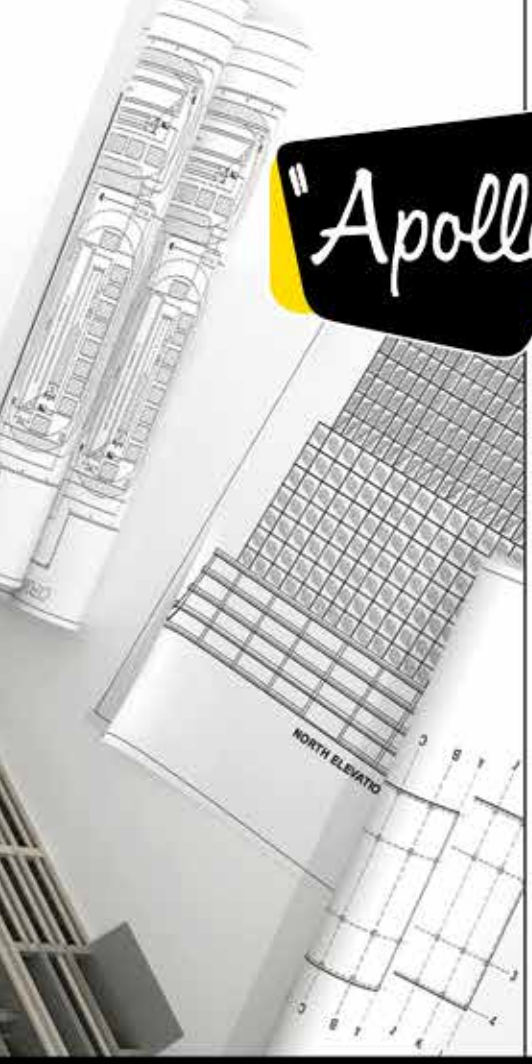
MIXING VALVES

"Apollo" Valves
Made In The USA

APOLLO VALVES
5 YEAR WARRANTY
MADE IN USA



"Apollo" Valves
Made In The USA

A history of **Quality, Service** and **Innovation**

Now in its ninth decade, Conbraco Industries, Inc. is a leading manufacturer of flow control products for U.S. and international markets. The company's headquarters is based in Matthews, North Carolina with manufacturing plants and foundries located in Pageland and Conway, South Carolina.

Conbraco has a history of new product development and innovation that dates back to the company's inception in 1928. Today, the Conbraco line of products is marketed under the "Apollo Valves" brand and includes: ball valves, butterfly valves, backflow prevention devices, water pressure reducing valves, mixing valves, safety relief valves, water gauges, strainers, vacuum breakers, valve actuators and more.

Conbraco's vertically integrated manufacturing ensures a consistency of production, testing, quality and availability. It's your assurance that Conbraco flow control products will deliver long term performance advantages. All Conbraco plants are registered to ISO 9001:2008 quality standards.

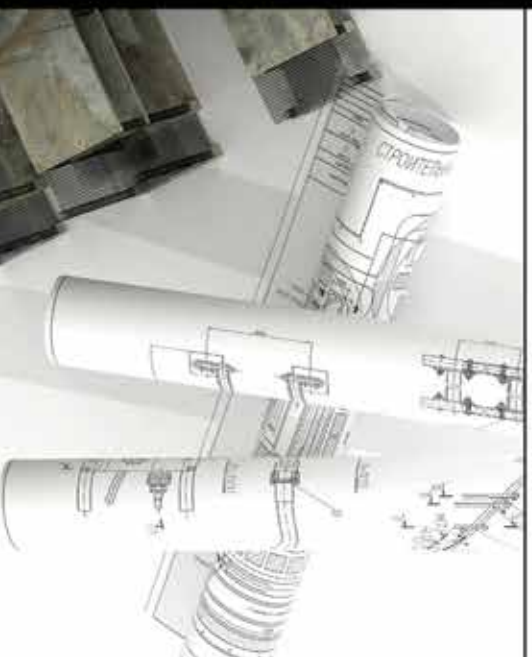
The Conbraco line continues to expand - with new products, designs and advanced materials - to better serve the needs of our customers in the chemical processing, pulp and paper, petroleum, residential and commercial plumbing and heating markets, as well as manufacturing and other markets.

PAGELAND, SC
Bronze Foundry and Manufacturing Plant

PAGELAND, SC
Final Assembly and Distribution Center

CONWAY, SC
Steel Foundry and Manufacturing Plant

MATTHEWS, NC
Corporate Headquarters



Throughout this catalog, products that have a Lead Free* option will be identified with this logo.

Certified LEAD FREE "Apollo" MODELS AVAILABLE

* LEAD FREE: The wetted surfaces of this product shall contain no more than 0.25% lead by weighted average. Complies with Federal Public Law 111-380. ANSI 3rd party approved and listed.

** Any imported products are clearly identified as "Apollo International™" or "Conbraco™ International".

Conbraco Industries offers a wide range of Apollo® products for potable and non-potable applications. When the use of lead free valves is required by code, specification or legislation, it is the sole responsibility of our customers to ensure that only lead free Apollo® products are installed in systems intended for potable water service. Further information related to our product offering and the **U.S. Safe Drinking Water Act (SDWA)** is available at www.apollovalves.com/lead_free, or by contacting Conbraco Customer Service.

APOLLO MIXING VALVES ...

Your Best Choice For Value And Protection

No matter how big or small your job, you can trust Apollo® thermostatic mixing valves to provide all the value and Code-compliant performance you're looking for.

Conserving energy and assuring safe use of our water systems by those who depend on them has grown increasingly important in recent years. Government at every level is working with our industry to enhance and improve the safety of our hot water supplies. This brochure addresses the use of Apollo® mixing valves to protect water users and extend energy efficiency.

A PROPER BALANCE

Maintaining proper water temperature in hot water supply systems is critical. Water stored and delivered at too high a temperature puts users at risk of scalding. But maintaining water at too low a temperature presents other risks. It can turn a tank or piping system into a breeding ground for bacteria – potentially harmful to water users young and old. Delivering water at the optimum temperature is exactly what our Apollo® thermostatic mixing valves are designed to do.

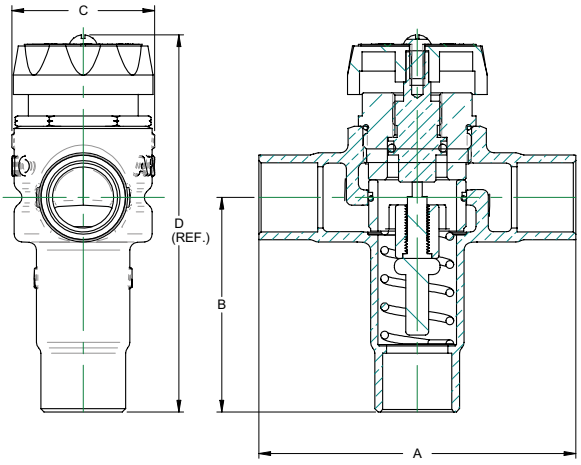
FOR EVERY JOB

Our Apollo® family of mixing valves includes ASSE certified products to meet all your point-of-source and point-of use requirements. We also offer a full range of non-ASSE models designed specifically for the higher temperatures associated with hydronic and radiant heating systems. And they're built to resist corrosion. All valves feature a high-copper-content all bronze body and heavy duty stainless steel springs. Our mixing valves offer fingertip control of water temperatures up to 180°F and the convenience of easy in-line servicing.

