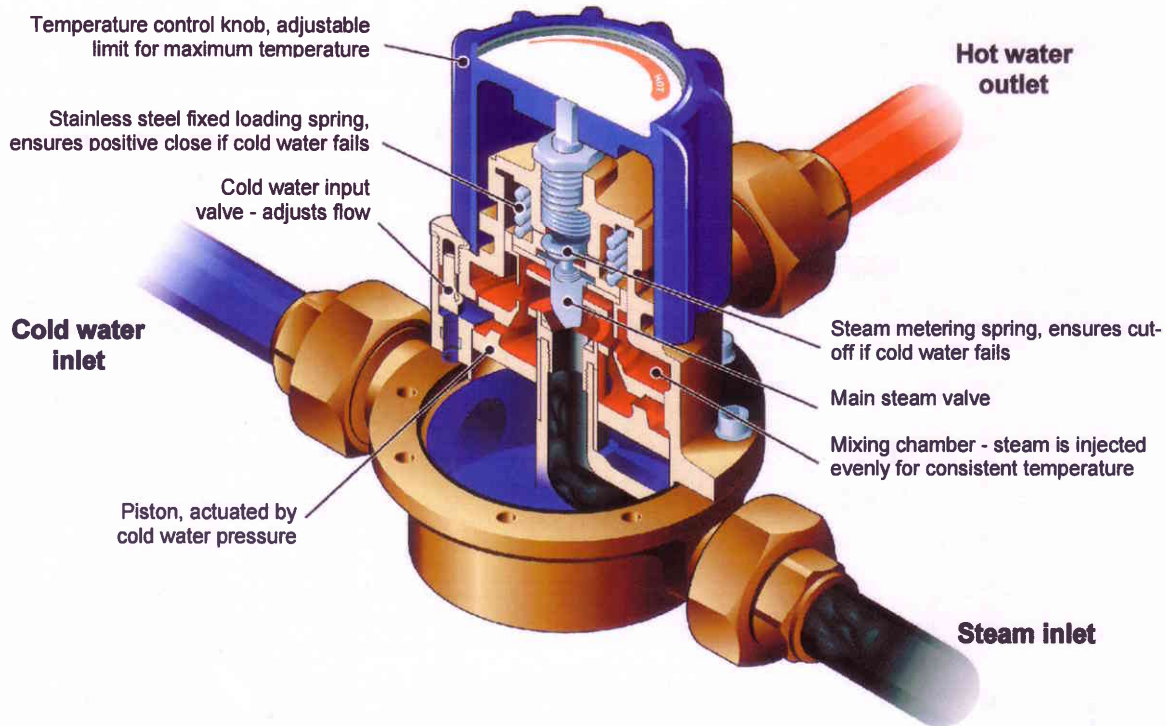


FACT SHEET

STEAM AND WATER MIXING VALVE MODEL 2000



BENEFITS

- Instantaneous hot water
- Outstanding economy – up to 80% cost savings
- Steam shuts off automatically if cold water supply fails
- Easy to service with unions allowing valve removal without disturbing pipework
- Full spares availability
- Available in four sizes 15mm (1/2"), 20mm (3/4"), 25mm (1") and 40mm (1 1/2")
- Variety of finishes:- natural gunmetal, dull chrome, Teflon coated, electro-less nickel and 20mm (3/4") valve available in stainless steel.
- Unique, proven over 40 years international experience.

SUPPLY REQUIREMENTS

1. Valve must be sized correctly (see charts overleaf) and within 1 – 10 bar pressures.
2. Steam and water mains must be large enough to cope with demand
3. Incoming/dropper pipework to suit valve i.e: 15mm bore pipe to 15mm valve, not reduced in bore.
4. It is recommended that water supply is softened (in hard water areas) to reduce lime-scale build up in valve.
5. Constant steam and water supplies are required to maintain set outlet temperature.
6. All valves and fittings to be full bore (as little restriction as possible)
7. Ensure strainer baskets are cleaned periodically to eliminate restrictions to valve.
8. On new installations, ensure pipework is flushed out before fitting valve.

OUTLET RECOMMENDATIONS

1. Only 15mm (1/2") and 20mm (3/4") valves to be used as hose washdown stations.
2. Large valves 25mm (1") and 40mm (1 1/2") to be used for tank filling, multipoint applications.
3. No restrictions on outlet as back pressure will stop valve from working.
4. When fitting sprayballs/jet spinners, they must be correctly sized to give correct flow for valve; i.e. no restriction
5. Top or bottom outlet can be used
6. Recommended maximum of 15 meters of 3/4" bore hose on outlet with 3/4" gun.

