Z63 - Z64

4-way rotor mixing valves

4-way rotor valve bodies for hot water heating installations. These valves can be used as mixing valves. Suitable for medium and large systems.

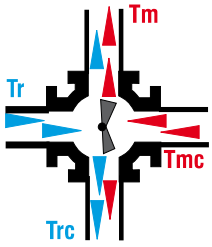
	Kv m³/h	Connection DN	Connection type	Servocontrol to couple with	Unit weight Kg	Protection degree
Z63C	41	40	flange PN6	024-034	7,27	IP40
Z63D	65	50	flange PN6	024-034	9,71	IP40
Z63E	100	65	flange PN6	024-034	13,02	IP40
Z63F	185	80	flange PN6	024-034	18,04	IP40
Z63G	310	100	flange PN6	024-034	25,26	IP40
Z64A	17	G1	female threaded	024-034	0,86	IP40
Z64B	25	G1 1/4	female threaded	024-034	2,45	IP40
Z64C	41	G1 1/2	female threaded	024-034	2,86	IP40
Z64D	65	G2	female threaded	024-034	5,86	IP40

OPERATION

The 4-way mixing valve is not limited with mixing the return water with the delivery water, but makes to flow from the boiler the hot water not used by the installation, in this way the return temperature in the boiler will always be superior relative to the dangerous value of corrosion onset. We do not recommend to use a 4-way mixing valve when the boiler also supplies the users (convector heaters, etc..) equipped with circulation pump or where there exist two or more circuits in parallel fed from the same boiler, as the complete closure of a valve causes parasitic circulations between one circuit and another.
Thermolinear regulation of water delivery temperature.
Leakage of 1% from the nominal flow rate.
The shutter, in rotation movement, opens or closes proportionally two opposite inputs flowing into a third one.

INSTALLATION

4-way rotor mixing valves can be installed as mixing valves only.
Valve motorization is fast and easy executed with 024 type servocontrol and T01A coupling group.
It is always possible to disconnect the servocontrol in order to operate the valve manually.
The connection to the boiler can be done either by means of the fastening clamps from the left or from the right.



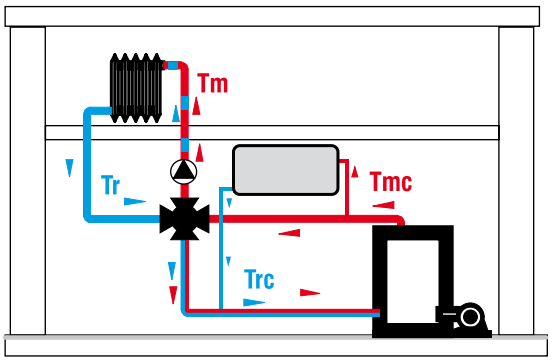
HYDRAULIC CONNECTIONS

See on the page 93 overall dimensions of the valve bodies. With servocontrol (motorized mixing valve)

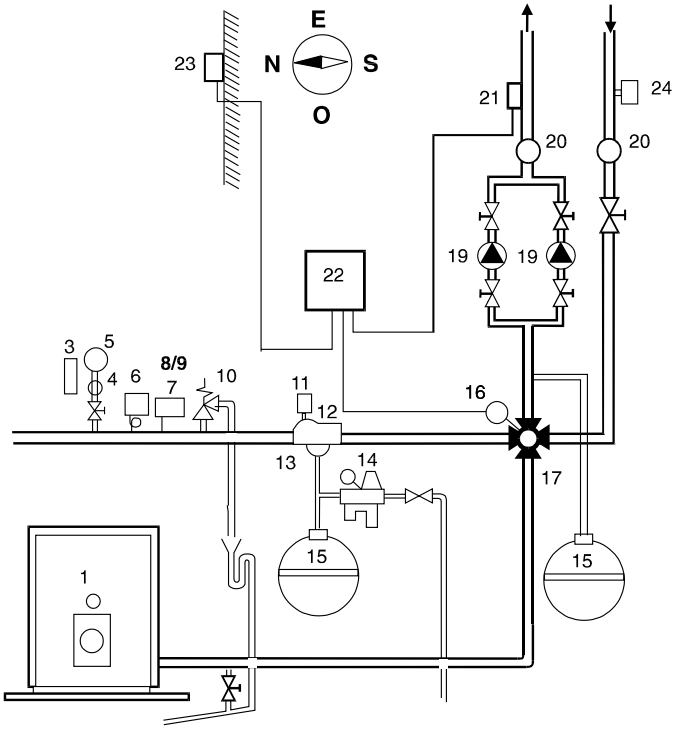
ELECTRICAL FEATURES

Cast iron valve body.
Antifriction bronze shutter.
Stainless steel shaft.
Neoprene sealing rings.
Maximum operating pressure - 6 bar.
Maximum operating temperature - 110 °C.