TABLE OF CONTENTS

HYDRONIC TEMPERING VALVES

34-200 SERIES

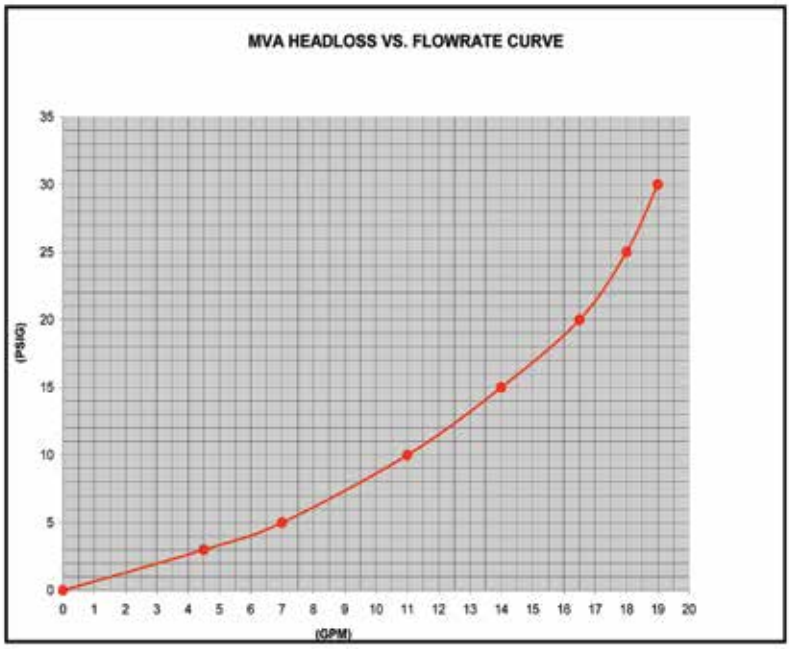


The Apollo® Model TV (34-200 Series) thermostatic mixing valve provides non-ASSE extension of water heater capacity and hot water temperature control in hydronic heating systems. Available in low or high temperature options for floor or baseboard applications.

FEATURES

- Low temperature range 85°-120°F (-L1 suffix)
- High temperature range 120°-180°F (-01 suffix)
- Stainless steel spring
- Corrosion resistant bronze body
- Thermoplastic shuttle assembly
- Solder connections are standard
- In-line repairable
- Fingertip temperature control
- **Made in USA - ARRA compliant**

Part No. Low Temp 85° - 120° F	Part No. High Temp 120° - 180° F	Connection	Size (in.)	Dimensions		Weight Lbs.
				Height	Width	
34203L1	3420301	Solder	1/2	4.45	3.75	1.4
34204L1	3420401	Solder	3/4	4.47	4.00	1.5



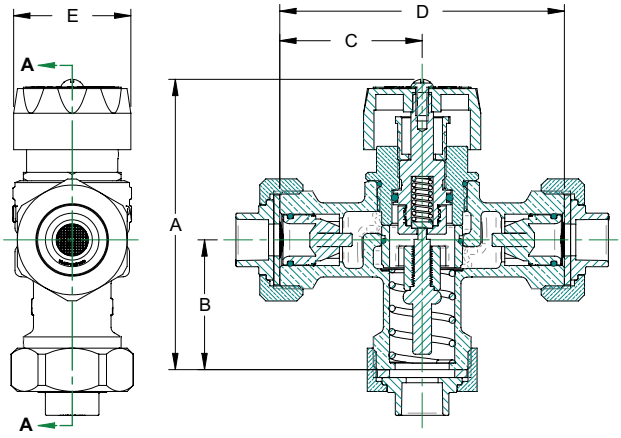
ASSE 1017 Point of Source Mixing Valves

MVA (34A) Series/MVAH Hydronic Series

The Apollo MVA thermostatic master mixing valves are designed for ASSE 1017 "point of source" applications. They provide reliable hot water temperature control of potable and hydronic hot water distribution systems.

FEATURES

- Superior thermostatic element technology for optimal performance, reliability and accuracy
- Integral inlet strainers and check valves are standard to protect against cross-flow and foreign particles in the piping system
- Thermostat over-temperature control
- Maximum temperature limit option
- Fingertip temperature control
- Cold or hot water supply failure shut-off protection
- Multiple connection options to fit your specific needs
- High temperature version for hydronic/radiant heating applications
- Standard materials of construction meet the requirements of the EPA Safe Drinking Water Act
- Lead free option available - specify model 34ALF
- **Made in USA - ARRA compliant**



SECTION A-A

APPROVALS

- ASSE 1017 - Temperature Actuated Mixing Valve for Hot Water Distribution Systems
- CSA B125.3 - Plumbing Supply Fittings

PERFORMANCE RATING

Maximum working pressure	150 psig (1034 kPa)
Maximum working temperature	210°F (99°C)
Cold water inlet temperature range	39-80°F (4 - 27°C)
Hot water inlet temperature range	120 - 200°F (49 - 82°C)
Minimum flow rate	1/2 gpm (1.9 lpm)
Mixed water temperature range	130 - 180°F (54 - 82°C)
Mixed water temperature tolerance	±5°F (1.7°C)
Cv rating	3.9
Flow rate at 30 psid(138kPA)	19 gpm (64 lpm)
Maximum pressure differential between hot & cold	25%

MATERIAL

Body:	ASTM B584 Bronze
Shuttle:	Noryl® Modified PPO (Polyphenylene Oxide)
Sensor:	Copper/Wax filled
O-ring:	Chloramine Resistant EPDM
Spring:	ASTM A313 Stainless Steel
Cap:	ABS (Acrylonitrile Butadiene Styrene)

OPTIONS

Max Temperature Adjustment Setting (B suffix)
Preset to 120°F maximum temperature

High Temp Range (H) Radiant Heat Application
120°F-180°F (Not ASSE Certified)
See 34A-H submittal sheet

