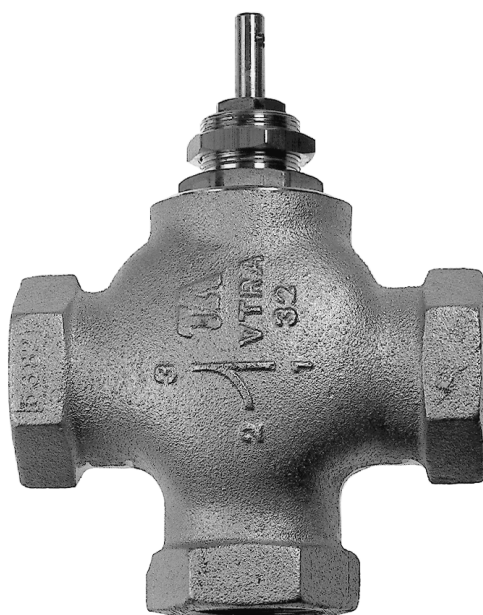




The VTRA is a 3-way rotating disc valve, which is intended to be used either as a mixing or a diverting valve. Typical applications include hydronic heating and air handling systems with moderate requirements regarding differential pressure and leakage.

The VTRA valve can be used in systems containing up to 50% glycol.

The actuator is supplied separately.

TECHNICAL DATA

Valve type	rotating disc
Characteristic	equal percentage (see flow diagram)
Torsional angle	180°
Pressure rating	PN 10
Max. water temperature	120 °C
Min. water temperature	+20 °C
Max. pressure drop	see table 1
Leakage, % of Kvs	max. 0,5%
Materials	
Body	cast iron
Disc	brass
Connections	
VTRA-GM	threaded SS-ISO 228/1
VTRA-GF	flanged, hole pattern SS 342, ISO/R 2084
	suitable DIN-flanges with welding neck SS 2032, DIN 2632

OPERATION

The water flow through the valve is controlled by means of a rotating flat disc shaped to give the desired flow characteristic. The disc has a 180° circular stem travel.

Ports are marked 1, 2 and 3, respectively. On the end of port 1, this port is closed and the other ports are open. When the arrow points to port 3, port 2 is closed and the other ports are open.

Port 3 is always the common port, 1 is normally used as control port and port 2 as by-pass port.

With the actuator mounting kit fitted, the valve crank arm serves as position indicator, in the same way as the arrow.

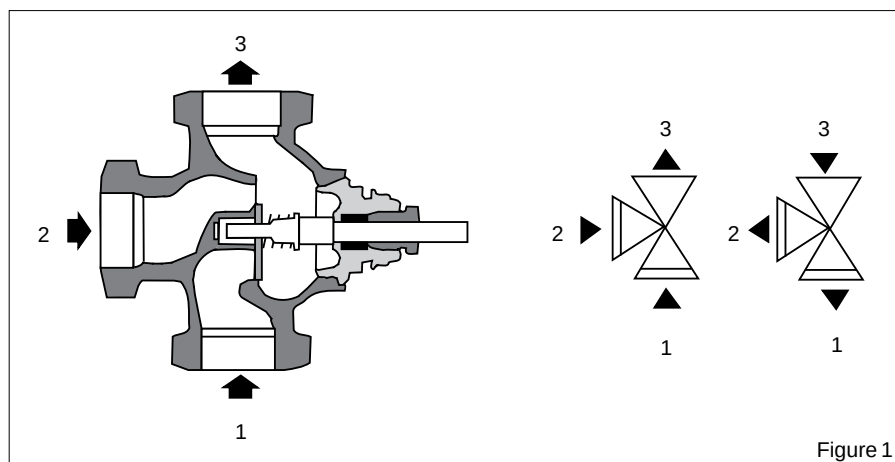


Figure 1

INSTALLATION

The valve should, whenever possible, be mounted in the return line in order not to expose the actuator to unnecessarily high temperatures. The actuator should not be mounted under the valve.

A filter should be mounted upstream of the valve, if the medium contains suspended solids.

VTRA can be installed either as mixing or diverting valve. Figures 2 to 5 show some typical installations. The following should be noted:

When installed according to figures 2 and 5, never install a circulating pump between the boiler and the valve.

When installed according to figures 3 and 4, and when there are two or more secondary circuits, balancing valves must be fitted to make it possible to adjust (balance) water flows.

