FLOWING EXPERTISE

JULY 2024

CALEFFI
Hydronic Solutions

PLUMBING AND HYDRONICS CATALOG

07-2024

CALEFFI
Hydronic Solutions

FLOWING EXPERTISE

With our heating and plumbing solutions, we have been redesigning the comfort of the spaces we live and work in for over 60 years. This is thanks to the flow of expertise, technology, experience and innovations that we have acquired over the years by constantly exchanging ideas with our customers and suppliers. A flow that pushes boundaries, allowing us to constantly set the benchmark. A flow that allows us to always look one step ahead into the future.

FLOW OF LIFE

A unique way of flowing.
It is **continuous change**, a high degree of reliability in our work, and the ongoing pursuit of total quality, which is the result of small daily actions.

FUTURE

Innovation aimed at creating **new forms of comfort** for spaces, which motivates us to continue to grow and improve.

SUSTAINABILITY

Our focus on preserving **environmental**, **social and economic well-being** so that it can be passed on to future generations through our products and processes.

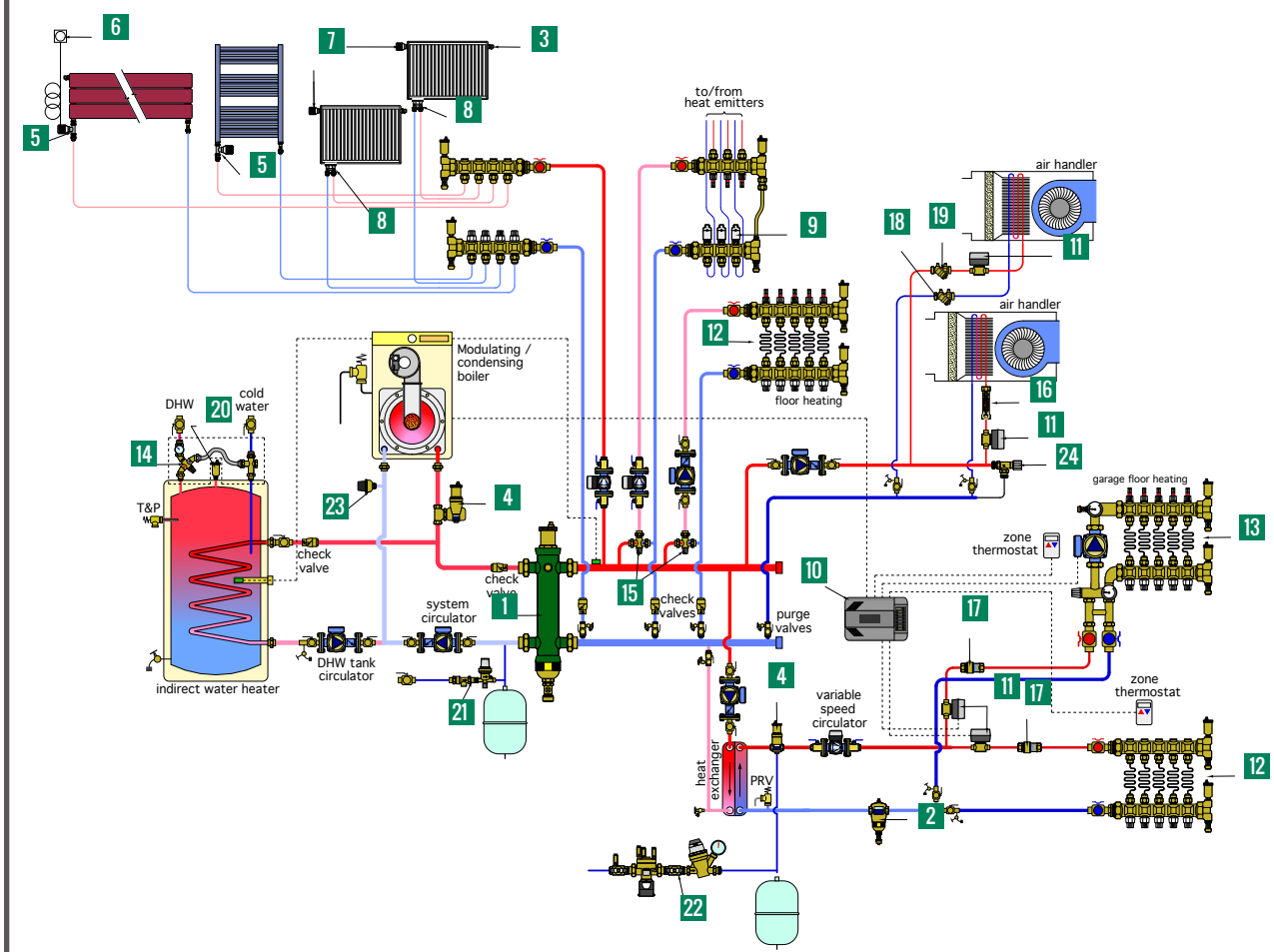
TECHNOLOGY

Our ability to do research, invest in processes and develop **state-of-the-art solutions** in an ever-evolving world of expertise.

MADE IN CALEFFI

A uniqueness consisting of many details, which is what we are known for worldwide. True **“Made in Italy”** quality, the hallmark of our company.

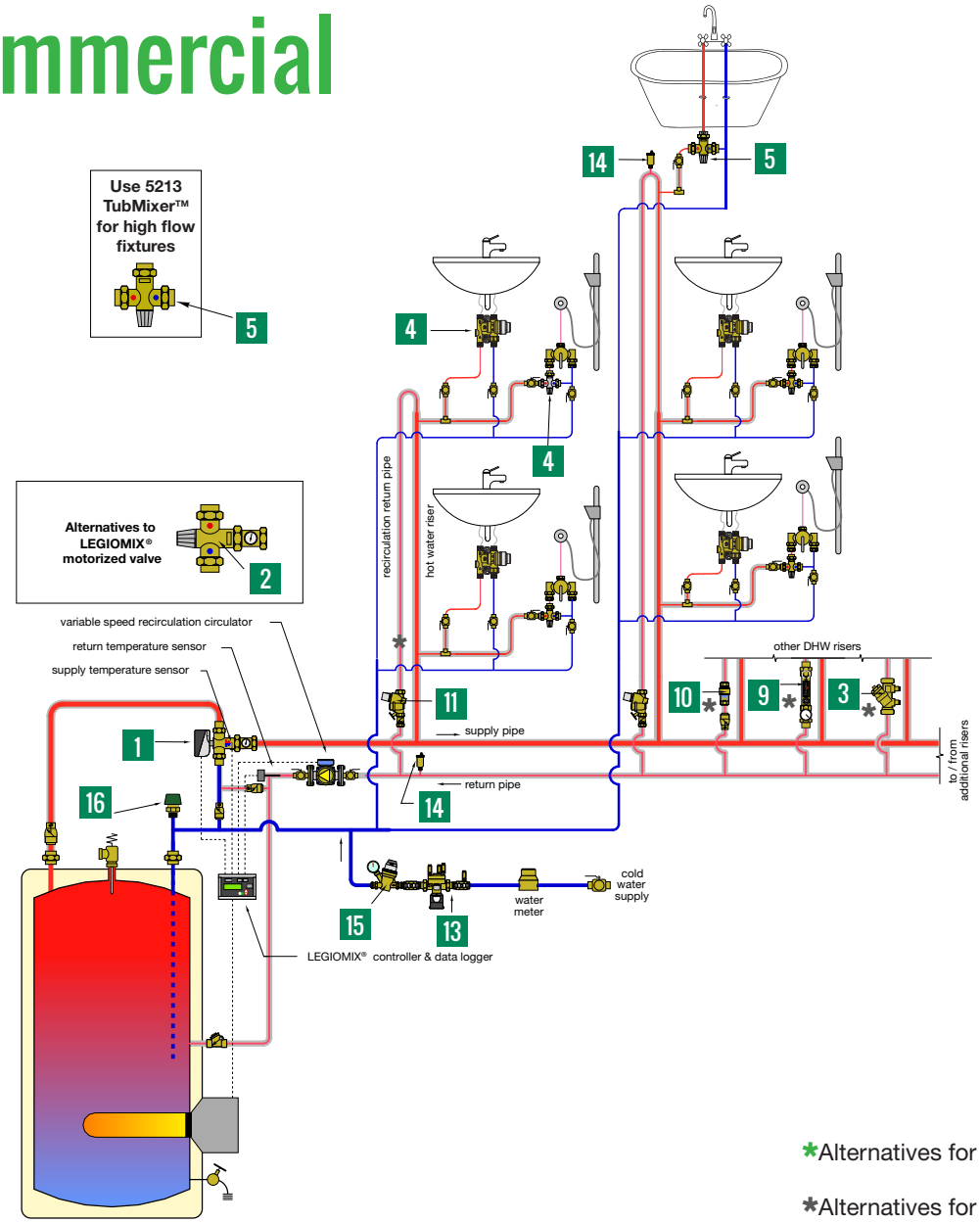
Hydronics Product Selector



Key	Part Number	Description	Pages #
1	**549506A**	SEP4™ hydraulic, air, dirt, mag separator	12
2	**546328AM**	DIRTMAG® PRO magnetic dirt separator	24
3	**508013A**	Hygroscopic air vent	29
4	**551706A**	DISCAL® air separator, rotating collar	20
5	**221500**	Radiator valve	33
6	**472000**	Remote wall sensor	32
7	**200000**	Radiator valve control head	32
8	**301040**	Radiator connection valves	34
9	**656344**	TwisTop™ thermo-electric actuator	40 & 52
10	**ZVR103**	Z-one™ valve relay control	44
11	**Z55P**	Z-one™ valve assembly	41
12	**6686E5S1A**	TwistFlow™ manifold	50
13	**1725E1AHE**	Manifold mixing station	48
14	**520510AX**	TankMixer™ thermostatic mixing assembly	65
15	**521619A**	MixCal™ thermostatic mixing valve	57
16	**132662A**	QuickSetter™ balancing valve	69
17	**127361AF**	FlowCal™ automatic balancing valve	75
18	**128556AF**	FlowCal™ dynamic balancing valve	74
19	**128756 000**	Union Y-strainer	96
20	**NA502640A**	PLUMBVENT™ low lead automatic air vent	101
21	**573002A**	AutoFill™ combo ASSE 1012	106
22	**574151A**	AutoFill™ combo ASSE 1013	107
23	**626600A**	Uni-Switch™ Paddle flow switch	117
24	**519600A**	Differential pressure bypass valve	117

Plumbing Product Selector

Commercial

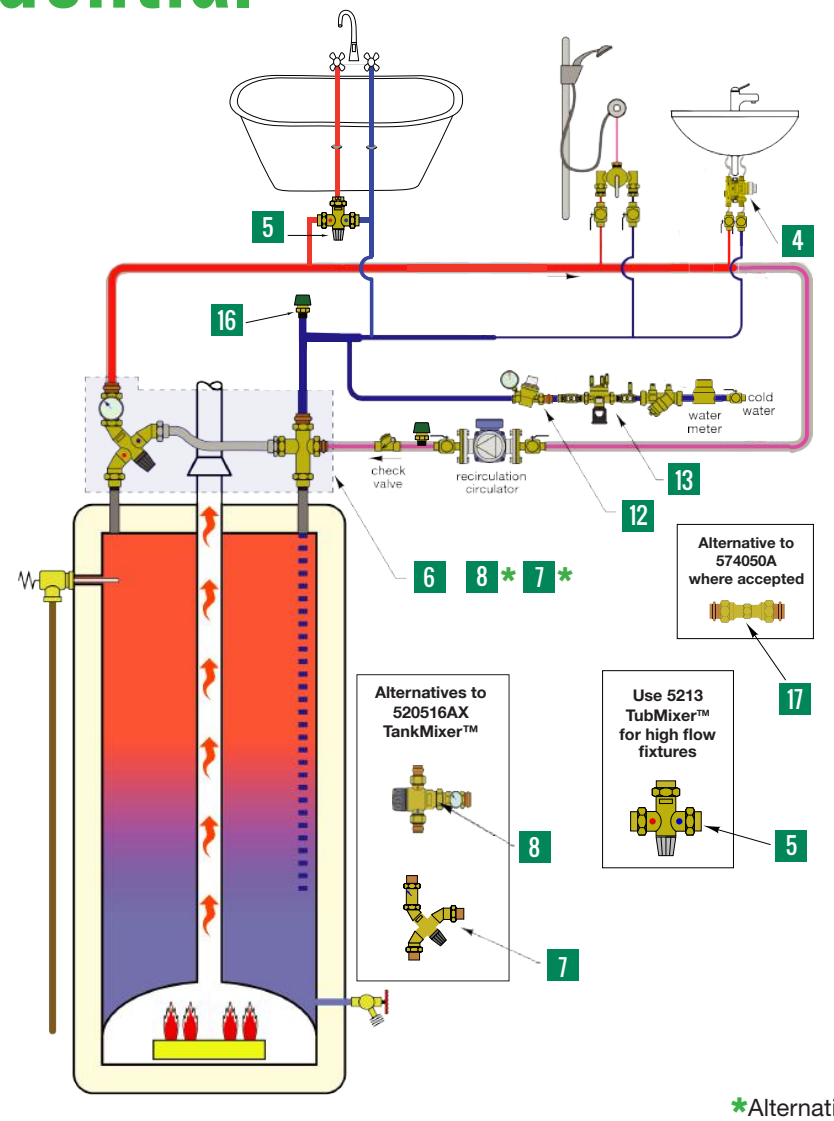


*Alternatives for mixing.

*Alternatives for balancing.

Key	Part Number	Description	Catalog Pages
1	**600074A**	LEGIOMIX® electronic mixing valve ASSE 1017	62
2	**523177A***	MixCal+™ High-flow mixing valve ASSE 1017	58
3	**128456AF***	FlowCal+™ dynamic balancing valve	73
4	**521201A**	SinkMixer™ scald protection valve ASSE 1070	61
5	**521347A**	TubMixer™ scald protection mixing valve ASSE 1070	61
6	**520516AX**	TankMixer™ mixing valve assy ASSE 1017	65
7	**520616A**	AngleMix™ with valve with gauge ASSE 1017	60
8	**521616A**	MixCal™ mixing valve ASSE 1017	57

Residential



*Alternatives for mixing.

Key	Part Number	Description	Catalog Pages
9	**132537AFC**	QuickSetter+™ manual balancing valve	68
10	**127356AF***	FlowCal™ automatic balancing valve	75
11	**116151AC 009**	ThermoSetter™ thermal balancing valve	80
12	**533351HA**	PresCal™ pressure reducing valve ASSE 1003	86
13	**574050A**	FlowShield™ RP backflow preventer ASSE 1013	90
14	**NA502640A**	PLUMBVENT™ low lead automatic air vent	101
15	**535991HA**	PresCal™ pressure reducing valve ASSE 1003	84
16	**304050A**	Vacu-Stop™ vacuum relief valve	96
17	**304859A**	FlowShield™ DuC backflow preventer ASSE 1024	110

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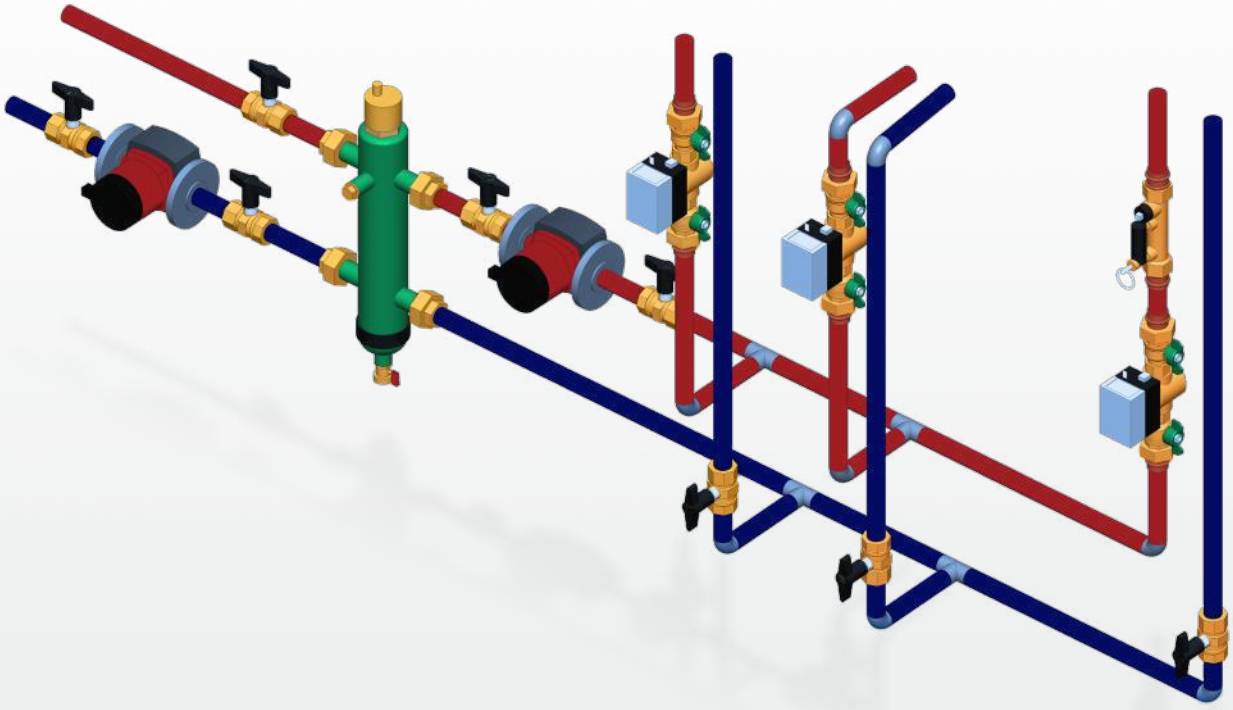
SEP4™ 4-IN-1
HIGH PERFORMANCE HYDRAULIC SEPARATORS

The Caleffi SEP4™ hydraulic separator combines air, hydraulic, dirt and magnetic separation, reducing installation costs. Don't settle for less, maintain peak system energy efficiency with SEP4. **CALEFFI GUARANTEED**.



This diagram is for illustration purposes only

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PRODUCTS INCLUDED IN SECTION

4-in-1 hydraulic separators
Hydraulic separators
Hydraulic separator accessories

4-IN-1 HYDRAULIC SEPARATORS

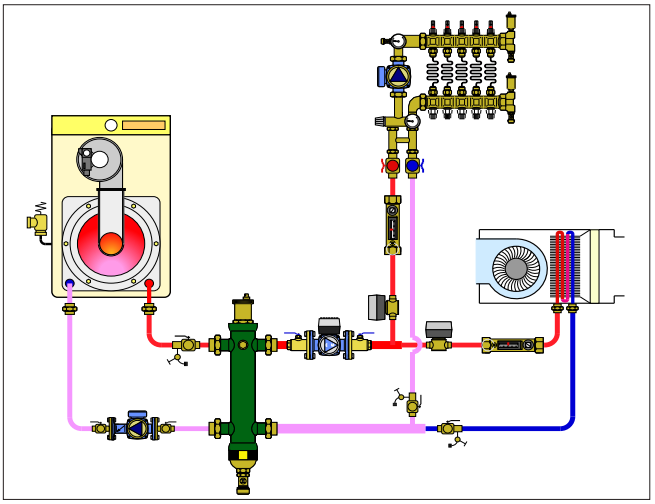
5495 SEP4™

Combination 1. hydraulic, 2. air, 3. dirt and 4. magnetic separation.
Epoxy resin coated steel body.
HDPE internal coalescing element, removable for cleaning.
Includes mounting bracket.
Thermowell tap: ½" straight female.
Max. working pressure: 150 psi.
Working temperature range: 32 – 212 °F.

Code	Description	Lbs	USD
549596A	1" sweat union	15	**749.00**
549506A	1" NPT female union	15	**779.00**
549566A	1" press union	15	**819.00**
549597A	1¼" sweat union	19	**914.00**
549507A	1¼" NPT female union	19	**944.00**
549567A	1¼" press union	19	**1,038.00**
549598A	1½" sweat union	27	**1,193.00**
549508A	1½" NPT female union	27	**1,235.00**
549568A	1½" press union	27	**1,348.00**
549599A	2" sweat union	29	**1,368.00**
549509A	2" NPT female union	29	**1,402.00**
549569A	2" press union	29	**1,574.00**
549506US*	1" no tailpieces	13	**638.00**
549507US*	1¼" no tailpieces	16	**745.00**
549508US*	1½" no tailpieces	23	**878.00**
549509US*	2" no tailpieces	24	**1,064.00**

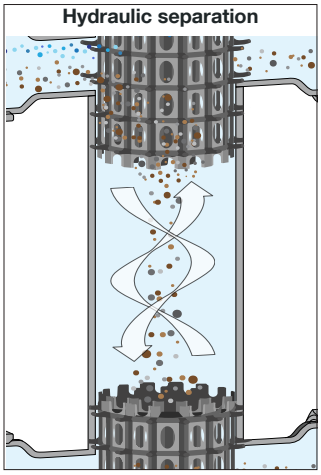
*See Separator fittings in Section 13.

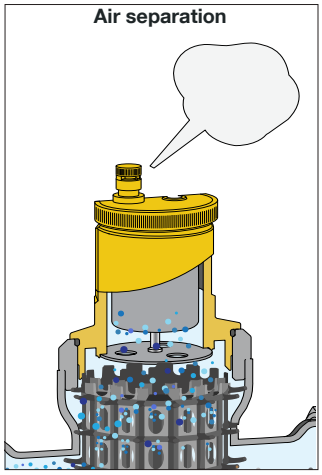
The SEP4™ 4-in-1 combination separator incorporates four important functions for hydronic systems: hydraulic separation, air separation, dirt separation and ferrous impurity separation. The unique geometry and design of the separator causes the connected primary and secondary circuits to be hydraulically de-coupled to prevent pump conflict from occurring. An internal screen element facilitates the coalescing and capture of micro-bubbles to facilitate high performance automatic removal, while concurrently causing the capture of non-ferrous debris particles down to 5 micron size. A powerful magnetic field induced by rare-earth neodymium magnets facilitates the capture of ferrous impurities such as iron oxide down to microscopic size thus delivering 2½ times the ferrous impurity removal performance of standard air and dirt separators.

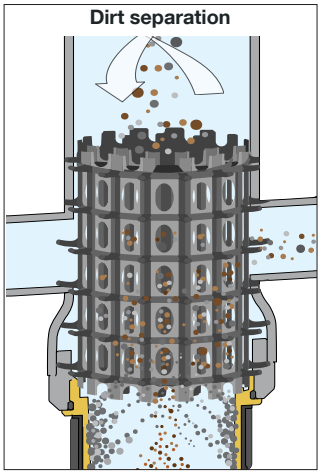


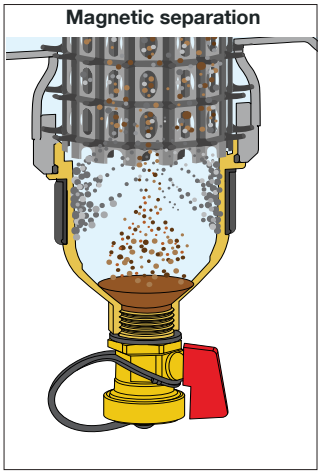
	FLOW RATE			
Size	1"	1¼"	1½"	2"
GPM	11	18	26	37
Gallons	0.5	0.7	1.3	3.5

Operations for 5495 SEP4™









4-IN-1 HYDRAULIC SEPARATORS

549/NA549 SEP4™

Combination 1. hydraulic, 2. air, 3. dirt and 4. magnetic separation
Epoxy resin coated steel body.
Stainless steel internal coalescing mesh.
Pre-formed insulation on 2"— 4" sizes.
One neodymium magnet assembly.
Complete with:
automatic air vent (code 501502A).
air vent shut-off valve (code NA39589).
1" drain valve NA39753 (2"— 4" sizes)
1¼" drain valve NA39588 (5" — 6" sizes).
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 220 °F.
Working temp. w/o insulation: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).

Code	Description	Lbs	USD
549552A	2" ANSI flange	76	**5,852.00**
549562A	2½" ANSI flange	82	**6,237.00**
549582A	3" ANSI flange	112	**7,805.00**
549510A	4" ANSI flange	120	**8,741.00**

Code	Description	Lbs	USD
NA549052AM	2" ANSI flange ASME & CRN	76	**6,812.00**
NA549062AM	2½" ANSI flange ASME & CRN	82	**7,315.00**
NA549082AM	3" ANSI flange ASME & CRN	112	**9,053.00**
NA549102AM	4" ANSI flange ASME & CRN	120	**9,546.00**
NA549120AM*	5" ANSI flange ASME & CRN	220	**13,750.00**
NA549150AM*	6" ANSI flange ASME & CRN	235	**16,587.00**

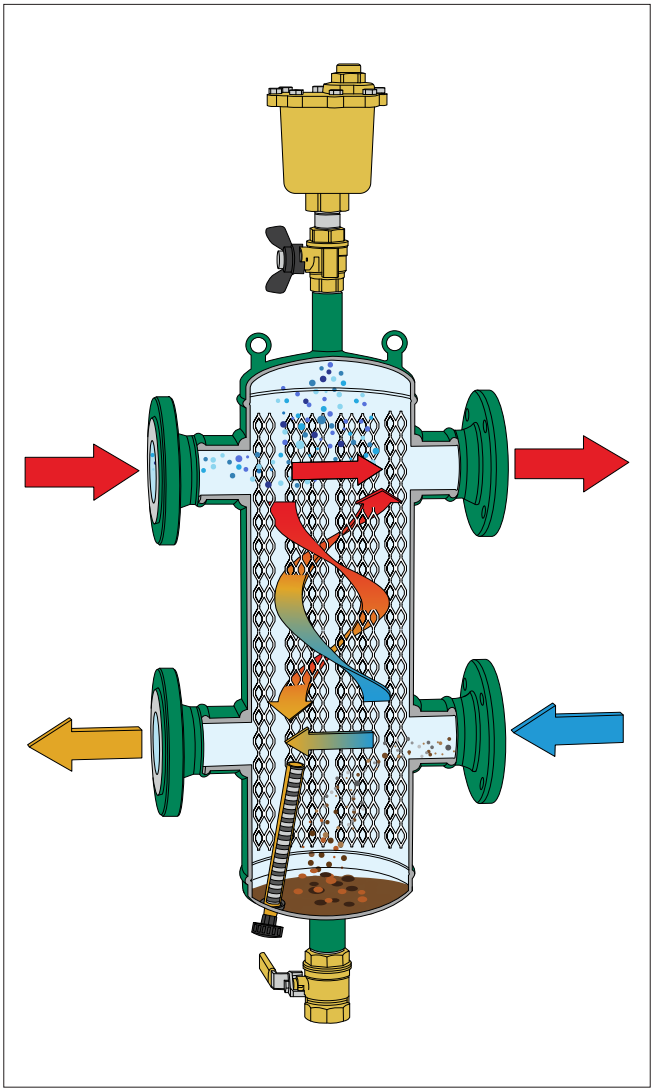
*Without insulation
NA prefix indicates ASME U-stamp tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered.

NA549 SEP4™ ASME

Combination 1. hydraulic, 2. air, 3. dirt and 4. magnetic separation
Three neodymium magnet assemblies.
Complete with:
automatic air vent (code 501502A).
air vent shut-off valve (code NA39589).
drain valve (code NA59600).
ANSI 150 flange connections.
Thermometer pockets (NPT):
½" inlet/outlet flanges, ¾" front center
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
CRN registered through 12". Consult factory for 14".

Code	Description	Lbs	USD
NA549200AM	8" ANSI flange ASME & CRN	530	**28,709.00**
NA549250AM	10" ANSI flange ASME & CRN	740	**38,897.00**
NA549300AM	12" ANSI flange ASME & CRN	1,110	**51,187.00**
NA549350AM	14" ANSI flange ASME	1,550	**60,346.00**

Operations details for NA549 SEP4™



In the SEP4™ hydraulic separators ferrous impurities are captured by a concentrated magnetic field created by a stack of neodymium magnetic rods, rare-earth magnets positioned inside a brass dry-well which is below the flow stream. Non-magnetic dirt particles are separated by colliding with an internal element in the flow stream and settling to the bottom. The deep collection chamber keeps the dirt from re-entering the flow stream. The dirt and ferrous impurities are flushed out even while the system is still running, by removing the magnets and opening the purge valve.

	FLOW RATE									
Size	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"
GPM	60	80	124	247	300	484	792	1330	1850	2500
Gallons	4.0	4.0	8.0	8.0	23	23	95	175	255	450

HYDRAULIC SEPARATORS

548 Hydro Separator

Hydraulic separator.
Epoxy resin coated steel body.
300 Series stainless steel internal baffle.
Includes mounting bracket.
Thermowell tap: ½" straight female
Max. working pressure: 150 psi.
Working temperature range: 32 – 212 °F.

Code	Description	Lbs	USD
548006A	1" NPT female union	13	**542.00**
548066A	1" press union	13	**581.00**
548096A	1" sweat union	13	**514.00**
548007A	1¼" NPT female union	17	**650.00**
548067A	1¼" press union	17	**739.00**
548097A	1¼" sweat union	17	**620.00**
548008A	1½" NPT female union	25	**852.00**
548068A	1½" press union	25	**959.00**
548098A	1½" sweat union	25	**811.00**
548009A	2" NPT female union	27	**993.00**
548069A	2" press union	27	**1,211.00**
548099A	2" sweat union	27	**948.00**
548006US*	1" no tailpieces	11	**408.00**
548007US*	1¼" no tailpieces	14	**459.00**
548008US*	1½" no tailpieces	21	**509.00**
548009US*	2" no tailpieces	22	**561.00**

*See Separator fittings in Section 13.

NA548 Hydro Separator ASME

Hydraulic separator.
Complete with:
automatic air vent (code 501502A).
shut-off valve (code NA39589).
drain valve (code NA59600).
ANSI 150 flange connections.
Thermometer pockets (NPT):
½" inlet/outlet flanges, ¾" front center.
Max. working pressure: 150 psi.
Working temperature range: 32°— z270 °F.
Baffle plates for all sizes: 304SST
ASME U-stamp tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered through 12". Consult factory for 14".

Code	Description	Lbs	USD
NA548200A	8" ANSI flange ASME & CRN	530	**19,248.00**
NA548250A	10" ANSI flange ASME & CRN	740	**27,169.00**
NA548300A	12" ANSI flange ASME & CRN	1,110	**32,885.00**
NA548350A	14" ANSI flange ASME	1,550	**52,443.00**

548/NA548 Hydro Separator

Hydraulic separator.
Epoxy resin coated steel body.
Pre-formed insulation on 2"— 4" sizes.
Complete with:
automatic air vent (code 501502A).
shut-off valve (code NA39589).
drain valve (code NA39588).
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 220 °F.
Vessel temp. w/o insulation: 32 – 270 °F.
Baffle plates for all sizes: 304 SS

Code	Description	Lbs	USD
548052A	2" ANSI flange	75	**3,868.00**
548062A	2½" ANSI flange	82	**4,118.00**
548082A	3" ANSI flange	112	**5,155.00**
548102A	4" ANSI flange	117	**5,768.00**

Code	Description	Lbs	USD
NA548052A	2" ANSI flange ASME & CRN	75	**5,088.00**
NA548062A	2½" ANSI flange ASME & CRN	82	**5,470.00**
NA548082A	3" ANSI flange ASME & CRN	112	**6,621.00**
NA548102A	4" ANSI flange ASME & CRN	117	**7,000.00**
NA548120A*	5" ANSI flange ASME & CRN	220	**10,222.00**
NA548150A*	6" ANSI flange ASME & CRN	231	**12,404.00**

NA prefix indicates ASME U-stamp tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered.
*Without insulation

NA549 HydroCal™ ASME

Combination 1. air, 2. hydraulic, 3. dirt separation.
Epoxy resin coated steel body.
Stainless steel internal coalescing mesh.
Pre-formed insulation on 2"— 4" sizes.
Complete with: automatic air vent, air vent shut-off valve, drain valve.
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 220 °F.
Working temp. w/o insulation: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
CRN registered through 12".
Consult factory for 14".

Code	Description	Lbs	USD
NA549052A	2" ANSI flange ASME & CRN	73	**6,614.00**
NA549062A	2½" ANSI flange ASME & CRN	79	**7,114.00**
NA549082A	3" ANSI flange ASME & CRN	108	**8,603.00**
NA549102A	4" ANSI flange ASME & CRN	117	**9,097.00**
NA549120A*	5" ANSI flange ASME & CRN	190	**13,283.00**
NA549150A*	6" ANSI flange ASME & CRN	231	**16,116.00**
NA549200A*	8" ANSI flange ASME & CRN	520	**26,039.00**
NA549250A*	10" ANSI flange ASME & CRN	730	**36,225.00**
NA549300A*	12" ANSI flange ASME & CRN	1,100	**48,517.00**
NA549350A*	14" ANSI flange ASME	1,540	**57,676.00**

*Without insulation

HYDRAULIC SEPARATOR ACCESSORIES

501 MAXCAL™

Replacement air vent for Hydro Separator.
Fits NA548 Series and NA549 Series.
Max. working pressure: 230 psi.
Max. discharge pressure: 90 psi.
Max. working temperature: 250 °F.
Discharge top thread: ⅜" female.

Code	Description	Lbs	USD
501502A	¾" FNPT	7.0	**324.00**

5023 VALCAL™

Replacement high capacity air vent with service check valve fits Hydro Separator 548 Series.
Max. working pressure: 150 psi.
Max. discharge pressure: 60 psi.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
502343A	½" MNPT	0.5	**49.60**

Support bracket for SEP4™ and Hydro Separator.

Code	Description	Lbs	USD
NA10778	for 1" and 1¼" union	2.0	**28.70**
NA10796	for 1½" union	2.5	**30.00**
NA10797	for 2" union	4.0	**31.20**

Replacement drain valve fits Hydro Separator 548 Series.
¾" garden hose thread with cap.
Max. working pressure: 150 psi.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
538402 FD	½" NPT x ¾" GHT	0.3	**15.60**

Magnetic/drywell assembly for SEP4™.

Code	Description	Lbs	USD
F0000435	Fits 2" and 2½"	0.3	**141.00**
49684A	Fits 3" to 6"	0.3	**318.00**
F0000349	Fits 8" to 14"	0.3	**600.00**

Drain ball valves fit HydroCal™, Hydro Separators, DISCAL®, DISCALDIRT® and DIRTCAL®.
Brass body.
Max. working pressure: 150 psi.
Max. working temperature: 365 °F.

Code	Description	Lbs	USD
NA39589	¾" FNPT with t-handle, drain	0.8	**32.20**
NA39753	1" FNPT with lever, drain	0.7	**43.90**
NA39588	1¼" FNPT with lever, drain	1.0	**73.90**
NA59600	2" FNPT with lever, drain	4.0	**156.00**

Temperature pocket well fits 1", 1¼", 1½" & 2" 548 / 5495 Hydro Separators.
1¾" pocket length.
Inside thread: 20 x1.0 mm.

Code	Description	Lbs	USD
694045	½" straight thread	0.2	**19.80**
R20011	Sealing washer	0.1	**1.60**
NA10426	Sensor holding grommet	0.1	**4.50**
NA10425	Kit containing above 3 items	0.4	**26.50**

Insulation jacket kit for SEP4™ and Hydro Separator.

Code	Description	Lbs	USD
NA10801	for 1" union 5495	0.5	**50.00**
NA10802	for 1¼" union 5495	0.5	**54.90**
NA10803	for 1½" union 5495	0.6	**75.00**
NA10804	for 2" union 5495	0.6	**84.90**
NA10805	for 1" union 548	0.5	**32.40**
NA10806	for 1¼" union 548	0.5	**37.50**
NA10807	for 1½" union 548	0.6	**46.20**
NA10808	for 2" union 548	0.6	**53.80**

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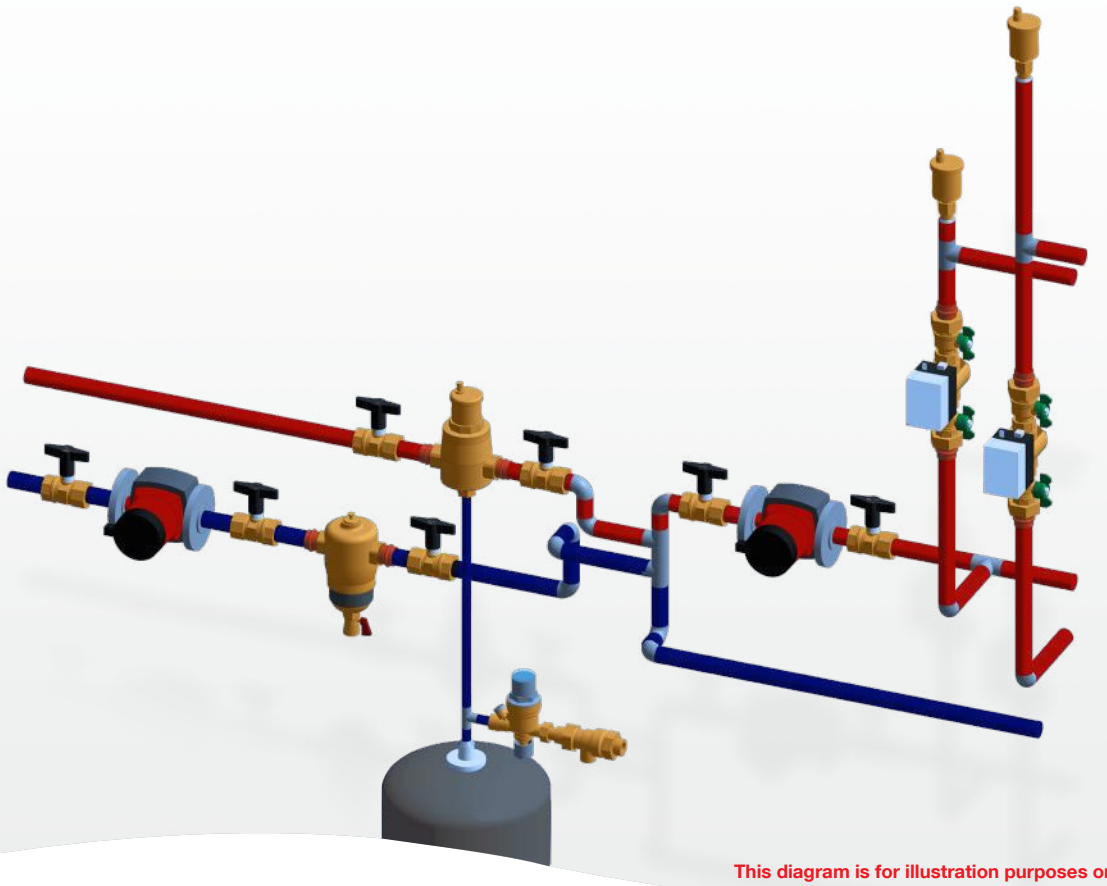
GOLD STANDARD KIT™
FOR HEALTHY
HYDRONIC SYSTEM FLUIDS

Stop air and dirt from causing callbacks. The Gold Standard Kit™ includes a DISCAL® high-efficiency air separator and a DIRTMAG® PRO dual magnet dirt separator, specifically designed to protect hydronic systems. Ensure consistent project performance. **CALEFFI GUARANTEED**.

AIR AND DIRT SEPARATORS AND AIR VENTS



This diagram is for illustration purposes only

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PRODUCTS INCLUDED IN SECTION

Gold Standard kits
Air separators
Dirt separators
Combination air and dirt separators
Magnetic dirt separators
Accessories for air and dirt separators
Automatic and manual air vents

GOLD STANDARD KITS

551
Gold Standard Kit™

DISCAL®
Air separator.
Brass body.
Stainless steel float guide pin and linkage.
Glass reinforced nylon internal element.
DIRTMAG® PRO
Dirt separator with exclusive dual magnetic fields.
- Internal magnet in drywell.
- External clip-on magnet.

Brass body.

Maintaining the "health" of water based solutions that circulate through a hydronic system is of critical importance for its operation and protection of components. It is accomplished by preventing oxygen from reacting with ferrous materials resulting in corrosion and by removing ferrous and non-ferrous debris that are damaging to the system.

Rest assured. The **GOLD STANDARD** kit conveniently accomplishes these tasks. Separation with **NO** Compromise. **CALEFFI GUARANTEED.**

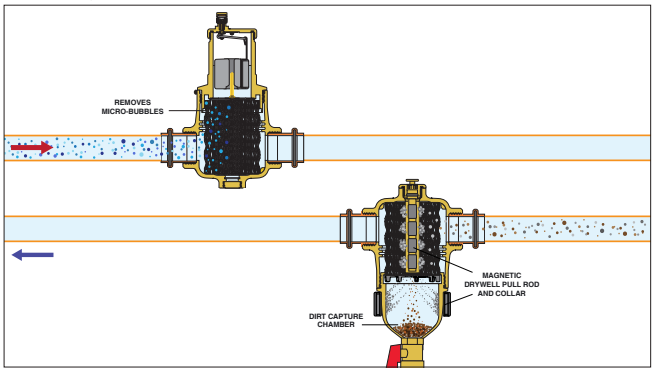
The DISCAL air separator keeps dissolved oxygen concentration below the level that can cause corrosion with ferrous materials. It has a unique bell shape geometry that slows the fluid velocity down by a 9 to 1 ratio. Coupled with a specially engineered coalescing mesh, the action forces micro-bubble gasses to be efficiently collected and automatically vented from the system. When properly placed within the system, DISCAL keeps the concentration of dissolved oxygen low, thus preventing unimpeded ferrous formation.

Protect the boiler (or chiller) with a magnetic dirt separator that collects not only ferrous but also non-ferrous debris. Problematic non-ferrous debris includes copper shavings, pipe tape, pipe sealant and solder. Piping and other equipment stored outside can collect dirt, silica, dust and insects. Calcium scale that forms and breaks off within a system is also non-ferrous. All of these non-ferrous debris types are not captured by a magnet. With the DIRTMAG PRO, purging the debris is easy, non-messy and doesn't require shutting down the system. Simply remove the top magnetic rod and the lower magnetic collar and open the drain valve to purge the captured impurities.

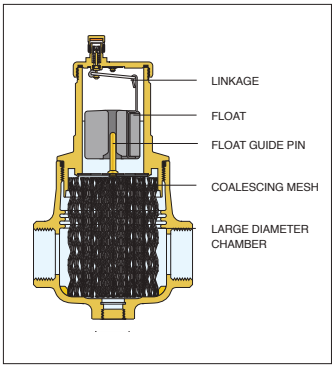
Code	Description	Lbs	USD
KIT551546 028	1" sweat	8.5	**368.00**
KIT551546 066	1" press	8.9	**428.00**
KIT551546 035	1¼" sweat	8.5	**506.00**
KIT551546 067	1¼" press	11.1	**621.00**

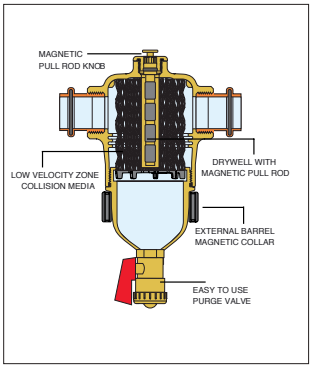
*All kits include a DISCAL® and DIRTMAG® PRO.

Operating principle for 551 DISCAL® and 5463 DIRTMAG® PRO

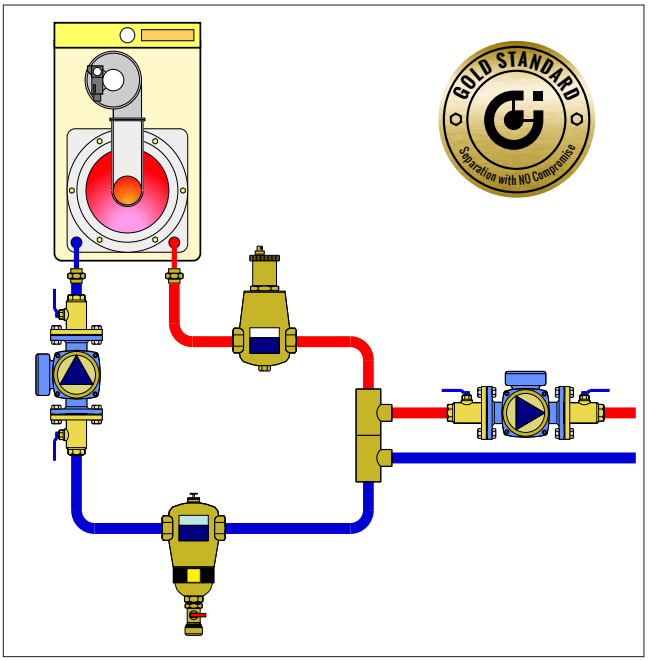


Construction details





Application diagram for DISCAL® and DIRTMAG® PRO



AIR SEPARATORS

551 DISCAL®

Air separator.
Brass body.
Stainless steel float guide pin and linkage.
Glass reinforced nylon internal element.
½" FNPT bottom thread.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.

Code	Description	Lbs	USD
551005A	¾" FNPT	3.7	**178.00**
551028A	1" sweat	3.7	**183.00**
551006A	1" FNPT	3.7	**192.00**
551066A	1" press	3.8	**218.00**
551035A	1¼" sweat	3.7	**266.00**
551007A	1¼" FNPT	4.9	**281.00**
551067A	1¼" press	5.0	**336.00**
551041A	1½" sweat	4.9	**346.00**
551008A	1½" FNPT	4.9	**364.00**
551068A	1½" press	5.1	**434.00**
551054A	2" sweat	5.5	**424.00**
551009A	2" FNPT	5.5	**445.00**
551069A	2" press	5.5	**530.00**

551 DISCAL® Service check

Air separator with ½" service check valve (code 561402A) to mount expansion tank on bottom thread.
Brass body.
Stainless steel float guide pin and linkage.
Glass reinforced nylon internal element.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.

Code	Description	Lbs	USD
551005AC	¾" FNPT	3.8	**185.00**
551028AC	1" sweat	3.8	**190.00**
551006AC	1" FNPT	3.8	**199.00**
551066AC	1" press	3.9	**224.00**
551035AC	1¼" sweat	3.8	**273.00**
551007AC	1¼" FNPT	5.0	**286.00**
551067AC	1¼" press	5.1	**343.00**
551041AC	1½" sweat	5.0	**354.00**
551008AC	1½" FNPT	5.0	**371.00**
551068AC	1½" press	5.2	**441.00**
551054AC	2" sweat	5.6	**430.00**
551009AC	2" FNPT	5.6	**451.00**
551069AC	2" press	5.6	**537.00**

ACCESSORIES

Insulation shell fits DISCAL® 551 Series.

Code	Description	Lbs	USD
CBN551005	Fits ¾"* and 1" 551 Series	0.1	**59.10**
CBN551007	Fits 1¼" and 1½" 551 Series	0.1	**63.30**
CBN551009	Fits 2" 551 Series	0.1	**69.30**

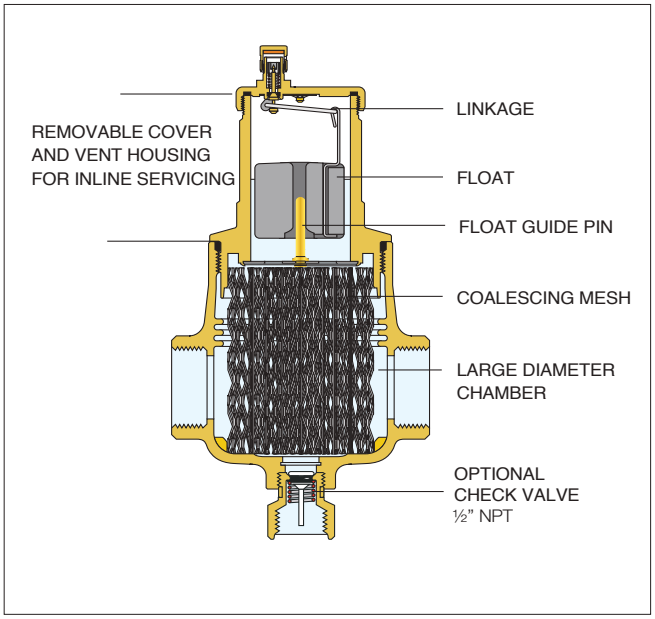
*Will not fit the ¾" compact DISCAL®; codes 551003A and 551022A.

Service check valve for easy replacement of expansion tank when connected to bottom of DISCAL®.

Code	Description	Lbs	USD
561402A	½" MNPT x ½" FNPT	0.2	**15.60**

	FLOW RATE				
Size	¾"	1"	1¼"	1½"	2"
GPM	6	10	15	22	39
Cv	19	32	56	73	81

Construction details for 551 DISCAL®



AIR SEPARATORS

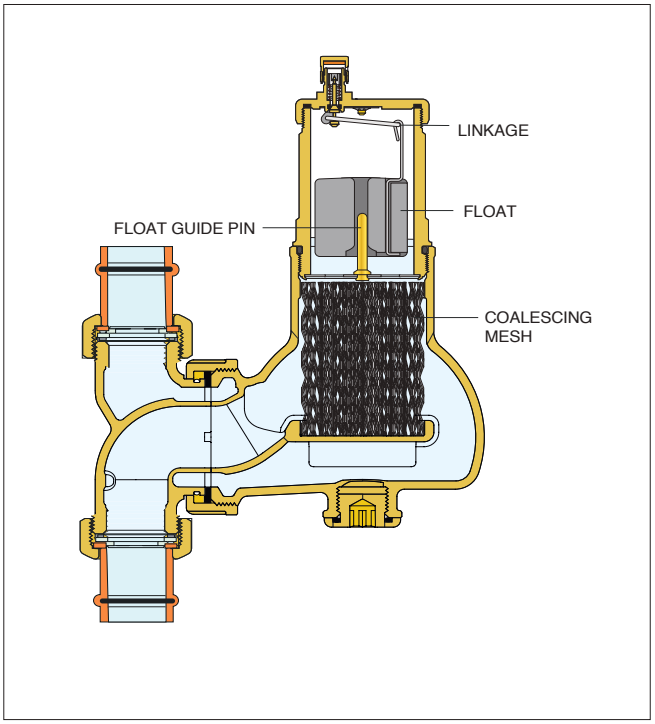
5517
DISCAL® Rotating collar

Air separator with rotating collar for horizontal or vertical pipes.
Brass body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.

Code	Description	Lbs	USD
551705A	¾" NPT male union	4.9	**274.00**
551765A	¾" press union	4.9	**288.00**
551795A	¾" sweat union	4.9	**271.00**
551706A	1" NPT male union	4.9	**293.00**
551766A	1" press union	4.9	**322.00**
551796A	1" sweat union	4.9	**287.00**
551716*	body only, order unions separately	4.4	**250.00**

*See fitting selection in Section 13.

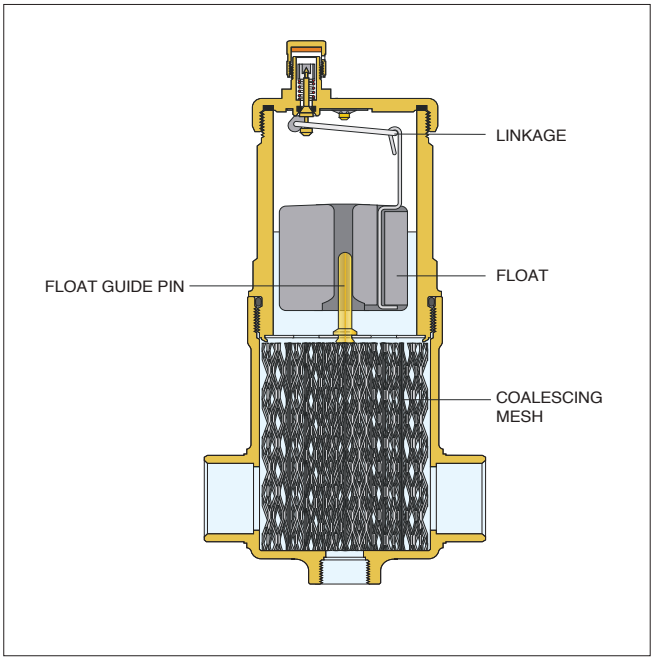
Construction details for 5517 DISCAL® Rotating collar



Air separator.
Brass body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
½" NPT bottom thread.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.

Code	Description	Lbs	USD
551003A	¾" FNPT	2.0	**119.00**
551003AC	¾" FNPT, service check valve	2.1	**125.00**
551022A	¾" sweat	2.0	**115.00**
551022AC	¾" sweat, service check valve	2.1	**122.00**

Construction details for 551 DISCAL® Compact



	FLOW RATE		
Size	¾" compact	¾" vertical	1" vertical
GPM	6	6	10
Cv	12	12	19

AIR SEPARATORS

551 DISCAL®

Air separator.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
ANSI 150 flange connections.
1" NPT male bottom drain connection.
Complete with drain valve (NA39753).
½" NPT male side drain connection.
Complete with side drain valve (538402FD).
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.

Code	Description	Lbs	USD
551050A	2" ANSI flange	34	**3,009.00**
551050AT	2" MNPT	30	**2,861.00**
551060A	2½" ANSI flange	35	**3,215.00**
551060AT	2½" MNPT	31	**3,069.00**
551080A	3" ANSI flange	62	**4,257.00**
551100A	4" ANSI flange	67	**4,762.00**

NA551 DISCAL® ASME/CRN

Air separator.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
ANSI 150 flange connections.
1" NPT male bottom drain connection.
Complete with drain valve (NA39753).
½" NPT male side drain connection.
Complete with side drain valve (538402FD).
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
ASME and CRN registered.

Code	Description	Lbs	USD
NA551050A	2" ANSI flange ASME & CRN	34	**3,769.00**
NA551060A	2½" ANSI flange ASME & CRN	35	**4,029.00**
NA551080A	3" ANSI flange ASME & CRN	62	**5,333.00**
NA551100A	4" ANSI flange ASME & CRN	67	**5,968.00**
NA551120A	5" ANSI flange ASME & CRN	106	**6,864.00**
NA551150A	6" ANSI flange ASME & CRN	117	**11,189.00**

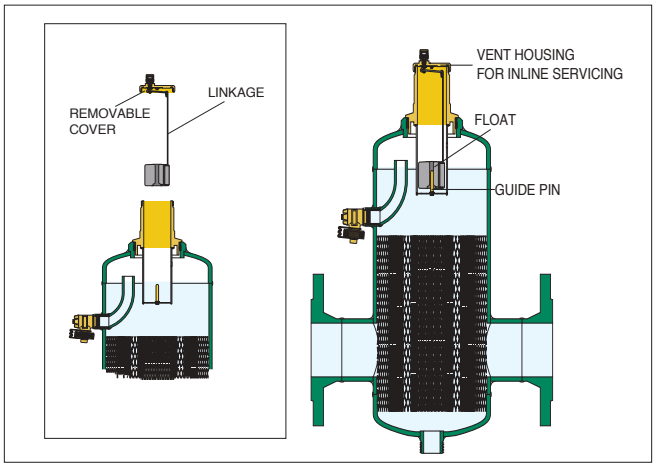
NA prefix indicates ASME tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered.

Air separator construction

DISCAL® air separators are constructed to allow maintenance and cleaning operations to be carried out without having to remove the separator body from the pipe work. All DISCAL air separators have a bottom connection drain valve. All internal air release control components are fully accessible. The automatic air release valve, located at the top of the separator, has a long chamber for the movement of the float. This feature prevents any debris present in the water from reaching the sealing seat.

Flanged models include a side drain vent to release large amounts of air when filling the system and to remove any debris present above the water level.

Construction details for 551 DISCAL®



	FLOW RATE								
Size	2"	2½"	3"	4"	5"	6"	8"	10"	12"
GPM	100	155	220	400	615	880	1,570	2,450	3,525
Cv	87	174	208	324	520	832	1,109	1,387	1,664

NA551 DISCAL® ASME/CRN

Air separator.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
ANSI 150 flange connections.
2" NPT male bottom drain connection.
Complete with drain valve (NA59600).
½" NPT male side drain connection.
Complete with side drain valve (538402FD).
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
ASME and CRN registered.

Code	Description	Lbs	USD
NA551200A	8" ANSI flange ASME & CRN	371	**18,311.00**
NA551250A	10" ANSI flange ASME & CRN	617	**27,462.00**
NA551300A	12" ANSI flange ASME & CRN	871	**35,703.00**

NA prefix indicates ASME tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered.

Replacement drain ball valve.
Fits DISCAL® Series.
Brass body.
Lever.
Max. working pressure: 150 psi.
Max. working temperature: 365 °F.

Code	Description	Lbs	USD
NA39753	1" FNPT with lever	0.7	**43.90**
NA59600	2" FNPT with lever	3.5	**156.00**

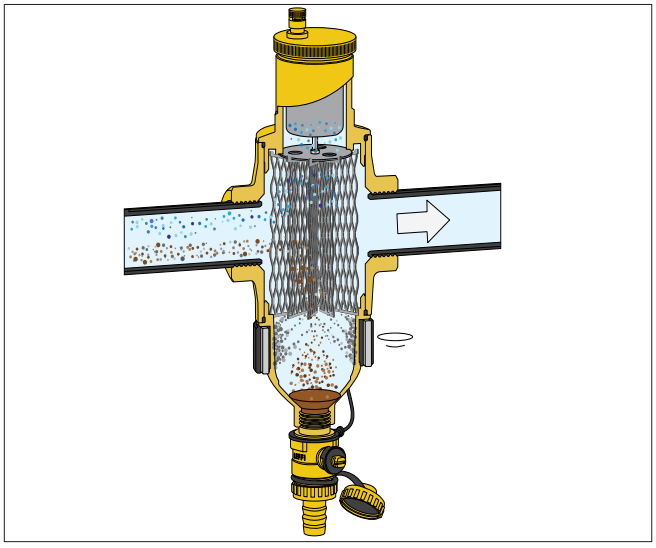
COMBINATION AIR AND DIRT SEPARATORS

5461 DISCALDIRTMAG™

Air & Dirt separator with magnet.
Brass body.
Stainless steel float guide pin and linkage.
Glass reinforced nylon internal element.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.

Code	Description	Lbs	USD
546196A	1" sweat	8.5	**458.00**
546166A	1" press	8.5	**491.00**
546116A	1" MNPT	8.5	**479.00**
546197A	1¼" sweat	8.5	**547.00**
546167A	1¼" press	8.5	**619.00**

Operating principle for 5461 DISCALDIRTMAG™



The **DISCALDIRTMAG™** air and dirt separator with magnet uses a patented external magnet ring for separation of ferrous impurities. The impurities are retained in the body of the dirt separator by the strong magnetic field created. The outer ring is removable from the body to allow the flushing of sludge.

546 DISCALDIRT®

Air & Dirt separator.
Brass body.
Stainless steel float guide pin and linkage.
Glass reinforced nylon internal element.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.
Particle separation capacity: to 5 µm (0.2 mil).