Lead Free construction certified 0.25% lead max.
Model 34ALF

ASSE 1017 Point of Source Mixing Valves*

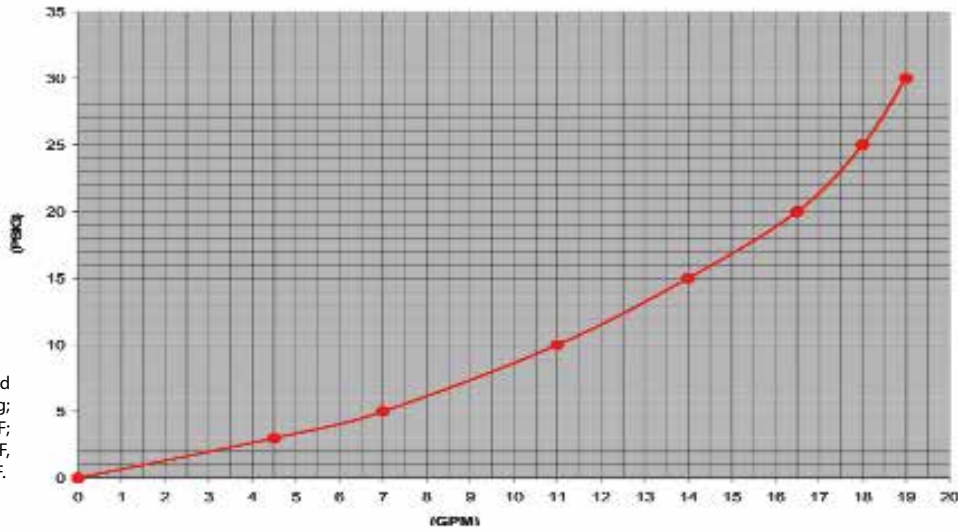
MVA (34A) Series/MVAH Hydronic Series

Model Number	Lead Free Model#	Order Number	Lead Free Order #	Connection Type	Dimensions (in.)						Unit Wt. (lbs)
					A	B	C	D	E	F	
MVA12	MVA12-LF	34A213T	34ALF213T	1/2" FNPT	3.73	2.11	2.28	4.56	1.87	0.73	2.8
MVA34	MVA34 -LF	34A214T	34ALF214T	3/4" FNPT						0.77	2.8
MVA1	MVA1 -LF	34A215T	34ALF215T	1" FNPT					2.12	0.94	2.9
MVAS12	MVAS12 -LF	34A213S	34ALF213S	1/2" Solder	3.73	2.11	2.28	4.56	1.87	0.81	2.5
MVAS34	MVAS34 -LF	34A214S	34ALF214S	3/4" Solder						0.81	2.6
MVAS1	MVAS1 -LF	34A215S	34ALF215S	1" Solder					2.12	0.94	2.7
MVAC12	MVAC12 -LF	34A213C	34ALF213C	1/2" CPVC	3.73	2.11	2.28	4.56	1.87	0.58	2.4
MVAC34	MVAC34 -LF	34A214C	34ALF214C	3/4" CPVC						0.80	2.4
MVAC1	MVAC1 -LF	34A215C	34ALF215C	1" CPVC					2.12	1.09	2.5
MVAX12	MVAX12 -LF	34A213X	34ALF213X	1/2" PEX	3.73	2.11	2.28	4.56	1.87	0.83	2.5
MVAX34	MVAX34 -LF	34A214X	34ALF214X	3/4" PEX						0.83	2.6
MVAX1	MVAX1 -LF	34A215X	34ALF215X	1" PEX					2.12	1.04	2.7

	Standard 85° - 120°F				120°F Adjustment Limit Stop				High Temp (120°F-180°F)*	
Size & Connection	Order Number	Model Number	Lead Free Order #	Lead Free Model #	Order Number	Model Number	Lead Free Order #	Lead Free Model #	Order Number	Model Number
1/2" FNPT	34A213T	MVA12	34ALF213T	MVA12-LF	34A213BT	MVAB12	34ALF213BT	MVAB12-LF	34A213HT	MVAH12
3/4" FNPT	34A214T	MVA34	34ALF214T	MVA34-LF	34A214BT	MVAB34	34ALF214BT	MVAB34-LF	34A214HT	MVAH34
1" FNPT	34A215T	MVA1	34ALF215T	MVA1-LF	34A215BT	MVAB1	34ALF215BT	MVAB1-LF	34A215HT	MVAH1
1/2" Solder	34A213S	MVAS12	34ALF213S	MVAS12-LF	34A213BS	MVABS12	34ALF213BS	MVABS12-LF	34A213HS	MVAHS12
3/4" Solder	34A214S	MVAS34	34ALF214S	MVAS34-LF	34A214BS	MVABS34	34ALF214BS	MVABS34-LF	34A214HS	MVAHS34
1" Solder	34A215S	MVAS1	34ALF215S	MVAS1-LF	34A215BS	MVABS1	34ALF215BS	MVABS1-LF	34A215HS	MVAHS1
1/2" CPVC	34A213C	MVAC12	34ALF213C	MVAC12-LF	34A213BC	MVABC12	34ALF213BC	MVABC12-LF	34A213HC	MVAHC12
3/4" CPVC	34A214C	MVAC34	34ALF214C	MVAC34-LF	34A214BC	MVABC34	34ALF214BC	MVABC34-LF	34A214HC	MVAHC34
1" CPVC	34A215C	MVAC1	34ALF215C	MVAC1-LF	34A215BC	MVABC1	34ALF215BC	MVABC1-LF	34A215HC	MVAHC1
1/2" PEX	34A213X	MVAX12	34ALF213X	MVAX12-LF	34A213BX	MVABX12	34ALF213BX	MVABX12-LF	34A213HX	MVAHX12
3/4" PEX	34A214X	MVAX34	34ALF214X	MVAX34-LF	34A214BX	MVABX34	34ALF214BX	MVABX34-LF	34A214HX	MVAHX34
1" PEX	34A215X	MVAX1	34ALF215X	MVAX1-LF	34A215BX	MVABX1	34ALF215BX	MVABX1-LF	34A215HX	MVAHX1

* Hydronic models 34A-H/MVAH not covered by ASSE Standards.

MVA Headloss VS. Flow Rate Curve

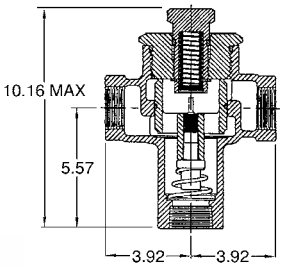


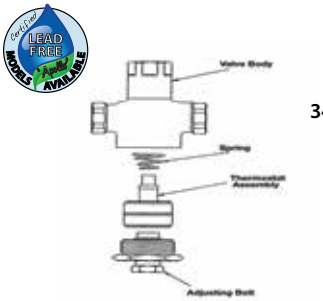
FLOW CURVE
Flow curve is based on the following: Cold and hot water inlet pressures at 45 psig; cold water supply temperature at 55 ±5°F; hot water supply temperature at 140 ±5°F, and mixed water temperature at 105 ±5°F.

Commercial High Capacity Mixing Valves

MVC (34C Series)

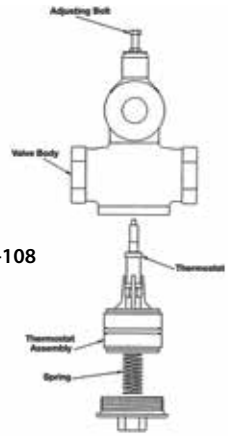
3/4" - 1"

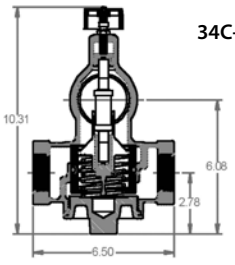




34C-104/34C-105

1-1/4" - 2"





34C-106/34C-108

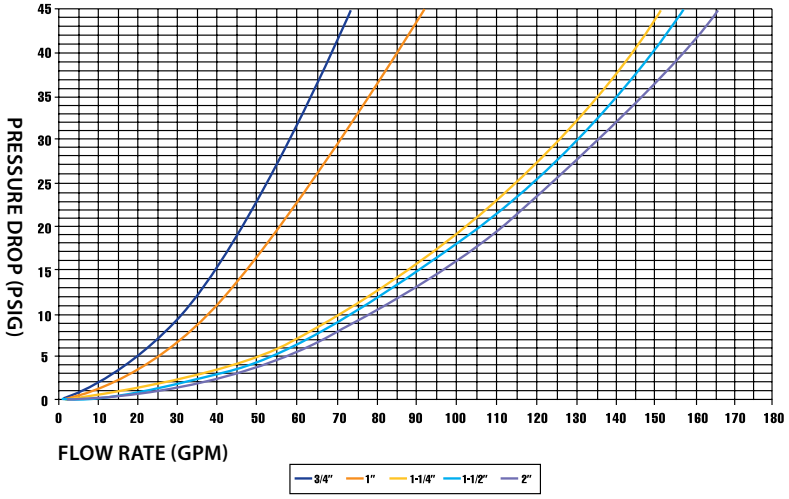
The Apollo® Model MVC (34C Series) ASSE 1017 listed, high-capacity mixing valves are thermostatically controlled regulating valves designed for use in large commercial and institutional "point of source" and hydronic hot water systems or applications. Simple adjustment of water temperature from 90°-140°F or 130°-180°F. Lead Free valves are available.

