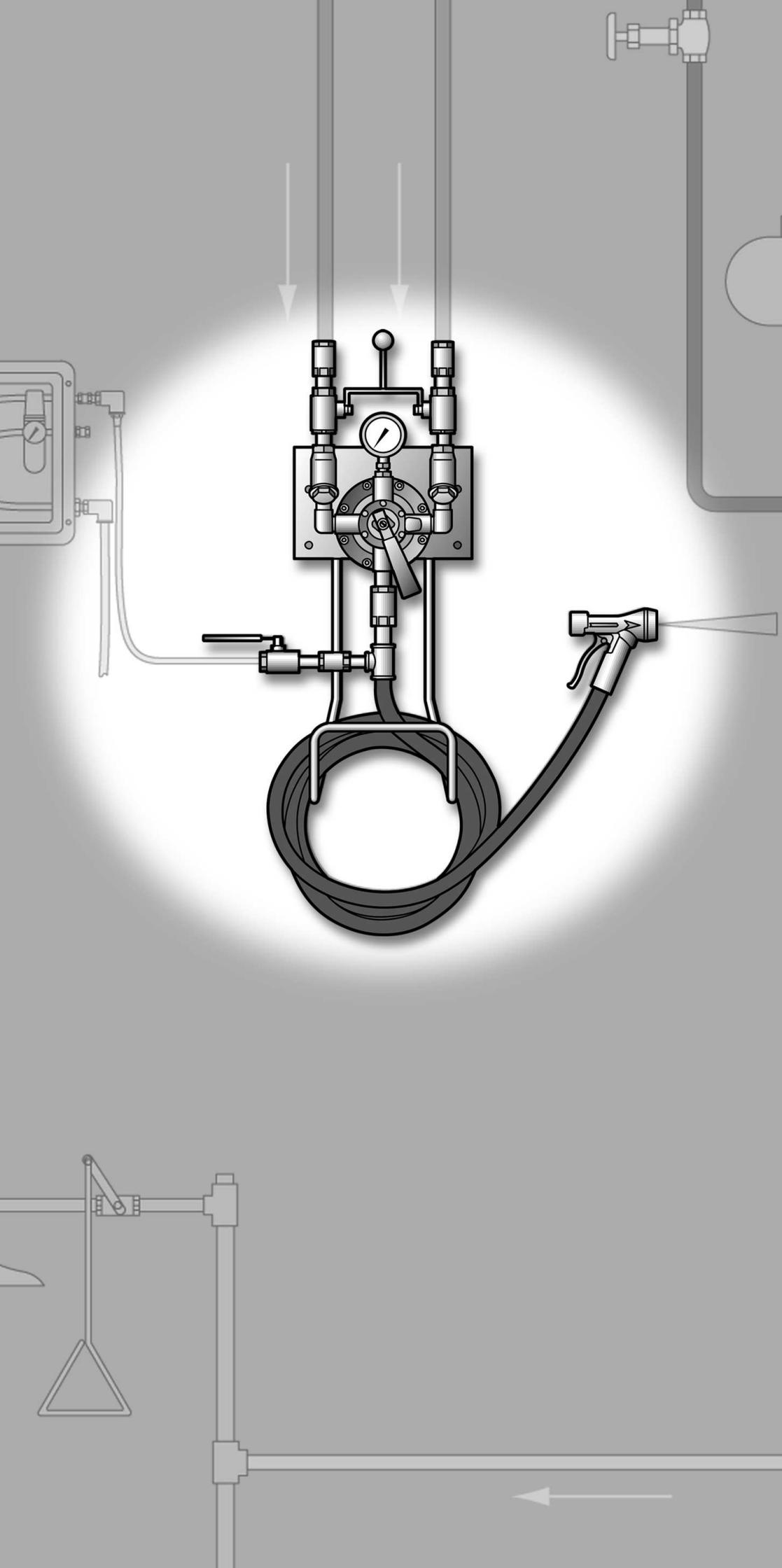


Water Mixing



Armstrong



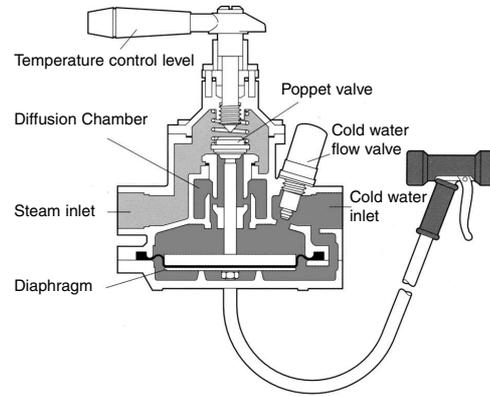
Armstrong[®]

Intelligent System Solutions[™]

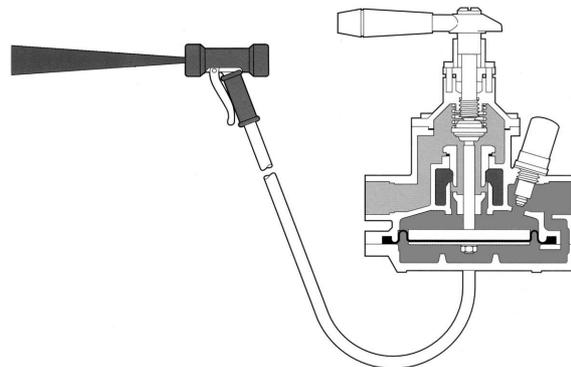
STEAM • AIR • HOT WATER

The outstanding performance of the STEAMIX 203 is due to the simplicity and ruggedness of its operating mechanism with its intrinsic fail safe construction. The illustrations below demonstrate how the STEAMIX 203 works and why its reliability is guaranteed – even with poor water conditions.

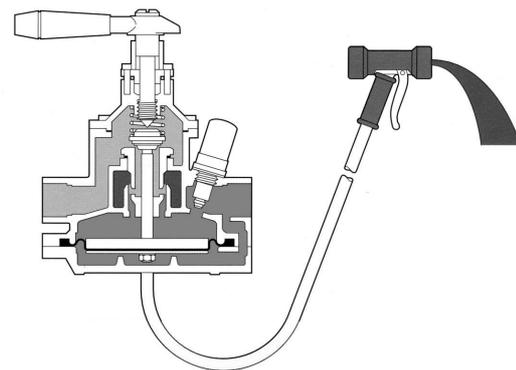
1. With no flow, the water pressure each side of the diaphragm is equal and the spring holds the poppet valve on the seating to prevent steam flow.



2. Only when water flows will a differential pressure across the diaphragm cause it to lift and therefore the poppet valve to rise against the spring and allow the steam to flow.



3. As flow is reduced, back pressure on the outlet side of the diaphragm increases until water pressure on the both sides of the diaphragm becomes equal. As the pressures equalize, the spring pushes the poppet valve onto its seating and closes off the steam supply.



Washdown Equipment & Accessories ID Charts



Table WM-323-1. Armstrong Washdown Equipment and Accessories													
Illustration	Type	Connections NPT	Body Material	Model	Max. Flow Rate m ³ /h	Max. Inlet Press. bar	Check Valves	Flow Controls	Hose Rack	Spray Nozzle	Shutdown Feature	Hose	Located on Page
STEAMIX® Hose Stations and Mixing Units													
	Steam & Water Mixing Unit	3/4"	Bronze	2030/2030S	2*	10*	S only				●		WM-326
				2031/2031S				●		●		WM-327	
	Steam & Water Hose Station			2032/2032S				●	●		●		WM-328
				2033/2033S				●	●	●	●	●	WM-329
Hot & Cold Hose Stations and Mixing Unit													
	Hot & Cold Water Mixing Unit	3/4"	Chrome Plated Brass	3031/3031S	5,5 †	150	S only	●			●		WM-333
				3032/3032S				●	●		●		WM-333
	Hot & Cold Water Hose Station			3033/3033S				●	●	●	●	●	WM-334
				3401				●	●				WM-335
				3403				●	●	●	●	●	WM-336
Steam/Water Mixing Valves													
	Steam/Water Mixing Valves	1" x 1-1/4"	Chrome Plated Brass	A55	4*	100		●					WM-337
		2"		TS202	19*		●				WM-338		
Flow Indicators													
	Ball Flow Indicators	1/2"	Brass	BFI-003-02-STD	1,6 ††	7							WM-339
		1/2"	Stainless Steel	BFI-003-31	1,6 ††	14							
		1/2"	Brass	BFI-003-30 High Pressure	1,6 ††	21							
		3/4"	Brass	BFI-003-25	3,6 ††	7							
		1"	Brass	BFI-003-28	5,9 ††	7							
Accessory Products													
	Washdown Equipment & Accessories	3/4"	Fiberglass Enclosure	Series 4000	0,5	8,5	●	●					WM-330
		3/4"	Stainless Steel	F/SMCD Cabinet Assembly	–	–	●	●	●	●	●	●	WM-331
		1/2"	See Specification	038 Spray Nozzle	3,6	10				●			WM-340
		3/4" x 1/2"	See Specification	035 Washdown Hose	–	10						●	WM-342
		3/4"	Enameled Steel/ Stainless Steel	047 Hose Reel	–	10							WM-343
MagaMix™ Water Temperature Mixing Unit													
	Electronically Actuated Water Temperature Mixing Units	3/4 x 1"	Stainless Steel	E20W	8**	10					●		WM-344
		1" x 1-1/4"		E25W	13**		●			WM-345			
		1-1/2" x 1-1/2"		E40W	20**		●			WM-346			
		2" x 2-1/2"		E50W	48**		●			WM-347			
		3" ASME B16.5 Class 150 Flg.		E80W	146**	16			●	WM-348			
MagaMix™ Steam/Water Temperature Mixing Unit													
	Electronically Actuated Steam/Water Temperature Mixing Units	1" x 1-1/4"	Stainless Steel	E25S	8**	10					●		WM-349
		1-1/2" x 1-1/2"		E40S	14**		●			WM-350			
		2" x 2-1/2"		E50S	27**		●			WM-351			

* Valve only at 37°C Δ t° @ 4 bar steam/water to OPEN outlet.

† 3 bar pressure drop to open outlet

†† 2,7 m/s flow velocity

All steam equipment comply with the Pressure Equipment Directive PED 97/23/EC. For details, see specific product page or Armstrong PED Certificate.



STEAMIX® Will Not Pass Live Steam

Whisper quiet operation is achieved by special steam diffuser design.

Will not pass live steam if cold water pressure falls or fails completely.

Rugged steam valve seat is made from new high-temperature-resistant polymer.

Fails safe STEAMIX® will deliver only cold water if the primary operating component (diaphragm) is damaged.

Intrinsically safe operating principle means steam can flow only if water is already flowing.

Reliable all stainless steel internal parts move freely every time flow takes place.

User friendly single-handle temperature control means no "juggling" of inlet supply globe valve is required to find temperature.

Flexibility of application allows STEAMIX® to operate at lower steam pressures than older style dual globe valve Mixing "Y."

Lock in the temperature Tamper-resistant locking device option allows STEAMIX® to be preset to a desired temperature and locked. Discourages adjustment by unauthorized personnel.

2-years warranty on mixing unit wetted components



Water Mixing

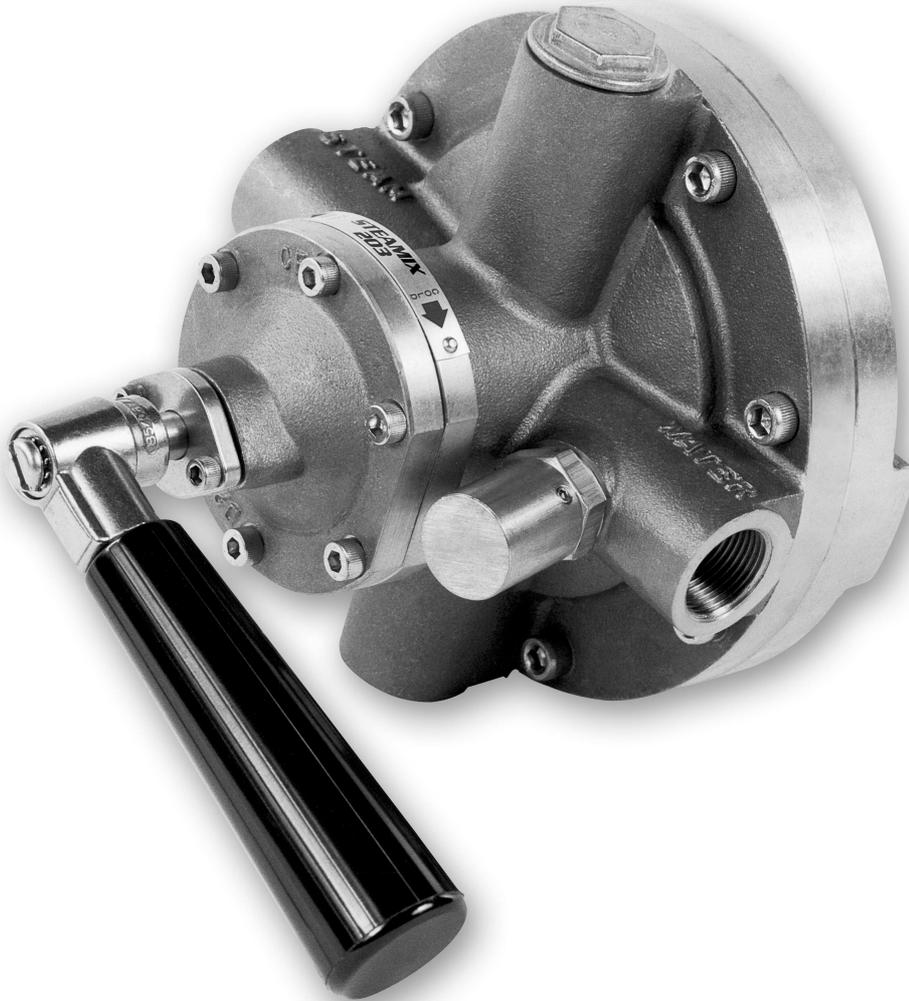
Engineered for Safety and Reliability



The Safest Steam and Water Mixing Valve

The STEAMIX® mixing valve, featured on all STEAMIX Steam and Water Hose Stations by Armstrong, WILL NOT PASS LIVE STEAM in the event of either a significant pressure reduction or complete failure of the cold water supply.

STEAMIX is designed to improve efficiency and reduce risk when mixing STEAM and WATER for washdown. When your process demands high washdown temperatures, adjusting the mix of steam and water becomes much more difficult and dangerous. With the older style dual globe valve Mixing "Y," it is only too easy to introduce too much steam – with risky consequences for your personnel. Not with STEAMIX!



Water Mixing

Four Steps to Maximum Safety and Effectiveness

1. STEAMIX has a single control lever for ease of temperature selection. With three full turns from cold to full hot, STEAMIX can deliver an infinite range of outlet temperatures OR can be "locked" at a predetermined single setting that the user cannot override. No proportioning or "juggling" of inlet supplies necessary to find temperature.
2. It is mechanically impossible for STEAMIX to operate without cold water pressure upon its main operating diaphragm. Because the operating diaphragm dictates if and how much the steam poppet will open, the valve is intrinsically safe. THE UNIT IS INOPERABLE WITHOUT A COLD WATER SUPPLY!
3. Because every moving part of STEAMIX is exercised during operation, and it does not rely upon tightly fitted metal-to-metal internal components, high mineral content water supplies become more manageable. Keep using the valve and the "free flowing" internal components will remain functional.
4. STEAMIX, like all mechanical equipment, has the potential for internal component failure. If the primary operating mechanism (diaphragm) within STEAMIX fails, the unit will pass only cold water.



STEAMIX® Steam & Water Hose Stations & Mixing Units

Assembly 2030 – Standard

STEAMIX 2030 comprises a STEAMIX Steam/Water Mixing Valve of brass/stainless steel (SS) construction.