Code	Description	Lbs	USD
546096A	1" sweat	8.3	**362.00**
546016A	1" MNPT	8.3	**380.00**
546097A	1¼" sweat	8.3	**432.00**

5461 DISCALDIRTMAG™

Air & Dirt separator with magnet.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
Complete with union connections.
Max. working pressure: 150 psi.
Working temperature range: 32 – 230 °F
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.

Code	Description	Lbs	USD
546198A	1½" sweat union	22	**1,376.00**
546108A	1½" NPT female union	22	**1,419.00**
546168A	1½" press union	22	**1,572.00**
546199A	2" sweat union	23	**1,443.00**
546109A	2" NPT female union	23	**1,497.00**
546169A	2" press union	23	**1,754.00**

546 DISCALDIRT®

Air & Dirt separator.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
1" NPT threaded bottom drain connection.
Complete with side drain valve (538402 FD).
ANSI 150 flange connections.
Complete with drain valve (NA39753)
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).

Code	Description	Lbs	USD
546050A	2" ANSI flange	40	**3,821.00**
546060A	2½" ANSI flange	42	**4,027.00**
546080A	3" ANSI flange	73	**5,187.00**
546100A	4" ANSI flange	78	**5,685.00**
546120A	5" ANSI flange	181	**8,573.00**

Insulation shell for DISCALDIRT® & DISCALDIRTMAG™.

Code	Description	Lbs	USD
CBN546002	Fits 1", 1¼" brass 546 only	0.1	**92.70**
CBN546118	Fits 1½" steel 5461 only	0.1	**116.00**
CBN546119	Fits 2" steel 5461 only	0.1	**133.00**

	FLOW RATE			
Size	1"	1¼"	1½"	2"
GPM	10	15	22	39
Cv	32	40	50	79

COMBINATION AIR AND DIRT SEPARATORS

NA546
DISCALDIRT®
ASME/CRN

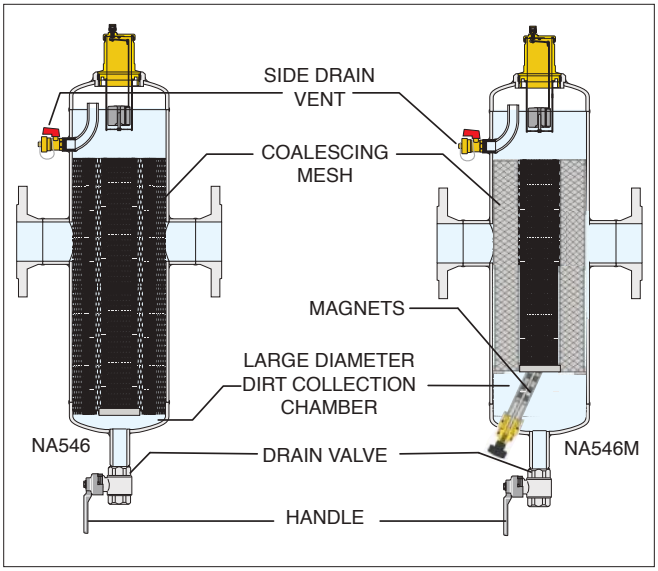
Air & Dirt separator.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
1" (2—6" sizes) and 2" (8—14" sizes) threaded NPT bottom drain connection.
ANSI 150 flange connections.
Complete with drain valve NA39753 (2—6" sizes), NA59600 (8—14" sizes).
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
ASME registered. CRN registered thru 12".
Consult factory for 14".

Code	Description	Lbs	USD
NA546050T	2" MNPT ASME & CRN	28	**3,659.00**
NA546060A	2½" ANSI flange ASME & CRN	42	**4,921.00**
NA546080A	3" ANSI flange ASME & CRN	73	**6,337.00**
NA546100A	4" ANSI flange ASME & CRN	78	**6,949.00**
NA546120A	5" ANSI flange ASME & CRN	181	**10,023.00**
NA546150A	6" ANSI flange ASME & CRN	188	**12,783.00**
NA546200A	8" ANSI flange ASME & CRN	355	**23,746.00**
NA546250A	10" ANSI flange ASME & CRN	555	**36,510.00**
NA546300A	12" ANSI flange ASME & CRN	825	**45,654.00**
NA546350A	14" ANSI flange ASME	950	**57,729.00**

ASME U-stamp tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors; CRN registered, 2"— 12"; consult factory for 14".

Low head losses and high performance are maintained over time. The dirt separating action performed by the **DISCALDIRT®** air and dirt separator is based on using the internal element with concentric diamond pattern mesh surfaces instead of an ordinary filter. The element offers little resistance to the medium flow while ensuring dirt separation. These air and dirt separators are ideal for chilled water applications.

Construction details for NA546 DISCALDIRT®



NA546M
DISCALDIRTMAG™
ASME/CRN

Air & Dirt separator with magnets.
Epoxy resin coated steel body.
Stainless steel float guide pin and linkage.
Stainless steel mesh internal element.
ANSI 150 flange connections.
1" (2—6" sizes) and 2" (8—14" sizes) threaded NPT bottom drain connection.
Complete with drain valve NA39753 (2—6" sizes), NA59600 (8—14" sizes).
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: up to 100%.
ASME registered. CRN registered thru 12".
Consult factory for 14".

Code	Description	Lbs	USD
NA546050TM*	2" MNPT ASME & CRN	31	**4,228.00**
NA546060AM*	2½" ANSI flange ASME & CRN	45	**5,528.00**
NA546080AM*	3" ANSI flange ASME & CRN	76	**7,193.00**
NA546100AM*	4" ANSI flange ASME & CRN	81	**7,821.00**
NA546120AM*	5" ANSI flange ASME & CRN	184	**11,486.00**
NA546150AM*	6" ANSI flange ASME & CRN	191	**13,860.00**
NA546200AM**	8" ANSI flange ASME & CRN	365	**27,191.00**
NA546250AM**	10" ANSI flange ASME & CRN	565	**39,260.00**
NA546300AM**	12" ANSI flange ASME & CRN	835	**49,748.00**
NA546350AM**	14" ANSI flange ASME	960	**62,176.00**

*With one magnet
**With three magnets
ASME U-stamp tagged and registered with the National Board of Boiler and Pressure Vessel Inspectors. CRN registered, 2" — 12"; consult factory for 14".

In the DISCALDIRTMAG™ air and dirt separator with magnets, ferrous impurities are captured by a concentrated magnetic field created by a stack of neodymium rare-earth magnets positioned inside a brass dry-well which is below the flow stream. Non-magnetic dirt particles are separated by colliding with an internal element in the flow stream and settling to the bottom. The deep collection chamber keeps the dirt from re-entering the flow stream. The dirt and ferrous impurities are flushed out while the system is operating, by removing the magnets and opening the purge valve.

	FLOW RATE									
Size	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"
GPM	100	155	220	400	615	880	1,570	2,450	3,525	4,800
Cv	87	174	208	324	520	832	1,109	1,387	1,664	1,967

MAGNETIC DIRT SEPARATORS

5463M DIRTMAG® PRO

Dirt separator with exclusive dual magnetic fields.
Internal magnet in drywell.
External clip-on magnet.
Brass body.
Max. working pressure: 150 psi.
Working temperature range: 32 – 250 °F.
Particle separation capacity: to 5um (0.2 mil).
Ferrous impurities separation efficiency: 100%.

Code	Description	Lbs	USD
546328AM	1" sweat	4.7	**226.00**
546306AM	1" FNPT	4.7	**237.00**
546366AM	1" press	5.0	**258.00**
546335AM	1¼" sweat	4.7	**329.00**
546307AM	1¼" FNPT	5.8	**345.00**
546367AM	1¼" press	6.1	**394.00**
546341AM	1½" sweat	5.4	**429.00**
546308AM	1½" FNPT	6.7	**451.00**
546368AM	1½" press	7.0	**514.00**
546354AM	2" sweat	6.0	**523.00**
546309AM	2" FNPT	6.7	**542.00**
546369AM	2" press	7.0	**627.00**

Double the protection

Captures two forms of debris that can damage or shorten the life of heat exchangers, circulators and valves: ferrous debris such as magnetite, and non-ferrous debris such as copper shavings, solder, lime-scale fragments, silica and pipe compound. Two powerful neodymium rare-earth magnetic fields attract and capture ferrous oxide impurities and allow simple blowdown - no disassembly required.

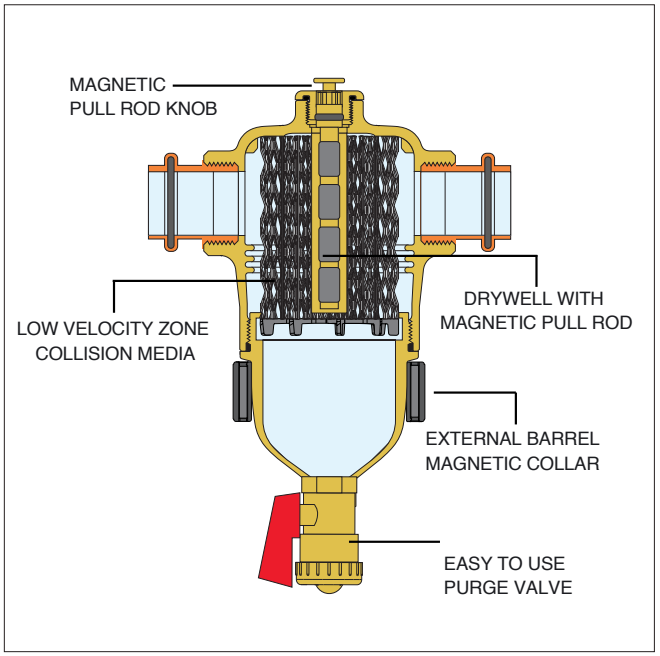
Combine the **DIRTMAG® PRO** with a **DISCAL®** air separator for **The Gold Standard Kit** found on page 16. **Separation with NO compromise.**

Insulation shell fits DIRTMAG® PRO 5463M Series.
Labels included for field installation to externally identify product use.

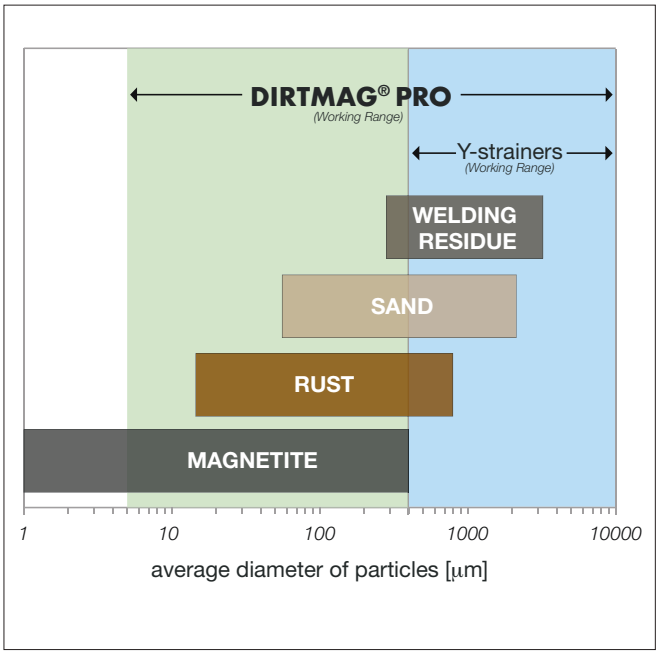
Code	Description	Lbs	USD
CBN546205	Fits ¾" & 1" DIRTMAG® PRO	0.1	**56.20**
CBN546207	Fits 1¼" & 1½" DIRTMAG® PRO	0.1	**60.60**
CBN546209	Fits 2" DIRTMAG® PRO	0.1	**66.00**

Construction design for 5463M DIRTMAG® Pro

The DIRTMAG® PRO incorporates patented technology and features dual magnetic fields that increase ferrous debris removal efficiency by 40%. The concentric pattern collision media inside the low-velocity zone efficiently separates non-ferrous debris. All debris is quickly purged from system via the blow down valve. No disassembly or scraping of magnetite from immersed magnets is required, which means clean hands, fast, and easy servicing.



Dirt separation comparison



	FLOW RATE			
Size	1"	1¼"	1½"	2"
GPM	14	21	31	54
Cv	32	45	69	104

MAGNETIC DIRT SEPARATORS

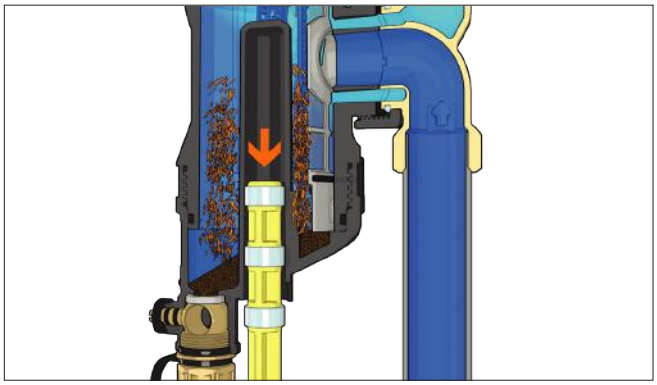
577
XF Extra Filtration Separator

50% bypass feature (on 1¼" and 1½" sizes) to reduce pressure drop, provides side-stream dirt removal after initial startup.
Working temperature range: 32 – 195 °F
Maximum working pressure: 45 psi (3 bar)
Compatible medium: Water, glycol solutions up to 30%
Filter mesh size: 160 µm

Code	Description	Lbs	USD
577660A	1" NPT male union	4.3	**356.00**
577666A	1" press union	4.7	**387.00**
577669A	1" sweat union	4.3	**339.00**
577870A	1¼" NPT female union	8.7	**656.00**
577876A	1¼" press union	8.9	**749.00**
577879A	1¼" sweat union	8.7	**625.00**
577980A	1½" NPT female union	8.4	**812.00**
577986A	1½" press union	7.8	**925.00**
577989A	1½" sweat union	8.0	**772.00**

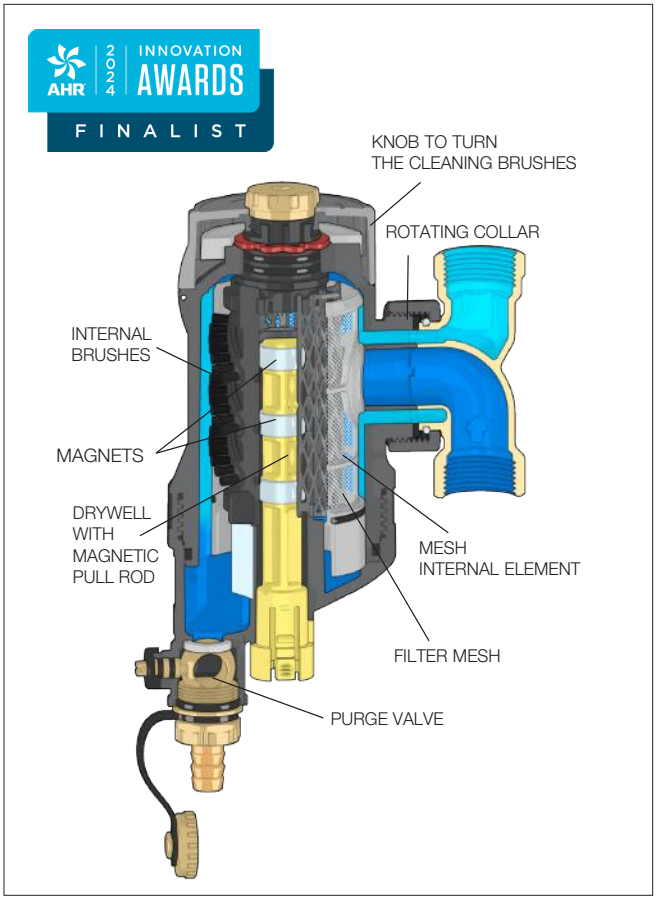
Separation of ferrous impurities

The central magnet separates and collects ferrous impurities. They are retained in the center of the body by the strong magnetic field created by the magnets inserted in the drywell. Remove the central magnet from the drywell to to allow the impurities to settle so that they can be purged.



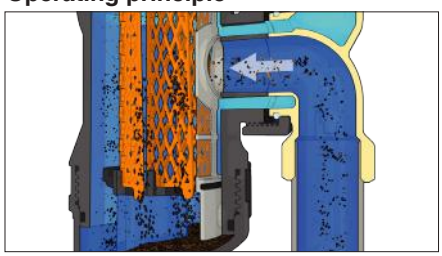
Construction design for 577 XF

The Caleffi XF "triple pass" magnetic separator-filter protects components in hydronic systems by maintaining impurity-free hydronic fluid to maximize heat transfer efficiency. The XF has a collision media for removing non-magnetic debris, a magnet to capture ferrous materials, and a 160 µm mesh filter to remove fine particle impurities starting with the first pass of the fluid. It is perfect for heat pump and boiler applications. The unique internal brush mechanism cleans the filter for simple and efficient purging. The XF can be mounted in vertical or horizontal applications due to its rotating collar.

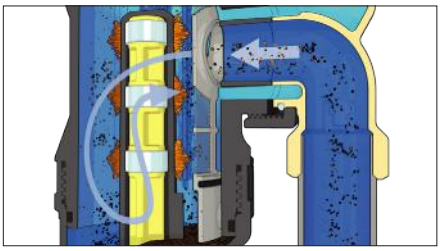


	FLOW RATE		
Size	1"	1¼"	1½"
GPM	13	26	26

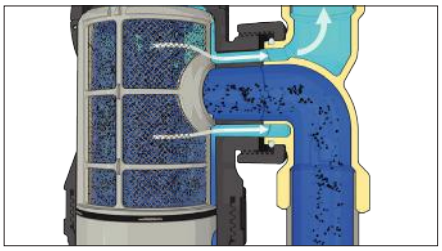
Operating principle



1) Water enters at the center of the device where the mesh element deflects impurities. This "dirt" falls to the bottom of the low velocity barrel due to gravity.



2) A central magnet captures and retains ferrous impurities on the external surfaces of the drywell. Removal of the magnet, while the circulator is turned off, releases the magnetic debris which can then be purged.



3) At the device outlet, the water passes through a filter mesh which retains the residual impurities.

MAGNETIC DIRT SEPARATORS

NA5453 DIRTMAG®

Dirt separator with magnet.
Brass mounting housing.
Composite PA66G30 body.
Max. working pressure: 45 psi.
Working temperature range: 32 – 195 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.
Drain valve with hose connection.
Top dosing point port.
Dosing capacity: 12 fluid oz.
Manual screw air vent.

Code	Description	Lbs	USD
NA545305	¾" NPT male union	4.5	**214.00**
NA545365	¾" press union	4.5	**233.00**
NA545395	¾" sweat union	4.5	**213.00**
NA545306	1" NPT male union	4.5	**247.00**
NA545366	1" press union	4.7	**278.00**
NA545396	1" sweat union	4.5	**236.00**
NA545355	¾" NPT female union, isolation valves	5.5	**258.00**
NA545356	1" NPT female union, isolation valves	5.5	**300.00**
NA545376	1" press union, isolation valves	5.5	**409.00**

The special coupling between the locking nut and the mounting base allows the DIRTMAG® dirt separator to be rotated for installation to either vertical or horizontal pipes, while maintaining the same operating performance.

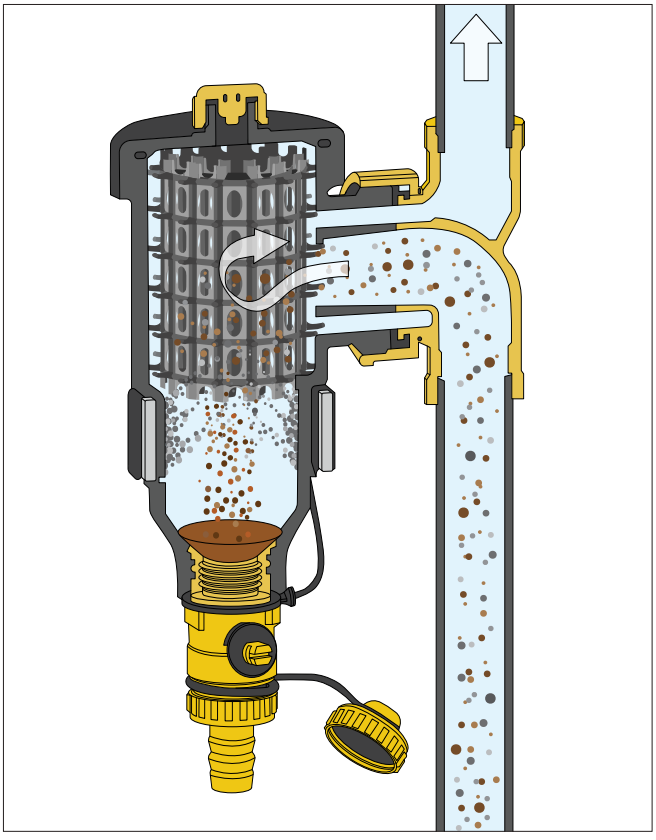
	FLOW RATE	
Size	¾"	1"
GPM	10	10
Cv	9	9

Replacement drain valve fits DIRTMAG® Pro 5463M Series, brass DISCALDIRT® 546 Series and DISCALDIRTMAG™ 5461 Series.
Brass body.
Max. working pressure: 150 psi.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
538402 FD	½" MNPT x ¾" GHT	0.3	**15.60**

Construction design for NA5453 DIRTMAG®

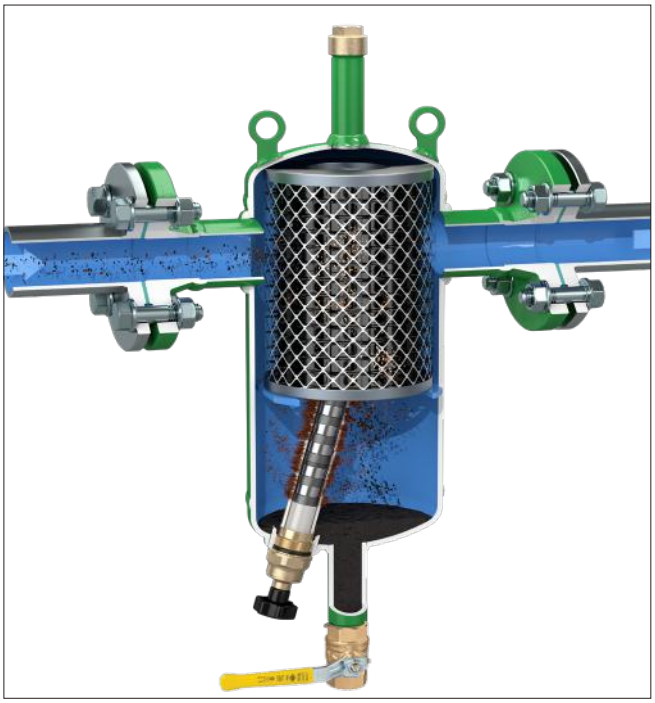
The dirt separator with magnet combines the action of the internal element and magnet. The impurities in the water strike the internal element and are separated, dropping into the bottom of the body where they are collected. Ferrous impurities are also trapped inside the dirt separator body by two strong magnets contained within the removable outer ring collar. The collected impurities are discharged by removing the external ring magnet and opening the drain valve.



MAGNETIC DIRT SEPARATORS

Ferrous and non-ferrous impurities in hydronic systems can deposit onto heat exchanger surfaces and accumulate in pump cavities causing reduced thermal efficiency and premature wear. The small and often microscopic magnetic particles, called magnetite, form when iron or steel corrodes. Highly abrasive, the extremely fine particles are difficult to remove by traditional means. DIRTMAG® separators offer highly efficient separation of typical dirt as well as magnetite. The magnetite is captured by a concentrated magnetic field created by a stack of neodymium rare-earth magnets positioned inside a brass dry-well which is below the flow stream. Non-magnetic dirt particles are separated by colliding with an internal element in the flow stream, settling to the bottom. The deep collection chamber keeps the dirt from re-entering the flow stream.

Construction details for 5465M DIRTMAG®



To purge the debris, the flexible magnetic stack is removed from the brass dry-well and, even while the system is still running, the drain valve can be opened. Aided by the system pressure, the dirt and magnetite flushes out quickly and effectively. DIRTMAG magnetic dirt separators accomplish 2½ times the ferrous impurities removal performance of standard dirt separators, delivering up to 100% elimination efficiency.

	FLOW RATE					
Size	2"	2½"	3"	4"	5"	6"
GPM	89	150	227	355	816	904
Cv	88	176	211	328	520	842

	FLOW RATE			
Size	8"	10"	12"	14"
GPM	1,570	2,450	3,525	4,800
Cv	1,055	1,400	1,755	2,075

5465M DIRTMAG®

Magnetic dirt separator with one magnet assembly.
Internal element epoxy resin coated.stain-less steel and HDPE.
Complete with drain valve (code NA39753).
¾" NPT male top thread with brass cap.
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.

Code	Description	Lbs	USD
546550AM	2" ANSI flange	41	**2,492.00**
546560AM	2½" ANSI flange	41	**2,683.00**
546580AM	3" ANSI flange	58	**3,627.00**
546510AM	4" ANSI flange	58	**4,012.00**

NA5465M DIRTMAG®ASME/CRN

Magnetic dirt separator with three-magnet assembly.
Epoxy resin coated steel body.
Complete with drain valve (code NA39753).
¾" NPT male top thread with brass cap.
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.
ASME and CRN registered.

Code	Description	Lbs	USD
NA546550AM	2" ANSI flange ASME & CRN	41	**3,534.00**
NA546560AM	2½" ANSI flange ASME & CRN	41	**3,731.00**
NA546580AM	3" ANSI flange ASME & CRN	58	**4,921.00**
NA546510AM	4" ANSI flange ASME & CRN	58	**5,327.00**
NA546512AM	5" ANSI flange ASME & CRN	141	**7,733.00**
NA546515AM	6" ANSI flange ASME & CRN	151	**9,732.00**

NA5465M DIRTMAG®ASME/CRN

Magnetic dirt separator with three-magnets assembly.
Epoxy resin coated steel body.
Complete with drain valve (code NA59600).
¾" NPT male top thread with brass cap.
ANSI 150 flange connections.
Max. working pressure: 150 psi.
Vessel temperature range: 32 – 270 °F.
Particle separation capacity: to 5 µm (0.2 mil).
Ferrous impurities separation efficiency: 100%.
ASME registered. CRN registered thru 12".
Consult factory for 14".

Code	Description	Lbs	USD
NA546520AM	8" ANSI flange ASME & CRN	345	**21,152.00**
NA546525AM	10" ANSI flange ASME & CRN	630	**31,188.00**
NA546530AM	12" ANSI flange ASME & CRN	880	**38,003.00**
NA546535AM	14" ANSI flange ASME	1,010	**47,106.00**

ACCESSORIES FOR AIR AND DIRT SEPARATORS

Hygroscopic air vent cap fits DISCAL® 551 Series, and DISCALDIRT® 546 Series, and MINICAL™ 502 Series.

Code	Description	Lbs	USD
R59681	vent cap	0.1	**19.40**

Anti-suction air vent cap fits DISCAL® 551Series, DISCALDIRT® 546 Series and MINICAL™

Code	Description	Lbs	USD
562100	vent cap	0.1	**20.30**

Replacement air vent cap fits DISCAL® 551 Series and DISCALDIRT® 546 Series.

Code	Description	Lbs	USD
R59119	vent cap	0.1	**12.90**

Replacement plastic cap fits MINICAL™ 5020 and 5021 Series.

Code	Description	Lbs	USD
R56214	vent cap	0.1	**2.20**

Replacement plastic air vent cap fits 5026 and 5027 Series.

Code	Description	Lbs	USD
R56142	vent cap	0.1	**2.10**

Magnetic/drywell assembly for DISCALDIRTMAG® and DIRTMAG® PRO.

Code	Description	Lbs	USD
49684A	fit 2" and 2½"	3.0	**318.00**
49685A	fit 3" to 6"	3.0	**459.00**
F0000349	fit 8" to 14"	3.0	**600.00**

DIRTCAL® to DIRTMAG®
Retrofit kit for ¾" to 2" 5462 Series brass DIRTCAL.

Code	Description	Lbs	USD
F41661A	retrofit kit	2.0	**115.00**

Replacement clip-on magnets for DIRTMAG® PRO.

Code	Description	Lbs	USD
R39949	magnetic band	0.2	**38.70**

Replacement air vent assembly fits DISCAL® brass 551 Series (except Compact and Rotating Collar version), brass 546 Series, steel 5461 Series and SEP4™ 5495 Series.

Code	Description	Lbs	USD
59829	air vent assembly for brass DISCAL®	2.0	**126.00**

Replacement air vent assembly fits steel 551, NA551 Series DISCAL® and steel 546 Series DISCALDIRT® and DISCALDIRTMAG®.

Code	Description	Lbs	USD
59756	air vent assembly for steel DISCAL®	3.0	**139.00**

Replacement cover and float subassembly. Vent cap sold separately.

Code	Description	Lbs	USD
F39807	cover and float for brass DISCAL®	0.4	**60.90**
F0001470	cover and float for steel DISCAL®	0.5	**73.50**

Drain ball valve.
Fits DIRTCAL® 5465 and NA5465 Series.
Fits steel separators in Section 2.
Max. working pressure: 150 psi.
Max. working temperature: 365 °F.

Code	Description	Lbs	USD
NA39753	1" FNPT with lever	0.7	**43.90**
NA59600	2" FNPT with lever	3.5	**156.00**

Vent cap adapter fits all air separators and air vents except 5026 and 5027 Series.

Code	Description	Lbs	USD
NA10204	¼" MNPT	0.1	**22.00**

Replacement coalescing element for brass separators (except 551 Series DISCAL® Compact and 5517 Series DISCAL® Rotating collar)

Code	Description	Lbs	USD
F0001179	for sizes ¾" to 1¼" (sweat)	0.2	**20.30**
F59917	for sizes 1¼" (NPT, press) to 2"	0.2	**20.30**

Replacement GHT cap for DIRTMAG® (shown attached to 538 Series drain valve, not included).

Code	Description	Lbs	USD
R49418	cap with teather	0.1	**17.50**

AUTOMATIC AND MANUAL AIR VENTS

5022 VALCAL™

High discharge automatic air vent.
Hygroscopic safety air vent cap.
Max. working pressure: 150 psi.
Max. discharge pressure: 60 psi.
Max. discharge rate: 2.5 SCFM.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
502243A	½" MNPT	0.5	**41.90**

5023 VALCAL™

High discharge vent with service check.
Hygroscopic safety air vent cap.
Max. working pressure: 150 psi.
Max. discharge pressure: 60 psi.
Max. discharge rate: 2.5 SCFM.
Max. working temperature: 230 °F.

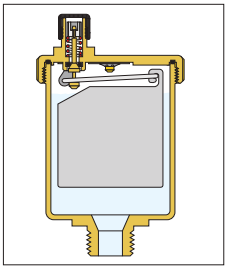
Code	Description	Lbs	USD
502343A	½" MNPT	0.5	**49.60**

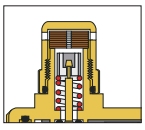
MINICAL™ and VALCAL™

These float type automatic air vents are designed to vent released air from the water while being heated. They are used on manifolds or pipes in sealed heating systems.

MINICAL is a standard size air vent that will discharge up to 1.75 SCFM.

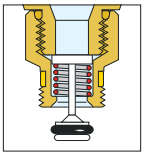
VALCAL is a high capacity larger size air vent that will discharge up to 2.5 SCFM.





Some MINICAL and VALCAL models are equipped with a hygroscopic safety cap. Cellulose fiber discs in the cap serve as a redundant seal. Their volume increases by 50% when wet, sealing the discharge vent.

Some MINICAL and VALCAL models are equipped with a service check valve which facilitates maintenance operations by shutting off the water flow when the air vent is removed and also allows an easy replacement of the air vent without purging the system.



5020 MINICAL™

Automatic air vent.
Brass body.
Max. working pressure: 150 psi.
Max. discharge pressure: 32 psi.
Max. discharge rate: 1.75 SCFM.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
502015A	⅛" MNPT	0.4	**17.40**
502040A	½" MNPT	0.4	**17.40**

5021 MINICAL™

Automatic air vent with service check valve
Brass body.
Max. working pressure: 150 psi.
Max. discharge pressure: 32 psi.
Max. discharge rate: 1.75 SCFM.
Max. working temperature: 230 °F.

Code	Description	Lbs	USD
502115A	⅛" MNPT	0.4	**23.40**
502113A	⅛" MNPT, hygroscopic anti-drip cap	0.4	**26.90**

5020 MINICAL™

Automatic air vent.
Brass body.
Hygroscopic safety air vent cap.
Max. working pressure: 150 psi.
Max discharge pressure: 32 psi.
Max. discharge rate: 1.75 SCFM.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
502043A	½" MNPT	0.6	**24.50**

AUTOMATIC AND MANUAL AIR VENTS

5027 ROBOCAL™

Automatic air vent with service check valve.
Brass body.
Max. working pressure: 150 psi.
Max. discharge rate: 1.25 SCFM
Max. discharge pressure: 90 psi.

Code	Description	Lbs	USD
502710A	⅛" MNPT	0.6	**21.50**
502720A	¼" MNPT	0.6	**22.80**

NA5027 ROBOCAL™

Automatic air vent with service check valve.
Brass body.
Max. working pressure: 150 psi.
Max. discharge rate: 1.25 SCFM
Max. discharge pressure: 90 psi.

Code	Description	Lbs	USD
NA502740A	½" MNPT, hygroscopic anti-drip cap	0.6	**29.60**

5026 ROBOCAL™

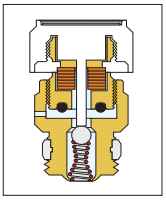
Automatic air vent.
Brass body.
Max. working pressure: 150 psi.
Max. discharge pressure: 90 psi.
Max. discharge rate: 1.25 SCFM
Max. working temperature: 240 °F.

Code	Description	Lbs	USD
502610A	⅛" MNPT	0.6	**15.50**
502620A	¼" MNPT	0.6	**16.40**
502420	¼" straight thread	1.0	**21.60**
502630	⅜" straight thread	1.0	**21.60**
502640	½" straight thread	1.0	**23.40**

337

Manual air vent with metal seal and adjustable outlet.
Brass body.
Max. working pressure: 150 psi.
Max. working temperature: 212 °F.

Code	Description	Lbs	USD
337221A	¼" MNPT	0.1	**10.50**



Automatic radiator air vent valve is designed to remove any air trapped inside the heat emitters both during the filling of the system and in normal operation. The automatic air discharge happens when the hygroscopic cellulose fiber discs are dry. As air is vented and water contacts the hygroscopic discs, they increase their volume by 50% which causes the discharge vent to close.

5080 HYGROCAL™

Automatic hygroscopic air vent for hydronic heating system and low pressure steam.
Manual operation by rotating knob.
Chrome plated brass body.
Max. working pressure: 150 psi.
Max. working temperature: 212 °F.
Low pressure steam: 15 psi.
(Priced each, sold in quantities of 25)

Code	Description	Lbs	USD
508013A	⅛" MNPT	0.1	**8.30**

5081

Replacement hygroscopic cartridge fits hygroscopic air vent 5080 Series.
(Priced each, sold in quantities of 25)

Code	Description	Lbs	USD
508100A	cartridge	0.1	**7.30**

Service check valve for removal of air vent or expansion tank without purging system.
Fits automatic air vents 502 Series.
Max. working pressure: 150 psi.
Max. working temperature: 230 °F.

Code	Description	Lbs	USD
59474A	⅛" MNPT x FNPT	0.1	**12.80**
59804A	¼" MNPT x FNPT	0.1	**13.50**
561402A	½" MNPT x FNPT	0.2	**15.60**

AUTOMATIC AND MANUAL AIR VENTS

501 MAXCAL™

Automatic air vent for heating and air conditioning. Brass body and cover, stainless steel internal components.
Extra high discharge capacity.
Max. working pressure: 230 psi.
Max. discharge pressure: 90 psi.
Max. discharge rate: 9 SCFM.
Working temperature range: -4 – 250 °F.
Discharge top thread: ⅜" female.

Code	Description	Lbs	USD
501502A	¾" FNPT	7.0	**324.00**

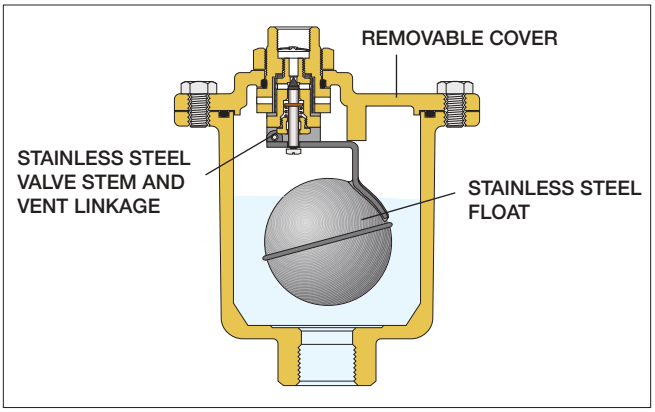
551 DISCAL AIR®

High discharge automatic air vent.
Brass body.
Stainless steel float guide pin and linkage.
Max. working pressure: 150 psi.
Max. discharge pressure: 150 psi.
Max. discharge rate: 4.5 SCFM.
Max. working temperature: 230 °F.

Code	Description	Lbs	USD
551004A	½" FNPT and ¾" MNPT	0.8	**100.00**

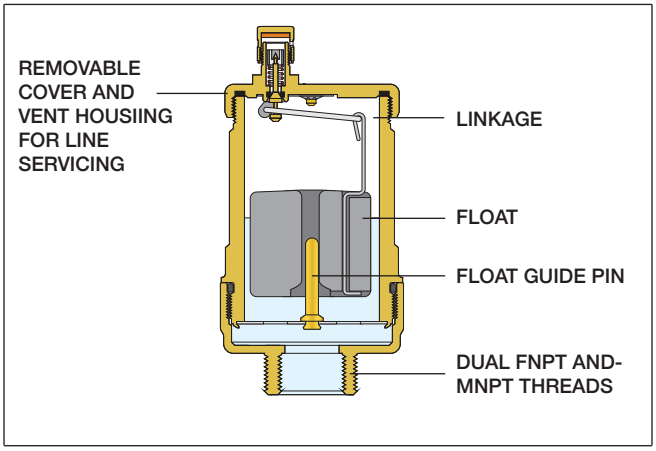
Construction for 501 MAXCAL™

Extra high capacity air vent is ideal for use in large piping systems and can also be installed in horizontal piping. The valve body and cover are made of forged brass while the filter, valve stem, float, and spring are all made of stainless steel to prevent the formation of rust.



Construction for 551 DISCALAIR®

Automatic air vents release air that forms in the hydraulic circuits of heating and air conditioning systems with pressures to 150 psi. The venting air discharge capacity is capable of expelling over 4 standard cubic feet per minute (SCFM). The circulation of fully de-aerated water or glycol-water mediums enables the equipment to operate under optimum conditions, free from noise, corrosion, localized overheating, or mechanical damage.



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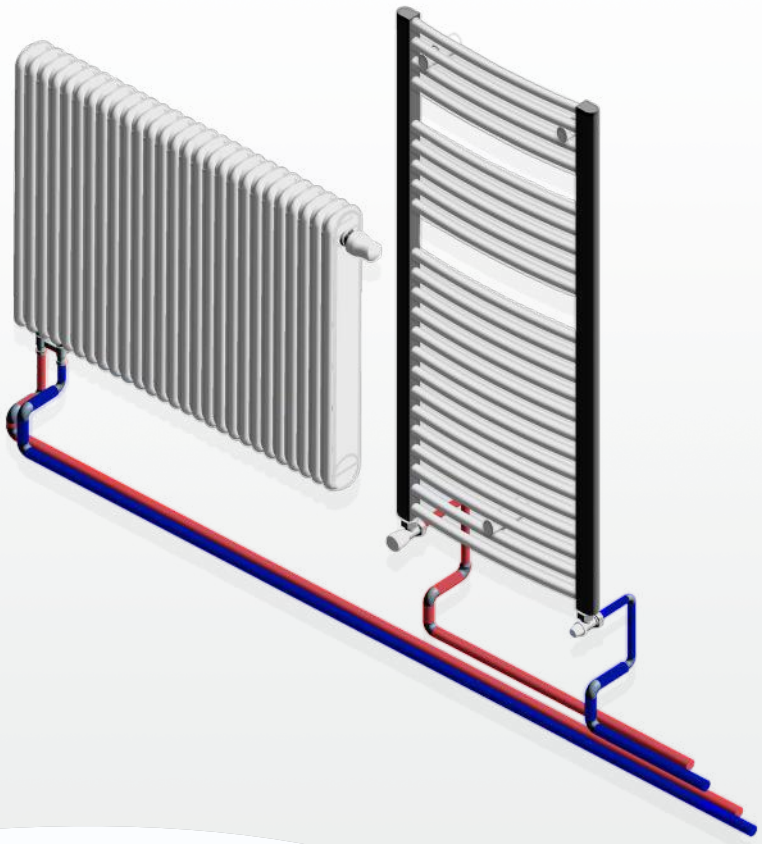

This diagram is for illustration purposes only

BIM
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PRODUCTS INCLUDED IN SECTION

Thermostatic control heads
Thermo-electric actuator
NPT thermostatic radiator valve bodies
European style towel warmer radiator valves
Connection valves for panel radiators
Connection fittings

THERMOSTATIC CONTROL HEADS

200

Thermostatic control head fits radiator valves.
Set point locking mechanism.
Range stop adjustment.
Built-in sensor with liquid-filled element.
Fits valve 220, 221, 338 and 339 Series.
Graduated scale from ⋆ to 5 corresponding to a temperature scale adjustment range of 45 – 82 °F (7 – 28 °C).

Code	Description	Lbs	USD
200000	Built-in sensor	0.5	**60.20**

201

Thermostatic control head fits radiator valves.
With remote sensor.
Fits valve 220, 221, 338 and 339 Series.
Graduated scale from ⋆ to 5 corresponding to a temperature scale adjustment range of 45 – 82 °F (7 – 28 °C).
Capillary length: 78" (2 m).

Code	Description	Lbs	USD
201000	remote sensor	1.0	**107.00**

THERMO-ELECTRIC ACTUATOR

6564

Thermo-electric actuator for electric control of radiator valves.
Fits valves 220, 221, 338 and 339 Series.
Hermetically sealed for upside down installation..
Pop-up feature.
Protection class (installed in all positions): NEMA 3 (IP54)
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA

CE

Code	Description	Lbs	USD
656404	24 V AC/DC	0.4	**82.80**
656414	24 V AC/DC with microswitch	0.4	**105.00**

472

Thermostatic control head with remote adjusting knob, liquid-filled element.
Fits valves 220, 221, 338, 339 & 676 Series (direct coupling).
Temperature range: 43 – 82 °F (6 – 28 °C).
Capillary length: 78" (2 m).

Code	Description	Lbs	USD
472000	remote wall sensor	1.0	**204.00**

203

Thermostatic control head fits radiator valves; with contact probe.
Built-in sensor with liquid-filled element.
Fits valve 220, 221, 338 and 339 Series.
The pre-set scale corresponds to adjustment temperature range of 68 – 122 °F (20 – 50 °C).
Capillary length: 78" (2 m).

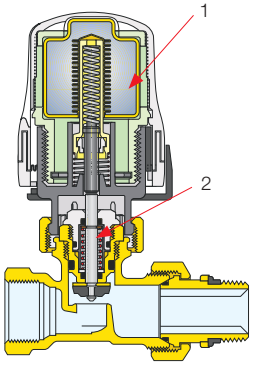
Code	Description	Lbs	USD
203502	remote sensor probe	0.5	**203.00**

ACCESSORIES

4490

Manual knob for thermostatic radiator valves. Fits valves 220 and 221 Series.

Code	Description	Lbs	USD
449010	manual knob	0.1	**12.60**



Key features

The thermostatic control head is filled with a non-compressible liquid bellows (1). The radiator valve body has a strong valve stem compression spring (2). The non compressible liquid provides the force required to compress the valve stem spring. When the temperature decreases, the liquid bellows contracts, which allows the valve stem spring to lift the valve plug from valve seat after long periods of non-movement. This ensures that after a long off-season, when the actuator operates for the first time, the spring reliably lifts the valve plug off the seat without sticking. In addition, the 200000 control head features an easy-to-use locking mechanism that prevents unauthorized temperature set point changes and a range stop adjustment that limits the maximum temperature setting to save energy and over-heating.

NPT THERMOSTATIC RADIATOR VALVE BODIES

220

Angled radiator valve body. Order thermo-electric actuators or thermostatic control heads separately for field installation.
Chrome plated.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Description	Cv	Lbs	USD
220400A	½" FNPT in, ½" NPT male union out	2.7	0.3	**59.00**
220500A	¾" FNPT in, ¾" NPT male union out	3.7	0.3	**64.60**

221

Straight radiator valve body.
Order thermo-electric actuators or thermostatic control heads separately for field installation.
Chrome plated.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Description	Cv	Lbs	USD
221400A	½" FNPT in, ½" NPT male union out	1.7	0.3	**59.00**
221500A	¾" FNPT in, ¾" NPT male union out	2.5	0.3	**64.60**

Replacement internal valve assembly fits radiator valves.

Code	Description	Lbs	USD
F36073	½" and ¾"	0.1	**8.20**

Universal radiator tool for installing ½ and ¾" tail pieces.

Code	Description	Lbs	USD
387127	Radiator tool	1.0	**86.50**

EUROPEAN STYLE TOWEL WARMER RADIATOR VALVES

338

Angled radiator valve body.
Convertible from standard manual operation to automatic control with thermostatic control heads.
Chrome plated.
Fits copper, single and multilayer PEX pipes.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Radiator Connection	Pipe Connection	Cv	Lbs	USD
338452	½" straight	¾" conical	3.1	0.5	**62.10**

342

Angled isolation and balancing valve.
Chrome plated.
Fits copper, single and multilayer PEX pipes.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Radiator Connection	Pipe Connection	Cv	Lbs	USD
342452	½" straight	¾" conical	4.6	0.5	**40.80**

339

Straight radiator valve body.
Convertible from standard manual operation to automatic control with thermostatic control heads.
Chrome plated.
Fits copper, single and multilayer PEX pipes.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Radiator Connection	Pipe Connection	Cv	Lbs	USD
339452	½" straight	¾" conical	2.0	0.5	**67.00**

343

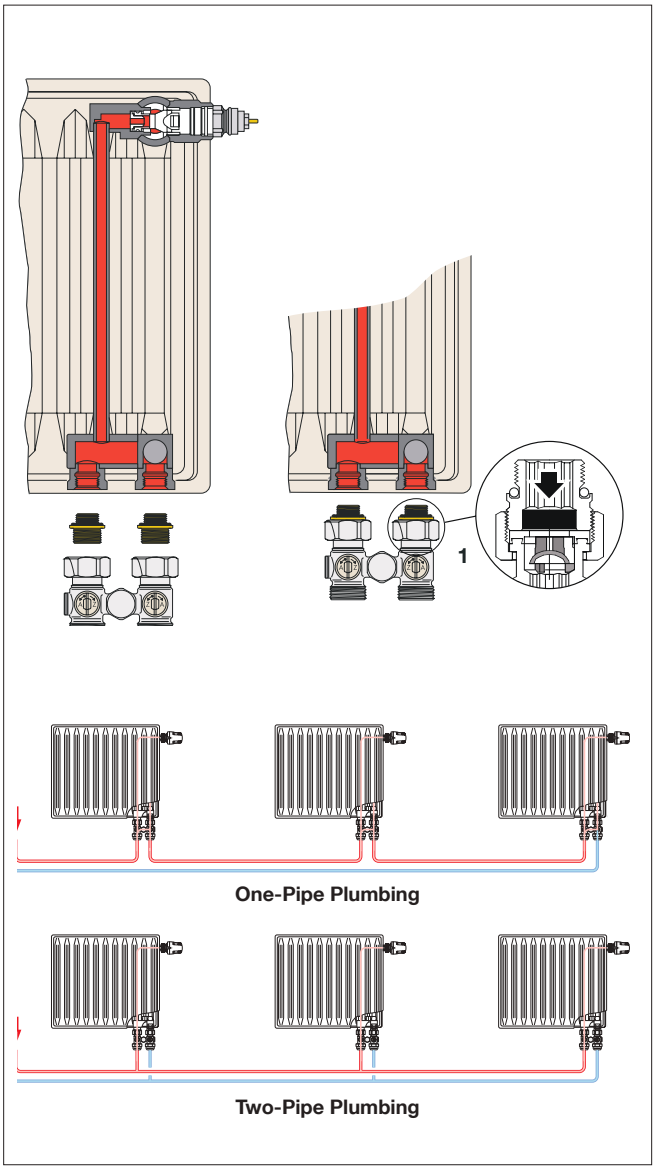
Straight isolation and balancing valve.
Chrome plated.
Fits copper, single and multilayer PEX pipes.
Max. working pressure: 150 psi (10 bar).
Temperature range: 40 – 212 °F
(5 – 100 °C).

Code	Radiator Connection	Pipe Connection	Cv	Lbs	USD
343452	½" straight	¾" conical	2.5	0.5	**42.80**

Intended for use in metric radiators such as European towel warmers and panel radiators.

CONNECTION VALVES FOR PANEL RADIATORS

Caleffi panel radiator valves are designed to be connected to the bottom of panel radiators. They come in two versions: for two-pipe and one-pipe systems. Both are available straight (pipes exiting the floor) and angled (pipes exiting the wall). The two-pipe version is equipped with two ball shut-off valves. The one-pipe, in addition to the shut-off valves, is equipped with an adjustable by-pass which diverts from 30% to 50% of the flow rate towards the radiator, and a flow check valve device (1) prevents thermo-syphoning upward into radiator from by-passing flow.



3010

Valve for panel radiators that have built-in thermostatic valve unit.
Two-pipe straight version (floor connections) fits ½" female radiator connections.
Max. working pressure: 150 psi (10 bar).
Max. working temperature: 212 °F (100 °C).

Code	Radiator Connection	Pipe Connection	Lbs	USD
301040	½" straight	¾" conical	1.0	**49.70**

3011

Valve for panel radiators that have built-in thermostatic valve unit.
Two-pipe valve angled version (wall connections) fits ½" female radiator connections.
Max. working pressure: 150 psi (10 bar).
Max. working temperature: 212 °F (100 °C).

Code	Radiator Connection	Pipe Connection	Lbs	USD
301140	½" straight	¾" conical	1.0	**49.70**

3012

Valve for panel radiators that have built-in thermostatic valve unit.
One-pipe straight version (floor connections) fits ½" female radiator connections.
With adjustable by-pass.
Balance knob.
Max. working pressure: 150 psi (10 bar).
Max. working temperature: 212 °F (100 °C).

Code	Radiator Connection	Pipe Connection	Lbs	USD
301241	½" straight	¾" conical	1.0	**87.00**

3013

Valve for panel radiators that have built-in thermostatic valve unit.
One-pipe angled version (wall connections) fits ½" female radiator connections.
With adjustable by-pass.
Balance knob.
Max. working pressure: 150 psi (10 bar).
Max. working temperature: 212 °F (100 °C).

Code	Radiator Connection	Pipe Connection	Lbs	USD
301341	½" straight	¾" conical	1.0	**87.00**

4497

Wall-covering plate.
Fits dual panel radiator valves 301X.
With wall connections.
In white ABS.
Outlet center distance: 40—50 mm.

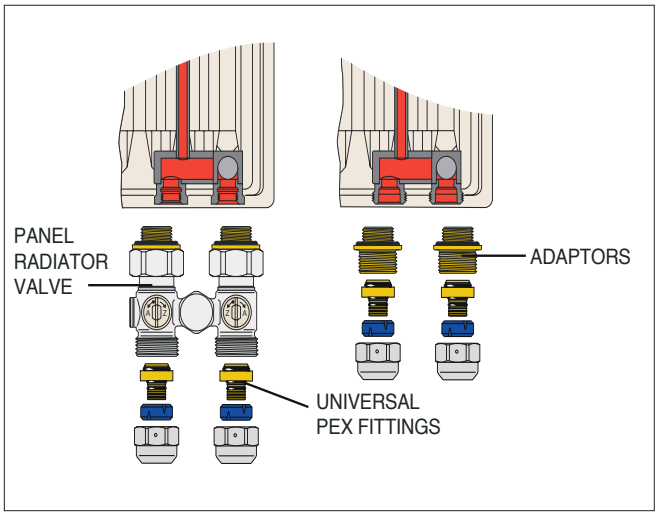
Code	Description	Lbs	USD
449740	Plate	0.1	**4.40**

CONNECTION FITTINGS

681
Universal PEX fittings

681 Series fittings are compatible with any ASTM F876 single layer PEX.
Max. working pressure: 150 psi.
Working temperature for ASTM F876 PEX piping: 40 – 180 °F.
Chrome plated nut.

Code	Description	Lbs	USD
681503A	⅜" nominal PEX	0.2	**10.60**
681524	½" nominal PEX	0.2	**10.60**
681555	⅝" nominal PEX	0.2	**10.40**



940

Radiator adapter for directly connecting a panel radiator with PEX, PEX-AL-PEX, sweat, NPT or compression fittings.
Package of 2 each, priced per package.

Code	Description	Lbs	USD
940451	½" M straight x ¾" M conical (2 ea.)	0.1	**19.10**

Wrench for tightening PEX fitting to TRV.

Code	Description	Lbs	USD
387100	26 mm x 30 mm	1.5	**47.80**

682
Universal PEX-AL-PEX fittings

682 Series fittings are compatible with any ASTM F1281 multilayer PEX-AL-PEX pipe.
Max. working pressure: 150 psi.
Working temperature for ASTM F1281 PEX-AL-PEX piping: 40 – 200 °F with tubing rated 200 °F.

Code	Description	Lbs	USD
682540A	½" PEX-AL-PEX	0.2	**10.40**

437

Compression fitting.
Fits ½" hard copper.
With o-ring seal.
Max. working pressure: 150 psi.
Working temperature range: 40 – 250 °F.
Chrome plated.
For connecting copper to valve 301, 338, 339, 342 and 343 Series.

Code	Description	Lbs	USD
437516	½" compression	0.1	**8.50**

NA102

Sweat connection fitting.
Fits ½" copper.
Max. working pressure: 150 psi.
Working temperature range: 40 – 250 °F.
Chrome plated nut.
For connecting copper to valve 301, 338, 339, 342 and 343 Series.

Code	Description	Lbs	USD
NA10262	½" sweat	0.2	**11.30**

NA103

NPT connection fitting.
Max. working pressure: 150 psi.
Working temperature range: 40 – 250 °F.
Chrome plated nut.
For connecting copper to valve 301, 338, 339, 342 and 343 series.

Code	Description	Lbs	USD
NA10313	½" NPT male	0.2	**12.20**

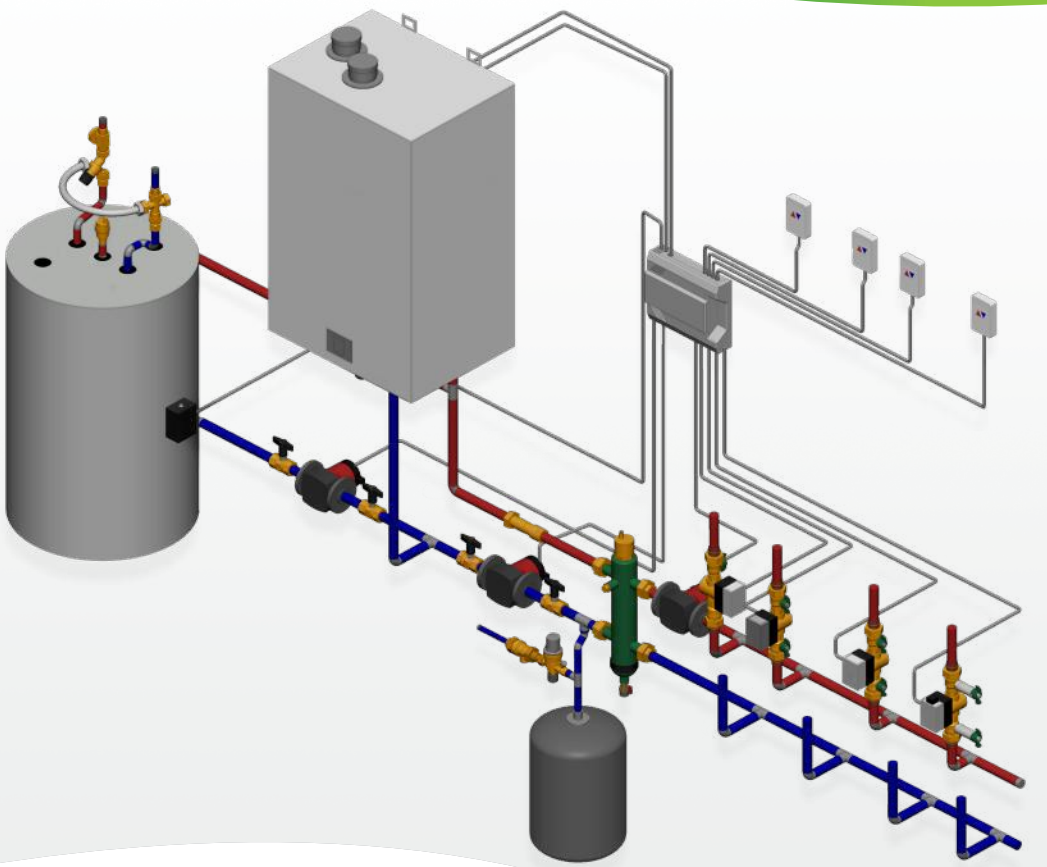
CALEFFI
Hydronic Solutions

www.caleffi.com

Z-ONE™ VALVES AND RELAYS
ZONING DONE RIGHT

The reliable Z-one™ Motorized Zone Valves and Relay Controls were developed by contractors for contractors. They offer quick installation and easy service for commercial and residential applications. Enjoy an industry-exclusive five-year warranty when installed together. Simple, serviceable, reliable. **CALEFFI GUARANTEED.**

ZONE VALVES, CONTROLS AND COIL KITS



This diagram is for illustration purposes only

bim.caleffi.com

PRODUCTS INCLUDED IN SECTION

Coil kits
Pressure independent control valves (PICV)
Thermo-electric zone valves
Motorized zone valves
Pump zone controls
Valve zone controls
Motorized ball zone valves

PRESSURE INDEPENDENT CONTROL VALVES (PICV)

145 FLOWMATIC® NPT

Pressure independent control valve.
Max. working pressure: 360 psi (25 bar)
Max. differential pressure: 58 psi (4 bar)
Working temperature range:
-4 – 250 °F (-20 – 121 °C)
Nominal differential pressure control range:
3.6 to 58 psid (0.25 to 4 bar)

145 FLOWMATIC® sweat

Pressure independent control valve.
Max. working pressure: 360 psi (25 bar)
Max. differential pressure: 58 psi (4 bar)
Working temperature range:
-4 – 250 °F (-20 – 121 °C)
Nominal differential pressure control range:
3.6 to 58 psid (0.25 to 4 bar)

Code	Description	GPM Range	Lbs	USD
145443A G90	½" NPT female union	0.1 - 0.9	1.0	**167.00**
145443A 1G8	½" NPT female union	0.4 - 1.8	1.0	**167.00**
145443A 3G5	½" NPT female union	0.4 - 3.5	1.0	**167.00**
145553A G90	¾" NPT female union	0.1 - 0.9	1.0	**178.00**
145553A 1G8	¾" NPT female union	0.4 - 1.8	1.0	**178.00**
145553A 3G5	¾" NPT female union	0.4 - 3.5	1.0	**178.00**
145553A 5G3	¾" NPT female union	0.5 - 5.3	1.0	**178.00**
145663A 7G9	1" NPT female union	0.8 - 7.9	1.1	**322.00**
145663A 13G	1" NPT female union	1.3 - 13	1.1	**322.00**
145663A 16G	1" NPT female union	1.6 - 16	1.1	**344.00**

Code	Description	GPM Range	Lbs	USD
145449A G90	½" sweat union	0.1 - 0.9	1.0	**156.00**
145449A 1G8	½" sweat union	0.4 - 1.8	1.0	**156.00**
145449A 3G5	½" sweat union	0.4 - 3.5	1.0	**156.00**
145559A G90	¾" sweat union	0.1 - 0.9	1.0	**167.00**
145559A 1G8	¾" sweat union	0.4 - 1.8	1.0	**167.00**
145559A 3G5	¾" sweat union	0.4 - 3.5	1.0	**167.00**
145559A 5G3	¾" sweat union	0.5 - 5.3	1.0	**167.00**
145669A 7G9	1" sweat union	0.8 - 7.9	1.1	**311.00**
145669A 13G	1" sweat union	1.3 - 13	1.1	**311.00**
145669A 16G	1" sweat union	1.6 - 16	1.1	**356.00**

Construction design for 145 FLOWMATIC®

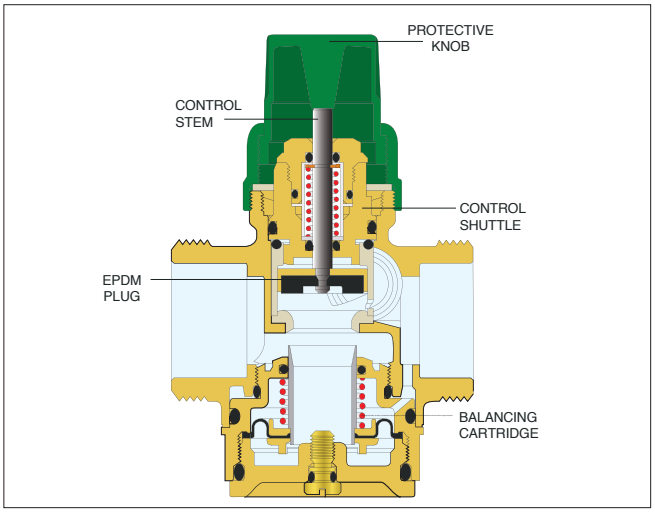
The FLOWMATIC® pressure independent control valve (PICV) combines an automatic differential pressure regulator and a control valve with optional actuator. The PICV automatically adjusts flow rate and keeps it constant under changing circuit differential pressure conditions where it is installed.