FEATURES

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2" FNPT
- Standard temp range 90°-140°F (-01 suffix)
- High temp range 130°-180°F (use suffix "H1") for hydronic/radiant heating systems
- Highest flow rates in its class, up to 165 gpm
- Threaded connections
- All-bronze and stainless steel construction
- Patented design for easy in-line maintenance
- Supply pressures to 150 psig
- U.S. Patent #6,328,219
- ASSE 1017 listed
- CSA B125.3 "Plumbing Fittings"
- Lead free option available - specify model 34CLF
- **Made in USA - ARRA compliant**

SPECIAL FEATURES

Selected Apollo 34C mixing valves feature a two-piece shuttle with integral over-travel spring so they're smaller and easier to install than other high-capacity valves. Plus their patented snap-fit element retainer and shuttle with special finger-grip pads assure easy removal and servicing without the need for special tools.



ORDERING NUMBERS

Size (in.)	Part No. Standard Temp. 90° - 140° F	Part No. High Temp. 130° - 180° F
3/4	34C-104-01	34C-104-H1
1	34C-105-01	34C-105-H1
1-1/4	34C-106-01	34C-106-H1
1-1/2	34C-107-01	34C-107-H1
2	34C-108-01	34C-108-H1

ASSE 1070/1017 Point of Use Mixing Valves

MVB (34B Series)

The Apollo® Model "MVB" (34B Series) thermostatic mixing valves are designed to control and limit the volumes of cold and hot water required to deliver mixed water at a predetermined temperature either from the "point of source" or "point of use" application for single or multiple fixtures. Lead Free valves are available with various end connections.

FEATURES

- Highest capacity that meets ASSE 1070
- Superior thermostatic element technology for optimum reliability, dependability and accuracy
- Integral strainers and check valves provide protection against cross-flow and foreign particles
- Thermostat over-temperature protection
- Tamper resistant locking cap feature
- Maximum temperature setting adjustment
- Meets the requirements of the EPA Safe Drinking Water Act
- Instantaneous cold or hot water supply failure shut-off protection
- Multiple connection options to fit your specific needs
- Lead free option available - specify model 34BLF
- **Made in USA - ARRA compliant**

APPROVALS

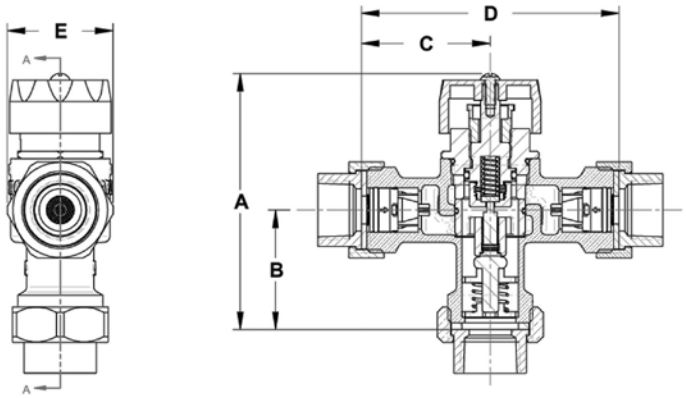
- ASSE 1017 - Temperature Actuated Mixing Valve for Hot Water Distribution Systems
- ASSE 1070 - Water Temperature Limiting Device
- CSA B125.3 - Plumbing Supply Fittings

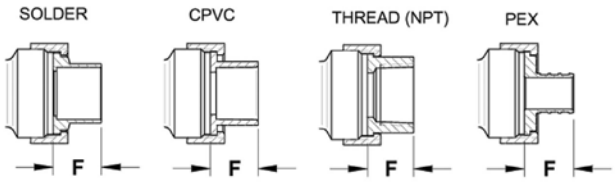
PERFORMANCE RATING

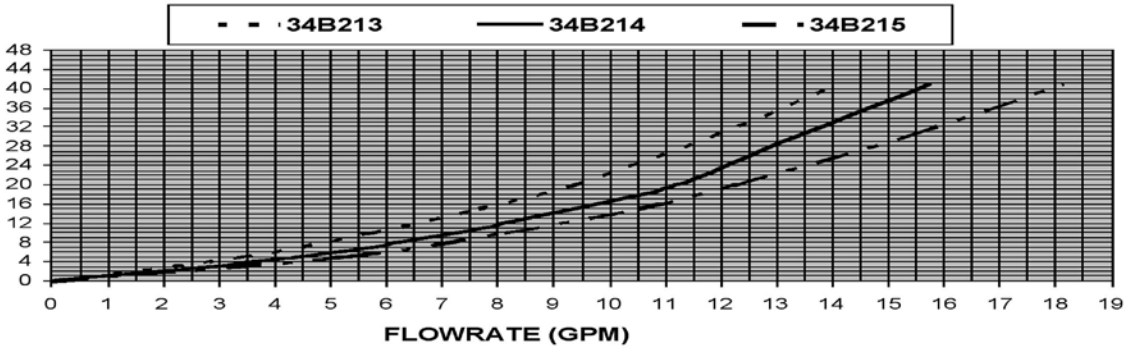
Maximum supply pressure	150 psig (1034 kPA)
Maximum working temperature	210°F (99°C)
Hot water inlet temperature range	120 - 180°F (49 - 82°C)
Mixed water temperature range	80 - 120°F (27 - 49°C)
Mixed water temperature tolerance	± 3°F (1.7°C)
Minimum flow rate	1.5 gpm (5.7 lpm)
Maximum pressure differential between hot & cold	25%
Minimum inlet/outlet temperature differential	15°F

ASSE 1070/1017 Point of Use Mixing Valves

MVB (34B Series) cont.







Model Number	Lead Free Model #	Order Number	Lead Free Order #	Connection Type	A	B	C	D	E	F	Unit Wt. (lbs)
MVB12	MVB12-LF	34B213T	34BLF213T	1/2" FNPT	4.52	2.11	2.28	4.56	1.87	0.73	2.8
MVB34	MVB34-LF	34B214T	34BLF214T	3/4" FNPT	4.52	2.11	2.28	4.56	1.87	0.77	2.8
MVB1	MVB1-LF	34B215T	34BLF215T	1" FNPT	4.52	2.11	2.28	4.56	2.12	0.94	2.9
MVBS12	MVBS12-LF	34B213S	34BLF213S	1/2" Solder	4.52	2.11	2.28	4.56	1.87	0.81	2.5
MVBS34	MVBS34-LF	34B214S	34BLF214S	3/4" Solder	4.52	2.11	2.28	4.56	1.87	0.81	2.6
MVBS1	MVBS1-LF	34B215S	34BLF215S	1" Solder	4.52	2.11	2.28	4.56	2.12	0.94	2.7
MVBC12	MVBC12-LF	34B213C	34BLF213C	1/2" CPVC	4.52	2.11	2.28	4.56	1.87	0.58	2.4
MVBC34	MVBC34-LF	34B214C	34BLF214C	3/4" CPVC	4.52	2.11	2.28	4.56	1.87	0.80	2.4
MVBC1	MVBC1-LF	34B215C	34BLF215C	1" CPVC	4.52	2.11	2.28	4.56	2.12	1.09	2.5
MVBX12	MVBX12-LF	34B213X	34BLF213X	1/2" PEX	4.52	2.11	2.28	4.56	1.87	0.83	2.5
MVBX34	MVBX34-LF	34B214X	34BLF214X	3/4" PEX	4.52	2.11	2.28	4.56	1.87	0.83	2.6
MVBX1	MVBX1-LF	34B215X	34BLF215X	1" PEX	4.52	2.11	2.28	4.56	2.12	1.04	2.7

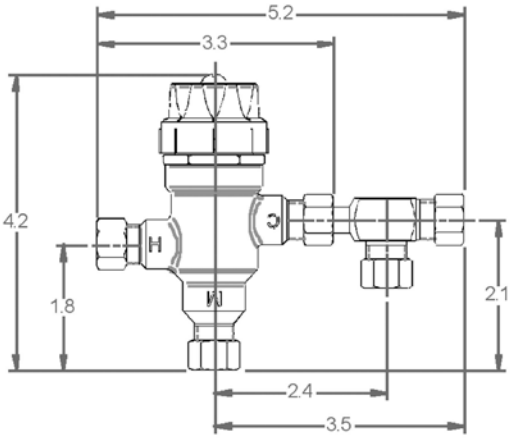
ASSE 1070 Point of Use "Mini Mixer" Valves

MVD (34D Series)

The Apollo® MVD (34D Series) Mini Thermostatic mixing valves are designed for ASSE 1070 "Point of Use" temperature control applications with a single fixture using proven ASTM grade materials. These valves will hold a desired temperature within ± 3°F and will shut off flow in the event of hot or cold water failure. They come equipped with a tamper-resistant high temperature limit stop to prevent adjustment above 120°F.