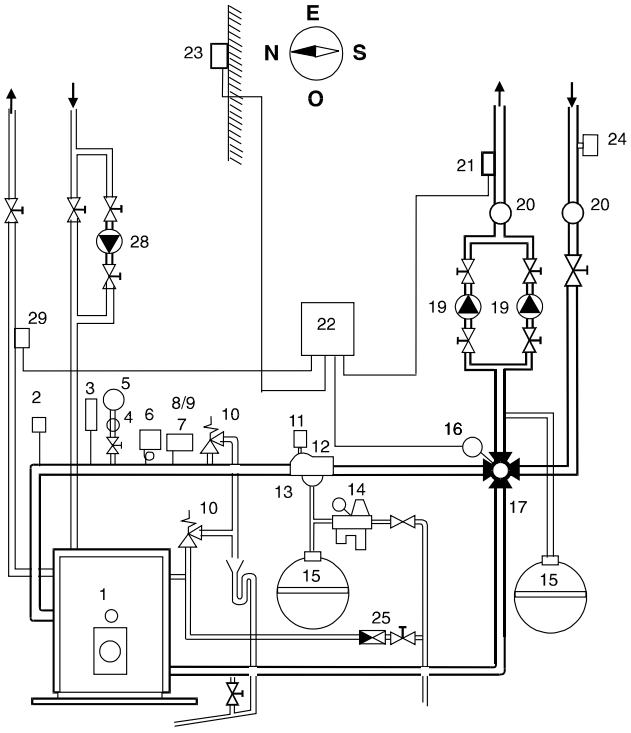
EXAMPLES OF HEATING SYSTEMS WITH 4-WAY ROTOR MIXING VALVE



WITHOUT HOT WATER PRODUCTION SYSTEM (BOILER)



INCLUDING HOT WATER PRODUCTION SYSTEM (BOILER)