Flow rate is adjusted either:

• **Manually** on the automatic differential pressure regulator, to restrict the maximum value, or

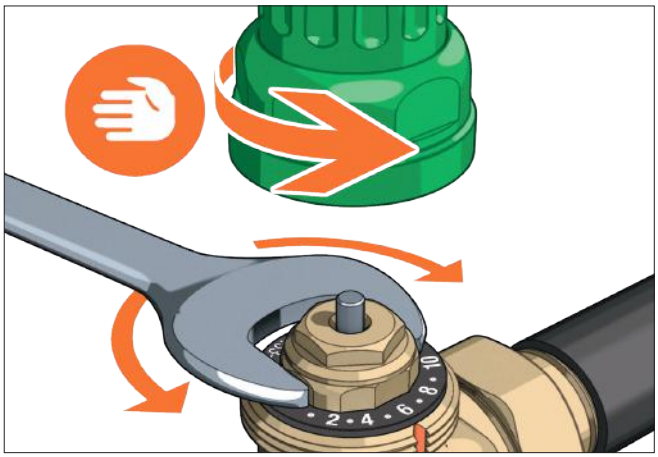
• **Automatically** by the control valve in utilzing a separatly purchased and field intalled proportional (0–10 V) or ON/OFF actuator.

The (PICV) is supplied complete with upstream and downstream pressure test ports for measuring operating conditions.
The FLOWMATIC PICV is designed for use in hydronic systems only.



Adjustment procedure

Maximum flow rate adjustment:
Unscrew the protective cap by hand to gain access to the maximum flow rate locking nut, which can be turned with a 19 mm wrench. Attached to the locking nut is a 10-position graduated scale. Refer to the "Flow rate adjustment table" in the technical brochure to determine the correct numerical position based on the design flow rate of the circuit being served. Turn the locking nut, lining up the desired numerical position with the notch on the valve.



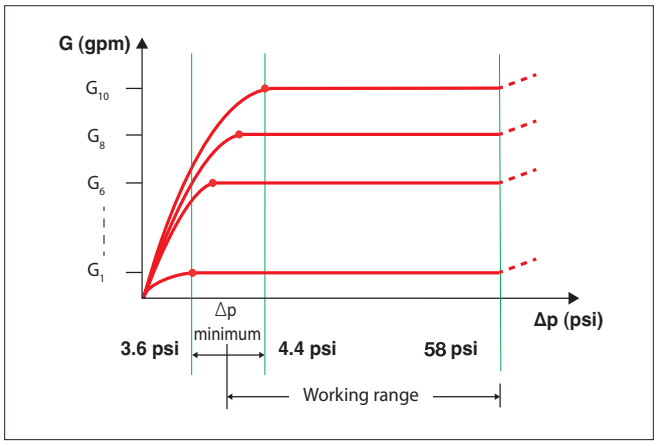
PRESSURE INDEPENDENT CONTROL VALVES (PICV)

145 FLOWMATIC® press

Pressure independent control valve.
Max. working pressure: 360 psi (25 bar)
Max. differential pressure: 58 psi (4 bar)
Working temperature range:
-4 – 250 °F (-20 – 121 °C)
Nominal differential pressure control range:
3.6 to 58 psid (0.25 to 4 bar)

Code	Description	GPM Range	Lbs	USD
145446A G90	½" press union	0.1 - 0.9	1.0	**178.00**
145446A 1G8	½" press union	0.4 - 1.8	1.0	**178.00**
145446A 3G5	½" press union	0.4 - 3.5	1.0	**178.00**
145556A G90	¾" press union	0.1 - 0.9	1.0	**189.00**
145556A 1G8	¾" press union	0.4 - 1.8	1.0	**189.00**
145556A 3G5	¾" press union	0.4 - 3.5	1.0	**189.00**
145556A 5G3	¾" press union	0.5 - 5.3	1.0	**189.00**
145666A 7G9	1" press union	0.8 - 7.9	1.1	**333.00**
145666A 13G	1" press union	1.3 - 13	1.1	**333.00**
145666A 16G	1" press union	1.6 - 16	1.1	**367.00**

Working range
To maintain the flow rate constant independently from the circuit's differential pressure conditions, total valve ΔP must be in the range from the minimum ΔP value and the maximum value of 58 psid. Consult the 145 FLOWMATIC technical brochure for flow rate adjustment tables.



145 FLOWMATIC®

Pressure independent control valve actuator.
24V, 0-10V proportional with feedback.

Code	Description	Lbs	USD
145013	24V, 0-10 V proportional, fail in place	0.3	**194.00**
145018*	24V, 0-10 V proportional 2nd QTR	0.3	**256.00**

* NC / NO, fail open or closed

Pressure independent control valve actuator.
Thermo-electric with feedback, 200 sec. stroke time

Code	Description	Lbs	USD
656524	24V, 0-10 V proportional, NC	0.3	**178.00**

Pressure independent control valve actuator.
Thermo-electric, 200 sec. stroke time

Code	Description	Lbs	USD
656504	24V on/off, NC	0.3	**100.00**

COIL KITS

149 FLOWMATIC® Express Coil Kit

Connection and regulation kit
for HVAC terminal units.
Dezincification resistant alloy body.
Complete with:
- pressure independent control valve,
- three-way shut-off valves,
- integrated by-pass,
- Venturi device with pressure test ports.
- filtering cartridge,
- pre-formed insulation shell.

Max. working pressure: 360 psi.
Temperature range: 15 – 250 °F.
Max. percentage of glycol: 50 %.
ΔP range (PICV): 3.6 - 58 psi.
Compatible with 145 and 6565 Series actuators on page 39.

*** Custom tagging available for coil kits; see web page for spreadsheet and submit with purchase order**

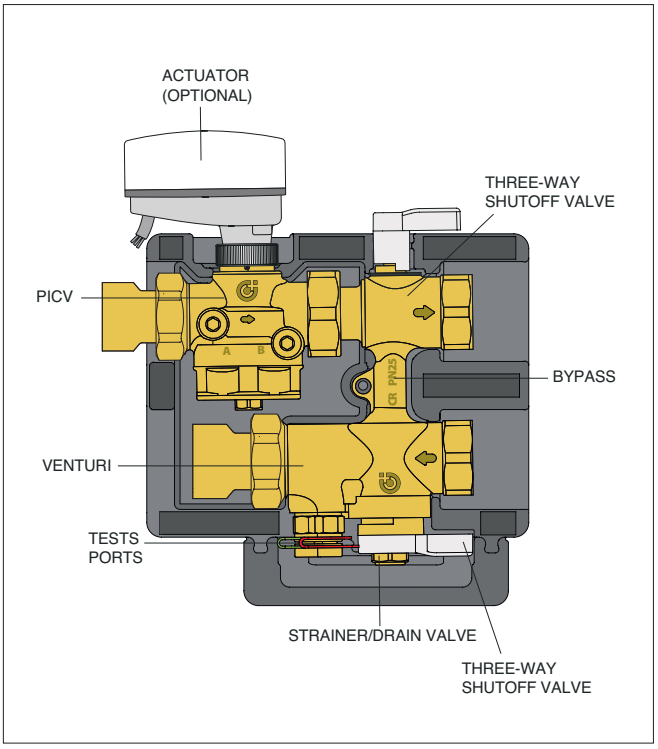
Code	Description	GPM Range	Lbs	USD
149400A G40	½" NPT	0.1 - 0.4	5.0	**400.00**
149400A G90	½" NPT	0.4 - 0.9	5.0	**400.00**
149400A 1G8	½" NPT	0.9 - 1.8	5.0	**400.00**
149400A 3G5	½" NPT	1.8 - 3.5	5.0	**400.00**
149500A G90	¾" NPT	0.4 - 0.9	5.2	**422.00**
149500A 1G8	¾" NPT	0.9 - 1.8	5.2	**422.00**
149500A 3G5	¾" NPT	1.8 - 3.5	5.2	**422.00**
149500A 5G3	¾" NPT	3.5 - 5.3	5.2	**422.00**
149600A 7G9	1" NPT	5.3 - 7.9	6.3	**500.00**
149600A 13G	1" NPT	7.9 - 13	6.3	**500.00**
149600A 16G	1" NPT	8.0 - 16	6.3	**500.00**

Optional Insulation jacket to cover
149 Series for chilled water applications.
Materials: EPP
Density: 1.9 lb/ft³
Thermal conductivity:
at 50 °F (10 °C): 0.257 BTU · in/hr · ft² · °F
(0.037 W/m · K)

Code	Description	Lbs	USD
F0001771	insulation shell for chilled water	0.1	**40.00**

Construction design for 149 FLOWMATIC® Express Coil Kit

The pre-assembled kit for terminal units is compact and enables control, balancing, testing and servicing the secondary circuit. It allows the connection of fan-coils, chilled beams or ceiling-mounted air-conditioning systems with the main distribution system. It also allows for maintenance and setting operations of the system. Complete with insulation suitable for both heating or cooling and venturi device for flow rate measurement at test ports.



Terminal unit connecting hoses.
Material: stainless steel braid.
Fitting connection: NPT male x NPT male, plated steel.
Max. working pressure: 400 psi (28 bar)
Max. operating temperature: 212 °F (100 °C)
Codes below include a pair of hoses.

Code	Description	Lbs	USD
NA10970	½" MNPT x 12" length	0.6	**98.00**
NA10971	½" MNPT x 18" length	0.7	**110.00**
NA10972	½" MNPT x 24" length	0.8	**122.00**
NA10973	¾" MNPT x 12" length	1.0	**128.00**
NA10974	¾" MNPT x 18" length	1.1	**146.00**
NA10975	¾" MNPT x 24" length	1.2	**164.00**
NA10976	1" MNPT x 12" length	2.0	**284.00**
NA10977	1" MNPT x 18" length	2.2	**312.00**
NA10978	1" MNPT x 24" length	2.4	**340.00**

THERMO-ELECTRIC ZONE VALVES

6767
TwisTop+™ High Performance

Complete with 656354 actuator.
Pressure balanced body.
40% more flow, 75% more close-off
Spring return. Normally closed.
Brass valve body and trim.
Max. body pressure: 150 psi.
Max fluid temperature: 200 °F.
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA
Max. ambient temperature: 120 °F
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.

Code	Description	Cv	ΔP	Lbs	USD
676746A	½" press union	5.6	35 psi	2.2	**206.00**
676749A	½" sweat union	5.6	35 psi	2.2	**224.00**
676748A	½" PEX expansion union	5.6	35 psi	2.2	**224.00**
676756A	¾" press union	5.6	35 psi	2.2	**224.00**
676759A	¾" sweat union	5.6	35 psi	2.2	**217.00**
676758A	¾" PEX expansion union	5.6	35 psi	2.2	**217.00**
676766A	1" press union	5.6	35 psi	2.2	**254.00**
676769A	1" sweat union	5.6	35 psi	2.2	**243.00**
676768A	1" PEX expansion union	5.6	35 psi	2.2	**243.00**
676500A	body only, close-off 35 psid	5.6	35 psi	1.0	**55.90**

6762
TwisTop™ Zone valve

Two-way thermo-electric zone valve.
Complete with TwisTop™ (code 656354) actuator. Spring return. Normally closed.
Brass valve body and trim.
Max. body pressure: 150 psi.
Max. Temperature: 200 °F.
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA
Max. ambient temperature: 120 °F
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.

Code	Description	Cv	ΔP	Lbs	USD
676246A	½" press union	4.0	20 psi	1.4	**187.00**
676249A	½" sweat union	4.0	20 psi	1.4	**182.00**
676248A	½" PEX expansion union	4.0	20 psi	1.4	**182.00**
676256A	¾" press union	4.0	20 psi	1.4	**204.00**
676259A	¾" sweat union	4.0	20 psi	1.4	**198.00**
676258A	¾" PEX expansion union	4.0	20 psi	1.4	**198.00**
676266A	1" press union	4.0	20 psi	1.4	**235.00**
676269A	1" sweat union	4.0	20 psi	1.4	**226.00**
676268A	1" PEX expansion union	4.0	20 psi	1.4	**226.00**
676000A	body only, close-off 20 psid	4.3	20 psi	0.5	**28.20**

6564

Thermo-electric actuator fits on 676 two-way zone valve bodies.
Hermetically sealed for upside down installation.
Pop-up feature.
Low current draw.
Protection class (installed in all positions): NEMA 3 (IP54)
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA
Max. ambient temperature: 120 °F
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.

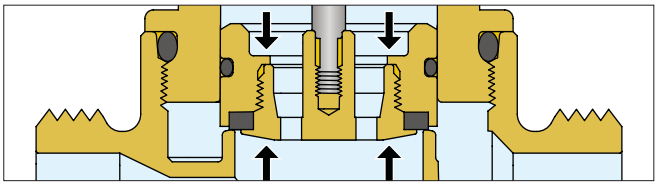
Code	Description	Lbs	USD
656404	24 V AC/DC	0.4	**82.80**
656414	24 V AC/DC with micro-switch	0.4	**105.00**

6563
TwisTop™

TwisTop™ thermo-electric actuator fits on 676 two-way valve.
Twist the top to manually open and close micro-switch.
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA
Max. ambient temperature: 120 °F
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.

Code	Description	Lbs	USD
656344	24 V AC/DC	0.4	**111.00**
656354	24 V AC/DC with micro-switch	0.4	**131.00**

Construction design for 6564 TwisTop+™



The pressure-balanced valve, code 676500A, has a special valve plug that can work at high differential pressures. As shown in the figure, the thrust towards the opening is counterbalanced by the force created by the pressure acting on the internal surface of the valve plug. This feature reduces the thrust needed to close the valve plug resulting in higher close-off pressure.

MOTORIZED ZONE VALVES

Z4
Z-one® 2-way

Two-way zone valve. Spring return.
Normally closed actuator: Z111000.
Auxiliary micro-switch.
Max. body pressure: 300 psi.
Temperature range: 32 – 240 °F.
Suitable fluids: water, 50% max. glycol, 15 psi max. steam.
Power supply: 24 VAC.
Power consumption: 5 W, 7 VA.
Rating of auxiliary micro-switch contacts: 0.0 A min, 0.4 A max 24 V (24 V only).
18" wire lead connection.
UL873, cULus Listed & CE.
UL 1995 sec. 18 air plenums and ducts.
U.S. Patent 7,048,251.

c UL US LISTED E239721 86BP

Code	Description	Cv	Δ P	Lbs	USD
Z40	inverted flare	3.5	30 psi	2.2	**173.00**
Z40F	¾" Inv flare*	3.5	30 psi	2.2	**196.00**
Z42	½" SAE flare	3.5	30 psi	2.2	**187.00**
Z44	½" sweat	2.5	50 psi	2.1	**169.00**
Z45	¾" sweat	7.5	20 psi	2.2	**182.00**
Z46	1" sweat	7.5	20 psi	2.3	**228.00**
Z47	1¼" sweat	7.5	20 psi	2.3	**265.00**

* Two ¾" sweat fittings (NA10006) included.

Z5
Z-one® 2-way

Two-way zone valve. Spring return.
Normally closed actuator: Z151000.
Auxiliary micro-switch.
Max. body pressure: 300 psi.
Temperature range: 32 – 240 °F.
Suitable fluids: water, 50% max. glycol, 15 psi max. steam.
Power supply: 24 VAC.
Power consumption: 5 W, 7 VA.
Rating of auxiliary micro-switch contacts: 0.0 A min, 0.4 A max 24 V (24 V only).
Screw terminal connection.
UL873, cULus Listed & CE.
UL 1995 sec. 18 air plenums and ducts.
U.S. Patent 7,048,251.

c UL US LISTED E239721 86BP

Code	Description	Cv	Δ P	Lbs	USD
Z50	inverted flare	3.5	30 psi	2.2	**177.00**
Z50F	¾" Inv flare*	3.5	30 psi	2.2	**200.00**
Z54	½" sweat	2.5	50 psi	2.1	**173.00**
Z55	¾" sweat	7.5	20 psi	2.2	**187.00**
Z56	1" sweat	7.5	20 psi	2.3	**232.00**
Z57	1¼" sweat	7.5	20 psi	2.3	**270.00**

* Two ¾" sweat fittings (NA10006) included.

Z-one® 2-way Unions

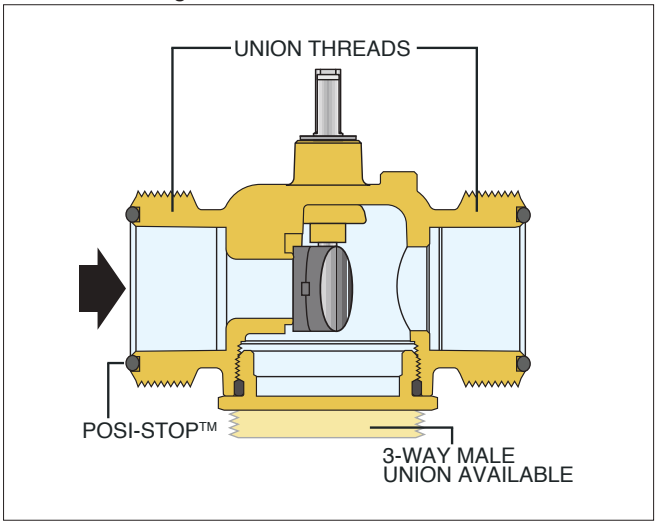
Two-way zone valve. Spring return.
Auxiliary micro-switch.
Max. body pressure: 300 psi.
Overall length: 5⅝"
Temperature range: 32 – 240 °F.
Suitable fluids: water, 50% max. glycol, 15 psi max. steam.
Power supply: 24 VAC.
Power consumption: 5 W, 7 VA.
Rating of auxiliary micro-switch contacts: 0.0 A min, 0.4 A max 24 V (24 V only).
UL873, cULus Listed & CE.
UL 1995 sec. 18 air plenums and ducts.
U.S. Patent 7,048,251.

c UL US LISTED E239721 86BP

Code	Description	Cv	Δ P	Lbs	USD
Z44P	½" press unions*	3.5	30 psi	2.2	**232.00**
Z54P	½" press unions**	3.5	30 psi	2.2	**236.00**
Z45P3	¾" press unions NEW	3.5	30 psi	2.2	**236.00**
Z55P3	¾" press unions NEW	3.5	30 psi	2.2	**240.00**
Z45P	¾" press unions*	7.5	20 psi	2.2	**236.00**
Z55P	¾" press unions**	7.5	20 psi	2.2	**240.00**
Z45PL	¾" press unions*	7.5	20 psi	2.3	**258.00**
Z55PL	¾" press unions**	7.5	20 psi	2.3	**262.00**
Z46P	1" press unions*	7.5	20 psi	2.4	**267.00**
Z56P	1" press unions**	7.5	20 psi	2.4	**272.00**
Z55S	¾" sweat unions	7.5	20 psi	2.2	**228.00**

*Include Z11000 actuator with 18" wire lead connection.
**Have the Z151000 actuator with screw terminal block connection.
PL version long press fitting for retrofit includes press fittings.

Construction design for Z4 Z-one™



Inverted flare sweat adaptors fits Z40, Z50 and inverted flare valve body.

Code	Description	Lbs	USD
NA10005	½" sweat	0.3	**8.50**
NA10006	¾" sweat	0.3	**10.80**
NA10007	1" sweat	0.4	**17.90**
NA61241	retrofit extension kit	0.2	**8.80**

MOTORIZED ZONE VALVES

E239721
US LISTED
86BP

Z1

Z1 Normally closed actuators fit on Z2 and Z3 valves. Normally open actuators fit on Z2 valves only. Easy pushbutton attachment 7/8" knockout for ½" conduit connector.
Power: 24 or 120 VAC.
Power consumption: 5 W, 7 VA.
Conduit connector size: ½".
Rating of auxiliary switch contacts:
24 VAC: 0.0 A min, 0.4 A max (24 V).
120 and Z111900 VAC: 0.25 A min, 5.0 A max (230 V).
UL873, cULus Listed & CE.
UL 1995 sec.18 air plenums and ducts.
U.S. Patent 7,048,251.

Normally closed

Code	Description	Lbs	USD
Z111000	24 V, micro-switch, 18" wires	1.1	**119.00**
Z111900	24 V, high current switch, 18" wires	1.1	**119.00**
Z116000	120 V, micro-switch, 6" wires	1.1	**119.00**
Z151000	24 V, micro-switch, terminal blocks	1.1	**124.00**
Z161000	24 V, terminal blocks	1.1	**113.00**
Z121000	24 V, 18" wires	1.1	**111.00**
Z126000	120 V, 6" wires	1.1	**111.00**

Normally open

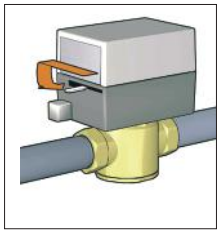
Code	Description	Lbs	USD
Z131000	24 V, micro-switch, 18" wires	1.1	**131.00**
Z136000	120 V, micro-switch, 6" wires	1.1	**131.00**
Z141000	24 V, 18" wires	1.1	**120.00**
Z146000	120 V, 6" wires	1.1	**120.00**

Function

The Z-one™ valve is a truly universal zone valve that can be used in a wide range of commercial and residential applications; from fan coils to baseboard, radiant to high rise, the Z-one is the professional's valve of choice. The Z-one can be used in both chilled or hot water and low pressure steam applications. With ΔP close off pressures of up to 75 PSI, the Z-one outperforms all other zone valves. The Z-one is available in sizes from ½" to 1¼" sweat or NPT connections on valve body, with removable actuator available in 24 to 120 voltages.

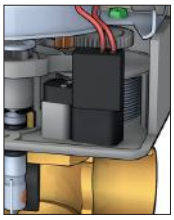
Some models of Z-one actuators contain an auxiliary micro-switch to operate other devices. The 24 V actuators use a sealed reed switch, which has been produced specifically for use with relays, boiler contacts (TT) and DDC systems. It requires no minimum current load. The 120 V actuators for applications requiring greater than 400 mA, use a conventional micro-switch with silver contacts. The auxiliary switch is activated when the valve is 60% open or when the actuator is manually opened.

• Manual opening (Normally closed actuator only) The valve can be opened manually by moving the lever for opening it. When the power is restored the manual control is automatically overridden. The auxiliary switch in 24 V actuators is tripped when the unit is put into manual open position. This helps during start up to check if the wiring is correct without firing the valve electrically with the thermostat.

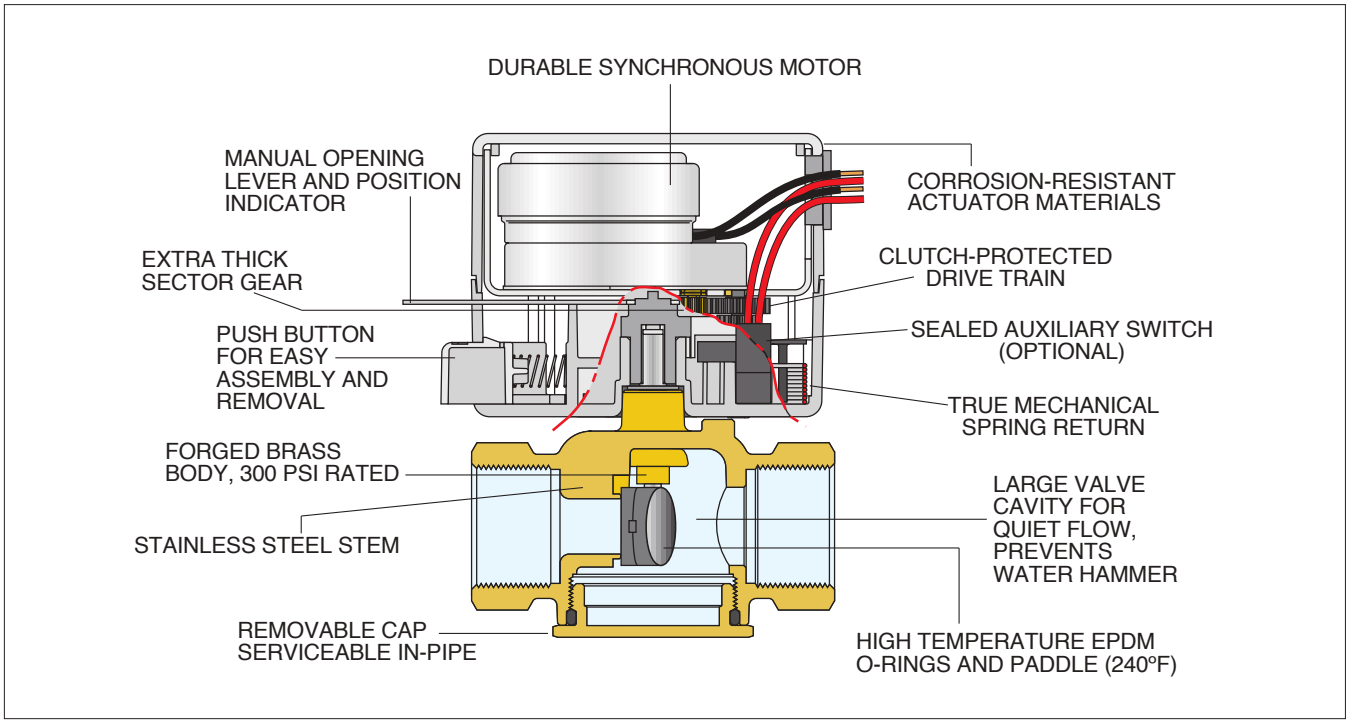


• Auxiliary micro-switch

The actuator contains an auxiliary microswitch to operate other devices. The 24 V actuators use a sealed reed switch, which has been produced specifically for use with relays, boiler contacts (TT) and DDC systems. It requires no minimum current load. The 120 V actuators use a conventional micro-switch with silver contacts. The auxiliary micro-switch is activated when the valve is 60% open or when the actuator is manually opened.



Construction details for Z-one™ actuators



MOTORIZED ZONE VALVES

Z2
2-way

Two-way on/off two position valve.
Straight through flow pattern.
Brass body.
Stainless steel stem.
EPDM rubber seals and paddle.
Max. working pressure: 300 psi.
Max temperature: 240 °F.

Code	Description		Cv	Δ P	Lbs	USD
Z200041	inverted flare		1.0	75 psi	1.1	**52.70**
Z200042	inverted flare		2.5	50 psi	1.1	**52.70**
Z200043	inverted flare		3.5	30 psi	1.1	**52.70**
Z200053	½" SAE Flare		3.5	30 psi	1.1	**67.40**
Z200411	½" FNPT		1.0	75 psi	1.1	**52.70**
Z207411	½" FNPT	**LL**	1.0	75 psi	1.1	**71.90**
Z200412	½" FNPT		2.5	50 psi	1.1	**52.70**
Z200413	½" FNPT		3.5	30 psi	1.1	**52.70**
Z200431	½" sweat		1.0	75 psi	1.0	**48.30**
Z200432	½" sweat		2.5	50 psi	1.0	**48.30**
Z207433	½" sweat	**LL**	3.5	30 psi	1.0	**67.40**
Z200512	¾" FNPT		2.5	50 psi	1.2	**71.90**
Z200513	¾" FNPT		3.5	30 psi	1.2	**71.90**
Z200515	¾" FNPT		5.0	25 psi	1.2	**71.90**
Z200517	¾" FNPT		7.5	20 psi	1.2	**71.90**
Z200532	¾" sweat		2.5	50 psi	1.1	**63.70**
Z207533*	¾" sweat	**LL**	3.5	30 psi	1.1	**82.80**
Z200535	¾" sweat		5.0	25 psi	1.1	**63.70**
Z200537	¾" sweat		7.5	20 psi	1.1	**63.70**
Z207537*	¾" sweat	**LL**	7.5	20 psi	1.1	**82.80**
Z200617	1" FNPT		7.5	20 psi	1.3	**114.00**
Z200635	1" sweat		5.0	25 psi	1.2	**108.00**
Z200637	1" sweat		7.5	20 psi	1.2	**108.00**
Z200737	1¼" sweat		7.5	20 psi	1.3	**145.00**

LL Low-lead brass body.

Isolation ball valve.
Low lead MxF union union fits between valve body and tailpiece.

Code	Description		Lbs	USD
290030	1" M x 1" F union ball valve		1.0	**47.60**
290031*	1" M x 1" F union ball valve	NEW	1.0	**75.00**

*with extended handle

Z3
3-way

Three-way on/off two position valve.
Diverting flow pattern.
Brass body.
Stainless steel stem.
EPDM rubber seals and paddle.
Max. working pressure: 300 psi.
Max temperature: 240 °F.

Code	Description		Cv	Δ P	Lbs	USD
Z300411	½" FNPT		1.0	75 psi	1.1	**70.20**
Z300412	½" FNPT		2.5	50 psi	1.1	**70.20**
Z300413	½" FNPT		3.5	30 psi	1.1	**70.20**
Z300431	½" sweat		1.0	75 psi	1.0	**65.90**
Z300432	½" sweat		2.5	50 psi	1.0	**65.90**
Z307433*	½" sweat	**LL**	3.5	30 psi	1.0	**84.90**
Z300512	¾" FNPT		2.5	50 psi	1.2	**87.70**
Z300513	¾" FNPT		3.5	30 psi	1.2	**87.70**
Z300515	¾" FNPT		5.0	25 psi	1.2	**87.70**
Z300517	¾" FNPT		7.5	20 psi	1.2	**87.70**
Z300532	¾" sweat		2.5	50 psi	1.1	**81.40**
Z300533	¾" sweat		3.5	30 psi	1.1	**81.40**
Z300535	¾" sweat		5.0	25 psi	1.1	**81.40**
Z307537*	¾" sweat	**LL**	7.5	20 psi	1.1	**101.00**
Z300617	1" FNPT		7.5	20 psi	1.3	**132.00**
Z300635	1" sweat		5.0	25 psi	1.2	**122.00**
Z300637	1" sweat		7.5	20 psi	1.2	**122.00**
Z300737	1¼" sweat		7.5	20 psi	1.3	**149.00**

***LL** Low-lead brass body.

2-way male union valve body.
Posi-Stop™ included.
Refer to fitting selection table in Section 13.

Code	Description	Cv	Δ P	Lbs	USD
Z200683	1" male union body	3.5	30 psi	1.1	**71.90**
Z200687	1" male union body	7.5	20 psi	1.1	**71.90**

3-way male union valve body.
Posi-Stop™ included.
Refer to fitting selection table in Section 13.

Code	Description	Cv	Δ P	Lbs	USD
Z300687	1" male union body	7.5	20 psi	1.2	**91.40**

Two-way and three-way zone valve body repair kit. Includes valve stem paddle with O-rings, C clip and one bottom cap O-ring.

Code	Description	Lbs	USD
F69293	fits all ½" and ¾" sweat Z2, Z3	0.4	**17.70**
F69294	fits all ¾" NPT and all 1", 1¼" Z2, Z3	0.4	**17.70**

Complies with standard NSF/ANSI/CAN 372, certified by ICC-ES (for the LL models only).

PUMP ZONE CONTROLS

Certified to CSA C22-2 No.24
Conforms to UL Standard 873
Intertek
4009064

ZSR
Z-one™ Relay

The ZSR Series is multi-zone pump and boiler operating control for multiple zone hydronic heating systems. The ZSR Series interfaces with low voltage thermostats or any other low voltage controllers having a switching action. The ZSR Series controls up to 3, 4, 5 or 6 heating circulator pumps, depending on model selected, a primary pump, and has LED indicators to provide functional status and easy system troubleshooting. In addition, a primary pump system circulator is switched on whenever any zone calls for heat.

Power supply: 120 VAC, 50/60 Hz
Transformer voltage: 24 VAC
Maximum transformer load: 40 VA (ZSR101/103/104/106).
Electrical switch rating: 10A (ZSR101), 20A (ZSR103/4) max combined
Electrical switch rating pump output: 120 VAC, 5A each
Dry contact rating: AUX, XX, ZONE1 E/S: 120 VAC max, 2A each
Replaceable fuses: Type 2AG, 5A slow blow

ZSR Z-ONE RELAY FUSES

Code	Description	Lbs	USD
NA10342	spare fuse (package of 5)	0.1	**11.90**

Code	Description	Lbs	USD
ZSR101	single zone relay	1.0	**117.00**
ZSR103	3 zone pump control	2.0	**278.00**
ZSR104	4 zone pump control	2.0	**325.00**
ZSR106	6 zone pump control	2.0	**398.00**

VALVE ZONE CONTROLS

Certified to CSA C22-2 No.24
Conforms to UL Standard 873
Intertek
4009064

ZVR
Z-one™ Relay

The ZVR Series is a multi-zone valve relay and boiler operating control for multiple zone hydronic heating systems. The ZVR Series interfaces with low voltage thermostats or any other low voltage controllers having a switching action. The ZVR Series controls up to 3, 4, 5 or 6 zones, depending on model selected. In addition, a system circulator pump and secondary pump is turned on whenever any zone calls for heat. LED indicators provide functional status and easy system troubleshooting. The ZVR Series is a perfect match with Caleffi's Z-one™ motorized zone valves.

Power supply: 120 VAC, 50/60 Hz
Transformer voltage: 24 VAC
Maximum transformer load: 40 VA (ZVR103/4), 80 VA (ZVR106)
Electrical switch rating: 20A Max Combined
Electrical switch rating pumps: 120 VAC, 5A each
Dry contact rating: AUX, XX, ZONE1 E/S:120 VAC, 2A each
Resettable Fuse: automatic
High Capacity 40 VA Transformer standard for 3 and 4 zone models-expandable to 80 VA, and 80 VA for the 6 zone model

Code	Description	Lbs	USD
ZVR103	3 zone valve control	2.0	**211.00**
ZVR104	4 zone valve control	2.0	**250.00**
ZVR106	6 zone valve control	2.0	**325.00**
NA10343	expansion transformer	0.1	**68.20**

MOTORIZED BALL VALVES

NEW

638 Motorized Ball Valves NPT

Two-way straight body.
3-wire floating actuator.
Fluid temperature range: 14 – 230 °F.
Fluid compatibility:
water, glycol solutions to 50%.
Maximum working pressure:
230 psi (16 bar).
Maximum differential pressure:
¾" to 1¼" 150 psi (10 bar).
1½" to 2" 75 psi (5 bar).
Operating ambient temperature: 14 – 230 °F.
Maximum humidity: 95% non-condensing.
Actuator power: 24 VAC, 6 VA.
Protection class: NEMA 4 (IP 65).
Stroke time (90 degrees): 50 seconds.
Aux. contacts rating: 6A at 24 VAC

Code	Description	Cv	Lbs	USD
638054A 103	¾" NPT female unions	20	3.3	**385.00**
638064A 103	1" NPT female unions	42	4.5	**439.00**
638074A 103	1¼" NPT female unions	56	5.6	**559.00**
638084A 103	1½" NPT male unions	89	12	**911.00**
638094A 103	2" NPT female unions	162	12.4	**1,002.00**

NEW

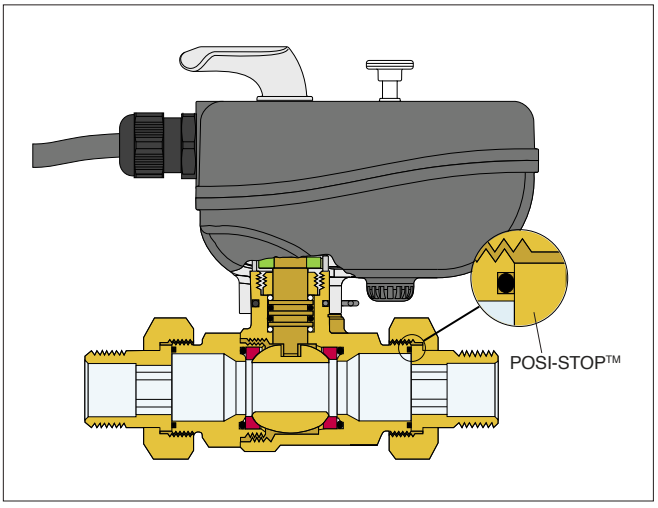
638 Motorized Ball Valves Press

Two-way straight body.
3-wire floating actuator.
Fluid temperature range: 14 – 230 °F.
Fluid compatibility:
water, glycol solutions to 50%.
Maximum working pressure:
230 psi (16 bar).
Maximum differential pressure:
¾" to 1¼" 150 psi (10 bar).
1½" to 2" 75 psi (5 bar).
Operating ambient temperature: 14 – 230 °F.
Maximum humidity: 95% non-condensing.
Actuator power: 24 VAC, 6 VA.
Protection class: NEMA 4 (IP 65).
Stroke time (90 degrees): 50 seconds.
Aux. contacts rating: 6A at 24 VAC

Code	Description	Cv	Lbs	USD
638054A 106	¾" press unions	20	2.7	**393.00**
638064A 106	1" press unions	42	4.8	**467.00**
638074A 106	1¼" press unions	56	5.8	**726.00**
638084A 106	1½" press unions	89	11.6	**985.00**
638094A 106	2" press unions	162	11.8	**1,338.00**

Construction design for 638 Motorized Ball Valves

The 638 Series 2-way ball valves are perfect for shutoff and isolation in hydronic heating or cooling applications. Because they have bubble-tight closeoff, a high differential pressure (closeoff) rating and a high Cv, they are perfect for use in large hydronic and geothermal systems. The valve body has dual union connections for installation and service efficiency. The 3-wire floating control fail-in-place actuator has auxiliary contacts, a convenient manual override feature and an integral position indicator.



NEW

638 Motorized Ball Valves Sweat

Two-way straight body.
3-wire floating actuator.
Fluid temperature range: 14 – 230 °F.
Fluid compatibility:
water, glycol solutions to 50%.
Maximum working pressure:
230 psi (16 bar).
Maximum differential pressure:
¾" to 1¼" 150 psi (10 bar).
1½" to 2" 75 psi (5 bar).
Operating ambient temperature: 14 – 230 °F.
Maximum humidity: 95% non-condensing.
Actuator power: 24 VAC, 6 VA.
Protection class: NEMA 4 (IP 65).
Stroke time (90 degrees): 50 seconds.
Aux. contacts rating: 6A at 24 VAC

Code	Description	Cv	Lbs	USD
638054A 109	¾" sweat unions	20	3.3	**375.00**
638064A 109	1" sweat unions	42	4.5	**426.00**
638074A 109	1¼" sweat unions	56	5.6	**542.00**
638084A 109	1½" sweat unions	89	12	**866.00**
638094A 109	2" sweat unions	162	12.4	**954.00**

MOTORIZED BALL ZONE VALVES

6442
2-way Straight

Two-way motorized ball zone valve.
Straight.
Max. ΔP close-off pressure: 150 psi.
Temperature range: 20 – 230 °F.
Power supply: 24 VAC.
Power consumption: 4 VA.
Rating of micro-switch contacts: 5 A (24 V).
3-wire control.
36" wire lead connection.

Code	Description	Cv	Lbs	USD
644250A	¾" NPT male union	13	2.3	**328.00**
644256A	¾" press union	13	2.4	**328.00**
644259A	¾" sweat union	13	2.3	**321.00**
644260A	1" NPT male union	13	2.3	**354.00**
644266A	1" press union	13	2.4	**357.00**
644269A	1" sweat union	13	2.3	**347.00**
NA644200*	body, with no fittings	13	1.0	**284.00**

*See fitting selection in Section 13.

6443..3BY
3-way By-pass

Three-way motorized ball zone valve.
By-pass.
Max. ΔP close-off pressure: 150 psi.
Temperature range: 20 – 230 °F.
Power supply: 24 VAC.
Power consumption: 4 VA.
Rating of micro-switch contacts: 5 A (24 V).
3-wire control.
2.1 Cv in by-pass mode.
36" wire lead connection.

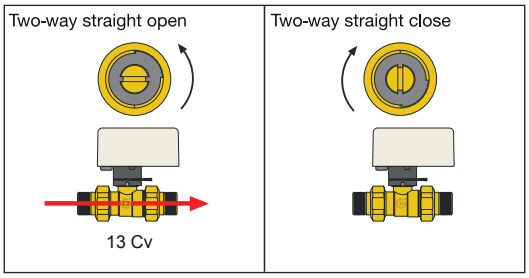
Code	Description	Cv	Lbs	USD
644350A 3BY	¾" NPT male union	12	2.5	**353.00**
644356A 3BY	¾" press union	12	2.6	**372.00**
644359A 3BY	¾" sweat union	12	2.5	**364.00**
644360A 3BY	1" NPT male union	12	2.5	**411.00**
644366A 3BY	1" press union	12	2.6	**417.00**
644369A 3BY	1" sweat union	12	2.5	**402.00**
NA644300 3BY*	body, no fittings	12	1.2	**308.00**

*See fitting selection in Section 13.

6440
24 V 3-wire control

Actuator fits 6442 and 6443 Series.
Power supply: 24 VAC.
Power consumption: 4 VA.
Rating of micro-switch contacts: 5 A (24 V).
Operating time: 40 s (90° rotation).
Length of supply cable: 36".

Code	Description	Lbs	USD
644004	24 VAC	1.0	**193.00**



6443
3-way Diverting

Three-way motorized ball zone valve.
Diverting.
Max. ΔP close-off pressure: 150 psi.
Temperature range: 20 – 230 °F.
Power supply: 24 VAC.
Power consumption: 4 VA.
Rating of micro-switch contacts: 5 A (24 V).
3-wire control.
36" wire lead connection.

Code	Description	Cv	Lbs	USD
644350A	¾" NPT male union	4.5	2.5	**353.00**
644356A	¾" press union	4.5	2.6	**372.00**
644359A	¾" sweat union	4.5	2.5	**364.00**
644360A	1" NPT male union	4.5	2.5	**411.00**
644366A	1" press union	4.5	2.6	**417.00**
644369A	1" sweat union	4.5	2.5	**402.00**
NA644300*	body, no fittings	4.5	1.2	**308.00**

*See fitting selection in Section 13.

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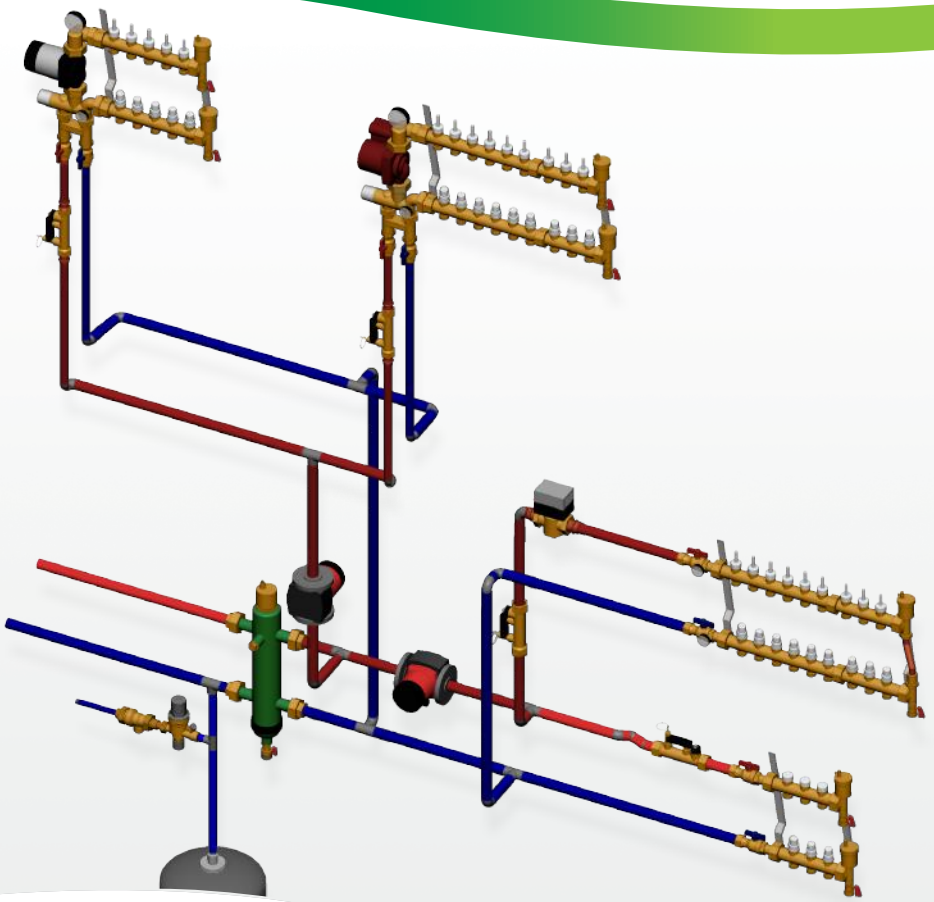
DISTRIBUTION MANIFOLDS AND MIXING STATIONS



This diagram is for illustration purposes only

BIM
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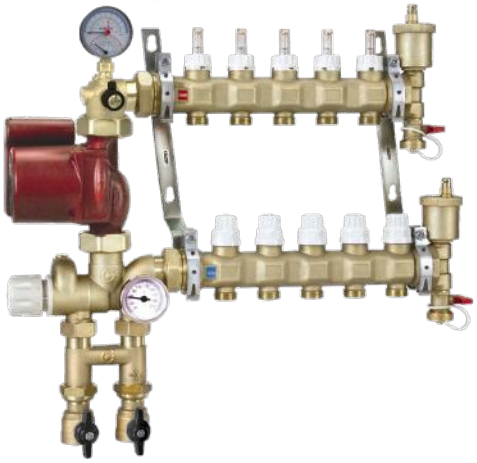
PRODUCTS INCLUDED IN SECTION

Thermostatic manifold mixing stations
Low temperature manifold mixing stations
Brass distribution manifolds
Pump and valve temperature mixing units
Fittings for distribution manifolds and mixing stations
Boxes for distribution manifolds
Thermo electric actuators for manifolds and valves

THERMOSTATIC MANIFOLD MIXING STATIONS

172
Low temperature manifold mixing station three speed pump

Pre-assembled thermostatic manifold mixing station consisting of a supply distribution manifold complete with built-in sight flow gauges and adjustable balancing valves. Return manifold with built-in shutoff valves is suitable for thermo-electric actuators. Complete with built-in sensor to keep flow temperature at constant set value.
Includes Grundfos UPS 15— 58 three-speed pump.
¾" F NPT supply/return ball valves.
Max. working pressure: 150 psi.
Control temperature range: 80 – 130 °F.
Primary inlet max. temperature: 195 °F.
Outlet center distance: 2 in.
PT Gauge: (40 – 240 °F, 10 – 110 °C) (0 -10 bar; 1 - 140 psi)
Models with "...IN" suffix are built inverted (tubing connections going upward).



Code	Description	UPS Pump	No.	Outlets	Lbs	USD
1725C1A	¾"	15-58	3	¾" M	20	**1,304.00**
1725C1A IN	¾"	15-58	3	¾" M	20	**1,304.00**
1725D1A	¾"	15-58	4	¾" M	21	**1,389.00**
1725D1A IN	¾"	15-58	4	¾" M	21	**1,389.00**
1725E1A	¾"	15-58	5	¾" M	23	**1,472.00**
1725E1A IN	¾"	15-58	5	¾" M	23	**1,472.00**
1725F1A	¾"	15-58	6	¾" M	25	**1,557.00**
1725F1A IN	¾"	15-58	6	¾" M	25	**1,557.00**
1725G1A	¾"	15-58	7	¾" M	27	**1,642.00**
1725G1A IN	¾"	15-58	7	¾" M	27	**1,642.00**
1725H1A	¾"	15-58	8	¾" M	28	**1,726.00**
1725H1A IN	¾"	15-58	8	¾" M	28	**1,726.00**
1725I1A	¾"	15-58	9	¾" M	29	**1,809.00**
1725I1A IN	¾"	15-58	9	¾" M	29	**1,809.00**
1725L1A	¾"	15-58	10	¾" M	31	**1,892.00**
1725L1A IN	¾"	15-58	10	¾" M	31	**1,892.00**
1725M1A	¾"	15-58	11	¾" M	33	**1,976.00**
1725M1A IN	¾"	15-58	11	¾" M	33	**1,976.00**
1725N1A	¾"	15-58	12	¾" M	34	**2,062.00**
1725N1A IN	¾"	15-58	12	¾" M	34	**2,062.00**
1725O1A	¾"	15-58	13	¾" M	36	**2,145.00**
1725O1A IN	¾"	15-58	13	¾" M	36	**2,145.00**

172
Low temperature manifold mixing station high efficiency pump

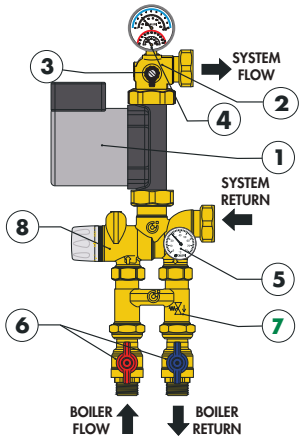
Pre-assembled thermostatic manifold mixing station consisting of a supply distribution manifold complete with built-in sight flow gauges and adjustable balancing valves. Return manifold with built-in shutoff valves is suitable for thermo-electric actuators. Complete with built-in sensor to keep flow temperature at constant set value.
Includes Grundfos Alpha 25-55U pump.
¾" F NPT supply/return ball valves.
Max. working pressure: 150 psi.
Control temperature range: 80 – 130 °F.
Primary inlet max. temperature: 195 °F.
Outlet center distance: 2 in.
PT Gauge: (40 – 240 °F, 10 – 110 °C) (0-10 bar; 1-140 psi)
Models with "...IN" suffix are built inverted (tubing connections going upward).

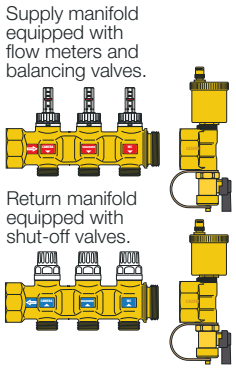
Code	Description	Alpha Pump	No.	Outlets	Lbs	USD
1725C1AHE	¾"	25-55U	3	¾" M	20	**1,565.00**
1725C1AHE IN	¾"	25-55U	3	¾" M	20	**1,565.00**
1725D1AHE	¾"	25-55U	4	¾" M	21	**1,648.00**
1725D1AHE IN	¾"	25-55U	4	¾" M	21	**1,648.00**
1725E1AHE	¾"	25-55U	5	¾" M	23	**1,732.00**
1725E1AHE IN	¾"	25-55U	5	¾" M	23	**1,732.00**
1725F1AHE	¾"	25-55U	6	¾" M	25	**1,816.00**
1725F1AHE IN	¾"	25-55U	6	¾" M	25	**1,816.00**
1725G1AHE	¾"	25-55U	7	¾" M	27	**1,902.00**
1725G1AHE IN	¾"	25-55U	7	¾" M	27	**1,902.00**
1725H1AHE	¾"	25-55U	8	¾" M	28	**1,984.00**
1725H1AHE IN	¾"	25-55U	8	¾" M	28	**1,984.00**
1725I1AHE	¾"	25-55U	9	¾" M	29	**2,069.00**
1725I1AHE IN	¾"	25-55U	9	¾" M	29	**2,069.00**
1725L1AHE	¾"	25-55U	10	¾" M	31	**2,155.00**
1725L1AHE IN	¾"	25-55U	10	¾" M	31	**2,155.00**
1725M1AHE	¾"	25-55U	11	¾" M	33	**2,239.00**
1725M1AHE IN	¾"	25-55U	11	¾" M	33	**2,239.00**
1725N1AHE	¾"	25-55U	12	¾" M	34	**2,323.00**
1725N1AHE IN	¾"	25-55U	12	¾" M	34	**2,323.00**
1725O1AHE	¾"	25-55U	13	¾" M	36	**2,406.00**
1725O1AHE IN	¾"	25-55U	13	¾" M	36	**2,406.00**

THERMOSTATIC MANIFOLD MIXING STATIONS

Characteristic components / hydraulic diagram

Item	Description	Symbol
1	Circulation pump UPS 15-58 pictured	
2	Top elbow with supply temperature and pressure gauge	
3	Purge valve	
4	Supply temperature and pressure gauge	
5	Return temperature gauge	
6	Primary circuit shut-off valves	
7	**Primary circuit hydraulic separator with check valve**	
8	Thermostatic three-way mixing valve with built-in sensor	

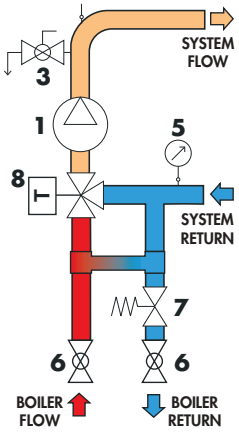




Supply manifold equipped with flow meters and balancing valves.

Return manifold equipped with shut-off valves.

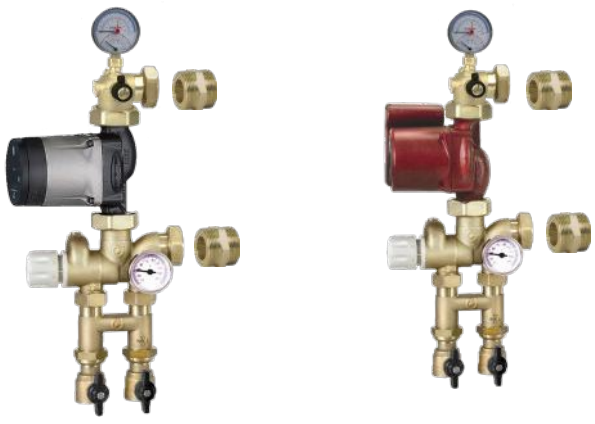
End fittings with automatic air vent with hygroscopic cap and drain cock.



Function

The 172 Series manifold mixing station is designed for use in manifold-based hydronic distribution systems. The manifold mixing station incorporates a thermostatic actuator with built-in sensor which keeps the flow temperature at a constant set value for use in low temperature systems such as floor radiant panels. (7) A removable, primary circuit hydraulic separator with check valve is also supplied. The hydraulic separator is essential when there is a primary circuit circulation pump and when radiator circuits or fan coils are controlled by thermostatic or thermo-electric valves. When connecting to a Caleffi HydroLink™ or hydraulic separator without a primary pump, the hydraulic separator can be removed and the manifold mixing station can be connected directly. The 172 station, like the TwistFlow™ Series 668S1 distribution manifolds, can be configured with 3 to 13 circuit outlets offering similar benefits with built-in sight flow meters/adjustable balancing valves and optional TwisTop™ thermo-electric zone actuators.

LOW TEMPERATURE MANIFOLD MIXING STATIONS

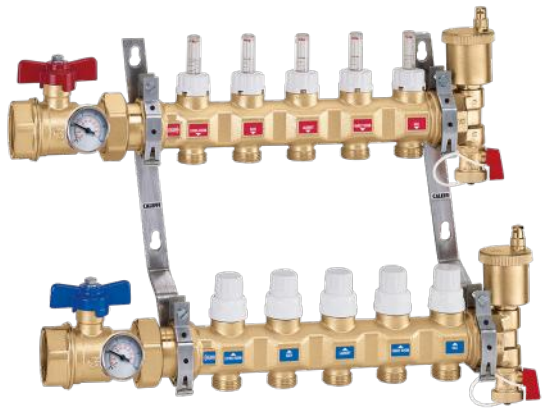


Thermostatic mixing station replacement parts

Grundfos UPS 15—58 three-speed pump or Alpha 25-55U.
Pump or mixing valve only; codes below do not include all parts shown.

