 SPEED)	G-NRF36

NRF36

PL55

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.

PUMPS: G & L NPE 316L SS CLOSE-COUPLED CENTRIFUGAL PUMPS

All Single Phase Motors Includes Built-in Overload Protection.

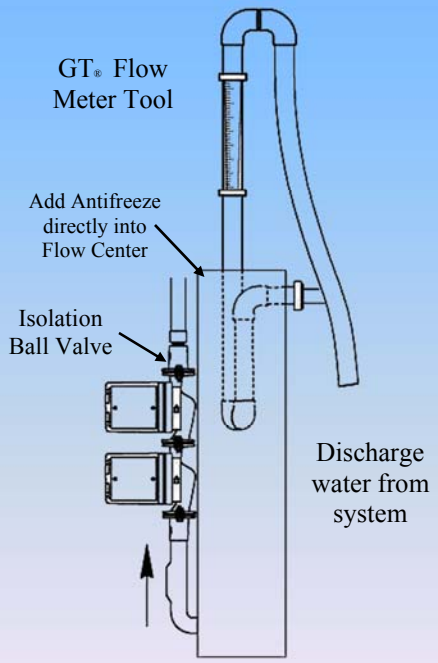
Single Phase -- 115/230 volt 60 Hz
Three Phase -- 208-230/460 Volt 60 Hz
Maximum Working Pressure 125 PSIG
**Except Models 3HP are 230v 1PH only.
Capacities to **150 GPM**
Heads to **150 ft**

Single Phase - ODP

Size	Part Number	Model Number	Aprx. Weight
1/2 HP	1AM001	1ST1C1E4	27
3/4 HP	1AM003	1ST1D1D4	32
1 HP	1AM005	1ST1E1C4	33
1 1/2 HP	1AM007	1ST1F1B4	39
2 HP	1AM009	1ST1G1A4	43
3/4 HP	1AM011	2ST1D1F4	32
1 HP	1AM013	2ST1E1E4	33
1 1/2 HP	1AM015	2ST1F1D4	39
2 HP	1AM017	2ST1G1C4	43
3 HP	1AM019	**2ST1H1A4	49
1 HP	1AM021	3ST1E1E4	33
1 1/2 HP	1AM023	3ST1F1D4	39
2 HP	1AM025	3ST1G1C4	43
3 HP	1AM027	**3ST1H1A4	49

Call for availability on non-stock/
Special Order Pumps.

FLOW CENTER ACCESSORIES: FLOWMETER TOOL



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

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

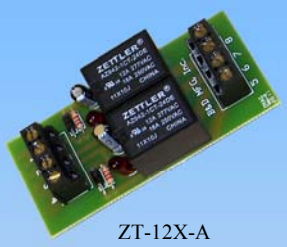
Size	Part Number	GPM	LPM	Adapter Size
WF-400N IN-LINE FLOWMETER	F-40750LN-12	1.0 to 10	4.0 to 38	3/4" FPT
WF-400N IN-LINE FLOWMETER	F-40750LN-16	1.0 to 10	4.0 to 38	1" FPT
WF-400N IN-LINE FLOWMETER	F-41017LN-12	1.0 to 17	. . .	3/4" FPT
WF-400N IN-LINE FLOWMETER	F-41017LN-16	1.0 to 17	. . .	1" FPT
WF-400N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

HSS® SERIES: CONTROLS & ACCESSORIES



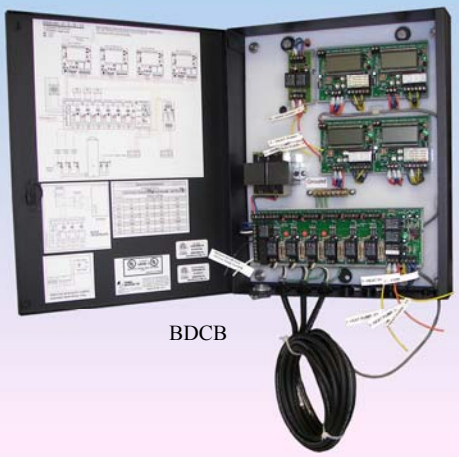
ZT-12X-A

WD17535

2876710

B1-30T

H2-2TC



BDCB

B3-6CR

ETC

Size	Part Number
DIGITAL THERMOMETER	WD17535
SINGLE STAGE ELECTRONIC TEMPERATURE CONTROL	ETC-111000
DUAL STAGE ELECTRONIC TEMPERATURE CONTROL	ETC-211000
30 MINUTE ADJUSTABLE DELAY TIMER	B1-30T
HSS®- 6 CIRCUIT CONTROL PRINTED CIRCUIT BOARD	B3-6CR
CONTROL BOX WITH B3-6CR & 50 VA Tranf & G.Bar	BDCB-1
BOX, B3-6CR & 50VA TRANF & G.BAR, ETC-111- HTG.	BDCB-1H1
BOX, B3-6CR & 50VA TRANF & G.BAR, ETC-211- HTG,CLG.	BDCB-1HC2
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.

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

MALE PIPE X
SWIVEL NUT ADAPTER

GAUGE, PRESSURE PROBE, 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
4" PRESSURE GAUGE	WP060
2 1/2" PRESSURE GAUGE, LIQUID FILLED	PGNL25-100-G

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

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.

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.

ACCESSORIES: BRASS BARB FITTINGS

Size	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
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
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 1/4" BRASS BARB X 1 1/4" FUSION COUPLING	BRC125PE6
1" BRASS BARB X 2" FUSION COUPLING	BRC1PE8
3/4” INSERT X 1” INSERT BRASS	RBCP7510
1” INSERT X 1” INSERT BRASS	RBCP100
1” FPT X 1” BARB STRAIGHT ADAPTER	RBFA100
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

Call for availability of other sizes.

ACCESSORIES: GLYCOL TESTER

- **Eyepiece**
- **Dip Stick**
- **Syringe to Draw Fluids**
- **Hole for Wall Hanging**
- **High-Impact Housing**
- **ViewPoint R 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 antifreeze. This method is proven to be the most accurate of all conventional testing methods. Accurate readings will save antifreeze and extend the life of your engine and water pump.

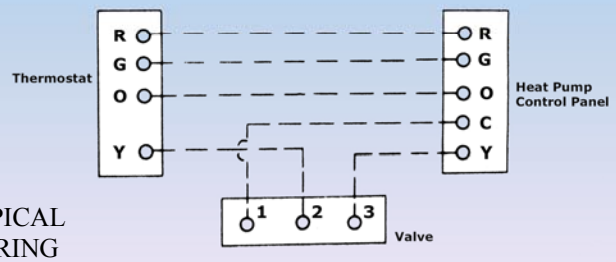
ACCESSORIES: GEOTHERMAL VALVES

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

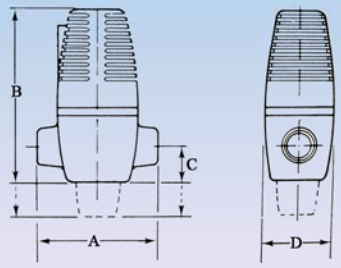
Created especially to eliminate noisy water hammer. The Taco GT Whisper Guard operates in a totally different way from fast-acting solenoids. How? Because it closes slowly and no water hammer occurs. The unique end-switch design permits control of the heat pump by the valve. This allows movement of cold 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.



TYPICAL WIRING DIAGRAM



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	T557G2	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	T557G2	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

Specifications available upon request

Call for availability of other sizes.

