



INSTALLATION AND MAINTENANCE INSTRUCTIONS MX20 - STEAM - WATER MIXERS ADCAMIX

GENERAL

- These instructions must be carefully read before any work involving products supplied by VALSTEAM ADCA ENGINEERING S.A. is undertaken.
- The installation procedure is a critical stage in a life of a mixing valve and care should be taken to avoid damage to the valve or equipment.
- The steam/water Adcamix mixers provide cheap, instant source of low pressure hot water by using existing steam and cold water supplies. The mixer incorporates a safety device to ensure that live steam cannot be accidentally ejected, even if for some reason the cold water supply fails. They give their maximum performance only when the equipment associated with them is correctly sized and installed in accordance with our recommendations.

Note:

- Current regional safety regulations should be take in to account and followed, while doing the installation and maintenance work.
- Handling, installation and maintenance work must be carried out by trained personnel. A supervisor must follow and check all activities.
- For the problems that cannot be solved with the help of this instructions, please contact the supplier or the manufacturer.
- The manufacturer reserves the right to change the design and material of this product without notice.

APPLICATION LIMITS	
Minimum steam pressure	2,5 bar
Maximum steam pressure	10 bar
Steam pressure equal to or no more than 3 times the water pressure.	

CE Marking: This product has been designed for use on steam and water which are in Group 2 of the PED-European Pressure Equipment Directive 97/23/EC and it complies with those requirements. The product falls within category SEP and must not be CE marked.

**ATTENTION**

- If malfunction of any other equipment or system operation failure may result in a dangerous overpressure, over temperature or even vacuum condition, a safety device must be included in the system to prevent such situations.
- At start up, the presence of small particles in the fluid (dirt, scale, weld splatters, etc) may cause an imperfect closure of the seat. If this occurs, proceed to an accurate cleaning.
- Do not touch the equipment without appropriate protection during working operation because it may conduct heat if the used fluid is at high temperature.
- Before starting maintenance be sure that the equipment is not pressurized or hot.
- The equipments must be used within the working temperature and pressure limits laid down for them, otherwise they may fail (refer to nameplate and/or IS- Information Sheet).
- Manual handling of products may present a risk of injury. You are advised to assess the risks taking into account the task, the individual, the load and the working environment.
- Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine ADCA replacement parts.
- Do not remove the nameplate attached to the equipment. Serial number and other useful information is stamped on it.
- During the assembly work, apply protective measures against dirt.
- Correct installation of the equipment is full responsibility of the contractor
- We recommend special constructions or protective measures for applications on the outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapors, etc).

TRANSPORT AND STORAGE**ATTENTION**

- Handling and lifting of materials should be made with adequate equipments.
- The valves and equipments should be protected from impacts and forces during transportation and storage.
- The manufacturer doesn't assume the responsibility of damaged equipments due to inappropriate handling during the transportation and storage.

INSTALLATION**ATTENTION**

- Account for over pressure conditions, according with the local laws or standards.
- For the problems that cannot be solved with the help of this instructions, please contact the supplier or the manufacturer.



Installation area requirements:

- The installation area should have easy access and provide enough space for maintenance and removing operations.
- The pipework before the mixing valve must be sized in order to avoid that the max flow speed recommended, for the fluid in question, is exceeded.
- In order to allow installation and maintenance work without emptying the system, stop valves should be installed upstream of the mixing valve in both water and steam lines.