Code	Description	Lbs	USD
NA16002	alpha 25-55U replacement pump	2.3	**530.00**
NA10038	UPS 15-58U replacement pump	2.3	**261.00**
F19153	replacement mixing valve	1.6	**295.00**

BRASS DISTRIBUTION MANIFOLDS



668S1
TwistFlow™ assembly

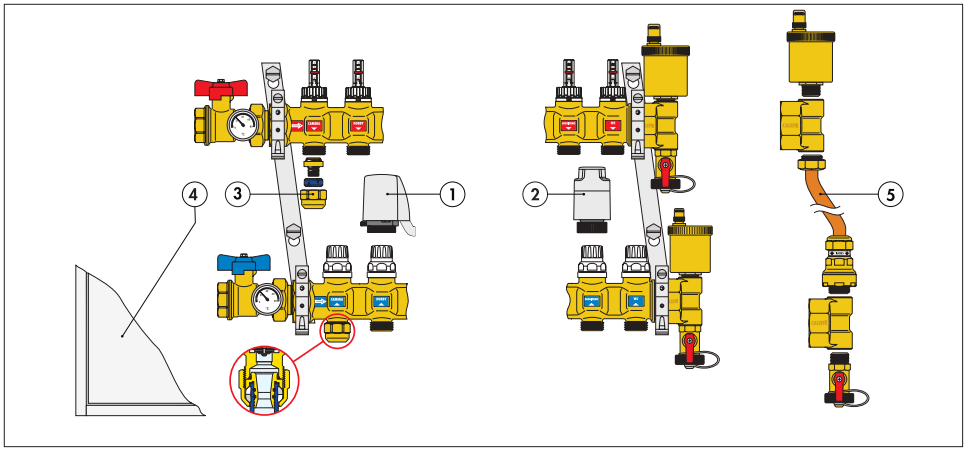
Pre-assembled radiant manifold consisting of return distribution manifold complete with built-in shut-off valves suitable for thermo-electric actuator and supply distribution manifold complete with built-in sight flow meters and balancing valves with 2" gauges 30 – 210 °F scale.
1" or 1¼" NPT inlet ball valves.
Temperature gauges.
Max. working pressure: 150 psi.
Max. working temperature: 180 °F.
Max: peak temperature: 200 °F.
Loop Cv: 1.23 (combined supply & return ports).
Flow meter scale: ¼ — 2 gpm.
Outlet center distance: 2".

Models with "...IN" suffix are built inverted (tubing connections going upward).

Code	Description	No.	Outlets	Lbs	USD
6686C5S1A	1"	3	¾" M	17	**588.00**
6686C5S1A IN	1"	3	¾" M	17	**588.00**
6686D5S1A	1"	4	¾" M	18	**673.00**
6686D5S1A IN	1"	4	¾" M	18	**673.00**
6686E5S1A	1"	5	¾" M	19	**757.00**
6686E5S1A IN	1"	5	¾" M	19	**757.00**
6686F5S1A	1"	6	¾" M	21	**844.00**
6686F5S1A IN	1"	6	¾" M	21	**844.00**
6686G5S1A	1"	7	¾" M	23	**928.00**
6686G5S1A IN	1"	7	¾" M	23	**928.00**
6686H5S1A	1"	8	¾" M	24	**1,016.00**
6686H5S1A IN	1"	8	¾" M	24	**1,016.00**
6686I5S1A	1"	9	¾" M	26	**1,099.00**
6686I5S1A IN	1"	9	¾" M	26	**1,099.00**
6686L5S1A	1"	10	¾" M	28	**1,185.00**
6686L5S1A IN	1"	10	¾" M	28	**1,185.00**
6686M5S1A	1"	11	¾" M	29	**1,270.00**
6686M5S1A IN	1"	11	¾" M	29	**1,270.00**
6686N5S1A	1"	12	¾" M	31	**1,355.00**
6686N5S1A IN	1"	12	¾" M	31	**1,355.00**
6686O5S1A	1"	13	¾" M	33	**1,441.00**
6686O5S1A IN	1"	13	¾" M	33	**1,441.00**

Code	Description	No.	Outlets	Lbs	USD
6687C5S1A	1¼"	3	¾" M	17	**622.00**
6687C5S1A IN	1¼"	3	¾" M	17	**622.00**
6687D5S1A	1¼"	4	¾" M	18	**709.00**
6687D5S1A IN	1¼"	4	¾" M	18	**709.00**
6687E5S1A	1¼"	5	¾" M	19	**794.00**
6687E5S1A IN	1¼"	5	¾" M	19	**794.00**
6687F5S1A	1¼"	6	¾" M	21	**879.00**
6687F5S1A IN	1¼"	6	¾" M	21	**879.00**
6687G5S1A	1¼"	7	¾" M	23	**963.00**
6687G5S1A IN	1¼"	7	¾" M	23	**963.00**
6687H5S1A	1¼"	8	¾" M	24	**1,050.00**
6687H5S1A IN	1¼"	8	¾" M	24	**1,050.00**
6687I5S1A	1¼"	9	¾" M	26	**1,136.00**
6687I5S1A IN	1¼"	9	¾" M	26	**1,136.00**
6687L5S1A	1¼"	10	¾" M	28	**1,220.00**
6687L5S1A IN	1¼"	10	¾" M	28	**1,220.00**
6687M5S1A	1¼"	11	¾" M	29	**1,304.00**
6687M5S1A IN	1¼"	11	¾" M	29	**1,304.00**
6687N5S1A	1¼"	12	¾" M	31	**1,389.00**
6687N5S1A IN	1¼"	12	¾" M	31	**1,389.00**
6687O5S1A	1¼"	13	¾" M	33	**1,475.00**
6687O5S1A IN	1¼"	13	¾" M	33	**1,475.00**

Manifolds and accessories



1. Thermo-electric actuator 6564 Series.
2. Thermo-electric actuator with manual open handle, 6563 Series.
3. Self-adjusting Universal PEX fitting, 680, 682 Series.
4. Inspection wall box, 659 Series.
5. Differential by-pass kit, code 668000.

PUMP AND VALVE TEMPERATURE MIXING UNITS

166 HydroMixer™

Thermostatic adjustable temperature mixing unit with insulation.
Grundfos UPS 15-58 three speed pump.
Grundfos Alpha 25-55U pump.
Temperature gauges.
Shut-off ball valves.
Compatible with 5599 Hydrolink Series.
Male union connections (select top and bottom fitting sets below).
Max working pressure: 145 psi.
Adjustable range: 80 – 125 °F.
Power supply: 115 V 50/60 Hz.

Code	Description	Lbs	USD
166600A	dual line with 15-58 pump on right	22	**1,651.00**
166610A	dual line with 15-58 pump on left	22	**1,651.00**
166602A	dual line with Alpha pump on right	22	**1,904.00**
166612A	dual line with Alpha pump on left	22	**1,904.00**

Wall bracket fits 166 and 167 Series.

Code	Description	Lbs	USD
165001	wall bracket	0.1	**64.00**

Optional differential pressure bypass valve fits 166 and 167 Series.

Code	Description	Lbs	USD
519006	differential pressure by-pass valve	1.0	**71.60**

BOXES FOR DISTRIBUTION MANIFOLDS

659 Manifold cabinet

Housing wall box fits 663 and 668S1 Series manifolds.
Adjustable depth: 4⅜"— 5½".
Powder coated painted 18 gauge sheet metal.
With push-fit clamp.

Code	Description	H	Max Outlets	Lbs	USD
659044	16" width	20"	3	17	**340.00**
659064	24" width	20"	6	23	**372.00**
659084	32" width	20"	10	30	**438.00**
659104	40" width	20"	13	37	**502.00**
659124	48" width"	20"	17	44	**569.00**

Rough opening dimensions

167 HydroMixer™

Motorized temperature mixing unit with insulation. Three-point floating 24 VAC actuator for use with separately-sourced outdoor reset controller.
Grundfos UPS 15-58 three speed pump.
Grundfos Alpha 25-55U pump.
Temperature gauges.
Shut-off ball valves.
Compatible with 5599 Hydrolink Series.
Male union connections (select top and bottom fitting sets below).
Max working pressure: 145 psi.
Primary inlet temperature range: 40 – 212 °F.
Power supply: 115 V 50/60 Hz.
Valve actuator: 24 V AC

Code	Description	Lbs	USD
167600A	dual line with 15-58 pump on right	23	**1,651.00**
167610A	dual line with 15-58 pump on left	23	**1,651.00**
167602A	dual line with Alpha pump on right	23	**1,904.00**
167612A	dual line with Alpha pump on left	23	**1,904.00**

Top outlet fitting set fits 166 and 167 Series. Includes (2) 1¼" union nuts, (2) tail pieces and (2) washers. Will not fit bottom inlet thread.

Code	Description	Lbs	USD
NA16069	1" sweat union outlet fittings	1.0	**65.60**

Bottom Inlet fitting set fits 166 and 167 Series. Includes (2) 1½" union nuts, (2) tail pieces and (2) washers. Will not fit top outlet thread.

Code	Description	Lbs	USD
NA16169	1" sweat union inlet fittings	1.0	**66.40**

Top outlet fitting set fits 166 and 167 Series. Includes (2) 1¼" union nuts, (2) tail pieces and (2) washers. Will not fit bottom inlet thread.

Code	Description	Lbs	USD
NA16060	1" NPT female union outlet fittings	1.0	**74.50**

Bottom Inlet fitting set fits 166 and 167 Series. Includes (2) 1½" union nuts, (2) tail pieces and (2) washers. Will not fit top outlet thread.

Code	Description	Lbs	USD
NA16160	1" NPT female union inlet fittings	1.0	**75.20**

FITTINGS FOR DISTRIBUTION MANIFOLDS AND MIXING STATIONS

(680504A shown)

680 Universal PEX fittings

680 Series fittings are compatible with any ASTM F876 single layer PEX.
Max. working pressure: 150 psi.
Working temperature range for ASTM F876 PEX piping: 80 – 180 °F.

Code	Description	Compression ring	Lbs	USD
680507	5/16" nominal PEX	Blue	0.2	**10.20**
680503A	3/8" nominal PEX	Black	0.2	**10.20**
680504A	1/2" nominal PEX	Blue	0.2	**10.20**
680555A	5/8" nominal PEX	Black	0.2	**10.20**
680505A	3/4" nominal PEX	Brass	0.2	**10.20**

(682530A shown)

682 Universal PEX-AL-PEX fittings

682 Series fittings are compatible with any ASTM F1281 multilayer PEX-AL-PEX pipe.
Max. working pressure: 150 psi.
Working temperature range for ASTM F1281 PEX-AL-PEX piping: 40 – 200 °F with tubing rated 200°F.

Code	Description	Lbs	USD
682530A	3/8" nominal PEX-AL-PEX	0.2	**10.40**
682540A	1/2" nominal PEX-AL-PEX	0.2	**10.40**
682545A	5/8" nominal PEX-AL-PEX	0.2	**11.00**
682550A	3/4" nominal PEX-AL-PEX	0.2	**19.70**

NA102

Sweat connection fitting fits 1/2" copper.
Max. working pressure: 150 psi.
Working temperature range: 41 – 250 °F.
Chrome plated nut.
Does not work with 668S1 and 172 Series.

Code	Description	Lbs	USD
NA10262	1/2" sweat	0.2	**11.30**

386

Cap to plug unused manifold outlets on 592, 663 and 668S1 Series.

Code	Description	Lbs	USD
386500	3/4" straight thread	0.2	**10.20**

Double nipple for coupling PEX fittings.

Code	Description	Lbs	USD
942550	3/4" x 3/4" thread	0.1	**12.60**

Wrench for tightening PEX fitting to manifolds.

Code	Description	Lbs	USD
387100	26 mm x 30 mm	1.5	**47.80**

THERMO ELECTRIC ACTUATORS FOR MANIFOLDS AND VALVES

6563 TwisTop™

TwisTop™ thermo-electric actuator.
Twist the top to manually open.
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption: 3 W.
Power consumption:
holding: 3 W
inrush: 6 VA
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.
Max. ambient temperature: 120 °F
US Patent 7,617,989 B2.

Code	Description	Lbs	USD
656344	24 V AC/DC	0.4	**111.00**
656354	24 V AC/DC with micro-switch	0.4	**131.00**
656354R	24 V AC/DC with micro-switch REHAU	0.4	**144.00**

6564

Low current draw thermo-electric actuator.
Hermetically sealed for upside down installation..
Pop-up feature.
Power supply: 24 V AC/DC.
Initial current draw: ≤ 250 mA.
Power consumption:
holding: 3 W
inrush: 6 VA
Power consumption: 3 W.
Rating of micro-switch contacts: 5 A (24 V).
31½" wire lead connection.
Max. ambient temperature: 120 °F

Code	Description	Lbs	USD
656404	24 V AC/DC	0.4	**82.80**
656414	24 V AC/DC with micro-switch	0.4	**105.00**

ACCESSORIES

Replacement balance/flow meter fits 668S1 Series manifold.
Flow meter scale: ¼ — 2 gpm.

Code	Description	Lbs	USD
F69600	fits 668S1 supply manifold	0.2	**29.40**

Replacement shut-off valve fits 668S1 Series manifold.

Code	Description	Lbs	USD
F69590	fits 668S1 return manifold	0.3	**23.40**

Plastic replacement/test cap fits 5020 Series, for pressure testing manifolds.

Code	Description	Lbs	USD
R56214	vent cap	0.1	**2.20**

Replacement shut-off valve fits old 668 & 663 Series manifold.

Code	Description	Lbs	USD
69122 CST	fits 668 & 663 return manifold	0.3	**13.00**

Replacement balancing valve for old 663 Series manifold.

Code	Description	Lbs	USD
R69176	fits 663 supply manifold	0.3	**20.00**

NA669

Flow meter fits old 668 & 663 manifolds.
Max: temperature: 180 °F (669050).
Max: temperature: 210 °F (NA669 Series).
¾" straight male x ¾" straight female connections.

Code	Description	Lbs	USD
NA669150	¼ — 1 GPM high temp.	0.3	**34.50**
NA669250	½ — 2 GPM high temp.	0.3	**34.50**

5020

Replacement air vent fits radiant manifolds.
Brass body.
Hygroscopic safety air vent cap.
Max. working pressure: 150 psi.
Max discharge pressure: 32 psi.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
502043 CST	½" straight thread	0.6	**24.50**

668

Off-center by-pass assembly with fixed crack setting of 3.6 psi differential pressure.
Max working pressure: 150 psi.
Working temperature range: 15 – 230 °F.

Code	Description	Lbs	USD
668000	½" straight thread	0.6	**115.00**

675

Snap-on thermometer directly to PEX, PEX-AL-PEX and copper piping.
Box of 10 comes with 1 syringe of thermo conductive paste.

Code	Description	Lbs	USD
675900A	¾" & ⅝" PEX & ½" copper	0.2	**10.80**
R69413	syringe of thermo conductive paste	0.1	**7.60**

688

Temperature gauge with well pocket fitting for inserting into manifold ball valves.
Working Temperature range: 30 – 210 °F.
Face dial diameter: 2".
Dual scale.

Code	Description	Lbs	USD
NA11031	replacement gauge	0.1	**26.50**
688003A	gauge with pocket well	0.2	**40.50**
NA10498	replacement pocket well, low lead	0.1	**4.00**
F67037	O-ring fits NA10498	0.1	**0.80**

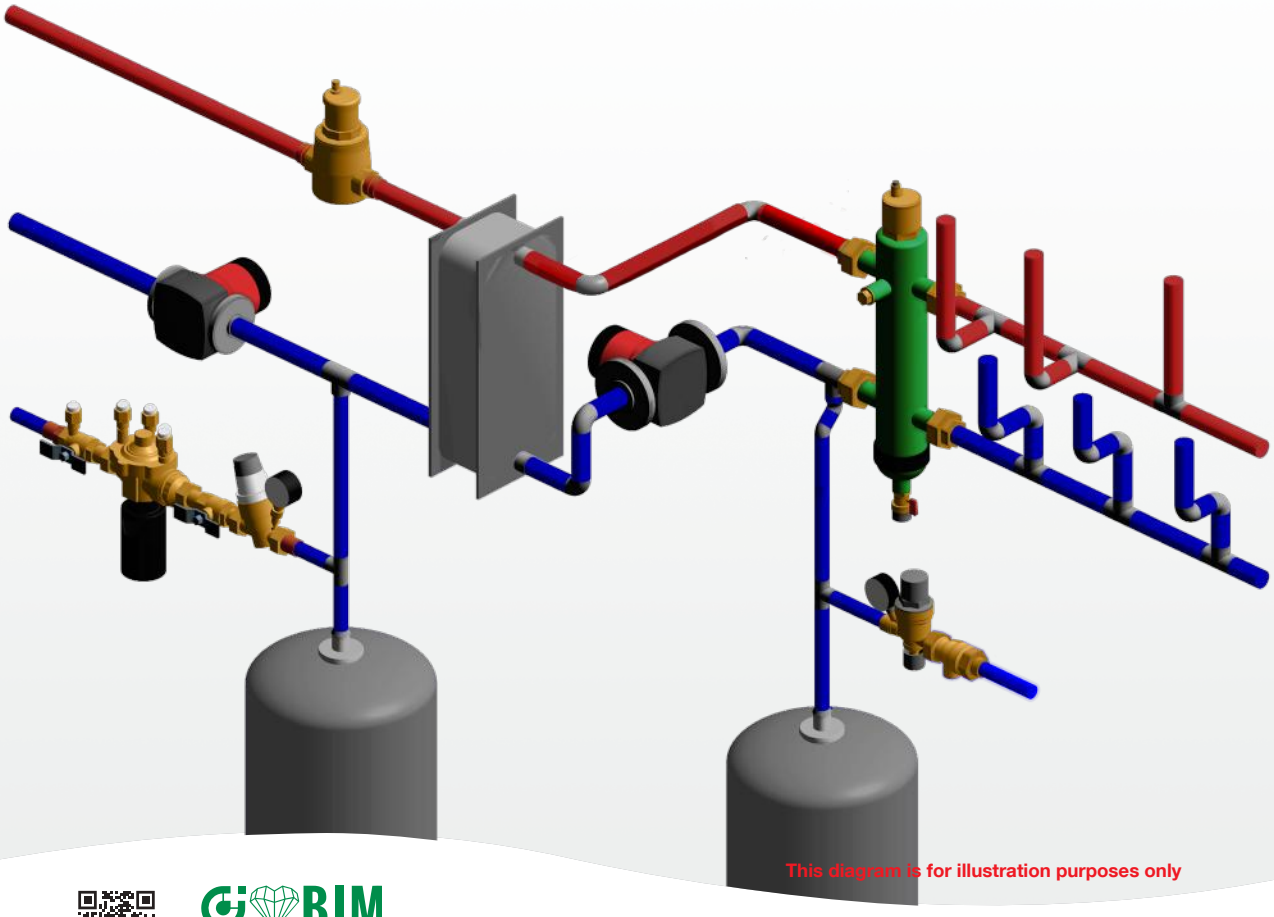
CALEFFI
Hydronic Solutions

www.caleffi.com

AUTOFILL™
SET IT AND FORGET IT

Fill fast and maintain system pressure automatically with the AutoFill™ No bypass lever needed for purging, and it slows down as it approaches the number on the pressure setpoint dial. Available with a gauge for a quick visual check. **CALEFFI GUARANTEED**.

FILLING UNITS AND BOILER TRIM KITS



This diagram is for illustration purposes only

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PRODUCTS INCLUDED IN SECTION

Automatic filling units
Boiler trim kits
Water treatment filling units
Fill and Flush cart

AUTOMATIC FILLING UNITS

553 AutoFill™

Pre-adjustable automatic filling valve, anti-scale, visual system pressure indicator. Complete with manual shut-off valve, strainer and check valve.
Brass body.
Max. inlet pressure: 230 psi.
Max. working temperature: 150 °F.
Setting pressure range: 3—60 psi.
Preset outlet pressure: 15 psi.
Pressure gauge scale: 0—60 psi / 0—4 bar.
See fitting selection in Section 13.

Code	Description	Lbs	USD
553549A	½" sweat union in, ½" FNPT out	1.7	**119.00**
553649A*	½" sweat union in, ½" FNPT out	1.7	**134.00**
553542A	½" NPT male union in, ½" FNPT out	1.7	**127.00**
553642A*	½" NPT male union in, ½" FNPT out	1.7	**142.00**

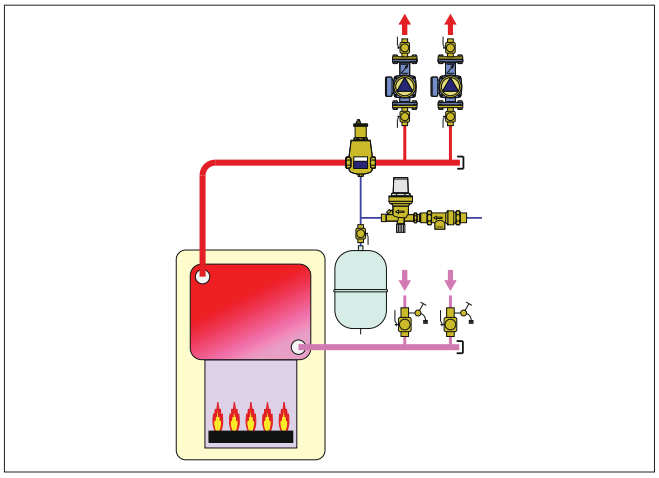
*With pressure gauge.

574 AutoFill™ Combo

Pre-adjustable automatic filling valve with testable reduced pressure zone backflow preventer with air gap.
Brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.
Setting pressure range: 3—60 psi.
Preset outlet pressure: 15 psi.
Pressure gauge scale: 0—60 psi / 0—4 bar.

Code	Description	Lbs	USD
574002A	½" FNPT	9.4	**474.00**
574012A	½" FNPT, gauge	9.4	**487.00**
574206A	½" press	9.4	**495.00**
574216A	½" press, gauge	9.4	**484.00**
574207A	½" press in x FNPT out	9.4	**460.00**
574217A	½" press in x FNPT out, gauge	9.4	**499.00**

Application Diagram



573 AutoFill™ Combo

Pre-adjustable automatic filling valve with dual check backflow preventer.
Brass body.
Max. inlet pressure: 175 psi.
Max. working temperature: 150 °F.
Setting pressure range: 3—60 psi.
Preset outlet pressure: 15 psi.
Pressure gauge scale: 0—60 psi / 0—4 bar.

Code	Description	Lbs	USD
573002A	½" NPT female union in, ½" FNPT out	5.0	**214.00**
573012A*	½" NPT female union in, ½" FNPT out	5.0	**231.00**
573006A	½" press union in, ½" press out	5.0	**239.00**
573016A*	½" press union in, ½" press out	5.0	**258.00**
573007A	½" press union in, ½" FNPT out	5.0	**228.00**
573017A*	½" press union in, ½" FNPT out	5.0	**245.00**
573009A	½" sweat union in, ½" FNPT out	5.0	**204.00**
573019A*	½" sweat union in, ½" FNPT out	5.0	**221.00**

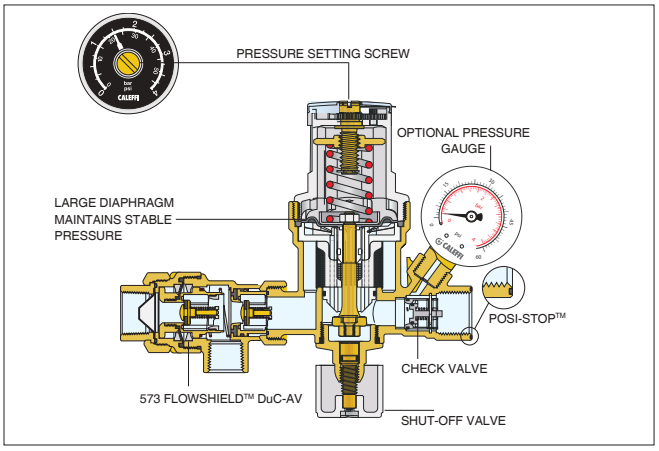
*With pressure gauge.

Code	Description	Lbs	USD
NA10363	0-60 psi/0-4 bar, ¼" NPT	0.1	**15.60**

Code	Description	Lbs	USD
F59650	553 AutoFill™ replacement cartridge	0.2	**35.40**

Code	Description	Lbs	USD
NA10197	AutoFill™ clear plastic disc cover	0.1	**1.60**

Construction details 553 AutoFill™



COMMERCIAL AUTOMATIC FILLING UNITS

5350 AutoFill™

Automatic filling valve.
Complete with integral downstream pressure gauge and pressure setting adjustment knob.
Max. working pressure: 365 psi.
Max. working temperature: 140 °F.
Pressure gauge scale: 0—100 psi / 0—7 bar.
Pressure setting range: 6—90 psi.
Preset outlet pressure: 15 psi.

Code	Description	Lbs	USD
535059A	¾" sweat union	2.3	**153.00**
535069A	1" sweat union	2.4	**164.00**
535051A	¾" NPT male union	2.3	**157.00**
535061A	1" NPT male union	2.4	**165.00**
535056A	¾" press union	2.3	**160.00**
535066A	1" press union	2.4	**173.00**
535057A	¾" PEX crimp union	2.3	**153.00**
535067A	1" PEX crimp union	2.4	**166.00**
535058A	¾" PEX expansion union	2.3	**153.00**
535068A	1" PEX expansion union	2.4	**166.00**

5350 AutoFill™ Body

Automatic filling valve.
Brass body.
Complete with integral downstream pressure gauge and pressure setting adjustment knob.
See fitting selection in Section 13.

Code	Description	Lbs	USD
535951A	autoFill™ body, no fittings	2.0	**109.00**

574 AutoFill™ Combo

Pre-adjustable automatic filling valve with testable reduced pressure zone backflow preventer with air gap.
Max. working pressure: 150 psi.
Max. working temperature: 140 °F.
Pressure gauge scale: 0—100 psi / 0—7 bar.
Pressure setting range: 6—90 psi.
Preset outlet pressure: 15 psi.

Code	Description	Lbs	USD
574151A	¾" FNPT in, ¾" FNPT union out	9.4	**578.00**
574161A	1" FNPT in, 1" NPT male union out	9.4	**579.00**
574156A	¾" press	9.4	**614.00**
574166A	1" press	9.4	**633.00**
574157A	¾" press in, ¾" FNPT union out	9.4	**596.00**
574167A	1" press in, 1" NPT male union out	9.4	**626.00**

NA102

Pressure gauge fits 5350 Series AutoFill™.
Dial size: 2".
Pressure range: 0—100 psi / 0—7 bar.
Connection: ⅛" NPT.

Code	Description	Lbs	USD
NA10273	0-100 psi / 0-7 bar, ⅛" MNPT	0.2	**14.60**

Replacement cartridge for 5350 Series AutoFill™.

Code	Description	Lbs	USD
535004	autoFill™ 5350 Series replacement cartridge	0.2	**56.40**

BOILER TRIM KITS

NA553

Boiler Trim Kits.
6 configurations combining 8 boiler installation components in one box.
This kit includes:
- (1) DISCAL® air separator
- (1) 573 FlowShield™ DuC-AV: ½" NPT, sweat or press union
- (1) AutoFill™
- (1) Expansion tank check valve
- (2) Brass nipples: 3"
- (1) NPT brass tee
- (1) Expansion tank

Code	Description	Tank size (gal)	Lbs	USD
NA553369	1" sweat	4.4	15	**578.00**
NA553379	1¼" sweat	4.4	16	**671.00**
NA553362	1" FNPT	4.4	15	**591.00**
NA553372	1¼" FNPT	4.4	16	**685.00**
NA553366	1" press	4.4	15	**633.00**
NA553376	1¼" press	4.4	16	**761.00**

NA553

Boiler Trim Kits.
6 configurations combining 8 boiler installation components in one box.
This kit includes:
- (1) DISCAL® air separator
- (1) 574 FlowShield™ RP
- (1) AutoFill™
- (1) Expansion tank check valve
- (2) Brass nipples: 3"
- (1) NPT brass tee
- (1) Expansion tank

Code	Description	Tank size (gal)	Lbs	USD
NA553369R	1" sweat	4.4	19	**930.00**
NA553379R	1¼" sweat	4.4	20	**1,021.00**
NA553362R	1" FNPT	4.4	19	**940.00**
NA553372R	1¼" FNPT	4.4	20	**1,036.00**
NA553366R	1" press	4.4	19	**985.00**
NA553376R	1¼" press	4.4	20	**1,114.00**

WATER TREATMENT FILLING UNITS

NA573

Replenishment water treatment filling unit, demineralizes site water through a color changing (indicates when to change) demineralizing cartridge.
Max. inlet pressure: 125.
Max. working temperature: 100 °F.
Max. flow: 1 gpm.
TDS of water after treatment: < 30 ppm.

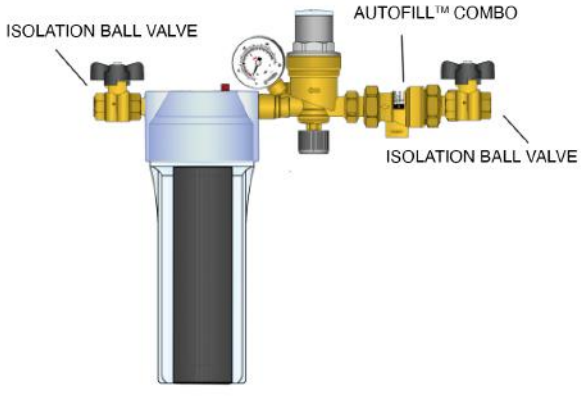
Code	Description	Lbs	USD
NA573022*	½" FNPT	7.4	**417.00**
NA573100**	replacement filter housing assembly	3.4	**190.00**
NA573102	replacement color-changing filter	1.0	**96.80**

*Complete including back flow preventer, isolation valves, filter housing with resin cartridge and AutoFill™.
**Filter housing only. Includes color changing demineralizing cartridge.

Function

The replenishment water treatment filling unit is an assembly consisting of a backflow preventer, isolation valves, filter housing unit with replaceable resin cartridge and AutoFill™ pre-adjustable fill valve. This unit is installed on the water inlet piping in sealed hydronic heating or cooling systems. Three important functions are provided in this single filling unit assembly: maintaining the pressure of the system stable at a set value and automatically filling up with water as required; protecting drinking water systems from return flow, caused by back-siphoning or back pressure of contaminated fluids; and producing from site-sourced water, demineralized water of an ideal grade for use in closed hydronic heating and cooling systems. Minerals causing hardness are almost entirely eliminated. This prevents premature equipment malfunction including reduced efficiency or component failure due to lime scale formation – a common affliction of heat exchangers. Demineralized water is low in electrical conductivity to minimize corrosion due to galvanic attack. Demineralized water eliminates the variability of mineral content found in untreated site water which provides more reliable dosing when chemical additives are used – such as glycol.

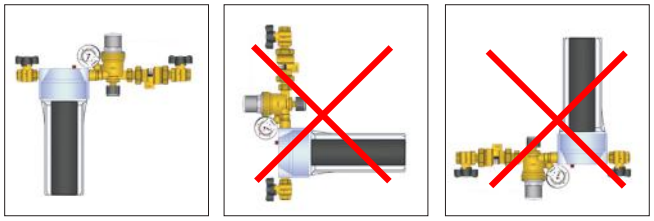
Construction details for NA573



Filter housing, code NA573100, with demineralizing cartridge, code NA573102

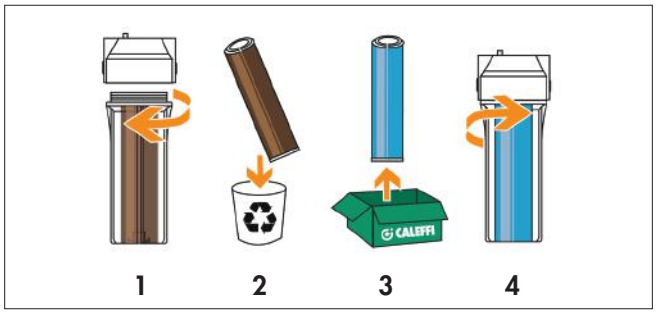
Installation

The replacement water treatment filling unit must be horizontally installed following the direction of flow as indicated by the arrow on the AutoFill™ or 573 FlowShield DuC-AV. The replacement water treatment filling unit is factory pre-assembled. Fittings may have loosened during shipping and handle. Check the fittings and tighten accordingly.



Cartridge change

1. Close the isolation ball valves. 2. Turn the cartridge with white plastic wrench included with unit. 3. Remove the used cartridge and discard them. 4. Insert the new cartridge. 5. Turn the cartridge and tighten in place with the white plastic wrench. 6. Re-open the isolation ball valves to return to normal operation.



NA570 HYDROFILL™ replacement twist-on lid.

Code	Description	Lbs	USD
NA57094	replacement twist-on lid	3.0	**686.00**

NA570 HYDROFILL™ replacement parts.

Code	Description	Lbs	USD
NA57092	replacement internal inlet/outlet screens	1.5	**62.70**
NA57093	replacement O-ring seal kit	0.1	**101.00**

Resin bags for NA570 HYDROFILL™ in reusable plastic pail.

Code	Description	Lbs	USD
NA570971	two resin bags for NA570912	22	**504.00**
NA570974	four resin bags for NA570924	43	**1,008.00**

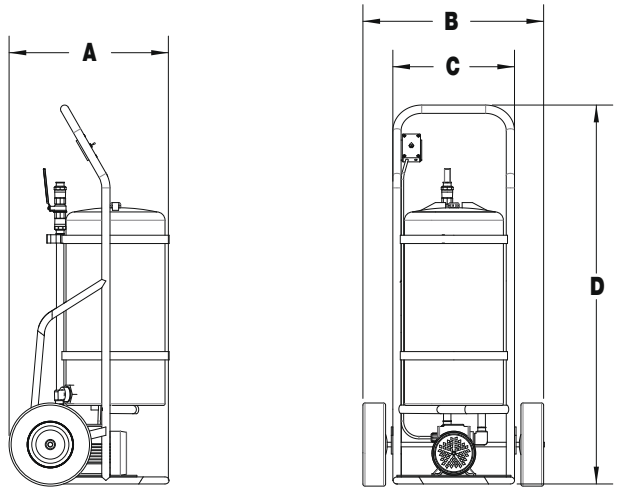
FILL AND FLUSH CART

NA255 HYDROFLUSH™

The fill and flush pump cart is portable, leak-tested for a safe, quick and clean way to fill and flush solar, geo thermal and hydronic systems.
Medium: water, glycol and cleaning fluids.
Tank: 10 gallon with dirt filter.
Max. tank medium temperature: 140 °F.
Pump delivery flow: 1—15 gpm.
Pump feet of head: 125
Max. pump pressure: 55 psi.
Pump power: ½ HP (120 V AC).
Isolating ball valves: ¾" garden hose thread.
Transfer hoses: 8' with ¾" GHT (2 ea).
Dimensions: 48"H × 20"W × 18"D.

Code	Description	Lbs	USD
NA25510	clean, fill and flush cart	60	**4,360.00**
NA11338	replacement hose, ¾" ID, FxF GHT	3.0	**65.00**
NA11313	Replacement pump NEW	32	**1,713.00**

Dimensions:



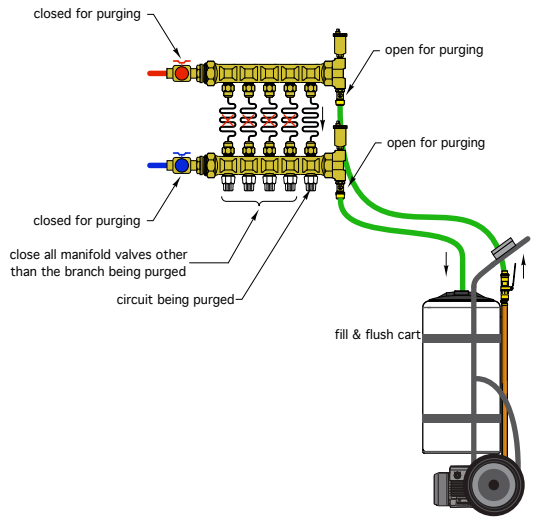
Code	A	B	C	D	Weight	Capacity
NA25510	19 ½"	20 "	14"	46 ¼"	85 lbs	10 gallon

Function

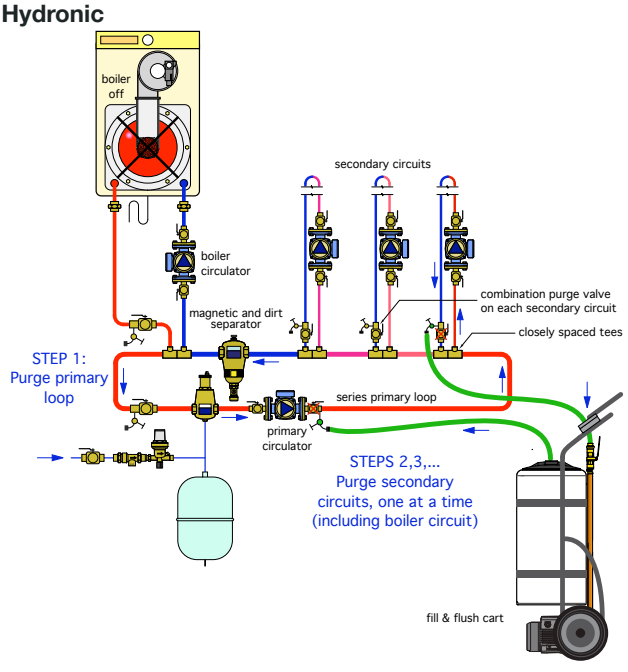
The fill and flush pump cart is portable and leak-tested for a safe, quick and clean way to fill and flush solar, geothermal and hydronic systems.

Connect the fill/purge valves to the fill and flush system, allow fluid to circulate and remove air and dirt in system.

Radiant



Hydronic



CALEFFI
Hydronic Solutions

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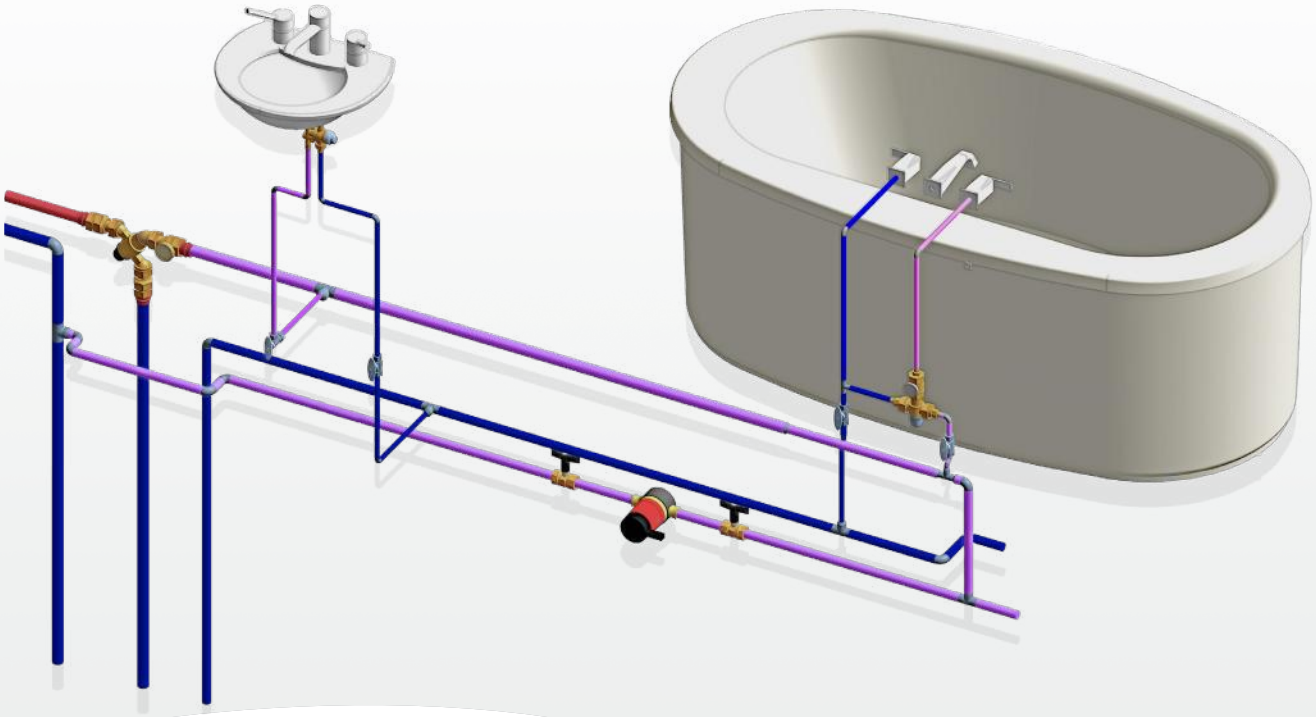
CUTTING-EDGE INNOVATION IN TEMPERATURE MIXING

We take it seriously. With over 60 years of experience Caleffi offers high quality, reliable mixing technology. Available from 3/8" under-sink scald protection valves to 3" flanged digital mixing valves, we provide a full selection for residential and commercial applications. **CALEFFI GUARANTEED.**



This diagram is for illustration purposes only

BIM
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PRODUCTS INCLUDED IN SECTION

Thermostatic mixing valves for plumbing and hydronics
High flow thermostatic mixing valves for plumbing and hydronics
Scald protection thermostatic mixing valves for plumbing
Electronic mixing valves for plumbing
Thermostatic mixing valve kits for domestic water heaters

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

521 MixCal™ sweat

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
521409A	½" sweat union	3.0	2.4	**200.00**
521409AC	½"sweat union, check valves	3.0	2.4	**221.00**
521509A	¾" sweat union	3.0	2.4	**209.00**
521509AC	¾" sweat union, check valves	3.0	2.4	**240.00**
521609A	1" sweat union	3.0	2.4	**249.00**
521609AC	1" sweat union, check valves	3.0	2.4	**278.00**

521 MixCal™ press

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
521406A	½" press union	3.0	2.4	**213.00**
521406AC	½" press union, check valves	3.0	2.5	**234.00**
521506A	¾" press union	3.0	2.4	**218.00**
521506AC	¾" press union, check valves	3.0	2.5	**271.00**
521606A	1" press union	3.0	2.6	**264.00**
521606AC	1" press union, check valves	3.0	3.1	**287.00**

521 MixCal™ NPT

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
521400A	½" NPT male union	3.0	2.4	**209.00**
521400AC	½" NPT male union, check valves	3.0	2.4	**230.00**
521500A	¾" NPT male union	3.0	2.4	**218.00**
521500AC	¾" NPT male union, check valves	3.0	2.4	**249.00**
521600A	1" NPT male union	3.0	2.4	**259.00**
521600AC	1" NPT male union, check valves	3.0	2.4	**288.00**

521 MixCal™ PEX

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960

Code	Description	Cv	Lbs	USD
521407A	½" PEX crimp union	3.0	2.4	**200.00**
521407AC	½" PEX crimp union, check valves	3.0	2.9	**221.00**
521408A	½" PEX expansion union	3.0	2.4	**200.00**
521408AC	½" PEX expansion union, check valves	3.0	2.9	**221.00**
521507A	¾" PEX crimp union	3.0	2.4	**209.00**
521507AC	¾" PEX crimp union, check valves	3.0	2.9	**240.00**
521508A	¾" PEX expansion union	3.0	2.4	**209.00**
521508AC	¾" PEX expansion union, check valves	3.0	2.9	**240.00**
521607A	1" PEX crimp union	3.0	2.4	**249.00**
521607AC	1" PEX crimp union, check valves	3.0	2.9	**278.00**
521608A	1" PEX expansion union	3.0	2.4	**249.00**
521608AC	1" PEX expansion union, check valves	3.0	2.9	**278.00**

Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

521 MixCal™ sweat

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body. with gauge.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)
Gauge scale: 30 – 210 °F.
Gauge accuracy: +/- 1% FS

Code	Description	Cv	Lbs	USD
521419A	½" sweat union	3.0	2.9	**238.00**
521419AC	½" sweat union, check valves	3.0	2.9	**258.00**
521519A	¾" sweat union	3.0	2.9	**246.00**
521519AC	¾" sweat union, check valves	3.0	2.9	**276.00**
521619A	1" sweat union	3.0	2.9	**287.00**
521619AC	1" sweat union, check valves	3.0	2.9	**317.00**

521 MixCal™ press

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body with gauge.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)
Gauge scale: 30 – 210 °F.
Gauge accuracy: +/- 1% FS

Code	Description	Cv	Lbs	USD
521416A	½" press union	3.0	2.9	**250.00**
521416AC	½" press union, check valves	3.0	3.0	**269.00**
521516A	¾" press union	3.0	2.9	**256.00**
521516AC	¾" press union, check valves	3.0	3.0	**307.00**
521616A	1" press union	3.0	3.1	**302.00**
521616AC	1" press union, check valves	3.0	3.5	**324.00**

521 MixCal™ NPT

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body with gauge.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)
Gauge scale: 30 – 210 °F.
Gauge accuracy: +/- 1% FS

Code	Description	Cv	Lbs	USD
521410A	½" NPT male union	3.0	2.9	**246.00**
521410AC	½" NPT male union, check valves	3.0	2.9	**266.00**
521510A	¾" NPT male union	3.0	2.9	**256.00**
521510AC	¾" NPT male union, check valves	3.0	2.9	**284.00**
521610A	1" NPT male union	3.0	2.9	**298.00**
521610AC	1" NPT male union, check valves	3.0	2.9	**325.00**

521 MixCal™ PEX

Adjustable thermostatic mixing valve for point of distribution in domestic water systems and radiant hydronic heating systems.
Low-lead brass body with gauge.
Locking set point knob.
Max. working pressure: 200 psi.
Max. inlet temperature: 200 °F.
Adjustable range: 85 – 150 °F.
Min. flow for optimum performance: 1.0 gpm. (0 gpm with recirculation)
Gauge scale: 30 – 210 °F.
Gauge accuracy: +/- 1% FS
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.

Code	Description	Cv	Lbs	USD
521417A	½" PEX crimp union	3.0	2.5	**238.00**
521417AC	½" PEX crimp union, checks	3.0	2.9	**258.00**
521418A	½" PEX expansion union	3.0	2.5	**238.00**
521418AC	½" PEX expansion union, checks	3.0	2.9	**258.00**
521517A	¾" PEX crimp union	3.0	2.5	**246.00**
521517AC	¾" PEX crimp union, checks	3.0	2.9	**276.00**
521518A	¾" PEX expansion union	3.0	2.5	**246.00**
521518AC	¾" PEX expansion union, checks	3.0	2.9	**276.00**
521617A	1" PEX crimp union	3.0	2.5	**287.00**
521617AC	1" PEX crimp union, checks	3.0	2.9	**317.00**
521618A	1" PEX expansion union	3.0	2.5	**287.00**
521618AC	1" PEX expansion union, checks	3.0	2.9	**317.00**

Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

Point of distribution mixed temperature gauge adaptor fits 1" male union thread mixing valves.
Removable gauge fits into pocket well.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1°FS.
Gauge dial: 2" diameter.
Certified: Low-lead brass.

Code	Description	Lbs	USD
NA10328	½" sweat with gauge	0.4	**59.30**
NA10056	¾" sweat with gauge	0.4	**65.20**
NA10058	1" sweat with gauge	0.4	**71.60**
NA10358	1" union thread with gauge	0.4	**37.30**
688003A	replacement gauge with pocket well	0.5	**40.50**
NA11031	replacement gauge	0.1	**26.50**
NA10498	pocket well, plated	0.1	**4.00**

ACCESSORIES

Replacement check valves for 521 (AC models).

Code	Description	Lbs	USD
NA10405	replacement for 521 PEX, press fittings	0.1	**2.50**
R39204	replacement for 521 sweat, NPT fittings	0.1	**3.50**

Conical inlet filter for 521 mixing valves.

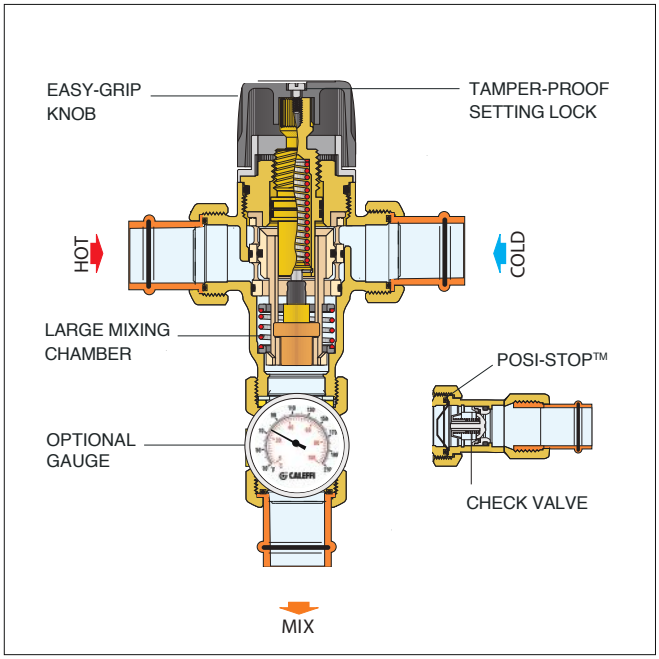
Code	Description	Lbs	USD
F52429	conical filter for 521 mixing valve	0.1	**5.00**

521 MixCal™ Body

Replacement body (½", ¾", 1" valve).
See fitting selection in Section 13.

Code	Description	Cv	Lbs	USD
521101A	1" union body	3.0	1.9	**153.00**

Construction details for 521 MixCal™



HIGH FLOW THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

5231 MixCal+™ Body

Replacement body includes nuts and gaskets.
See fitting selection in Section 13.

Code	Description	Cv	Lbs	USD
523179A	for 1" and 1¼" sizes	7.6	5.0	**1,129.00**
523199A	for 1½" and 2" sizes	14.2	14.2	**1,616.00**

5231 MixCal+™ Sweat

Adjustable thermostatic mixing valve for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195 °F.
Adjustable range: 95 – 150 °F.
Gauge scale: 30 – 210 °F.
Gauge accuracy: ± 6 °F.
Gauge dial: 2" diameter.
Min. flow for optimum performance: 4.4 gpm. (0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
523177A	1¼" sweat union	7.6	9.0	**1,412.00**

Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

HIGH FLOW THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

5231 MixCal+™ sweat

Adjustable thermostatic mixing valve
for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195 °F.
Adjustable range: 95 – 150 °F.

Code	Description	Cv	Lbs	USD
523168A	1" sweat union	7.0	7.0	**1,257.00**
523178A	1¼" sweat union	7.6	7.0	**1,313.00**
523188A	1½" sweat union	13	17	**1,973.00**
523198A	2" sweat union	14	18	**2,074.00**

5231 MixCal+™ NPT

Adjustable thermostatic mixing valve
for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195 °F.
Adjustable range: 95 – 150 °F.

Code	Description	Cv	Lbs	USD
523160A	1" NPT male union	7.0	7.0	**1,270.00**
523170A	1¼" NPT male union	7.6	7.0	**1,372.00**
523180A	1½" NPT male union	13	17	**2,023.00**
523190A	2" NPT male union	14	18	**2,127.00**

5231 MixCal+™ press

Adjustable thermostatic mixing valve
for domestic water systems and radiant hydronic systems.
DZR low lead brass body.
Max. working pressure: 200 psi.
Max. inlet temperature: 195 °F.
Adjustable range: 95 – 150 °F.

Code	Description		Cv	Lbs	USD
523166A	1" press union		7.0	7.0	**1,337.00**
523176A	1¼" press union		7.6	7.0	**1,399.00**
523186A	1½" press union	NEW	13	11	**2,150.00**
523196A	2" press union	NEW	14.2	12	**2,391.00**

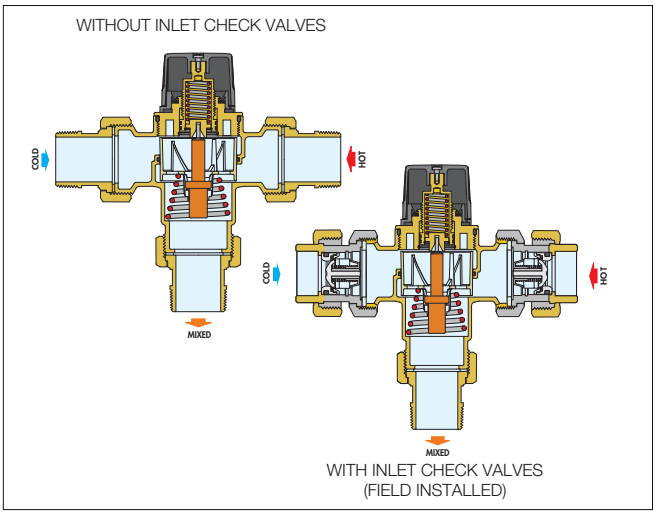
Point of distribution mixed temperature gauge adaptor fits MixCal+™ High Flow 5231 Series mixing valves.
Removable gauge fits into pocket well.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: +/- 1% FS
Gauge dial: 2" diameter.
Certified: Low-lead brass.

Code	Description	Lbs	USD
NA10315	1¼" sweat	0.5	**144.00**
NA10476	for 1" and 1¼" valves, MxF union	3.0	**165.00**
NA10461	for 1½" and 2" valves, MxF union	4.0	**283.00**
688003A	replacement gauge with pocket well	0.2	**40.50**
NA11031	replacement gauge	0.1	**26.50**

Inlet check valve assembly for installing on inlet union tail pieces of 5231 mixing valves. Stainless steel body. No Lead. Ordered separately, field installed. Assembly examples shown below.

523177A shown with (2) NA10366 523178A shown with (2) NA10366

Code	Description	Lbs	USD
NA10366	check valve assembly 1" and 1¼"	1.0	**103.00**
NA10367	check valve assembly 1½" and 2"	1.5	**228.00**



Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

THERMOSTATIC MIXING VALVES FOR PLUMBING AND HYDRONICS

520 AngleMix™

Body is DZR low lead brass with gauge.
Adjustment temperature range: 95 – 150 °F.
Max. body pressure rating (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195 °F.
Gauge scale: 30 – 210 °F.
Min. flow for optimum performance: ½" and ¾" valves 0.5 GPM, 1" valves 1 GPM.
(0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
520419A	½" sweat union	2.0	1.7	**238.00**
520519A	¾" sweat union	2.0	2.0	**256.00**
520619A	1" sweat union	3.5	3.7	**344.00**
520619AC	1" sweat union, checks	3.5	3.8	**381.00**
520410A	½" NPT male union	2.0	1.7	**246.00**
520510A	¾" NPT male union	2.0	2.0	**256.00**
520610A	1" NPT male union	3.5	3.9	**353.00**
520610AC	1" NPT male union, checks	3.5	4.0	**392.00**
520416A	½" press union	2.0	1.8	**271.00**
520516A	¾" press union	2.0	2.0	**282.00**
520616A	1" press union	3.5	3.7	**388.00**
520616AC	1" press union, checks	3.5	3.9	**431.00**
520414A	½" PEX crimp union	2.0	1.6	**238.00**
520514A	¾" PEX crimp union	2.0	1.8	**256.00**
520614A	1" PEX crimp union	3.5	3.5	**344.00**
520614AC	1" PEX crimp union, checks	3.5	3.7	**381.00**
520415A	½" PEX exp. union	2.0	1.6	**238.00**
520515A	¾" PEX exp. union	2.0	1.8	**256.00**
520615A	1" PEX exp. union	3.5	3.5	**344.00**
520615AC	1" PEX exp. union, checks	3.5	3.7	**381.00**

520 AngleMix™ Body

Replacement body.
See fitting selection in Section 13.

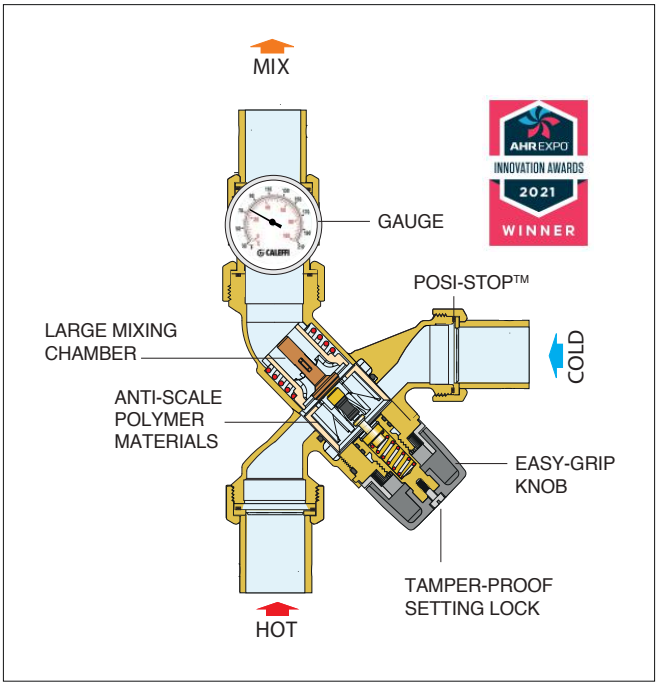
Code	Description	Cv	Lbs	USD
520051A	1" union body (½", ¾" valves)	2.0	2.0	**153.00**
520061A	1¼" union body (1" valves)	3.5	4.0	**214.00**

520 AngleMix™ DL

Dual listed; complies with ASSE 1017 and ASSE 1070.
With checks.
Body is DZR low lead brass with gauge.
Adjustment temperature range: 95 – 150 °F.
Max. body pressure rating (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195 °F.
Gauge scale: 30 – 210 °F.
Gauge accuracy: +/- 1% FS.
Min. flow for optimum performance: 0.5 GPM.
(0 gpm with recirculation)

Code	Description	Cv	Lbs	USD
520419AC	½" sweat union	2.0	1.8	**264.00**
520519AC	¾" sweat union	2.0	2.1	**291.00**
520410AC	½" NPT male union	2.0	1.8	**273.00**
520510AC	¾" NPT male union	2.0	2.1	**291.00**
520416AC	½" press union	2.0	1.9	**300.00**
520516AC	¾" press union	2.0	2.1	**320.00**
520414AC	½" PEX crimp union	2.0	1.7	**264.00**
520514AC	¾" PEX crimp union	2.0	1.9	**291.00**
520415AC	½" PEX exp. union	2.0	1.7	**264.00**
520515AC	¾" PEX exp. union	2.0	1.9	**291.00**

Construction details for 520 AngleMix



Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES. AngleMix™ DL also complies with ASSE 1070/ASME A112.1070, CSA B125.70, CSA B125.3.

THERMOSTATIC MIXING VALVE KITS FOR DOMESTIC WATER HEATERS

520 TankMixer™

Adjustment temperature range: 95 – 150 °F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195 °F.
Minimum flow for optimum performance: 0.5 GPM (0 GPM with recirculation).
Tank: ¾" NPT female union connections.
System: ¾" NPT M, press or sweat union connections.

