

	Model	DN	Kvs
2 way	2TBB15R1	1/2"	0.2
	2TBB15R2	1/2"	0.5
	2TBB15R3	1/2"	1
	2TBB15	1/2"	2,5
	2TBB20	3/4"	5
	2TBB25	1"	10
	2TBB32	1 1/4"	16
	2TBB40	1 1/2"	25
	2TBB50	2"	38
3 way	3TBB15	1/2"	2
	3TBB20	3/4"	5
	3TBB25	1"	10
	3TBB32	1 1/4"	16
	3TBB40	1 1/2"	25
	3TBB50	2"	38



#### APPLICATION AND USE

These valves can be used either for fluid control or detection in domestic hot water, air-conditioning, thermoventilation and heating plants, both environmental and industrial, and in machines for product thermal process. Three-way valves should be used only as mixing valves; angle way should never be used for control purposes.

#### MANUFACTURING CHARACTERISTICS

Suitable fluids are: water, water/glycol mixture (25% max) and water/NaCl or CaCl<sub>2</sub> mixture (15% max).

The use of steam is allowed only with 2 way valves up to 3/4" and, in any case, steam should not reach saturation conditions.

Controlli can not accept any responsibility in case of use of not listed fluids.

Materials exempt from dezincification are used for brass components in contact with fluids.

Valves are used in closed circuits; if the circuit is open they can be subject to deposit. In this case we suggest a frequent maintenance or the use of filters.

#### OPERATION

2TBB are globe valves equal percentage characterised; the valve is closed when plug is lifted.

3TBB valves have a parabolic plug with modified characteristic; if the plug is back the direct way is open.

The angle way has a linear characteristic. It guarantees an excellent operation both as mixing as well as diverter valve. In this case you have to reduce the performances to 1/3 of the indicated value.

These valves are designed to be motorized by MVH and MVF actuators; to use MVB actuators please contact our Technical Dept.

#### APPLICATION FOR MIXING VALVE

These valves must always be installed with two inlet streams and one outlet stream – i.e. as mixers. Reversal of direction will cause vibration and water hammer which will damage both valve and actuator.

As a consequence, to be used as diverter valves, they need to be adapted in return piping. Water will be diverted in relation with load, but it will be mixed inside the valve. (Fig. 1)

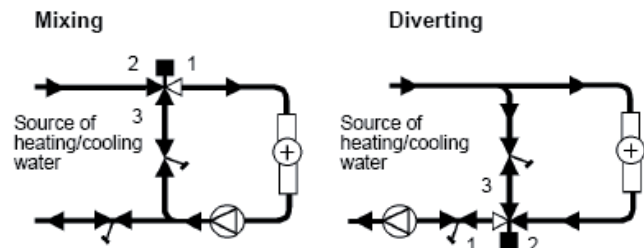


Fig.1

#### PLANNING OF INSTALLATION

In planning pipework layout the following considerations apply when deciding on the valve position:

- Allow sufficient access for actuator and wiring.
- Avoid plug pointing vertically downwards to avoid risk of condensation or leakage damaging actuator.
- Observe the upper ambient temperature limitation of actuators (50°C).
- Where fluid in valve exceeds 100°C actuator must **not** be above valve. Therefore valve should be mounted with plug horizontal.
- Observe correct direction of flow through valve as indicated by arrow cast on body.
- Ensure system is efficiently vented, particularly for low flow rates.

TECHNICAL CHARACTERISTICS

	Description	2 way		3 way	
		G1/2-G3/4	G1÷G2	G1/2-G3/4	G1÷G2
Pipe connections	Gas female thread - conical	x	-	x	-
	Gas female thread - parallel	-	x	-	x
Characteristic	EQM	x		-	
	Direct way - modified parabolic plug	-		x	
	Linear angle way	-		x	
Rangeability	50:1	x			
Let-by	Perfect seal	x	-	-	-
	Max Kv % loss	0	0,10%	-	
	Direct way	-		0,05%	0,1%
	Linear angle way	-		0,5%	
Temperature limits	2T120°C max 1600 kPa 2T130°C max 1500 kPa	x	-	-	
	2T120°C max 1600 kPa 2T200°C max 1300 kPa	-	x	x	
Body	Bronze	x			
Seat	Integral part of the valve body	x			
Plug	Copper alloy	x			
Plug seat	Ethylene propylene	x	-	x	-
Stem	Stainless steel	x			
Guide	Bronze	-		-	x
Bonnet	Integral part of the valve body	x			
Gland	Teflon V-ring + fluoroelastometer O-ring	x			
Stroke	9,5 mm	x		x	
	15,9 mm		x		x

INSTALLATION

**WARNING - STEAM OR HOT WATER HAZARD. BEFORE REMOVING ACTUATOR FROM VALVE OR OPENING VALVE, ENSURE THAT THE VALVE CONTROL MEDIUM IS ISOLATED AND RELIEVE THE PRESSURE. WORK SHOULD ONLY BE CARRIED OUT BY A COMPETENT ENGINEER.**

The system should be thoroughly flushed out to remove foreign matter before fitting the valve. Step-by-step installation instructions are packed with each valve and the precautions listed under 'Planning the Installation' must be observed. Ensure that the valve is fitted in accordance with the direction of flow.

Instructions for fitting electric actuators to valve are packed with actuator.

MAINTENANCE

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A periodic check of the valve should be made for general condition and leakage