Procedure:

- Prior to install check that the product is suitable for the intended application: materials and pressure/temperature ratings.
- Before installing remove plastic covers placed on flanges or connection ends. The equipment has an arrow or Inlet/Outlet designations. Be sure that it will be installed on the appropriate direction.
- Take care with jointing material to ensure that none may be permitted to block or enter the valve.
- In case of using Teflon tape (for screwed connections), avoid rolling it till the edge, because it can get cut and migrate to the valve interior, blocking or causing a defective sealing.
- The MX20 must be installed in a vertical position with the hot water outlet connection at the bottom to ensure that the best results are obtained.
- To automatically remove condensate from line thus eliminating water hammer when the MX20 is first put into use or after long periods of inactivity, an ADCA steam trap must be installed in the piping immediately ahead of steam valve (see typical installation). Condensate shall be connected to the condensate recovery system.
- An ADCA pipeline strainer should be installed upstream of the mixing valve on both water and steam lines to protect from dirt which could damage the valve or cause mal-functioning. The strainer must be installed with the sieve sideways, if the medium is steam, to prevent the collection of condensate.
- External stresses that may be induced by the system due to pipe expansion, etc, can affect this product. The necessary precautions are recommended during the systems design and equipment assembly.
- The mixing valve pipework should be properly supported and free from strain and it should not be subjected to undue surges of pressure. The start-up condition should be considered.

FLOW RATE CAPACITY - HOT WATER FLOW l/h							
STEAM PRESSURE	HOT WATER OUTLET TEMPERATURE						
bar	40°C	50°C	60°C	70°C	80°C	90°C	95°C
2,5	1900	1400	1150	900	700	650	600
3	2250	1600	1230	1030	900	800	700
4	2700	2000	1550	1250	1000	850	800
5	3250	2300	1800	1500	1250	900	850
6	3900	2900	2250	1800	1500	1200	1100
7	4200	3100	2400	1950	1600	1300	1200
8	4800	3500	2700	2100	1800	1550	1280
9	5200	3900	3000	2450	2000	1700	1600
10	5900	4100	3250	2700	2250	1900	1750

APPLICATION LIMITS	
Minimum steam pressure	2,5 bar
Maximum steam pressure	10 bar
<i>Steam pressure equal to or no more than 3 times the water pressure.</i>	
<i>Water pressure must not be higher than steam pressure.</i>	

START UP



ATTENTION

- Current regional safety regulations should be taken in to account and followed.
- Protective insulation and warning notice may be required.
- Until the start up of an existing or a new plant, the following must be checked:
 - All works are completed.
 - The valve is correctly installed.
 - All the necessary safety devices have been installed.
- **At start up, the presence of small particles in the fluid (dirt, scale, weld splatters, joint particles, remains of Teflon tape, etc) may cause an imperfect closure of the valve. If this occurs, proceed to an accurate cleaning.**
- **Protection varnishes from pipes and flanges, fats, leftover paint, graphite, etc, should also be carefully clean, because they can be dissolved in the fluids (like steam) blocking the regulation elements after the first service stop.**

Procedure:

1. All stop valves should be closed.
2. Open slowly the water upstream stop valve, in order to avoid water hammer damaging till you have the desired flow rate.
3. Open slowly the steam upstream stop valve, and at the same time check the temperature in the temperature indicator. Stop opening the valve when the desired temperature is reached.
4. The Hot water is ready to use.

Periodical checking:

- 24 hours after the start up, it is recommended to check pipe connections for leaks and retighten the connections if necessary.

MAINTENANCE

- The ADCAMIX MX20 steam - water mixers do not require any particular maintenance.
- Cleaning of the internals may become necessary from time to time. The cleaning intervals depend on the degree of contamination of the fluids.
- Examine steam valve nr.5 and seat to ascertain the extend of any damage or service wear. If necessary replace valve and spring nr.5 and 6 and clean piston nr.9.
- When reassembling make sure that all gasket faces are clean and always use a new gasket. Tighten the bolts uniformly in a diagonal sequence.

