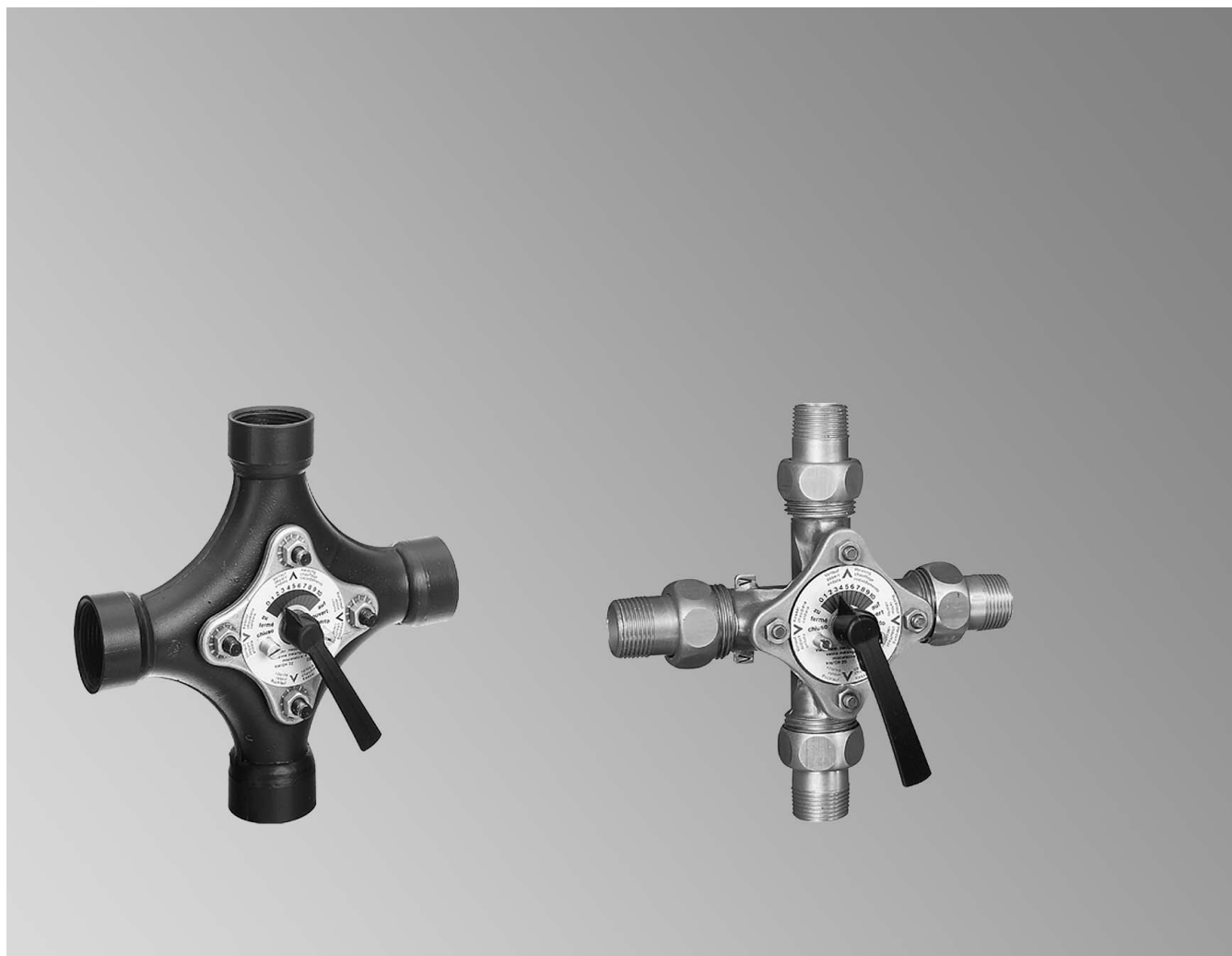


Datasheet

Part numbers and prices: see pricelist



Heating mixers

Heating mixer-4, DN 20 to DN 50, and R ¾" to R 1¼"
Special heating mixer-4, R ½" to R 1"
Heating mixer-3, DN 20 to DN 100
Special heating mixer-3, R ½" to R 1"