SERVICING/MAINTENANCE

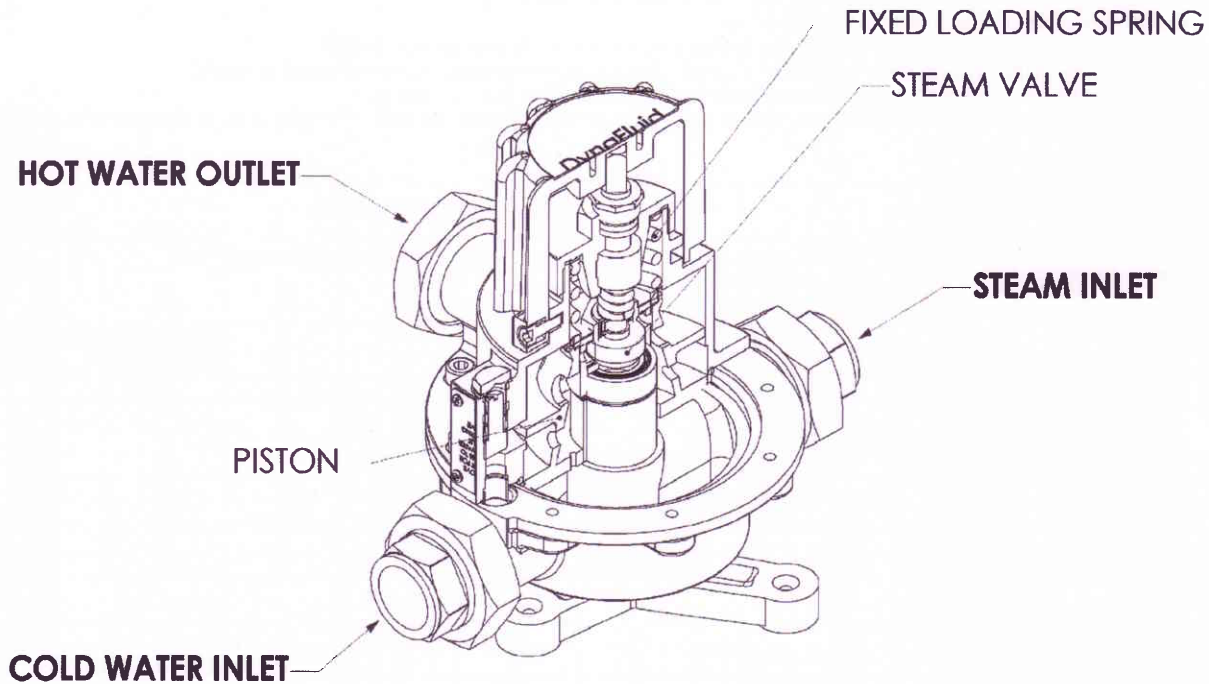
It is recommended that the valve is serviced *at least* every 12 months by a suitably qualified person



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Principle of Operation

When the outlet control is opened cold water flows into the valve body. This change in differential pressure raises the valves piston lifting the steam valve from its seat. Steam combines with the cold water in a mixing chamber to create instantaneous hot water. Once the control is turned off the differential pressure is hot, allowing a strong spring to push the piston back and close the steam valve completely. So, in the absence of cold water, live steam cannot escape through the outlet.



Fixed Loading Spring Selection

The Dynafluid 2000 valve uses one of three Fixed Loading Springs to give maximum efficiency and safety whilst covering the range of steam pressures (0.35 bar to 10.0 bar). These springs are of different values to suit the steam pressures and it is essential that the correct one is fitted before installation.

The medium spring (3.5 bar - 7.0 bar) is pre-fitted at the factory. The low value spring (0.35 bar - 3.5 bar) is supplied in the packaging. The high value spring (7.0 bar - 10.0 bar) is available on request, at which time the operating conditions can be verified.

Table 3 below indicates how to identify the correct spring by colour and number of notch marks, for each size of mixer. In each case a minimum flow rate will be required to ensure that the steam valve opens.