STEAMIX 2030 is a steam/water heater and is recommended for use in various washing machines, vessel filling, container “top off,” barrel washing and other similar applications.

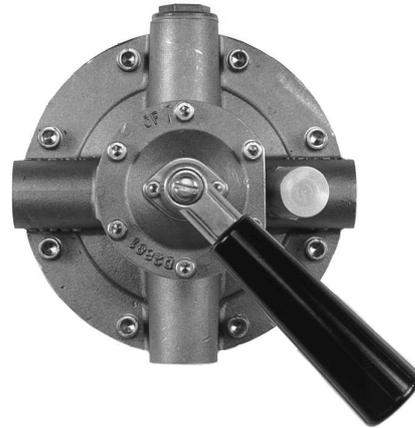
STEAMIX 2030 and is designed for a horizontal (temperature control handle at top) installation and is supplied as standard with a SS wall mounting bracket. Consult drawing below for suggested installation/mounting orientation.



Locking Set

Assembly 2030S – Premium

As above, with corrosion-resistant industrial nickel-plated finish.



Safety

- In the event of either a complete failure of the inlet cold water supply or a reduction in cold water pressure to below 1,3 bar (+/- 0,3 bar) STEAMIX will respond with a complete shutdown of outlet flow.
- In the event of a structural failure of the primary operating component (diaphragm), STEAMIX will “fail-safe” to cold water.
- To prevent over-temperature selection by the user and the potential for overheated water and flash steam presentation common with other types of hose stations, STEAMIX can be provided with either a single temperature lock-out or maximum temperature limiting option.

Technical Specifications

- 3/4" NPT inlets and outlet(s)
- Brass and stainless steel construction with double-sided ultra-durable EPDM diaphragm
- Operating pressures for steam and water:
Maximum: 10 bar
Minimum: 1,4 bar†
- Inlet check valves strongly recommended; not supplied
- Shipping weight: 12,7 kg

† **IMPORTANT NOTE:** Lower steam pressures significantly reduce outlet flow rates.

Flow Rates

The capacity charts indicate STEAMIX 203 flow rates at steam and water pressures commonly available in the average manufacturing plant. The STEAMIX 203 can handle a wide diversity of pressures and temperatures. Three typical outlet temperatures shown in the flow tables were selected to demonstrate the valve’s flow rate at:

- “User safe” temperature (approx. 48°C)
- “Hot hose down” temperature (approx. 65/71°C)
- “Common bacteria kill” temperature (approx. 82°C)**

Note: All flow rates shown are with open outlet, and a reduction of flow is to be expected depending on the length and diameter of outlet pipework, washdown hose, spray nozzle, etc.

** The phrase “common bacteria kill” is not meant to imply sterilization capability but to indicate the ability of STEAMIX 203 to handle the higher temperatures required in food, beverage, pharmaceutical plants, etc.

This model comply with the article 3.3 of the PED (97/23/EC).

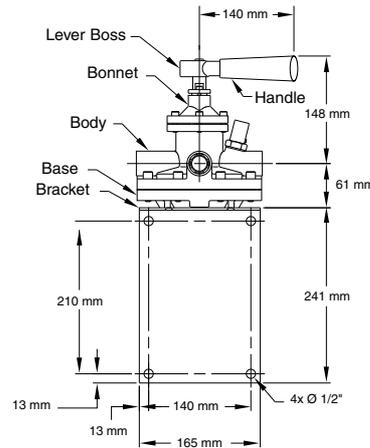
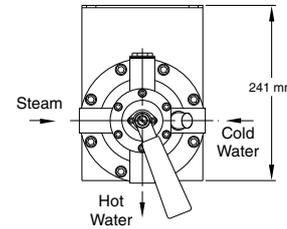


Table WM-326-1.					
A) 31°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	26,1	38,6	38,6	38,6	l/min
3 bar	26,1	49,9	49,9	49,9	l/min
4 bar	26,1	52,2	59,4	59,4	l/min
A) 56°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	13,6	26,1	31,4	32,1	l/min
3 bar	13,6	26,1	35,5	37,4	l/min
4 bar	13,6	26,1	35,5	39,7	l/min
A) 75°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	9,4	18,9	24,9	37,2	l/min
3 bar	9,4	18,9	27,2	30,2	l/min
4 bar	9,4	18,9	27,2	30,2	l/min

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Assembly 2031 – Standard

STEAMIX 2031 comprises a STEAMIX Steam/Water Mixing Valve of brass/stainless steel (SS) construction.

STEAMIX 2031 is supplied as standard with integral inlet supply risers comprising 3/4" Y-Type strainers and 3/4" ball valves cross-linked by a SS bridge piece and lever for simultaneous on/off control of both inlet supplies. Unit is supplied fully assembled and pressure tested. Inlet check valves required.

STEAMIX 2031 is a steam/water heater and is recommended for use in various vessel filling, container "top off," barrel washing and other similar applications or for use as a hose station when a hose reel is desired.



Assembly 2031S – Premium

As above, with corrosion-resistant industrial nickel-plated finish and integral inlet check valves.

Safety

- In the event of either a complete failure of the inlet cold water supply or a reduction in cold water pressure to below 1,3 bar (+/- 0,3 bar) STEAMIX will respond with a complete shutdown of outlet flow.
- In the event of a structural failure of the primary operating component (diaphragm), STEAMIX will "fail-safe" to cold water.
- To prevent over-temperature selection by the user and the potential for overheated water and flash steam presentation common with other types of hose stations, STEAMIX can be provided with either a single temperature lock-out or maximum temperature limiting option.

Technical Specifications

- 3/4" NPT inlets and outlet(s)
- Brass and stainless steel construction with double-sided ultra-durable EPDM diaphragm
- Operating pressures for steam and water:
 - Maximum: 10 bar
 - Minimum: 1,4 bar†
- Inlet check valves strongly recommended; not supplied
- Shipping weight: 13,6 kg

† IMPORTANT NOTE: Lower steam pressures significantly reduce outlet flow rates.

Flow Rates

The capacity charts indicate STEAMIX 203 flow rates at steam and water pressures commonly available in the average manufacturing plant. The STEAMIX 203 can handle a wide diversity of pressures and temperatures. Three typical outlet temperatures shown in the flow tables were selected to demonstrate the valve's flow rate at:

- "User safe" temperature (approx. 48°C)
- "Hot hose down" temperature (approx. 65/71°C)
- "Common bacteria kill" temperature (approx. 82°C)**

Note: All flow rates shown are with open outlet, and a reduction of flow is to be expected depending on the length and diameter of outlet pipework, washdown hose, spray nozzle, etc.

** The phrase "common bacteria kill" is not meant to imply sterilization capability but to indicate the ability of STEAMIX 203 to handle the higher temperatures required in food, beverage, pharmaceutical plants, etc.

This model comply with the article 3.3 of the PED (97/23/EC).

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

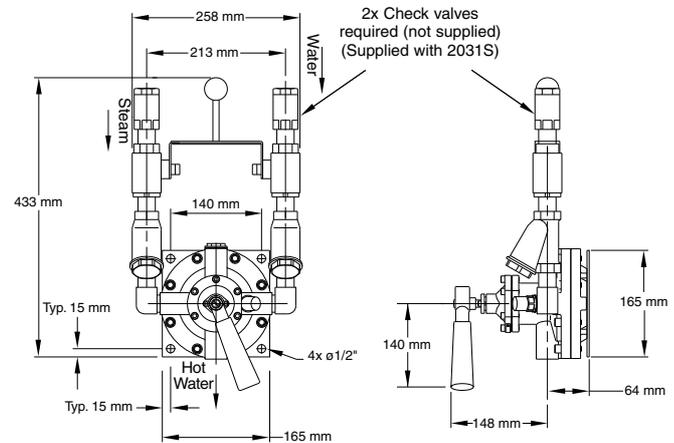
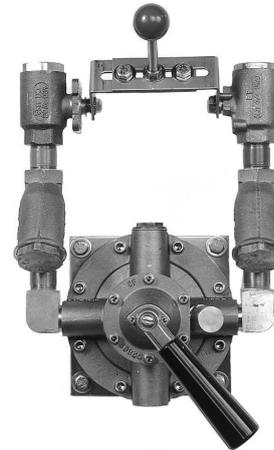


Table WM-327-1.

A) 31°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	26,1	38,6	38,6	38,6	l/min
3 bar	26,1	49,9	49,9	49,9	l/min
4 bar	26,1	52,2	59,4	59,4	l/min
A) 56°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	13,6	26,1	31,4	32,1	l/min
3 bar	13,6	26,1	35,5	37,4	l/min
4 bar	13,6	26,1	35,5	39,7	l/min
A) 75°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	9,4	18,9	24,9	37,2	l/min
3 bar	9,4	18,9	27,2	30,2	l/min
4 bar	9,4	18,9	27,2	30,2	l/min



STEAMIX® Steam & Water Hose Stations & Mixing Units

Assembly 2032 – Standard

STEAMIX 2032 comprises a STEAMIX Steam/Water Mixing Valve of brass/stainless steel (SS) construction with optional nickel-plated finish (VES).

STEAMIX 2032 is supplied as standard with integral inlet supply risers comprising 3/4" Y-Type strainers and 3/4" ball valves cross-linked by a SS bridge piece and lever for simultaneous on/off control of both inlet supplies. Complete unit is supplied fully assembled and pressure tested, installed on a SS hose rack. Inlet check valves required.

Assembly 2032S – Premium

As above, with corrosion-resistant industrial nickel-plated finish and integral inlet check valves.



Locking Set

Safety

- In the event of either a complete failure of the inlet cold water supply or a reduction in cold water pressure to below 1,3 bar (+/- 0,3 bar) STEAMIX will respond with a complete shutdown of outlet flow.
- In the event of a structural failure of the primary operating component (diaphragm), STEAMIX will “fail-safe” to cold water.
- To prevent over-temperature selection by the user and the potential for overheated water and flash steam presentation common with other types of hose stations, STEAMIX can be provided with either a single temperature lock-out or maximum temperature limiting option.

Technical Specifications

- 3/4" NPT inlets and outlet(s)
- Brass and stainless steel construction with double-sided ultra-durable EPDM diaphragm
- Operating pressures for steam and water:
Maximum: 10 bar
Minimum: 1,4 bar†
- Inlet check valves strongly recommended; not supplied
- Shipping weight: 18 kg

† IMPORTANT NOTE: Lower steam pressures significantly reduce outlet flow rates.

Flow Rates

The capacity charts indicate STEAMIX 203 flow rates at steam and water pressures commonly available in the average manufacturing plant. The STEAMIX 203 can handle a wide diversity of pressures and temperatures. Three typical outlet temperatures shown in the flow tables were selected to demonstrate the valve's flow rate at:

- “User safe” temperature (approx. 48°C)
- “Hot hose down” temperature (approx. 65/71°C)
- “Common bacteria kill” temperature (approx. 82°C)**

Note: All flow rates shown are with open outlet, and a reduction of flow is to be expected depending on the length and diameter of outlet pipework, washdown hose, spray nozzle, etc.

** The phrase “common bacteria kill” is not meant to imply sterilization capability but to indicate the ability of STEAMIX 203 to handle the higher temperatures required in food, beverage, pharmaceutical plants, etc.

This model comply with the article 3.3 of the PED (97/23/EC).

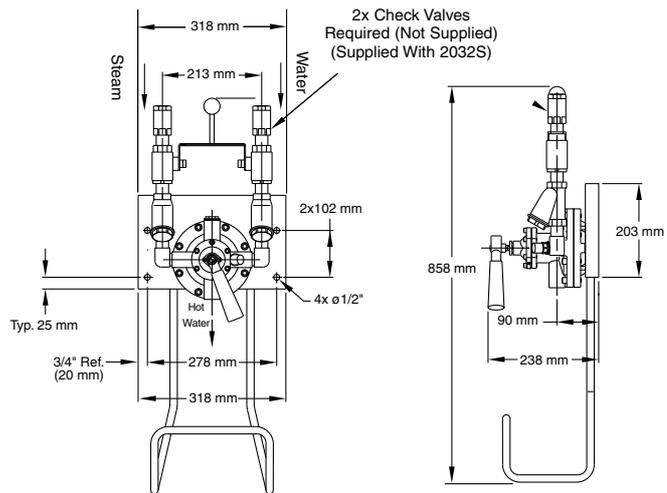
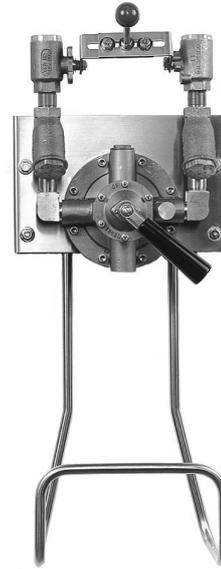


Table WM-328-1.					
A) 31°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	26,1	38,6	38,6	38,6	l/min
3 bar	26,1	49,9	49,9	49,9	l/min
4 bar	26,1	52,2	59,4	59,4	l/min
A) 56°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	13,6	26,1	31,4	32,1	l/min
3 bar	13,6	26,1	35,5	37,4	l/min
4 bar	13,6	26,1	35,5	39,7	l/min
A) 75°C Temperature Rise					
Water \ Steam	1,4	3	5	7	bar
1,5 bar	9,4	18,9	24,9	37,2	l/min
3 bar	9,4	18,9	27,2	30,2	l/min
4 bar	9,4	18,9	27,2	30,2	l/min

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Assembly 2033 – Standard

STEAMIX 2033 comprises a STEAMIX Steam/Water Mixing Valve of brass/stainless steel (SS) construction.

STEAMIX 2033 is supplied as standard with integral inlet supply risers comprising 3/4" Y-Type strainers and 3/4" ball valves cross-linked by a SS bridge piece and lever for simultaneous on/off control of both inlet supplies. Unit is supplied fully assembled and pressure tested, installed on a SS Hose rack.

STEAMIX 2033 also includes SS dual scale outlet thermometer, 7,5 m of "Safety Yellow" washdown hose rated for 28 bar and 88°C, low heat transfer polymer spray nozzle with trigger guard, swivel adapter and SS nozzle hook. Inlet check valves required.

Assembly 2033S – Premium

As above, with corrosion-resistant industrial nickel-plated finish and integral inlet check valves.



Locking Set

Safety

- In the event of either a complete failure of the inlet cold water supply or a reduction in cold water pressure to below 1,3 bar (+/- 0,3 bar) STEAMIX will respond with a complete shutdown of outlet flow.
- In the event of a structural failure of the primary operating component (diaphragm), STEAMIX will "fail-safe" to cold water.
- To prevent over-temperature selection by the user and the potential for overheated water and flash steam presentation common with other types of hose stations, STEAMIX can be provided with either a single temperature lock-out or maximum temperature limiting option.

Technical Specifications

- 3/4" NPT inlets and outlet(s)
- Brass and stainless steel construction with double-sided ultra-durable EPDM diaphragm
- Operating pressures for steam and water:
 - Maximum: 10 bar
 - Minimum: 1,4 bar†
- Inlet check valves strongly recommended; not supplied
- Shipping weight: 29 kg

† IMPORTANT NOTE: Lower steam pressures significantly reduce outlet flow rates.