ACCESSORIES: PLASTIC SOLENOID VALVE

Electric Globe
Light Commercial

APPLICATIONS

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

SIZE
1" plastic models

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

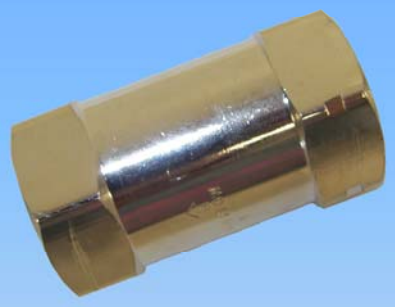
- Heavy-duty, corrosion and UV-resistant PVC construction
- Stainless steel and fabric-reinforced synthetic rubber diaphragm
- Encapsulated solenoid
- Available in NPT or slip configuration for high-volume applications
- Removable, tamper-resistant flow control handle
- Easily serviced without removal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

Call for availability of other sizes.

PIPE ACCESSORIES: POLY-ROLLER

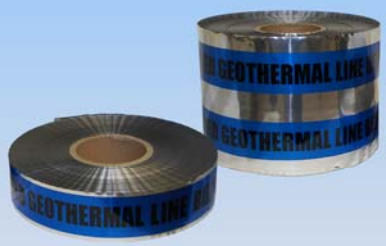
Handle Polyethylene Pipes and Tubing in a neat, Orderly Manner with the Poly-Roller.

- ◊ 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.

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



Size	Part Number
3/4” TEST CAP FOR P.E. PIPE	TP-304
1” TEST CAP FOR P.E. PIPE	TP-306
1 1/4” TEST CAP FOR P.E. PIPE	TP-308
1 1/2” TEST CAP FOR P.E. PIPE	TP-309
2” TEST CAP FOR P.E. PIPE	TP-310
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

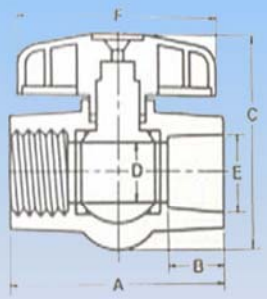
Refer to page 75 for more Test Cap Sizes

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

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 ^{O}F
MAX. SERVICE TEMP. 140 ^{O}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.

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.

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.

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	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	6-100U610
1" X 2-305 FT COILS-PE4710,SDR11 U-BEND COILS REVERSE	**6-100U610-R**
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.

GROUT: THERMAL GROUT LITE, BH20 GROUT, THERMAL GROUT SELECT

Thermal Grout Lite

Thermal Grout Lite is a unique bentonite-based two-part, field mixed, high to very-high solids, grouting material that can mixed to meet a range of thermal conductivity's from **0.45 to 1.00 Btu/hr ft °F**. It has been specifically developed for closed-loop ground-coupled heat pump applications where thermal conductivity in the vertical bore column is critical to system performance. This product is certified by the National Sanitation Foundation International to ANSI/NSF Standard 60, Drinking Water Treatment Chemicals - Health Effects. **Thermal Grout Lite** contains no chemical polymers or organic matter.

Thermal Grout Lite provides unequaled performance while offering the contractor proven advantages in handling and clean-up. When properly mixed, more than 30 minutes of working time is available before significant hydration occurs. Unlike many other bentonite grouting materials, **Thermal Grout Lite** does not flash hydrate.

Its percentage of solids will range from equivalent, to over 2 times greater than that of the best conventional bentonite grout products. As the solids percentage becomes higher, **Thermal Grout Lite** will require less water per delivered gallon of yield than other grout as well as a linear shrinkage potential which becomes less and less.

BH 20 Grout

A 20% solids, modified bentonite grout product which has been designed to be mixed with fresh water and pumped to its destination. **BH 20 Grout** requires no polymer additives and is a complete mineral base product. This product is certified by National Sanitation Foundation International to ANSI/NSF Standard 60, Drinking Water Treatment Chemicals - Health Effects. **BH 20 Grout** meets all minimum state regulations for grouting materials.

Once placed, **BH 20 Grout** will set into a semi-rigid plug. **BH 20 Grout** is also suitable for sealing well casings, decommissioning abandoned wells and Geothermal Heat Pump applications were thermal performance is not an issue.

Thermal Grout Select

Thermal Grout Select is a unique bentonite-based two-part, field mixed, high to extreme-high solids, grouting material that can mixed to meet a range of thermal conductivity's from **1.00 to 1.20 Btu/hr ft °F**. It has been specifically developed for closed-loop ground-coupled heat pump applications where thermal conductivity in the vertical bore column is critical to system performance. This product is certified by the National Sanitation Foundation International to ANSI/NSF Standard 60, Drinking Water Treatment Chemicals - Health Effects. **Thermal Grout Select** contains no chemical polymers or organic matter.

Thermal Grout Select provides unequaled performance while offering the contractor proven advantages in handling and clean-up. When properly mixed, more than 30 minutes of working time is available before significant hydration occurs. Unlike many other bentonite grouting materials, **Thermal Grout Select** does not flash hydrate.

Its percentage of solids will range from equivalent, to over 2.5 times greater than that of the best conventional bentonite grout products. As the solids percentage becomes higher, **Thermal Grout Select** will require less water per delivered gallon of yield than other grout as well as a linear shrinkage potential which becomes less and less.

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	-
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	5
2” X 2”	SPC88	5
3” X 3”	SPC1010	5

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

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	20
1 1/4” X 3/4”	SPE64	20
1 1/4” X 1”	SPE65	20
1 1/4” X 1 1/4”	SPE66	15
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
2” X 2” - 45° ELBOW (FAB)	SPE88-45

FUSION 45° ELBOW MOLDED-----NEW

Size	Part Number
1 1/4” X 1 1/4” - 45° ELBOW	SPE66-45

FUSION ELBOWS (SLIM LINE)

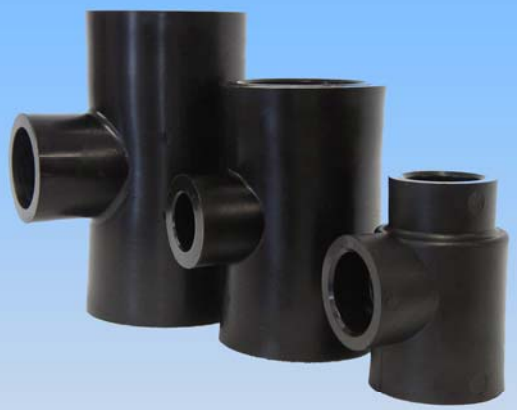
Size	Part Number
1 1/4” X 1 1/4” (SLIM LINE)	SPE66SL

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

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

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	5
1 1/2” X 1“ X 1”	SPT755	5
1 1/2” X 1” X 1 1/2”	SPT757	5
1 1/2” X 1 1/4“ X 3/4”	SPT764	5
1 1/2” X 1 1/4“ X 1”	SPT765	5
1 1/2” X 1 1/4“ X 1 1/4”	SPT766	5
1 1/2” X 1 1/2“ X 3/4”	SPT774	5
1 1/2” X 1 1/2“ X 1”	SPT775	5
1 1/2” X 1 1/2“ X 1 1/4”	SPT776	5



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	3
2“ X 1 1/4“ X 1”	SPT865	3
2“ X 1 1/4“ X 1 1/4”	SPT866	3
2” X 1 1/2“ X 3/4”	SPT874	3
2” X 1 1/2“ X 1”	SPT875	3
2” X 1 1/2“ X 1 1/4”	SPT876	3
2“ X 2“ X 3/4”	SPT884	3
2“ X 2“ X 1”	SPT885	3
2“ X 2“ X 1 1/4”	SPT886	3
2“ X 2“ X 2”	SPT888	3

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

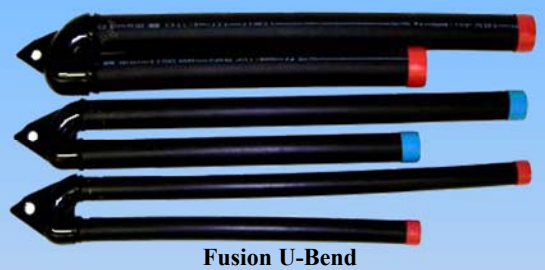
Can be bought individually.
Call for availability of other sizes.