TABLE 3

Valve size	Spring value	Steam Pressure (bar)	Colour Code	Notch Marks	Min. flow rate (l/min)
½"	High	7.0 - 10.0	Yellow	Three	4.5
½"	Medium	3.5 - 7.0	Green	Two	2.7
½"	Low	0.35 - 3.5	Black	One	2.7
¾"	High	7.0 - 10.0	Red	Three	8.2
¾"	Medium	3.5 - 7.0	Blue	Two	6.8
¾"	Low	0.35 - 3.5	White	One	6.2
1"	High	7.0 - 10.0	Red	Three	36.3
1"	Medium	3.5 - 7.0	Blue	Two	31.8
1"	Low	0.35 - 3.5	White	One	27.2
1½"	High	7.0 - 10.0	Red	Three	54.4
1½"	Medium	3.5 - 7.0	Blue	Two	54.4
1½"	Low	0.35 - 3.5	White	One	54.4



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Description

The Dynafuid 2000 range comprises 4 sizes of steam and water mixing valve - ½", ¾", 1" and 1½". The valve mixes steam with cold water to provide an extremely economical supply of hot water instantaneously and at the point where it is required. Typical applications include washing down floors or wall surfaces, cleaning vessels, and supplying hot water to laundry machines. Dynafuid valves can be used by any industry which has a ready supply of steam, such as abattoirs, breweries, food production and processing plants, chemical plants, launderettes etc.

Connections

Steam inlet - left
Cold water inlet - right
Outlet - top or bottom

Every valve is supplied with flat faced unions for each inlet and for one of the outlets. Each union terminates in a BSP female tail piece for connection to supply pipework (NPT female available on request). A cap is provided to close off the unused outlet. Every valve is supplied with a check valve for the steam inlet.

Materials of Manufacture

Main valve body and connections : gunmetal
Main steam valve : stainless steel with PTFE seat
Screws and springs : stainless steel
Main 'O' ringseal : Viton
Knob and mounting bracket : engineering plastics

All materials are UKWFB Listed.

Installation

Installations must comply with local and national regulations, codes and byelaws. Checkvalves and strainers must be installed on the inlets to ensure optimum performance and service life. To reduce the risk of condensate building up in the steam line, it is recommended that a steam trap is installed near the steam inlet.

See below for recommended installation layout.

Pressure Range

Water : Minimum pressure 1.0 bar
Maximum pressure 10.0 bar
Steam : Minimum pressure 0.35 bar
Maximum pressure 10.0 bar

Minimum pressure loss across the mixing valve must be 1.0 bar to ensure that the steam valve will open. Maximum pressure loss ratio is 10:1 in favour of the water or the steam. Pressure loss ratio is the ratio of water to steam after the back pressure caused by outlet restrictions has been deducted equally from the water and steam inlet pressures.

Flow Control

The maximum flow rate achievable will depend on the pressure of water available (see Table 1 opposite). The flow rate can be adjusted via the cold water input valve near the cold water inlet e.g. turn clockwise to reduce flow.

The design of the valve allows the ON-OFF control of the hot water to be on the outlet e.g. by trigger operated watergun or ball valve. Separate flow controls on the inlets are not required.

Temperature Control

The maximum temperature achievable will depend on the pressure of steam available (see Table 2 opposite). The temperature of the hot water can be adjusted by turning the temperature control knob e.g. clockwise to obtain hotter water.

Repairs and Maintenance

Repairs and maintenance can be carried out on site using standard pumping tools. Alternatively the valve can be easily removed from the pipework to a maintenance area. A full range of spares is available, including a Repair Kit for each valve size.

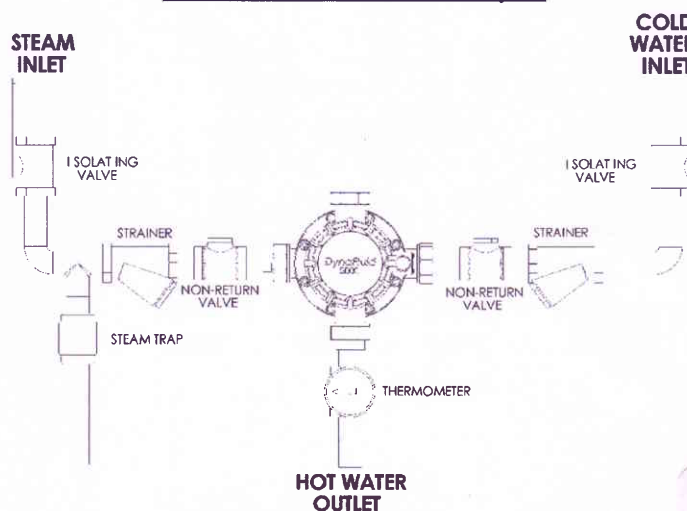
Testing and Guarantees

Every valve is performance tested prior to despatch and carries a unique serial number for traceability. Every valve is guaranteed for 12 months from date of installation against faulty materials or workmanship.