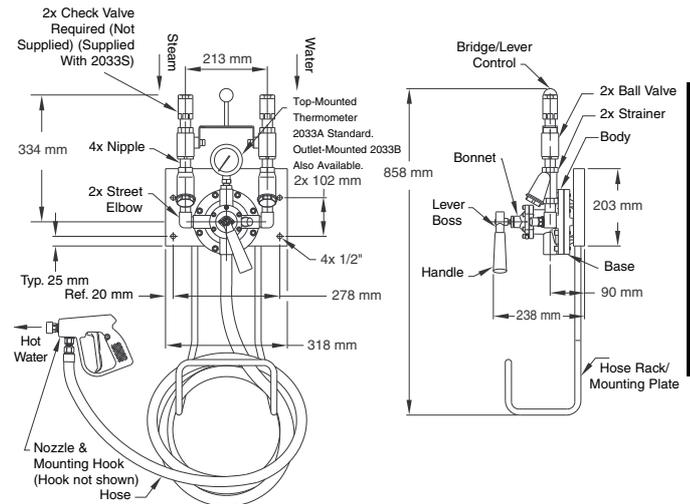
Flow Rates

The capacity charts indicate STEAMIX 203 flow rates at steam and water pressures commonly available in the average manufacturing plant. The STEAMIX 203 can handle a wide diversity of pressures and temperatures. Three typical outlet temperatures shown in the flow tables were selected to demonstrate the valve's flow rate at:

- "User safe" temperature (approx. 48°C)
- "Hot hose down" temperature (approx. 65/71°C)
- "Common bacteria kill" temperature (approx. 82°C)†††

Note: All flow rates shown are with open outlet, and a reduction of flow is to be expected depending on the length and diameter of outlet pipework, washdown hose, spray nozzle, etc.

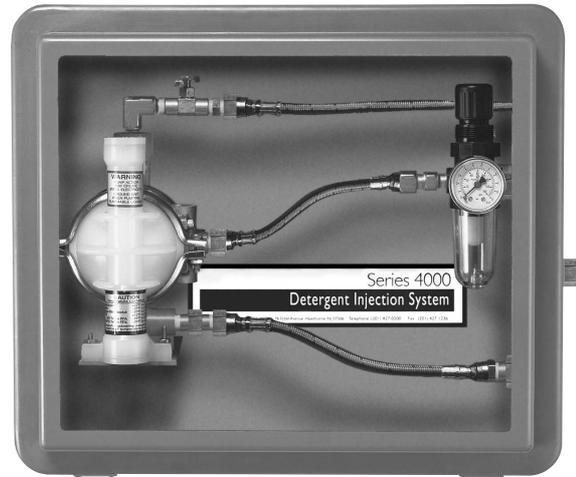
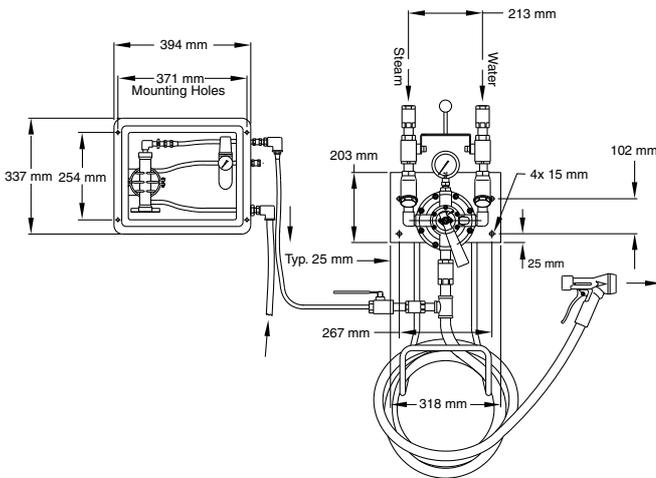
††† The phrase "common bacteria kill" is not meant to imply sterilization capability but to indicate the ability of STEAMIX 203 to handle the higher temperatures required in food, beverage, pharmaceutical plants, etc. This model comply with the article 3.3 of the PED (97/23/EC).



Water Mixing

Table WM-329-1.						
A) 31°C Temperature Rise						
Water \ Steam	1,4	3	5	7	bar	
1,5 bar	26,1	38,6	38,6	38,6	l/min	
3 bar	26,1	49,9	49,9	49,9	l/min	
4 bar	26,1	52,2	59,4	59,4	l/min	
A) 56°C Temperature Rise						
Water \ Steam	1,4	3	5	7	bar	
1,5 bar	13,6	26,1	31,4	32,1	l/min	
3 bar	13,6	26,1	35,5	37,4	l/min	
4 bar	13,6	26,1	35,5	39,7	l/min	
A) 75°C Temperature Rise						
Water \ Steam	1,4	3	5	7	bar	
1,5 bar	9,4	18,9	24,9	37,2	l/min	
3 bar	9,4	18,9	27,2	30,2	l/min	
4 bar	9,4	18,9	27,2	30,2	l/min	

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



The Armstrong Series 4000 Detergent Injection System is designed specifically to introduce detergent or a sanitizing liquid into the flowing line for washdown purposes.

The Armstrong Series 4000 pumped system is designed to maximize the available washdown water pressure and volume to achieve maximum plant hygiene in the shortest possible time.

Because the Armstrong Series 4000 pump is driven by compressed air, no electrical hook-ups are required in your washdown areas.

The Armstrong Series 4000 Detergent Injection System incorporates an all polymer construction pneumatic pump with a Teflon internal operating diaphragm and 1/4" connections. Each unit comes supplied with an in-line air filter, pressure gauge, air and chemical flow regulating needle valves, all preassembled, piped and pressure tested. The pump assembly is first mounted on a stainless steel 292 x 343 mm wall plate with a 133 mm shelf, then secured within a NEMA 4X rated fiberglass enclosure with stainless steel latches and padlock hasps. The 304 x 355 x 203 mm enclosure features a shatterproof 254 x 304 mm Lexan "view" window. The complete assembly includes 1/4" air inlet and chemical inlet and 1/4" outlet fittings, a detergent supply hose with strainer, an outlet ball valve for flow control and two check valves to eliminate cross connection potential (an in-line vacuum breaker is also available for installation where local code stipulates).

The Armstrong Series 4000 is recommended for use with existing washdown stations or as an accessory item to Armstrong Models 1033-25/50, 2033-25/50 and 3033-25/50.

The durable, low-maintenance PVDF and Teflon pump unit is designed for liquid chemical flows to 0,34 m³/h and is suitable for inlet air pressure supplies up to 8,6 bar. The pump unit is designed to shut itself off in a no-flow condition and then reactivate upon flow demand, thereby giving "remote" operation at the end of the primary washdown hose by using a self-closing trigger spray nozzle.

Supplied fully assembled and pressure tested with the following standard components:

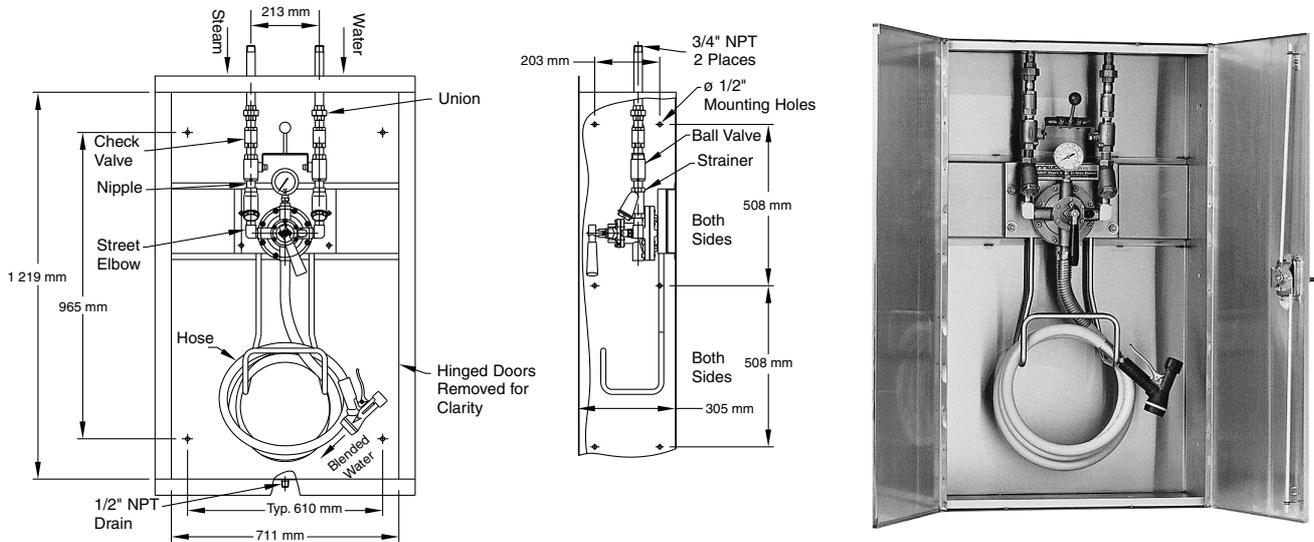
- 1/4" NPT air line connection
- 1/4" PVDF/Teflon pneumatic pump
- 1 needle valve
- Detergent supply hose with intake filter/foot strainer
- 2 check valves and outlet ball valve
- Air filter with pressure gauge
- Housed in durable fiberglass enclosure with Lexan window

Technical Specifications

- Pump flow capacities up to 0,34 m³/h
- Chemical mix ratios up to 100:1
- Maximum operating air pressure 8,6 bar
- Shipping weight: 12 kg

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Hose Station Cabinet Assembly



FMCD

The FMCD (Flush Mount Cabinet with Doors) is designed for recessed installation. A type 304 stainless steel, two-door cabinet with a 50 mm flange. Cabinet doors feature a recessed “toggle” handle. All exposed surfaces have a #4 brushed finish. The bottom of the cabinet is crosscut to drain any water accidentally discharged within the cabinet via a 1/2” NPT hole and plug, which is provided for optional connection to an external drain.

The FMCD is designed specifically to house the following hose stations:

- 1033-25/50
- 2033-25/50 (shown above)
- 3033-25/50

FMCD cabinets include, as standard, integral check valves (039V-S), union connections on each inlet supply, a separate 3/8” utility tapping and a utility inlet/inspection port.

To specify, tag the model number of the hose station selected with FMCD. For example, 2033 FMCD. Maximum hose length that can be installed within FMCD is 15 m.

FMCD cabinets are manufactured to order and can be modified to include custom requirements such as increased dimensions, vacuum breakers, compressed air and/or fluid lines, pressure reducing valves and gauges, extra hose lengths, and more.

SMCD

SMCD (Surface Mounted Cabinet with Doors) is the same as FMCD except it is designed for surface installation and is supplied without the 2” flange, utility line tapping and utility inlet/inspection port.

Please consult your local Representative.

Dimensions supplied are approximate for design purposes only. Dimensions may vary dependent upon mixing unit selected. Check with factory prior to installation.

Shipping weight (cabinet only): 68 kg

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Assembly HBWM

The HBWM (Heated Box Wall Mounted) cabinet is designed for outside all-weather use. The aluminum cabinet features a single door hinged left with a 4 1/2" wall flange for mounting.

To ensure freeze protection, the cabinet will contain an SS fin tube steam coil for cabinet heating with an Armstrong 2010 SS steam trap for condensate removal. The SS fin tube steam coil shall emit 1090 kJ/h at 3 bar steam; 1320 kJ/h at 7 bar steam and 1485 kJ/h at 10 bar steam. In event of steam shutdown during freezing conditions, a 500 watt 5 amp 110 volt AC heater is included for backup. When freeze protection is not desired, the steam coil may be turned off by an inlet ball valve.

The HBWM will include the STEAMIX 2031 Steam/Water Hose Station of brass/stainless steel construction with single handle temperature control, "Fail Safe" feature, integral inlet supply risers comprising 3/4" Y-type strainers and 3/4" ball valves cross-linked by an SS bridge piece and lever for simultaneous on/off control of BOTH inlet supplies and SS dual scale top mount thermometer. The HBWM shall also include 3/4" inlet vertical check valves, inlet unions, complete steam coil/trap assembly, 500 watt 5 amp 110 volt AC heater, and bottom hose outlet quick-disconnect, which allows the washdown hose to be removed and stored indoors when required. Unit supplied pressure tested and fully assembled with a "satellite" hose rack (part #041) for mounting immediately adjacent to the cabinet.

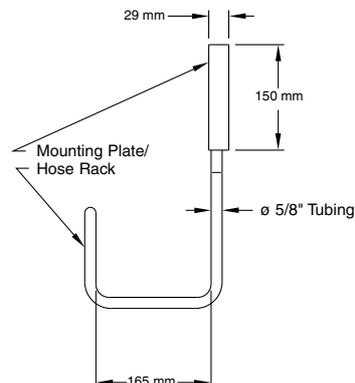
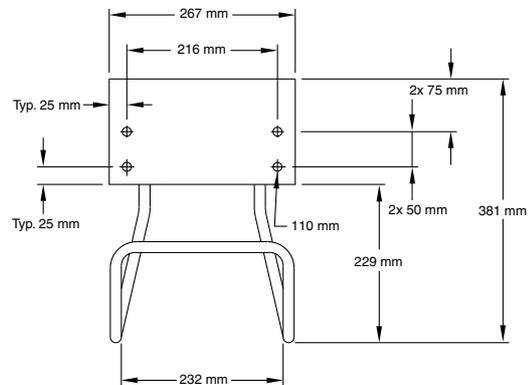
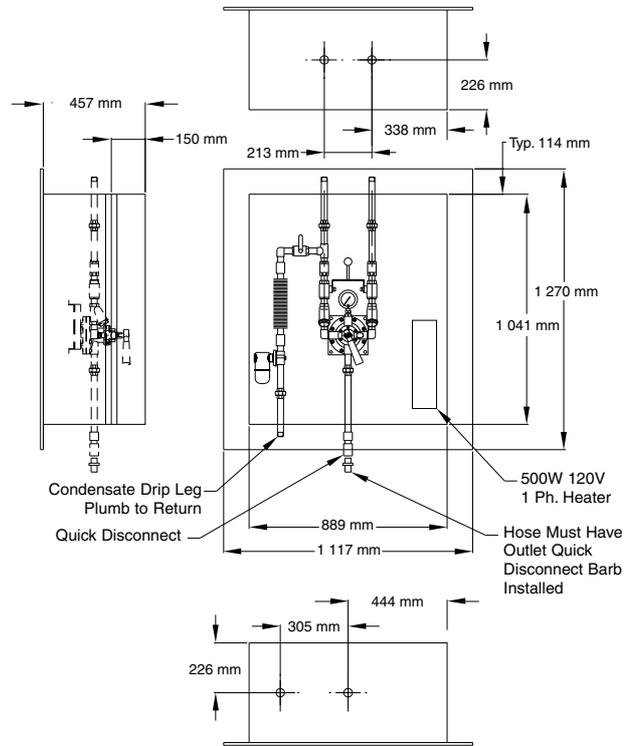
HBWM cabinet assemblies require the additional specification of Washdown Hose (035-length), Spray Nozzle (038) and Locking Assembly (042).

Technical Specifications

- 3/4" NPT inlets and outlet
- Red brass and stainless steel construction
- Operating pressures for steam and water:
 - Maximum: 10 bar
 - Minimum: 1,4 bar*
- Maximum pressure loss ratio 10:1**
- Inlet check valves included
- R factor: 8
- For shipping weight, consult factory

* Low steam pressures reduce flow rates. Always refer to flow tables and calculations to ensure complete satisfaction.

** Ratio of inlet pressures accounting for restrictions on valve outlet (minus back pressure).



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Hot & Cold Water Hose Stations and Mixing Units



Assembly 3031-Standard

Model 320 20 mm inlets/outlet(s) Thermostatic Mixing Valve (TMV) of disposable cartridge construction. TMV features unique full range temperature control from full cold to field adjustable maximum temperature limit stop in a single handle turn. TMV can be set and locked to a single temperature and will hold outlet temperatures +/- 1°C in the event of inlet pressure and/or temperature fluctuation/change.* Thermal shutdown capability protects operator in the event of an inlet supply failure. This model includes integral tandem valve comprising two (2) full port ball valves cross-linked by a stainless steel bridge piece and lever for simultaneous on/off control of Both inlet supplies. Complete assembly is mounted on a heavy-duty stainless steel backplate that is suitable for wall or column installation.

