

# MIXING VALVE SERIES 4F

4F, DN 32–150, cast iron, PN 6. Flange.



Flange

## OPERATION

The ESBE series F is a valve made of cast iron for use in heating and cooling installations.

The mixing proportions are adjusted manually with a handle or, in automatically controlled systems, by means of an actuator. Suitable actuators are ESBE series ARC300, ARD100, ARD200 or series 90. The valve can also be equipped with ESBE controllers series CRA120.

Valve series 4F is available in dimensions DN 32-150 with flanged connections.

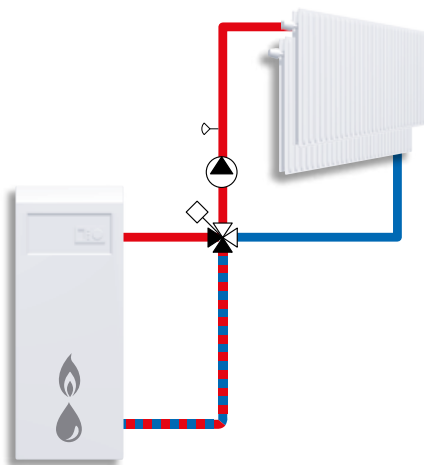
The scale is graded on both sides and can be turned, allowing a choice of mounting positions. Operation angle = 90°.

## SERVICE AND MAINTENANCE

All major parts are replaceable. The shaft seal consist two o-rings, one of which can be replaced without the need for draining down the system or dismantling the valve. However, before doing so, the system must be depressurized.

## INSTALLATION EXAMPLES

All the examples of installations can be reversed. The valve position plate is graded on both sides and should at the installation be fitted in the correct position as shown in the instruction for installation.



## VALVE 4F DESIGNED FOR

- Heating
- Comfort cooling

## SUITABLE ACTUATORS AND CONTROLLERS

- Series 90 ≤DN100
- Series ARC300
- Series ARD100 ≤DN80
- Series ARD200
- Series CRA120 ≤DN100

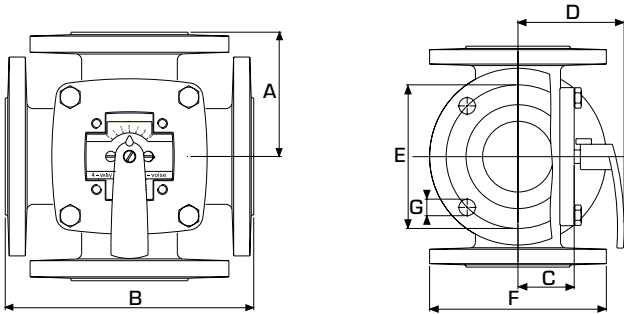
## TECHNICAL DATA

Pressure class: \_\_\_\_\_ PN 6  
 Media temperature: \_\_\_\_\_ max. 110°C  
 \_\_\_\_\_ min. - 10°C  
 Differential pressure drop: \_\_\_\_\_ max. 50 kPa  
 Leakrate in % of flow: \_\_\_\_\_ Mixing, max. 1,5% of Kvs  
 \_\_\_\_\_ Diverting, max. 1,0% of Kvs  
 Rangeability Kv/Kv<sup>min</sup>: \_\_\_\_\_ 100  
 Connection: \_\_\_\_\_ Flange according to EN 1092-2

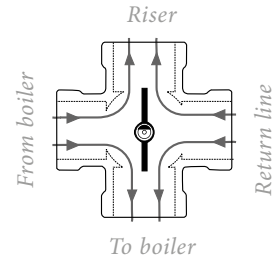
Material  
 Valve body: \_\_\_\_\_ Cast iron EN-JL 1030  
 Slide: \_\_\_\_\_ brass CW 614N and stainless steel  
 Bushing: \_\_\_\_\_ brass CW 602N  
 Cover plate: \_\_\_\_\_ cast iron  
 O-rings: \_\_\_\_\_ EPDM

PED 2014/68/EU, article 4.3

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Flanged connection PN6,  
standard EN 1092-2



The flat-sided spindle top  
(as well as the indicator of the knob)  
points towards the sleeve position.

## SERIES 4F

Art. No.	Reference	DN	Kvs*	A	B	C	D	E	F	G	Weight [kg]
11101700	4F 32	32	28	80	160	40	82	90	120	4x15	7,0
11101800	4F 40	40	44	88	175	40	82	100	130	4x15	8,2
11101900	4F 50	50	60	98	195	50	92	110	140	4x15	11,0
11102000	4F 65	65	90	100	200	50	92	130	160	4x15	12,2
11102100	4F 80	80	150	120	240	65	108	150	190	4x18	20,0
11102200	4F 100	100	225	132	265	81	124	170	210	4x18	25,0
11102300	4F 125	125	280	150	300	81	124	200	240	8x18	35,0
11102400	4F 150	150	400	175	350	89	131	225	265	8x18	45,0

\* Kvs-value in m<sup>3</sup>/h at a pressure drop of 1 bar: Flow chart, see product catalogue.