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.

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

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

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

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 1" MALE ADAPTER	SPMA55V	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 1" FUSION COUPLING FEMALE ADAPTER	SPFA55	10
1 1/4" X 1 1/4" FUSION COUPLING FEMALE ADAPTER	SPFA66	10
2" X 2" FUSION COUPLING FEMALE ADAPTER	SPFA88	5

SPMA

SPFA

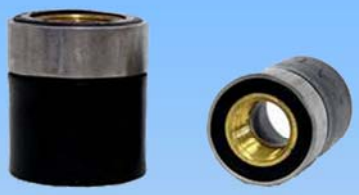
NEED A SPECIAL SIZE?
FABRICATED SIZES AVAILABLE!
CALL YOUR SALESMAN, TODAY!

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

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 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

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

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" FUSION BALL VALVE W/COUPLING	SPEV55C	-
1 1/4" VALVE ASSEMBLY WITH P.E. PIPE.	BPEV66	-
1 1/4" FUSION BALL VALVE W/COUPLING	SPEV66C	-

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

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

ACCESSORIES: P.E. FLUSH VALVES

PEVT566S

SPMT665S

PEVT666S

PE2VT666S

HEAT PUMP
CONNECTION

PEVTM566S

Size	Part Number
P.E. 1" MALE FLUSH TEE STRAIGHT 1 1/4"x 1 1/4" FUSION	PEVTM566S
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 1-1/4" 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

BPVA

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

Call for availability of other sizes.

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
1-1/2” 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
1-1/2” INLET X (3) 1” OUTLETS	SK755K02
1-1/2” INLET X (4) 1” OUTLETS	SK755K03
1-1/2” INLET X (5) 1” OUTLETS	SK755K04
1-1/2” INLET X (6) 1” OUTLETS	SK755K05
1-1/2” INLET X (7) 1” OUTLETS	SK755K06

PARALLEL HEADERS ARE SOLD INDIVIDUALLY , NOT AS A PAIR.

Size	Part Number
2” INLET X (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
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
2” INLET X (8) 1” OUTLETS	SK855K07
2” INLET X (9) 1” OUTLETS	SK855K08
2” INLET X (10) 1” OUTLETS	SK855K09

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

Call for availability of other sizes.

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
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
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
2” INLET X (8) 1” OUTLETS	SK855K07H
2” INLET X (9) 1” OUTLETS	SK855K08H
2” INLET X (10) 1” OUTLETS	SK855K09H

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

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

Call for availability of other sizes.

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.

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.

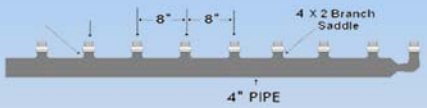
MANIFOLDS: P.E. MANIFOLDS
"SPECIAL ORDER ONLY"

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

Special Order - Non-Returnable Item
Call for availability of other sizes.

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.

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

GEO-**STAB**™ COUPLING

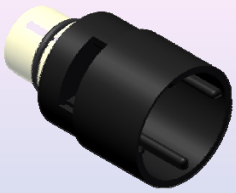
Size	Part Number
3/4" IPS SDR11 GEO-STAB™ FULL COUPLING	P1007754
1" IPS SDR11 GEO-STAB™ FULL COUPLING	P1007755
1 1/4" IPS SDR11 GEO-STAB™ FULL COUPLING	P1007756
1 1/2" IPS SDR11 GEO-STAB™ FULL COUPLING	P1007757
2" IPS SDR11 GEO-STAB™ FULL COUPLING	P1007758

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

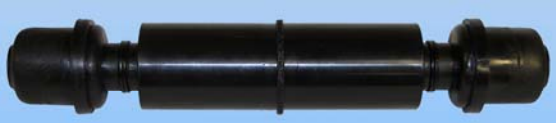
CHAMFER TOOL

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.

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

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

Call for availability of other sizes.

BUTT FUSION FITTINGS: SS MALE ADAPTERS, TEES, CAPS

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

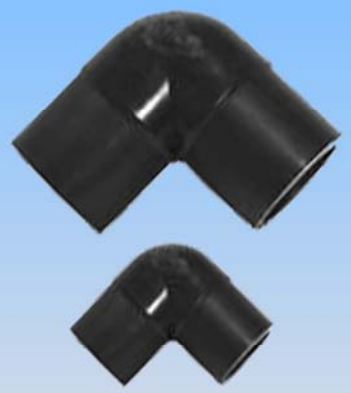
BUTT FUSION CAPS

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

Call for availability of other sizes.

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.

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#	DFIBR11
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#	DFIBR30

**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.

BUTT FUSION FITTINGS: MJ ADAPTERS, MJ ACCESSORY KITS

Size	Part Number
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*

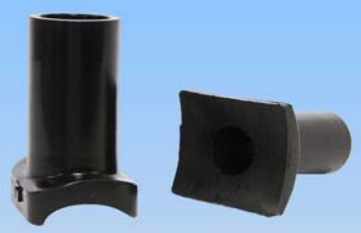
Size	Part Number
3” IPS x DIPS METAL MJ KIT C153-Includes Gland, Ring	DFIMJK10
4” IPS x DIPS METAL MJ KIT C153-Includes Gland, Ring	DFIMJK11
6” IPS x DIPS METAL MJ KIT C153-Includes Gland, Ring	DFIMJK12
8” IPS x DIPS METAL MJ KIT C153-Includes Gland, Ring	DFIMJK14
10” IPS x DIPS METAL MJ KIT C153-Includes 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.

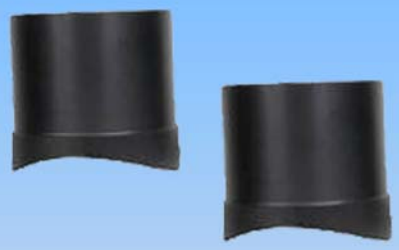
SADDLE FITTINGS: SERVICE SADDLES

Size	Part Number
1 1/4" X 3/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-64S
1 1/4" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-65S
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" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-84S
2" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-85S
2" X 1 1/4" SERVICE SADDLE: **BUTT FUSED OUTLET**	BFPSS-86B
2" X 1 1/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-86S
3" X 3/4" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-104S
3" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-105S
3" X 1 1/4" SERVICE SADDLE: **BUTT FUSED OUTLET**	BFPSS-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" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-114S
4" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-115S
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" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-124S
6" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-125S
6" X 1-1/4" SERVICE SADDLE: **BUTT FUSED OUTLET**	BFPSS-126B
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" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-144S
8" X 1" SERVICE SADDLE: SOCKET FUSED OUTLET	BFPSS-145S



Call for availability of other sizes.

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

Call for availability of other sizes.

FABRICATED TEES: BUTT TEES ONLY

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

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

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

Call for availability of other sizes.

ELECTROFUSION FITTINGS: COUPLINGS

CENTRAL

Size	Part Number
1" IPS 3408 ELECTROFUSION COUPLING	5760024C
1 1/4" IPS 3408 ELECTROFUSION COUPLING	5750026C
1 1/2" IPS 3408 ELECTROFUSION COUPLING	5750028C
2" IPS 3408 ELECTROFUSION COUPLING	5750030C
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.
Call for availability of other sizes.