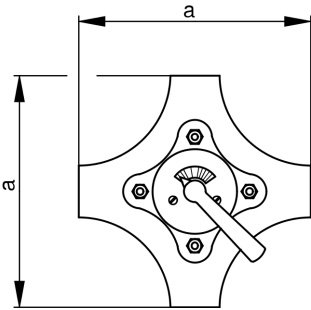
Mixer motors

For fitting to a heating mixer

Product description

Heating mixer-4 – dual mixing for boilers and heating circuits

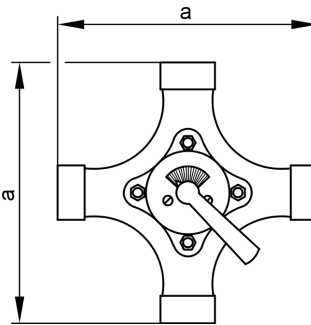
Heating mixer-4 – weld fitting



Int. dia. DN	a mm
20	150
25	150
32	170
40	180
50	210

- With four connections; mixes in the heating flow and boiler return directions
- In conjunction with heating circuits, connect directly to the return line
- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 120 °C
- To DIN 3336
- Shaft and separators made from stainless steel, internal components made from copper alloy
- Direct welding
- Replacement of the shaft seals (O-ring) without draining the heating system
- For sizing, see diagram on page 4.

Heating mixer-4 – threaded fitting

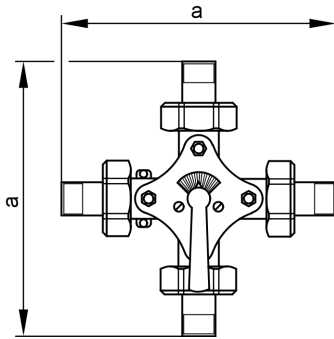


Connection R	a mm
¾"	190
1"	190
1¼"	214

- With four connections; mixes in the heating flow and boiler return directions
- In conjunction with heating circuits, connect directly to the return line
- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 120 °C
- To DIN 3336
- Shaft and separators made from stainless steel, internal components made from copper alloy
- with threaded fitting (R ¾" to 1¼")
- Replacement of the shaft seals (O-ring) without draining the heating system
- For sizing, see diagram on page 4.

Heating mixer-4 – dual mixing for boilers and heating circuits (cont.)

Special heating mixer-4 – also for underfloor heating systems



Mixer with soldered internal components

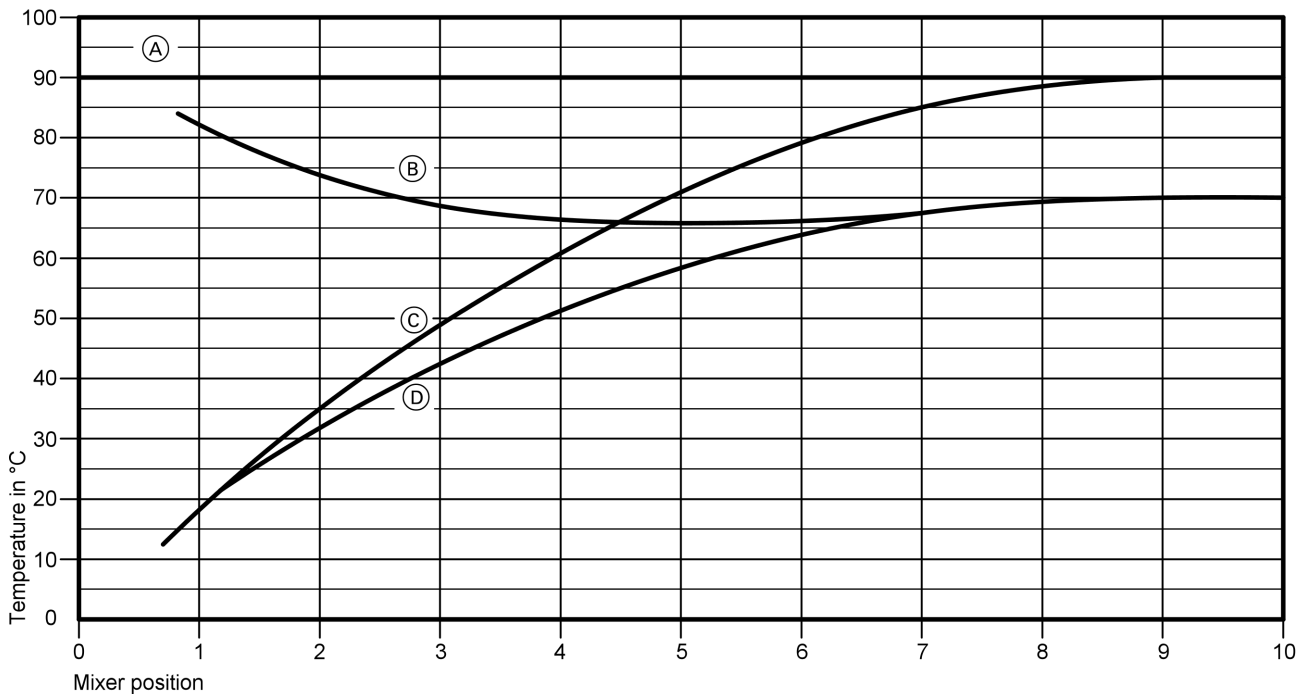
Connection R	Internal Ø mm	a mm
1/2"	15	152
1/2"	18	148
3/4"	22	162
1"	28	191