Unit supplied fully assembled and pressure tested with strain relief and 20 mm coupling for hose attachment. Inlet check valves are required (not supplied).

For a fully detailed certified drawing, refer to CDLW #1020.

*** IMPORTANT NOTE: Other thermostatic products used for this application cannot provide full cold to field adjustable maximum limit stop temperature range or access temperatures within 2°C of either inlet supply temperature.**

Assembly 3031S-Premium

As above with corrosion-resistant industrial nickel-plated components and integral spring-loaded check valves.

For a fully detailed certified drawing, refer to CDLW #1016.

Assembly 3032-Standard

Supplied as 3031 mounted on a heavy-duty stainless steel single-piece hose rack that is suitable for wall or column installation.

Unit supplied fully assembled and pressure tested with strain relief and 20 mm coupling for hose attachment. Inlet check valves are strongly recommended.

For a fully detailed certified drawing, refer to CDLW #1021.

Assembly 3032S-Premium

As above with corrosion-resistant industrial nickel-plated components and integral spring-loaded check valves.

For a fully detailed certified drawing, refer to CDLW #1017.

Technical Specifications

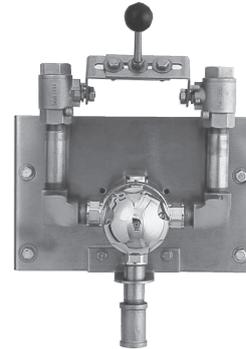
- 20 mm NPT inlets and 20 mm NPT outlet
- DZR brass/stainless alloy/polymer construction
- Operating pressures
- Maximum: 10 bar
- Minimum: 0,7 bar
- Maximum pressure loss ratio: 10 to 1**
- Shipping weights
 - 3031: 13 kg
 - 3032: 14 kg

**Ratio of inlet pressures accounting for restrictions on valve outlet (minus back pressure).

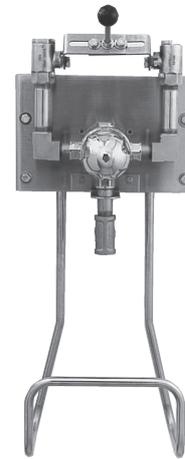
Flow Rates

The capacity chart for 3031/3032 appears on page WM-334 under 3033.

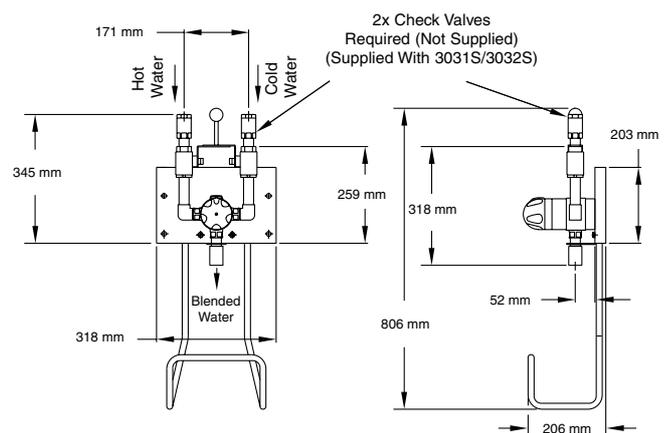
All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



Assembly 3031



Assembly 3032





Hot & Cold Water Hose Stations and Mixing Units

Assembly 3033-Standard

Model 320 20 mm inlet(s)/outlet(s) Thermostatic Mixing Valve (TMV) of disposable cartridge construction. TMV features unique full range temperature control from full cold to field adjustable maximum temperature limit stop in a single handle turn. TMV can be set and locked to a single temperature and will hold outlet temperatures +/- 1°C in the event of inlet pressure and/or temperature fluctuation/change.* Thermal shutdown capability protects operator in the event of an inlet supply failure.. This model includes integral tandem valve comprising two (2) full port ball valves cross-linked by a stainless steel bridge piece and lever for simultaneous on/off control of BOTH inlet supplies. Outlet thermometer of stainless steel construction and shatterproof Lexan® lens. Unit is mounted on a heavy-duty stainless steel single-piece hose rack that is suitable for wall or column installation. Supplied with 7,6 m white 20 bar/93°C rated washdown hose with "live" swivel adaptors. Rubber cushioned 37.8 lpm rated water saver spray nozzle** and nozzle hook supplied as standard.



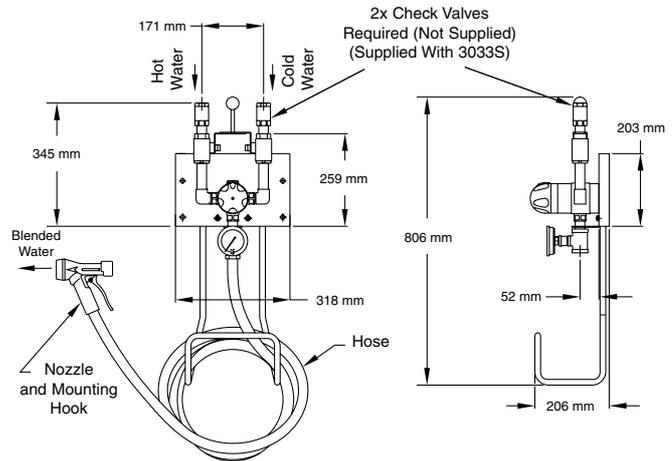
Unit is supplied fully assembled and pressure tested with strain relief and 20 mm coupling for hose attachment. Inlet check valves are required (not supplied).

*** IMPORTANT NOTE: Other thermostatic products used for this application cannot provide full cold to field adjustable maximum limit stop temperature range or access temperatures within 2°C of either inlet supply temperature.**

**038TG nozzle option also available. Refer to page WH-340.

Assembly 3033S-Premium

As above with corrosion-resistant industrial nickel-plated components, integral spring-loaded inlet check valves, stainless steel rubber-cushioned 37 lpm rated water and "Safety Yellow" 88°C rated washdown hose with "anti-kink" external spring guard and "live" swivel adaptors.



Technical Specifications

- 20 mm NPT inlets and 20 mm NPT outlets
- DZR brass/stainless alloy/polymer construction
- Operating pressures
 - Maximum: 10 bar
 - Minimum: 0,7 bar
- Maximum pressure loss ratio: 10 to 1†
- Shipping weight 28 kg

†Ratio of inlet pressures accounting for restrictions on valve outlet (minus back pressure).

Assembly 3033-Standard

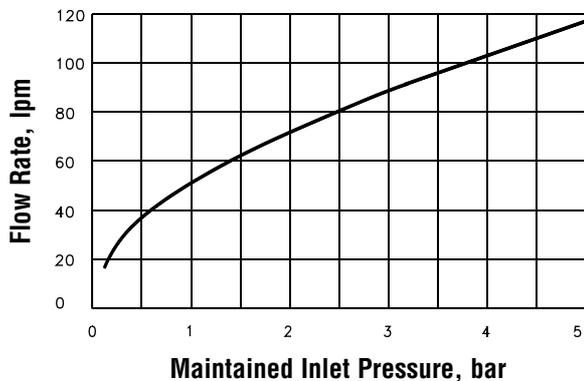
For a fully detailed certified drawing, refer to CDLW #1022.

Assembly 3033S-Premium

For a fully detailed certified drawing, refer to CDLW #1018.

Flow Rates

The capacity chart indicates the flow rates to be expected at mid-blend (equal proportions of hot and cold water) and with an unrestricted open outlet. Lower flow rates should be anticipated depending upon the length of washdown hose and spray nozzle selected.



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Hot & Cold Water Hose Stations and Mixing Units

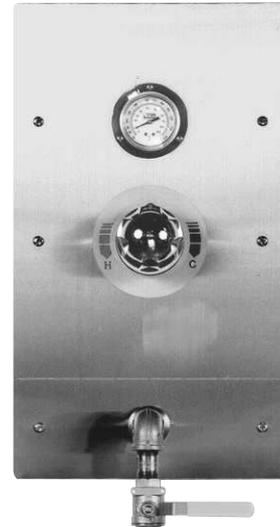


Model 3401

Model 3401 features a Model 320 20 mm thermostatic mixing valve (TMV) of disposable cartridge construction. TMV features unique full-range temperature control from full cold to field-adjustable maximum temperature limit stop in a single handle turn. TMV can be set and locked to a single temperature and will hold outlet temperatures +/-1°C in the event of inlet pressure and/or temperature fluctuation/change. Thermal shutdown capability protects operator in the event of an inlet supply failure.

Model 3401 is designed for wall-recessed installation and includes combination inlet isolation/strainer/check valves and stainless steel panel-mount thermometer. TMV, pipe work and associated components are secured within a rugged steel mounting frame and concealed behind a 336,55 mm x 590,55 mm polished stainless steel "easy service access" cover panel.

Model 3401 includes an exposed polished chrome temperature-control-handle and stainless steel flow-control ball valve. Ideal for clean rooms, pharmaceutical mixing rooms, research labs or similar locations where temperature-controlled hot water is required, but where surface-mount piping and fixtures are undesirable.



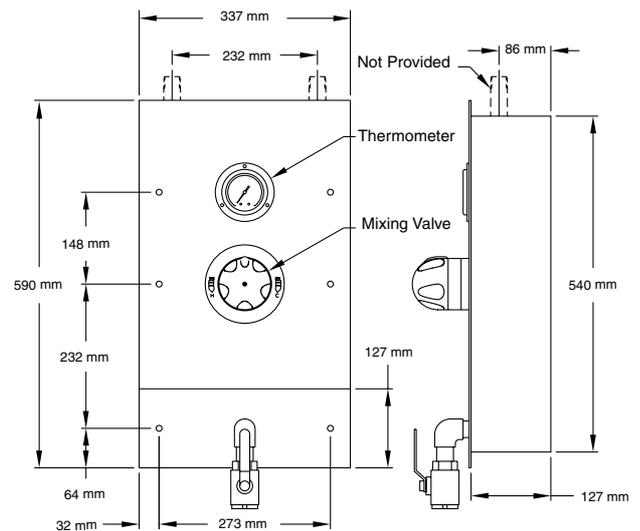
Technical Specifications

- 20 mm inlet/outlet
- Operating pressures
 - Maximum: 10 bar
 - Minimum: 0,7 bar
- Max pressure loss ratio: 10 to 1*
- Integral check valves
- Integral strainers
- Integral unions
- Panel-mount thermometer
- Maximum temperature stop
- Single temperature lock
- 1°C control
- Full range temperature control**

* Ratio of inlet pressures accounting for restrictions on valve outlet (minus back pressure).

****IMPORTANT NOTE: Other thermostatic products used for this application cannot provide full cold to field adjustable maximum limit stop temperature range or access temperatures within 2°C of either inlet supply temperature.**

For a fully detailed certified drawing, refer to CDLW #1069.



Water Mixing

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



Hot & Cold Water Hose Stations and Mixing Units

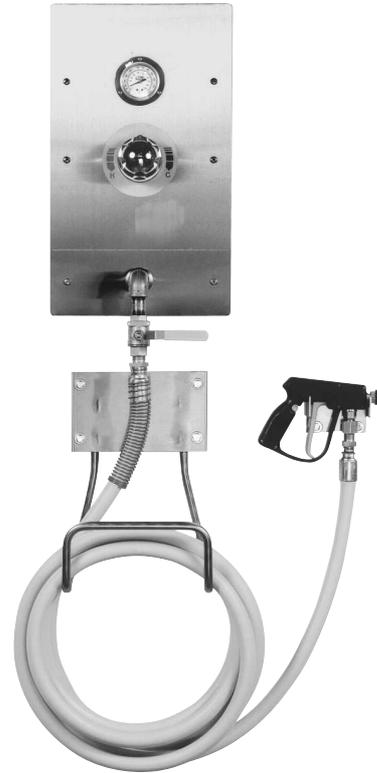
Model 3403

Model 3403 features a Model 320 20 mm thermostatic mixing valve (TMV) of disposable cartridge construction. TMV features unique full-range temperature control from full cold to field-adjustable maximum temperature limit stop in a single handle turn. TMV can be set and locked to a single temperature and will hold outlet temperatures +/-1°C in the event of inlet pressure and/or temperature fluctuation/change.*

Model 3403 is designed for wall-recessed installation and includes combination inlet isolation/strainer/check valves and stainless steel panel mount thermometer. TMV, pipe work and associated components are secured within a rugged steel mounting frame and concealed behind a 336,55 mm x 590,55 mm polished stainless-steel "easy service access" cover panel.

Model 3403 includes an exposed polished-chrome temperature-control handle and stainless steel flow-control ball valve. Ideal for clean rooms, pharmaceutical mixing rooms, research labs or similar locations where temperature-controlled hot water is required, but where surface-mount piping and fixtures are undesirable.

Model 3403 supplied with "satellite" hose rack, 635 mm "Safety Yellow" washdown hose with "live" swivel adapters and Armstrong 038TG spray nozzle with integral trigger guard and nozzle mounting hook.**



*** IMPORTANT NOTE: Other thermostatic products used for this application cannot provide full cold to field adjustable maximum limit stop temperature range or access temperatures within 2°C of either inlet supply temperature.**

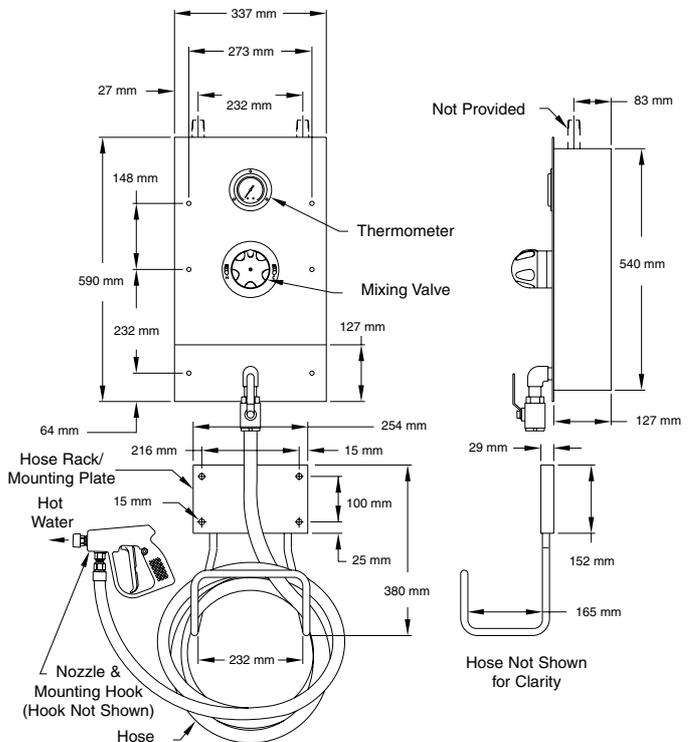
**Model 3403 specifies 635 mm hose. Also available with 1 270 mm (3403-50) or 1 905 mm (3403-75) hose.

Technical Specifications

- 20 mm inlets/outlets
- Operating Pressures
 - Maximum: 10 bar
 - Minimum: 0,7 bar
- Max pressure loss ratio: 10 to 1†
- Integral check valves
- Integral strainers
- Integral unions
- Panel mount thermometer
- Maximum temperature stop
- Single temperature lock
- 1°C control
- Full range temperature control*

† Ratio of inlet pressures accounting for restrictions on valve outlet (minus back pressure).

For a fully detailed certified drawing, refer to CDLW #1072.



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Thermostatic Steam & Water Mixing Valve

TS202

TS202 Thermostatic Mixing Valve of chrome-plated brass construction with stainless alloy internal operating mechanism. The TS202 uses bimetal thermostatic technology to automatically proportion inlet steam and water supplies to achieve and maintain a desired outlet temperature. The TS202 is equipped with an integral, site adjustable, maximum temperature (ΔT) fix point. With flow rates up to 265 lpm*, the TS202 is an economical alternative to hot water storage or central heat exchange systems by using existing plant steam or heat water instantly at the point of use. The TS202 has 50 mm NPT inlets and a 50 mm NPT outlet, and is supplied with 50 mm ball valves for inlet flow control. Check valves recommended.