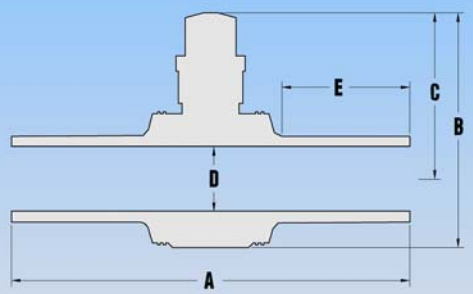
ELECTROFUSION FITTINGS: BRANCH SADDLE

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 2” IPS NUPI EF BRANCH SADDLE 230 PSI	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	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	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	12EICOL0602
8" X 2" IPS NUPI EF BRANCH SADDLE 230 PSI	12EICOL0802
10” X 2” IPS NUPI EF BRANCH SADDLE 230 PSI	12EICOL1002
12” X 2” IPS NUPI EF BRANCH SADDLE 230 PSI	12EICOL1202
12" X 4" IPS NUPI EF BRANCH SADDLE 230 PSI	12EICOL1204
NUPI to CENTRAL MALE & FEMALE CONNECTOR	12E8202

Call for availability of other sizes.

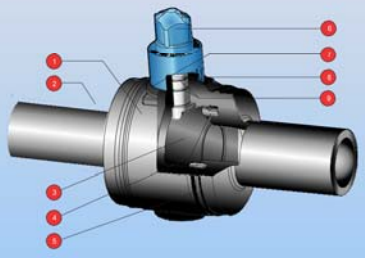
ACCESSORIES: KEROTEST POLYBALL

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.



Valve Sizes and Dimensions (Approx. Inches) Full Port

Size	Part Number	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

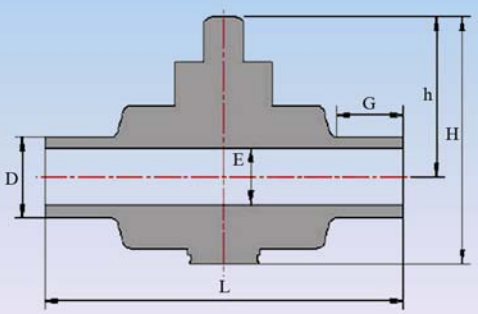
*Stem is SS on 1 1/2" FP & 1 1/4" FP sizes

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.

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
3" COMPRESSION X 3" FEMALE ADAPTER FOR P.E.	ELO-1010-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
3" COMPRESSION X 3" MALE ADAPTER FOR P.E.	ELO-1010-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.

COMPRESSION FITTINGS: COUPLINGS, END CAPS

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
1 1/2" PE X 1 1/2" PVC COUPLING	PE7C-PVC7C
2" PE X 2" PVC COUPLING	PE8C-PVC8C

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
3" PE X 3" PE COUPLING	ELO-1010C

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
3" COMPRESSION END CAP FOR P.E.	ELO-10-EC

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

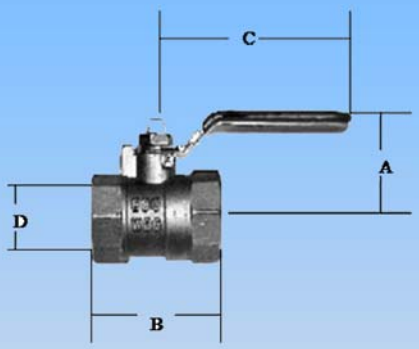
COMPRESSION FITTINGS: ELBOWS, CONVERSION KITS

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
1 1/2" PE X 1 1/2" PVC ELBOW	PE7E-PVC7E
2" PE X 2" PVC ELBOW	PE8E-PVC8E

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

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

ACCESSORIES: FULL PORT BRASS BALL VALVES



DIMENSIONS IN INCHES

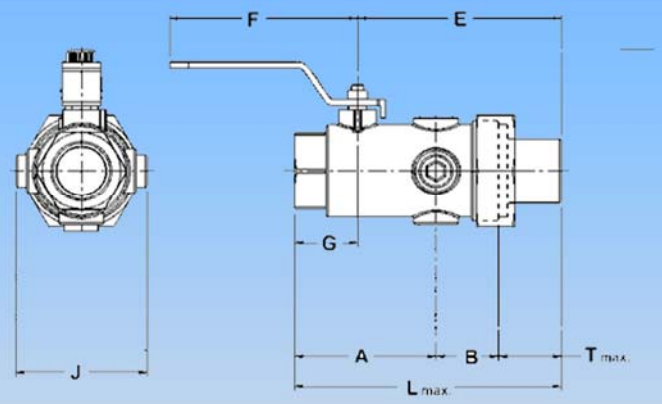
Size	Part Number	A	B	C	D (Bore)	Weight
3/4" FPT BRASS BALL VALVE (Full Port)	BV004	2.06	2.39	3.74	.79	.64lbs
1" FPT BRASS BALL VALVE (Full Port)	BV007	2.31	2.87	4.53	.98	1.07lbs
1 1/4" FPT BRASS BALL VALVE (Full Port)	BV010	3.00	3.41	5.51	1.26	1.61lbs
1 1/2" FPT BRASS BALL VALVE (Full Port)	BV013	3.15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

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 - 1/4" NPT taps

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

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

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.

FUSION KITS: CENTRAL SF3 FUSION KITS

The following kit contains the tools required to fuse the indicated pipe size with fittings. All kits are packed in a tool box and contain the following:

SF3-46C-1K
3/4" & 1 1/4" SET

- **SF3 Heater 115V**
- **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"**
- **1 1/4" Ratchet Cutter**
- **Tool Cover Bag**
- **Kwik Cutter (up to 2" IPS)**
- **Cotton Wipe Rag**
- **Second Timer**
- **Tempstik 475 & 525 F (one of each)**

SF3-48C-1K
COMPLETE SET - 3/4" Thru 2"

- **SF3 Heater 115V**
- **Socket Face Set - 3/4" thru 2" IPS**
- **Chamfer/Depth Gauge - 3/4" thru 2"**
- **Cold Rings - 3/4" thru 2"**
- **Roller Cutter 3/4" - 2"**
- **Tool Cover Bag**
- **Kwik Cutter (up to 2" IPS)**
- **Cotton Wipe Rag**
- **Second Timer**
- **Tempstik 475 & 525 F (one of each)**

SF3 Heating Tool: Versatile, Interchangeable Heater Faces, Portable & Recessed Thermometer.

SF3 Heater is available without kit. (Part# SF3-115V)

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

Vanguard compatible.
Warranty: 6 months from date of purchase.

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.**

FUSION KITS: CONNECTRA FUSION KITS

Each kit contains the tools required to fuse the indicated pipe size with fittings. All kits are packed in a tool box and contain the following:

[THREE YEAR LIMITED WARRANTY ON IRON ONLY]

46CPT-1K
3/4" & 1 1/4" SET

- **Double Face Heating 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 Keys**
- **1 1/4" Ratchet Cutter**
- **Tool Cover Bag**
- **Tempstik 500 & 525 F (one of each)**
- **Cotton Wipe Rag**
- **Fusion Tool Mounting Bracket**
- **Second Timer**

48CPT-2K
COMPLETE SET - 3/4" Thru 2"

- **Double Face Heating 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**
- **Tempstik 500 & 525 F (one of each)**
- **Cotton Wipe Rag**
- **Fusion Tool Mounting Bracket**
- **Second Timer**

Heating equipment is 110V. Kits include instructions necessary to complete trouble-free thermal welded joints.

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

FUSION EQUIPMENT: CENTRAL HEATING EQUIPMENT

CP0021-T

CP0022-T

SF3-115V

CHM300

CENTRAL

Size	Part Number
M-2 ELECTRIC HEATING TOOL (Single Socket Face)	CP0021-T
MODEL 4 SW ELECTRIC HEATING TOOL	CP0022-T
SF3 HEATER 115V W/ HIGH TEMP HANDLE	SF3-115V
HEATER MUFF BAG W/ROPE - LARGE	CHM300

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

FUSION EQUIPMENT: HEATING TOOLS

TD-3-H

TD-1-H

RT-1-H

RT-2-H

CONNECTRA

Size	Part Number
TD-1 HEATER W/20' CORD 120V	TD-1-H
TD-3 HEATER W/20' CORD 120V	TD-3-H
AUXILIARY HEATER TOOL HANDLE	TD-1

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 sizes.