TROUBLESHOOTING

ATTENTION

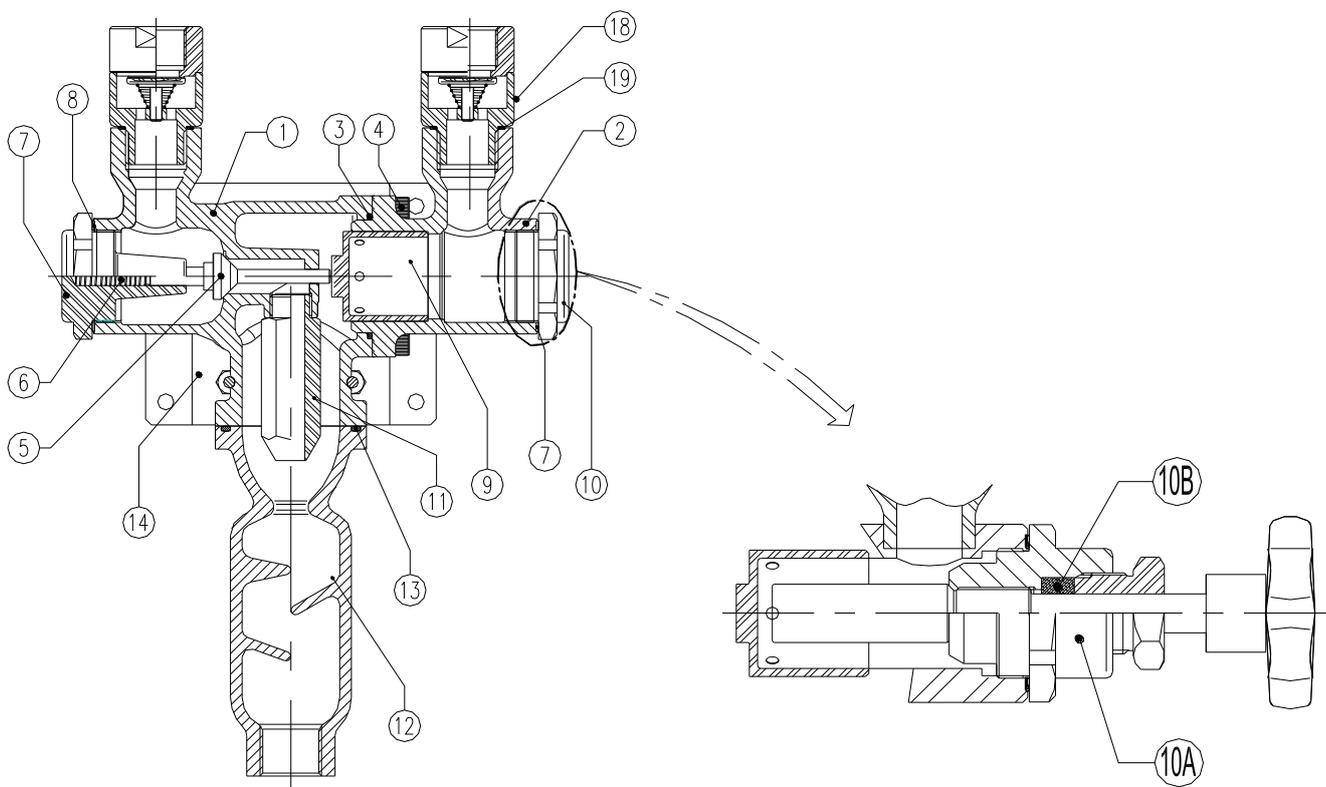
- If the malfunctions cannot be solved with the help of the following chart, please consult the manufacturer.

TROUBLE SHOOTING CHART

FAULT	POSSIBLE REASON	SOLUTION
Water doesn't heat	High water flow rate	Slowly close the water inlet valve till the desired temperature is reached.
	Low flow rate of steam	If available, increase the steam flow rate by opening the steam valve while observing the temperature indicator, till the desired temperature is reached.
	Obstruction of the mixing valve	Proceed to an accurate cleaning of the mixing valve internals and the strainers screen.
Noises and vibrations on the steam pipe work	Water hammer	Check if the steam traps are working properly. If not, proceed to maintenance. If they have insufficient capacity, consider the possibility to install more steam traps or others with higher capacities.
Noises and vibrations on the water pipe work	Deficient closure of the piston on the mixing valve	Dirt could be blocking the closure of the piston. Proceed to an accurate cleaning of the internal parts.