* Based upon 4 bar equal inlet steam and water supplies with a 55°C temperature rise.

Important: For optimum performance the TS202 should be allowed to operate at maximum flow with nominally equal inlet supply pressures and should not be installed with either outlet flow control or an outlet restriction (spray nozzle, washdown hose, etc).

Warning: The TS202 is designed for industrial process applications only and may pass live steam under certain circumstances.

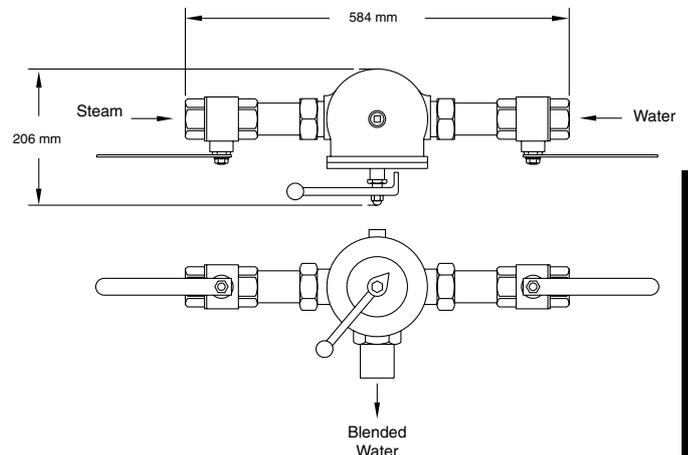
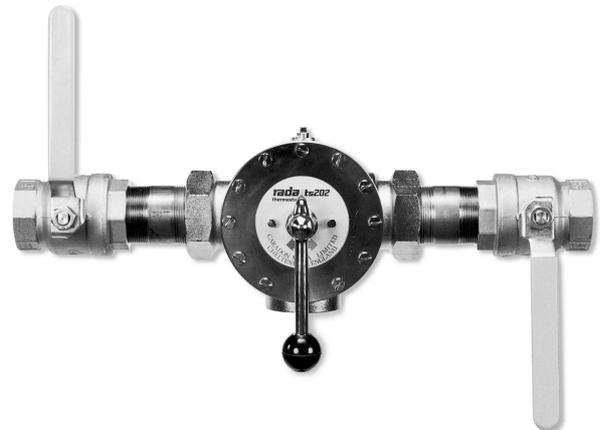
Technical Specifications

- 50 mm NPT inlets. 50 mm NPT outlet
- DZR brass/stainless alloy construction
- Operating pressures for steam and water
 - Maximum: 7 bar
 - Minimum: 1,4 bart
- Inlet check valves recommended
- Shipping weight 17 kg

† Low steam pressures reduce flow rates. Always refer to flow tables and calculations to ensure complete satisfaction.

For a fully detailed certified drawing, refer to CDLW #1045.

Table WH-337-1. TS202 Flow Rates (lpm)					
Temperature Rise °C	Maintained Equal Inlet Pressure, bar				
	1,3	2,7	4,1	5,5	6,8
12	291	412	481	552	590
23	211	303	352	405	435
37	159	227	265	303	325
57	117	151	197	227	242



Water Mixing

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



Thermostatic Steam & Water Mixing Valve

A55

Thermostatic Mixing Valve of chrome-plated brass construction with stainless steel alloy internal operating mechanism. The A55 uses bimetal thermostatic technology to automatically proportion inlet steam and water supplies to achieve and maintain a desired outlet temperature. The A55 is equipped with an integral, site-adjustable, maximum temperature (ΔT) fix point. With flow rates up to 49 lpm*, the A55 is an economical alternative to hot water storage or central heat exchange systems, using existing plant steam to heat water instantly at the point of use. The A55 has 25 mm NPT inlets and a 32 mm NPT outlet, and is supplied with 25 mm ball valves for inlet flow control. Check valves are recommended.

* Based upon 4 bar equal inlet steam and water supplies with a 55°C temperature rise.

Important: For optimum performance the A55 should be allowed to operate at maximum flow with nominally equal inlet supply pressures and should not be installed with either outlet flow control or an outlet restriction (spray nozzle, washdown hose, etc).

Warning: The A55 is designed for industrial process applications only and may pass live steam under certain circumstances.

Technical Specifications

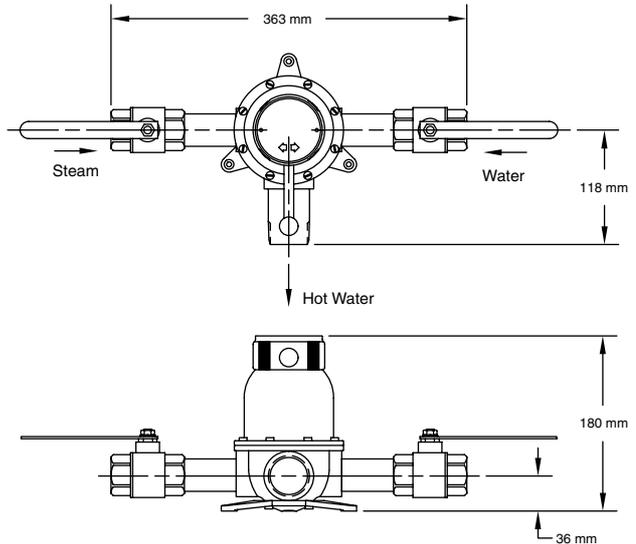
- 25 mm NPT inlets, 32 mm NPT outlet
- DZR brass/stainless steel alloy construction
- Operating pressures
Maximum: 7 bar
Minimum: 1,4 bar**
- Inlet check valves recommended
- Shipping weight 6.8 kg

**Low steam pressures reduce flow rates. Always refer to flow table shown below.

For a fully detailed certified drawing, refer to CDLW #1060.

Table WH-338-1. A55 Flow Rates (lpm)

Temperature Rise °C	Maintained Equal Inlet Pressure, bar				
	1,3	2,7	4,1	5,5	6,8
12	45	68	90	109	128
23	34	49	68	79	94
37	26	38	49	60	72
57	19	26	37	45	52



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Flow Indicator

Ball Type Flow Indicators (BFI)

Principle of Operation. To monitor gas, air, oil, water and other fluids at both maximum and minimum flow rates. The action is simple and highly visible. The flow makes the white ball oscillate in the dome. If the flow stops, the ball drops out of sight. The movement of the ball cannot be missed even in poorly lighted areas and at significant distances, which eliminates guesswork. With only one moving part – the ball – there is nothing to go wrong.

Sizes and Models. The **Standard** type ball flow indicator is made in 1/2", 3/4" and 1" NPT sizes, having a die-cast brass body with a shatter-resistant borosilicate dome. The indicators are suitable for temperatures up to 82°C and pressures up to 7 bar.

The 1/2" BFI only is supplied as standard with special high-temperature joint rings and a glass-filled PTFE Teflon ball permitting use with temperatures up to 120°C.

The **High Pressure** model of the 1/2" BFI has an aluminum bronze body and high-pressure cap assembly for pressures up to 21 bar and contains a high-temperature ball for up to 120°C.

The **Stainless Steel** 1/2" BFI with Type 316 stainless steel body, high temperature ball and Teflon joint rings is suitable for use with pressures up to 7 bar maximum and temperatures up to 120°C maximum.

Flow Rates

Installation. All Armstrong Ball Flow Indicators are supplied with NPT female-threaded connections. The ball flow indicator must be installed horizontally with the glass dome upwards, so that the indicator ball will drop out of sight when the flow stops. It must be installed so that flow takes place in the direction of the arrow stamped on the indicator body.

Large Diameter Pipes. Flow is easily indicated in large diameter pipes by installing the Armstrong Ball Flow Indicator in parallel with the large diameter pipe.

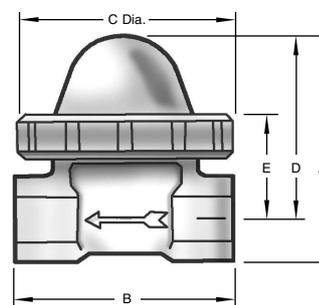
Maintenance. With only one moving part – the ball – there is practically no maintenance required.

Shipping weights

1/2" BFI 0,9 kg
 3/4" BFI 1,8 kg
 1" BFI 1,8 kg



With high-pressure cap



Drawing of the high-pressure version available upon request. This drawing shows the form of the 1/2" size. The 3/4" and 1" sizes are similar except for the shape of the cap.

Table WM-339-1. Flow Rates		
Starting Flow		
Flow Indicator Size	Liquid	Gas
	l/h	m ³ /min
1/2"	26,4	0,014
3/4"	42,0	0,056
1"	46,2	0,056

Table WM-339-2. Dimensions					
Size	A	B	C	D	E
Dimensions in Millimeters					
15	69	73	69	55	34
20 & 25	95	109	93	73	41

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

038TG Spray Nozzle

The Series 038TG (Trigger Guard) was designed to address several high-temperature washdown issues and concerns.

Heat: Nozzle is rated to 93°C. Washdown water does not pass through the handgrip, increasing user comfort and protection.

Operation: “Lock out” lever and trigger guard minimize the possibility of unintentional operation. Spray nozzle cannot be locked open, which prevents inadvertent discharge when water flow is controlled upstream.

Spray Direction: Well-defined nozzle and ergonomically designed trigger guard and handgrip reduce the potential for self-directed discharge.

Spray Volume: Designed to deliver up to 3,6 m³/h, the 038TG is ideal for the typical industrial washdown application.

Durability: Rugged, shatter-resistant polymer housing resists chemicals and heat better than standard rubber-covered equipment, for longer service life.

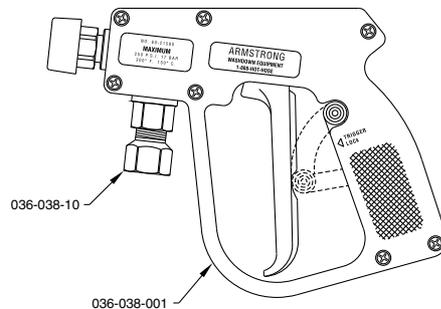
Technical Specifications

- 1/2" inlet
- 10 bar maximum operating pressure
- 93°C maximum operating temperature
- Weight: 0,6 kg
- Black polymer construction with brass/stainless steel internal wetted parts

038TG Spray Nozzle



038TG Spray Nozzle



038 Spray Nozzle



Stainless Steel Model – 038SS



038 Spray Nozzle

Weight: 1,1 kg

Replaced by 038TG on STEAMIX Hose Stations, 038 is suggested for washdown applications below 60°C. It comes with a black, heavy-duty, field-replaceable cover. The rear trigger reduces operator fatigue, and the unit conforms to the longstanding spray nozzle design common in many facilities.

Also available in White. Consult factory for details.

038SS

Weight: 1,1 kg

As above in 316 stainless steel with grey rubber cover.

Note: design/style difference in photograph.

038AL (not shown)

Weight: 0,7 kg

As above in “lightweight” aluminum with light blue rubber cover.

Note: Armstrong recommends the use of heat-protective gloves, garments and safety glasses at all times during the washdown procedure.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Washdown Equipment

038TG-EX Spray Nozzle

The Series 038TG-EX (Trigger Guard-Extension) was designed to address several high-temperature washdown issues and concerns.

Heat: Nozzle is rated to 93°C. Washdown water does not pass through the handgrip, increasing user comfort and protection.

Operation: “Lock out” lever and trigger guard minimize the possibility of unintentional operation. Spray nozzle cannot be locked open, which prevents inadvertent discharge when water flow is controlled upstream.

Spray Management: The 914 mm extension helps the operator clean hard-to-reach areas. Jet-spray and fan-spray tips (included) offer a choice of spray patterns.

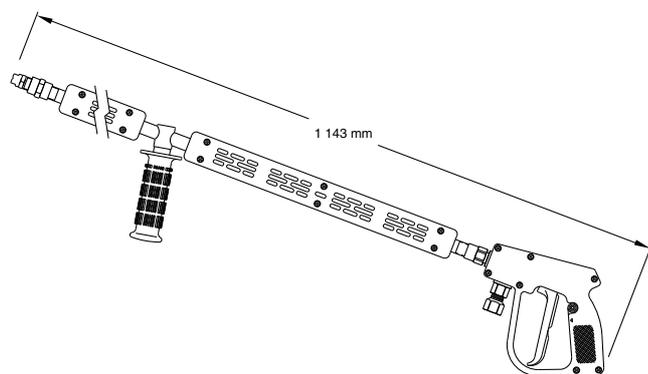
Safety and Ease of Use: The 038TG-EX comes fully assembled with two barrel insulators, trigger guard, trigger lock, and support handgrip.

Durability: Rugged, shatter-resistant polymer housing resists chemicals and heat better than standard rubber-covered equipment, for longer service life.

Technical Specifications

- 1/2" inlet
- 10 bar maximum operating pressure
- 93°C maximum operating temperature
- Weight: 2 kg
- Black polymer construction with brass/stainless steel internal wetted parts
- 914 mm extension wand with two barrel insulators and support hand grip
- 1,8 m³/h @ 3 bar

Note: Armstrong recommends the use of heat-protective gloves, garments and safety glasses at all times during the washdown procedure.



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Assembly 035 Washdown Hose

Heavy duty Washdown Hose is recommended for water temperatures up to 87,7°C and working pressure up to 28 bar. Designed to withstand the intensities of the industrial environment. Hose is supplied as standard in 7,5 m and 15 m lengths with custom lengths available on demand. Each hose assembly is provided as standard with a 3/4" live male swivel fitting at supply/inlet and a 1/2" live male swivel at the spray/outlet. Each fitting has a one-piece hose barb with ferrule, which is pressure-crimped to resist detachment during use. The supply/inlet end is protected by an anti-kink spring guard to reduce hose fatigue at a primary stress point.

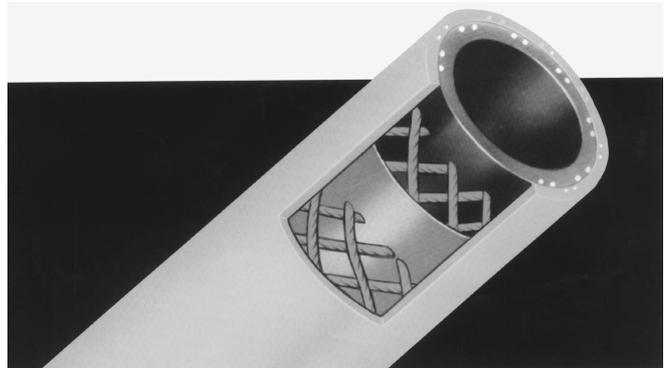
Supplied in Armstrong "Safety Yellow" as standard but may be ordered in differing specifications that alter temperature and pressure ratings in Red, Black, Green or White "Creamery/Packing House" style hose.

Note: Industrial washdown can be a rigorous procedure, and there is a fine relationship between weight and flexibility to reduce user fatigue, and strength and durability, which promote user safety. Armstrong Washdown Hose should not be considered functionally infallible. However, provided that the hose is installed as supplied, the users correctly trained, and the hose is then commissioned, operated, routinely inspected and maintained, the risk of injury because of product failure, while never eliminated, is substantially reduced.