SOCKET FUSION TOOLS: SOCKET FACES

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

CONNECTRA

Size	Part Number
3/4" IPS SOCKET FACE	SFT4
1" IPS SOCKET FACE	SFT5
1 1/4" IPS SOCKET FACE	SFT6
1 1/2" IPS SOCKET FACE	SFT7
2" IPS SOCKET FACE	SFT8

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

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

Call for availability of other sizes.

SOCKET FUSION TOOLS: DEPTH GAUGE, CHAMFER TOOL

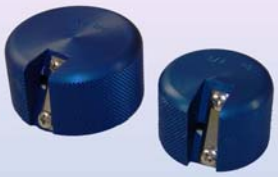
VANGUARD

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

CONNECTRA

Size	Part Number
3/4" IPS DEPTH GAUGE - ALUMINUM	DG4-A
1" IPS DEPTH GAUGE - ALUMINUM	DG5-A
1 1/4" IPS DEPTH GAUGE - ALUMINUM	DG6-A
1 1/2" IPS DEPTH GAUGE - ALUMINUM	DG7-A
2" IPS DEPTH GAUGE - ALUMINUM	DG8-A

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



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

CONNECTRA

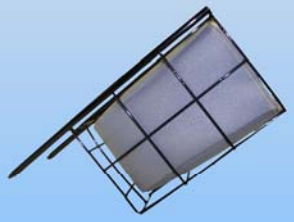
Size	Part Number
3/4" IPS COLD RING	CRT4
1" IPS COLD RING	CRT5
1 1/4" IPS COLD RING	CRT6
1 1/2" IPS COLD RING	CRT7
2" IPS COLD RING	CRT8

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 FOR RITMO IRON	DBUD



Call for availability of other sizes.

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.

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

CONNECTRA

Size	Part Number
FUSION TOOL MOUNTING BRACKET	CMB

FUSION EQUIPMENT: RITMO RAM 14

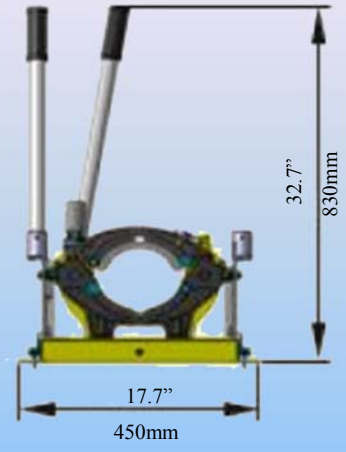
RAM 14 (1” IPS - 4” DIPS)
Manual fusion machine designed to butt fuse pipe and fittings.
Included with the **RAM 14** is a set of 4” liners.
RAM 14 is supplied with electronic-adjustable heating plate and an electric facer.
Aluminum made jaws, guarantee fusion force, strength and light weight. Ideal 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

DIMENSIONS:

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)



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

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.

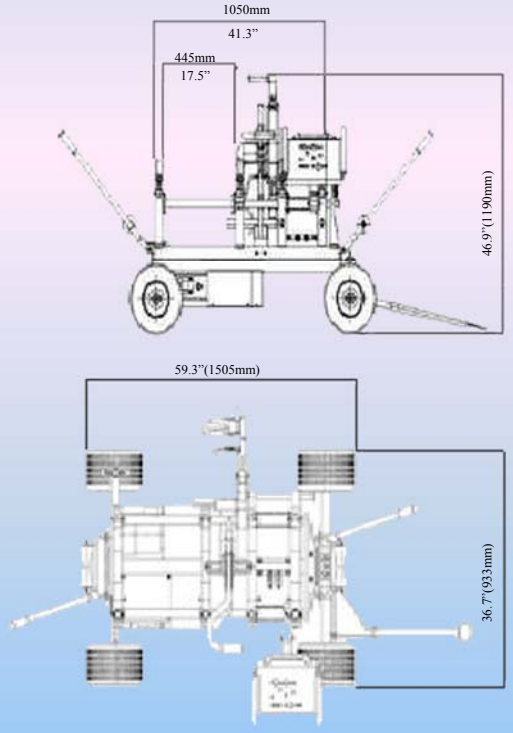
The **RAM 28** can be equipped with an optional data-logging device.

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

TECHNICAL FEATURES

Working Range	**2” IPS - 8” DIPS pipe (63-225 mm)**
Overall cylinder section	1.45 in² (9.36 cm²)
Weight	441 lbs (200 kg)
Power Supply	230 V, 50-60 Hz - 1Ph
Maximum absorbed power	3810W
Easy Life hydraulic unit	1100W
Facer	710W
Heater	2000W
Pressure working range	0-2176 PSI (0-150 bar)
Heater working temperature	356 - 536˚F (180 - 280˚ C)

DIMENSIONS:



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

FUSION EQUIPMENT: RITMO RAM 414

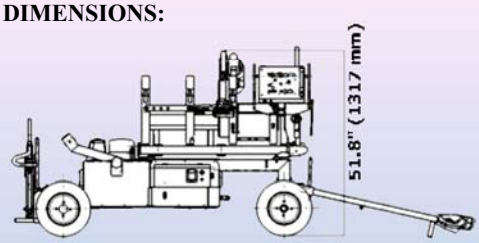
The **RAM 414** is an independent and motorized electro-hydraulic butt fusion machine with fusion capabilities ranging from 4” IPS to 14” IPS pipe sizes. The machine is designed for in-field fusion of HDPE pipe and fittings and other plastic pipes.
The **RAM 414** is provided with Ritmo’s unique and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

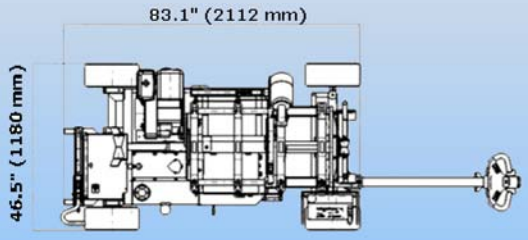
Size	Part Number
RAM 414 (4"-14"DIPS)	RAM 14 B.F. 4-14

TECHNICAL FEATURES

Working Range	**4” IPS - 14” IPS pipe (125-355 mm)**
Overall cylinder section	3.47 in² (22.38 cm²)
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.

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

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

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

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.

FUSION EQUIPMENT: CONNECTRA 14M BUTT FUSION MACHINE

DESCRIPTION:
The 14M is a highly versatile butt fusion machine that uses centerline applied force. This equipment is able to fuse IPS, metric and DIPS pipe as well as fittings, valves, tees, elbows and pups. The unit's independent locking mechanism on the joining assembly is semi-automatic and holds fusion force throughout the cool-down cycle. The 14M is easy to learn and operate. Expect minimal maintenance costs on your 14M and a rapid return on your investment.

FEATURES:

* True centerline fusion force provides evenloading around thecircumference of the pipe ends for symmetrical bead formation.
* Accommodates an impressive range of pipe sizes – from 3/4 inch IPS through 4 inch DIPS and 25 through 110 mm.
* Detachable handles can be arranged to permit fusion from either side of the joining assembly.
* Lightweight, symmetrical facing assembly allows mounting onto the joining assembly in either direction.
* Lightweight, narrow-profile heater for easy, one-hand operation.
* Rugged design with no "bells and whistles" means less maintenance expense.
* A superior piece of equipment at an extraordinary price.
* Limited three-year warranty.
* The 14M Butt Fusion Machine comes with a set of 4" liners.

OPTIONS/ACCESSORIES:
Snap in place liners for fusing smaller diameter pipe and pipe leveling outriggers.

The 14M modular cart has a wide base. Its front wheels rotate 360 degrees and its front axle pivots for easy handling on uneven terrain. All components can be integrated into a single unit for transport to and around the job site.