FEATURES

- Tamper resistant locking control knob
- Adjustable maximum temperature limit stop
- Crush proof integral check valves
- Hot/cold water failure protection
- Single outlet model for sensor faucets
- Bypass fitting option for dual fixture faucets
- Satin chrome plating option
- 3/8" compression or hose connections
- Mounting bracket included
- Lead free option available - specify model 34DLF
- **Made in the USA - ARRA compliant**



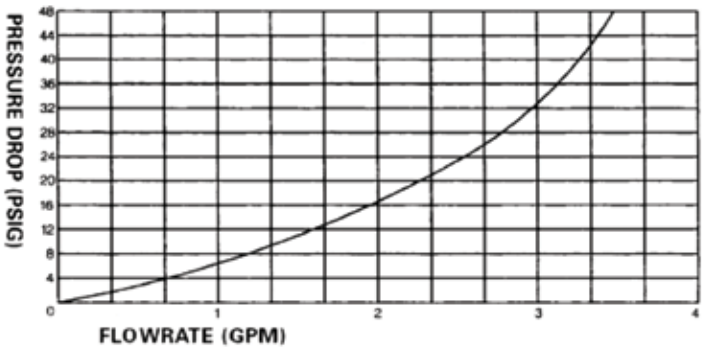
PERFORMANCE RATING

Outlet temperature range	(85°F - 120°F)
Maximum pressure:	125 psig
Maximum inlet temperature:	210°F
Minimum supply pressure	30 psi (207 kpa)
Minimum inlet/outlet temperature differential	15°F
Maximum hot/cold pressure differential	25%

APPROVALS

- ASSE 1070 - "Performance Requirements for Water Temperature Limiting Devices
- CSA B125.3 - "Plumbing Fittings"

Model Number	Lead Free Model #	Order Number	Lead Free Order #	Description	Weight
MVD	MVD-LF	34D30201	34DLF30201	3/8" Single Outlet Bronze	.82
MVDR	MVDR -LF	34D30217	34DLF30217	3/8" Single Outlet Chrome	.82
MVDB	MVDB-LF	34D302B1	34DLF302B1	3/8" Double Outlet Bronze	1.0
MVDBR	MVDBR-LF	34D302B17	34DLF302B17	3/8" Double Outlet Chrome	1.0



Hi/Lo Mixing Valve – ASSE 1069/1017

34HL Series

The 34HL Mixing Valve uses proven Apollo thermostatic control to produce a consistent mix of water from low through high flow range.

This single assembly controls mixed water temperatures to multiple-outlet shower and sink installations. It's the ideal choice in new construction or retrofits in nursing homes, prisons, hospitals, schools, gymnasiums, airports and other facilities where constant safe water temperature needs to be maintained at several outlets without the use of independent ASSE 1016 shower valves.

FEATURES

- The Apollo 34HL is an advanced Thermostatic Mixing Valve capable of maintaining safe, consistent temperature control of water at low and high flows to within ± 3.6° F.
- The 34HL will provide consistent temperature control at flow rates as high as 60 GPM and as low as 1.5 GPM, including mid-range flow between high and low.
- This high quality Apollo valve performs its function without requiring recirculation pumps like other systems in order to achieve low flow control.
- Integral strainers and checks are provided at the hot and cold supply inlets for greater reliability and performance.
- These cast bronze thermostatic mixing valves are manufactured to the same exacting standards that have made the Apollo name famous for durability and reliability.
- **Made in USA - ARRA compliant**

OPERATION

- The 34HL design is patented with a variable fluid flow assembly and dual thermal actuated controls for either low or high flow conditions.
- The passages are calibrated to control water temperature during all flow conditions without a "dead zone" between low and high flow.
- The 34HL also provides fluid shutoff as required by ASSE 1069 in the case that either the hot or cold supply lines fail (or are shut off for any reason) to prevent scalding.
- The valve can be tamper-resistant to limit the water temperature from exceeding safe conditions as required by ASSE 1069.
- The valve also meets the requirements of ASSE 1017 for Point of Source Applications.

Product Specifications	
Maximum Static Pressure	150 psig (1034 kpa)
Maximum Water Temperature	200° F (93° C)
Minimum Flow ASSE 1069 & 1017	1.5 gpm (5.7 lpm)
Temperature Adjustment Range	90° F - 140° F
Maximum Inlet Pressure Differential	30 psi (207kpa)
Inlet Connection	1" NPT
Outlet Connection	1-1/4" NPT
Temperature Gauge (1)	0-200°F
Pressure Gauge (3)	0-160 psi
Shipping Weight	36 lbs

This device will service end use fixture fittings, including but not limited to, gang showers and sitz baths, by supplying tempered water at a preset temperature through a single supply pipe and will meet ASSE standard 1069-2005. ASSE 1069 devices are designed to reduce the risk of scalding and thermal shock during changes in hot or cold water supply pressure or temperature, or loss of cold water supply.

Hi/Lo Mixing Valve - ASSE 1069/1017

34HL Series

United States Patent US 6,929,188 B2

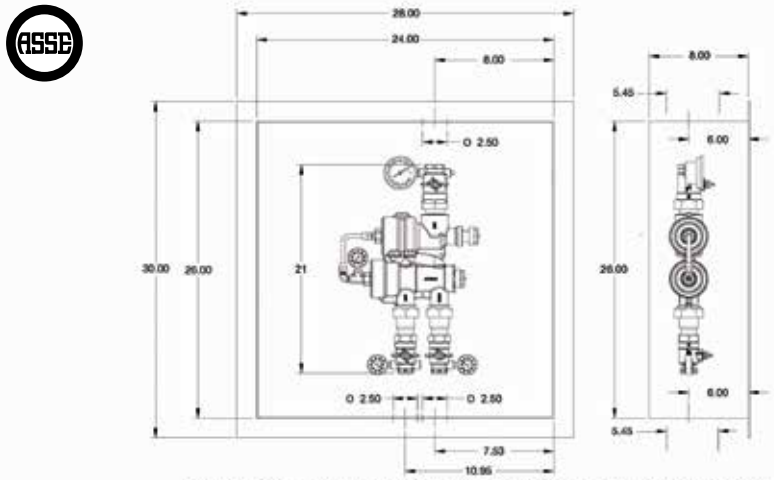


Figure 1: Typical Valve Dimensions with Stainless Steel Recessed Cabinet Option

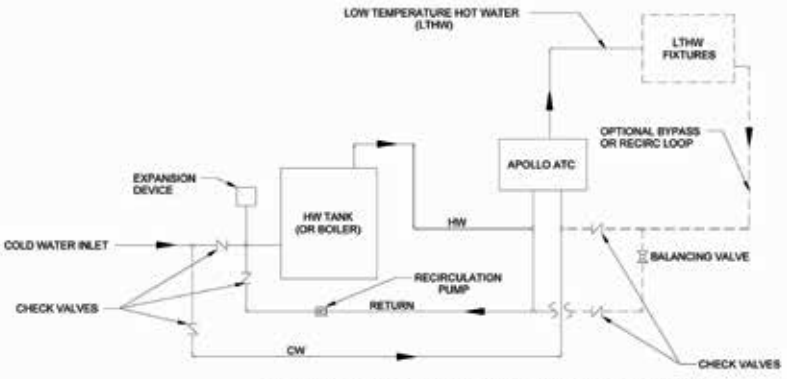


Figure 2: Typical Installation with Optional Recirculation loop

STANDARD APPROVALS

ASSE 1069-Automatic Temperature Control Mixing Valves

This device will control outlet water temperature to individual or multiple fixtures within 3.6°F to reduce the risk of scalding or thermal shock. This device is intended to be installed where the bather has no access to the temperature adjustment, and where no further mixing occurs downstream of the device.