Technical Specifications

- Recommended maximum temperature 87,7°C
- Maximum working pressure 28 bar
- "Safety Yellow" smooth MSHA approved finish
- Anti-kink spring guard and pressure-crimped ferrule
- 4:1 safety factor
- Live swivel connectors at each end
- Lightweight
- Shipping weight
- 7,5 m: 7 kg
- 15 m: 12 kg



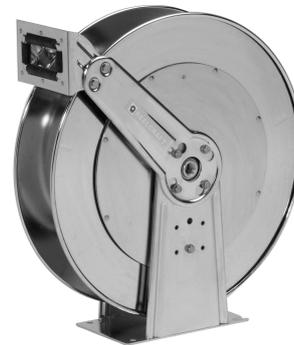
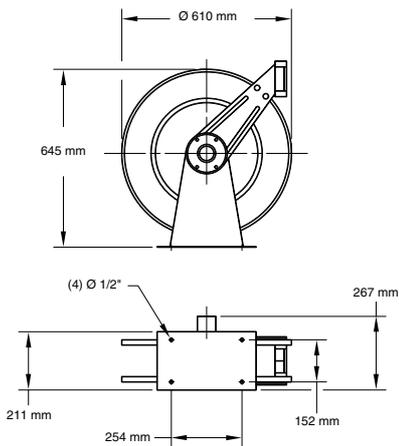
All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

047-81 Hose Reel

Red Spring Retractable Hose Reel for use with all Armstrong Hose Station assemblies. Guide arm is field adjustable for wall, floor or ceiling mounting. Compact hose reel capable of holding 15 m of 3/4" Washdown Hose.* Includes hose bumper stop and 1,2 m adapter hose from hose reel to hose station.

047-81SS Hose Reel

As above in stainless steel.



047-82 Hose Reel

Red Spring Retractable Hose Reel for use with all Armstrong Hose Station assemblies. Guide arm is field adjustable for wall, floor or ceiling mounting. Compact hose reel capable of holding 22,8 m of 3/4" Washdown Hose.* Includes hose bumper stop and 1,2 m adapter hose from hose reel to hose station.

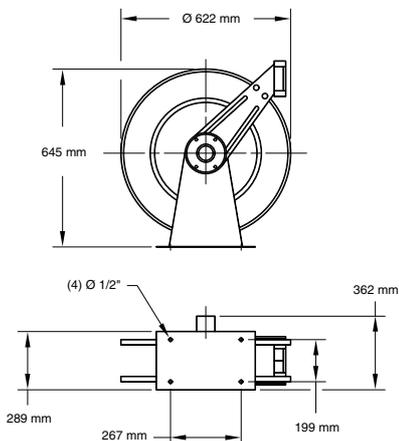
The 047-82 supersedes the 047-1.

047-82SS Hose Reel

As above in stainless steel.

The 047-82SS supersedes the 047-SS.

* Hose and spray nozzle supplied separately.



All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



MegaMix™ Model E20W Water Temperature Mixing Unit

General Features

The 3-port mixing valve utilizes ceramic shear action disc technology to provide tight shut-off, high pressure differential capability, and long life integrity. Fitted with the electronic actuator and integrated temperature sensor, the system delivers high-performance stand-alone closed-loop temperature control.

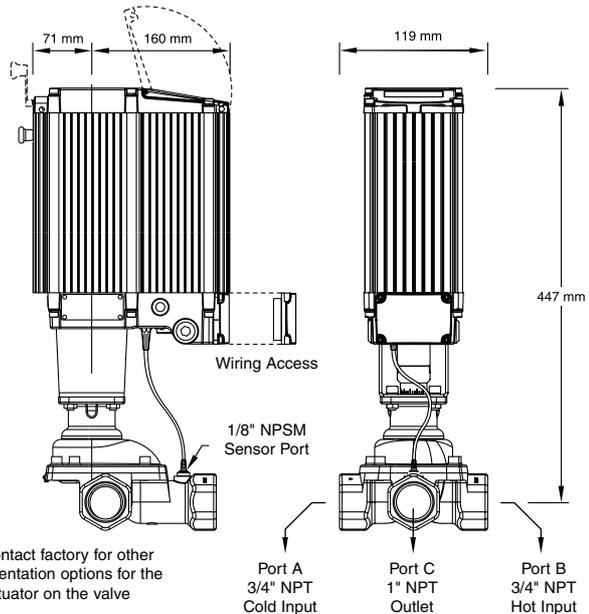
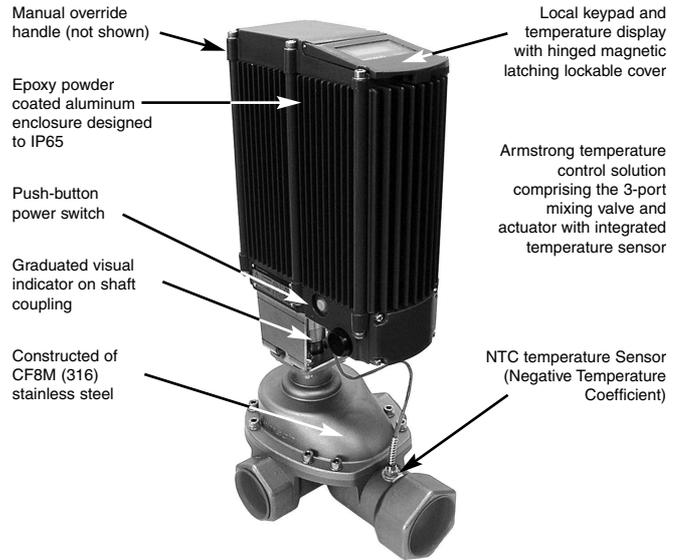
With the temperature feedback signal, the actuator provides temperature control accuracy to $\pm 0.5^\circ\text{C}$ over a $0^\circ\text{C} - 100^\circ\text{C}$ control range, capable of blending from 0% to 100% of either inlet temperature. Even with sudden changes of inlet pressure and temperature to the valve, the actuator controller aggressively minimizes outlet temperature variations, making the system ideal for use in industrial applications as a simple stand-alone or integrated mixing solution.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Ceramic discs: durable, corrosion resistant
- 3/4" valve flow coefficient (Cv): 8,1 mixing; 6,3 single port
- End connection: 3/4" NPT inlets and 1" NPT outlet
- Elastomer seal material options are available to support NON water temperature control applications, e.g., glycol, hydraulic fluid
- Top entry allows inline access to internal valve parts
- Operating temperature range: -25°C to 125°C
- Rated pressure: 10 bar
- BUBBLE TIGHT zero seat leakage shut-off
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 3-amp supply required
- Failsafe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



IMPORTANT NOTE: Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.

Table WH-344-1. A55 Flow Rates (lpm)

Model	Port Connection Sizes (NPT) Inlets x Outlet	Pressure Drop (bar)										Nominal Min. Flow (Note 4)	Max. Flow	C _v
		0,3	0,7	1,0	1,4	1,7	2,1	2,4	2,8	3,1	3,4			
E20W	3/4" x 1"	68	98	117	136	151	167	182	193	204	216	3	Note 2	8,1
E25W	1" x 1-1/4"	106	151	185	212	238	261	280	303	318	337	19	Note 2	12,6
E40W	1-1/2" x 1-1/2"	167	235	288	333	371	409	439	469	500	526	26	Note 2	19,6
E50W	2" x 2-1/2"	405	572	700	806	905	988	1 067	1 143	1 211	1 276	72	Note 2	47,7
E80W	3" x 3" (ASME B16 5 Class 150 Flanges)	1 219	1 722	2 112	2 438	2 725	2 987	3 225	3 449	3 657	3 854	201	Note 2	144

NOTE 1: Check valves MUST be installed on both inlets to the mixing system.

NOTE 2: Sensible pipeline velocities are the only limit to the E20W mixing valve flows.

NOTE 3: Contact Armstrong or visit Web site for Armstrong E20W valve sizing program and Application Notes.

NOTE 4: The nominal recommended Min. Flow is described as:

- The minimum flow at which temperature control can be readily achieved for the given valve size with the Actuator set at STANDARD control gain setting.
- Contact the factory for applications where flow conditions are lower than those stated above.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

MegaMix™ Model E25W Water Temperature Mixing Unit



General Features

The 3-port mixing valve utilizes ceramic shear action disc technology to provide tight shut-off, high pressure differential capability, and long life integrity. Fitted with the electronic actuator and integrated temperature sensor, the system delivers high-performance stand-alone closed-loop temperature control.

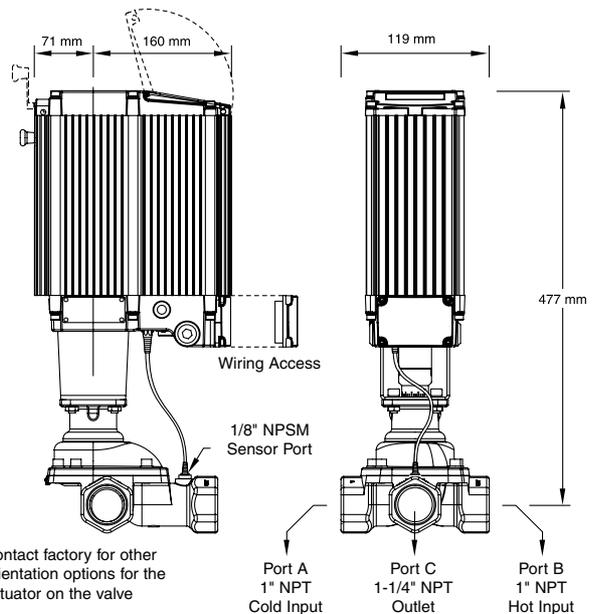
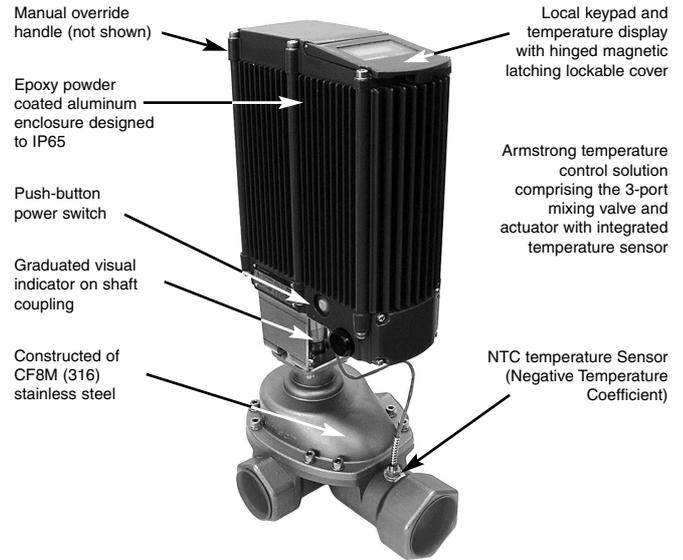
With the temperature feedback signal, the actuator provides temperature control accuracy to $\pm 0.5^{\circ}\text{C}$ over a $0^{\circ}\text{C} - 100^{\circ}\text{C}$ control range, capable of blending from 0% to 100% of either inlet temperature. Even with sudden changes of inlet pressure and temperature to the valve, the actuator controller aggressively minimizes outlet temperature variations, making the system ideal for use in industrial applications as a simple stand-alone or integrated mixing solution.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Ceramic discs: durable, corrosion resistant
- 1" valve flow coefficient (Cv): 12,6 mixing; 10,0 single port
- End connection: 1" NPT inlets and 1-1/4" NPT outlet
- Elastomer seal material options are available to support NON water temperature control applications, e.g., glycol, hydraulic fluid
- Top entry allows inline access to internal valve parts
- Operating temperature range: -25°C to 125°C
- Rated pressure: 10 bar
- BUBBLE TIGHT zero seat leakage shut-off
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 3-amp supply required
- Failsafe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



IMPORTANT NOTE: Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.

Table WH-345-1. A55 Flow Rates (lpm)

Model	Port Connection Sizes (NPT) Inlets x Outlet	Pressure Drop (bar)										Nominal Min. Flow (Note 4)	Max. Flow	C _v
		0,3	0,7	1,0	1,4	1,7	2,1	2,4	2,8	3,1	3,4			
E20W	3/4" x 1"	68	98	117	136	151	167	182	193	204	216	3	Note 2	8,1
E25W	1" x 1-1/4"	106	151	185	212	238	261	280	303	318	337	19	Note 2	12,6
E40W	1-1/2" x 1-1/2"	167	235	288	333	371	409	439	469	500	526	26	Note 2	19,6
E50W	2" x 2-1/2"	405	572	700	806	905	988	1 067	1 143	1 211	1 276	72	Note 2	47,7
E80W	3" x 3" (ASME B16 5 Class 150 Flanges)	1 219	1 722	2 112	2 438	2 725	2 987	3 225	3 449	3 657	3 854	201	Note 2	144

NOTE 1: Check valves MUST be installed on both inlets to the mixing system.
 NOTE 2: Sensible pipeline velocities are the only limit to the E25W mixing valve flows.
 NOTE 3: Contact Armstrong or visit Web site for Armstrong E25W valve sizing program and Application Notes.

NOTE 4: The nominal recommended Min. Flow is described as:
 • The minimum flow at which temperature control can be readily achieved for the given valve size with the Actuator set at STANDARD control gain setting.
 • Contact the factory for applications where flow conditions are lower than those stated above.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Water Mixing



MegaMix™ Model E40W Water Temperature Mixing Unit

General Features

The 3-port mixing valve utilizes ceramic shear action disc technology to provide tight shut-off, high pressure differential capability, and long life integrity. Fitted with the electronic actuator and integrated temperature sensor, the system delivers high-performance stand-alone closed-loop temperature control.

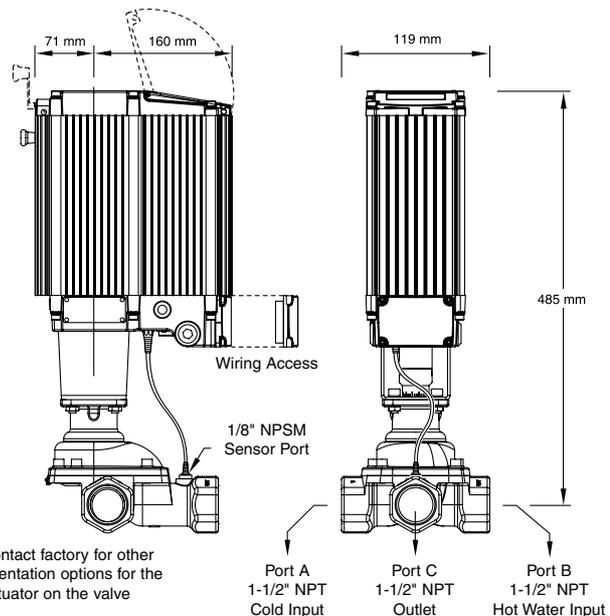
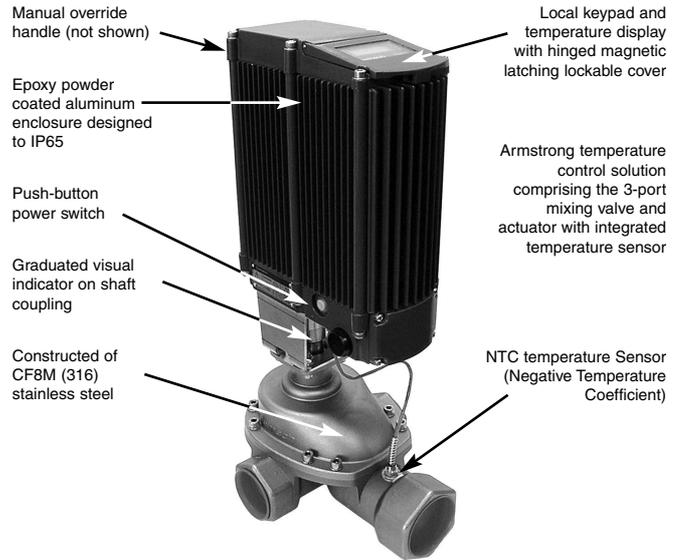
With the temperature feedback signal, the actuator provides temperature control accuracy to $\pm 0.5^\circ\text{C}$ over a $0^\circ\text{C} - 100^\circ\text{C}$ control range, capable of blending from 0% to 100% of either inlet temperature. Even with sudden changes of inlet pressure and temperature to the valve, the actuator controller aggressively minimizes outlet temperature variations, making the system ideal for use in industrial applications as a simple stand-alone or integrated mixing solution.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Ceramic discs: durable, corrosion resistant
- 1-1/2" valve flow coefficient (Cv): 19,6 mixing; 14,5 single port
- End connection: 1-1/2" NPT inlets and 1-1/2"NPT outlet
- Elastomer seal material options are available to support NON water temperature control applications, e.g., glycol, hydraulic fluid
- Top entry allows inline access to internal valve parts
- Operating temperature range: -25°C to 125°C
- Rated pressure: 10 bar
- BUBBLE TIGHT zero seat leakage shut-off
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 3-amp supply required
- Failsafe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



IMPORTANT NOTE: Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.