SPECIFICATIONS:

Carriage unit dimensions

Length	15.00 inches	381mm
Width	18.40 inches	467mm
Height	15.17 inches	385mm
Weight	39 pounds	17.7 kg

Capacities
Model 14M 3/4 inch CTS thru 4 inch DIPS*

Electrical data

120 VAC Single Phase	Watts	Amps
Facer Motor	660	5.5
Heater	1,500	12.5
Total Consumption	2,160	18

240 VAC Single Phase	Watts	Amps
Facer Motor	840	3.5
Heater	1,500	6.25
Total Consumption	2,340	9.75

◊With the use of optional reducing inserts
Per manufacturer, specs are subject to change without notice.

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

FUSION EQUIPMENT: CONNECTRA OUTRIDER 1500 SIDEWALL FUSION MACHINE

DESCRIPTION:
The outrider 1500 is designed for quick and accurate fusing of 1/2" through 4" sidewall fittings and outlets on all sizes and densities of polyolefin pipe. Its lightweight design allows one person operation, even in confined ditch space. The machine's mechanical/hydraulic load cell applies up to 1500 pounds of fusion force through the centerline of the fitting for consistent fusion force. The outrider 1500 consists of the fusion unit and fitting holder. Accessories for the unit include rounding shell assemblies to fit 2" or 4" pipe, and a chain shell assembly with bolster plates that accommodates 1-1/4" through 6" pipe. Easy to learn and operate, the outrider 1500 will deliver you low maintenance costs and a rapid return on your investment.

FEATURES:

* True centerline fusion force is applied through the centerline of fitting.
* Hydraulic load cell applies up to 1500 pounds of fusion force.
* Accommodates an impressive range of sizes 1/2 inch and larger.
* Standard 4 inch pivoting fitting holder.
* Fitting holder can be positioned quickly and easily.
* Fitting holder and inserts are serrated to better hold fittings.
* No maintenance intensive threaded rod.
* Rugged design with no "bells and whistles" means less maintenance expense.
* A superior piece of equipment at an extraordinary price.
* Limited three-year warranty.

ACCESSORIES:
Fitting liners for compatibility with 1/2 inch and larger fittings and chain extensions for larger size mains.
Accessories include: 2 inch rounding shell, 4 inch rounding shell, chain shell assembly and temperature adjustable heater.

Shown with 4 inch rounding shell

SPECIFICATIONS:

Top works with 4" rounding shell dimensions (fully open)

Length	44.75 inches	1,137mm
Width	10.50 inches	267mm
Height	8.50 inches	216mm
Weight	34 pounds	15.4kg

Top works with chain shell dimensions (fully open)

Length	43.00 inches	1,092mm
Width	13.50 inches	343mm
Height	38.00 inches	445mm
Weight	40 pounds	18.1kg

Per manufacturer, specs are subject to change without notice.

SPECIAL ORDER ONLY!
Accessories available. Please call for pricing.
Various items not in stock.

FUSION EQUIPMENT: CONNECTRA 28EP & 14M LINERS

28EP LINERS

Size	Part Number
2" IPS LINERS FOR 28EP	28-0208-6070-40
4" IPS LINERS FOR 28EP	28-0208-6010-40
6" IPS LINERS FOR 28EP	28-0208-6100-40
8" IPS LINERS FOR 28EP	28-0208-6000-40

14M LINERS (* 2" MASTER REQUIRED)

Size	Part Number
3/4" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6160-40*
1" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6150-40*
1 1/4" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6110-40*
1 1/2" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6090-40*
2" IPS (MASTER) LINERS (SET OF 4 EA.) FOR 14M	28-0204-6070-40
3" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6030-40
4" IPS LINERS (SET OF 4 EA.) FOR 14M	28-0204-6010-40

Call for availability of other sizes.

ELECTROFUSION PROCESSORS: ELECKTRA LIGHT

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

Elektra Light is light and easy to carry.

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

Basic equipment supplied with the welding unit:

- Connectors Ø 4,0 mm, Ø 4,7 mm
- Carrying Case
- Manual Scraper
- 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	20 - 125/160 mm
Welding output voltage	8 ÷ 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

ELECTROFUSION PROCESSORS: ELECKTRA 400 & ELECKTRA 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 compose 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
ELECTRA 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

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

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

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

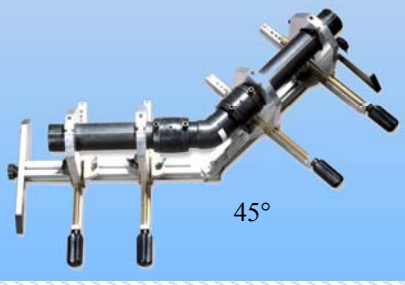
UNIVERSAL ALIGNER 63

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°

ELECTROFUSION EQUIPMENT: UNDER CLAMPS, SCRAPERS

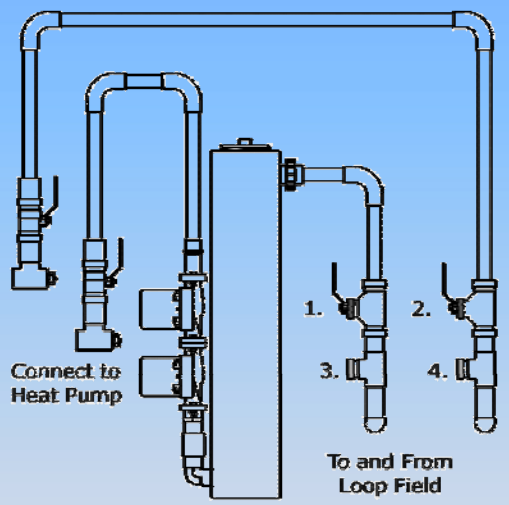
Size	Part Number
1 1/4" IPS UNDER CLAMP	5750014
1 1/2" IPS UNDER CLAMP	5750019
2" IPS UNDER CLAMP	5750862
3" IPS UNDER CLAMP	5750863
4" IPS UNDER CLAMP	5750864
6" IPS UNDER CLAMP	5750865

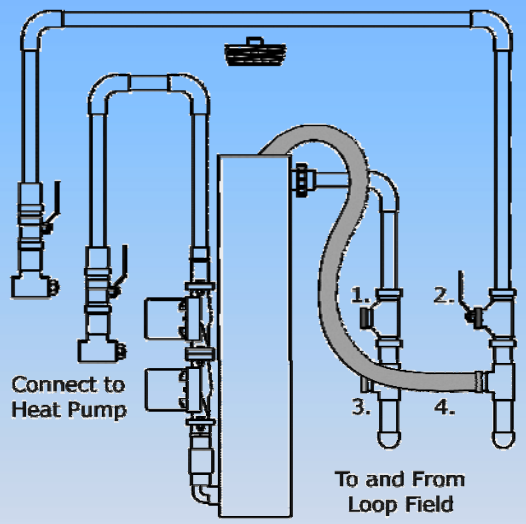
Size	Part Number
2" IPS MOLDED SCRAPER	5752118
3" IPS MOLDED SCRAPER	5752122
4” IPS MOLDED SCRAPER	5752119

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

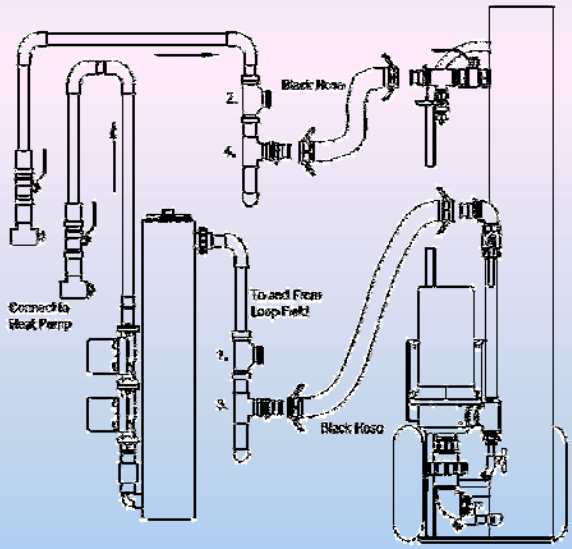
Call for availability on Under Clamps.
Various items not in stock.
Call for availability of other sizes.