Code	Description	Cv	Lbs	USD
520500AX	¾" NPT male union system connections	2.0	2.4	**287.00**
520506AX	¾" press union system connections	2.0	2.4	**328.00**
520509AX	¾" sweat union system connections	2.0	2.4	**277.00**

520 TankMixer™ with gauge

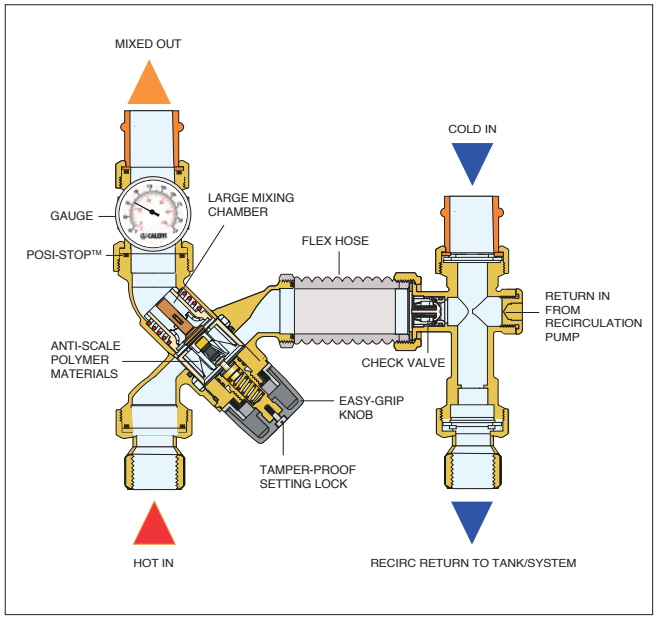
Adjustment temperature range: 95°—150°F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195 °F.
Gauge scale: 30 – 210 °F.
Gauge accuracy: ± 6 °F.
Gauge accuracy: +/- 1% FS.
Gauge dial: 2" diameter.
Minimum flow for optimum performance: 0.5 GPM (0 GPM with recirculation).
Tank: ¾" NPT female union connections.
System: ¾" NPT M, press or sweat union connections.

Code	Description	Cv	Lbs	USD
520510AX	¾" NPT male union system connections	2.0	2.9	**328.00**
520516AX	¾" press union system connections	2.0	2.9	**369.00**
520519AX	¾" sweat union system connections	2.0	2.9	**318.00**

Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

Construction details for 520 TankMixer™

The TankMixer Kit takes your tankless water heater to the next level with service valves that allow for easy flushing of the heat exchanger. With the included pressure relief valve and TankMixer mixing valve you can also ensure safe operation of your tankless water heater and accurate temperature control to your fixtures.



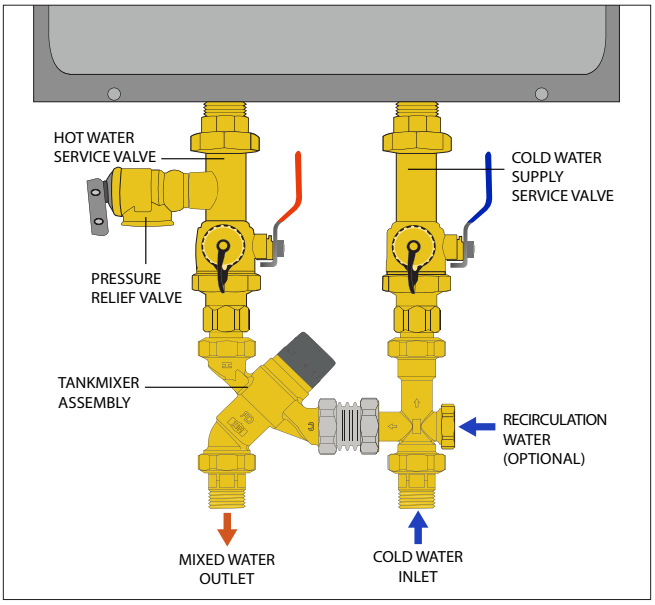
THERMOSTATIC MIXING VALVE KITS FOR DOMESTIC WATER HEATERS

290 Service Valve Kit with TankMixer™ for Combi Boilers

For use on tankless water heaters and combi boilers, the kit includes the 520 TankMixer for tempered water control and the 290 Series service valves for fill/flush/drain functionality. A pressure relief valve is also included.
Full details on the 290 Series are shown in Section 12

Code	Description	Cv	Lbs	USD
KIT290516A	¾" press	2.0	5.0	**492.00**
KIT290519A	¾" sweat	2.0	5.0	**463.00**
KIT290510A	¾" FNPT	2.0	5.0	**480.00**
KIT290517A	¾" PEX crimp	2.0	5.0	**463.00**
KIT290518A	¾" PEX exp	2.0	5.0	**463.00**

Construction details 290 Service Valve Kit



NEW

520 PivotMixer™

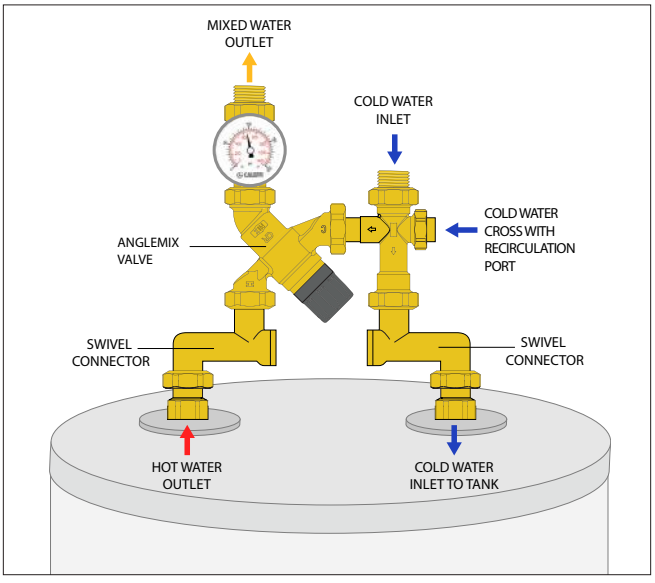
For Electric Water Heaters, Heat Pumps and Combi Boilers

Adjustment temperature range: 95 – 150°F.
Max. working pressure (static): 150 psi.
Max. working pressure (dynamic): 75 psi.
Max. inlet temperature: 195 °F.
Gauge scale: 30 – 210 °F.
Gauge accuracy: ± 1% FS.
Gauge dial: 2" diameter.
Minimum flow for optimum performance: 0.5 GPM (0 GPM with recirculation).
¾" NPT female union connections, adjustable up to 8" on-center.
System: ¾" NPT M, press or sweat union connections.

Code	Description	Cv	Lbs	USD
520519AP	¾" sweat union, gauge	2.0	4.5	**401.00**
520510AP	¾" NPT male union, gauge	2.0	4.5	**414.00**
520516AP	¾" press union, gauge	2.0	4.5	**385.00**

Construction details 520 PivotMixer™

The PivotMixer™ is a point-of-distribution mixing valve assembly specifically designed for electric water heaters, heat pump water heaters and combi-boilers. It has unique ¾" swivel connectors that adapt to heater nipples spaced from 3" to 8" on-center. The cross for the cold water supply contains an integral check valve for the flow to the mixing valve, and a ½"FNPT recirculation tap.



Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

ELECTRONIC MIXING VALVES FOR PLUMBING

6000 LEGIOMIX® sweat

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria.
Power: 24 VAC +/- 10% - 50/60 Hz - 6 VA. 115/24 VAC transformer included.
Adjustment temperature range: 70 – 185 °F.
Disinfection temperature range: 100 – 185 °F.
Max body pressure rating (static): 230 psi.
Max operating pressure: 150 psi.
Max. inlet temperature: 212 °F.

Code	Description	Cv	Lbs	USD
600059A	¾" sweat union	9.7	5.1	**3,017.00**
600069A 001	1" sweat union, ¾" body	9.7	5.3	**3,180.00**
600069A	1" sweat union	21	7.3	**3,339.00**
600079A	1¼" sweat union	24	8.2	**3,396.00**
600089A	1½" sweat union	34	21	**3,855.00**
600099A	2" sweat union	48	22	**3,955.00**

6000 LEGIOMIX® press

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria.
Power: 24 VAC +/- 10% - 50/60 Hz - 6 VA. 115/24 VAC transformer included.
Adjustment temperature range: 70 – 185 °F.
Disinfection temperature range: 100 – 185 °F.
Max body pressure rating (static): 230 psi.
Max operating pressure: 150 psi.
Max. inlet temperature: 212 °F.

Code	Description	Cv	Lbs	USD
600056A	¾" press union	9.7	5.1	**3,180.00**
600066A 001	1" press union, ¾" body	9.7	5.2	**3,300.00**
600066A	1" press union	21	7.3	**3,421.00**
600076A	1¼" press union	24	8.2	**3,480.00**
600086A	1½" press union	34	21	**4,031.00**
600096A	2" press union	48	22	**4,268.00**

6000 LEGIOMIX® NPT

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria.
Power: 24 VAC +/- 10% - 50/60 Hz - 6 VA. 115/24 VAC transformer included.
Adjustment temperature range: 70 – 185 °F.
Disinfection temperature range: 100 – 185 °F.
Max body pressure rating (static): 230 psi.
Max operating pressure: 150 psi.
Max. inlet temperature: 212 °F.

Code	Description	Cv	Lbs	USD
600054A	¾" NPT male union	9.7	5.1	**3,050.00**
600064A 001	1" NPT male union, ¾" body	9.7	5.3	**3,201.00**
600064A	1" NPT male union	21	7.3	**3,351.00**
600074A	1-¼" NPT male union	24	8.2	**3,456.00**
600084A	1½" NPT male union	34	21	**3,902.00**
600094A	2" NPT male union	48	22	**4,008.00**

6000 LEGIOMIX® flange

Electronic mixing valve with optional selectable programs for thermal disinfection of hot water recirculation system to kill Legionella bacteria.
Power: 24 VAC +/- 10% - 50/60 Hz - 6 VA. 115/24 VAC transformer included.
Adjustment temperature range: 70 – 185 °F.
Disinfection temperature range: 100 – 185°F.
Max body pressure rating (static): 230 psi.
Max operating pressure: 150 psi.
Max. inlet temperature: 212 °F.

Code	Description	Cv	Lbs	USD
600060A	2½" ANSI 150 flanges	105	30	**14,404.00**
600080A	3" ANSI 150 flanges	120	42	**15,248.00**

The LEGIOMIX® includes:
3-wire floating control actuator.
Controller/user interface with DIN rail mounting bracket.
Mixed outlet temperature sensor/probe.
Return temperature sensor/probe.
Mixed outlet temperature gauge.
Transformer included

Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

	Recommended Flow Rates (gpm/lpm)						
Size	**¾"**	**1"**	**1¼"**	**1½"**	**2"**	**2½"**	**3"**
Minimum flow*	2.2 / 8.3	3.1 / 12	4.4 / 17	6.6 / 25	8.8 / 33	17 / 64	22 / 83
Design flow**	27 / 102	58 / 220	66 / 250	93 / 352	131 / 495	288 / 1,090	329 / 1,245
Flow at 20 psid	43 / 172	94 / 356	107 / 405	152 / 575	215 / 814	470 / 1,780	537 / 2,033
Cv	9.7	21	24	34	48	105	120

*To ensure stable operation and ± 3 °F accuracy. Minimum flow rate is 0 gpm when recirculation flow rate is greater than or equal to the valve size minimum flow rating.
**Suggested maximum flow rate for optimum modulating control (at 7.5 psid pressure drop).

ELECTRONIC MIXING VALVES FOR PLUMBING

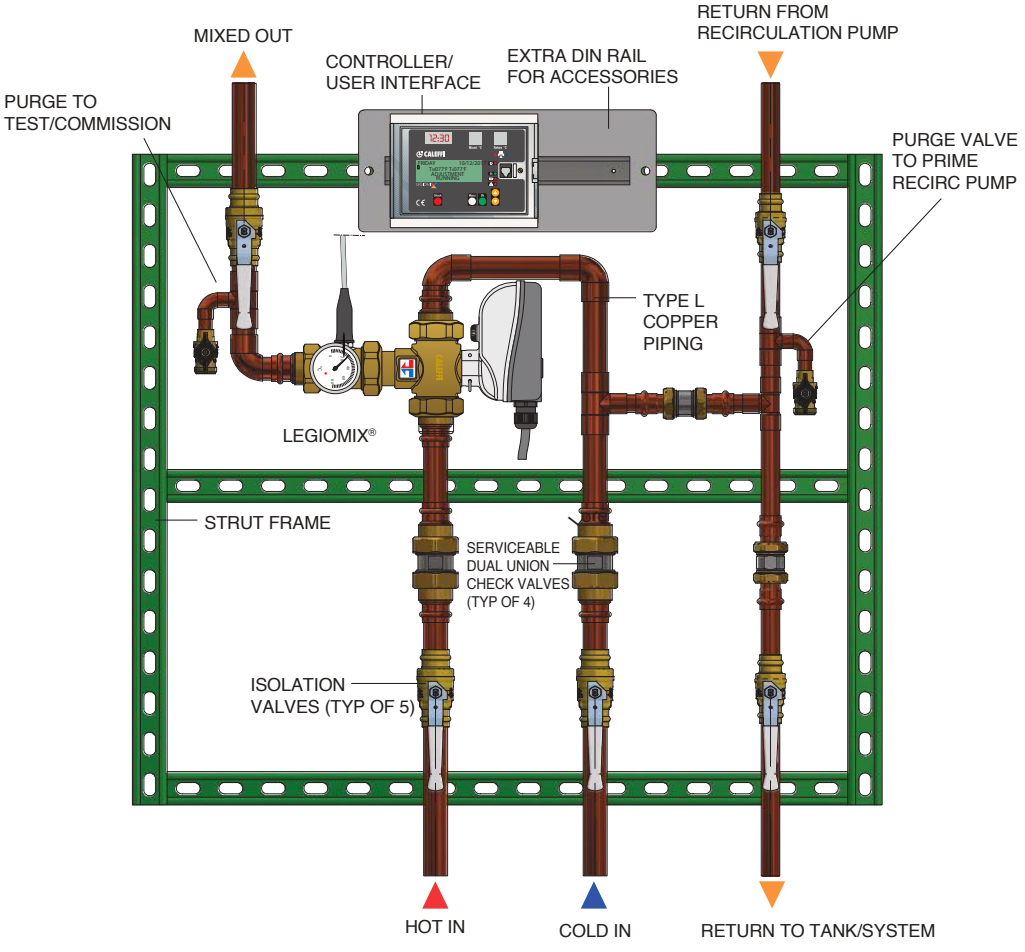
6000
LEGIOMIX® Station

Electronic mixing valve pre-packaged in a convenient wall mount configuration. 100% factory tested for plug-and-play in a packaged wall mount configuration.

Station assembly includes pre-piped 3-way mixing valve with union connections, serviceable check valves, a recirculation connection and isolation valves for fast and simple installation, all mounted on welded, powder-coat painted steel strut. The LEGIOMIX® controller/user interface with DIN rail mounting bracket is pre-mounted and pre-wired and includes a return water temperature sensor. Simply wall mount the assembly, hook up the hot and cold water supplies, the mixed outlet and the recirculation circuit.
Plug in 120/24 VAC transformer with 20 ft cable included.

Code	Description	Cv	Lbs	USD
600066AS	1" mixed outlet wall-mount station	8.0	130	**10,617.00**
600076AS	1¼" mixed outlet wall-mount station	9.0	148	**12,063.00**
600086AS	1½" mixed outlet wall-mount station	20	219	**15,268.00**
600096AS	2" mixed outlet wall-mount station	38	248	**17,330.00**
600060AS	2½" mixed outlet wall-mount station	43	250	**19,819.00**

Construction details for 6000 LEGIOMIX® Station



Complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

ACCESSORIES

Replacement mixed temp sensor.

Code	Description	Lbs	USD
F69807	fits ¾", 1" and 1¼" valve	1.0	**66.30**

Replacement mixed temp sensor.

Code	Description	Lbs	USD
F69804	fits 1½", 2", 2½" and 3"	1.0	**94.30**

Replacement recirculation sensor.

Code	Description	Lbs	USD
F69591	replacement recirculation sensor	1.0	**84.20**

Replacement controller.

Code	Description	Lbs	USD
F0000962	replacement controller	1.5	**1,890.00**

Replacement actuators.

Code	Description	Lbs	USD
645114	for ¾" to 2" valves	1.0	**473.00**
F0000995	for 2½" and 3" valves NEW	1	**3,708.00**

Replacement transformer.

Code	Description	Lbs	USD
NA10759	plug-in transformer 20 VA	1.0	**40.60**

LEGIOMIX® parts bag assembly.

Code	Description	Lbs	USD
R0001397	bag assembly	0.2	**86.50**

Replacement temp gauge.

Code	Description	Lbs	USD
R19101	replacement temp gauge	0.3	**23.00**

Modbus-to-BACnet gateway
Converts LEGIOMIX® controller Modbus (RS-485 serial) output communication to BACnet IP or MSTP communication.

Code	Description	Lbs	USD
755052	modbus-to-BACnet gateway	1.2	**2,007.00**

Inlet check valve assembly for installing on 6000 Series valve body (if required). Stainless steel body. No Lead. Ordered separately, field installed. 2 required per valve.

Code	Description	Lbs	USD
NA10366	check valve assembly 1" and 1¼"	1.0	**103.00**
NA10367	check valve assembly 1½" & 2"	1.5	**228.00**

Replacement body includes gauge adapter assembly.
See fitting selection in Section 13.

Code	Description	Lbs	USD
NA10758	body, gauge adapter (¾" valve)	3.5	**484.00**
NA10615	body, gauge adapter (1", 1¼" valves)	5.1	**546.00**
NA10616	body, gauge adapter (1½", 2" valves)	11	**800.00**

Replacement controller battery.

Code	Description	Lbs	USD
F69888	replacement controller battery	0.1	**47.50**

SCALD PROTECTION THERMOSTATIC MIXING VALVES FOR PLUMBING

5213 TubMixer™ High-Flow Scald Protection

Adjustable thermostatic high-flow point of use mixing valve for Roman Tubs and other high-flow fixtures. Locking set point knob. Complete with check valves on both hot and cold inlets. Low-lead brass body.
Max. working pressure: 150 psi.
Max. inlet temperature: 185 °F.
Adjustable range: 85 – 120 °F.
Temperature control: ±3 °F.
Min. flow for optimum performance: 0.5 gpm.
Cv = 2

Code	Description		Lbs	USD
521333A	3/8" compression union		2.0	**136.00**
521342A	½" NPT male union		2.0	**136.00**
521346A	½" press union	NEW	2.0	**142.00**
521347A	½" PEX crimp union		2.0	**136.00**
521348A	½" PEX expansion union		2.0	**136.00**
521349A	½" sweat union		2.0	**136.00**
521352A	¾" NPT male union		2.0	**143.00**
521356A	¾" press union	NEW	2.0	**151.00**
521357A	¾" PEX crimp union		2.0	**143.00**
521358A	¾" PEX expansion union		2.0	**143.00**
521359A	¾" sweat union		2.0	**143.00**
521362A	1" NPT male union		2.0	**175.00**
521366A	1" press union	NEW	2.0	**184.00**
521367A	1" PEX crimp union		2.0	**175.00**
521368A	1" PEX expansion union		2.0	**175.00**
521369A	1" sweat union		2.0	**175.00**
521301A*	replacement body, no fittings		1.5	**123.00**

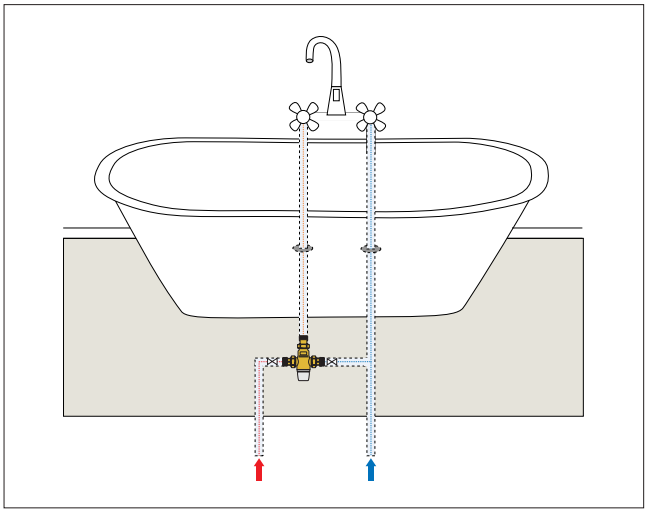
***See fitting selection in Section 13.**

5213 TubMixer™ High-Flow Scald Protection

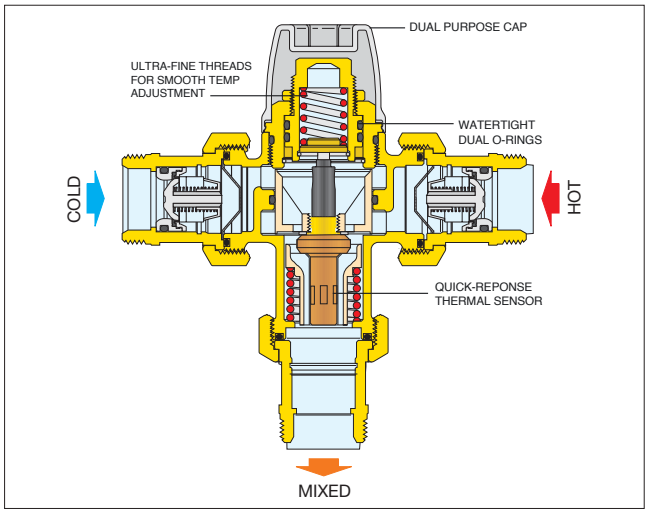
With gauge, 1% FS accuracy.
Adjustable thermostatic high-flow point of use mixing valve for Roman Tubs and other high-flow fixtures. Locking set point knob. Complete with check valves on both hot and cold inlets. Low-lead brass body.
Max. working pressure: 150 psi.
Max. inlet temperature: 185 °F.
Adjustable range: 85 – 120 °F.
Temperature control: ±3 °F.
Min. flow for optimum performance: 0.5 gpm.
Cv = 2

Code	Description	Lbs	USD
521333A 002	3/8" compression union	2.1	**173.00**
521342A 002	½" MNPT union	2.1	**173.00**
521346A 002	½" press union	2.1	**179.00**
521347A 002	½" PEX crimp union	2.1	**173.00**
521348A 002	½" PEX expansion union	2.1	**173.00**
521349A 002	½" sweat union	2.1	**173.00**
521352A 002	¾" MNPT union	2.1	**180.00**
521356A 002	¾" press union	2.1	**188.00**
521357A 002	¾" PEX crimp union	2.1	**180.00**
521358A 002	¾" PEX expansion union	2.1	**180.00**
521359A 002	¾" sweat union	2.1	**180.00**
521362A 002	1" MNPT union	2.1	**212.00**
521366A 002	1" press union	2.1	**221.00**
521367A 002	1" PEX crimp union	2.1	**212.00**
521368A 002	1" PEX expansion union	2.1	**212.00**
521369A 002	1" sweat union	2.1	**212.00**

Application diagram



Construction details for 5213 TubMixer™



Complies with standards ASSE 1070/ASME A112.1070, CSA B125.70, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

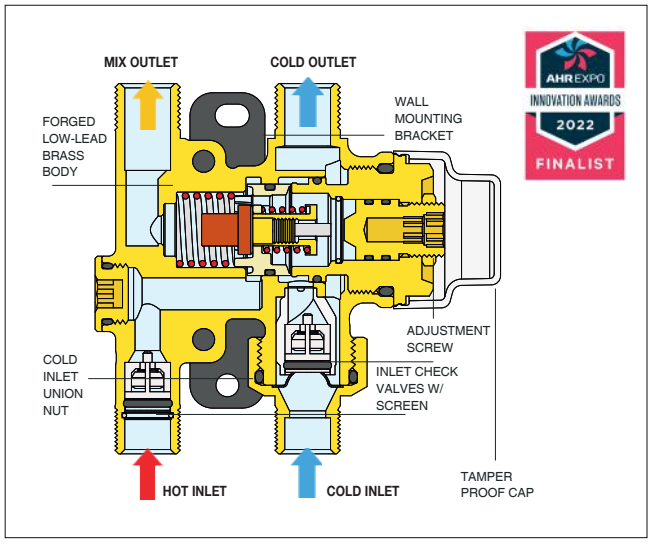
SCALD PROTECTION THERMOSTATIC MIXING VALVES FOR PLUMBING

5212 SinkMixer™
4-way Scald Protection Point of use

Thermostatic mixing valve for under sink and under counter applications where the user must be protected from the danger of scalding caused by excessively hot water.
Temperature adjustment range: 95 – 120 °F.
Cold inlet temperature: Min. 39 °F; Max. 85 °F.
Hot inlet temperature: Min. 120 °F; Max. 195 °F.
Min flow for optimum performance 0.35 gpm.
Cv = 0.52

Code	Description	Lbs	USD
521201A	3/8" compression	1.0	**113.00**
521201AP	3/8" compression, plug/fittings	1.1	**115.00**

Construction details 5212 SinkMixer™ (4-way)



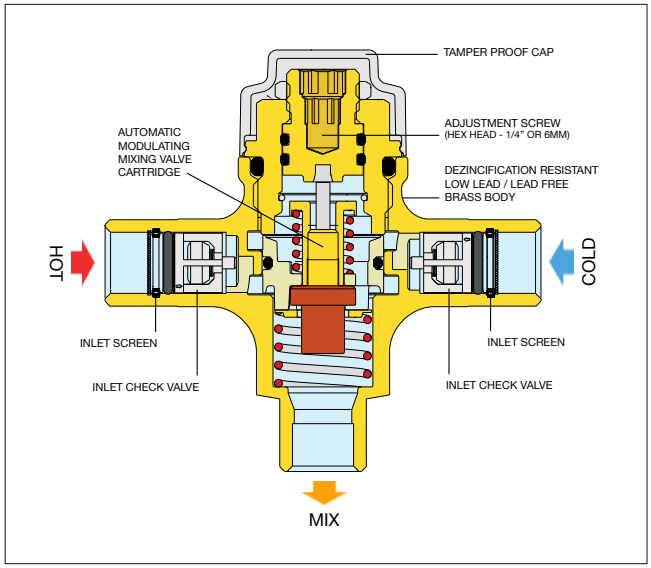
NEW

5212 SinkMixer™
3-way Scald Protection Point of use

Thermostatic mixing valve for under sink and under counter applications where the user must be protected from the danger of scalding caused by excessively hot water.
Temperature adjustment range: 95 – 120 °F.
Cold inlet temperature: Min. 39 °F; Max. 85 °F.
Hot inlet temperature: Min. 120 °F; Max. 195 °F.
Min flow for optimum performance 0.35 gpm.
Cv = 0.52

Code	Description	Lbs	USD
521204A	3/8" compression, plug/fittings	0.9	**91.00**

Construction details 5212 SinkMixer™ (3-way)



SinkMixer™ 5-pack plug/nut fitting kit. The cold outlet port plug is for single-pipe, mixed-water fixtures.

Code	Description	Lbs	USD
NA10741	5-pack plug/nut fitting kit	0.2	**17.10**

SinkMixer™ Replacement check valve/filter kit.

Code	Description	Lbs	USD
F0001270	replacement check valve/filter kit	0.1	**6.80**

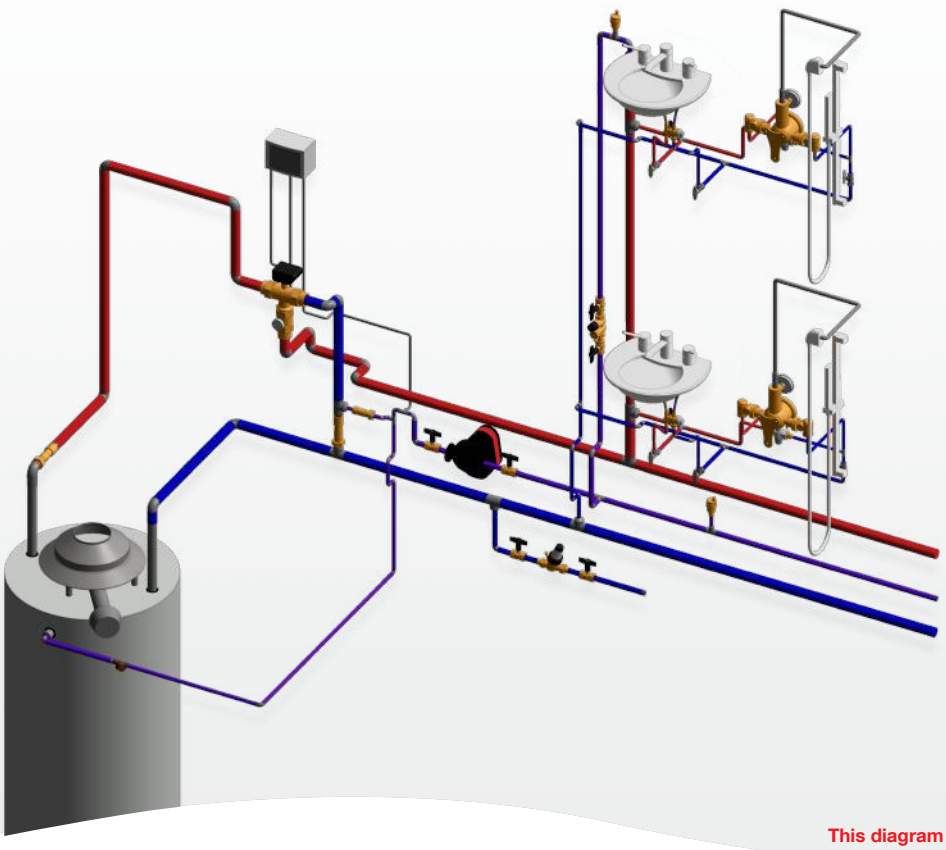
Complies with standards ASSE 1070/ASME A112.1070, CSA B125.70, CSA B125.3, NSF/ANSI/CAN 61 (Commercial Hot 180 °F), NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

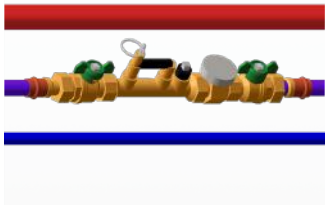
CALEFFI
Hydronic Solutions

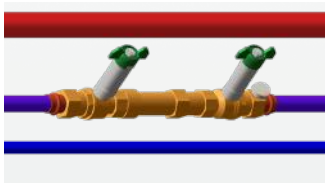
www.caleffi.com

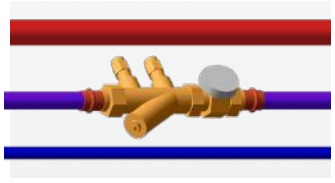
THERMOSETTER™
THERMAL BALANCING IN TEMPERATURE MIXING

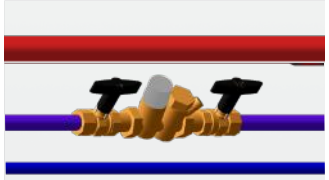
The flow rate might change, but the temperature won't with the ThermoSetter™ thermal balancing valves. They modulate to maintain precise temperature in DHW recirculation return piping. Models with bypass cartridges are available for Legionella bacteria management. Factory-assembled kits ensure easy ordering. **CALEFFI GUARANTEED.**











This diagram is for illustration purposes only

BIM
bim.caleffi.com

PRODUCTS INCLUDED IN SECTION

Static balancing valves with built-in flowmeter for plumbing
Static balancing valves with built-in flowmeter for hydronics
Static balancing valves (fixed orifice) for plumbing and hydronics
Static balancing valves (variable orifice) for plumbing and hydronics
Dynamic balancing valves for plumbing and hydronics
Thermal balancing valves for plumbing

STATIC BALANCING VALVES WITH BUILT-IN FLOWMETER FOR PLUMBING

132 QuickSetter+™ sweat

Balancing valve with flow meter.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.

Code	Description	Flow scale (gpm)	Lbs	USD
132439AFC	½" sweat union	0.5—1.8	1.8	**265.00**
132539AFC	¾" sweat union	0.5—1.8	2.0	**276.00**
132639AFC	1" sweat union	0.5—1.8	2.4	**305.00**
132459AFC	½" sweat union	2.0—7.0	1.8	**265.00**
132559AFC	¾" sweat union	2.0—7.0	2.0	**276.00**
132659AFC	1" sweat union	2.0—7.0	2.4	**305.00**

132 QuickSetter+™ sweat

Balancing valve with flow meter and temperature gauge.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.

Code	Description	Flow scale (gpm)	Lbs	USD
132438AFC	½" sweat union	0.5—1.8	2.4	**304.00**
132538AFC	¾" sweat union	0.5—1.8	2.6	**316.00**
132638AFC	1" sweat union	0.5—1.8	2.8	**342.00**
132458AFC	½" sweat union	2.0—7.0	2.4	**304.00**
132558AFC	¾" sweat union	2.0—7.0	2.6	**316.00**
132658AFC	1" sweat union	2.0—7.0	2.8	**342.00**

132 QuickSetter+™ press

Balancing valve with flow meter.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.

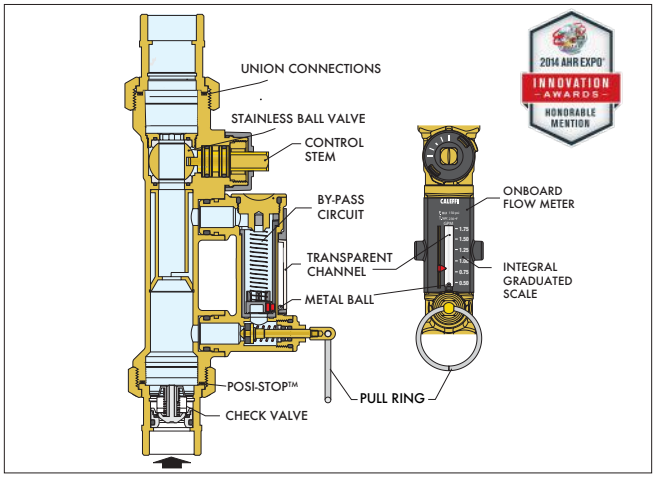
Code	Description	Flow scale (gpm)	Lbs	USD
132436AFC	½" press union	0.5—1.8	1.8	**305.00**
132536AFC	¾" press union	0.5—1.8	1.8	**317.00**
132636AFC	1" press union	0.5—1.8	2.2	**351.00**
132456AFC	½" press union	2.0—7.0	1.8	**305.00**
132556AFC	¾" press union	2.0—7.0	1.8	**317.00**
132656AFC	1" press union	2.0—7.0	2.2	**351.00**

132 QuickSetter+™ press

Balancing valve with flow meter and temperature gauge.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.

Code	Description	Flow scale (gpm)	Lbs	USD
132437AFC	½" press union	0.5—1.8	1.8	**349.00**
132537AFC	¾" press union	0.5—1.8	2.2	**364.00**
132637AFC	1" press union	0.5—1.8	2.6	**392.00**
132457AFC	½" press union	2.0—7.0	1.8	**349.00**
132557AFC	¾" press union	2.0—7.0	2.2	**364.00**
132657AFC	1" press union	2.0—7.0	2.6	**392.00**

Construction details for 132 QuickSetter+™



Connection size	Flow rate (gpm)	Fully open Cv
½"	0.5 - 1.8	1.0
¾"	0.5 - 1.8	1.0
1"	0.5 - 1.8	1.0
½"	2.0 - 7.0	6.3
¾"	2.0 - 7.0	6.3
1"	2.0 - 7.0	6.3

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

STATIC BALANCING VALVES WITH BUILT-IN FLOWMETER FOR PLUMBING

NEW

132 QuickSetter+™ NPT

Balancing valve with flow meter.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.

Code	Description	Flow scale (gpm)	Lbs	USD
132430AFC	½" NPT male union	0.5—1.8	1.8	**270.00**
132530AFC	¾" NPT male union	0.5—1.8	2.0	**281.00**
132630AFC	1" NPT male union	0.5—1.8	2.4	**310.00**
132450AFC	½" NPT male union	2.0—7.0	1.8	**270.00**
132550AFC	¾" NPT male union	2.0—7.0	2.0	**281.00**
132650AFC	1" NPT male union	2.0—7.0	2.4	**310.00**

NEW

132 QuickSetter+™ NPT

Balancing valve with flow meter and temperature gauge.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.

Code	Description	Flow scale (gpm)	Lbs	USD
132431AFC	½" NPT male union	0.5—1.8	2.4	**309.00**
132531AFC	¾" NPT male union	0.5—1.8	2.6	**321.00**
132631AFC	1" NPT male union	0.5—1.8	2.8	**350.00**
132451AFC	½" NPT male union	2.0—7.0	2.4	**309.00**
132551AFC	¾" NPT male union	2.0—7.0	2.6	**321.00**
132651AFC	1" NPT male union	2.0—7.0	2.8	**350.00**

132 QuickSetter+™ PEX

Balancing valve with flow meter.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960

Code	Description	Flow scale (gpm)	Lbs	USD
132434AFC	½" PEX crimp union	0.5—1.8	1.8	**265.00**
132432AFC	½" PEX expansion union	0.5—1.8	1.8	**265.00**
132534AFC	¾" PEX crimp union	0.5—1.8	2.0	**276.00**
132532AFC	¾" PEX expansion union	0.5—1.8	2.0	**276.00**
132634AFC	1" PEX crimp union	0.5—1.8	2.2	**319.00**
132632AFC	1" PEX expansion union	0.5—1.8	2.2	**319.00**
132454AFC	½" PEX crimp union	2.0—7.0	1.8	**265.00**
132452AFC	½" PEX expansion union	2.0—7.0	1.8	**265.00**
132554AFC	¾" PEX crimp union	2.0—7.0	2.0	**276.00**
132552AFC	¾" PEX expansion union	2.0—7.0	2.0	**276.00**
132654AFC	1" PEX crimp union	2.0—7.0	2.2	**319.00**
132652AFC	1" PEX expansion union	2.0—7.0	2.2	**319.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

132 QuickSetter+™ PEX

Balancing valve with flow meter and temperature gauge.
Direct reading of flow rate.
DZR low-lead brass.
Inlet flow check valve.
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.

Code	Description	Flow scale (gpm)	Lbs	USD
132435AFC	½" PEX crimp union	0.5—1.8	2.2	**304.00**
132433AFC	½" PEX expansion union	0.5—1.8	2.2	**304.00**
132535AFC	¾" PEX crimp union	0.5—1.8	2.4	**316.00**
132533AFC	¾" PEX expansion union	0.5—1.8	2.4	**316.00**
132635AFC	1" PEX crimp union	0.5—1.8	2.6	**357.00**
132633AFC	1" PEX expansion union	0.5—1.8	2.6	**357.00**
132455AFC	½" PEX crimp union	2.0—7.0	2.2	**304.00**
132453AFC	½" PEX expansion union	2.0—7.0	2.2	**304.00**
132555AFC	¾" PEX crimp union	2.0—7.0	2.4	**316.00**
132553AFC	¾" PEX expansion union	2.0—7.0	2.4	**316.00**
132655AFC	1" PEX crimp union	2.0—7.0	2.6	**357.00**
132653AFC	1" PEX expansion union	2.0—7.0	2.6	**357.00**

STATIC BALANCING VALVES WITH BUILT-IN FLOWMETER FOR HYDRONICS

132 QuickSetter™ press

Balancing valve with flow meter.
Direct reading of flow rate.
No sight gauge clouding or scaling.
Brass valve body and flow meter.
Max. working pressure: 150 psi.
Temperature range: 14 – 230 °F.
Max. percentage of glycol: 50%.
Insulation jacket included.

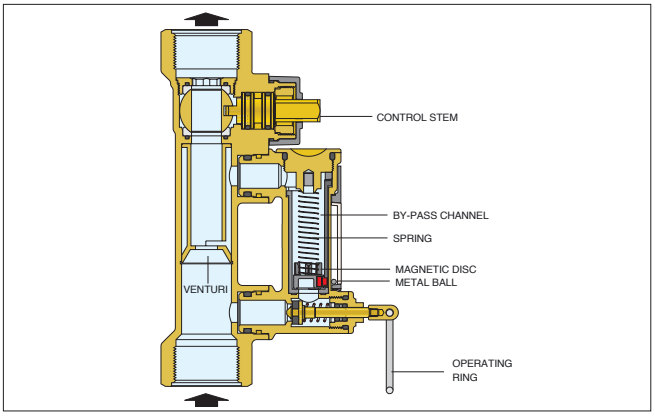
Code	Description	Flow scale (gpm)	Lbs	USD
132436A	½" press	0.5—1.8	2.2	**226.00**
132556A	¾" press	2.0—7.0	2.0	**254.00**
132666A	1" press	3.0—10	2.4	**298.00**
132776A	1¼" press	5.0—19	2.8	**394.00**
132886A	1½" press	8.0—32	3.4	**469.00**
132996A	2" press	12—50	4.4	**574.00**

132 QuickSetter™

Balancing valve with flow meter.
Direct reading of flow rate.
No sight gauge clouding or scaling.
Brass valve body and flow meter.
Max. working pressure: 150 psi.
Temperature range: 14 – 230 °F.
Max. percentage of glycol: 50%.
Insulation jacket included.

Code	Description	Flow scale (gpm)	Lbs	USD
132432A	½" FNPT	0.5—1.8	2.0	**210.00**
132552A	¾" FNPT	2.0—7.0	1.8	**226.00**
132662A	1" FNPT	3.0—10	2.4	**264.00**
132772A	1¼" FNPT	5.0—19	2.8	**351.00**
132882A	1½" FNPT	8.0—32	3.4	**416.00**
132992A	2" FNPT	12—50	4.4	**509.00**

Construction details for 132 QuickSetter™

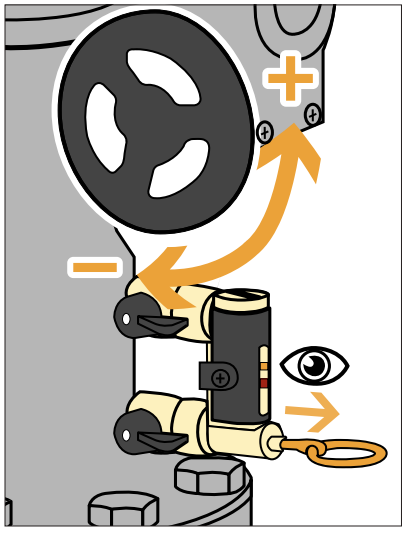


Connection size	Flow rate (gpm)	Fully open Cv
½"	0.5 - 1.8	3.0
¾"	2.0 - 7.0	6.3
1"	3.0 - 10	8.3
1¼"	5.0 - 19	15
1½"	8.0 - 32	32
2"	12 - 50	54

132 QuickSetter™ flange

Balancing valve with flow meter.
Direct reading of flow rate.
ANSI 125 flanged cast iron body.
Brass flow meter.
Max. working pressure: 150 psi.
Temperature range: 14 – 230 °F.
Max. percentage of glycol: 50%.

Code	Description	Flow scale (gpm)	Lbs	USD
132060A	2½" ANSI flange	30—105	35	**1,256.00**
132080A	3" ANSI flange	38—148	62	**1,675.00**
132100A	4" ANSI flange	55—210	67	**2,556.00**



The 132 Series balancing valve accurately sets the flow rate of heating and cooling transfer fluid. The flow meter is housed in a bypass circuit on the valve body and can be shut off during normal operation. The flow meter permits fast and easy circuit balancing without added differential pressure gauges and reference charts.

ACCESSORIES

NA108

NPT full port ball valves with extended operator handle for insulated or bare pipes.
For use with hot or cold water piping in plumbing or hydronic applications.
High strength forged low lead brass.
Blowout-proof stem with dual o-ring seals.
Pressure rating 600 WOG.
Temperature rating -4 – 366 °F.
Compatible nipples for connection with FNPT devices are shown in section 12.

Code	Description	Lbs	USD
NA10824	½" FNPT ball valve low lead	0.4	**38.40**
NA10825	¾" FNPT ball valve low lead	0.6	**47.10**
NA10826	1" FNPT ball valve low lead	1.0	**61.10**
NA10827	1¼" FNPT ball valve low lead	1.6	**102.00**
NA10828	1½" FNPT ball valve low lead	1.9	**129.00**
NA10829	2" FNPT ball valve low lead	3.0	**314.00**

QuickSetter insulation jackets.

Code	Description	Lbs	USD
F0000926	for Quicksetter+ with unions	0.1	**42.40**
112001	for ½", 3/4" quicksetter	0.1	**41.80**
112003	for 1" quicksetter NEW	0.1	**55.60**
F0002097	for 1¼" quicksetter	0.1	**45.00**
F0002098	for 1½" quicksetter	0.1	**50.00**
F0002099	for 2" quicksetter	0.1	**55.00**

Replacement flow meter.

Code	Description	Lbs	USD
F0000940	Replacement flowmeter 0.5 to 1.8 GPM	0.2	**116.00**
F0000941	replacement flowmeter 2.0 to 7.0 GPM	0.2	**116.00**
F0000942	replacement flowmeter 3.0 to 10 GPM	0.2	**116.00**
F0000943	replacement flowmeter 5.0 to 19 GPM	0.2	**123.00**
F0000944	replacement flowmeter 8.0 to 32 GPM	0.2	**123.00**
F0000945	replacement flowmeter 12 to 50 GPM	0.2	**123.00**
F0000946	replacement flowmeter 30 to 105GPM	0.2	**129.00**
F0000947	replacement flowmeter 38 to 148 GPM	0.2	**129.00**
F0000948	replacement flowmeter 55 to 210 GPM	0.2	**129.00**
F19346	replacement by-pass valve stem*	0.2	**42.50**

*With operating ring

QuickSetter+™ replacement body.
See fitting selections in Section 13.

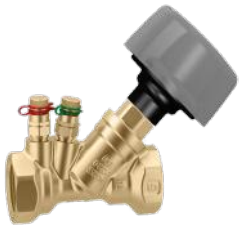
Code	Description	Lbs	USD
132637	0.5 - 1.8 GPM	1.0	**210.00**
132657	2.0 - 7.0 GPM	1.0	**221.00**

Isolation ball valves for QuickSetter+™.
See Section 12 for details.

Code	Description	Lbs	USD
290030	1" M x 1" F union ball valve	1.0	**47.60**
290031*	1" M x 1" F union ball valve NEW	1.0	**75.00**

*With extended handle

STATIC BALANCING VALVES (FIXED ORIFICE) FOR PLUMBING AND HYDRONICS



130
Flo-Set™
Fixed Orifice Balancing Valve

Fixed orifice.
Multi-turn adjustment range.
Memory stop feature.
Max. working pressure: 232 psi
Working temperature range: -4 – 250 °F
Number of adjustment turns: 6
DZR low-lead brass body.
Stainless steel valve plug.
Teflon® stem guide bearing.

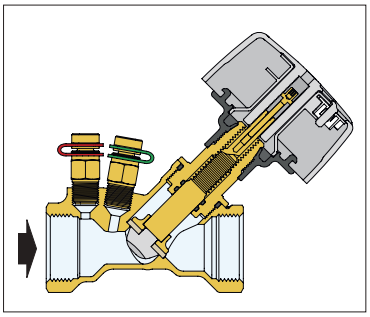
Code	Description	Max Cv	Lbs	USD
130400A	½" FNPT	3.7	1.0	**142.00**
130500A	¾" FNPT	5.1	1.2	**156.00**
130600A	1" FNPT	8.8	1.5	**185.00**
130700A	1¼" FNPT	14	2.0	**232.00**
130800A	1½" FNPT	20	2.3	**288.00**
130900A	2" FNPT	31	2.5	**384.00**

Venturi flow rate measurement device
The 130 Series valves are equipped with a flow rate measurement device based on the Venturi effect. The device is incorporated in the body of the valve upstream of the valve plug.

Insulation shell fits 130 Series balancing valves.

Code	Description	Lbs	USD
CBN130400	fits ½" FNPT	0.1	**31.20**
CBN130500	fits ¾" FNPT	0.1	**33.90**
CBN130600	fits 1" FNPT	0.1	**40.70**
CBN130700	fits 1¼" FNPT	0.1	**50.70**
CBN130800	fits 1½" FNPT	0.1	**63.30**
CBN130900	fits 2" FNPT	0.1	**84.40**

Operating Principal
The 130 Series balancing valve is a hydraulic device that controls the flow rate of a fluid. Turning the knob moves a plug within the fluid stream which varies the flow rate. The flow rate is determined according to the pressure drop value measured by a differential pressure meter connected to the pressure test ports.



STATIC BALANCING VALVES (VARIABLE ORIFICE) FOR PLUMBING AND HYDRONICS

142
Flo-Set™
Variable Orifice Balancing Valve

Memory stop feature.
Characterized plug for smooth adjustment.
Maximum working pressure: 232 psi.
Working temperature range: 14 – 250 °F.
DZR low-lead brass body.
Meets requirements of ANSI/NSF 372-2011.
Certified to Low Lead Laws and listed by ICC-ES for use in accordance with the U.S. and Canadian plumbing codes.

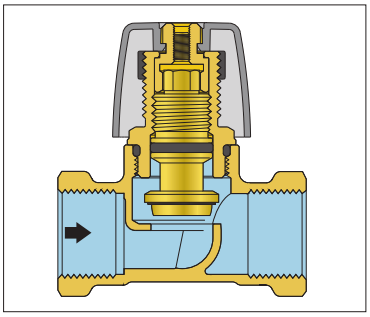
Code	Description	Max Cv	Lbs	USD
142241A	½" FNPT	3.4	1.0	**111.00**
142251A	¾" FNPT	5.0	1.2	**119.00**
142261A	1" FNPT	7.5	1.5	**161.00**
142271A	1¼" FNPT	13	2.3	**231.00**
142281A	1½" FNPT	17	3.0	**258.00**
142291A	2" FNPT	22	3.5	**330.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

Insulation shell fits 142 Series balancing valves.

Code	Description	Lbs	USD
CBN142241A	fits ½" FNPT	0.1	**28.60**
CBN142251A	fits ¾" FNPT	0.1	**30.40**
CBN142261A	fits 1" FNPT	0.1	**41.40**
CBN142271A	fits 1¼" FNPT	0.1	**59.10**
CBN142281A	fits 1½" FNPT	0.1	**66.50**

Operating Principal
The 142 Series balancing valve is a hydraulic device that controls the flow rate of a fluid. Turning the knob moves a plug within the fluid stream which varies the flow rate. The flow rate is determined according to the pressure drop value measured by a differential pressure meter connected to the pressure test ports and the adjustment knob position.



DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

128 FlowCal+™ sweat

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
2" temperature gauge, +/- 1% FS accuracy.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128448AFC***	½" sweat, PT ports, check	2.0	**162.00**
128458AFC***	¾" sweat, PT ports, check	2.0	**189.00**
128468AFC***	1" sweat, PT ports, check	2.2	**198.00**

128 FlowCal+™ NPT

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
2" temperature gauge, +/- 1% FS accuracy.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128440AFC***	½" NPT male, PT ports, check	2.0	**167.00**
128450AFC***	¾" NPT male, PT ports, check	1.8	**194.00**
128460AFC***	1" NPT male, PT ports, check	2.0	**200.00**

128 FlowCal+™ press

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
2" temperature gauge, +/- 1% FS accuracy.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128447AFC***	½" press, PT ports, check	2.0	**184.00**
128457AFC***	¾" press, PT ports, check	2.0	**207.00**
128467AFC***	1" press, PT ports, check	2.2	**215.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

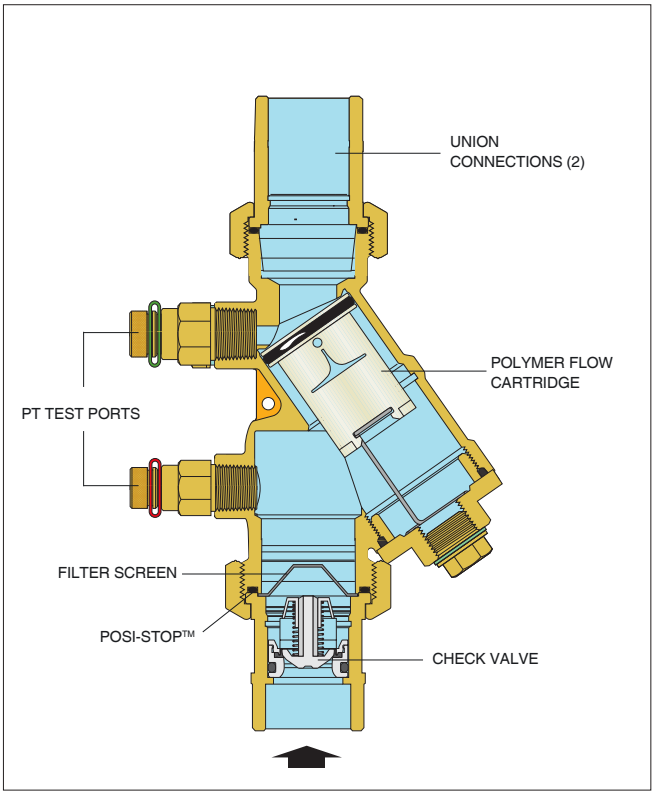
128 FlowCal+™ PEX

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.
2" temperature gauge, +/- 1% FS accuracy.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128445AFC***	½" PEX crimp, PT ports, check	2.0	**162.00**
128455AFC***	¾" PEX crimp, PT ports, check	2.0	**189.00**
128465AFC***	1" PEX crimp, PT ports, check	2.2	**198.00**
128443AFC***	½" PEX expansion, PT ports, check	2.0	**162.00**
128453AFC***	¾" PEX expansion, PT ports, check	2.0	**189.00**
128463AFC***	1" PEX expansion, PT ports, check	2.2	**198.00**

Construction details for 128 Series FlowCal+™

The Y-body 128 Series FlowCal uses the same flow cartridges as the 127 Series FlowCal. Because the body can remain in the piping, the Y-body simplifies serviceability and cartridge changeout. The 128 Series includes factory installed PT ports.



DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

128 FlowCal+™ sweat

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128449AFC***	½" sweat, PT ports, check	1.8	**130.00**
128459AFC***	¾" sweat, PT ports, check	1.8	**137.00**
128469AFC***	1" sweat, PT ports, check	2.0	**165.00**

128 FlowCal+™ NPT

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128441AFC***	½" NPT male, PT ports, check	1.8	**131.00**
128451AFC***	¾" NPT male, PT ports, check	1.6	**138.00**
128461AFC***	1" NPT male, PT ports, check	1.8	**167.00**

128 FlowCal+™ press

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included. .
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128446AFC***	½" press, PT ports, check	1.8	**141.00**
128456AFC***	¾" press, PT ports, check	1.8	**155.00**
128466AFC***	1" press, PT ports, check	2.0	**173.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

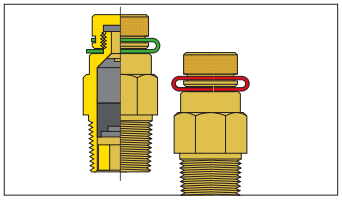
128 FlowCal+™ PEX

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128444AFC***	½" PEX crimp, PT ports, check	1.8	**130.00**
128454AFC***	¾" PEX crimp, PT ports, check	1.8	**137.00**
128464AFC***	1" PEX crimp, PT ports, check	2.0	**165.00**
128442AFC***	½" PEX expansion, PT ports, check	1.8	**130.00**
128452AFC***	¾" PEX expansion, PT ports, check	1.8	**137.00**
128462AFC***	1" PEX expansion, PT ports, check	2.0	**165.00**

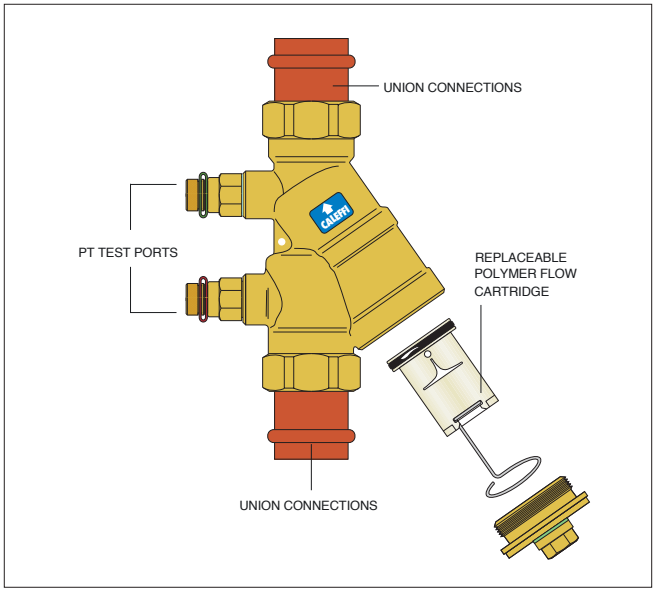
Connecting Device

Integral pressure temperature ports allow for quick confirmation of differential pressure to ensure that the valve is functioning within its control range.



Replaceable cartridge

The internal regulator is assembled in the form of a self contained cartridge so as to permit easy removal from the body for inspection or replacement. It is equipped with a special automatic fixing system with wire and an operating ring for fast and safe positioning without using tools.



DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

128 FlowCal™ sweat

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128549AF***	½" sweat, PT ports	1.8	**120.00**
128559AF***	¾" sweat, PT ports	2.0	**125.00**
128569AF***	1" sweat, PT ports	2.2	**141.00**

128 FlowCal™ NPT

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128541AF***	½" NPT male, PT ports	2.0	**125.00**
128551AF***	¾" NPT male, PT ports	2.1	**130.00**
128561AF***	1" NPT male, PT ports	2.2	**145.00**

128 FlowCal™ press

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128546AF***	½" press, PT ports	2.0	**136.00**
128556AF***	¾" press, PT ports	2.1	**147.00**
128566AF***	1" press, PT ports	2.2	**175.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

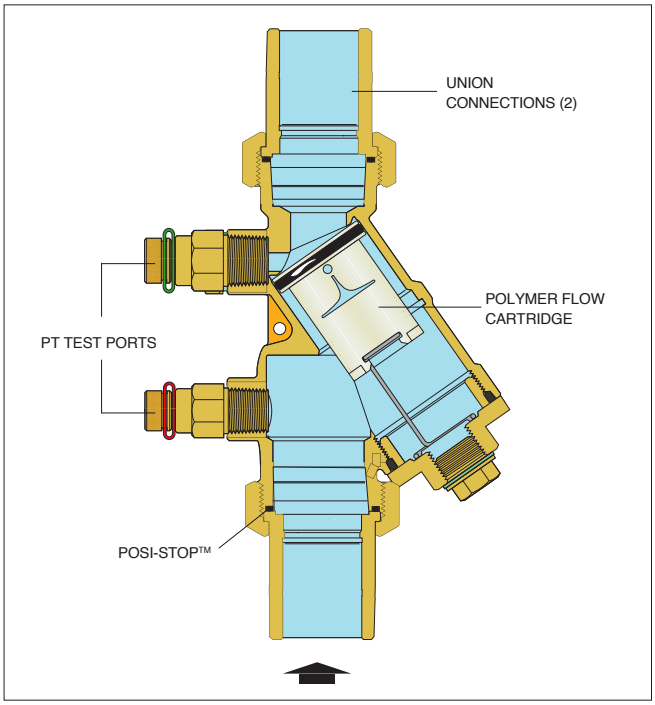
128 FlowCal™ PEX

Y-body automatic balancing valves. Patented anti-scale, low noise polymer FlowCal™ cartridge.
DZR low-lead brass bodies.
PT ports included.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%.
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: +/- 10%.
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
128544AF***	½" PEX crimp, PT ports	2.0	**120.00**
128554AF***	¾" PEX crimp, PT ports	2.1	**125.00**
128564AF***	1" PEX crimp, PT ports	2.2	**141.00**
128542AF***	½" PEX expansion, PT ports	2.0	**120.00**
128552AF***	¾" PEX expansion, PT ports	2.1	**125.00**
128562AF***	1" PEX expansion, PT ports	2.2	**141.00**

Construction details for 128 FlowCal™

The Y-body 128 Series FlowCal uses the same flow cartridges as the 127 Series FlowCal. Because the body can remain in the piping, the Y-body simplifies serviceability and cartridge changeout. The 128 Series includes factory installed PT ports. The FlowCal+ models come with a check valve in the inlet tailpiece, to prevent backward flow in DHW recirculation applications, and are available with or without outlet temperature gauge. The standard FlowCal models do not include a check valve.



DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

127 FlowCal™ sweat

Compact automatic recirculation balancing valves.
DZR low-lead brass bodies.
Patented anti-scale, low noise polymer.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127349AF***	½" sweat union	0.8	**108.00**
127359AF***	¾" sweat union	0.8	**114.00**
127369AF***	1" sweat union	1.0	**131.00**

127 FlowCal™ NPT

Compact automatic recirculation balancing valves.
DZR low-lead brass bodies.
Patented anti-scale, low noise polymer.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number..

Code	Description	Lbs	USD
127341AF***	½" NPT male union	1.0	**115.00**
127351AF***	¾" NPT male union	1.0	**119.00**
127361AF***	1" NPT male union	1.2	**135.00**

127 FlowCal™ press

Compact automatic recirculation balancing valves.
DZR low-lead brass bodies.
Patented anti-scale, low noise polymer.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127346AF***	½" press union	0.9	**127.00**
127356AF***	¾" press union	1.0	**140.00**
127366AF***	1" press union	1.3	**171.00**

127 FlowCal™ PEX

Compact automatic recirculation balancing valves.
DZR low-lead brass bodies.
Patented anti-scale, low noise polymer.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127344AF***	½" PEX crimp union	1.0	**108.00**
127342AF***	½" PEX expansion union	1.0	**108.00**
127354AF***	¾" PEX crimp union	1.0	**114.00**
127352AF***	¾" PEX expansion union	1.0	**114.00**
127364AF***	1" PEX crimp union	1.3	**131.00**
127362AF***	1" PEX expansion union	1.3	**131.00**

127 FlowCal™ body

Compact automatic recirculation balancing valves.
DZR low-lead brass bodies.
Patented anti-scale, low noise polymer.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127000A***	127 body + *** GPM cartridge, no fittings	1.0	**82.20**

Union isolation ball valve
Low lead MxF union fits between valve body and tailpiece.

Code	Description	Lbs	USD
290030	Isolation ball valve 1" M x 1" F union	1.0	**47.60**
290031*	1" M x 1" F union ball valve NEW	1.0	**75.00**

*With extended handle

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES. codes. U.S. Patent 7,246,635 B2.

DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

127 FlowCal+™ sweat

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127148AFC***	½" sweat union, check	1.0	**156.00**
127158AFC***	¾" sweat union, check	1.0	**170.00**
127168AFC***	1" sweat union, check	1.2	**198.00**

127 FlowCal+™ NPT

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127140AFC***	½" NPT male union, check	1.2	**161.00**
127150AFC***	¾" NPT male union, check	1.2	**193.00**
127160AFC***	1" NPT male union, check	1.4	**200.00**

127 FlowCal+™ press

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127147AFC***	½" press union, check	1.0	**151.00**
127157AFC***	¾" press union, check	1.2	**188.00**
127167AFC***	1" press union, check	1.5	**207.00**

127 FlowCal+™ PEX

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Dual scale: 30 – 210 °F (0 – 100 °C).
Gauge accuracy: ± 1% FS.
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127145AFC***	½" PEX crimp union, check	1.2	**156.00**
127143AFC***	½" PEX expansion union, check	1.2	**156.00**
127155AFC***	¾" PEX crimp union, check	1.2	**170.00**
127153AFC***	¾" PEX expansion union, check	1.2	**170.00**
127165AFC***	1" PEX crimp union, check	1.5	**198.00**
127163AFC***	1" PEX expansion union, check	1.5	**198.00**

Flow rate selection for 127 and 128 FlowCal™

GPM	Last 3 digits ...	Differential Pressure Control Ranges (psid)
0.35	G35	2—14
.5	G50	
.75	G75	
1.0	1G0	2—32
1.3	1G3	
1.5	1G5	
1.7	1G7	
2.0	2G0	
2.2	2G2	
2.5	2G5	
2.6	2G6	
3.0	3G0	
3.5	3G5	
4.0	4G0	
4.5	4G5	
5.0	5G0	
6.0	6G0	4—34
7.0	7G0	
8.0	8G0	
9.0	9G0	5—35
10	10G	

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES. codes. U.S. Patent 7,246,635 B2.

DYNAMIC BALANCING VALVES FOR PLUMBING AND HYDRONICS

127 FlowCal+™ sweat

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
DZR low-lead brass bodies.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127149AFC***	½" sweat union, check	0.8	**119.00**
127159AFC***	¾" sweat union, check	0.8	**129.00**
127169AFC***	1" sweat union, check	1.0	**159.00**

127 FlowCal+™ NPT

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
DZR low-lead brass bodies.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127141AFC***	½" NPT male union, check	1.0	**120.00**
127151AFC***	¾" NPT male union, check	1.0	**128.00**
127161AFC***	1" NPT male union, check	1.2	**161.00**

127 FlowCal+™ press

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
DZR low-lead brass bodies.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
Select desired flow rate on **page 87** to complete full part number.

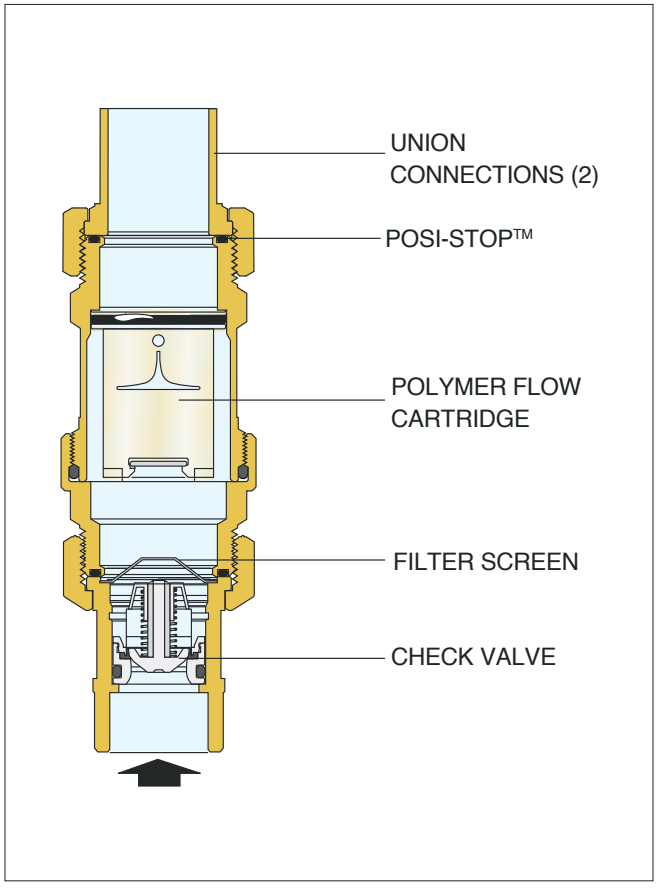
Code	Description	Lbs	USD
127146AFC***	½" press union, check	0.9	**119.00**
127156AFC***	¾" press union, check	1.0	**147.00**
127166AFC***	1" press union, check	1.3	**169.00**

127 FlowCal+™ PEX

Compact automatic recirculation balancing valves.
Patented anti-scale, low noise polymer.
DZR low-lead brass bodies.
FlowCal™ cartridge.
Inlet flow check valve.
Max. working pressure: 230 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%
Flow rate range: 0.35 to 10 GPM.
Flow accuracy: ±10%.
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960
Select desired flow rate on **page 87** to complete full part number.

Code	Description	Lbs	USD
127144AFC***	½" PEX crimp union, check	1.0	**119.00**
127142AFC***	½" PEX expansion union, check	1.0	**119.00**
127154AFC***	¾" PEX crimp union, check	1.0	**129.00**
127152AFC***	¾" PEX expansion union, check	1.0	**129.00**
127164AFC***	1" PEX crimp union, check	1.3	**159.00**
127162AFC***	1" PEX expansion union, check	1.3	**159.00**

Construction details for 127 FlowCal+



Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES. US Patent 7,246,635 B2.

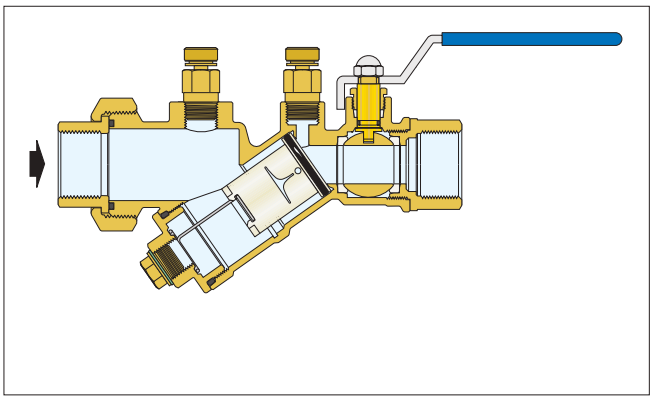
DYNAMIC BALANCING VALVES FOR HYDRONICS

121
FlowCal™

Automatic flow balancing valve with integral ball valve.
Not for use in potable water / plumbing systems, not low lead Brass body.
Patented anti-scale, low noise polymer FlowCal™ cartridge.
Maximum working pressure: 400 psi (400 WOG).
Working temperature range: 32 – 212 °F (0 – 100 °C).
Max. percentage of glycol: 50%.
Differential pressure control ranges: 2—14, 2—32, 4—34, 5—35 psid.
Flow rate: fixed flow rate settings ranging from 0.35—21 GPM.
Flow accuracy: ±10%.
US Patent 7,246,635 B2.

Available with optional factory-installed pressure and temperature test ports (1213xxx Series).

Code	Description	Lbs	USD
121141A ●●●	½" NPT female	2.7	**142.00**
121149A ●●●	½" sweat	2.7	**136.00**
121151A ●●●	¾" NPT female	2.7	**143.00**
121159A ●●●	¾" sweat	2.7	**137.00**
121161A ●●●	1" NPT female	5.0	**294.00**
121169A ●●●	1" sweat	5.0	**280.00**
121171A ●●●	1¼" NPT female	5.0	**330.00**
121179A ●●●	1¼" sweat	5.0	**314.00**
121341A ●●●	½" NPT female with PT test ports	3.2	**153.00**
121349A ●●●	½" sweat with PT test ports	3.2	**145.00**
121351A ●●●	¾" NPT female with PT test ports	3.2	**157.00**
121359A ●●●	¾" sweat with PT test ports	3.2	**146.00**
121361A ●●●	1" NPT female with PT test ports	5.5	**304.00**
121369A ●●●	1" sweat with PT test ports	5.5	**290.00**
121371A ●●●	1¼" NPT female with PT test ports	5.5	**340.00**
121379A ●●●	1¼" sweat with PT test ports	5.5	**323.00**



Select desired flow rate to complete full part number.

Size	GPM	Last 3 digits ...	Differential Pressure Control Ranges (psid)
½", ¾"	0.35	G35	2 — 14
½", ¾"	0.5	G50	
½", ¾"	0.75	G75	
½", ¾"	1	1G0	2 — 32
½", ¾"	1.3	1G3	
½", ¾"	1.5	1G5	
½", ¾"	1.7	1G7	
½", ¾"	2	2G0	
½", ¾"	2.2	2G2	
½", ¾"	2.5	2G5	
½", ¾", 1"	2.6	2G6	
½", ¾", 1"	3	3G0	
½", ¾", 1"	3.5	3G5	
½", ¾", 1", 1¼"	4	4G0	
½", ¾", 1", 1¼"	4.5	4G5	
½", ¾", 1", 1¼"	5	5G0	
½", ¾", 1", 1¼"	6	6G0	4 — 34
½", ¾", 1", 1¼"	7	7G0	
½", ¾", 1", 1¼"	8	8G0	

Size	GPM	Last 3 digits ...	Differential Pressure Control Ranges (psid)
½", ¾", 1", 1¼"	9	9G0	5 — 35
½", ¾", 1", 1¼"	10	10G	
1", 1¼"	11	11G	3 — 32
1", 1¼"	12	12G	
1", 1¼"	13	13G	
1", 1¼"	14	14G	4 — 35
1", 1¼"	15	15G	
1", 1¼"	16	16G	
1", 1¼"	17	17G	
1", 1¼"	18	18G	
1", 1¼"	19	19G	
1", 1¼"	20	20G	
1", 1¼"	21	21G	

Size	Flow Rates
½"	.35 —10 GPM
¾"	.35 —10 GPM
1"	2.5—21 GPM
1¼"	4—21 GPM

Replacement flow cartridge kits are available. Consult factory.

THERMAL BALANCING VALVES FOR PLUMBING

1164 ThermoSetter™ NPT

Compact adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union Connections
Drywell for optional temperature gauge or probe.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment temperature range: 105 – 150 °F.
Factory set at 130 °F.
Cv max: 2.1; Cv min: 0.35.
Cv design: 0.69.

Code	Description	Lbs	USD
116440AC 002	½" NPT female union	1.6	**259.00**
116440AC 102*	½" NPT female union	2.4	**363.00**
116441AC 002	½" NPT female union, gauge	1.8	**276.00**
116441AC 102*	½" NPT female union, gauge	2.6	**386.00**
116450AC 002	¾" NPT female union	1.8	**285.00**
116450AC 102*	¾" NPT female union	2.6	**399.00**
116451AC 002	¾" NPT female union, gauge	2.0	**298.00**
116451AC 102*	¾" NPT female union, gauge	2.8	**417.00**

***With isolation valves.**

1164 ThermoSetter™ sweat

Compact adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union Connections
Drywell for optional temperature gauge or probe.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment temperature range: 105 – 150 °F.
Factory set at 130 °F.
Cv max: 2.1; Cv min: 0.35.
Cv design: 0.69.

Code	Description	Lbs	USD
116440AC 009	½" sweat union	1.4	**246.00**
116440AC 109	½" sweat union, iso. valves	2.2	**345.00**
116441AC 009	½" sweat union, gauge	1.6	**262.00**
116441AC 109	½" sweat union, gauge, iso. valves	2.4	**367.00**
116450AC 009	¾" sweat union	1.6	**271.00**
116450AC 109	¾" sweat union, iso. valves	2.4	**379.00**
116451AC 009	¾" sweat union, gauge	1.8	**283.00**
116451AC 109	¾" sweat union, gauge, iso. valves	2.6	**396.00**

1164 ThermoSetter™ PEX

Compact adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union Connections
Drywell for optional temperature gauge or probe.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment temperature range: 105 – 150 °F.
Factory set at 130 °F.
Cv max: 2.1; Cv min: 0.35.
Cv design: 0.69.

Code	Description	Lbs	USD
116440AC 008	½" PEX expansion union	1.6	**246.00**
116440AC 108*	½" PEX expansion union	2.4	**345.00**
116440AC 007	½" PEX crimp union	1.6	**246.00**
116440AC 107*	½" PEX crimp union	2.4	**345.00**
116441AC 008	½" PEX expansion union, gauge	1.8	**262.00**
116441AC 108*	½" PEX expansion union, gauge	2.6	**367.00**
116441AC 007	½" PEX crimp union, gauge	1.8	**262.00**
116441AC 107*	½" PEX crimp union, gauge	2.6	**367.00**
116450AC 008	¾" PEX expansion union	1.8	**271.00**
116450AC 108*	¾" PEX expansion union	2.6	**379.00**
116450AC 007	¾" PEX crimp union	2	**271.00**
116450AC 107*	¾" PEX crimp union	2.8	**379.00**
116451AC 008	¾" PEX expansion union, gauge	2.0	**283.00**
116451AC 108*	¾" PEX expansion union, gauge	2.8	**396.00**
116451AC 007	¾" PEX crimp union, gauge	2.0	**283.00**
116451AC 107*	¾" PEX crimp union, gauge	2.8	**396.00**

***With isolation valves.**

1164 ThermoSetter™ press

Compact adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union Connections
Drywell for optional temperature gauge or probe.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment temperature range: 105 – 150 °F.
Factory set at 130 °F.
Cv max: 2.1; Cv min: 0.35.
Cv design: 0.69.

Code	Description	Lbs	USD
116440AC 006	½" press union	1.4	**272.00**
116440AC 106	½" press union, iso. valves	2.2	**381.00**
116441AC 006	½" press union, gauge	1.6	**290.00**
116441AC 106	½" press union, gauge, iso. valves	2.4	**405.00**
116450AC 006	¾" press union	1.6	**299.00**
116450AC 106	¾" press union, iso. valves	2.4	**419.00**
116451AC 006	¾" press union, gauge	1.8	**313.00**
116451AC 106	¾" press union, gauge, iso. valves	2.6	**438.00**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

THERMAL BALANCING VALVES FOR PLUMBING

NEW

1162, 1166 ThermoSetter™ NPT

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union connections.
Temperature gauge included.
Standard with outlet check valve.
Max. working pressure: 230 psi.
1162 includes 160 °F bypass cartridge.
1166 includes 140 °F bypass cartridge.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116240AC 002	½" NPT female unions	1.8	**353.00**
116240AC 102	½" NPT female unions, iso. valves	2.4	**494.00**
116250AC 002	¾" NPT female unions	2.0	**379.00**
116250AC 102	¾" NPT female unions, iso. valves	3.2	**531.00**
116640AC 002	½" NPT female unions	1.8	**353.00**
116640AC 102	½" NPT female unions, iso. valves	2.4	**494.00**
116650AC 002	¾" NPT female unions	2.0	**379.00**
116650AC 102	¾" NPT female unions, iso. valves	3.2	**531.00**

NEW

1162, 1166 ThermoSetter™ sweat

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union connections.
Temperature gauge included.
Standard with outlet check valve.
Max. working pressure: 230 psi.
1162 includes 160 °F bypass cartridge.
1166 includes 140 °F bypass cartridge.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116240AC 009	½" sweat unions	1.7	**335.00**
116240AC 109	½" sweat unions, iso. valves	2.3	**469.00**
116250AC 009	¾" sweat unions	1.9	**360.00**
116250AC 109	¾" sweat unions, iso. valves	3.1	**504.00**
116640AC 009	½" sweat unions	1.7	**335.00**
116640AC 109	½" sweat unions, iso. valves	2.3	**469.00**
116650AC 009	¾" sweat unions	1.9	**360.00**
116650AC 109	¾" sweat unions, iso. valves	3.1	**504.00**

NEW

1162, 1166 ThermoSetter™ PEX

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union connections.
Temperature gauge included.
Standard with outlet check valve.
Max. working pressure: 230 psi.
1162 includes 160 °F bypass cartridge.
1166 includes 140 °F bypass cartridge.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116240AC 008	½" PEX expansion unions	1.8	**335.00**
116240AC 108	½" PEX expansion unions, iso. valves	2.4	**469.00**
116240AC 007	½" PEX crimp unions	1.8	**335.00**
116240AC 107	½" PEX crimp unions, iso. valves	2.4	**469.00**
116250AC 008	¾" PEX expansion unions,	2.0	**360.00**
116250AC 108	¾" PEX expansion unions, iso. valves	3.2	**504.00**
116250AC 007	¾" PEX crimp unions	2.0	**360.00**
116250AC 107	¾" PEX crimp unions, iso. valves	3.2	**504.00**
116640AC 008	½" PEX expansion unions	1.8	**335.00**
116640AC 108	½" PEX expansion unions, iso. valves	2.4	**469.00**
116640AC 007	½" PEX crimp unions	1.8	**335.00**
116640AC 107	½" PEX crimp unions, iso. valves	2.4	**469.00**
116650AC 008	¾" PEX expansion unions	2.0	**360.00**
116650AC 108	¾" PEX expansion unions, iso. valves	3.2	**504.00**
116650AC 007	¾" PEX crimp unions	2.0	**360.00**
116650AC 107	¾" PEX crimp unions, iso. valves	3.2	**504.00**

NEW

1162, 1166 ThermoSetter™ press

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
Union connections.
Temperature gauge included.
Standard with outlet check valve.
Max. working pressure: 230 psi.
1162 includes 160 °F bypass cartridge.
1166 includes 140 °F bypass cartridge.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116240AC 006	½" press unions	1.7	**371.00**
116240AC 106	½" press unions, iso. valves	2.3	**519.00**
116250AC 006	¾" press unions	1.9	**398.00**
116250AC 106	¾" press unions, iso. valves	2.1	**558.00**
116640AC 006	½" press unions	1.7	**371.00**
116640AC 106	½" press unions, iso. valves	2.3	**519.00**
116650AC 006	¾" press unions	1.9	**398.00**
116650AC 106	¾" press unions, iso. valves	2.1	**558.00**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

THERMAL BALANCING VALVES FOR PLUMBING

1161 ThermoSetter™ NPT

Adjustable thermal balancing valve, with capped bypass cavity for potential future upgrade, for domestic hot water recirculation circuits.
Union connections.
Drywell for temperature gauge or probe.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116140AC 002	½" NPT female unions	1.7	**313.00**
116140AC 102*	½" NPT female unions	2.3	**438.00**
116141AC 002	½" NPT female unions, gauge	1.8	**332.00**
116141AC 102*	½" NPT female unions, gauge	2.4	**465.00**
116150AC 002	¾" NPT female unions	1.9	**340.00**
116150AC 102*	¾" NPT female unions	3.1	**476.00**
116151AC 002	¾" NPT female unions, gauge	2.0	**359.00**
116151AC 102*	¾" NPT female unions, gauge	3.2	**503.00**

***With isolation valves.**

1161 ThermoSetter™ sweat

Adjustable thermal balancing valve, with capped bypass cavity for potential future upgrade, for domestic hot water recirculation circuits.
Union connections.
Drywell for temperature gauge or probe.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116140AC 009	½" sweat unions	1.6	**297.00**
116140AC 109*	½" sweat unions	2.2	**416.00**
116141AC 009	½" sweat unions, gauge	1.7	**315.00**
116141AC 109*	½" sweat unions, gauge	2.3	**442.00**
116150AC 009	¾" sweat unions	1.8	**323.00**
116150AC 109*	¾" sweat unions	3.0	**452.00**
116151AC 009	¾" sweat unions, gauge	1.9	**341.00**
116151AC 109*	¾" sweat unions, gauge	3.1	**478.00**

***With isolation valves.**

1161 ThermoSetter™ PEX

Adjustable thermal balancing valve, with capped bypass cavity for potential future upgrade, for domestic hot water recirculation circuits.
Union connections.
Drywell for temperature gauge or probe.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116140AC 008	½" PEX expansion unions	1.7	**297.00**
116140AC 108*	½" PEX expansion unions	2.3	**416.00**
116140AC 007	½" PEX crimp unions	1.7	**297.00**
116140AC 107*	½" PEX crimp unions	2.3	**416.00**
116141AC 008	½" PEX expansion unions, gauge	1.8	**315.00**
116141AC 108*	½" PEX expansion unions, gauge	2.4	**442.00**
116141AC 007	½" PEX crimp unions, gauge	1.8	**315.00**
116141AC 107*	½" PEX crimp unions, gauge	2.4	**442.00**
116150AC 008	¾" PEX expansion unions	1.9	**323.00**
116150AC 108*	¾" PEX expansion unions	3.1	**452.00**
116150AC 007	¾" PEX crimp unions	1.9	**323.00**
116150AC 107*	¾" PEX crimp unions, check	3.1	**452.00**
116151AC 008	¾" PEX expansion unions, gauge	2.0	**341.00**
116151AC 108*	¾" PEX expansion unions, gauge	3.2	**478.00**
116151AC 007	¾" PEX crimp unions, gauge	2.0	**341.00**
116151AC 107*	¾" PEX crimp unions, gauge	3.2	**478.00**

***With isolation valves.**

1161 ThermoSetter™ press

Adjustable thermal balancing valve, with capped bypass cavity for potential future upgrade, for domestic hot water recirculation circuits.
Union connections.
Drywell for temperature gauge or probe.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: .23;
Cv disinfection: 1.2; Cv design: .52

Code	Description	Lbs	USD
116140AC 006	½" press unions	1.6	**329.00**
116140AC 106*	½" press unions	2.2	**460.00**
116141AC 006	½" press unions, gauge	1.7	**349.00**
116141AC 106*	½" press unions, gauge	2.3	**488.00**
116150AC 006	¾" press unions	1.9	**357.00**
116150AC 106*	¾" press unions	3.1	**500.00**
116151AC 006	¾" press unions, gauge	1.9	**377.00**
116151AC 106*	¾" press unions, gauge	3.1	**528.00**

***With isolation valves.**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

THERMAL BALANCING VALVES FOR PLUMBING

1163 ThermoSetter™ NPT

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
With by-pass valve for thermal disinfection.
Purchase 656 actuator separately.
Union connections.
Temperature gauge included.
Actuator bypass.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv disinfection: 1.2; Cv design: 0.52

Code	Description	Lbs	USD
116340AC 002	½" NPT female union	1.8	**371.00**
116340AC 102	½" NPT female union, iso. valves	2.4	**519.00**
116350AC 002	¾" NPT female union	2.0	**395.00**
116350AC 102	¾" NPT female union, iso. valves	3.2	**553.00**

1163 ThermoSetter™ sweat

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
With by-pass valve for thermal disinfection.
Purchase 656 actuator separately.
Union connections.
Temperature gauge included.
Actuator bypass.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: 0.23.
Cv disinfection: 1.2; Cv design: 0.52.

Code	Description	Lbs	USD
116340AC 009	½" sweat union	1.7	**352.00**
116340AC 109	½" sweat union, iso. valves	2.3	**493.00**
116350AC 009	¾" sweat union	1.9	**375.00**
116350AC 109	¾" sweat union, iso valves	3.1	**525.00**

1163 ThermoSetter™ PEX

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
With by-pass valve for thermal disinfection.
Purchase 656 actuator separately.
Union connections.
Temperature gauge included.
Actuator bypass.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: 0.23.
Cv disinfection: 1.2; Cv design: 0.52.

Code	Description	Lbs	USD
116340AC 008	½" PEX expansion union	1.8	**352.00**
116340AC 108	½" PEX expansion union, iso. valves	2.4	**493.00**
116340AC 007	½" PEX crimp union	1.8	**352.00**
116340AC 107	½" PEX crimp union, iso. valves	2.4	**493.00**
116350AC 008	¾" PEX expansion union	2.0	**375.00**
116350AC 108	¾" PEX expansion union, iso. valves	3.2	**525.00**
116350AC 007	¾" PEX crimp union	2.0	**375.00**
116350AC 107	¾" PEX crimp union, iso. valves	3.2	**525.00**

1163 ThermoSetter™ press

Adjustable thermal balancing valve for domestic hot water recirculation circuits.
With by-pass valve for thermal disinfection.
Purchase 656 actuator separately.
Union connections.
Temperature gauge included.
Actuator bypass.
DZR low-lead brass body.
Standard with outlet check valve.
Max. working pressure: 230 psi.
Adjustment range; 95 – 140 °F
Cv max: 2.1; Cv min: 0.23.
Cv disinfection: 1.2; Cv design: 0.52.

Code	Description	Lbs	USD
116340AC 006	½" press union	1.7	**390.00**
116340AC 106	½" press union, iso. valves	2.3	**545.00**
116350AC 006	¾" press union	1.9	**415.00**
116350AC 106	¾" press union, iso. valves	2.1	**581.00**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

THERMAL BALANCING VALVES FOR PLUMBING

1162,1166 ThermoSetter™

Large body adjustable thermal balancing valve for domestic hot water recirculation circuits.
With integral FNPT. Thermal by-pass cartridge for thermal disinfection.
DZR low-lead brass body.
Temperature gauge included.
Max. working pressure: 230 psi.
Adjustment range: 95 – 150 °F
Cv max: 4.4; Cv min: 1.0.
Cv disinfection: 2.3; Cv design: 1.9.

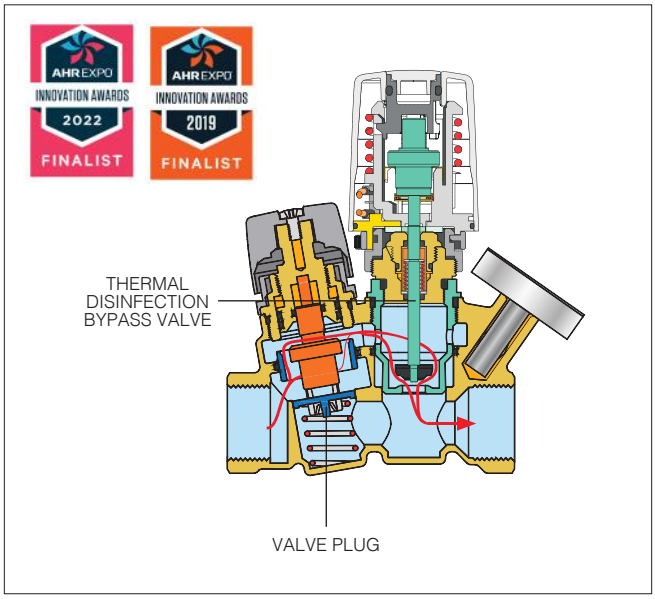
1161 ThermoSetter™

Large body adjustable thermal balancing valve, with capped bypass cavity for potential future upgrade, for domestic hot water recirculation circuits.
Integral FNPT.
Drywell for optional temperature gauge or probe.
DZR low-lead brass body.
Max. working pressure: 230 psi.
Adjustment range: 95 – 150 °F
Cv max: 4.4; Cv min: 1.0.
Cv disinfection: 2.3; Cv design: 1.9.

Code	Description	Lbs	USD
116260A	1" FNPT, 160°F bypass	1.8	**411.00**
116260AC	1" FNPT check, 160 °F bypass	2.0	**543.00**
116270A	1¼" FNPT, 160 °F bypass	1.7	**438.00**
116270AC	1¼" FNPT, check, 160 °F bypass	1.9	**583.00**
116660A	1" FNPT, 140 °F bypass	2.3	**411.00**
116660AC	1" FNPT, check, 140 °F bypass	2.5	**543.00**
116670A	1¼" FNPT, 140 °F bypass	2.2	**438.00**
116670AC	1¼" FNPT, check, 140 °F bypass	2.4	**583.00**

Code	Description	Lbs	USD
116160A	1" FNPT	2.1	**343.00**
116160AC	1" FNPT, check	2.3	**476.00**
116161A	1" FNPT, gauge	2.2	**358.00**
116161AC	1" FNPT, gauge, check	2.4	**492.00**
116170A	1¼" FNPT	2.0	**369.00**
116170AC	1¼" FNPT, check	2.2	**515.00**
116171A	1¼" FNPT, gauge	2.1	**383.00**
116171AC	1¼" FNPT, gauge, check	2.3	**530.00**

Construction details for 1163 ThermoSetter™



1163 ThermoSetter™

Large body adjustable thermal balancing valve for domestic hot water recirculation circuits.
Integral FNPT.
With by-pass valve for thermal disinfection.
Purchase 656 actuator separately.
Temperature gauge included.
DZR low-lead brass body.
Optional outlet check valve.
Max. working pressure: 230 psi.
Adjustment range: 95 – 150 °F
Cv max: 4.4; Cv min: 1.0.
Cv disinfection: 2.3; Cv design: 1.9.

Code	Description	Lbs	USD
116360A	1" FNPT	2.3	**426.00**
116360AC	1" FNPT, check valve	2.5	**559.00**
116370A	1¼" FNPT	2.2	**451.00**
116370AC	1¼" FNPT, check valve	2.4	**597.00**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

THERMAL BALANCING VALVES FOR PLUMBING

Thermal disinfection bypass cartridges.

Code	Description	Lbs	USD
F0001286	140 °F bypass cartridge	0.1	**52.70**
F0000580	160 °F bypass cartridge	0.1	**52.70**

Temperature gauge fits 116 ThermoSetter™.
Working temperature range: 30 – 180 °F.

Code	Description	Lbs	USD
116010	1½" dial temp. gauge	0.1	**15.00**

Actuator disinfection cartridge for use with 656 actuator.
Can be use to upgrade 1161 bodies for thermal disinfection

Code	Description	Lbs	USD
116000	replacement actuator bypass cartridge	0.1	**68.00**

Check valve fits fits integral FNPT 116 ThermoSetter™.
Serviceable stinless steel check.
DZR low-lead brass.
Max. working pressure: 150 psi.
Max. working temperature: 250 °F.

Code	Description	Lbs	USD
NA51361	1" MNPT in, 1" FNPT out	1.1	**131.00**
NA51371	1¼" MNPT in, 1¼" FNPT out	1.3	**144.00**

Replacement main balancing cartridge.

Code	Description	Lbs	USD
F0001516	½", ¾" balancing cartridge	0.1	**52.70**

Insulation shell fits 116 ThermoSetter™ thermal balancing valve.

Code	Description	Lbs	USD
CBN116140*	insulation shell for 1161, 1162, 1163	0.1	**36.40**
CBN116440*	insulation shell for 1164	0.1	**35.70**
CBN116160**	insulation shell for 1161, 1162, 1163	0.1	**38.90**

*Fits ½" and ¾"
**Fits1" and 1¼"

To order a large body ThermoSetter™ (that has integral FNPT connections) with isolation ball valves, add suffix "...001" to the code. See Section 12 for isolation valve details. **Contact Caleffi for 116...001 List Prices.**

CALEFFI
Hydronic Solutions

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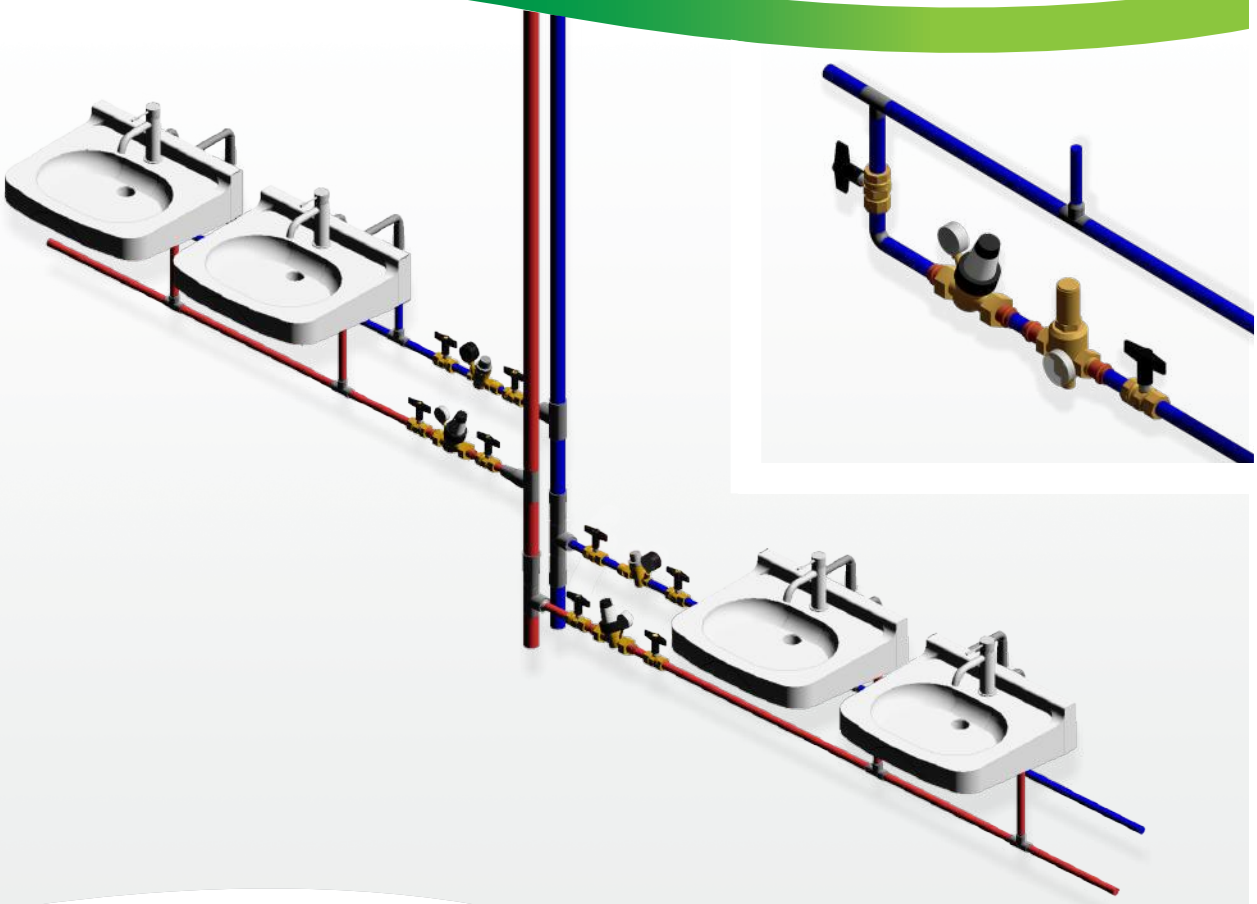
PRESCAL™ PRVS

PRECISION ENGINEERED FOR DURABLE PERFORMANCE

AHR EXPO
INNOVATION AWARDS
2023
WINNER

Removable cartridges make service simple. PresCal™ pressure reducing valves feature one-piece, self-contained cartridges with stainless steel mesh filters to keep dirt out and speed up rebuilds. Optional pressure gauges allow for visual verification of the setting. **CALEFFI GUARANTEED.**



This diagram is for illustration purposes only

BIM
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PRODUCTS INCLUDED IN SECTION

Pressure reducing valves
Compact pressure reducing valves
High range piston type pressure reducing valves
Low range piston type pressure reducing valves

PRESSURE REDUCING VALVES

535H PresCal™ sweat

Pressure reducing valve for residential and commercial applications.
DZR low-lead brass body.
Max. working pressure: 300 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15 — 90 psi.
Front and back set point indication for visibility in any mounting orientation.
UV protective cover included.

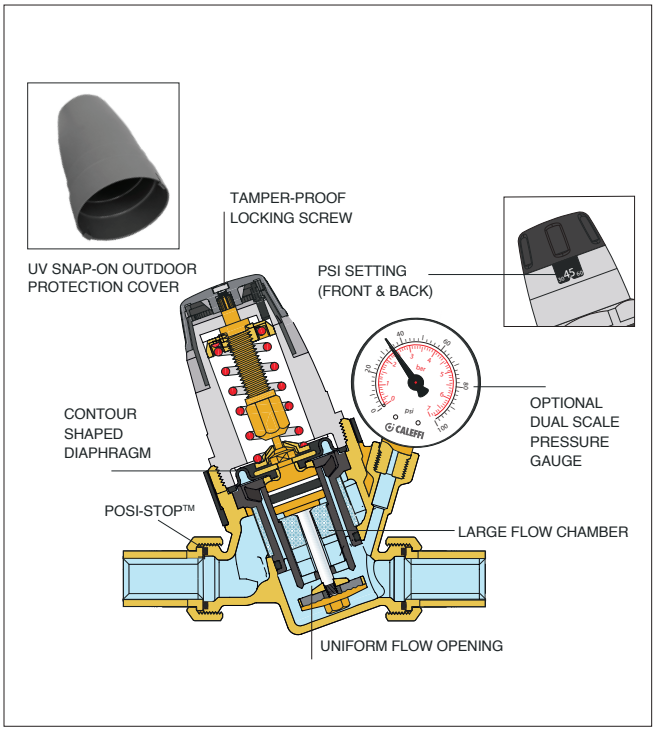
Code	Description	Lbs	USD
535940HA	½" sweat unions	1.9	**117.00**
535941HA	½" sweat unions, gauge	2.0	**128.00**
535950HA	¾" sweat unions	2.2	**128.00**
535951HA	¾" sweat unions, gauge	2.3	**140.00**
535960HA	1" sweat unions	2.9	**168.00**
535961HA	1" sweat unions, gauge	3.0	**180.00**
535970HA	1¼" sweat unions	5.6	**372.00**
535971HA	1¼" sweat unions, gauge	5.7	**383.00**
535980HA	1½" sweat unions	7.3	**522.00**
535981HA	1½" sweat unions, gauge	7.4	**533.00**
535990HA	2" sweat unions	9.7	**677.00**
535991HA	2" sweat unions, gauge	9.8	**689.00**

535H PresCal™ NPT

Pressure reducing valve for residential and commercial applications.
DZR low-lead brass body.
Max. working pressure: 300 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15 — 90 psi.
Front and back set point indication for visibility in any mounting orientation.
UV protective cover included.

Code	Description	Lbs	USD
535340HA	½" NPT female unions	2.0	**128.00**
535341HA	½" NPT female unions, gauge	2.1	**140.00**
535350HA	¾" NPT female unions	2.3	**137.00**
535351HA	¾" NPT female unions, gauge	2.4	**148.00**
535360HA	1" NPT female unions	3.0	**179.00**
535361HA	1" NPT female unions, gauge	3.1	**190.00**
535370HA	1¼" NPT female unions	5.7	**383.00**
535371HA	1¼" NPT female unions, gauge	5.8	**395.00**
535380HA	1½" NPT female unions	7.3	**549.00**
535381HA	1½" NPT female unions, gauge	7.4	**560.00**
535390HA	2" NPT female unions	9.7	**677.00**
535391HA	2" NPT female unions, gauge	9.8	**689.00**

Construction details for 535H PresCal™



535H PresCal™ press

Pressure reducing valve for residential and commercial applications.
DZR low-lead brass body.
Max. working pressure: 300 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15 — 90 psi.
Front and back set point indication for visibility in any mounting orientation.
UV protective cover included.

Code	Description	Lbs	USD
535640HA	½" press unions	1.9	**141.00**
535641HA	½" press unions, gauge	2.0	**152.00**
535650HA	¾" press unions	2.3	**144.00**
535651HA	¾" press unions, gauge	2.4	**155.00**
535660HA	1" press unions	3.0	**195.00**
535661HA	1" press unions, gauge	3.1	**207.00**
535670HA	1¼" press unions	5.8	**543.00**
535671HA	1¼" press unions, gauge	5.8	**554.00**
535680HA	1½" press unions	7.3	**779.00**
535681HA	1½" press unions, gauge	7.4	**791.00**
535690HA	2" press unions	9.7	**960.00**
535691HA	2" press unions, gauge	9.8	**971.00**

Complies with standards ASSE 1003, CSA B356, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.
Plenum rated: compliant with the requirements of standard UL 2043.

PRESSURE REDUCING VALVES

535H PresCal™ PEX

Pressure reducing valve for residential and commercial applications.
DZR low-lead brass body.
Max. working pressure: 300 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15 — 90 psi.
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.
Front and back set point indication for visibility in any mounting orientation.
UV protective cover included.

Code	Description	Max GPM	Lbs	USD
535750HA	¾" PEX crimp unions	12	2.3	**128.00**
535751HA	¾" PEX crimp unions, gauge	12	2.4	**140.00**
535550HA	¾" PEX expansion unions	19	2.3	**128.00**
535551HA	¾" PEX expansion unions, gauge	19	2.4	**140.00**
535760HA	1" PEX crimp unions	12	3.0	**168.00**
535761HA	1" PEX crimp unions, gauge	12	3.1	**180.00**
535560HA	1" PEX expansion unions	19	3.0	**168.00**
535561HA	1" PEX expansion unions, gauge	19	3.1	**180.00**

PVC jumper nipple with male union thread. The length of the jumper nipple matches the 535H Series valve body face-to-face dimension (B'), allowing the piping to be completed prior to the installation of valve and permitting quick change out from the jumper to the valve.

Code	Description	Lbs	USD
NA11304	jumper nipple for 535H ½"	0.1	**15.90**
NA11375*	jumper nipple for 535H ¾"	0.1	**21.50**
NA11376*	jumper nipple for 535H 1"	0.2	**23.10**
NA11307	jumper nipple for 535H 1¼"	0.3	**20.10**
NA11308	jumper nipple for 535H 1½"	0.3	**21.90**
NA11309	jumper nipple for 535H 2"	0.5	**63.20**

*With filter screen.

535H PresCal™ Body

Replacement valve body.
DZR low lead body.
Gauge port plug NA10438 included with body.
See fitting selection in Section 13.

Code	Description	Lbs	USD
NA535840HA	½" body	1.9	**89.10**
NA535841HA	½" body, gauge	2.0	**101.00**
NA535850HA	¾" body	2.2	**93.90**
NA535851HA	¾" body, gauge	2.3	**105.00**
NA535860HA	1" body	2.9	**124.00**
NA535861HA	1" body, gauge	3.0	**136.00**
NA535870HA	1¼" body	6.1	**271.00**
NA535871HA	1¼" body, gauge	6.2	**283.00**
NA535880HA	1½" body	7.3	**382.00**
NA535881HA	1½" body, gauge	7.4	**394.00**
NA535890HA	2" body	9.7	**443.00**
NA535891HA	2" body, gauge	9.8	**456.00**

Replacement cartridge for 535H Series pressure reducer.

Code	Description	Lbs	USD
535006HA	Fits 535H ½", ¾" , 1"	0.3	**65.70**
535009HA	Fits 535H 1¼", 1½", 2"	0.5	**198.00**

Complies with standards ASSE 1003, CSA B356, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.
Plenum rated: compliant with the requirements of standard UL 2043.

COMPACT PRESSURE REDUCING VALVES

533H PresCal™ Compact sweat

Compact pressure reducing valve for residential and light commercial applications.
DZR low lead body with inlet union connection.
Low friction anti-scale moving parts.
High flow seat design.
Adjustment screw for pressure set point.
Tamper-resistant cap included.
Max. working pressure: 250 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15-80 psi.
Factory setting: 45 psi.

Code	Description	USD
533940HA	½", sweat unions in, FNPT out	**91.30**
533941HA*	½", sweat unions in, FNPT out, gauge	**104.00**
533950HA	¾", sweat unions in, FNPT out	**65.90**
533951HA*	¾", sweat unions in, FNPT out, gauge	**77.30**

533H PresCal™ Compact press

Compact pressure reducing valve for residential and light commercial applications.
DZR low-lead brass body with inlet union connection.
Low friction anti-scale moving parts.
High flow seat design.
Adjustment screw for pressure set point.
Tamper-resistant cap included.
Max. working pressure: 250 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15-80 psi.
Factory setting: 45 psi.

Code	Description	Lbs	USD
533640HA	½", press unions in, FNPT out	2.3	**110.00**
533641HA*	½", press unions in, FNPT out, gauge	2.4	**121.00**
533650HA	¾", press unions in, FNPT out	2.3	**65.90**
533651HA*	¾", press unions in, FNPT out, gauge	2.4	**77.30**

533H PresCal™ Compact NPT

Compact pressure reducing valve for residential and light commercial applications.
DZR low-lead brass body with inlet union connection.
Low friction anti-scale moving parts.
High flow seat design.
Adjustment screw for pressure set point.
Tamper-resistant cap included.
Max. working pressure: 250 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15-80 psi.
Factory setting: 45 psi.

Code	Description	Lbs	USD
533340HA	½", NPT female unions in, FNPT out	1.9	**100.00**
533341HA	½", NPT female unions in, FNPT out, gauge	2.0	**113.00**
533350HA	¾", NPT female unions in, FNPT out	2.2	**65.90**
533351HA	¾", NPT female unions in, FNPT out, gauge	2.3	**77.30**

533H PresCal™ Compact PEX

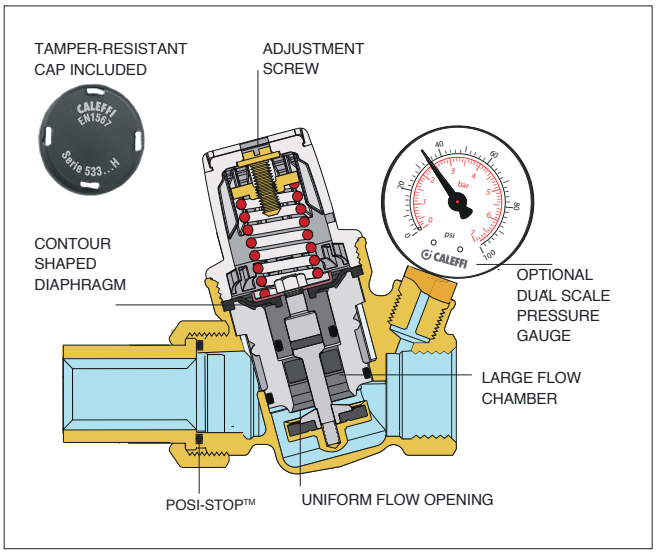
Compact pressure reducing valve for residential and light commercial applications.
DZR low-lead brass body with inlet union connection.
Low friction anti-scale moving parts.
High flow seat design.
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.
Adjustment screw for pressure set point.
Tamper-resistant cap included.
Max. working pressure: 250 psi.
Max. working temperature: 180 °F.
Pressure setting range: 15-80 psi.
Factory setting: 45 psi.

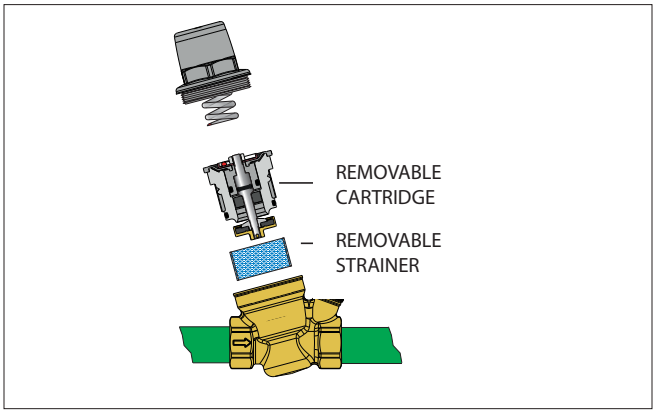
Code	Description	Lbs	USD
533750HA	¾", PEX crimp unions in, FNPT out	2.3	**65.90**
533751HA	¾", PEX crimp unions in, FNPT out, gauge	2.4	**77.30**
533850HA	¾", PEX expansion unions in, FNPT out	2.3	**65.90**
533851HA	¾", PEX expansion unions in, FNPT out, gauge	2.3	**77.30**

Complies with standards ASSE 1003, CSA B356, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.

COMPACT PRESSURE REDUCING VALVES

Construction details for 533H PresCal™





Replacement cartridge for 533H Series pressure reducer.

Code	Description	Lbs	USD
533000H	Fits 533H ½", ¾"	0.2	**49.10**

533H PresCal™ Body

Replacement valve body.
DZR low lead body.
Gauge port plug NA10438 included with body.
See fitting selection in Section 13.

Code	Description	Lbs	USD
NA533449HA	½" body	0.7	**81.60**
NA533459HA	¾" body	0.9	**86.30**

Pressure gauge fits 535H and 533H Series pressure reducers.
Dial size: 2".
Pressure range: 0—100 psi /0-7 bar.
Connection: ⅛" NPT.

Code	Description	Lbs	USD
NA10273	⅛" NPT male	0.1	**14.60**

HIGH RANGE PISTON TYPE PRESSURE REDUCING VALVES

536 PresCal™ HP sweat High Range

High performance piston type pressure reducing valve for high rise buildings and other applications where high pressures are present and require staged pressure control.
DZR low-lead brass body.
Pressure gauge: 0 – 200 psi.
Max. working pressure: 360 psi.
Max. working temperature: 180 °F.
Pressure setting range: 90 – 150 psi
Factory setting: 115 psi.

Code	Description	Lbs	USD
536043A 109	½" sweat unions	3.3	**321.00**
536053A 109	¾" sweat unions	4.4	**354.00**
536063A 109	1" sweat unions	5.0	**468.00**
536073A 109	1¼" sweat unions	7.5	**648.00**
536083A 109	1½" sweat unions	8.8	**793.00**
536093A 109	2" sweat unions	12	**1,020.00**

536 PresCal™ HP NPT High Range

High performance piston type pressure reducing valve for high rise buildings and other applications where high pressures are present and require staged pressure control.
DZR low-lead brass body.
Pressure gauge: 0 – 200 psi.
Max. working pressure: 360 psi.
Max. working temperature: 180 °F.
Pressure setting range: 90 – 150 psi
Factory setting: 115 psi.

Code	Description	Lbs	USD
536043A 103	½" NPT female unions	3.3	**338.00**
536053A 103	¾" NPT female unions	4.4	**372.00**
536063A 103	1" NPT female unions	5.0	**491.00**
536073A 103	1¼" NPT female unions	7.5	**680.00**
536083A 103	1½" NPT female unions	8.8	**835.00**
536093A 103	2" NPT female unions	11	**1,073.00**

NEW

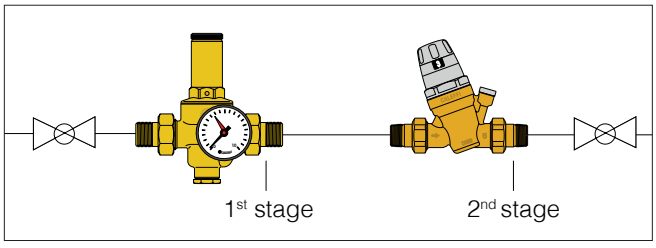
536 PresCal™ HP press High Range

High performance piston type pressure reducing valve for high rise buildings and other applications where high pressures are present and require staged pressure control.
DZR low-lead brass body.
Pressure gauge: 0 – 200 psi.
Max working pressure:
300 psi (½", ¾", 1"); 200 psi (1¼", 1½", 2")
Max. working temperature: 180 °F.
Pressure setting range: 90 – 150 psi
Factory setting: 115 psi.

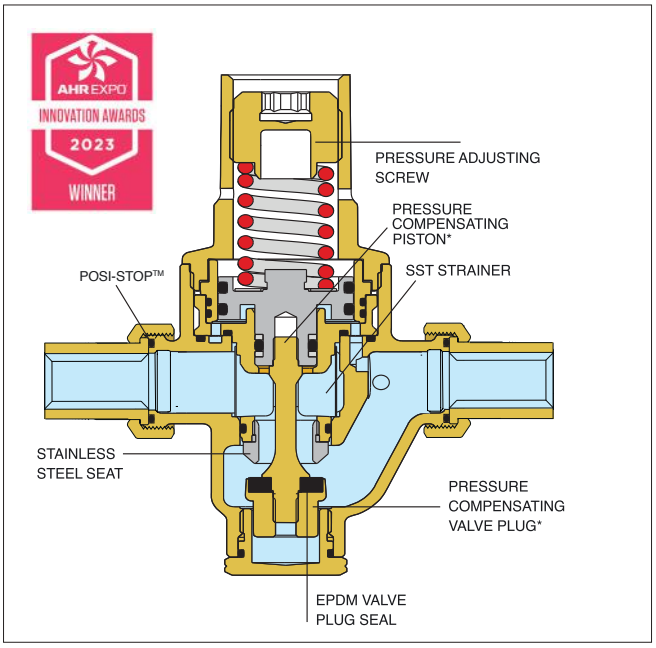
Code	Description	Lbs	USD
536043A 106	½" press unions	3.3	**353.00**
536053A 106	¾" press unions	4.4	**409.00**
536063A 106	1" press unions	5.0	**540.00**
536073A 106	1¼" press unions	7.5	**749.00**
536083A 106	1½" press unions	8.8	**959.00**
536093A 106	2" press unions	12	**1,406.00**

Application diagram

The high range 536A PresCal HP is designed for 1st stage pressure control due to it's adjustment range of 90 - 150 psi. The 2nd stage PRV is typically a diaphragm type, such as the 535H PresCal, with an adjustment range of 15 - 90 psi.



Construction details for 536 PresCal™ HP



Gauge for high range.
Dual-scale gauge.
0 - 200 psi and 0 - 1400 kPa.
2½" dial.
¼" CBM.

Code	Description	Lbs	USD
NA10813	0-200 psi	0.4	**54.10**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.

LOW RANGE PISTON TYPE PRESSURE REDUCING VALVES

536 PresCal™ HP sweat Low Range

High performance piston type pressure reducing valve designed for demanding applications where water hammer and pressure spikes are present that would damage a diaphragm type PRV.
DZR low-lead brass body.
Pressure gauge: 0 – 100 psi.
Max working pressure: 300 psi.
Max working temperature: 180 °F
Pressure setting range 10 – 90 psi.
Factory setting 45 psi

Code	Description	Lbs	USD
536044A 109	½" sweat unions	3.3	**321.00**
536054A 109	¾" sweat unions	4.4	**354.00**
536064A 109	1" sweat unions	5.0	**468.00**
536074A 109	1¼" sweat unions	7.5	**648.00**
536084A 109	1½" sweat unions	8.8	**793.00**

536 PresCal™ HP press Low Range

High performance piston type pressure reducing valve designed for demanding applications where water hammer and pressure spikes are present that would damage a diaphragm type PRV.
DZR low-lead brass body.
Pressure gauge: 0 – 100 psi.
Max working pressure:
300 psi (½", ¾", 1"); 200 psi (1¼", 1½")
Max working temperature: 180 °F
Pressure setting range 10 – 90 psi.
Factory setting 45 psi.

Code	Description	Lbs	USD
536044A 106	½" press unions	3.3	**330.00**
536054A 106	¾" press unions	4.4	**409.00**
536064A 106	1" press unions	5.0	**540.00**
536074A 106	1¼" press unions	7.5	**749.00**
536084A 106	1½" press unions	8.8	**959.00**

O-ring seal and NA10810 gauge adapter for 536A PresCal™ HP valves.

Code	Description	Lbs	USD
R57264*	o-ring seal	0.1	**1.00**
NA10810**	¼" G male x ¼" FNPT	0.3	**24.90**

*for NA10810 gauge adapter for high and low range.
**Gauge adapter fitting for high and low range.

Function
The PresCal™HP 536 Series pressure reducing valve is a high performance true piston-type PRV that can withstand the punishing conditions of water hammer while ensuring high pressure reduction and control. Models 536x3A, with set point adjustment range 90 to 150 psi, provide the first stage of pressure reduction in a two-valve Series where the pressure ratio between the inlet and outlet would be too high for single PRV to control. Models 536x4A, also a piston PRV, comply with ASSE 1003, CSA B356, have a standard adjustment range of 10 to 90 psi and the all-metal design makes them ideal for commercial kitchen and commercial laundry, outdoor locations and irrigation pressure control.