The Apollo 34HL ATC will meet the performance requirements of ASSE 1069 at flow as low as 1.5 GPM up through maximum flow rate.

ASSE 1017-Temperature Actuated Mixing Valves for Hot Water Distribution Systems

This device will control outlet set water temperature to hot water distribution systems near the hot water source within 3°F below 2 GPM and within 5°F above 5 GPM.

OPTIONS:

34HL10517 - Nickel plated automatic temperature controller
34HLBOX01 - Cabinet, flush mount, SS
34HLBOX02 - Cabinet, flush mount, CS powder coat
34HLBOX03 - Cabinet, wall mount, SS
34HLBOX04 - Cabinet, wall mount, CS powder coat

Flow Capacity

Model	Min. Flow to ASSE 1069	Pressure Drop Across Valve			
		10 psi (69 kpa)	20 psi (138 kpa)	30 psi (207 kpa)	45 psi (310 kpa)
34HL10501	1.5 gpm	22 gpm	42 gpm	52 gpm	60 gpm
	6 lpm	83 lpm	159 lpm	197 lpm	227 lpm

Emergency Eye Wash/Face Wash Mixing Valve

MVE (34 E Series)

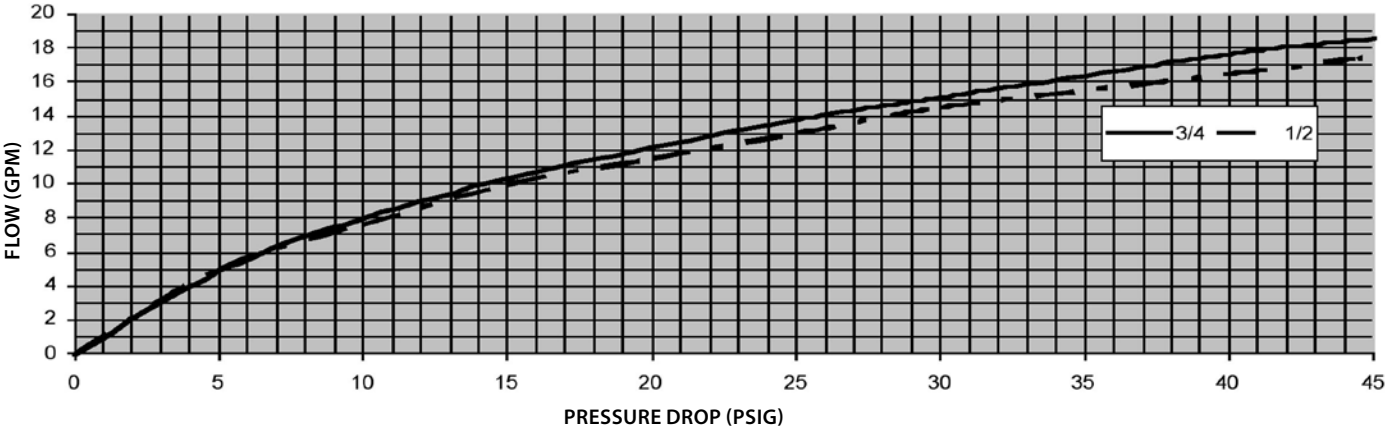
The Apollo® Model "MVE" (34E Series) emergency mixing valves are designed to control the cold and hot water temperature to deliver tepid water at a predetermined temperature to emergency eyewash/ facewash fixtures. The device provides a precise temperature and flow control in the event of cold water, hot water and thermostatic element failures.

FEATURES

- Hot and cold water supply failure protection patented design (US Patent 6,926,20 B2)
- Tepid water temperature limit control and adjustment
- Tepid water temperature adjustment handle with locking mechanism for tamper-resistant protection and inadvertent adjustment
- Integral inlet check valves and strainers to provide protection against cross-flow and foreign particles
- Superior thermostatic element technology for optimum reliability, dependability and accuracy
- Thermostatic element failure and over-travel protection
- High efficiency and positive shut-off check valves
- In-line accessibility and serviceability of failure protection module and mixing valve internal components
- Meets the requirements of the EPA Safe Drinking Water Act
- Corrosion resistant components
- Single cartridge design of failure protection module for easy service and maintenance.
- Integral hot water by-pass
- Positive shutoff of hot supply when cold supply is lost
- Lead free option available - specify model 34ELF
- **Made in USA - ARRA compliant**

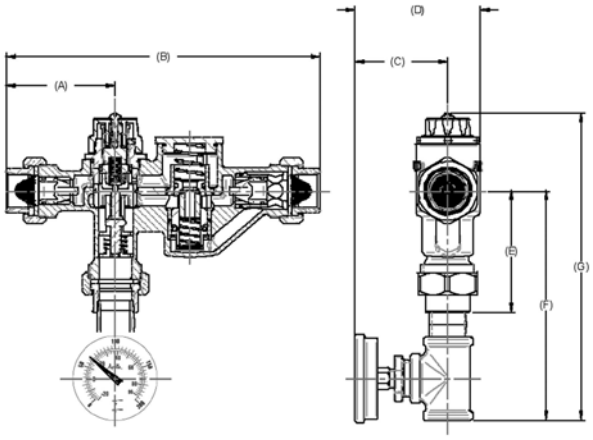
APPROVALS

- ASSE 1071 - Temperature Actuated Mixing Valves for Plumbed Emergency Equipment
- ANSI/ISEA Z358.1 2009 Emergency Eyewash & Shower Equipment



Emergency Eye Wash/Face Wash Mixing Valve

MVE (34E Series)

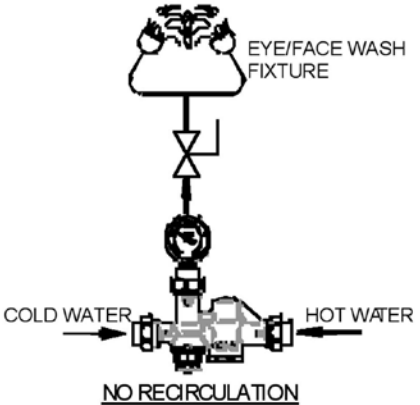


PERFORMANCE RATING

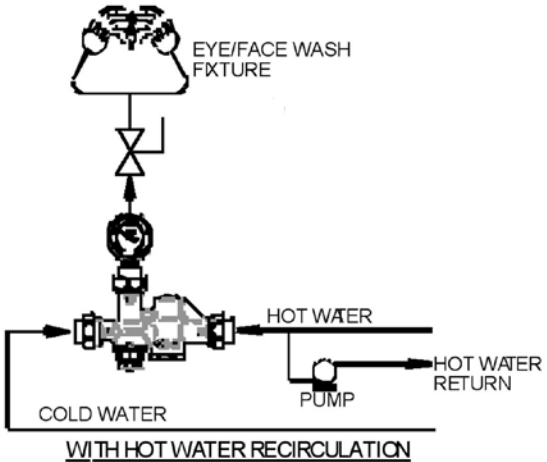
Maximum working pressure	150 psig (1034 kPA)
Hot water inlet temperature range	120 - 180°F (49 - 82°C)
Cold water inlet temperature range	40 - 70°F (4.4 - 21°C)
Tepid water temperature adjustment range	65 - 95°F (18.3 - 35°C)
Mixed water temperature tolerance	± 5°F (2.8°C)
Flow rate @ 30 psig (206.9 kPA) differential	15 gpm (56.8 lpm)
Cold water bypass @ 30 psi (207 kPa) differential	13.5 gpm (51 lpm)