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



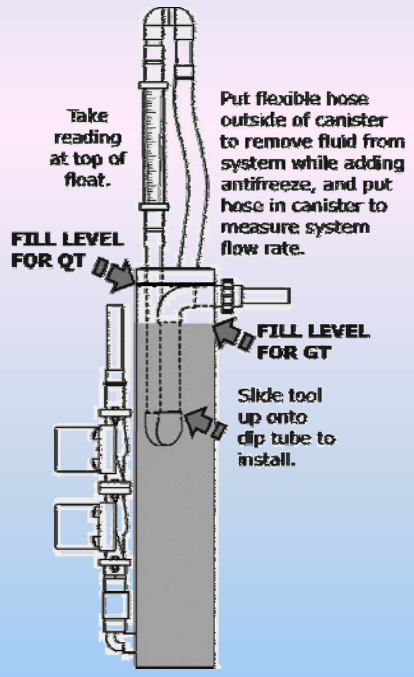


1. Close valves 1. and 2., located on lines to and from the loop field.
2. Remove screw caps from tees 3. and 4. and connect flush cart hoses to 1“ MNT.
3. Flush and purge loop field thoroughly with flush cart.



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).

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



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.

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.

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). 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 of 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 lws
REV Nov 2010/Replaces All previous Warranty Statements

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.

FORM lws
REV Nov 2010/Replaces All previous Warranty Statements

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 (15-58) pumps and circuit boards are free from defects in materials and workmanship. B & D Mfg., Inc. warrants all other pumps for 2 1/2 years. 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 lws
REV Nov 2010/Replaces All previous Warranty Statements

PIPE: WATER VOLUME, TEMPERATURE LIMITS

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

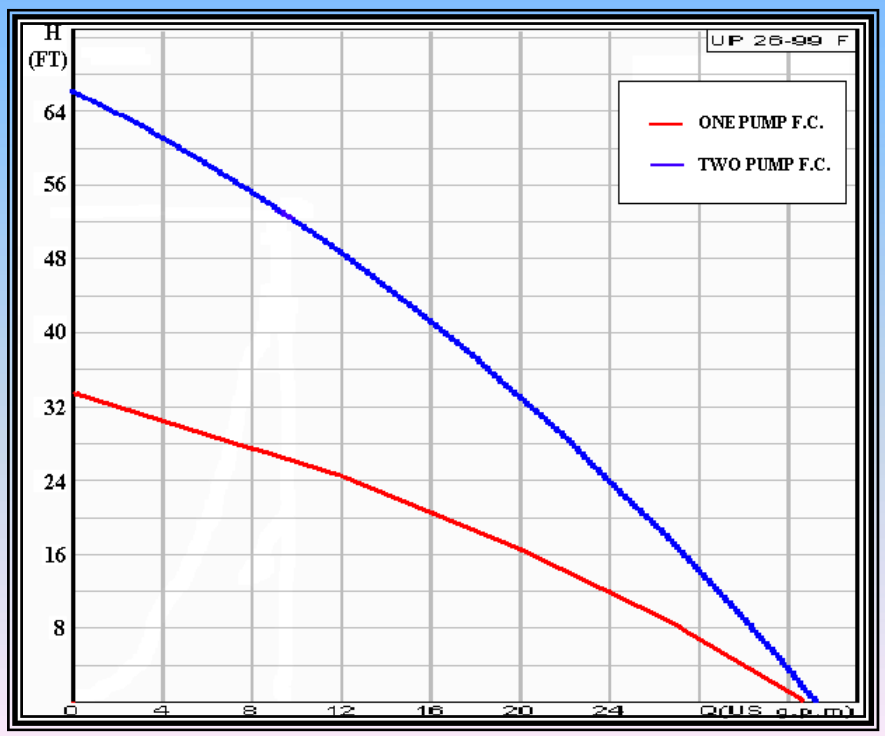
NOMINAL PIPE SIZE	GALLONS	LITERS
3/4 SDR-11	3.02	11.42
1" SDR-11	4.73	17.91
1-1/4" SDR-11	7.55	28.56
1-1/2" SDR-11	9.93	37.58
2" SDR-11	15.36	58.12
3" SDR-11	33.47	126.67
4" SDR-11	55.31	209.36

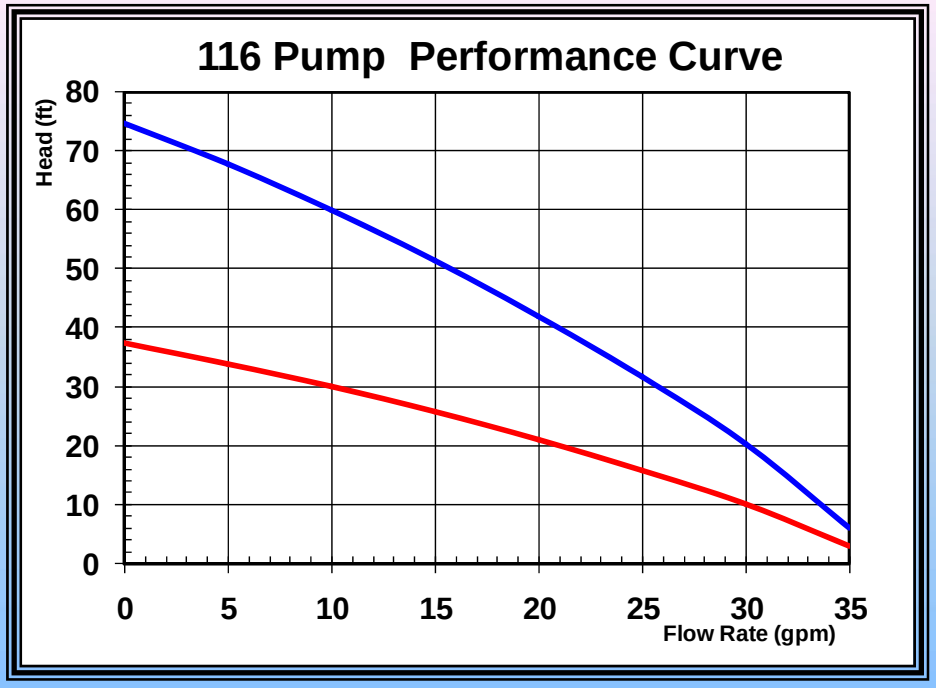
Temperature Limits

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

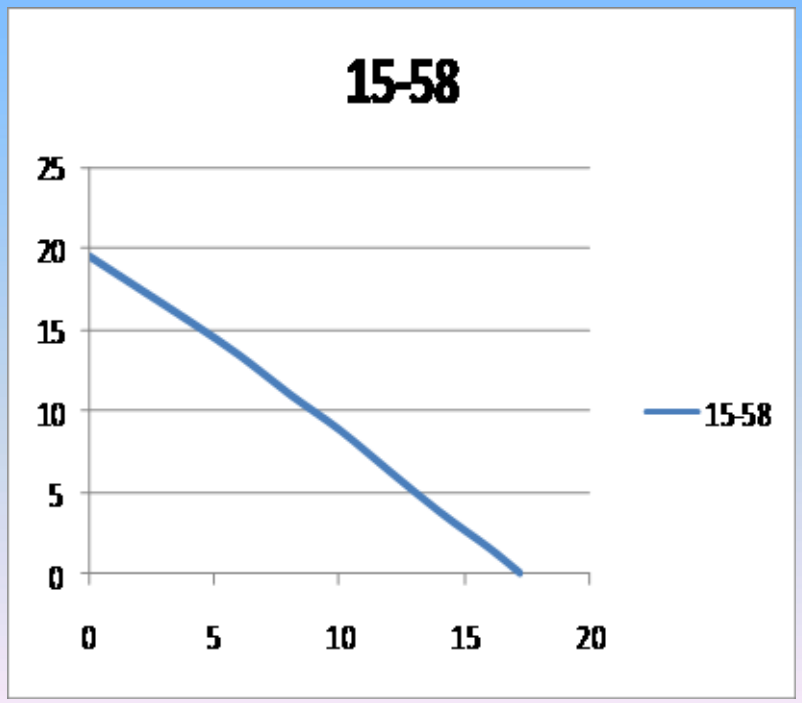
OPERATING TEMPERATURE, ^{O}F	De-Rating Factor
73	1.00
100	0.75
140	0.50