Mixer with compression fitting inserts

Connection R	a mm
1/2"	168
3/4"	187
1"	209

- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 120 °C
- To DIN 3336
- Low leakage rate and corrosion-resistant when using permeable plastic pipes (to DIN 4726) in conjunction with system separation
- Housing and rotary damper made from brass, cast shaft made from stainless steel
- Low leakage rate through close fit
- Replacement of the shaft seals (O-ring) without draining the heating system
- Compression or solder fitting inserts
- For sizing, see diagram on page 4.
Observe the technical guide "Control of underfloor heating systems".

Mixer curve

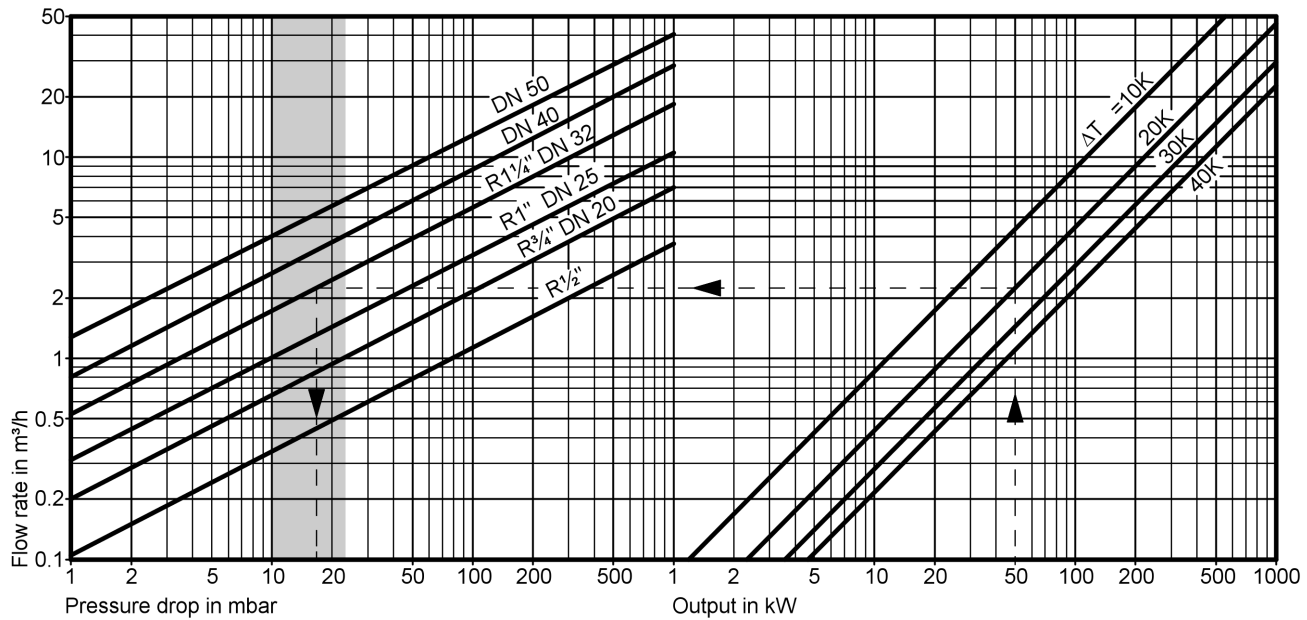


- Ⓐ Boiler flow
- Ⓑ Boiler return

- Ⓒ Heating flow
- Ⓓ Heating return

Heating mixer-4 – dual mixing for boilers and heating circuits (cont.)