Table WH-346-1. A55 Flow Rates (lpm)

Model	Port Connection Sizes (NPT) Inlets x Outlet	Pressure Drop (bar)										Nominal Min. Flow (Note 4)	Max. Flow	C _v
		0,3	0,7	1,0	1,4	1,7	2,1	2,4	2,8	3,1	3,4			
E20W	3/4" x 1"	68	98	117	136	151	167	182	193	204	216	3	Note 2	8,1
E25W	1" x 1-1/4"	106	151	185	212	238	261	280	303	318	337	19	Note 2	12,6
E40W	1-1/2" x 1-1/2"	167	235	288	333	371	409	439	469	500	526	26	Note 2	19,6
E50W	2" x 2-1/2"	405	572	700	806	905	988	1 067	1 143	1 211	1 276	72	Note 2	47,7
E80W	3" x 3" (ASME B16 5 Class 150 Flanges)	1 219	1 722	2 112	2 438	2 725	2 987	3 225	3 449	3 657	3 854	201	Note 2	144

NOTE 1: Check valves MUST be installed on both inlets to the mixing system.

NOTE 2: Sensible pipeline velocities are the only limit to the E40W mixing valve flows.

NOTE 3: Contact Armstrong or visit Web site for Armstrong E40W valve sizing program and Application Notes.

NOTE 4: The nominal recommended Min. Flow is described as:

- The minimum flow at which temperature control can be readily achieved for the given valve size with the Actuator set at STANDARD control gain setting.
- Contact the factory for applications where flow conditions are lower than those stated above.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

MegaMix™ Model E50W Water Temperature Mixing Unit



General Features

The 3-port mixing valve utilizes ceramic shear action disc technology to provide tight shut-off, high pressure differential capability, and long life integrity. Fitted with the electronic actuator and integrated temperature sensor, the system delivers high-performance stand-alone closed-loop temperature control.

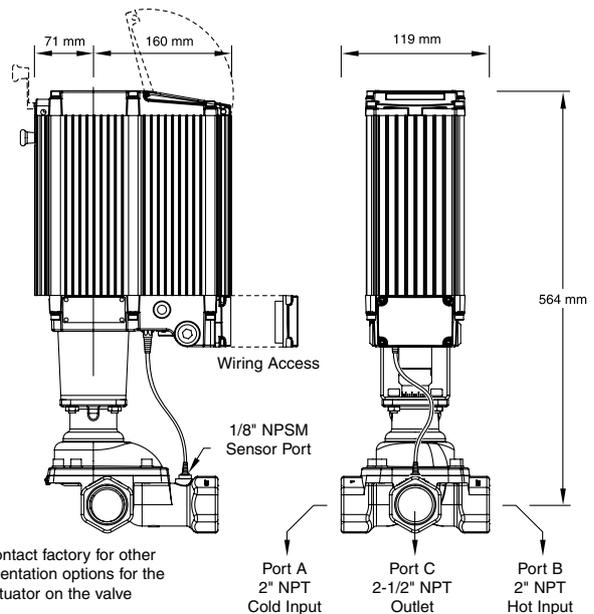
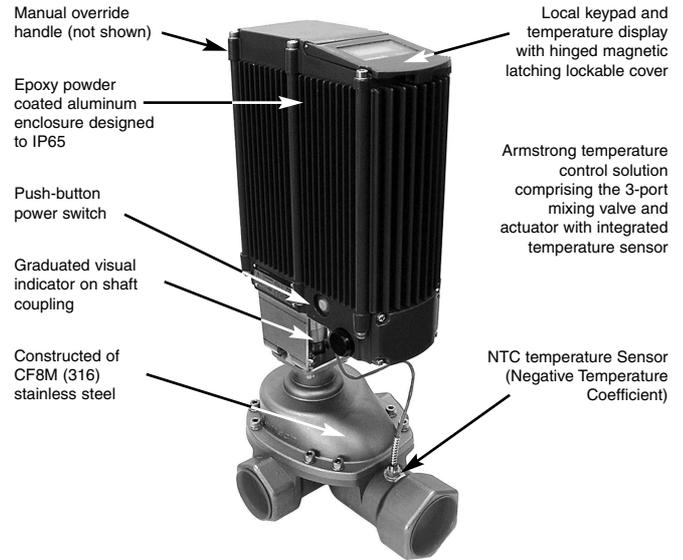
With the temperature feedback signal, the actuator provides temperature control accuracy to $\pm 0.5^\circ\text{C}$ over a $0^\circ\text{C} - 100^\circ\text{C}$ control range, capable of blending from 0% to 100% of either inlet temperature. Even with sudden changes of inlet pressure and temperature to the valve, the actuator controller aggressively minimizes outlet temperature variations, making the system ideal for use in industrial applications as a simple stand-alone or integrated mixing solution.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Ceramic discs: durable, corrosion resistant
- 2" valve flow coefficient (Cv): 47,7 mixing; 40,3 single port
- End Connection: 2" NPT inlets and 2-1/2" NPT outlet
- Elastomer seal material options are available to support NON water temperature control applications, e.g., glycol, hydraulic fluid
- Top entry allows inline access to internal valve parts
- Operating temperature range: -25°C to 125°C
- Rated pressure: 145 psi (10 bar)
- BUBBLE TIGHT zero seat leakage shut-off
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 5-amp supply required
- Failsafe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



IMPORTANT NOTE: Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.

Table WH-347-1. A55 Flow Rates (lpm)

Model	Port Connection Sizes (NPT) Inlets x Outlet	Pressure Drop (bar)										Nominal Min. Flow (Note 4)	Max. Flow	C _v
		0,3	0,7	1,0	1,4	1,7	2,1	2,4	2,8	3,1	3,4			
E20W	3/4" x 1"	68	98	117	136	151	167	182	193	204	216	3	Note 2	8,1
E25W	1" x 1-1/4"	106	151	185	212	238	261	280	303	318	337	19	Note 2	12,6
E40W	1-1/2" x 1-1/2"	167	235	288	333	371	409	439	469	500	526	26	Note 2	19,6
E50W	2" x 2-1/2"	405	572	700	806	905	988	1 067	1 143	1 211	1 276	72	Note 2	47,7
E80W	3" x 3" (ASME B16 5 Class 150 Flanges)	1 219	1 722	2 112	2 438	2 725	2 987	3 225	3 449	3 657	3 854	201	Note 2	144

NOTE 1: Check valves MUST be installed on both inlets to the mixing system.
 NOTE 2: Sensible pipeline velocities are the only limit to the E50W mixing valve flows.
 NOTE 3: Contact Armstrong or visit Web site for Armstrong E50W valve sizing program and Application Notes.

NOTE 4: The nominal recommended Min. Flow is described as:
 • The minimum flow at which temperature control can be readily achieved for the given valve size with the Actuator set at STANDARD control gain setting.
 • Contact the factory for applications where flow conditions are lower than those stated above.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



MegaMix™ Model E80W Water Temperature Mixing Unit

General Features

The 3-port valve utilizes a unique shear action disc technology and swirl-mix body geometry to provide high performance dynamic fluid mixing. The nature of the valve seat design minimizes disc wear, outperforming conventionally seated valves, minimizing seal replacement and plant downtime. Fitted with the electronic actuator and a temperature sensor inserted into the outlet pipe, the system delivers high-performance stand-alone closed-loop temperature control.

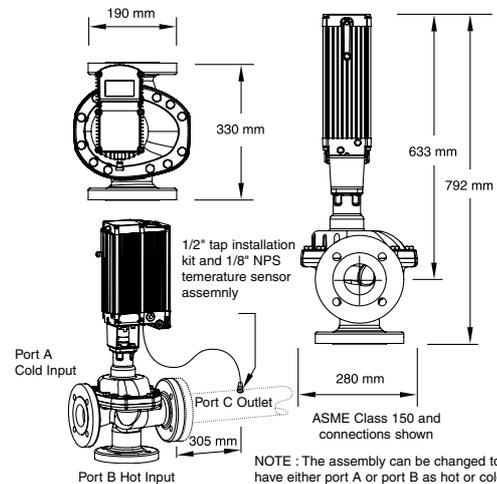
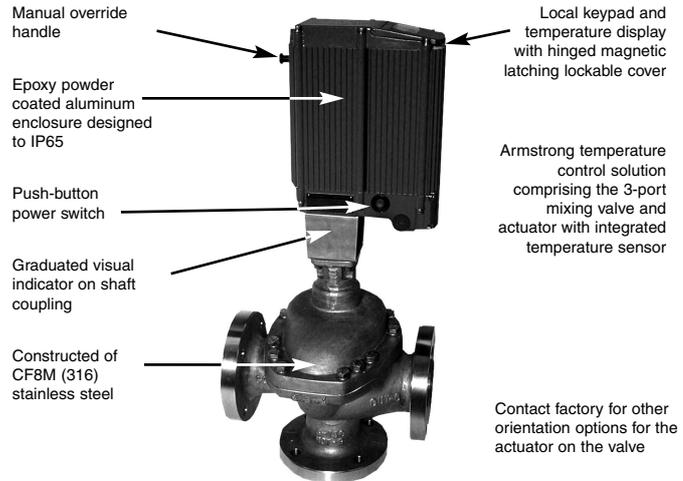
The calibrated temperature feedback signal in combination with the fast acting actuator provides temperature control accuracy to $\pm 1^\circ\text{C}$ over a $0^\circ\text{C} - 100^\circ\text{C}$ control range, capable of blending from 0% to 100% of either inlet temperature. Even with sudden changes of inlet pressure and temperature to the valve, the actuator controller aggressively minimizes outlet temperature variations, making the system ideal for use in industrial applications as a simple stand-alone or integrated mixing solution.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Shear Action Discs and Valve constructed of CF8M (316) stainless steel
- 3" valve flow coefficient (Cv): 144
- End connection: 3" ASME B16.5 Class 150 standard (Cl. 300 option available)
- Port size: 3" nominal bore
- Calibrated NTC temperature probe assembly requires fitting into pipework 12" downstream of the outlet port
- Elastomer seal material options are available to support NON water temperature control applications, e.g., glycol, hydraulic fluid
- Top entry allows inline access to internal valve parts
- Operating temperature range: -25°C to 125°C
- Rated pressure: 16 bar at 100°C
- Valve is non shutoff with seat leakage being less than 0.05% of C_v
- Design verification to ASME B16.34
- U.S. and EU patent pending

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 5-amp supply required
- Failsafe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1.5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



Important Notes: Consult the "Installation, Operation and Maintenance" Manual (IOM) to review key requirements, recommendations and considerations when planning your installation. Failure to do so may affect the performance of the product. A copy of the IOM is provided with the product.

- Illustration shows standard system format for actuator/valve orientation, installed calibrated NTC temperature probe with installation tap kit and ASME B16.5 Class 150 end connections on the valve.
- Hot and cold input ports can be interchanged, and alternative orientations of the actuator on the valve can be specified.
- Class 300 flange option is available on indent, but not pressure rated to ASME CI 300.
- Please consult with the Armstrong factory at time of order placement if you require non standard format product for your installation. For a fully detailed certified drawing, refer to CDLW #1172.

Table WH-348-1. A55 Flow Rates (lpm)

Model	Port Connection Sizes (NPT) Inlets x Outlet	Pressure Drop (bar)										Nominal Min. Flow (Note 4)	Max. Flow	C _v
		0,3	0,7	1,0	1,4	1,7	2,1	2,4	2,8	3,1	3,4			
E20W	3/4" x 1"	68	98	117	136	151	167	182	193	204	216	3	Note 2	8,1
E25W	1" x 1-1/4"	106	151	185	212	238	261	280	303	318	337	19	Note 2	12,6
E40W	1-1/2" x 1-1/2"	167	235	288	333	371	409	439	469	500	526	26	Note 2	19,6
E50W	2" x 2-1/2"	405	572	700	806	905	988	1 067	1 143	1 211	1 276	72	Note 2	47,7
E80W	3" x 3" (ASME B16 5 Class 150 Flanges)	1 219	1 722	2 112	2 438	2 725	2 987	3 225	3 449	3 657	3 854	201	Note 2	144

NOTE 1: Check valves MUST be installed on both inlets to the mixing system.

NOTE 2: Sensible pipeline velocities are the only limit to the E80W mixing valve flows.

NOTE 3: Contact Armstrong or visit Web site for Armstrong E80W valve sizing program and Application Notes.

NOTE 4: The nominal recommended Min. Flow is described as:

- The minimum flow at which temperature control can be readily achieved for the given valve size with the Actuator set at STANDARD control gain setting.
- Contact the factory for applications where flow conditions are lower than those stated above.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

MegaMix™ Model E25S Steam/Water Mixing Unit



General Features

The shear action disc design of the E25S valve provides precise controlled mixing of steam and water. Fitted with the electronic actuator and an integrated temperature sensor, the system ensures fast, accurate and stable temperature control. The single compact assembly simplifies installation. The independence of this stand-alone unit provides a reliable solution for hot water supply for industrial applications.

The calibrated temperature probe fits into a 1/8" NPSM port in the outlet, and connects via a cable to the actuator. With this temperature feedback signal, the actuator can provide temperature control accuracy of $\pm 0,5^{\circ}\text{C}$ and up to 95°C heated water at the outlet.

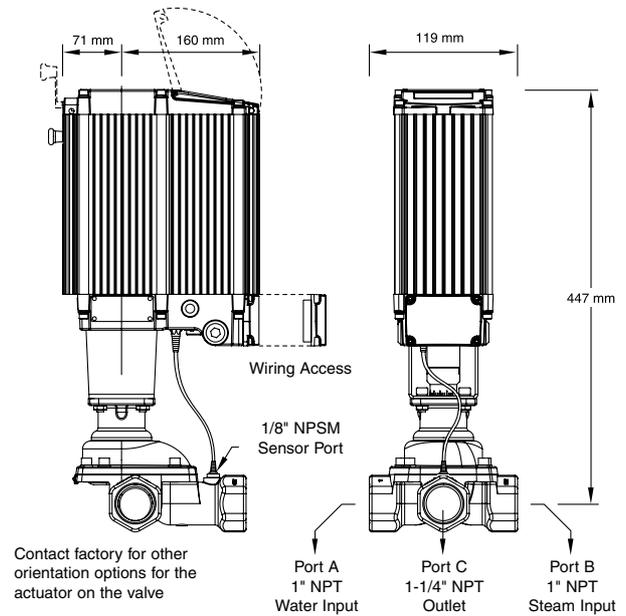
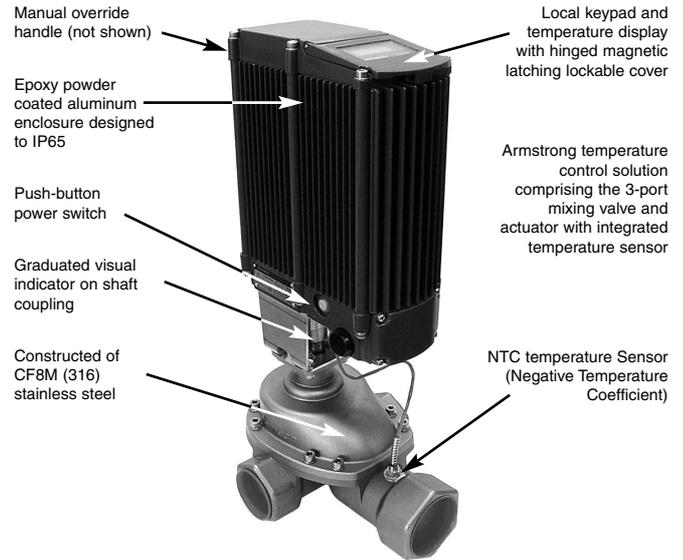
The E25S can handle a variety of input temperatures and pressures to give a temperature rise. The flow rate table below outlines only 4 typically requested output temperature rises. With sudden changes of inlet pressure and temperature to the valve, the controller aggressively minimizes outlet temperature variations.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Nickel chrome and cobalt coated CF8M (316) stainless steel discs
- 1" valve flow coefficient $C_v(\text{max})$: 8,0
- End connection: 1" NPT inlets and 1-1/4" NPT outlet
- Top entry allows inline access to internal valve parts
- Maximum inlet steam temperature 250°C
- Rated pressure: 10 bar
- Seat leakage is approximately 0,05% of the valves $C_v(\text{max})$
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability ($0,03^{\circ}$ rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 3-amp supply required
- Fail-safe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



Water Mixing

The E25S can handle a variety of input temperatures and pressures to give a temperature rise. The flow table below outlines only four typical output rises. Contact Armstrong for application sizing assistance.