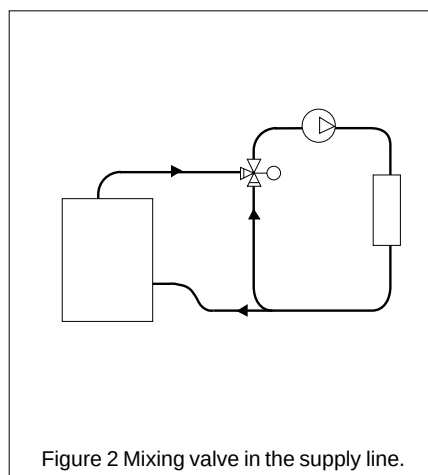


Figure 2 Mixing valve in the supply line.

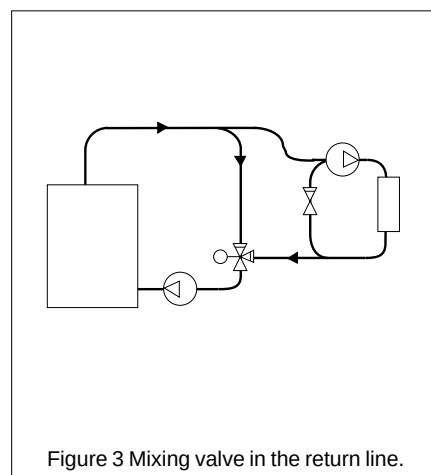


Figure 3 Mixing valve in the return line.

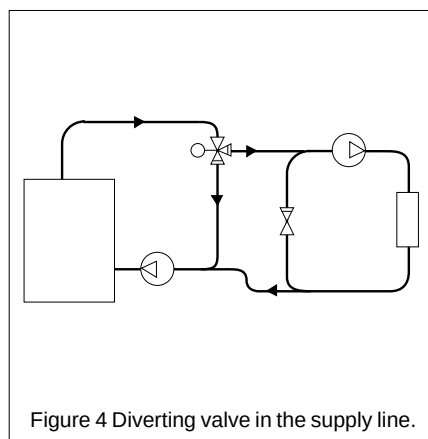


Figure 4 Diverting valve in the supply line.

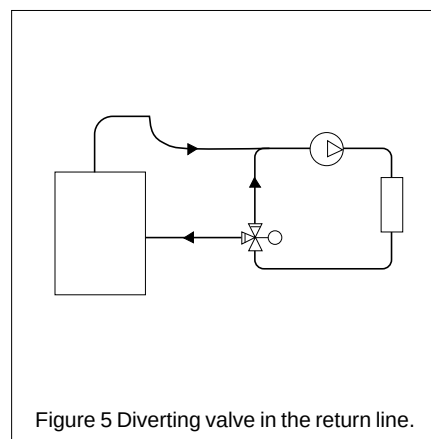


Figure 5 Diverting valve in the return line.

SELECTION OF ACTUATOR

The M15C actuator is controlled with an increase/decrease signal and is intended for control of heating systems.

The EM5C and EM15C actuators are controlled with a 2-10 V signal and are intended for air handling systems. The table to the right specifies the greatest permissible pressure drop across the valve in kPa (100 kPa = 1 bar). Attaching VTRA valves to actuator is done with linkage kit part number 911-1010-000. See ACCESSORIES.

Valve type	Diverting valve		Mixing valve	
	EM5C	M15C EM15C	EM5C	M15C EM15C
15-40	150	150	40	40
50	150	150	40	40
65	85	150	25	25
80	20	90	15	15

Table 1. Greatest permissible pressure drops (kPa) for different actuators.