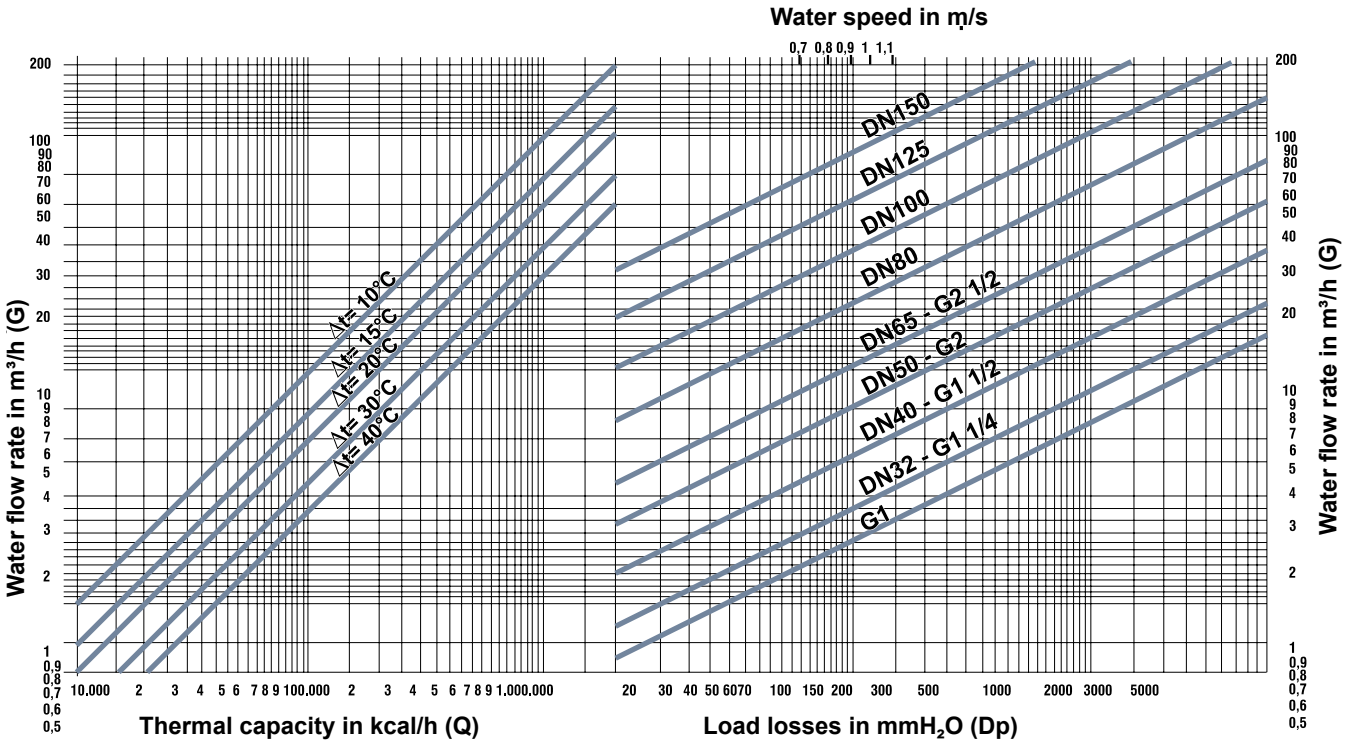
1. Diesel fuel or methane boiler.
2. Temperature testing sump.
3. Thermometer.
4. Manometer holder lock.
5. Pressure gauge with dial.
6. Blocking pressostat with manual reset of B01AM - B12MN type.
7. Dual thermostat (control and blocking) of C07A3M type, which can be replaced with equipment described in p. 8 and 9.
8. Blocking thermostat with manual reset of C06A3M or C09A3M types.
9. Control thermostat of C03A3 or C04A3 types.
10. Safety valve with spring.
11. Automatic valve for air deflation.
12. Air separator.
13. Thermohydrometer.
14. Automatic filling group with pressure gauge.
15. Expansion tank, closed with membrane.
16. 024 type servocontrol with coupling accessories to valve's body.
17. Mixing valve body.
18. Circulation pumps.
19. Dial thermometer.
20. EC12 delivery probe (contact) or EC13 (immersion).
21. EV0 type control unit.
22. External probe EC11.
23. FF type flow switch for burner blocking, in case of pumps suspension.
24. Check valve with spring.
25. Anticondensation circulation pump.
26. Bronze valve with spring, slopping.
27. Circulation pump for boiler water.
28. Thermostat for boiler - C03A2 or C04A2 type.

Z61-Z62-Z63-Z64

3-way and 4-way rotor mixing valves

PARAMETERS DETERMINATION

Having as design data boiler production capacity Q (kcal/h) and the temperature differential Dt (°C) of the system or directly the water flow in m^3/h, proceed as follows using the below mentioned diagrams.
Starting from the capacity Q, rise a perpendicular line until it intersects the line relative to temperature difference of the system, on the diagram ordinate you can read the water flow rate in m^3/h.
From this flow rate value draw a horizontal line until it intersects the hatched zone, a line of load loss that determines the nominal diameter of the valve to be used.
From this point, going down vertically on the abscissa, can be read the load loss of the valve. Adding the load losses of the entire system to the losses related to the mixing valve, is possible to calculate the head pressure of the circulation pump.
N.B. nominal diameters obtained from the diagram are not binding: for proper adjustment, it is still convenient to choose the nominal diameter of the mixing valve equal or of a lower value than that of the pipes, while it is absolutely not recommended too large diameter.



EXAMPLE:
Determine the diameter of a mixing valve for a heating system having the following characteristics:

- boiler production capacity Q = 200.000 kcal/h
- system temperature differential Dt = 20°C
- load losses of the hydraulic circuit = 1200 mmH_2O

From the first diagram (on the left) it is obtained the water flow rate G=10m^3/h, while from the second diagram (on the right) is determined the valve that has to be used - DN 65 (3-way Z61E type or 4-way Z63E type) and the corresponding load losses of 100 mmH_2O.
Adding the load losses of the valve with the load losses of the hydraulic circuit, we obtain the head pressure of the circulation pump:
1.200 mmH_2O + 100 mmH_2O = 1.300 mmH_2O

G = water flow rate (m^3/h)