A) 10°C Temperature Rise						C) 56°C Temperature Rise					
Water \ Steam	1,5	3,0	5,0	7,0	bar	Water \ Steam	1,5	3,0	5,0	7,0	bar
1,5 bar	470	470	470	470	l/min	1,5 bar	197	470	470	470	l/min
3,0 bar	470	665	665	665	l/min	3,0 bar	197	665	665	665	l/min
4,0 bar	470	665	768	768	l/min	4,0 bar	197	665	768	765	l/min
B) 31°C Temperature Rise						D) 75°C Temperature Rise					
Water \ Steam	1,5	3,0	5,0	7,0	bar	Water \ Steam	1,5	3,0	5,0	7,0	bar
1,5 bar	373	393	470	470	l/min	1,5 bar	142	283	470	470	l/min
3,0 bar	373	393	655	665	l/min	3,0 bar	142	283	472	660	l/min
4,0 bar	373	393	655	768	l/min	4,0 bar	142	283	472	660	l/min

Safety

Consideration should be given during the design phase to the following conditions of the proposed circuit/system:

- Sudden loss of water pressure
- Loss of power supply
- Over-temperature safety-fail-safe system

If cold water supply or temp. sensor fails, the valve will be closed within approximately 2 seconds. If there is a loss of power, the unit will remain in its last powered up position and can be manually actuated using the manual override handle.

IMPORTANT NOTES:

1. A minimum flow rate must be established for effective mixing and temperature control. The approximate minimum flow for effective steam and water mixing for the E25S valve is 15 lpm.
2. Check (nonreturn) valves MUST be fitted to both inlets. Strainers are also recommended.
3. Sensible pipeline velocities must be considered in application design.
4. Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.
5. Armstrong's Engineering Team is available to assist you with application support, component selection and E25S valve sizing.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.



MegaMix™ Model E40S Steam/Water Mixing Unit

General Features

The shear action disc design of the E40S valve provides precise controlled mixing of steam and water. Fitted with the electronic actuator and an integrated temperature sensor, the system ensures fast, accurate and stable temperature control. The single compact assembly simplifies installation. The independence of this stand-alone unit provides a reliable solution for hot water supply for industrial applications.

The calibrated temperature probe fits into a 1/8" NPSM port in the outlet, and connects via a cable to the actuator. With this temperature feedback signal, the actuator can provide temperature control accuracy of $\pm 0,5^{\circ}\text{C}$ and up to 95°C heated water at the outlet.

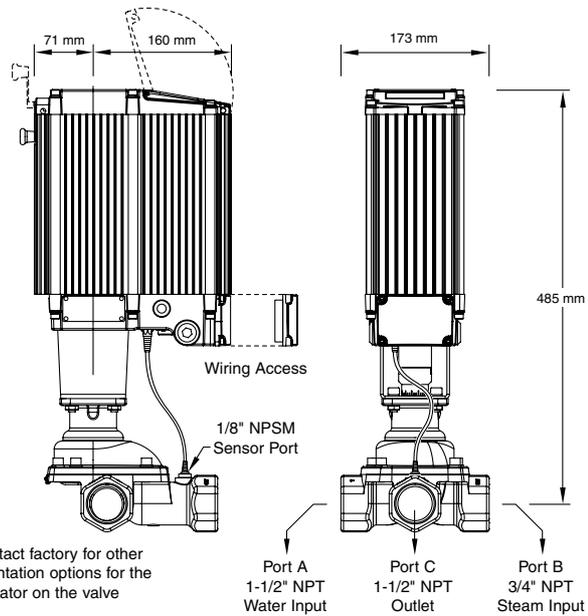
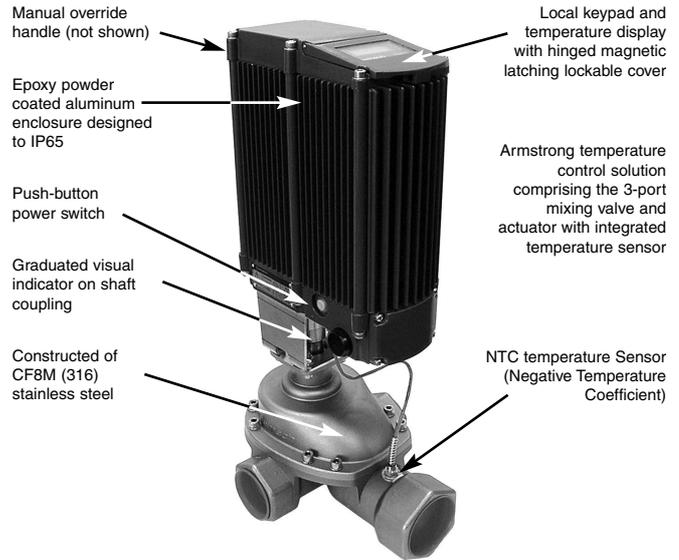
The E40S can handle a variety of input temperatures and pressures to give a temperature rise. The flow rate table below outlines only 4 typically requested output temperature rises. With sudden changes of inlet pressure and temperature to the valve, the controller aggressively minimizes outlet temperature variations.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Nickel chrome and cobalt coated CF8M (316) stainless steel discs
- 1-1/2" valve flow coefficient $C_v(\text{max})$: 13,3
- End connection: 1-1/2" NPT inlets and 1-1/2" NPT outlet
- Top entry allows inline access to internal valve parts
- Maximum inlet steam temperature 250°C
- Rated pressure: 10 bar
- Seat leakage is approximately 0,05% of the valves $C_v(\text{max})$
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability ($0,03^{\circ}$ rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 3-amp supply required
- Fail-safe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1,5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



The E40S can handle a variety of input temperatures and pressures to give a temperature rise. The flow table below outlines only four typical output rises. Contact Armstrong for application sizing assistance.

A) 10°C Temperature Rise						C) 56°C Temperature Rise							
Water	Steam	1,5	3,0	5,0	7,0	bar	Water	Steam	1,5	3,0	5,0	7,0	bar
1,5 bar		470	470	470	470	l/min	1,5 bar		197	470	470	470	l/min
3,0 bar		470	665	665	665	l/min	3,0 bar		197	665	665	665	l/min
4,0 bar		470	665	768	768	l/min	4,0 bar		197	665	768	765	l/min

B) 31°C Temperature Rise						D) 75°C Temperature Rise							
Water	Steam	1,5	3,0	5,0	7,0	bar	Water	Steam	1,5	3,0	5,0	7,0	bar
1,5 bar		373	393	470	470	l/min	1,5 bar		142	283	470	470	l/min
3,0 bar		373	393	655	665	l/min	3,0 bar		142	283	472	660	l/min
4,0 bar		373	393	655	768	l/min	4,0 bar		142	283	472	660	l/min

Safety
Consideration should be given during the design phase to the following conditions of the proposed circuit/system:

- Sudden loss of water pressure
- Loss of power supply
- Over-temperature safety-fail-safe system

If cold water supply or temp. sensor fails, the valve will be closed within approximately 2 seconds. If there is a loss of power, the unit will remain in its last powered up position and can be manually actuated using the manual override handle.

IMPORTANT NOTES:

1. A minimum flow rate must be established for effective mixing and temperature control. The approximate minimum flow for effective steam and water mixing for the E40S valve is 22 lpm.
2. Check (nonreturn) valves MUST be fitted to both inlets. Strainers are also recommended.
3. Sensible pipeline velocities must be considered in application design.
4. Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.
5. Armstrong's Engineering Team is available to assist you with application support, component selection and E40S valve sizing.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

MegaMix™ Model E50S Steam/Water Mixing Unit



General Features

The shear action disc design of the E50S valve provides precise controlled mixing of steam and water. Fitted with the electronic actuator and an integrated temperature sensor, the system ensures fast, accurate and stable temperature control. The single compact assembly simplifies installation. The independence of this stand-alone unit provides a reliable solution for hot water supply for industrial applications.

The calibrated temperature probe fits into a 1/8" NPSM port in the outlet, and connects via a cable to the actuator. With this temperature feedback signal, the actuator can provide temperature control accuracy of $\pm 0,5^{\circ}\text{C}$ and up to 95°C heated water at the outlet.

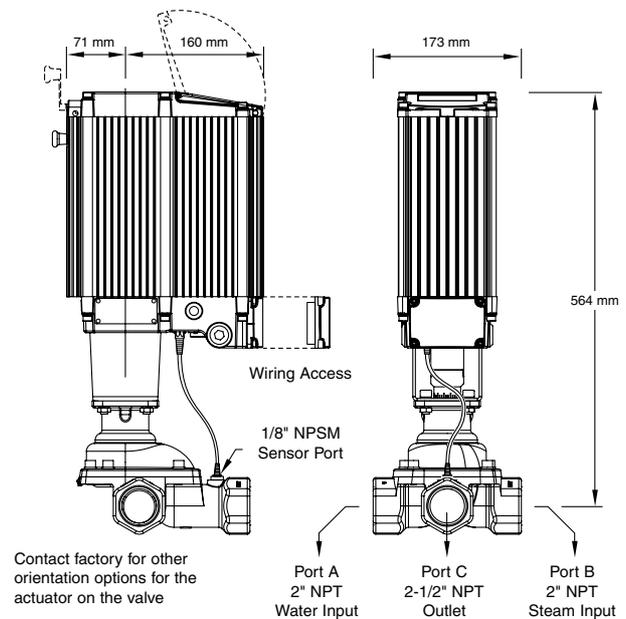
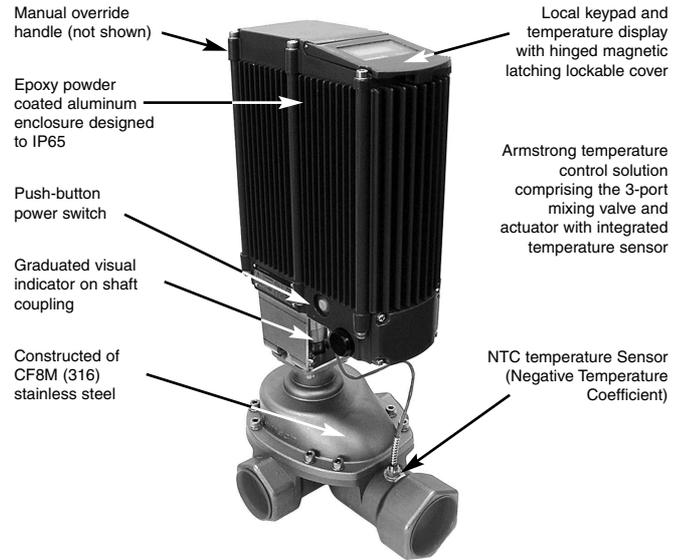
The E50S can handle a variety of input temperatures and pressures to give a temperature rise. The flow rate table below outlines only 4 typically requested output temperature rises. With sudden changes of inlet pressure and temperature to the valve, the controller aggressively minimizes outlet temperature variations.

Valve Features

- ISO 5211, 5210 actuator flange mounting
- Nickel chrome and cobalt coated CF8M (316) stainless steel discs
- 2" valve flow coefficient $C_v(\text{max})$: 26,6
- End connection: 2" NPT inlets and 2-1/2" NPT outlet
- Top entry allows inline access to internal valve parts
- Maximum inlet steam temperature 250°C
- Rated pressure: 10 bar
- Seat leakage is approximately 0,05% of the valves $C_v(\text{max})$
- Design verification to ASME B16.34

Electronic Actuator Features

- Analog (4-20mA) input and output control signals for interfacing with SCADA control (Supervisory Control And Data Acquisition)
- Software configurable control settings
- Very high resolution capability (0.03° rotational)
- External RS232 connection (cable supplied)
- Stand-alone closed loop temperature control, or remote analog (4-20mA) control options
- Power: regulated 24Vdc 5-amp supply required
- Fail-safe position feedback (non-contact absolute encoder)
- Keypad: 4 membrane switches with "dual touch" safety features
- Display: 3.5 digit LCD display with back light
- Push-button power switch
- Extra analog input for interfacing ancillary devices (e.g., flow switch, level switch)
- 90° stroke time as low as 1.5 seconds for fast control action
- Gearbox: planetary, lifetime lubrication, low backlash
- 100% duty cycle rated actuator
- Conforms to Directive 89/336/EEC (Electromagnetic Compatibility)



The E50S can handle a variety of input temperatures and pressures to give a temperature rise. The flow table below outlines only four typical output rises. Contact Armstrong for application sizing assistance.

A) 10°C Temperature Rise						C) 56°C Temperature Rise							
Water	Steam	1,5	3,0	5,0	7,0	bar	Water	Steam	1,5	3,0	5,0	7,0	bar
1,5 bar		470	470	470	470	l/min	1,5 bar		197	470	470	470	l/min
3,0 bar		470	665	665	665	l/min	3,0 bar		197	665	665	665	l/min
4,0 bar		470	665	768	768	l/min	4,0 bar		197	665	768	765	l/min
B) 31°C Temperature Rise						D) 75°C Temperature Rise							
Water	Steam	1,5	3,0	5,0	7,0	bar	Water	Steam	1,5	3,0	5,0	7,0	bar
1,5 bar		373	393	470	470	l/min	1,5 bar		142	283	470	470	l/min
3,0 bar		373	393	655	665	l/min	3,0 bar		142	283	472	660	l/min
4,0 bar		373	393	655	768	l/min	4,0 bar		142	283	472	660	l/min

Safety

Consideration should be given during the design phase to the following conditions of the proposed circuit/system:

- Sudden loss of water pressure
- Loss of power supply
- Over-temperature safety-fail-safe system

If cold water supply or temp. sensor fails, the valve will be closed within approximately 2 seconds. If there is a loss of power, the unit will remain in its last powered up position and can be manually actuated using the manual override handle.

IMPORTANT NOTES:

1. A minimum flow rate must be established for effective mixing and temperature control. The approximate minimum flow for effective steam and water mixing for the E50S valve is 75 lpm.
2. Check (nonreturn) valves MUST be fitted to both inlets. Strainers are also recommended.
3. Sensible pipeline velocities must be considered in application design.
4. Further information on installation requirements and recommendations is available in the "Installation, Operation and Maintenance" Manual (IOM), a copy of which is provided with the product.
5. Armstrong's Engineering Team is available to assist you with application support, component selection and E50S valve sizing.

All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

Water Mixing