FLOW DIAGRAM

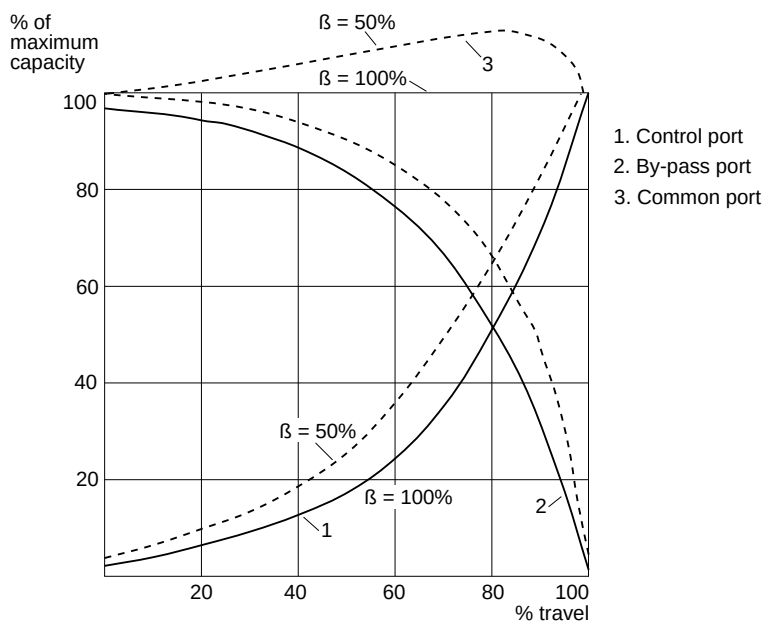


Figure 6

ELECTRICAL WIRING

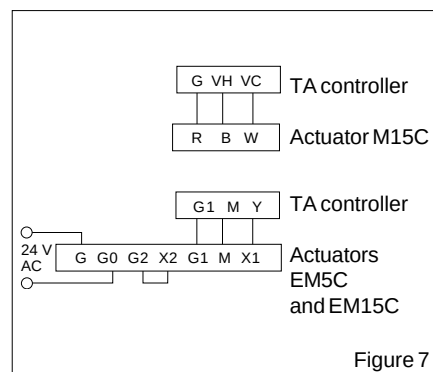


Figure 7

PRESSURE DROP CHART

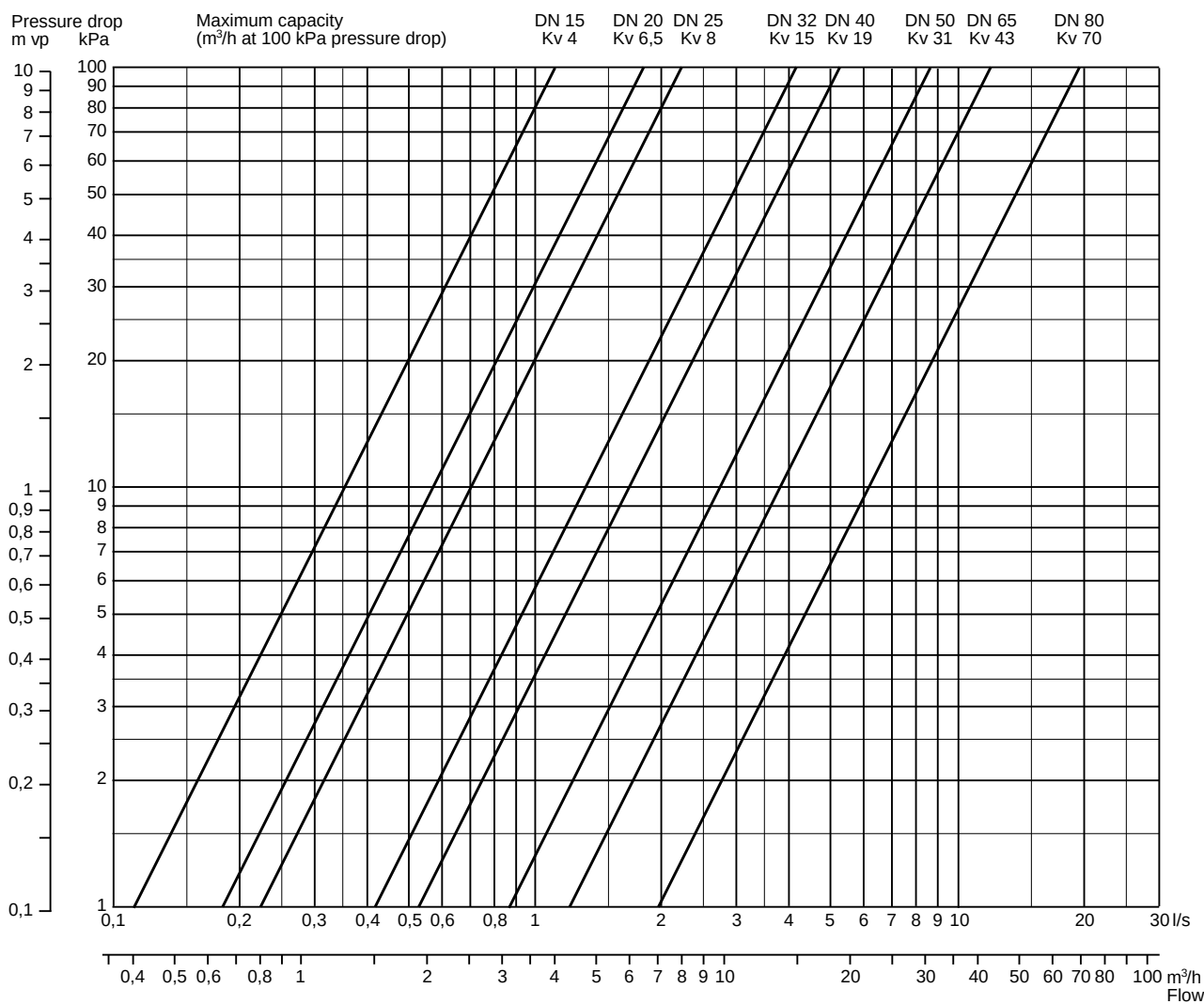
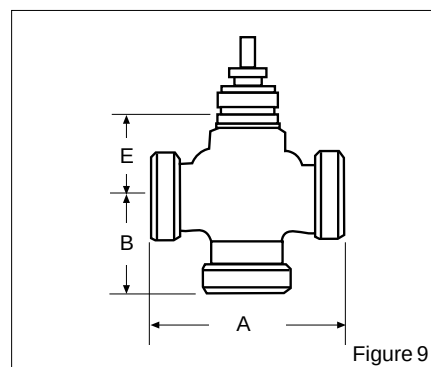