Q = thermal capacity (kcal/h)

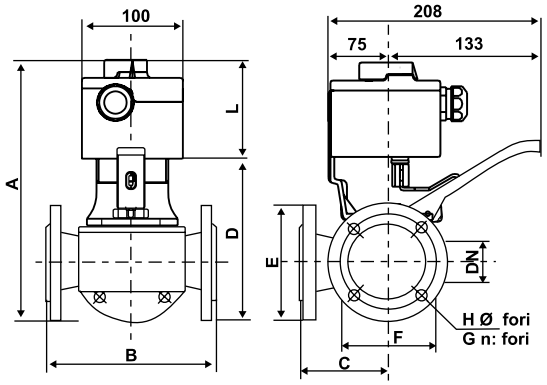
Dt = system temperature differential (°C)

Dp = load losses of the mixing valve (mmH_2O)

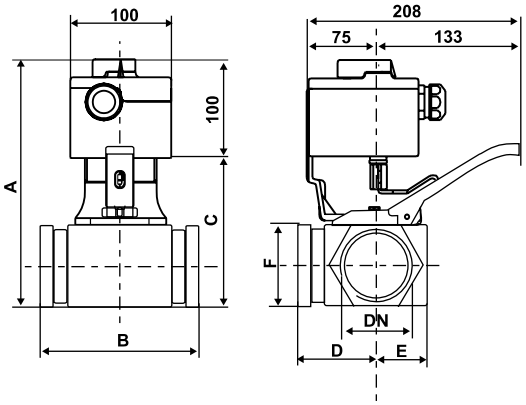
OVERALL DIMENSIONS

3-WAY VALVES

FLANGED CONNECTION



SOCKET CONNECTION



3-WAY ROTOR MOTORIZED MIXING VALVES

Z61 + T01A + 024

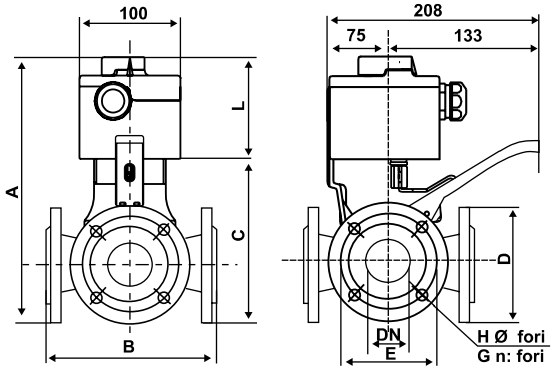
DN	A	B	C	D	E	F	G	H
40	258	180	90	168	130	100	4	14
50	268	200	100	178	140	110	4	14
65	282	200	100	192	160	130	4	14
80	305	234	117	215	190	150	4	18
100	330	260	130	240	210	170	4	18

Z62 + T01A + 024

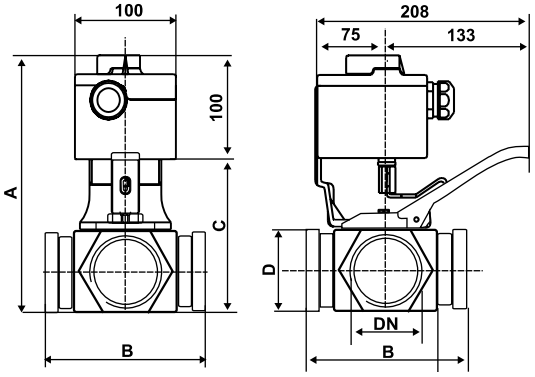
DN	A	B	C	D	E	F
G1	205	85	115	42,5	27	42
G1 1/4	222	122	132	61	39	60
G1 1/2	225	135	135	67,5	40	65
G2	236	180	146	90	53	82

4-WAY VALVES

FLANGED CONNECTION



SOCKET CONNECTION



4-WAY ROTOR MOTORIZED MIXING VALVES

Z63 + T01A + 024

DN	A	B	C	D	E	F	G
40	58	180	168	130	100	4	14
50	268	200	178	140	110	4	14
65	282	200	192	160	130	4	14
80	305	234	215	190	150	4	18
100	330	260	240	210	170	4	18

Z64 + T01A + 024

DN	A	B	C	D
G1	205	85	115	42
G1 1/4	222	122	132	60
G1 1/2	225	135	135	65
G2	236	180	146	90