(Note: The cold water supply shall be at least 20°F (-6.7°C) lower than the outlet water temperature setting)

CONNECTION SIZE		1/2" THREADED	1/2" SOLDER	3/4"THREADED	3/4"SOLDER
BASIC VALVE	MODEL #	MVE12	MVES12	MVE34	MVES34
	ORDERING #	34E103T	34E103S	34E104T	34E104S
INCLUDES OUTLET TEMPERATURE GAUGE	MODEL #	MVE12G	MVES12G	MVE34G	MVES34G
	ORDERING #	34E113T	34E113S	34E114T	34E114S
INCLUDES OUTLET TEMP. GAUGE AND INLET BALL VALVES	MODEL #	MVE12GB	MVES12GB	MVE34GB	MVES34GB
	ORDERING #	34E123T	34E123S	34E124T	34E124S
LEAD FREE BASIC VALVE	MODEL #	MVE12LF	MVES12LF	MVE34LF	MVES34LF
	ORDERING #	34ELF103T	34ELF103S	34ELF104T	34ELF104S
	DIMENSIONS & WEIGHTS				
	A (in.)	3.09	3.22	3.09	3.10
	B (in.)	8.90	9.15	8.90	8.90
	C (in.)	2.66	2.66	2.67	2.67
	D (in.)	3.60	3.60	3.60	3.60
	E (in.)	3.45	3.45	3.45	3.45
	F (in.)	5.77	5.77	6.32	6.32
	G (in.)	7.83	7.83	8.39	8.39
	UNIT WT. (lbs.)	3.94	3.73	5.13	5.07



NO RECIRCULATION



WITH HOT WATER RECIRCULATION

34E TYPICAL INSTALLATIONS

Note: Piping and installation of the device must be in accordance to federal, state, and local plumbing codes.
Note: If the valve is some distance from the hot water source, recirculation is required to keep the hot water supply temperature within the required operational limits

APOLLO® MIXING VALVES APPLICATION CHART - Point of Source

34-200 Series

Apollo 34 Series mixing valves help extend hot water supply and enhance the life and accuracy of hydronic thermostats in residential and small commercial systems. These valves may be used to increase draw capacity of automatic storage water heaters. They save hot water and energy by automatically regulating the mix of hot water with cold. Water temperatures can be adjusted by simply turning the yellow knob to the desired setting.

- Sizes 1/2", 3/4" solder
- Corrosion resistant bronze body and stainless steel spring
- Easy installation
- For tankless coils, water heaters, boilers and solar energy systems
- Outlet temperatures from 120˚F to 130˚F (110˚F to 150˚F optional)

34A-H Series – Radiant Heat

Apollo 34H Series mixing valves are ideal for use with domestic and commercial boilers and all types of radiant systems. They are available in a variety of pipe end connections and are equipped with element over-travel protection. Also the 34H Series mixing valves offer integral checks to prevent cross-connection of temperatures.

- Sizes 1/2", 3/4", 1"
- Maximum rated working pressure 125 psig
- Mixed temperature range is 120˚F to 180˚F.
- Corrosion resistant cast bronze body
- Union tailpieces and union nuts, standard
- Designed to make maintenance fast and easy
- Glass-filled Noryl® shuttle

34A Series – ASSE 1017

Apollo 34A Series mixing valves provide thermostat control of temperatures in residential, commercial and non-potable hot water systems. They are ASSE 1017 certified and designed for use with water heaters and boilers. During operation, the valve redistributes and extends safe hot water from the heater to various sections of a building's water system. 34A Series mixing valves offer integral checks to prevent cross-connection of temperatures. They also enable the contractor to direct mount the unit to the heater or boiler instead of heat trapping the valve.

- Sizes 1/2", 3/4", 1"
- Highest flow capacity in their class
- Maximum rated working pressure of 125 psig
- Easy temperature control from 85˚F to 140˚F.
- Corrosion resistant cast bronze body
- Union tailpieces and union nuts, standard
- Easily accessible internals allow in-line servicing
- Glass-filled Noryl® shuttle

34C Series – ASSE 1017

Apollo 34C Series high capacity mixing valves are ASSE 1017 certified. Also available in a high temperature model, these large capacity valves are designed for use in large commercial and institutional hot water systems.

- Sizes 3/4"- 2"
- Industry leading flow rates
- Corrosion resistant cast bronze body
- Stainless steel and thermoplastic internals
- Maximum rated pressure 150 psig
- Controlled temperature range is 90˚F to 140˚F (130˚F to 180˚F optional)
- All replaceable parts accessible from single point
- In-line repairable
- Glass-filled Noryl® shuttle

34HL Series – ASSE 1017/ASSE 1069 Hi/Lo Mixer

Apollo 34HL single assembly controls mixed water temperatures to multiple-outlet shower and sink installations. It's the ideal choice in new construction or retrofits in nursing homes, prisons, hospitals, schools, gymnasiums, airports and other facilities where constant safe water temperature needs to be maintained at several outlets without the use of independent ASSE 1016 shower valves.

- Capable of maintaining safe, consistent temperature control of water at low and high flows to within ± 3.6°F
- Provides consistent temperature control at flow rates as high as 60 GPM and as low as 1.5 GPM, including mid-range flow between high and low
- Performs without requiring recirculation pumps like other systems in order to achieve low flow control
- Integral strainers and checks are provided at the hot and cold supply inlets for greater reliability and performance.
- Manufactured to the same exacting standards that have made the Apollo name famous for durability and reliability
- Units can be mounted in parallel for extra large flow requirements

APOLLO® MIXING VALVES APPLICATION CHART - Point of Use

34D Series – ASSE 1070

Apollo 34D Series thermostatic "Mini Mixer" valves are dual ASSE 1070 certified and designed as the ultimate single fixture valve, with a mixed accuracy of +/- 2˚F. Two designs are available depending on the application; single outlet design for sensor type faucets and double outlet design for standard connections.

- Compact, space saving design
- 3/8" compression x 3/8" compression connections
- Factory equipped with integral checks
- Corrosion resistant cast bronze body
- Stainless and thermoplastic internals
- Bypass tee option for cold water connection
- Chrome plating option

34B Series – ASSE 1070/ASSE 1017

Apollo 34B Series thermostatic mixing valves are dual ASSE 1070 and 1017 certified for point-of-use applications and provide enough capacity to protect up to twelve separate fixtures while maintaining an accuracy of +/- 3˚F. They offer easy adjustment of water temperatures. In accordance with ASSE 1070 standards, Series 34B valves come with maximum set point control features.

- Sizes 1/2", 3/4", 1"
- Controlled temperatures from full cold up to 120˚F.
- Corrosion resistant bronze body
- Union tailpieces, nuts, standard
- NPT, solder, CPVC and PEX connections
- In-line repairable
- Glass-filled Noryl® shuttle
- Factory equipped with integral checks and strainers
- Locking cap feature

34HL Series – ASSE 1069/ASSE 1017 Hi/Lo Mixer

Apollo 34HL is dual ASSE 1069 and 1017 certified as Point of Source and Point of Use. This thermostatic device will service multiple end-use fixture fittings, including but not limited to, gang showers and sitz baths, by supplying tempered water at a preset temperature through a single supply pipe and will meet ASSE standard 1069-2005. ASSE 1069 devices are designed to reduce the risk of scalding and thermal shock during changes in hot or cold water supply pressure or temperature, or loss of cold water supply.