536 PresCal™ HP NPT Low Range

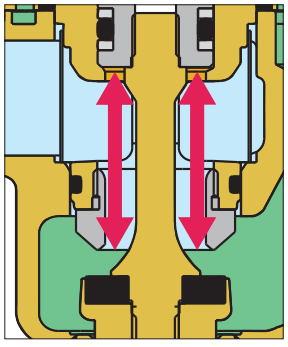
High performance piston type pressure reducing valve designed for demanding applications where water hammer and pressure spikes are present that would damage a diaphragm type PRV.
DZR low-lead brass body.
Pressure gauge: 0-100 psi.
Max working pressure: 300 psi.
Max working temperature: 180 °F
Pressure setting range 10 - 90 psi.
Factory setting 45 psi

Code	Description	Max GPM	Lbs	USD
536044A 103	½" NPT female unions	7.3	3.3	**338.00**
536054A 103	¾" NPT female unions	12	4.4	**372.00**
536064A 103	1" NPT female unions	19	5.0	**491.00**
536074A 103	1¼" NPT female unions	34	7.5	**680.00**
536084A 103	1½" NPT female unions	44	8.8	**835.00**

Gauge for low range.
Dual-scale gauge.
0 - 100 psi and 0 - 700 kPa.
2½" dial.
¼" CBM.

Code	Description	Lbs	USD
NA10817	0-100 psi gauge, low range	0.4	**52.50**

Pressure compensating
Caleffi 536A Series pressure reducing valves are designed with a pressure balanced seat/plug. This ensures precise and constant controlled outlet pressure despite upstream pressure fluctuations. In the figure, the thrust towards the opening is counterbalanced by the force created by the closing pressure acting on the compensating piston. Since the piston has a surface area equal to that of the valve plug, the two forces cancel out each other.



Complies with standards ASSE 1003, CSA B356, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.

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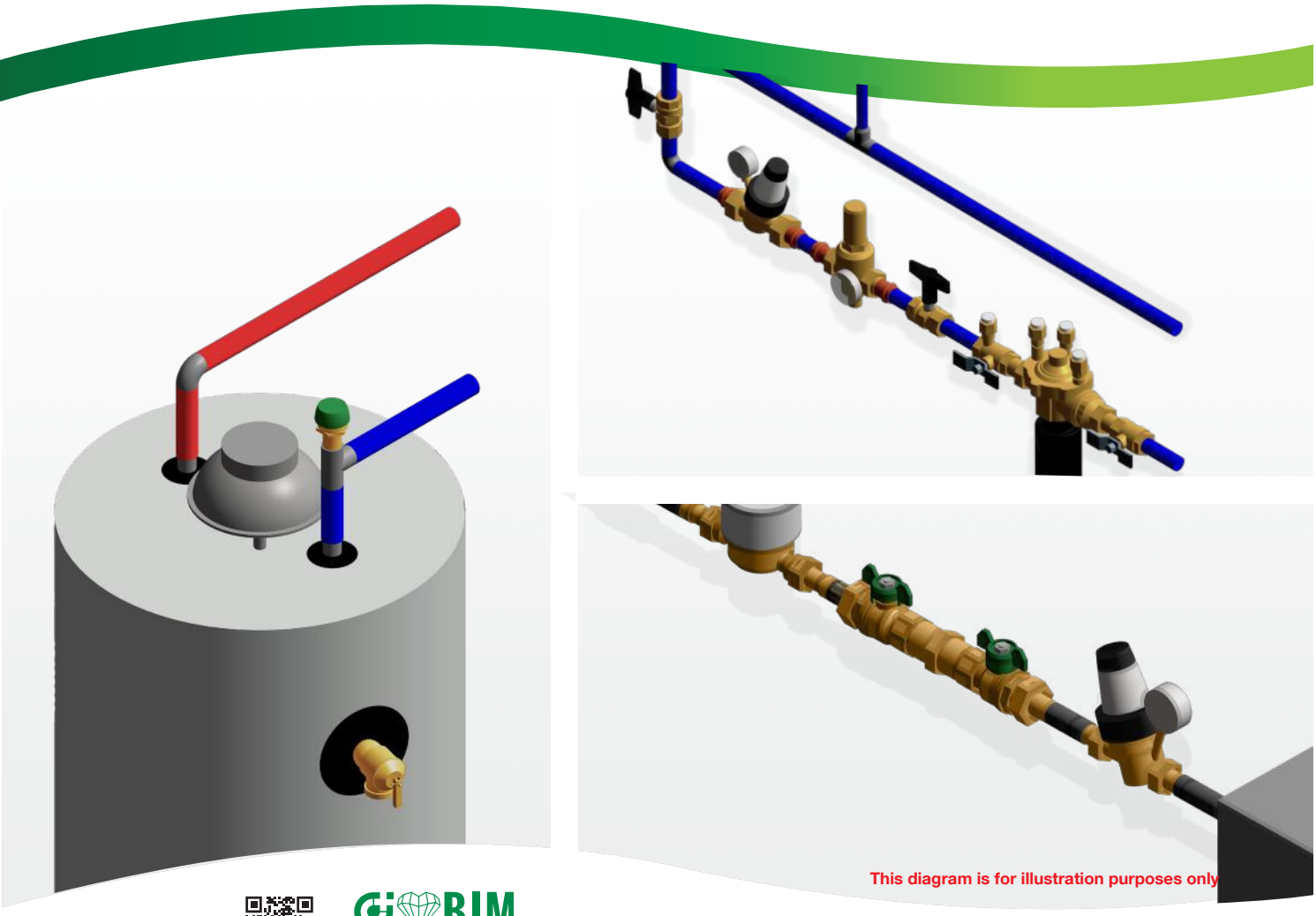
ASK CALEFFI

The Ask Caleffi podcast Series follows Greg Tubbs and Dan Firkus as they discuss tricky heating and plumbing system problems. Learn how to incorporate best practices and hear what industry expert guests are up to. **CALEFFI GUARANTEED.**



This diagram is for illustration purposes only

BIM
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PRODUCTS INCLUDED IN SECTION

Backflow preventers, RPZ type
Backflow preventers, dual check (DuC)
Backflow preventers, dual check, atmospheric vent (DuC-AV)
Vacuum relief valve

BACKFLOW PREVENTERS, RPZ TYPE

574 FlowShield™ RP

Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

Code	Description	Lbs	USD
574004A	½" FNPT	5.0	**361.00**
574064A	½" press	5.1	**382.00**
NA11604	complete rebuild kit (½")	0.7	**80.00**
59977*	upstream check valve	0.1	**22.40**
59978*	downstream check valve	0.2	**40.20**
59979*	discharge valve assembly	0.1	**25.90**
59980*	discharge air gap	0.1	**54.10**
F0001006*	test port valve (½" - 1")	0.2	**24.70**

*Replacement

574 FlowShield™ RP

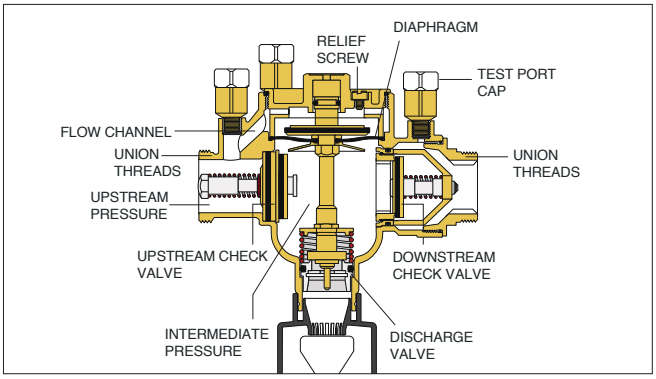
Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

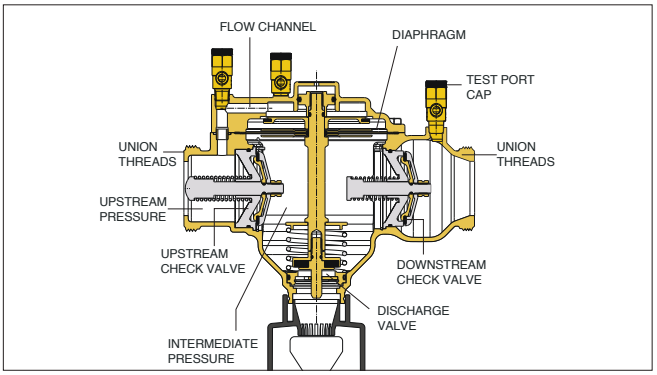
Code	Description	Lbs	USD
574050A	¾" FNPT	9.5	**433.00**
574056A	¾" press	9.6	**471.00**
NA11605	complete rebuild kit (¾")	0.8	**258.00**
59469*	upstream check valve (¾")	0.2	**57.60**
59470*	downstream check valve (¾")	0.2	**61.20**
59471*	discharge valve assembly (¾")	0.3	**122.00**
59472*	valve seat (¾")	0.1	**43.20**
39623*	discharge air gap (¾" to 2")	0.2	**59.50**
F0001006*	test port valve (½" to 1")	0.2	**24.70**

*Replacement

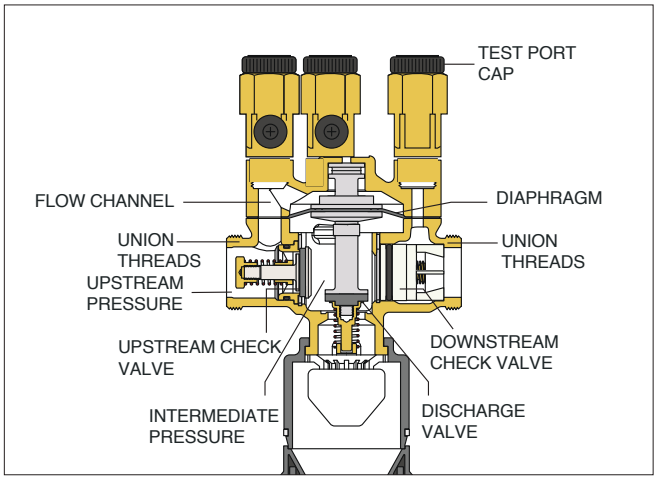
Construction details for 1¼" and 1½" 574 FlowShield™ RP



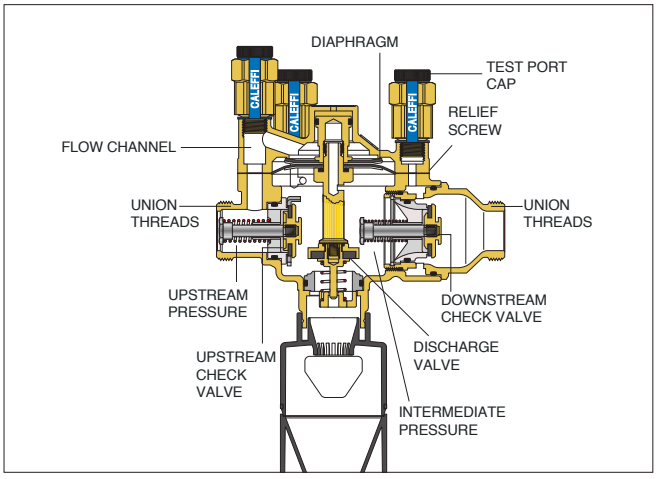
Construction details for 2" 574 FlowShield™ RP



Construction details for ½" 574 FlowShield™ RP



Construction details for ¾" and 1" 574 FlowShield™ RP



Listed and certified by ASSE to standard 1013. Complies with standards CSA B64.4, AWWA C511, NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372.

BACKFLOW PREVENTERS, RPZ TYPE

574 FlowShield™ RP

Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

Code	Description	Lbs	USD
574006A	1" FNPT	11	**451.00**
574066A	1" press	11	**501.00**
NA11606	complete rebuild kit (1")	0.8	**303.00**
59455*	upstream check valve (1")	0.3	**94.10**
59456*	downstream check valve (1")	0.3	**94.10**
59471*	discharge valve assembly (1")	0.3	**122.00**
59472*	valve seat (1")	0.1	**43.20**
39623*	discharge air gap (¾" to 2")	0.2	**59.50**
F0001006*	test port valve (½" to 1")	0.2	**24.70**

*Replacement

574 FlowShield™ RP

Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

Code	Description	Lbs	USD
574700A	1¼" FNPT	14	**821.00**
574706A	1¼" press	14	**934.00**
NA11607	complete rebuild kit (1¼")	1.4	**367.00**
59455*	upstream check valve (1¼")	0.3	**94.10**
59456*	downstream check valve (1¼")	0.3	**94.10**
59457*	discharge valve assembly (1¼")	0.6	**133.00**
59458*	valve seat (1¼")	0.2	**45.40**
39623*	discharge air gap (¾" to 2")	0.2	**59.50**
F0001901	test port valve (1¼" to 2")	0.2	**20.10**

*Replacement

574 FlowShield™ RP

Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

Code	Description	Lbs	USD
574801A	1½" FNPT	14	**887.00**
574806A	1½" press	14	**1,006.00**
NA11608	complete rebuild kit (1½")	1.4	**367.00**
59455*	upstream check valve (1½")	0.3	**94.10**
59456*	downstream check valve (1½")	0.6	**94.10**
59457*	discharge valve assembly (1½")	0.6	**133.00**
59458*	valve seat (1½")	0.2	**45.40**
39623*	discharge air gap (¾" to 2")	0.2	**59.50**
F0001901	test port valve (1¼" to 2")	0.2	**20.10**

*Replacement

574 FlowShield™ RP

Testable reduced pressure zone backflow preventer **with air gap.**
DZR low lead brass body.
Max. working pressure: 150 psi.
Max. working temperature: 150 °F.

1013 B64.4

Code	Description	Lbs	USD
574900A	2" FNPT	20	**1,396.00**
574906A	2" press	20	**1,606.00**
NA11609	complete rebuild kit (2")	1.8	**709.00**
59459*	upstream check valve (2")	0.4	**152.00**
59460*	downstream check valve (2")	0.4	**135.00**
59461*	discharge valve assembly (2")	0.7	**258.00**
59462*	valve seat (2")	0.3	**51.90**
39623*	discharge air gap (¾" to 2")	0.2	**59.50**
F0001901	test port valve (1¼" to 2")	0.2	**20.10**

*Replacement

Listed and certified by ASSE to standard 1013. Complies with standards CSA B64.4, AWWA C511, NSF/ANSI/CAN 61 and NSF/ANSI/CAN 372.

BACKFLOW PREVENTERS, DUAL CHECK (DuC)

NEW

3048 FlowShield™ DuC sweat

Dual check backflow preventer.
DZR low-lead brass body.
Max working pressure 175 psi.
Operating temperature range 32 – 180 °F

Code	Description	Lbs	USD
304849A	½" sweat	1.2	**79.00**
304859A	¾" sweat	1.6	**80.00**
304869A	1" sweat	1.6	**89.00**

NEW

3048 FlowShield™ DuC MNPT

Serviceable inline spring check valves.
DZR low-lead brass body.
Max working pressure 175 psi.
Operating temperature range 32 – 180 °F

Code	Description	Lbs	USD
304840A	½" MNPT	1.0	**85.00**
304850A	¾" MNPT	1.2	**86.00**
304860A	1" MNPT	1.6	**94.00**

NEW

3048 FlowShield™ DuC FNPT

Dual check backflow preventer.
DZR low-lead brass body.
Max working pressure 175 psi.
Operating temperature range 32 – 180 °F

Code	Description	Lbs	USD
304843A	½" FNPT	1.2	**85.00**
304853A	¾" FNPT	1.6	**86.00**

Function
Dual check backflow preventer for residential domestic water supply lines or commercial low-hazard backflow applications, wherever **ASSE 1024** backflow preventers are approved.

NEW

3048 FlowShield™ DuC PEX

Dual check backflow preventer.
DZR low-lead brass body.
Max working pressure 175 psi.
Operating temperature range 32 – 180 °F
PEX crimp: ASTM F1807.
PEX expansion: ASTM F1960.

Code	Description	Lbs	USD
304847A	½" PEX crimp	1.0	**79.00**
304848A	½" PEX expansion	1.0	**79.00**
304857A	¾" PEX crimp	1.2	**80.00**
304858A	¾" PEX expansion	1.2	**80.00**
304867A	1" PEX crimp	1.4	**89.00**
304868A	1" PEX expansion	1.4	**89.00**

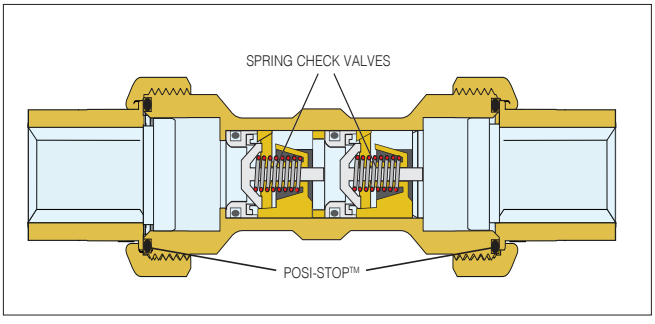
NEW

3048 FlowShield™ DuC press

Dual check backflow preventer.
DZR low-lead brass body.
Max working pressure 175 psi.
Operating temperature range 32 – 180 °F

Code	Description	Lbs	USD
304846A	½" press	1.0	**92.00**
304856A	¾" press	1.2	**93.00**
304866A	1" press	1.4	**102.00**

Construction details for 3048 FlowShield™ DuC



Complies with standards ASSE 1024, CSA B64.6, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC.

BACKFLOW PREVENTERS, DUAL CHECK, ATMOSPHERIC VENT (DuC-AV)

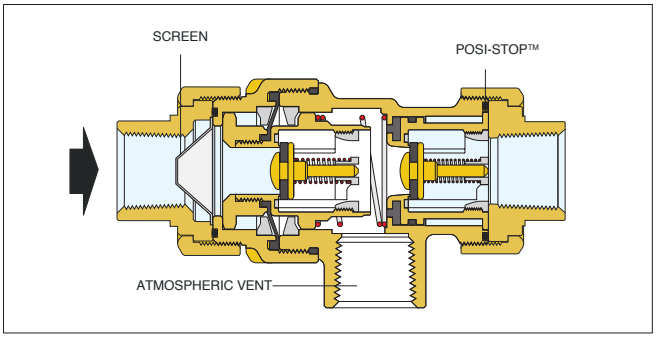
573
FlowShield™ DuC-AV

Dual check continuous pressure backflow preventer with atmospheric vent.
DZR low lead brass body.
Max. working pressure: 175 psi.
Working temperature range: 32 – 250 °F.
Emergency backpressure temperature: 250 °F.

Code	Description	Lbs	USD
573403A	½" NPT female unions	1.7	**97.50**
573406A	½" press unions	1.7	**119.00**
573409A	½" sweat unions	1.7	**92.70**
573493A	½" sweat union inlet, ½" FNPT union outlet	1.7	**95.40**
573503A	¾" NPT female unions	1.7	**102.00**
573100A*	replacement body w/washers	1.5	**71.60**

***See fitting selection in Section 13.**

Construction details



Complies with standards ASSE 1012, CSA B64.3, NSF/ANSI/CAN 372 and with codes IPC, IRC, UPC. Certified by ICC-ES.

VACUUM RELIEF VALVE

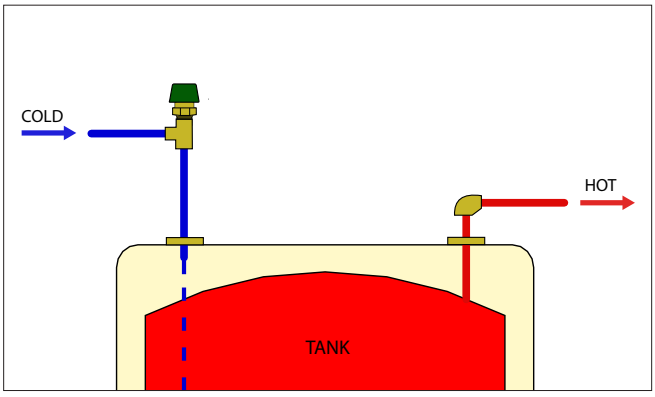
NEW

304
Vacu-Stop™ (VRV)

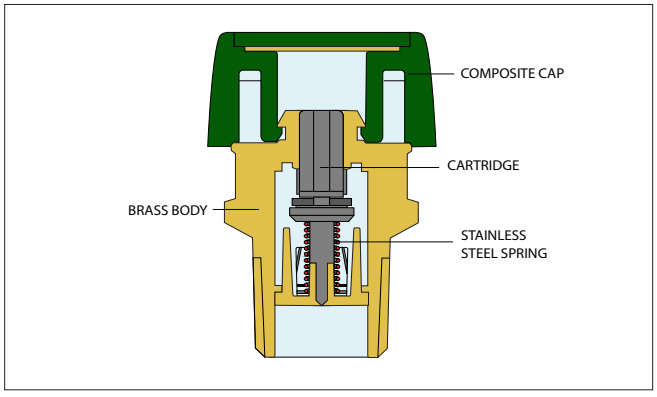
Vacuum relief valves (VRV) automatically allow air to enter into the piping system to prevent vacuum conditions that could siphon the water from the system and damage water heater/tank equipment. VRVs are suitable for water and low pressure steam service and are ideal for use in water heaters and supply tanks, table top heaters, jacketed steam kettles, unit heaters, low pressure steam systems, and steam coil heaters.
DZR low-lead brass body.
Max working pressure 200 psi.
Operating temperature range 32 – 250 °F.

Code	Description	Lbs	USD
304040A	½" MNPT vacuum relief valve	0.8	**35.00**
304050A	¾" MNPT vacuum relief valve	0.8	**38.00**

Application diagram



Construction details for 304 Vacu-Stop™



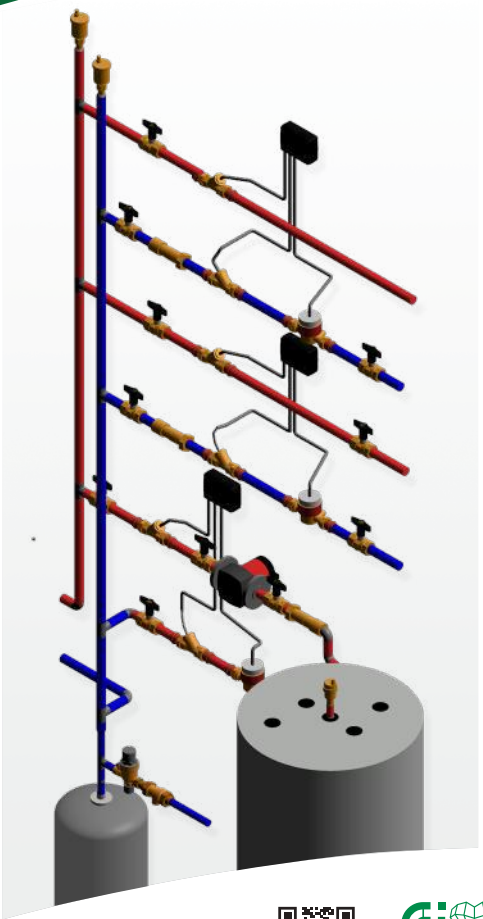
Complies with standards ANSI Z21.22, CSA 4.4, NSF/ANSI/CAN 61, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

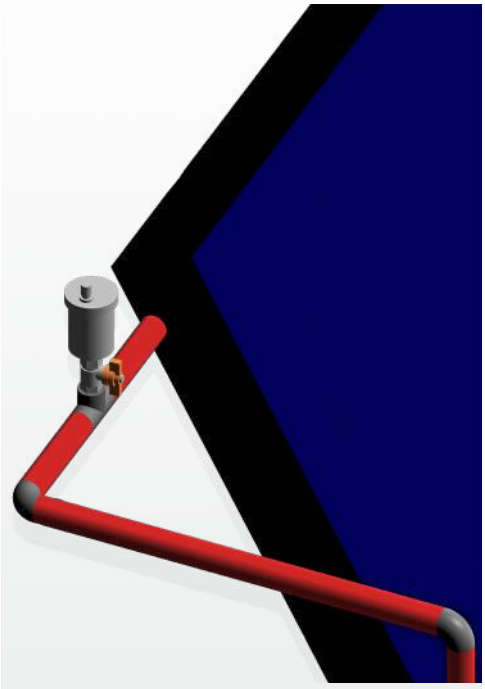
CALEFFI
Hydronic Solutions

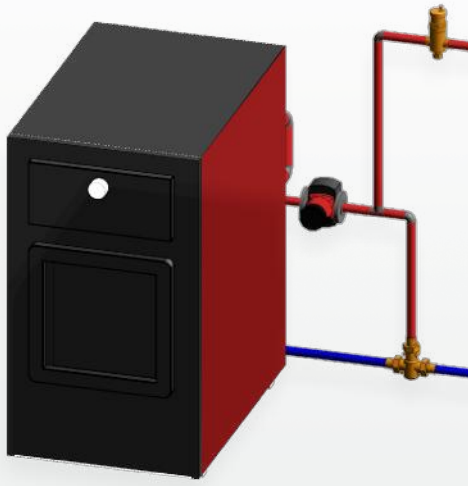
www.caleffi.com

MEASURE
CALCULATE
COMMUNICATE

You can't change what you don't measure. CONTECA™ heat meters measure and record instantaneous and totalized thermal energy usage for both heating and cooling. Ideal for submetering a shared hydronic plant and billing tenants for BTU used. Access data locally or remotely. **CALEFFI GUARANTEED.**







This diagram is for illustration purposes only

BIM
bim.caleffi.com

PRODUCTS INCLUDED IN SECTION

Solar pump stations
Drainback pump station
High temperature premix glycol
Pump station fittings
Boiler protection accessories
Boiler protection high-flow thermostatic mixing valves
Boiler protectin recirculation and distribution units
Air Separator and safety relief valves
Automatic air vents
Energy Meters
Energy meter accessories

SOLAR PUMP STATIONS

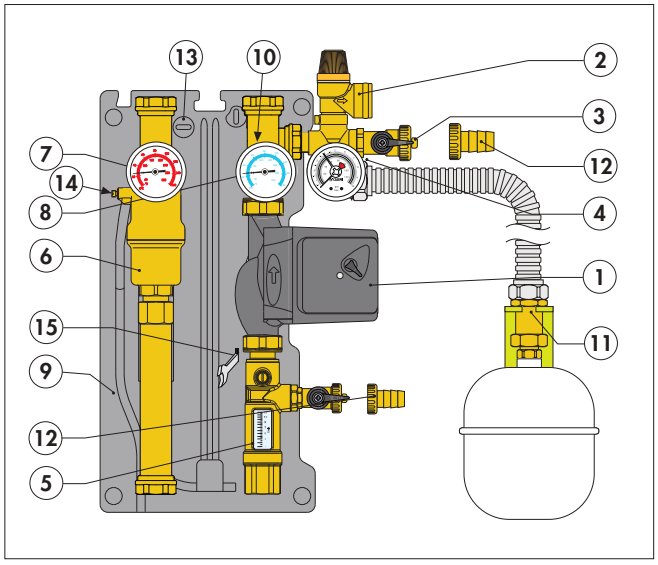
279

Solar pump stations are pre-assembled and leak-tested. Safety relief valve.
Ball valves with built-in flow checks in return (and flow for dual-line models).
Temperature gauges in return (and flow for dual-line models). Pressure gauge. Manual air vent (dual-line models only). Expansion tank connection. Connections for flushing and filling. Foam insulation.
Balance/flow meter: 1— 8 gpm scale.
Pump: three speed.
Pump performance: 19 ft head/8 gpm.
Safety relief valve: 90 psi.
Max. working pressure: 145 psi.
Max. working temp: 350 °F.
Connections: ¾" female thread.

(Select adaptors to the right)

Code	Description	Lbs	USD
279051A	dual-line solar pump station	17	**1,058.00**
279051	dual-line solar station w/o pump	12	**846.00**

Construction details for 279 Solar pump station



1) Circulation pump
2) Safety relief valve
3) Fill/drain valve with control lever
4) Instrument holder fitting with pressure gauge
5) Flow meter
6) Air separator with air vent and shut-off valve with check valve
7) Supply (flow) temperature gauge
8) Return temperature gauge
9) Pre-formed shell insulation
10) Shut-off ball valve with check valve and temperature gauge holder knob (Drainback station does not have a check valve)
11) Connection kit for expansion tank (purchase separately)
12) Hose connection
13) Mounting bracket
14) Manual air vent release screw head
15) 9 mm hex wrench for shut-off ball valve and flow meter valve

DRAINBACK PUMP STATION

278

Drainback solar pump station designed with a high head and steep pump curve which are pre-assembled and leak-tested. Safety relief valve, ball valve, temperature gauge, pressure gauge, air fill valve.
Connections for flushing and filling with foam insulation.
Balance/flow meter: 2—8 gpm scale.
Pump: Grundfos UP15-100.
Performance: 36 feet head / 8 gpm.
Safety relief valve: 90 psi.
Max. working pressure: 145 psi.
Max. working temp: 350 °F.
Connections: ¾" female thread.
(Select adaptors to the left)

Code	Description	Lbs	USD
278951A	drainback solar pump station	14	**985.00**

Replacement pump fits current solar pump stations 278 & 279, plus discontinued 255 & 256 stations.
3 speed 115 V.
1" male union thread.
Agency approval: cULus.
(install in-line with NA122 union fittings on page 84)

Code	Description	Lbs	USD
NA10481	Grundfos 15-58U, 21' head / 18 gpm	5.0	**273.00**

HIGH TEMPERATURE PREMIX GLYCOL

NA101 SolarHD™

Pre-mixed 50% high temperature non toxic glycol, FDA reference: 21 CRF 182.1666, Gosselin TOXICITY INDEX 1, Generally recognized as safe for use as direct food additives. NSF listed, Category Code: HT1, HT2, NSF Registration No. 144912. Compatable with other propylene glycols.

Code	Description	Lbs	USD
NA10103	5 gallon bucket	45	**324.00**

PUMP STATION FITTINGS

¾" sweat fittings to top or bottom.
2 each.

Code	Description	Lbs	USD
NA26659	¾" male thread x ¾" sweat fitting	0.6	**87.00**

¾" sweat fittings to top and bottom. 4 each.

Code	Description	Lbs	USD
NA26759	¾" male thread x ¾" sweat fitting	1.0	**174.00**

1" sweat fittings to top or bottom.
2 each.

Code	Description	Lbs	USD
NA26669	¾" male thread x 1" sweat fitting	0.6	**95.40**

1" sweat fittings to top and bottom. 4 each.

Code	Description	Lbs	USD
NA26769	¾" male thread x 1" sweat fitting	1.0	**191.00**

BOILER PROTECTION ACCESSORIES

F296

Replacement thermostatic sensor cartridges.
Sensor cartridge accuracy: ±4 °F.
By-pass from boiler complete closing temperature: Tset +18 °F (130°+18°=148 °F).

Fits 280 and 281 Series boiler protection valves.
Easy replacement to change the 280 valve set temperature without removing the valve body from the piping.

Code	Description	Lbs	USD
F29633	115 °F Tset	0.2	**32.20**
F29634	130 °F Tset	0.2	**32.20**
F29635	140 °F Tset	0.2	**32.20**
F29636	160 °F Tset	0.2	**32.20**

Selection note: thermostatic sensor cartridge will completely close at Tset value +18°F. Example: (130°F Tset +18°F=148°F completely closed) ±4°F.

BOILER PROTECTION HIGH-FLOW THERMOSTATIC MIXING VALVES

280 ThermoProtec™

Boiler protection high-flow thermostatic mixing valve.
Changeable thermostatic sensor cartridge.
Brass body and lower plug.
Max. working pressure: 150 psi.
Working temperature range: 40 – 212 °F.
Thermostatic sensor cartridge:
130 °F and 140 °F Tset standard selections,see below.
115 °F, 160 °F Tset optional (field replaceable).
Sensor cartridge accuracy: ±4 °F.
By-pass from boiler complete closing temperature: Tset +18 °F
(ex. 130°+18°=148 °F).

Code	Description	Lbs	USD
280965A	1" sweat unions 130 °F Tset	11	**319.00**
280165A	1" NPT female unions 130 °F Tset	11	**341.00**
280966A	1" sweat unions 140 °F Tset	11	**319.00**
280166A	1" NPT female unions 140 °F Tset	11	**341.00**
280975A	1¼" sweat unions 130 °F Tset	11	**375.00**
280175A	1¼" NPT female unions 130 °F Tset	11	**391.00**
280976A	1¼" sweat unions 140 °F Tset	11	**375.00**
280176A	1¼" NPT female unions 140 °F Tset	11	**391.00**

BOILER PROTECTION RECIRCULATION AND DISTRIBUTION UNITS

281 ThermoBloc™

ThermoBloc replacement pump only, for existing installations.

Code	Description	Lbs	USD
F19379	replacement pump	5.0	**416.00**

F295

Dual scale temperature gauge 280 and 281 Series boiler protection valves.

Code	Description	Lbs	USD
F29571	32 – 250 °F	0.2	**27.30**

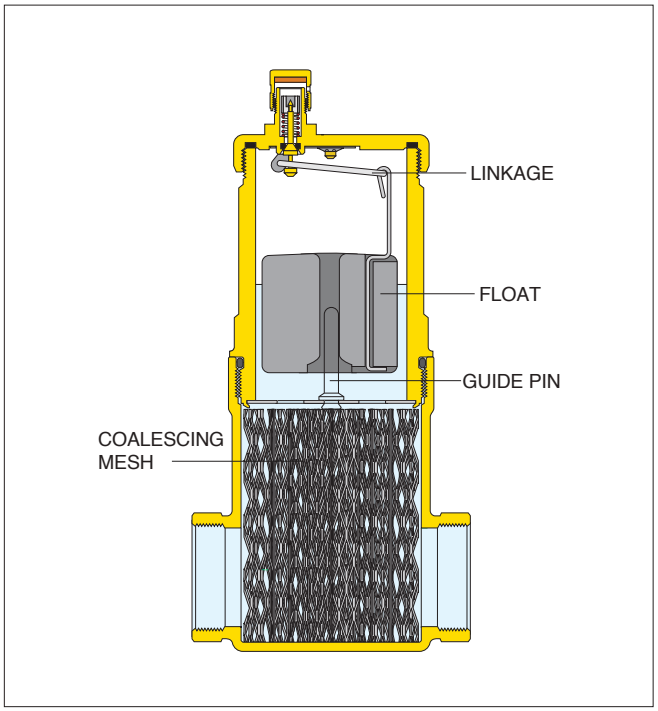
AIR SEPARATOR AND SAFETY RELIEF VALVES

251
DISCAL®

Air separator for solar heating systems.
Working temperature range: -20 – 320 °F.
Max. working pressure: 150 psi.
Max. discharge pressure: 150 psi.
Connections: Main, ¾" FNPT.
Bottom, ½" FNPT.

Code	Description	Lbs	USD
251003A	¾" FNPT	2.0	**188.00**

Construction details for 251 DISCAL®



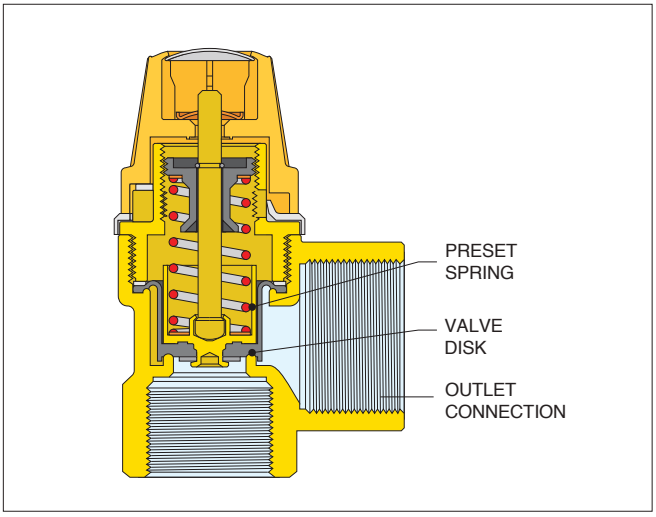
253

Safety relief valves for solar systems.
Working temperature range: -20 – 360 °F.
Normal pressure: 150 psi.
Opening over pressure: 10%.
Closing differential: 20%.
Discharge capacity: 171,000 Btu.
Connections: Inlet, ½" female.
Discharge, ¾" female.
TÜV certified to TRD-721-SV100 7.7.
Meets ANSI Z21.22 standard.

TÜV Rheinland is an approved U.S. Nationally Recognized Testing Laboratory (NRTL) Certification Body for Pressure Equipment. Meets ANSI Z21.22 "Relief Valves for Hot Water Supply Systems."

Code	Description	Lbs	USD
253042	factory set to 35 psi	0.3	**63.00**
253043	factory set to 45 psi	0.3	**63.00**
253044	factory set to 60 psi	0.3	**63.00**
253046	factory set to 90 psi	0.3	**63.00**
253048	factory set to 120 psi	0.3	**63.00**
253040	factory set to 150 psi	0.3	**63.00**

Construction details for 253 relief valve



AUTOMATIC AIR VENTS

250

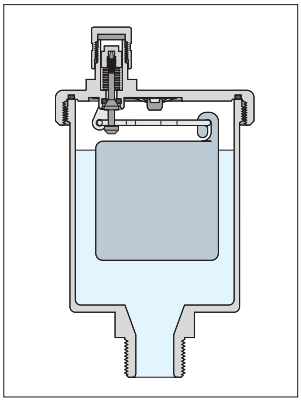
Automatic air vent for solar systems.
Working temperature range: -20 – 360 °F.
Max. working pressure: 150 psi.
Max. discharge pressure: 75 psi.

Code	Description	Lbs	USD
250041A	½" MNPT	0.3	**66.50**

Function

Automatic air vents are used in the closed circuits of solar heating systems. They allow air contained in the fluid to be released automatically during the filling process, through a valve operated by a float in contact with fluid in the system.

The shut-off valves are used in combination with the automatic air vents to isolate them after filling the circuit of solar heating systems. This product has been specially made to work at high temperatures with a glycol medium.



251 DISCALAIR®

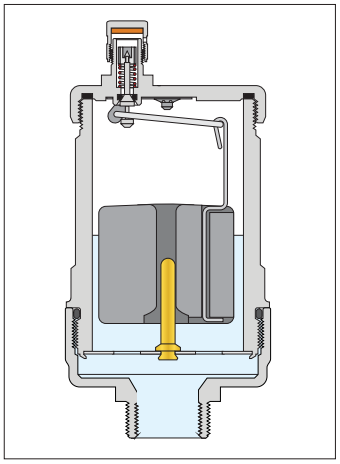
High-performance automatic air vent for solar heating systems.
Working temperature range: -20 – 320 °F.
Max. working pressure: 150 psi.
Max. discharge pressure: 150 psi.

Code	Description	Lbs	USD
251004A	½" FNPT and ¾" MNPT	0.8	**142.00**

Function

DISCALAIR® solar devices are used in hydronic systems or in the filling and start-up phase of solar heating systems to discharge evenly discharge large quantities of air that have formed in the circuits. This function is performed even when there is considerable pressure due to the special geometry of the discharge mechanism, which is identical to the mechanism on DISCAL® Solar 251 Series air separators.

This product has been specifically designed to work at high temperature with a glycol medium, which is typical of solar heating systems.



NA292

Shut-off fits automatic air vent.
Working temperature range: -20°—360°F.
Max. working pressure: 150 psi.

Code	Description	Lbs	USD
NA29284	½" FNPT x ½" MNPT	0.2	**51.60**

NA102

Vent cap adapter to connect discharge tube. Fits all air vents and air separators except 5026 and 5027 Series.

Code	Description	Lbs	USD
NA10204	¼" MNPT	0.1	**22.00**

ENERGY METERS

7504
CONTECA™ Energy meter

CONTECA™ is a direct heat meter designed to measure instantaneous and recorded history of thermal energy usage in residential and commercial buildings.

Micro processor:
Power supply: 24 VAC, 50/60 Hz, 1W.
Data transmission: 2-wire RS-485; selectable Modbus or M-bus (for use with Datalogger).
Ambient temperature: 40 – 113 °F (4 – 45 °C).
Environmental rating: NEMA 3S (IP 54).
Pulse inputs: Class 1B per EN 1434-2.

Temperature sensors:
Cable length: 26¼ feet (8 m).
Sensor type: 100 kohm NTC matched.
Temperature sensitivity: < 0.1°F.

Flow meters:
Body material: Brass.
Body threads: ISO 228 male straight.
Piping connections: Dual unions, tailpieces NPT, sweat, flanged, press.
Max. working pressure: 150 psi (10 bar)

CE

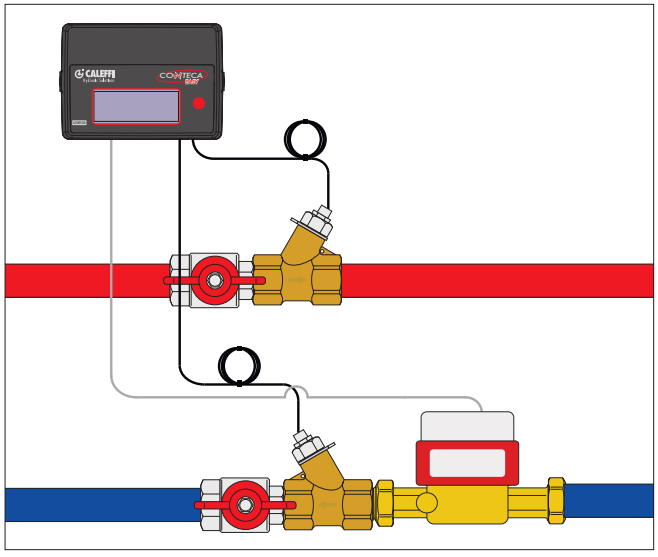
Function
The CONTECA meter features an 8-digit liquid crystal display that enables easy reading of BTU consumed as well as a range of technical data indicating equipment operating status and data logging.

Each CONTECA includes an electronic calculator/user interface, two temperature sensors, fittings included. The flow meter comes with the CONTECA meter kit. In addition to the two temperature inputs and flow meter input, four additional pulse inputs, for optional equipment monitoring and data logging. The CONTECA is easy to install and commission.

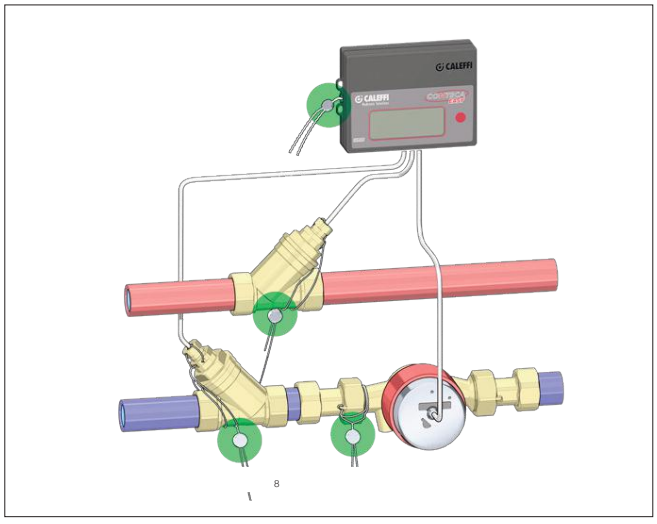
The meter has integral RS-485 Modbus protocol 2-wire communication (default) for remote access and configuration when BAS is MODBUS-RT. The RS-485 protocol must be changed to M-bus when using the Datalogger. Up to 250 CONTECA meters can connect to one CONTECA data logger.

Code	Description	Lbs	USD
750449A	energy meter, 0.25 to 10 GPM, ½" sweat	6.2	**1,043.00**
750440A	energy meter, 0.25 to 10 GPM, ½ MNPT	6.2	**1,084.00**
750446A	energy meter, 0.25 to 10 GPM, ½" press	6.2	**1,137.00**
750459A	energy meter, 0.25 to 10 GPM, ¾" sweat	7.1	**1,056.00**
750450A	energy meter, 0.25 to 10 GPM, ¾" MNPT	7.1	**1,097.00**
750456A	energy meter, 0.25 to 10 GPM, ¾" press	7.1	**1,149.00**
750469A	energy meter, 0.25 to 10 GPM, 1" sweat	7.9	**1,109.00**
750460A	energy meter, 0.25 to 10 GPM, 1" MNPT	7.9	**1,149.00**
750466A	energy meter, 0.25 to 10 GPM, 1" press	7.9	**1,203.00**
750463A	energy meter, 0.3 to 15 GPM, 1" FNPT	12	**1,547.00**
750473A	energy meter, 0.5 to 25 GPM, 1¼" FNPT	13	**1,652.00**
750483A	energy meter, 1 to 45 GPM, 1½" FNPT	19	**1,916.00**

Standard installation



Lead seals (included with each kit) to prevent tampering



Complies with ASTM E3137 specification for heat metering instrumentation and European directive 2014/32/UE EN 1434 (MI 004). Approved by Measurement Canada for use in heat metering applications in Canada.

ENERGY METER ACCESSORIES

7504
CONTECA™ Datalogger

Power supply: 24 V (DC) ±10%, 24 V (AC) - 3 W.
2 Ethernet ports: ETH1 (PoE), ETH2.
Ambient temperature range: 32 – 122 °F.
Mounting: on a 35 mm DIN rail (EN 60715).
Network addresses: up to 250 Conteca heat meters.
Daily data logging: 10 years.
Reports: In XLS or CSV format.

CE

Code	Description	Lbs	USD
750450	Conteca™ datalogger	2.0	**2,436.00**

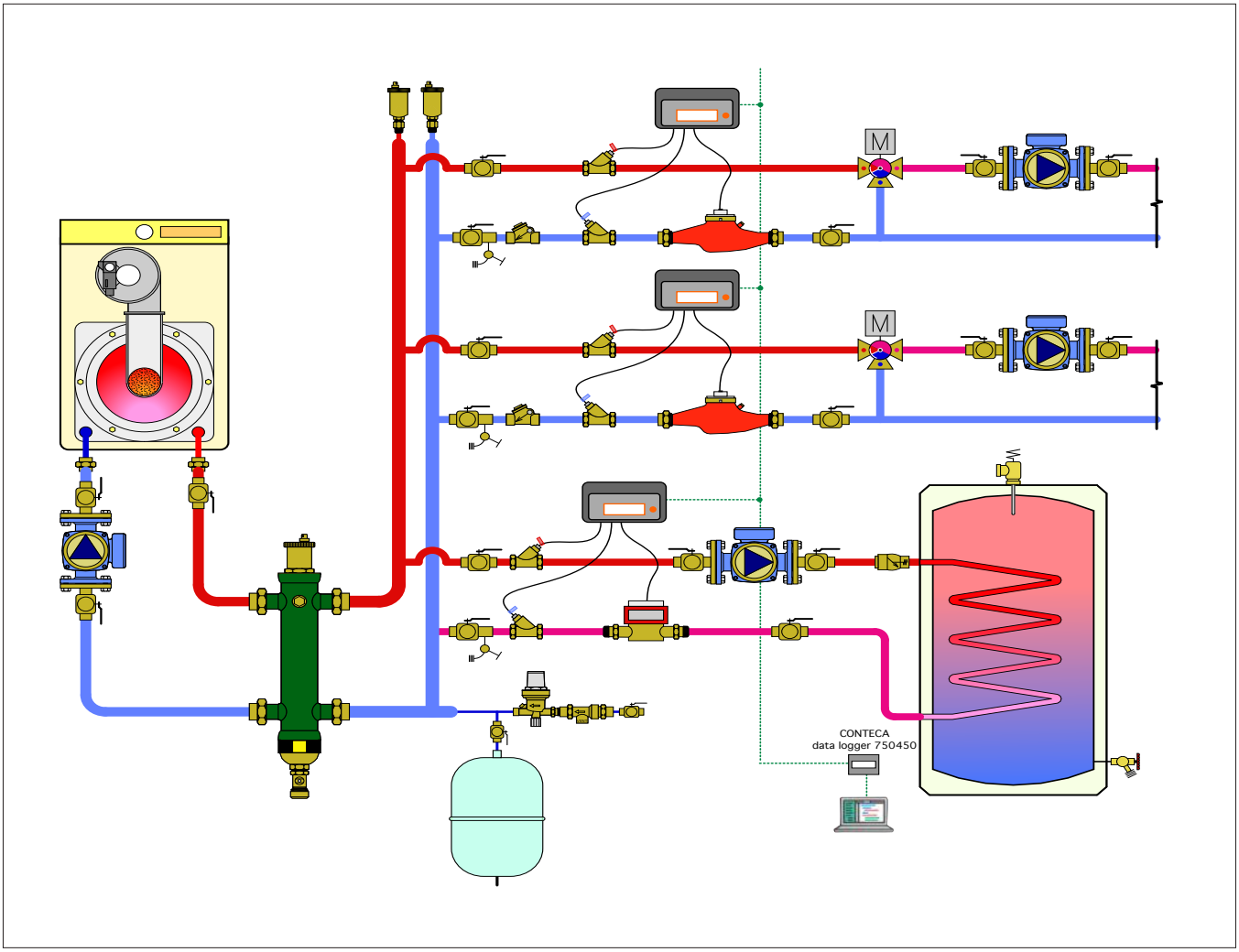
MODBUS-RT-to-BACnet gateway.
Converts CONTECA™ controller MODBUS-RT (RS-485 serial) output communication to BACnet IP or MSTP communication.
Network capacity: up to 1500 registers (approx. 50 CONTECA heat meters).

Code	Description	Lbs	USD
755052	MODBUS-RT-to-BACnet gateway	1.0	**2,007.00**

Wall transformer.
Input voltage: 120 V AC.
Output voltage: 24 V AC.
Power output: 20 VA.
Agency approval: cULus.

Code	Description	Lbs	USD
NA10759	24 V AC wall transformer, 20 VA	1.0	**40.60**

Application Diagram



CALEFFI
Hydronic Solutions

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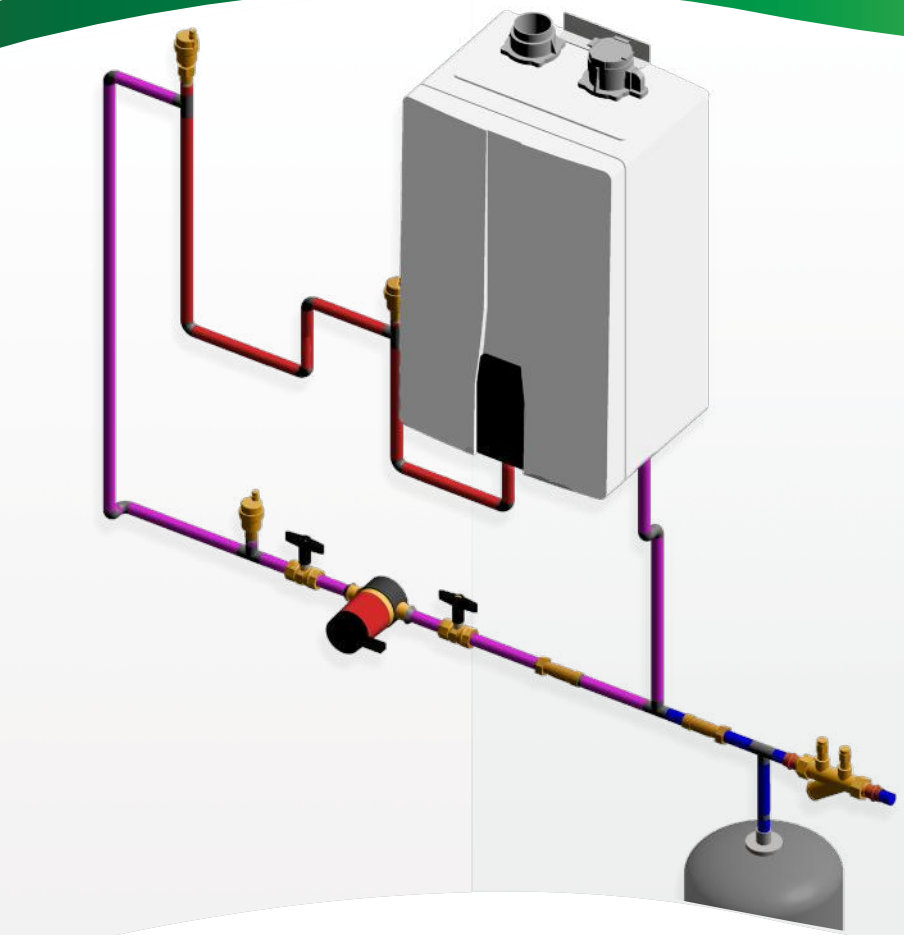
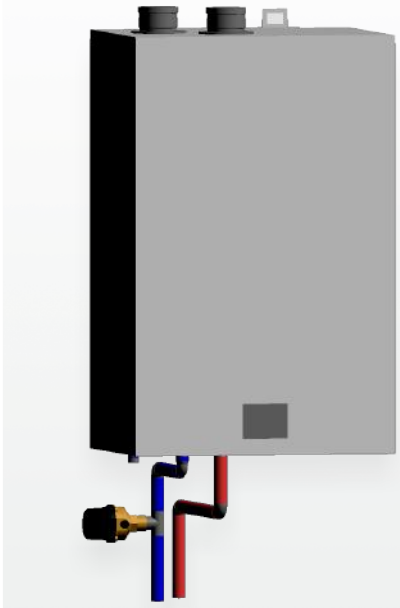
PLUMBVENT™
LOW LEAD AIR VENT

Keep air pockets from stopping your domestic hot water circulator with PLUMBVENT™, the market's only low lead air vent that automatically removes air from plumbing systems. **CALEFFI GUARANTEED**.





This diagram is for illustration purposes only

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PRODUCTS INCLUDED IN SECTION

Union Y-strainers for plumbing and hydronics
Y-strainer with ball valve for hydronics
NPT Y-strainers for plumbing and hydronics
Isolation ball valves
Tankless water heater service valve kit
Serviceable low low lead check valves
Automatic air vent for plumbing
Uni-Switch™ universal flow switch
Heat pump antifreeze valve
Differential pressure bypass

UNION Y-STRAINERS FOR PLUMBING AND HYDRONICS

128 Y-strainer sweat

Y-strainer with union connections.
PT ports included.
½" FNPT plugged blowdown port.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%

Code	Description	Lbs	USD
128749A 000	½" sweat union	1.3	**133.00**
128759A 000	¾" sweat union	1.5	**136.00**
128769A 000	1" sweat union	1.7	**141.00**

128 Y-strainer NPT

Y-strainer with union connections.
PT ports included.
½" FNPT plugged blowdown port.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%

Code	Description	Lbs	USD
128741A 000	½" NPT male union	1.5	**144.00**
128751A 000	¾" NPT male union	1.5	**147.00**
128761A 000	1" NPT male union	1.7	**149.00**

128 Y-strainer press

Y-strainer with union connections.
PT ports included.
½" FNPT plugged blowdown port.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%

Code	Description	Lbs	USD
128746A 000	½" press union	1.5	**153.00**
128756A 000	¾" press union	1.5	**149.00**
128766A 000	1" press union	1.7	**166.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

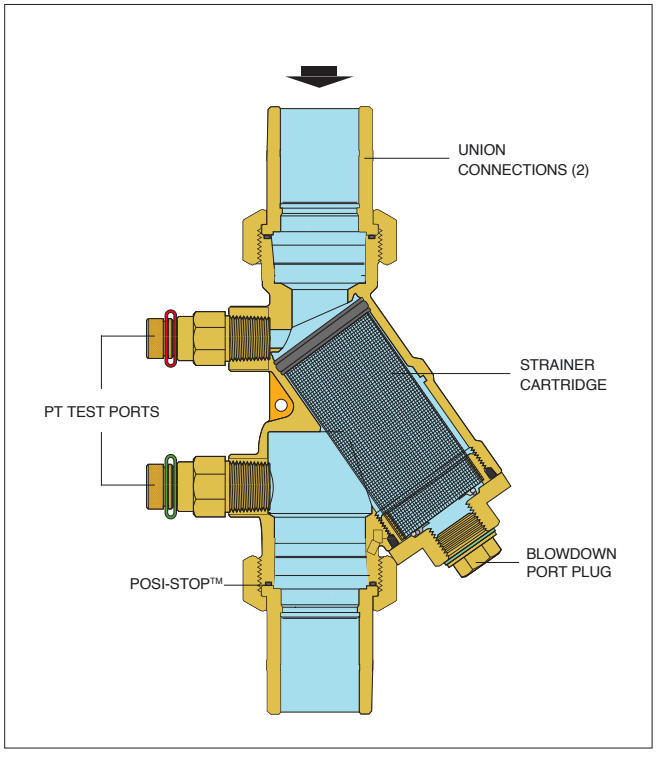
128 Y-strainer PEX

Y-strainer with union connections.
PT ports included.
½" FNPT plugged blowdown port.
Max. working pressure: 400 psi.
Temperature range: 32 – 212 °F.
Max. percentage of glycol: 50%

Code	Description	Lbs	USD
128744A 000	½" PEX crimp union	1.5	**137.00**
128754A 000	¾" PEX crimp union	1.5	**141.00**
128764A 000	1" PEX crimp union	1.7	**143.00**
128742A 000	½" PEX expansion union	1.5	**137.00**
128752A 000	¾" PEX expansion union	1.5	**141.00**
128762A 000	1" PEX expansion union	1.7	**143.00**

Construction details for 128 Y-strainer

The 128 Series Y-strainer uses the same brass body as the 128 Series FlowCal balancing valve, with dual unions and PT ports included. The 20 mesh stainless steel screen can be easily removed for cleaning without removing the body from the piping or a ½" purge valve, field provided, can replace the plug for easy dirt blowdown.



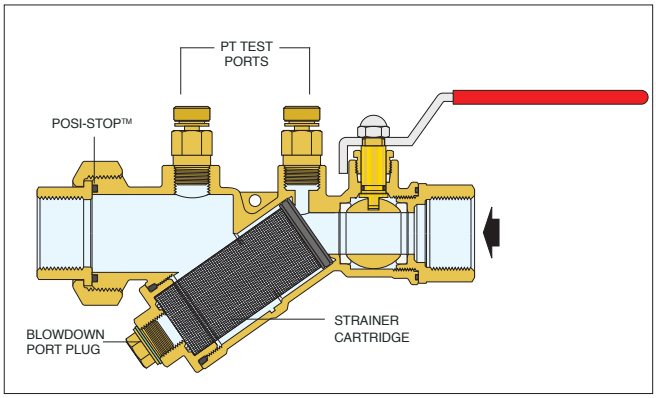
Y-STRAINER WITH BALL VALVE FOR HYDRONICS

120
Y-strainer

Y-strainer with integral ball valve for hydronic applications only, not for plumbing.
Brass body.
Stainless steel strainer cartridge.
Maximum working pressure: 400 psi (400 WOG).
Working temperature range: 32 – 212 °F.
Max. percentage glycol: 50%.
Strainer (20 mesh).
Connections: —body: NPT female union x FNPT, sweat union x sweat.
Pressure and temperature ports: ¼" NPT.
Drain port connection: ¼" for ½" & ¾" or ½" for 1" & 1¼".