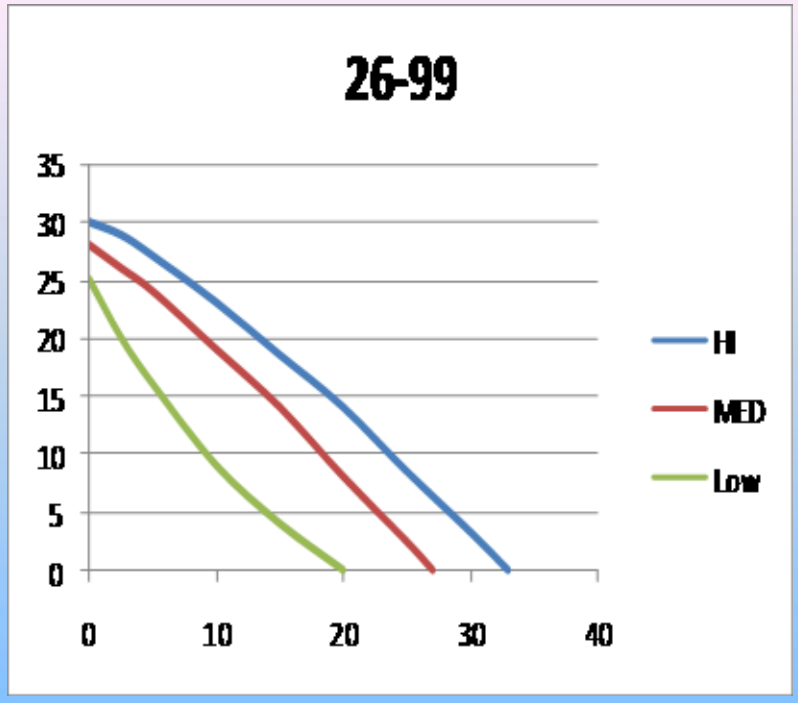
FLOW CENTERS: PUMP CURVES 26-99 & 116



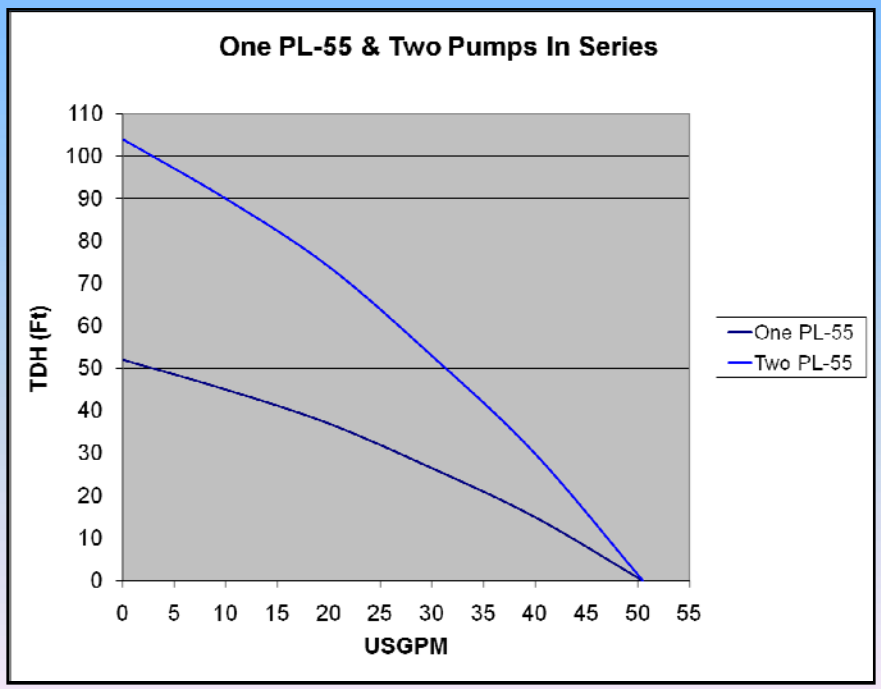


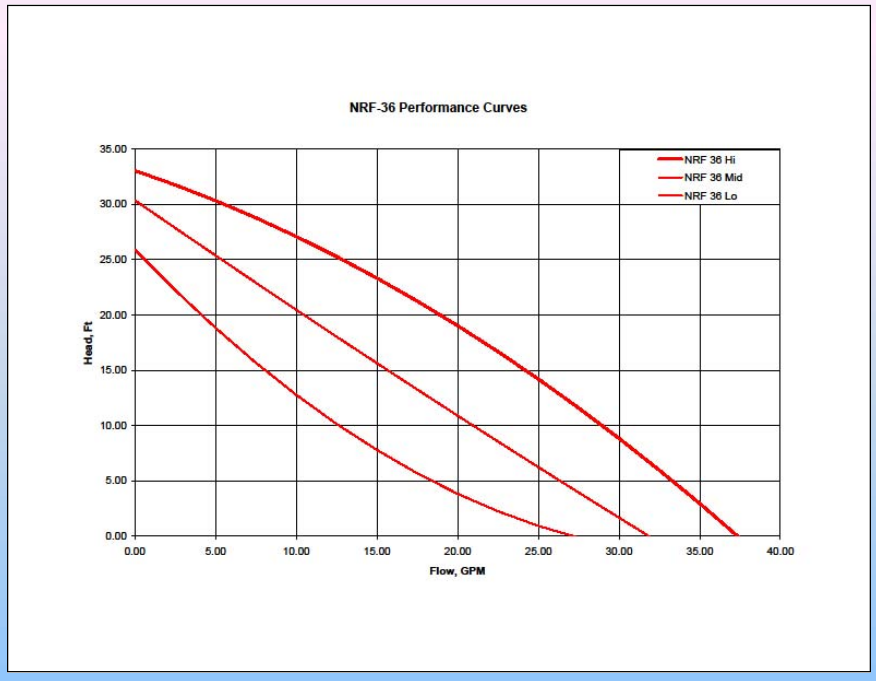
FLOW CENTERS: PUMP CURVES 15-58 & 26-99 3-SPEED





FLOW CENTERS: PUMP CURVES PL-55 & NRF-36





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- HEAT PUMP SCHEDULING
- CLOSED-LOOP GHEX DESIGN
- INTERIOR PIPING DESIGN
- HEAD LOSS CALCULATIONS
- CIRCULATING PUMP SELECTION
- ACCA MANUAL D DUCT DESIGN

GEO CONNECTIONS

loopLink

- LOOPFIELD DESIGN
- PEAK LOAD ESTIMATOR
- OPERATING COST COMPARISON
- DOMESTIC HOT WATER CALCULATOR
- COST OF OWNERSHIP CALCULATOR
- CO_2 EMISSIONS CALCULATOR

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BUTT FUSION MACHINES:
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ELECTROFUSION MACHINES:
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