SPARE PARTS
ADCA MX20

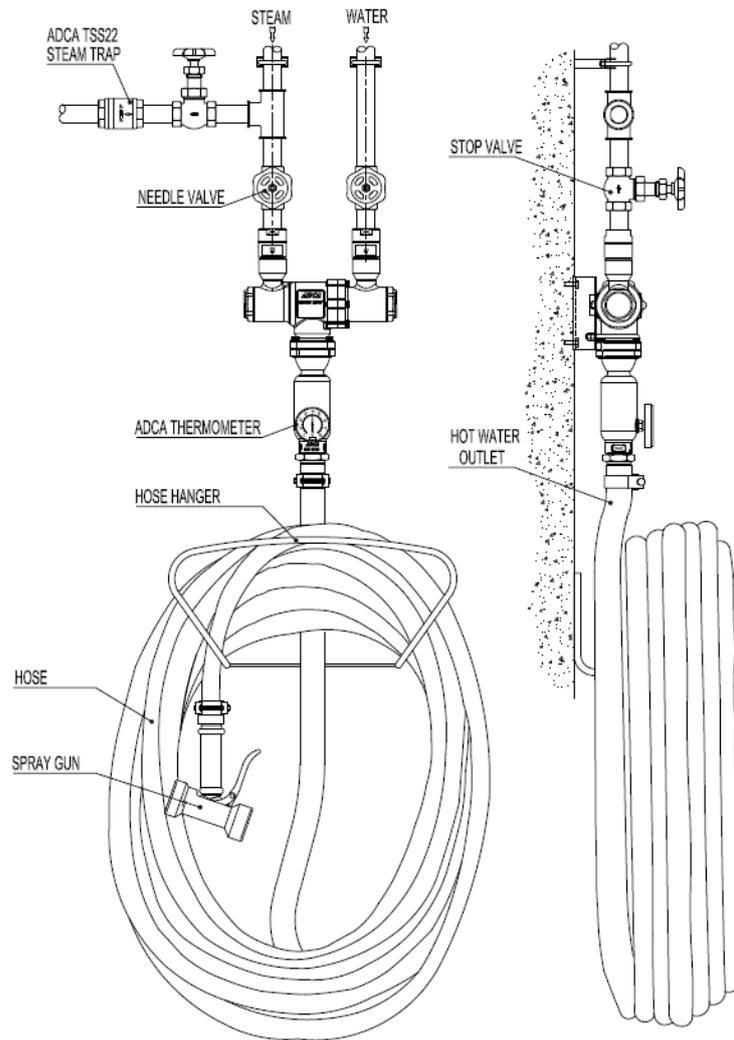
CODE	DESIGNATION	VALVE SIZE DN	POS.NR.	QTY.
A.95.7050.020	Valve, spring & gasket	3/4"	5,6,8	1
A.95.7050.120	Piston & gasket	3/4"	9	1
A.95.7050.220	Check valve	3/4"	18,19	2
A.95.7050.420	Packing & gasket	3/4"	8,10B	1


Recommended tightening torques

POS.NR.	SIZE DN	Nm
7,10	3/4"	80

Remarks: Tighten cover bolts uniformly.

ADCAMIX Typical Installation



PRODUCTS RETURNING



ATTENTION

- Information regarding any hazards and precautions to be considered because of contaminating fluids and residues or mechanical damage that may represent a health, safety or environmental risk, must be provided in writing by the distributors and costumers when returning products to Valsteam ADCA engineering.
- Health and safety data sheets regarding substances identified as hazardous or potentially hazardous must be provided with the information mention above.



ATTENTION

- **LOSS OF WARRANTY:** Total or partial disregard of above instructions involves loss of any right to warranty.