Code	Description	Cv	Lbs	USD
120141A 000	½" NPT female	8.0	3.0	**129.00**
120149A 000	½" sweat	8.0	3.0	**123.00**
120151A 000	¾" NPT female	8.4	3.0	**130.00**
120159A 000	¾" sweat	8.4	3.0	**124.00**
120161A 000	1" NPT female	19	6.0	**258.00**
120169A 000	1" sweat	19	6.0	**245.00**
120171A 000	1¼" NPT female	20	6.0	**294.00**
120179A 000	1¼" sweat	20	6.0	**280.00**
120341A 000	½" NPT female with PT	8.0	3.5	**139.00**
120349A 000	½" sweat with PT	8.0	3.5	**134.00**
120351A 000	¾" NPT female with PT	8.4	3.5	**141.00**
120359A 000	¾" sweat with PT	8.4	3.5	**135.00**
120361A 000	1" NPT female with PT	19	6.5	**269.00**
120369A 000	1" sweat with PT	19	6.5	**255.00**
120371A 000	1¼" NPT female with PT	20	6.5	**304.00**
120379A 000	1¼" sweat with PT	20	6.5	**290.00**

Construction details for 120 Y-strainer



DRAIN VALVES AND PT PORTS

Drain valves for field installation in blow-down-port connection of the 120 Series Y-strainer.
Brass body.
With ¾" garden hose connection.
Max. working pressure: 150 psi.
Max: working temperature: 250 °F.

Code	Description	Lbs	USD
538202 FD	¼" NPT fits ½—¾" 120 series	0.3	**15.20**
538402 FD	½" NPT fits 1—1¼" 120 series	0.3	**15.60**

Fast-plug pressure/temperature test ports fits FlowCal™ automatic flow balancing valves and the 120 Series Y-strainer. The double-sealing core insures long and trouble free service.
Low Lead brass body.
Nordel Core.
Connections: ¼" NPT male.
Cap thread: ⅜"-24 UNF.
Working temperature range: 0 – 275°F.
Max. working pressure: 435 psi.
Pair (2 ports included).

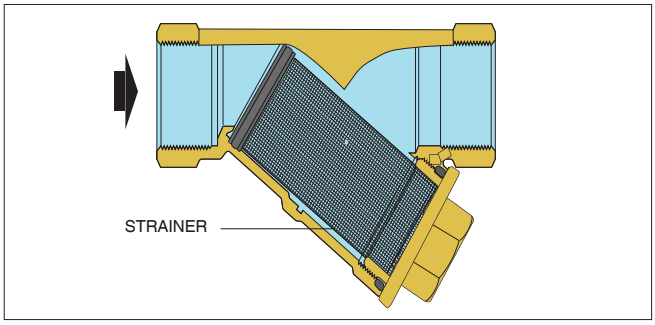
Code	Description	Lbs	USD
100001A	standard size, 1½" length (pair)	0.5	**16.10**

NPT Y-STRAINERS FOR PLUMBING AND HYDRONICS

NEW

NA109
Y-strainer

Designed for residential and commercial plumbing and hydronic applications to protect equipment from premature failure due to damaging debris.
Low-lead brass body CW 511L-M y-strainers.
Pressure rating 290 psi.
Temperature range 14 – 350 °F.
Max glycol percentage 50%.
30 mesh (650 microns) stainless steel screen.



Code	Description	Lbs	USD
NA10904	½" FNPT	0.5	**54.00**
NA10905	¾" FNPT	0.9	**86.00**
NA10906	1" FNPT	1.4	**107.00**
NA10907	1¼" FNPT	1.9	**180.00**
NA10908	1½" FNPT	2.4	**236.00**
NA10909	2" FNPT	3.0	**406.00**

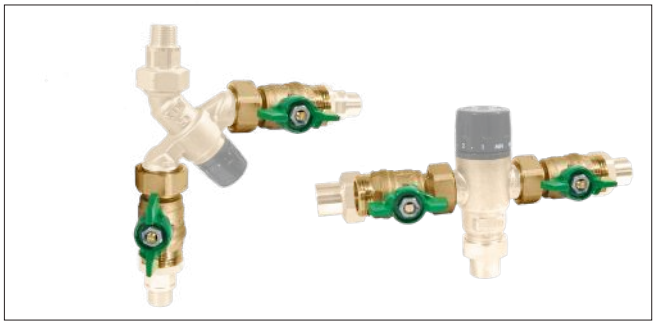
Complies with standards NSF/ANSI/CAN 372. Certified by IAPMO R&T.

ISOLATION BALL VALVES

290
Isolation Valve

Isolation ball valve.
Low lead MxF union fits between valve body and tailpiece.

Example: 290 valves on 520 and 521 Series mixing valves



Code	Description		Lbs	USD
290030	1" M x 1" F union ball valve		1.0	**47.60**
290031*	1" M x 1" F union ball valve	NEW	1.0	**75.00**

*With extended handle

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

NA108

NPT full port ball valves with extended operator handle for insulated or bare pipes.
For use with hot or cold water piping in plumbing or hydronic applications.
High strength forged low lead brass.
Blowout-proof stem with dual o-ring seals.
Pressure rating 600 WOG.
Temperature rating -4 – 366 °F.

Low lead brass pipe nipples.
For connecting NA108 ball valve to other FNPT valves such as 130, 132, 142, 116 Series.

Code	Description	Lbs	USD
NA10824	½" FNPT ball valve	0.4	**38.40**
NA10825	¾" FNPT ball valve	0.6	**47.10**
NA10826	1" FNPT ball valve	1.0	**61.10**
NA10827	1¼" FNPT ball valve	1.6	**102.00**
NA10828	1½" FNPT ball valve	1.9	**129.00**
NA10829	2" FNPT ball valve	3.0	**314.00**

Code	Description	Lbs	USD
NA10834	½" NPT nipple	0.1	**4.80**
NA10835	¾" NPT nipple	0.1	**7.60**
NA10836	1" NPT nipple	0.1	**11.90**
NA10837	1¼" NPT nipple	0.3	**20.60**
NA10838	1½" NPT nipple	0.3	**21.60**
NA10839	2" NPT nipple	0.5	**31.40**

Complies with standards NSF/ANSI/CAN 61, NSF/ANSI/CAN 372. Certified by ICC-ES.

TANKLESS WATER HEATER SERVICE VALVE KIT

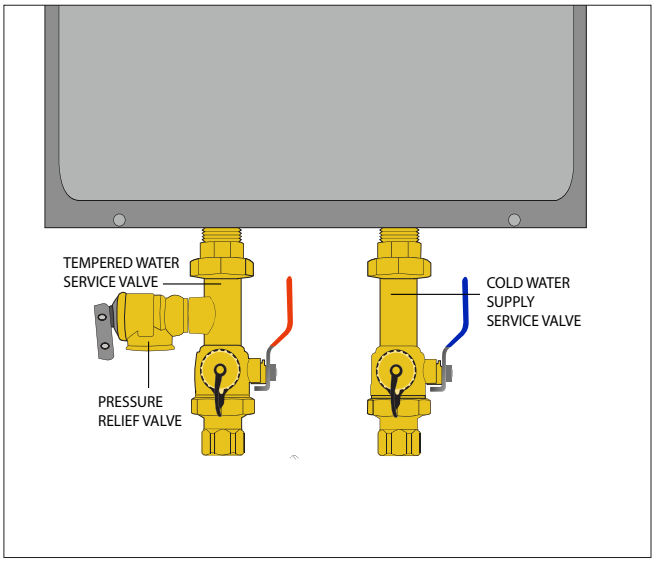
290
Tankless Water Heater Service Valve Kit

Tankless water heater service valves have union connections that attach directly to ¾" water heater MNPT nipples.
**Isolation valves and ¾" garden hose connections allow for flushing and servicing the water heater.
A pressure relief valve, set to 150 psi, is included with each kit.
DZR low lead brass body.
Max working pressure 400 psi.
Operating temperature range 32 – 210 °F.

Code	Description	Lbs	USD
KIT290503A*	¾" FNPT service valve kit	2.0	**156.00**

*With pressure relief valve.
** Certified to Section 1417(d) of the Safe Drinking Water Act, and the lead content requirements of Section 116875 of the California Health & Safety Code, by IAPMO R&T.

Construction details for 290 Tankless Water Heater Service Valve Kit

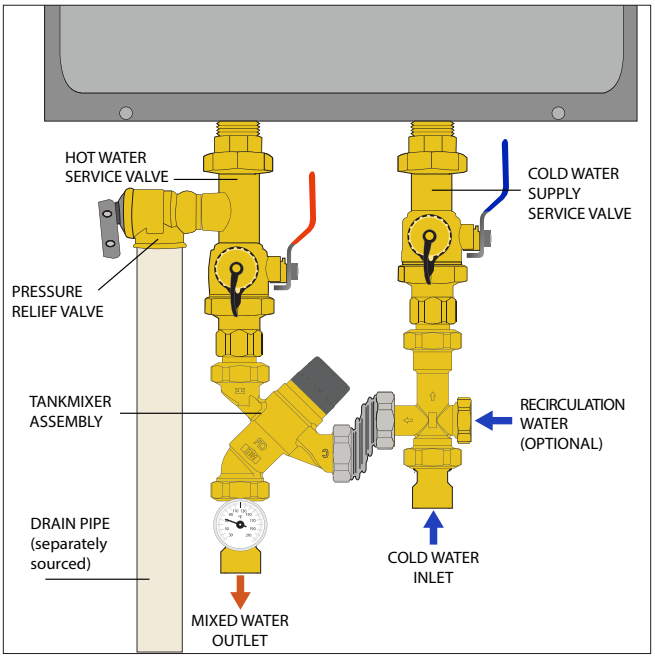


The tankless water heater service valve kit is available standalone (shown) or with the 520 Series TankMixer thermostatic mixing valve assembly.

290
Service Valve Kit with TankMixer ™ for Combi Boilers

See Section 7 for TankMixer specifications; service valve kit specifications below.
Max working pressure 400 psi.
Operating temperature range 32 – 210 °F.

Construction details for 290 Service Valve Kit



Code	Description	Lbs	USD
KIT290516A	¾" press	5.0	**492.00**
KIT290519A	¾" sweat	5.0	**463.00**
KIT290510A	¾" FNPT	5.0	**480.00**
KIT290517A	¾" PEX crimp	5.0	**463.00**
KIT290518A	¾" PEX exp	5.0	**463.00**

TankMixer™ complies with standards ASSE 1017, CSA B125.3, NSF/ANSI/CAN 372 and codes IPC, IRC, UPC, NPC. Certified by ICC-ES.

SERVICEABLE LOW LEAD CHECK VALVES

NA51 sweat

Serviceable low lead check valve.
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
Fluid temperature range:
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" sizes 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51249	½" sweat unions	17	0.4	**79.00**
NA51259	¾" sweat unions	17	0.4	**86.70**
NA51369	1" sweat unions	30	0.9	**123.00**
NA51379	1¼" sweat unions	30	1.1	**138.00**
NA51489	1½" sweat unions	75	2.4	**344.00**
NA51499	2" sweat unions	75	2.4	**366.00**

NA51 MNPT

Serviceable low lead check valve.
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
Fluid temperature range:
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" sizes 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51240	½" NPT male unions	17	0.4	**94.30**
NA51250	¾" NPT male unions	17	0.6	**99.50**
NA51360	1" NPT male unions	30	1.1	**130.00**
NA51370	1¼" NPT male unions	30	1.3	**143.00**
NA51480	1½" NPT male unions	75	2.6	**366.00**
NA51490	2" NPT male unions	75	2.6	**388.00**

NA51 FNPT

Serviceable low lead check valve.
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
Fluid temperature range:
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51243	½" NPT female unions	17	0.4	**107.00**
NA51253	¾" NPT female unions	17	0.6	**114.00**
NA51363	1" NPT female unions	30	1.1	**138.00**
NA51373	1¼" NPT female unions	30	1.3	**150.00**
NA51493	2" NPT female unions	75	2.6	**403.00**

Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

NA51 press

Serviceable low lead check valves
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
Fluid temperature range:
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" sizes 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51246	½" press unions	17	0.4	**114.00**
NA51256	¾" press unions	17	0.6	**123.00**
NA51366	1" press unions	30	1.1	**178.00**
NA51376	1¼" press unions	30	1.3	**209.00**
NA51486	1½" press unions	75	2.6	**451.00**
NA51496	2" press unions	75	2.6	**495.00**

NA51 PEX

Serviceable low lead check valve.
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
Fluid temperature range:
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").
PEX crimp: ASTM F1807
PEX expansion: ASTM F1960

Code	Description	Cv	Lbs	USD
NA51247	½" PEX crimp unions	17	0.4	**86.70**
NA51257	¾" PEX crimp unions	17	0.6	**94.30**
NA51248	½" PEX expansion unions	17	0.4	**86.70**
NA51258	¾" PEX expansion unions	17	0.6	**94.30**

NA51 body

Serviceable low lead check valve without fittings.
Max. working pressure: 150 psi (10 bar).
Operating temperature range: 32 – 150 °F (0 – 65 °C).
For ½" and ¾" sizes 32 – 250 °F and for 1 - 2" 32 – 150 °F.
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51200	½", ¾" body, small	17	0.2	**56.00**
NA51300	1", 1¼" body, medium	30	0.5	**71.40**
NA51400	1½", 2" body, large	75	1.8	**186.00**

Replacement NA51 checks

Code	Description	Cv	Lbs	USD
NA10117	Fits ½", ¾" (small body)	17	0.1	**10.30**
NA10370	Fits 1", 1¼" (medium body)	30	0.1	**10.30**
NA10371	Fits 1½", 2" (large body)	75	0.2	**17.80**

AUTOMATIC AIR VENT FOR PLUMBING

NA5026 PLUMBVENT™

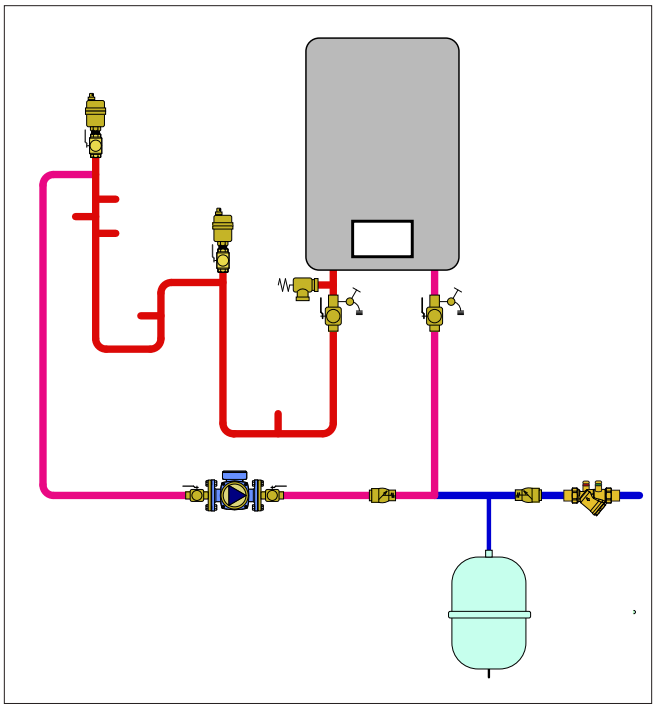
Automatic air vent with low lead brass body.
Compatible with plumbing systems.
Hygroscopic cap (anti-drip).
Max. working pressure: 150 psi.
Max. discharge pressure: 90 psi.
Max. discharge rate: 1.75 SCFM.
Max working temperature: 240 °F.

Code	Description	Lbs	USD
NA502640A	½" MNPT	0.6	**50.00**

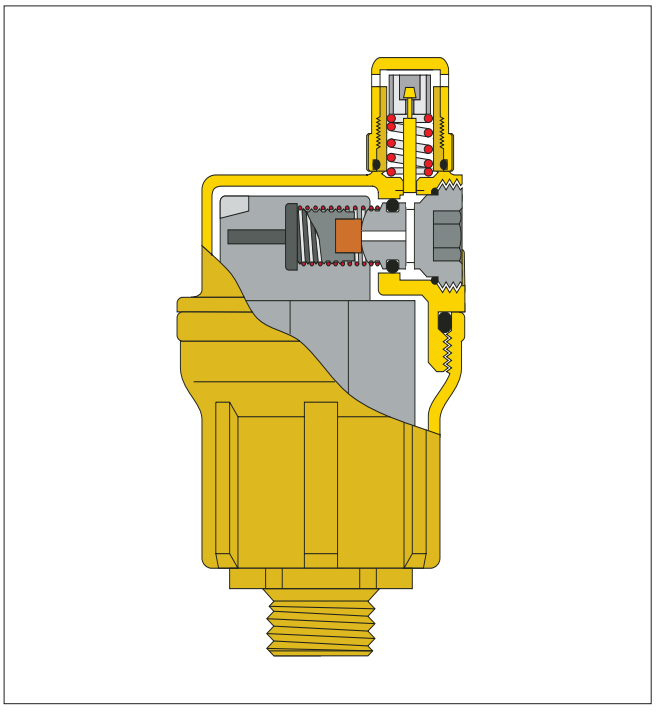
Function

Float type automatic air vent designed to vent air from water at high points in plumbing system piping. Example applications include risers, domestic hot water storage tanks and recirculation system pump inlets. The automatic air vent is installed in the vertical position in parts of the system where air can accumulate and cause circulator air-lock or reduced efficiency. It is supplied complete with a safety hygroscopic cap that automatically closes the air discharge in case of contact with water.

Application Diagram



Construction details for NA5026 PLUMBVENT™



Complies with standard NSF/ANSI/CAN 372. Certified by ICC-ES.

UNIVERSAL FLOW SWITCH

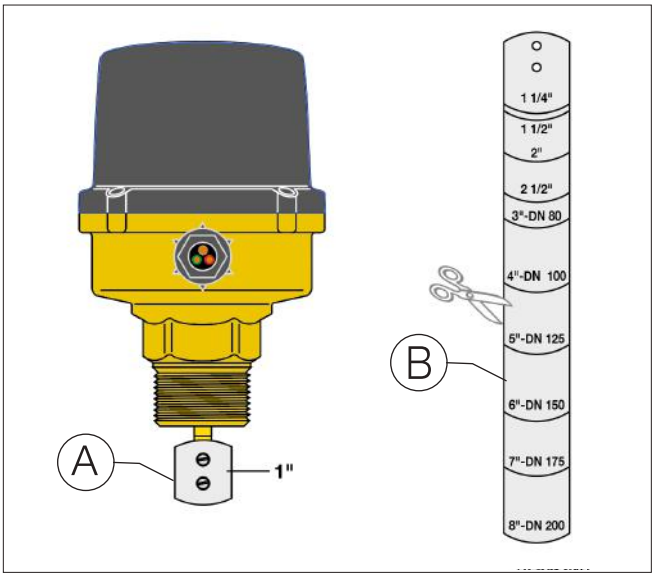
626
Uni-Switch™

Universal flow switch.
Suitable for 1" to 8" pipe size.
Working pressure: 150 psi.
Working temperature range: -20 – 250 °F.
Minimum flow: 5.7 gpm.
Switch contacts: NO or NC.
Switch rating: 15 A.
CE, cUL, NEMA Type 3, IP 54.

c UL us
30V9

The unit is equipped with a set of paddles (blades) (A), to be used for different pipe diameters, particularly sized to allow easy installation and minimal head losses.

For diameters equal to or greater than 3" (DN 80), it is necessary to add to the preassembled blades in increasing order on the long blade (B) (supplied in the package), just by cutting it to the size corresponding to the desired diameter. Replacement paddle or blade assemblies are available, order part number 626009.



Code	Description	Lbs	USD
626600A	1" NPT male thread	2.3	**263.00**
626009	replacement paddle assembly*	0.1	**24.60**

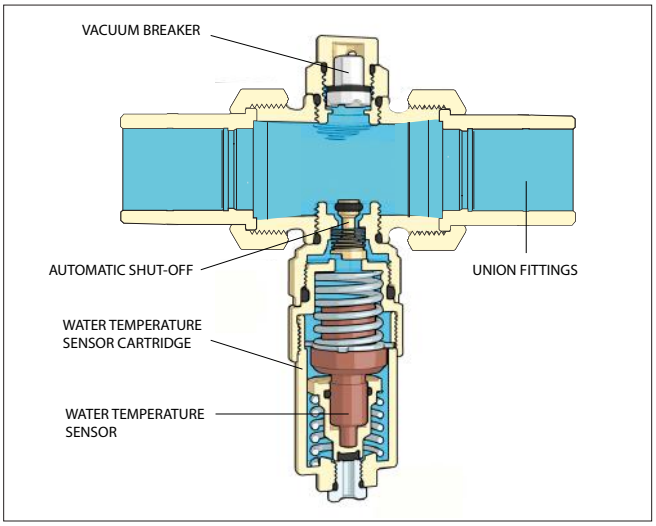
* stainless steel

HEAT PUMP ANTIFREEZE VALVE

108
iStop®

Antifreeze valve.
Brass body.
Discharge water temp: 37 °F (3 °C)
Minimum ambient temp: -22 °F (-30 °C)
Maximum pressure: 150 psi (10 bar)

Function
Protects air-to-water hydronic heat pumps from freeze damage when 100% water is used as the heat transfer fluid. Mounted outside, the 108 opens to discharge when the water temperature drops to 37 °F (3 °C). Must be installed in pairs, in supply and return lines to/from the outdoor unit. Suitable for monobloc and hydro-split type AWHPs in hydronic applications; not used on systems with glycol. Must verify acceptance with heat pump manufacturer for warranty compliance.



Code	Description	Lbs	USD
108860A	1" NPT female union	2.7	**234.00**
108866A	1" press union	3.1	**303.00**
108869A	1" sweat union	2.5	**241.00**
108870A	1-1/4" NPT female union	3.5	**272.00**
108876A	1-1/4" press union	3.6	**332.00**
108879A	1-1/4" sweat union	2.6	**254.00**

DIFFFERENTIAL PRESSURE BYPASS

519

Differential pressure by-pass valve.
Adjustable from 2 to 10 psid.
Brass body.
Max. working pressure: 150 psi.
Working temperature range: 32 – 230°F.
¾" flow up to 9 gpm.
1" flow up to 40 gpm.
1¼" flow up to 45 gpm.

Code	Description	Lbs	USD
519502A	¾" NPT male union	1.0	**134.00**
519566A	¾" press union	1.0	**152.00**
519599A	¾" sweat union	1.0	**133.00**
519600A	1" FNPT in, 1" NPT male union out	1.4	**210.00**
519609A	1" FNPT in, 1" sweat union out	1.4	**210.00**
519700A	1¼" FNPT in, 1¼" NPT male union out	1.5	**252.00**
519709A	1¼" FNPT in, 1¼" sweat union out	1.5	**252.00**

MISCELLANEOUS COMPONENTS

NA503

Tridicator dual pressure / temperature gauge for boilers. Dial size: 3 1/8".
Pressure range: 0 – 75 psi.
Temperature range: 60 – 320 °F.
¼" NPT rear probe.
For direct fluid stream submersion.

Code	Description	Lbs	USD
NA503040	¼" NPT male center back	0.2	**38.10**

NA510

NBR, POM check valve.
Max. percentage of glycol: 50%.
Max. working pressure: 150 psi.
Temperature range: 32 – 150 °F (190 °F for max. 1 hour).
Opening pressure differential: 0.25 psi (½" through 1¼"); 0.50 psi (1½", 2").

Code	Description	Cv	Lbs	USD
NA51069	1" sweat union	17	1.0	**76.50**

538

Drain valve. Brass body.
¾" garden hose thread with cap.
Max. working pressure: 150 psi.
Max. working temperature: 250 °F.

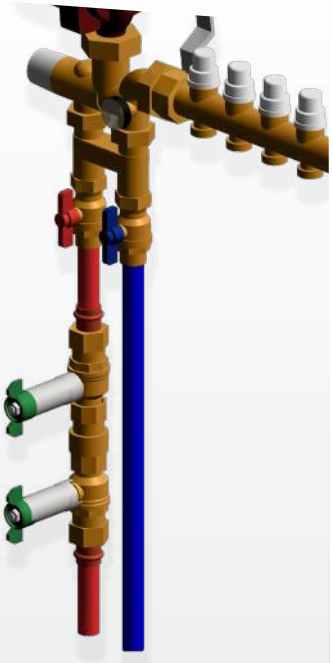
Code	Description	Lbs	USD
538202 FD	¼" NPT male x ¾" GHT	0.3	**15.20**
538402 FD	½" NPT male x ¾" GHT	0.3	**15.60**

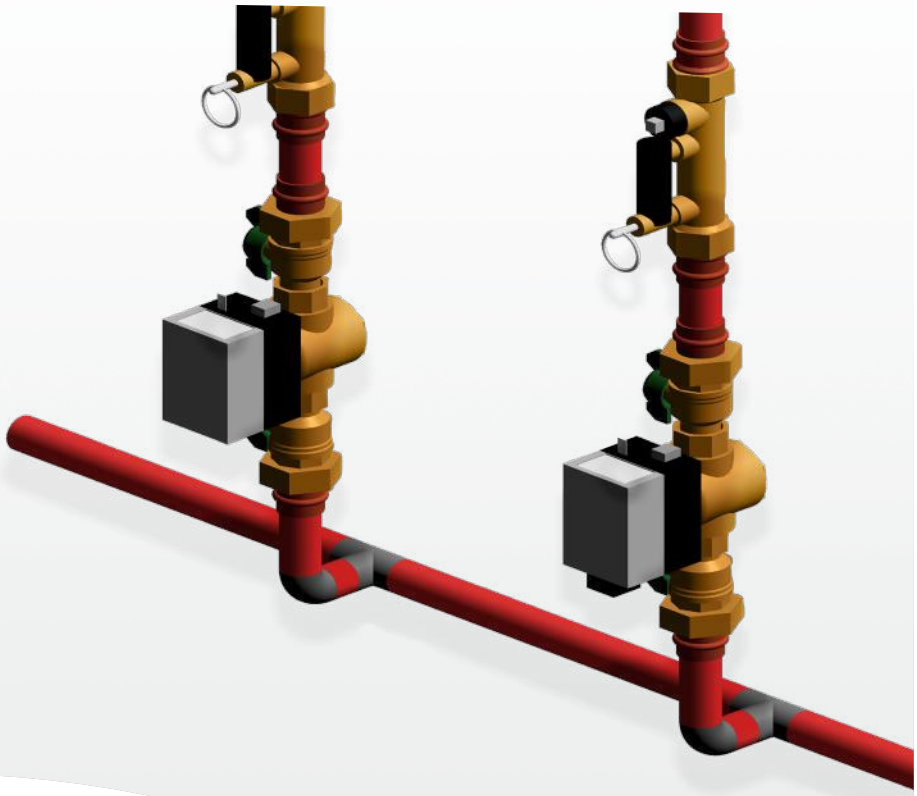
CALEFFI
Hydronic Solutions

www.caleffi.com

POSI-STOP™
A SUPERIOR UNION CONNECTION

Take the guesswork out of your connections. When an installer tightens Posi-Stop™ union nut an EPDM O-ring seal compresses to a controlled value by way of a positive metal-to-metal stop. For service, remove and reinstall without replacing any parts. **CALEFFI GUARANTEED**.





This diagram is for illustration purposes only

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PRODUCTS INCLUDED IN SECTION

520 AngleMix, 521 MixCal, 5213 TubMixer, 520 TankMixer
5231 MixCal+ and 6000 LEGIOMIX
127 FlowCal+, 128 FlowCal+, 128 Y-Strainer, 132 QuickSetter+
535 PresCal and 536 PresCal HP
533 PresCal Compact
573 FlowShield DuC-AV
3048 FlowShield DuC
5517 DISCAL Rotating Collar, NA5453 DIRTMAG
5495 SEP4, 548 Hydro Separator, 5461 DISCALDIRTMAG
553 AutoFill and 5350 AutoFill
116 ThermoSetter
Z-one™ union, 145 Flowmatic 6767 TwisTop+, 6762 TwisTop, 6442 and 6443 Series
Miscellaneous Fittings

520 ANGLEMIX, 521 MIXCAL, 5213 TUBMIXER, 520 TANKMIXER

NPT male tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
R31981	½" NPT male requires 1" union nut	0.3	**11.60**
31901A	¾" NPT male requires 1" union nut	0.4	**15.10**
59817A	1" NPT male includes union nut	0.4	**32.90**
NA20760*	1" NPT male	0.4	**30.30**

* for **5206 AngleMix ONLY** includes nut and gasket.

NPT male tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
59893A	½" NPT male requires 1" union nut	0.2	**21.80**
59840A	¾" NPT male requires 1" union nut	0.3	**29.80**
59894A	1" NPT male includes check and union nut	0.5	**47.80**
NA20760C*	1" NPT male	0.6	**30.30**

* for **5206 AngleMix ONLY** includes nut and gasket.

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10002	½" sweat requires 1" union nut	0.2	**8.40**
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**
59834A	1" sweat includes union nut	0.4	**29.70**
NA20769*	1" sweat	0.5	**24.60**

*for **5206 AngleMix ONLY** incl. nut, gasket.

Sweat tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
59904A	½" sweat requires 1" union nut	0.2	**19.00**
59905A	¾" sweat requires 1" union nut	0.3	**26.60**
59906A	1" sweat includes 1" union nut	0.5	**44.70**
NA20769C*	1" sweat	0.5	**24.60**

*for **5206 AngleMix ONLY** incl. nut, gasket.

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA16264	½" press includes 1" union nut	0.3	**17.60**
NA16265	¾" press includes 1" union nut	0.4	**19.40**
NA16266	1" press includes 1" union nut	0.5	**34.50**
NA20766*	1" press	0.5	**40.20**

*for **5206 AngleMix ONLY** includes nut and gasket.

Long copper press tailpiece with **check valve**, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10864LC	½" press includes check and 1" union nut	0.3	**23.00**
NA16265LC	¾" press includes check and 1" union nut	0.4	**56.20**
NA16266LC	1" press includes check and 1" union nut	0.5	**68.90**
NA20766C*	1" press	0.5	**40.20**

*for **5206 AngleMix ONLY** includes nut and gasket.

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0001007	½" PEX exp. requires 1" union nut	0.1	**8.40**
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**
F0001009	1" PEX exp. requires 1" slip nut	0.1	**24.90**
NA20768*	1" PEX exp.	0.5	**31.20**

*for **5206 AngleMix ONLY** includes nut and gasket.

PEX expansion (ASTM F1960) tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10634	½" PEX exp. requires 1" union nut	0.2	**19.00**
NA10635	¾" PEX exp. requires 1" union nut	0.2	**26.60**
NA10636	1" PEX exp. requires 1" slip nut	0.2	**39.90**
NA20768C*	1" PEX exp.	0.6	**31.20**

*for **5206 AngleMix ONLY** includes nut and gasket.

520 ANGLEMIX, 521 MIXCAL, 5213 TUBMIXER, 520 TANKMIXER

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0000492	½" PEX crimp requires 1" union nut	0.1	**8.40**
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**
F0000521	1" PEX crimp requires 1" slip nut	0.1	**24.90**
NA20767*	1" PEX crimp	0.5	**31.90**

*for **5206 AngleMix ONLY** includes nut and gasket.

PEX crimp (ASTM F1807) tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10484	½" PEX crimp requires 1" union nut	0.2	**19.00**
NA10485	¾" PEX crimp requires 1" union nut	0.2	**26.60**
NA10486	1" PEX crimp requires 1" union nut	0.2	**39.90**
NA20767C*	1" PEX crimp	0.6	**31.90**

*for **5206 AngleMix ONLY** includes nut and gasket.

Replacement NA51 checks valves.

Code	Description	Lbs	USD
R39204	for sweat, NPT male fittings	0.1	**3.50**
NA10405	for press and PEX fittings	0.1	**2.50**
NA10117	for 5206 angleMix 1" fittings	0.1	**10.30**
NA10479	for 5213 tubMixer ⅜" compression	0.1	**2.30**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**
R31495*	1¼" union nut	0.2	**7.60**
R11222**	1¼" slip nut	0.2	**7.60**

*for 5206 AngleMix fittings.
**for 5206 AngleMix press.

Compression tailpiece, low lead brass.
For **5213 TubMixer ONLY.**

Code	Description	Lbs	USD
F0000718	⅜" compression requires 1" nut	0.1	**17.10**

Union sealing gasket
(Legacy Non Posi-Stop™ Product)

Code	Description	Lbs	USD
R20011	1" union gasket	0.1	**1.60**
R0001454*	1¼" union gasket	0.1	**2.50**

*for 5206 AngleMix 1" fittings.

5231 MIXCAL+ AND 6000 LEGIOMIX

NPT male tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
31901A*	¾" NPT male requires 1" union nut	0.3	**15.10**
59817A*	1" NPT male includes 1" union nut	0.3	**32.90**
NA10009	1" NPT male requires 1¼" union nut	0.3	**45.80**
R41660	1¼" NPT male requires 1½" union nut	0.3	**52.40**
41371A	1½" NPT male requires 2½" union nut	0.4	**59.10**
41372A	2" NPT male requires 2½" union nut	0.5	**76.50**

*for **6000 LEGIOMIX ¾" body ONLY**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10003*	¾" sweat requires 1" union nut	0.3	**11.60**
59834A*	1" sweat includes 1" union nut	0.3	**29.70**
31554 FD	1" sweat requires 1½" union nut	0.3	**36.50**
41788 CST	1¼" sweat requires 1½" union nut	0.3	**56.80**
41788 CST	1½" sweat requires 2½" union nut	0.4	**56.80**
41789 CST	2" sweat requires 2½" union nut	0.5	**73.90**

*for **6000 LEGIOMIX ¾" body ONLY**

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10744*	¾" press requires 1" union slip nut	0.2	**16.50**
NA10404*	1" press requires 1" union slip nut	0.2	**34.60**
NA10747	1" press requires 1¼" union slip nut	0.4	**22.80**
NA10707	1¼" press requires 1½" union slip nut	0.4	**84.20**
NA10708	1½" press requires 2" union nut	0.5	**121.00**
NA10709	2" press includes 2½" union nut	0.5	**214.00**

* for **6000 LEGIOMIX ¾" body ONLY**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut for 3/4" and 1" press	0.2	**6.40**
R11222	1¼" union slip nut	0.3	**7.60**
R31589	1½" union nut	0.2	**15.60**
R11221	1½" union slip nut for 1-1/4" press	0.2	**15.20**
R51838	2½" union nut	0.3	**38.10**

Union sealing gasket.
(Legacy Non Posi-Stop™ Product)

Code	Description	Lbs	USD
R0001462	1" union gasket	0.1	**1.60**
R0001457	1½" union gasket	0.1	**3.60**
R0001460	2½" union gasket	0.1	**17.00**

127 FLOWCAL+, 128 FLOWCAL+, 128 Y-STRAINER, 132 QUICKSETTER+

Union sealing gasket.
(Legacy Non Posi-Stop™ Product)

Code	Description	Lbs	USD
R20011	replacement for 1" union	0.1	**1.60**

Compatible check valves

Code	Description	Lbs	USD
NA10405	for sweat, NPT male fittings	0.1	**2.50**
R39204	for press and PEX fittings	0.1	**3.50**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**

NPT female tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F49644	½" NPT female includes ¾" union nut	0.4	**20.30**
F49645	¾" NPT female includes 1" union nut	0.5	**23.00**

127 FLOWCAL+, 128 FLOWCAL+, 128 Y-STRAINER, 132 QUICKSETTER+

NPT male tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
R31981	½" NPT male requires 1" union nut	0.3	**11.60**
31901A	¾" NPT male requires 1" union nut	0.4	**15.10**
59817A	1" NPT male includes union nut	0.3	**32.90**

NPT male tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
59893A	½" NPT male requires 1" union nut	0.2	**21.80**
59840A	¾" NPT male requires 1" union nut	0.3	**29.80**
59894A	1" NPT male includes check and nut	0.4	**47.80**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10002	½" sweat requires 1" union nut	0.2	**8.40**
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**
59834A	1" sweat includes union nut	0.4	**29.70**

Sweat tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
59904A	½" sweat requires 1" union nut	0.2	**19.00**
59905A	¾" sweat requires 1" union nut	0.3	**26.60**
59906A	1" sweat includes 1" union nut	0.4	**44.70**

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA16264	½" press includes 1" union nut	0.3	**17.60**
NA16265	¾" press includes 1" union nut	0.4	**19.40**
NA16266	1" press includes 1" union nut	0.5	**34.50**

Long copper press tailpiece with **check valve**, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10864LC	½" press includes check and 1" union nut	0.3	**23.00**
NA16265LC	¾" press includes check and 1" union nut	0.3	**56.20**
NA16266LC	1" press includes check and 1" union nut	0.3	**68.90**

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0001007	½" PEX exp. requires 1" union nut	0.1	**8.40**
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**
F0001009	1" PEX exp. requires 1" slip nut	0.1	**24.90**

PEX expansion (ASTM F1960) tailpiece with **check valve**, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10634	½" PEX exp. requires 1" union nut	0.2	**19.00**
NA10635	¾" PEX exp. requires 1" union nut	0.2	**26.60**
NA10636	1" PEX exp. requires 1" slip nut	0.2	**39.90**

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0000492	½" PEX crimp requires 1" union nut	0.1	**8.40**
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**
F0000521	1" PEX crimp requires 1" slip nut	0.1	**24.90**

PEX crimp (ASTM F1807) tailpiece with check valve, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10484	½" PEX crimp requires 1" union nut	0.2	**19.00**
NA10485	¾" PEX crimp requires 1" union nut	0.2	**26.60**
NA10486	1" PEX crimp requires 1" union nut	0.2	**39.90**

535 PRESCAL AND 536 PRESCAL HP

NPT female tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F49644	½" NPT female includes ¾" union nut	0.4	**20.30**
F49645	¾" NPT female includes 1" union nut	0.5	**23.00**
F49646	1" NPT female includes 1¼" union nut	0.6	**30.60**
F49647	1¼" NPT female includes 1½" union nut	0.7	**51.00**
F0000493	1½" NPT female includes 2" union nut	0.9	**91.70**
F0000495*	2" NPT female includes 2½" union nut	1.0	**109.00**

*536 PresCal HP Low range not offered in this size

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10809	½" press requires ¾" union slip nut	0.2	**16.50**
NA10744	¾" press requires 1" union slip nut	0.4	**16.50**
NA10747	1" press requires 1¼" union slip nut	0.6	**22.80**
NA10707	1¼" press requires 1½" union slip nut	0.8	**84.20**
NA10715	1½" press includes 2" union nut	0.9	**167.00**
NA10709*	2" press includes 2½" union nut	0.2	**214.00**

*536 PresCal HP Low range not offered in this size

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0001008	¾" PEX expansion requires 1" union nut	0.1	**11.60**
NA10556	1" PEX expansion requires 1¼" union nut	0.2	**15.20**

Union sealing gasket.
(Legacy non Posi-Stop™ products)

Code	Description	Lbs	USD
R0001458	¾" union gasket	0.1	**1.50**
R20011	1" union gasket	0.1	**1.60**
R0001454	1¼" union gasket	0.1	**2.50**
R0001457	1½" union gasket	0.1	**3.60**
R0001459	2" union gasket	0.1	**6.90**
R0001460	2½" union gasket	0.1	**17.00**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10002	½" sweat requires ¾" union nut	0.1	**8.40**
NA10003	¾" sweat requires 1" union nut	0.2	**11.60**
F49657	1" sweat includes 1¼" nut	0.4	**20.30**
41787 CST	1¼" sweat requires 1½" union nut	0.3	**35.80**
F0000494	1½" sweat includes 2" union nut	0.7	**68.90**
F0000496*	2" sweat includes 2½" union nut	0.8	**94.30**

*536 PresCal HP Low range not offered in this size

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**
NA10496	1" PEX crimp requires 1¼" union nut	0.2	**27.10**

Union nut, brass.

Code	Description	Lbs	USD
F41186	¾" union nut	0.1	**3.80**
R21176	¾" union slip nut	0.1	**6.40**
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**
R31495	1¼" union nut	0.3	**7.60**
R11222	1¼" union slip nut	0.3	**7.60**
R31589	1½" union nut	0.4	**15.60**
R11221	1½" union slip nut	0.4	**15.20**
R51838	2½" union nut	0.5	**38.10**

533 PRESCAL COMPACT

NPT female tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F49644	½" NPT female includes ¾" union nut	0.4	**20.30**
F49645	¾" NPT female includes 1" union nut	0.5	**23.00**

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10809	½" press requires ¾" union slip nut	0.2	**16.50**
NA10744	¾" press requires 1" union slip nut	0.4	**16.50**

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0002108	¾" PEX expansion requires 1" union nut	0.1	**11.60**

Union sealing gasket.
(Legacy non Posi-Stop products)

Code	Description	Lbs	USD
R0001458	¾" union gasket	0.1	**1.50**
R20011	1" union gasket	0.1	**1.60**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10002	½" sweat tailpiece requires ¾" union nut	0.1	**8.40**
NA10003	¾" sweat tailpiece requires 1" union nut	0.2	**11.60**

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0002077	¾" PEX crimp requires 1" union nut	0.1	**21.00**

Union nut, brass.

Code	Description	Lbs	USD
F41186	¾" union nut	0.1	**3.80**
R21176	¾" union slip nut	0.1	**6.40**
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**

573 FLOWSHIELD DUC-AV

NPT female tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
R0000892	½" NPT female	0.2	**15.20**
R0002057	¾" NPT female	0.3	**23.00**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
41380A	½" sweat	0.1	**14.50**

Union sealing gasket.
(Legacy non Posi-Stop™ products)

Code	Description	Lbs	USD
R0001622	replacement gasket for 573 series	0.1	**3.50**

Copper press adapter, low lead.

Code	Description	Lbs	USD
NA10494	½" press adapter, MNPT x press	0.3	**23.00**

Union nut, brass.

Code	Description	Lbs	USD
R0000582	union nut for 573 series	0.2	**3.00**

3048 FLOWSHIELD DUC

NPT male tailpiece, low lead brass.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
F0002181	½" NPT male requires 1" union nut NEW	0.2	**11.60**
31901A	¾" NPT male requires 1" union nut	0.3	**15.10**
59817A	1" NPT male includes nut	0.3	**32.90**

Copper press tailpiece, low lead.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
NA16264	½" press includes 1" union nut	0.3	**17.60**
NA16265	¾" press includes 1" union nut	0.4	**19.40**
NA16266	1" press includes 1" union nut	0.5	**34.50**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" brass nut	0.2	**4.60**
F0000698	1" brass slip nut	0.2	**6.40**

NPT female tailpiece, low lead brass.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
NA10596	½" NPT female requires 1" union slip nut	0.2	**#N/A**
F49645	¾" NPT female includes 1" union slip nut	0.3	**23.00**

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
F0001007	½" PEX exp. requires 1" union nut	0.1	**8.40**
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**
F0001009	1" PEX exp. requires 1" slip nut	0.1	**24.90**

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
F0000492	½" PEX crimp requires 1" union nut	0.1	**8.40**
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**
F0000521	1" PEX crimp requires 1" union slip nut	0.1	**24.90**

5517 DISCAL ROTATING COLLAR, NA5453 DIRTMAG

NPT male tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
31901A	¾" NPT male requires 1" union nut	0.3	**15.10**
59817A	1" NPT male includes nut	0.3	**32.90**

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA16265	¾" press includes 1" union slip nut	0.4	**19.40**
NA16266	1" press includes 1" union slip nut	0.5	**34.50**

Union gasket.
(Legacy non Posi-Stop™ products)

Code	Description	Lbs	USD
R20011	1" union gasket	0.1	**1.60**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**
59834A	1" sweat includes 1" union nut	0.4	**29.70**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" brass nut	0.2	**4.60**
F0000698	1" brass slip nut	0.2	**6.40**

5495 SEP4, 548 HYDRO SEPARATOR, 5461 DISCALDIRTMAG

NPT female tailpiece, brass.

Code	Description	Lbs	USD
31553 FD	1" NPT female requires 1½" steel union nut	0.3	**18.10**
31401 FD	1¼" NPT female requires 2" steel union nut	0.3	**39.20**
R41441	1½" NPT female requires 2¼" steel union nut	0.3	**39.60**
31426 FD	2" NPT female requires 2¾" steel union nut	0.4	**77.50**

Copper press tailpiece.

Code	Description	Lbs	USD
NA10406	1" press tailpiece requires 1½" steel union nut	0.4	**47.10**
NA10407	1¼" press tailpiece requires 2" steel union nut	0.4	**70.10**
NA10408	1½" press tailpiece requires 2¼" steel union nut	0.5	**99.10**
NA10409	2" press tailpiece requires 2¾" steel union nut	0.5	**163.00**

Union nut, steel.

Code	Description	Lbs	USD
R0001452	1½" steel union nut	0.4	**15.10**
R53003	2" steel union nut	0.4	**31.00**
R53004	2¼" steel union nut	0.4	**31.00**
R53005	2¾" steel union nut	0.4	**35.50**

Sweat tailpiece, brass.

Code	Description	Lbs	USD
31554 FD	1" sweat requires 1½" steel union nut	0.3	**36.50**
31403 FD	1¼" sweat requires 2" steel union nut	0.3	**67.80**
41882A	1½" sweat requires 2¼" steel union nut	0.3	**64.20**
31428 FD	2" sweat requires 2¾" steel union nut	0.4	**105.00**

Union gasket.

Code	Description	Lbs	USD
R50005	1½" union gasket	0.2	**3.60**
R50008	2" union gasket	0.2	**7.20**
R50047	2¼" union gasket	0.2	**14.50**
R50048	2¾" union gasket	0.2	**17.60**

553 AND 5350 AUTOFILL

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10001*	½" sweat requires ¾" union nut	0.3	**10.20**
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**
59834A	1" sweat includes union nut	0.4	**29.70**

*for ***553 AutoFill ONLY***

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA16265	¾" press includes 1" union nut	0.4	**19.40**
NA16266	1" press includes 1" union nut	0.5	**34.50**

Union nut, brass.

Code	Description	Lbs	USD
F41186	¾" union nut	0.1	**3.80**
F61008	1" union nut	0.2	**4.60**

Union gasket.
(Legacy non Posi-Stop™ products)

Code	Description	Lbs	USD
R0001458	¾" union gasket	0.1	**1.50**
R20011	1" union gasket	0.1	**1.60**

NPT male tailpiece, low lead brass.
Posi-Stop™ product, not compatible with sealing gaskets.

Code	Description	Lbs	USD
F31868*	½" NPT male	0.1	**12.20**
31901A	¾" NPT male requires 1" union nut	0.3	**15.10**
59817A	1" NPT male includes nut	0.3	**32.90**

*for ***553 AutoFill ONLY***

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**
F0001009	1" PEX exp. requires 1" slip nut	0.1	**24.90**

PEX crimp (ASTM F1807) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**
F0000521	1" PEX crimp. requires 1" union slip nut	0.1	**24.90**

116 THERMOSETTER & 1164 THERMOSETTER COMPACT

NPT female tailpiece, low lead brass.

Code	Description	Lbs	USD
NA10569	½" NPT female requires 1" union slip nut	0.2	**20.30**
F49645	¾" NPT female includes 1" union nut	0.5	**23.00**

Sweat tailpiece, low lead brass.

Code	Description	Lbs	USD
NA10002	½" sweat requires 1" union nut	0.2	**8.40**
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**

Copper press tailpiece, low lead.

Code	Description	Lbs	USD
NA16264	½" press includes 1" union nut	0.3	**17.60**
NA16265	¾" press includes 1" union nut	0.4	**19.40**

PEX expansion (ASTM F1960) tailpiece, low lead brass.

Code	Description	Lbs	USD
F0001007	½" PEX exp. requires 1" union nut	0.1	**8.40**
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**

PEX crimp (ASTM F1807) tailpiece, low lead brass.

Code	Description	Lbs	USD
F0000492	½" PEX crimp requires 1" union nut	0.1	**8.40**
F0000520	¾" PEX crimp requires 1" union nut	0.1	**11.60**

Union nut, brass.

Code	Description	Lbs	USD
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**

MISCELLANEOUS FITTINGS

Sweat adapter.

Code	Description	Lbs	USD
NA10062	1" sweat adaptor with 1" male thread	0.1	**23.80**

Double nipple.

Code	Description	Lbs	USD
NA12173	1" NPT x 1" NPT	0.4	**27.40**

Nipple.

Code	Description	Lbs	USD
NA10064	1" NPT with 1" male thread	0.2	**24.70**

Nipple.

Code	Description	Lbs	USD
NA12162	¾" male with O-ring x 1" male thread	0.2	**25.30**

Sweat adapter.

Code	Description	Lbs	USD
NA10119	1" sweat adapter x 1¼" union thread	0.4	**30.20**

Bushing.

Code	Description	Lbs	USD
61215A	1" NPT F x 1¼“ M thread bushing	0.8	**22.00**

Bushing.

Code	Description	Lbs	USD
NA10087	1" female x 1¼" male thread bushing	0.4	**22.10**

Nipple.

Code	Description	Lbs	USD
R31706	1" male x 1¼" male nipple	0.3	**27.40**

Z-ONE UNION, 145 FLOWMATIC, 6767 TWISTOP+, 6762 TWISTOP, 6442 AND 6443 SERIES

NPT female tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F49644	½" NPT female includes ¾" union slip nut	0.2	**20.30**
F49645	¾" NPT female includes 1" union slip nut	0.3	**23.00**
F49646	1" NPT female includes 1¼" union slip nut	0.3	**30.60**

*for **145 FLOWMATIC PICV ONLY**

Copper press tailpiece, low lead.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA16264	½" press includes 1" union nut	0.3	**17.60**
NA16265	¾" press includes 1" union nut	0.3	**19.40**
NA16265L*	¾" long press includes 1" union slip nut	0.4	**44.40**
NA16266	1" press includes 1" union nut	0.5	**34.50**

*for **Z-one Union zone valves ONLY**

PEX expansion (ASTM F1960) tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0001007	½" PEX exp. requires 1" union nut	0.1	**8.40**
F0001008	¾" PEX exp. requires 1" union nut	0.1	**11.60**
F0001009*	1" PEX exp. requires 1" slip nut	0.1	**24.90**

*for **6767 and 6762 Series ONLY**

Sweat tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
NA10002	½" sweat requires 1" union nut	0.2	**8.40**
NA10003	¾" sweat requires 1" union nut	0.3	**11.60**
59834A	1" sweat includes union nut	0.4	**29.70**

NPT male tailpiece, low lead brass.
Sealing gasket required for legacy valves without Posi-Stop™.

Code	Description	Lbs	USD
F0002181*	½" NPT male requires 1" union nut	0.2	**11.60**
31901A*	¾" NPT male requires 1" union nut	0.3	**15.10**

*for **6442 & 6443 Series ONLY**

Union nut, brass.

Code	Description	Lbs	USD
R21176	¾" union slip nut	0.1	**6.40**
F61008	1" union nut	0.2	**4.60**
F0000698	1" union slip nut	0.2	**6.40**
R11222	1¼" union slip nut	0.3	**7.60**

Union sealing gasket.
(Legacy non Posi-Stop™ products)

Code	Description	Lbs	USD
R20011	1" union gasket	0.1	**1.60**

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***PRODUCT warranty exceptions:**

Switching Zone Relays	**3 years**
Switching zone relays + valves (Z-one valves and Z-one relays installed together)	**5 years**

NOT COVERED: This Limited Warranty also does not apply to, and WARRANTOR shall have no liability or responsibility in respect of, damages or expenses relating to:

- The failure to properly store, transport, install or use the PRODUCT as, for example, specified in any manuals or other literature supplied by WARRANTOR, on WARRANTOR's website, or in accordance with any applicable laws, codes, regulators or standards;
- Any PRODUCT purchased from any entity other than WARRANTOR;
- Alteration, change or modification of the PRODUCT, including its subcomponents, parts or assemblies;
- WARRANTOR also makes no warranty that a PRODUCT manufactured does not infringe the intellectual property or other proprietary rights of any third party;
- Accidents, misuse, abuse, abnormal use, improper use, negligent use, wilful misconduct, or use exceeding the recommended and permitted limits of the PRODUCT, and/or normal wear or deterioration;
- Any defect or non-conformity that has not been timely and promptly communicated in writing to WARRANTOR as set forth herein.
- Any damage, cost or expense caused by Act of God; or
- Loss of time, loss of use, inconvenience, loss of profits, lost business, lost business opportunities, damage to reputation, goodwill and any incidental or consequential damages arising out of or relating to the PRODUCT, or other matters not specifically covered hereunder.

PROCEDURE: Upon delivery, PURCHASER shall, within one (3) business day, inspect the PRODUCT for conformity and visible defects. PURCHASER shall give WARRANTOR immediate written, specific and detailed notice of any non-conformities or defects regarding the PRODUCT. Upon receipt of the written notice of claim, WARRANTOR shall have the right to inspect the PRODUCT. In the event of a defect covered by this Limited Warranty, WARRANTOR will, at WARRANTOR's discretion, repair or replace the PRODUCT or any component of the PRODUCT or refund the purchase price for that particular PRODUCT. In the event that PURCHASER submits a warranty claim that, in the sole reasonable discretion of the WARRANTOR, is unfounded, the PURCHASER shall reimburse the WARRANTOR all reasonable costs incurred by the WARRANTOR in evaluating the warranty claim (i.e. travel, lodging, expert evaluations, etc.). WARRANTOR must approve, in advance and in writing, all repairs or replacements covered under or performed pursuant to this Limited Warranty. Any warranty repairs or service must be performed exclusively by WARRANTOR or other authorized representative of WARRANTOR or by another servicing facility pre-approved in writing by WARRANTOR. Acceptance of any Limited Warranty claim is not an admission that any PRODUCT or any of its component parts are defective.
The PURCHASER forfeits any rights it may have under this Limited Warranty if the PURCHASER does not follow the procedure described herein.

All requests and notices under this Limited Warranty shall be directed to:

Caleffi North America Inc.
3883 West Milwaukee Road
Milwaukee, WI 53208
E-Mail: returns.us@caleffi.com
Phone (414) 238-2360
Fax: (414) 238-2366

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DISCLAIMER: ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ALL IMPLIED WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OF TRADE, BY STATUTE OR OTHERWISE, IS HEREBY STRICTLY LIMITED TO THE TERM OF THIS WRITTEN WARRANTY. This Limited Warranty shall be the sole and exclusive remedy available to the PURCHASER with respect to this PRODUCT. In the event of any alleged breach of any warranty or any legal action brought by the PURCHASER based on alleged negligence or other tortious conduct by WARRANTOR, the PURCHASER'S sole and exclusive remedy will be repair or replacement of defective materials or refund of the purchase price, as stated herein.

TRANSFER OF LIMITED WARRANTY: This warranty is made by WARRANTOR with only first PURCHASER of the PRODUCT and does not extend to any subsequent PURCHASER or any third parties. The unexpired portion of this Limited Warranty may not be transferred to any entity.

APPLICABLE LAW: The parties expressly acknowledge and irrevocably agree that any and all claims or disputes arising out of or otherwise relating to this Limited Warranty shall be decided by a binding arbitration administered by the American Arbitration Association pursuant to Commercial Industry Rules in effect as of the date of this Limited Warranty, to the exclusion of any courts of any place, except as necessary for the enforcement of arbitration rights. The place for any such arbitration shall be The State of Wisconsin. PURCHASER expressly waives any provision of law in the jurisdiction in which PURCHASER is located or any other potentially applicable law which conflicts with any provision of this Limited Warranty at any time.

OTHER RIGHTS: Your acceptance of delivery of The PRODUCT constitutes your acceptance of the terms of this Limited Warranty. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. If any term or provision of this Limited Warranty is invalid or unenforceable under any local, state, or federal law, statute, judicial decision, regulation, ordinance, executive order or other rule of law, such term shall be deemed reformed or deleted, but only to the extent necessary to comply with such statute, regulation, ordinance, order or rule and the remaining provisions of this Limited Warranty shall remain in full force and effect.

ENTIRE AGREEMENT: This document alone contains the entire Limited Warranty given by WARRANTOR in respect of the PRODUCT. Nothing in WARRANTOR's product literature, marketing materials, advertisements and technical specifications expand or enlarge the scope of this Limited Warranty. There are no terms, promises, conditions or warranties regarding the PRODUCT other than those expressly contained herein. WARRANTOR specifically does not authorize any person, including but not limited to any dealer or other agent or employee of WARRANTOR, to extend the time, scope, terms or conditions of this Limited Warranty or to create or assume for WARRANTOR any other obligation or liability with respect to the PRODUCT or other products designed, manufactured or sold by WARRANTOR. All terms of this Limited Warranty are contractual and not mere recitals, and constitute material terms of this Limited Warranty. It is agreed and acknowledged that the provisions of this Limited Warranty allocate the risks between WARRANTOR and PURCHASER, that WARRANTOR's pricing reflects this allocation of risk, and but for this allocation and limitation of liability, WARRANTOR would not have entered into this Limited Warranty.
The agents, employees, and dealers of Caleffi Products are not authorized to make modifications to this limited warranty or make additional warranties binding on Caleffi.

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HAVE A QUESTION?

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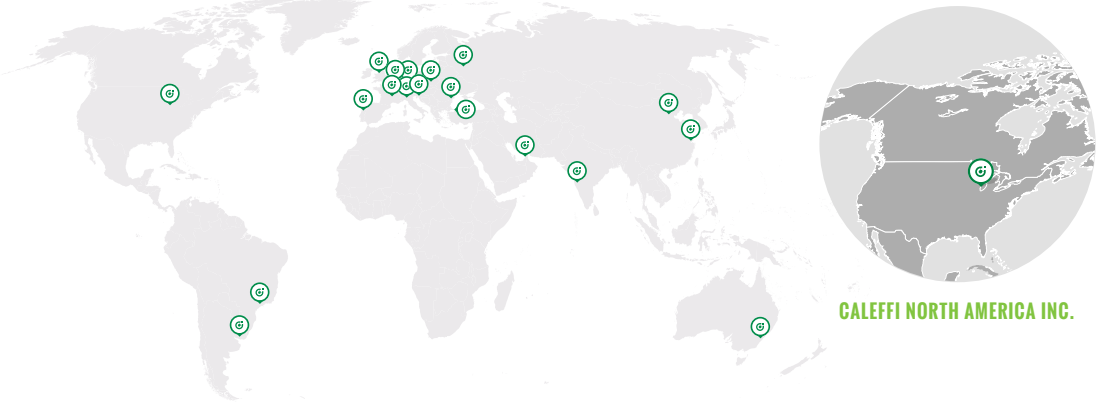

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