IMPORTANT:

The correct Fixed Loading Spring must be fitted to the valve prior to installation - See back page for selection procedure

Recommended Installation Layout



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HOW TO CHOOSE THE CORRECT SIZE MIXING VALVE FOR YOUR APPLICATION

The tables below give the hot water output achievable for a range of temperatures and pressures, for the 4 different sizes of valve.

- To choose the correct valve:-
- Ascertain the hot water temperature required - for example: washdown systems typically require **60°C**.
- Ascertain the amount of hot water required - for example: washdown systems typically use **50 l/min**.
- Confirm the running water and steam pressures available on site.
- From Table 1, select the smallest valve which can deliver the required flow rate at the running water pressure available.
- From Table 2, check that this valve can deliver the hot water at the flow rate and temperature required, with the steam pressure available.
- If there is not enough steam, choose the next size valve and check that this valve can deliver your requirements.
- Ensure that the minimum flow rate of the valve is lower than the quantity of water which the steam can heat. If it is higher, it will be necessary to increase the steam pressure.

TABLE 1 - COLD WATER CAPACITY			Valve size	TABLE 2 - STEAM CAPACITY							
Running water pressure (bar)	Max flow rate input valve open (l/min)	Min flow rate input valve closed (l/min)		Running steam pressure (bar)	Steam feed requirement (kg/hr)	Max flow rate obtainable with open outlet (l/min)					
					at 40°C	at 50°C	at 60°C	at 70°C	at 80°C	at 90°C	
1	23	10	15mm (1/2")	1	62	26	16	12	10	STEAM PRESSURE TOO LOW	
2	35	13		2	85	37	24	18	14		
3	43	15		3	125	53	32	25	20	17	14
4	50	16		4	157	61	40	31	26	22	18
5	56	17		5	174	73	45	34	28	24	21
6	63	18		6	191	80	49	38	31	26	22
7	69	19		7	208	STEAM PRESSURE TOO HIGH	53	41	33	28	24
8	75	20		8	225	58	44	36	31	26	22
9	79	20		9	242	62	48	39	33	28	24
10	83	21		10	263	67	51	42	35	30	26

1	26	12	20mm (3/4")	1	120	44	30	24	20	16	14
2	44	16		2	174	77	44	34	27	23	19
3	58	22		3	247	88	63	48	40	34	29
4	69	25		4	306	110	79	60	49	41	36
5	78	28		5	337	STEAM PRESSURE TOO HIGH	86	67	54	46	39
6	85	31		6	382	100	75	60	53	44	36
7	93	33		7	447	STEAM PRESSURE TOO HIGH	88	71	60	51	41
8	100	36		8	506	100	81	69	59	49	41
9	106	38		9	551	108	88	74	64	54	44
10	112	41		10	566	111	90	75	66	56	46

1	79	22	25mm (1")	1	213	90	56	STEAM PRESSURE TOO LOW			
2	104	29		2	350	146	90	68	56	48	40
3	120	33		3	420	175	108	82	67	57	49
4	138	39		4	490	STEAM PRESSURE TOO HIGH	126	94	78	66	57
5	152	46		5	554	142	102	88	74	64	54
6	164	49		6	622	160	118	99	84	72	60
7	177	52		7	689	177	135	110	92	79	66
8	187	55		8	757	195	149	121	102	86	72
9	194	57		9	824	162	131	112	94	78	66
10	198	60		10	886	174	140	120	102	86	72

1	112	47	40mm (1 1/2")	1	243	105	65	STEAM PRESSURE TOO LOW				
2	162	69		2	394	165	100	70				
3	197	80		3	545	225	140	100	88	72	62	
4	230	91		4	688	275	180	132	110	93	80	
5	252	100		5	830	345	215	165	132	112	97	
6	273	110		6	957	STEAM PRESSURE TOO HIGH	245	190	155	135	110	
7	293	119		7	1064	275	210	170	147	123	104	
8	315	128		8	1158	295	230	185	162	135	114	
9	338	135		9	1231	320	245	198	167	145	120	
10	357	142		10	1285	330	255	210	172	150	126	



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