Hosedown station

for efficient instantaneous hot water

spirax sarco

Hosedown station
for efficient instantaneous hot water

Spirax Sarco offers a unique single source supply for wash down installations. Each hosedown station is supplied with isolation valves, check valves, union joints, strainers, thermometer, TCO1 temperature cut-out valve, hosedown gun, high quality dairy hose and a stainless steel hose rack.

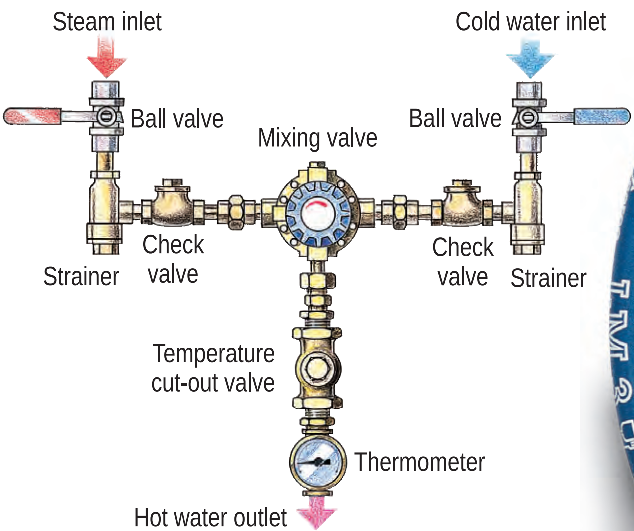
The hosedown station has been designed to provide hot water economically by blending steam and cold water quickly to the required user temperature. As the valve is not thermostatically controlled, in order to maintain a fixed hot water temperature the cold water pressure and flowrate must be constant.
The set temperature can be altered by turning the adjustment knob.

UK Water Byelaws prohibit the direct use of mains water.

Typical applications

The hosedown station is ideally suited to any general application where hot water is required for washing down. Typical applications include washing down walls, floors, process equipment, vehicles, in dairies, abattoirs, food and beverage industries, chemical plants etc.

Typical installation

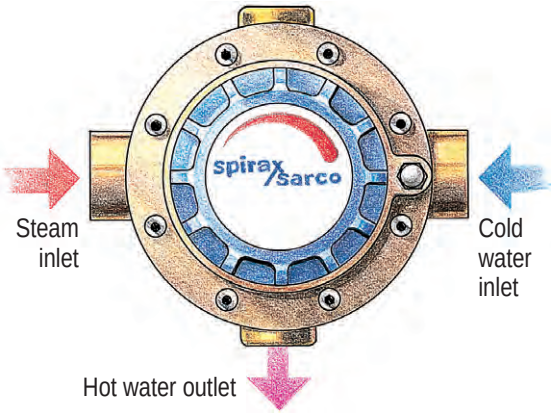


Note: The valve may be rotated through 180° to suit site installations

The steam inlet should be drained of condensate (i.e. steam trap set to drain vertical pipework).
Supply pipework should be sized according to standard practice.

The steam inlet would be sized on the steam flowrate (from the steam consumption chart) at the supply pressure and a steam velocity of between 15 - 25 m/s.

Cold water pipework should take into account, pressure, pipe length and acceptable pressure drop.



How it works

The heart of the hosedown station is the steam / water mixing valve. Cold water is allowed into the mixing chamber through the by-pass valve. When not in use cold water pressure acts on either side of the piston. Opening the gun introduces atmospheric pressure and a flow of water into the mixing chamber.

The cold water inlet pressure now raises the piston, compressing the fixed loading spring and lifting the steam valve off its seat. The steam mixes with the cold water in the chamber providing hot water at the outlet.

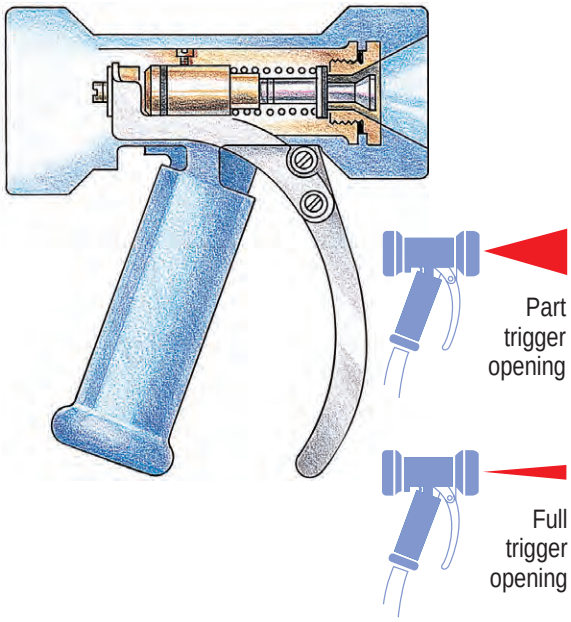
When the cold water supply is isolated (or interrupted) or the gun is closed the fixed loading spring moves the piston down, closing the steam valve. If the piston's movement is impeded by scale or dirt steam would remain in the chamber and reach the gun. This is why the Hosedown Station includes a safety device called the TCO1. This temperature cut-out valve activates at a temperature of 95°C to limit the discharge of steam in the event of a system fault. Maintenance is therefore essential to ensure continued safe operation.