- Capable of maintaining safe, consistent temperature control of water at low and high flows to within ± 3.6°F
- Provides consistent temperature control at flow rates as high as 60 GPM and as low as 1.5 GPM, including mid-range flow between high and low
- Performs without requiring recirculation pumps like other systems in order to achieve low flow control
- Integral strainers and checks are provided at the hot and cold supply inlets for greater reliability and performance.
- Manufactured to the same exacting standards that have made the Apollo name famous for durability and reliability
- Units can be mounted in parallel for extra large flow requirements
- Cabinets available

34E Series – ASSE 1071 Emergency Eye Wash / Face Wash

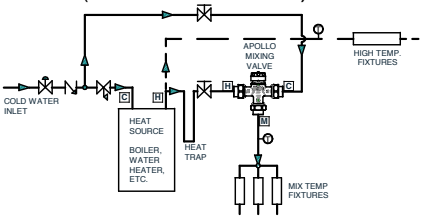
Apollo 34E Emergency Mixing Valves are designed to control the cold and hot water temperature to deliver tepid water at a predetermined temperature to emergency eyewash/facewash fixtures. The device provides a precise temperature and flow control in the event of cold water, hot water and thermostatic element failures. Complies with ANSI Z358.1-2009 & ASSE 1071-2008.

- Hot and cold water supply failure protection patented design (US Patent 6,926,20 B2)
- Tepid water temperature limit control and adjustment
- Tepid water temperature adjustment handle with locking mechanism for tamper-resistant protection and inadvertent adjustment
- Integral inlet check valves and strainers to provide protection against cross-flow and foreign particles
- Superior thermostatic element technology for optimum reliability, dependability and accuracy
- Thermostatic element failure and over-travel protection
- High efficiency and positive shut-off check valves
- In-line accessibility and serviceability of failure protection module and mixing valve internal components
- Meets the requirements of the EPA Safe Drinking Water Act
- Corrosion resistant components
- Single cartridge design of failure protection module for easy service and maintenance.

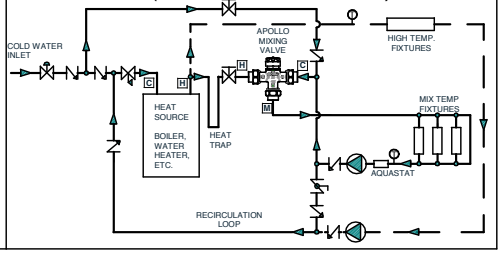
TYPICAL MIXING VALVE PIPING SCHEMATIC

MVA SERIES
MVB SERIES
MVC SERIES
MVHL SERIES

TYPICAL INSTALLATION
POINT OF SOURCE
(NO RECIRCULATION SYSTEM)



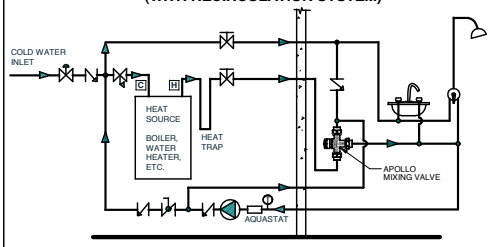
TYPICAL INSTALLATION
POINT OF SOURCE
(WITH RECIRCULATION SYSTEM)



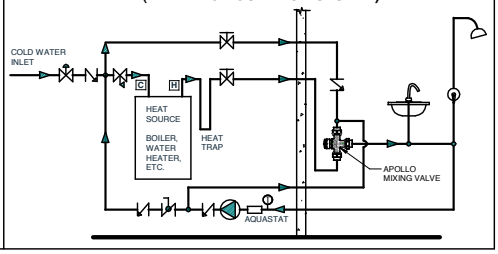
- DIRECTION OF FLOW
- THERMAL EXPANSION RELIEF VALVE OR TANK
- PRESS. REDUCING VLV.
- CHECK VALVE
- BALANCING VALVE
- PUMP
- TEMPERATURE GAUGE
- SHUT-OFF VALVE

MVB SERIES
MVD SERIES

TYPICAL INSTALLATION
POINT OF USE - STANDARD FAUCET
(WITH RECIRCULATION SYSTEM)



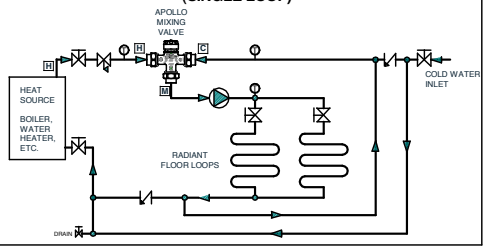
TYPICAL INSTALLATION
POINT OF USE - SENSOR FAUCET
(WITH RECIRCULATION SYSTEM)



- DIRECTION OF FLOW
- THERMAL EXPANSION RELIEF VALVE OR TANK
- PRESS. REDUCING VLV.
- CHECK VALVE
- BALANCING VALVE
- PUMP
- TEMPERATURE GAUGE
- SHUT-OFF VALVE

TV SERIES
MVAH SERIES

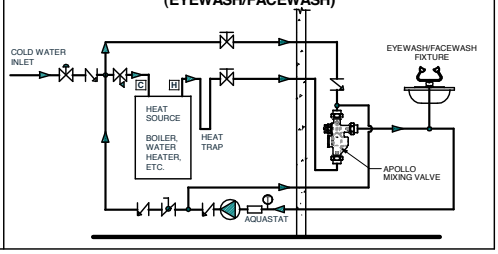
TYPICAL INSTALLATION
HYDRONIC HEATING SYSTEM
(SINGLE LOOP)



- DIRECTION OF FLOW
- THERMAL EXPANSION RELIEF VALVE OR TANK
- PRESS. REDUCING VLV.
- CHECK VALVE
- PUMP
- TEMPERATURE GAUGE
- SHUT-OFF VALVE

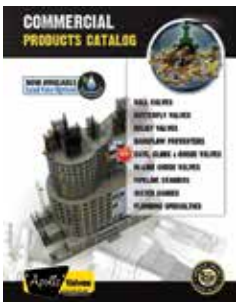
MVE SERIES

TYPICAL INSTALLATION
EMERGENCY SYSTEM
(EYEWASH/FACEWASH)



- DIRECTION OF FLOW
- THERMAL EXPANSION RELIEF VALVE OR TANK
- PRESS. REDUCING VLV.
- CHECK VALVE
- BALANCING VALVE
- PUMP
- TEMPERATURE GAUGE
- SHUT-OFF VALVE

OTHER APOLLO LITERATURE FOR YOUR SPECIFICATION LIBRARY



Commercial Products Catalog

Gate, Globe & Check Catalog

Iron Gate, Globe & Check Catalog

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Conbraco Industries, Inc. warrants, to its initial purchaser only, that its products which are delivered to this initial purchaser will be of the kind described in the order or price list and will be free of defects in workmanship or material for a period of FIVE years from the date of delivery to you, our initial purchaser. This warranty applies to Apollo brand product with "Made in the USA" markings only.

Should any failure to conform to this warranty appear within FIVE years after the date of the initial delivery to our initial purchaser, Conbraco will, upon written notification thereof and substantiation that the goods have been stored, installed, maintained and operated in accordance with Conbraco's recommendations and standard industry practice, correct such defects by suitable repair or replacement at Conbraco's own expense.

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* It is the end user's responsibility to confirm that items intended for use satisfy local codes and standards.

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current as of 7/20/15

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