## SELECTION GUIDE ESBE ACTUATORS

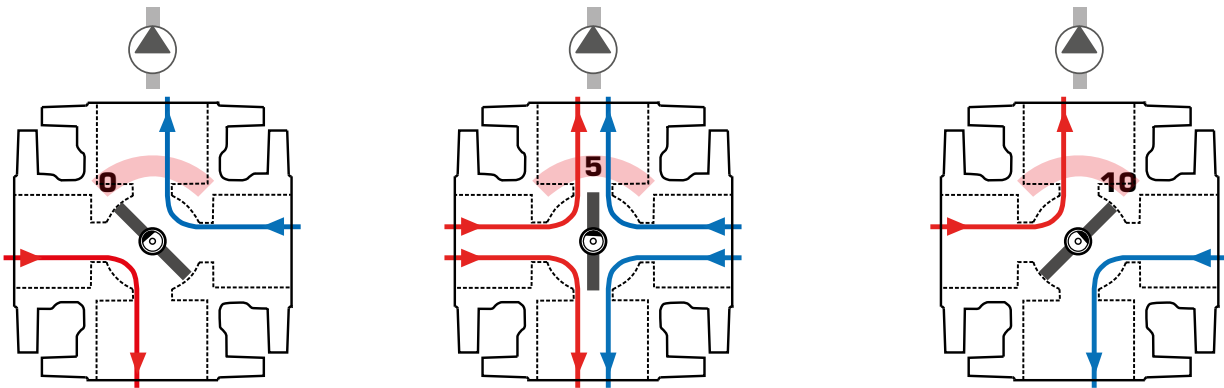
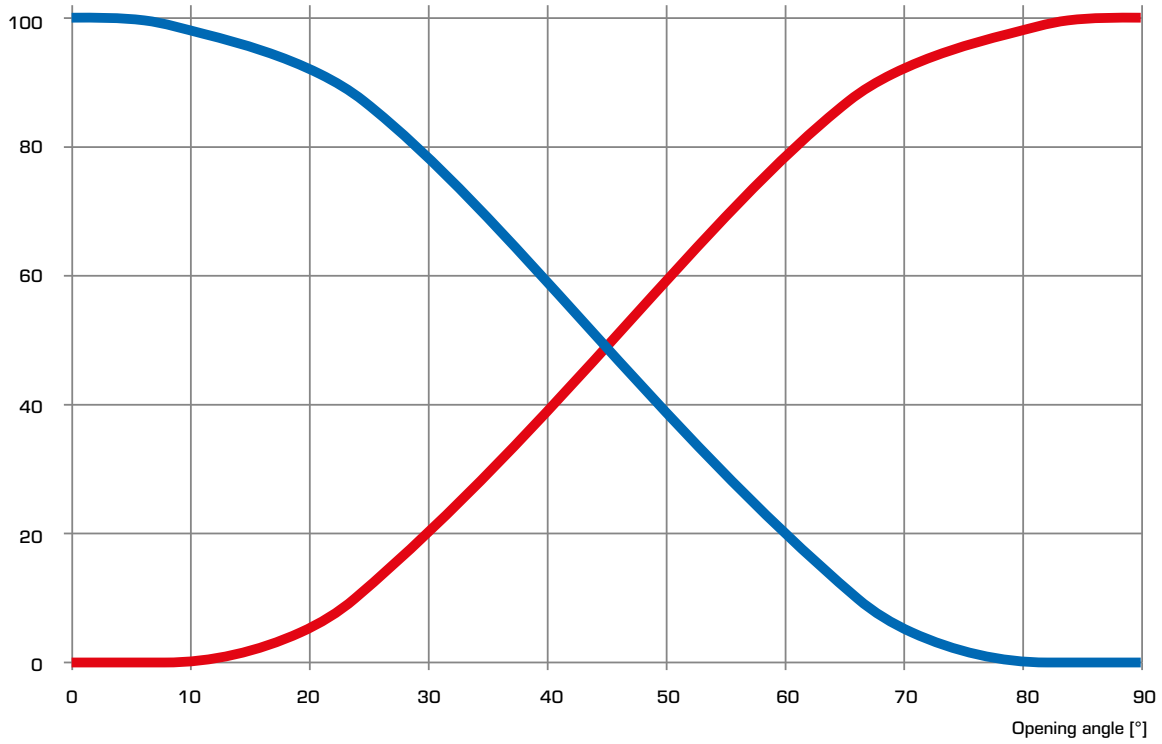
The figures below are intended only as a recommendation for ordinary installations. In some applications the valve may require even more actuator torque.

Actuator	MAXIMUM DIFFERENTIAL PRESSURE					MAXIMUM FLOW				
	ARA600	90	ARC300	ARD100	ARD200	ARA600	90	ARC300	ARD100	ARD200
Torque	6 Nm	15 Nm	30 Nm	10 Nm	20 Nm	6 Nm	15 Nm	30 Nm	10 Nm	20 Nm
DN	max. ΔP [kPa]					max. flow [m <sup>3</sup> /h]				
20	50	50	50	50	50	8,5	8,5	8,5	8,5	8,5
25						13	13	13	13	13
32						20	20	20	20	20
40						31	31	31	31	31
50	—	30	50	30	30	—	42	42	42	42
65	—					64	64	64	64	
80	—	15	30	30	30	—	110	110	82	110
100	—					—	120	160	87	160
125	—					—	110	200	—	150
150	—	—	—	—	—	—	160	280	—	220

ROTARY MOTORIZED VALVES  
**MIXING VALVE**  
**SERIES 4F**

**VALVE CHARACTERISTICS**

Flow [%]



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## DIMENSIONING

### HEATING SYSTEMS (RADIATOR OR UNDERFLOOR HEATING SYSTEMS)

Start with the heat demand in kW (e.g. 200 kW) and move vertically to the chosen  $\Delta t$  (e.g. 10°C).

Move horizontally to the shaded field (pressure drop of 3-15 kPa) and select the smaller Kvs-value (e.g. 60). A mixing valve with suitable Kvs-value will be found in respective product description.

### OTHER APPLICATIONS

Make sure maximum  $\Delta P$  is not exceeded (see lines A to E in the graphs below).