Maintenance

The valve must be serviced because the operation described above is dependant upon clean valve internals. Maintenance will therefore depend upon geographic area and the type of water. If the cold water supply is known to be hard, more frequent maintenance will be needed to provide correct operation. The hose, gun and their couplings must also be checked for signs of misuse and wear.

Hosedown gun

The hosedown gun has a ½" NPT female connection.



User benefits

- Energy efficient: energy is only used when water is flowing - no storage costs.
- Complete hosedown system from one source supplied ready for installation.
- Simple hot water temperature control.
- Compact unit requiring minimal installation space.
- Steam and water supply pressures may range between *3 - 10.3 bar g.
- Dairy quality hose fitted with swivel coupling at hosedown gun.
- High quality hosedown gun suitable for maximum hosedown temperatures.

*Steam pressure can be as low as 0.5 bar g.

How to size

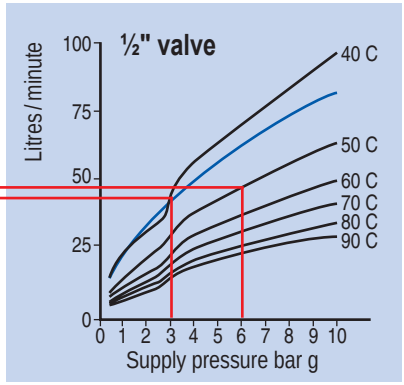
The graphs below indicate the maximum flow of hot water at various temperatures for a given steam supply pressure. The bold blue line shows the maximum cold water flow for a given water supply pressure. When sizing the valve, ascertain the hot water temperature and quantity required, and the hot water and steam pressure available.

Plot the cold water supply pressure and read off from the bold blue line the maximum flow of cold water. Plot the steam supply pressure against the runing temperature required and read off the maximum flow of heated water. For sizing purposes always select the smaller of the two values because depending on the supply pressures, there can be an imbalance in the amount of either water or steam heat available. The effect of selecting different supply pressures or different sizes of valve can easily be compared.

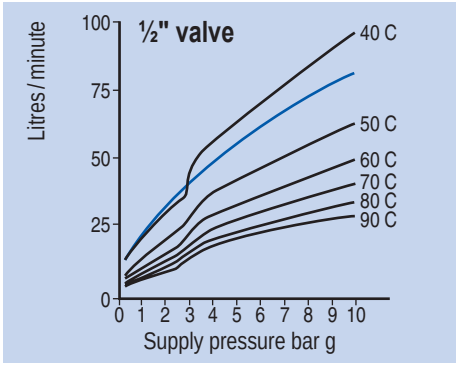
Example

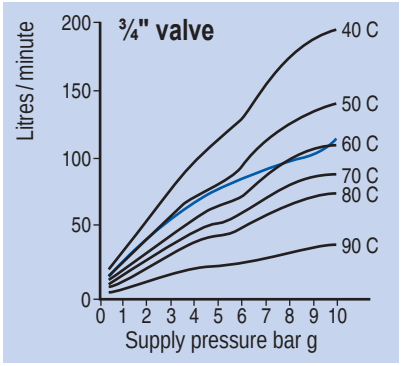
For steam supply pressure of 6 bar g the mxiumum flow of hot water at 50°C is 43 l/min

For cold water supply pressure of 3 bar g the maximum flow of cold water is 40 l/min



Capacities





Steam consumption kg/h (for maximum water flow)		
	Valve size	
Pressure bar g	½"	¾"
1	60	125
2	90	175
3	135	270
4	160	310
5	175	335
6	180	380
7	210	445
8	225	515
9	245	550
10	260	570

Note: Size 1" and 1½" valves are available for fixed installations such as periodic filling of hot water tanks. See seperate literature for technical details.

Technical data

Mixing valve pressure / spring ranges

Size	Spring	Steam pressure bar g	Min water flow l/min to open steam valve
½"	yellow	7.0 - 10.3	4.5
½"	green	3.5 - 7.0	2.7
½"	black	0.5 - 3.5	2.2
¾"	red	7.0 - 10.3	8.1
¾"	blue	3.5 - 7.0	6.8
¾"	white	0.5 - 3.5	6.8

Note: Valves are supplied with all 3 springs, the intermediate 3.5 - 7 bar spring is already fitted into the mixing valve.

Note: A minimum cold water supply pressure of 3 bar g is required to give a reasonable spray velocity at the gun.

Materials

Part	Materials
Mixing valve	Bronze body, stainless steel internals
Hose	Cover and lining EPDM with synthetic textile reinforcement
Gun	Brass insulated with rubber cover. Maximum working pressure 10 bar g Maximum temperature 100°C
Hose rack	Stainless steel
Pipeline fittings	See seperate literature

Options

Mixing adjustment

Valve size	Range °C	Hot water flow l/min Min - Max	Hose Length	Hose Bore
½"	40 - 90	3.4 - 112	20 m	½"
¾"	40 - 90	6.6 - 212	20 m	¾"

Spirax-Sarco Limited, Charlton House,
Cheltenham, Gloucestershire, GL53 8ER UK.
Tel: +44 (0)1242 521361 Fax: +44 (0)1242 573342
E-mail: enq@spiraxuk.attmail.com
Internet: www.spirax-sarco.com