Figure 8

DIMENSIONS AND WEIGHTS

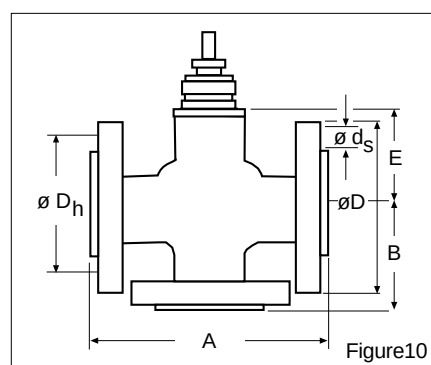
VTRA-GM

Size DN	Kvs	Dimensions (mm)			Weight kg
		A	B	E	
15	4	100	50	49,5	1,6
20	6,5	115	58	49,5	1,9
25	8	125	63	51,5	2,4
32	15	150	75	64,5	3,1
40	19	170	65	74,5	4,2
50	31	200	80	79,5	6,7



VTRA-GF

Size DN	Kvs	Dimension (mm)						Weight kg
		A	B	D	E	Dh	Ds	
32	15	190	80	140	74,5	100	18	7,3
40	19	210	90	150	83,5	110	18	9,4
50	31	230	110	165	83,5	125	18	12,2
65	43	250	110	185	105	145	18	17,9
80	70	270	120	200	118	160	18	22,4



PART NUMBERS, KVS VALUES

Kvs values (m³/h at 100 kPa – 1 bar – pressure drop).

Size DN	VTRA-GM Threaded	VTRA-GF Flanged	Part number
15	4		731-7208-000
20	6,5		731-7226-000
25	8		731-7228-000
32	15		731-7232-000
		15	731-7432-000
40	19		731-7244-000
		19	731-7444-000
50	31		731-7252-000
		31	731-7452-000
65		43	731-7464-000
80		70	731-7482-000

ACCESSORIES

Kits for EM5C, M15C and EM15C actuators

	Part number
Linkage kit	911-1010-000
Handle for manual operation	911-2059-000
Actuators	
M15C/24 V/180°	831-8000-000
EM5C/180°	836-4000-000
EM15CBB/180°	836-8300-000

SPARE PARTS

Reconditioning Kit

All parts except valve body and bonnet

Valve type	Size DN	Part number
VTRA-GM	15	080-4395-005
	20	080-4396-005
	25	080-4397-000
	32	080-4397-005
	40	080-4399-005
	50	080-4400-005

Valve type	Size DN	Part number
VTRA-GF	32	080-4401-005
	40	080-4402-005
	50	080-4403-005
	65	080-4404-005
	80	080-4405-005
Stuffing box		080-4883-005