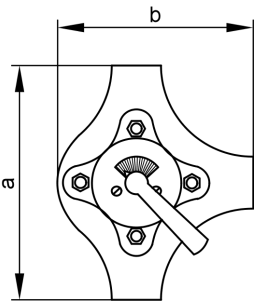
Calculating the internal diameter and pressure drop



Int. dia. DN	Connection R	k_{vs} value m^3/h	max. Δp_{v100}
–	1/2"	3.8	See shaded sizing area in the diagram
20	3/4"	6.9	
25	1"	10.5	
32	1 1/4"	18.5	
40	–	28.5	
50	–	42.0	

Heating mixer-3 – one-way mixing for heating circuits

Heating mixer-3 – DN 20 to DN 50

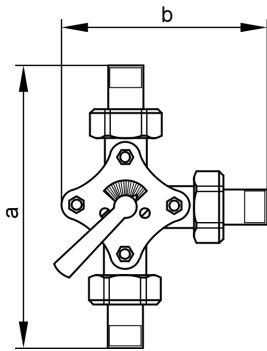


Int. dia. DN	a mm	b mm
20	150	123
25	150	123
32	170	142
40	180	154
50	210	177

- For vertical installation
- With 3 connections, mixes only in the heating flow direction
- Heating return optionally on the l.h. or r.h. side
- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 120 °C
- To DIN 3336
- Shaft and separators made from stainless steel, internal components made from copper alloy
- Direct welding
- Replacement of the shaft seals (O-ring) without draining the heating system
- For sizing, see diagram on page 6.

Heating mixer-3 – one-way mixing for heating circuits (cont.)

Special heating mixer-3 – also for underfloor heating systems – R 1/2" to R 1"



Mixer with soldered internal components

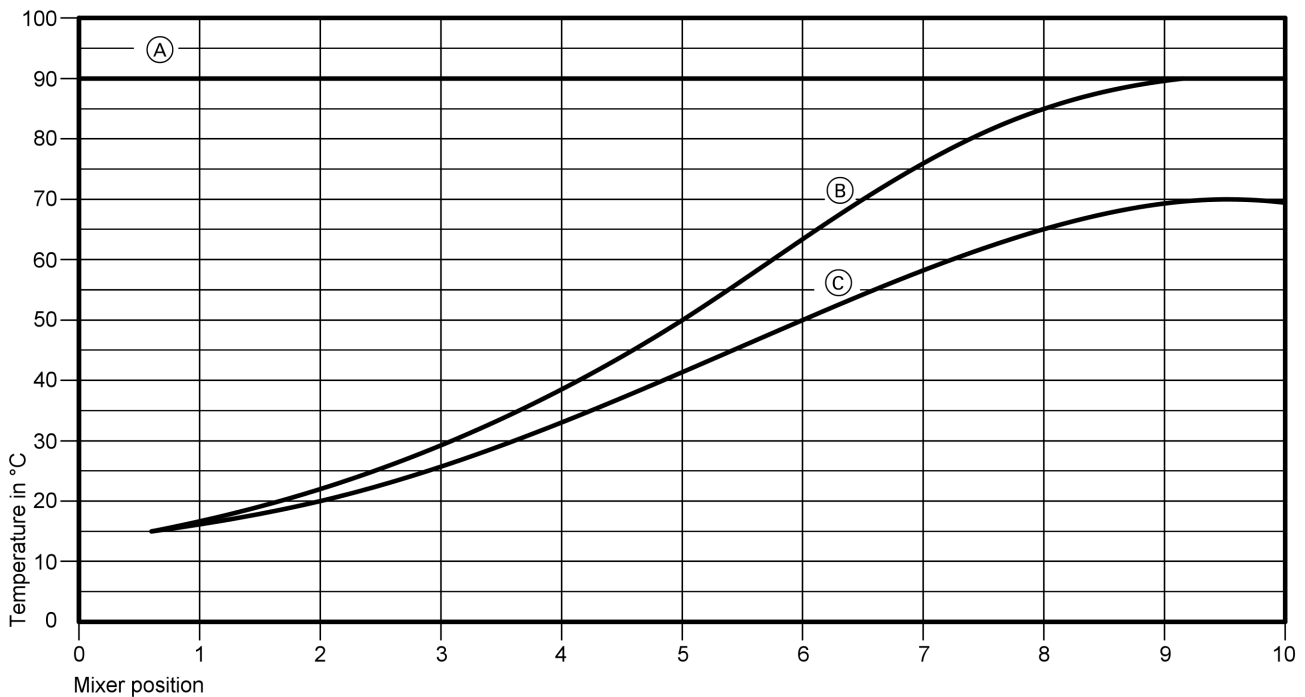
Connection R	Internal Ø mm	a mm	b mm
1/2"	15	152	111
1/2"	18	148	109
3/4"	22	162	121
1"	28	191	140

- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 120 °C
- To DIN 3336
- Low leakage rate and corrosion-resistant when using permeable plastic pipes (to DIN 4726) in conjunction with system separation
- Housing and rotary damper made from brass, cast shaft made from stainless steel
- Low leakage rate through close fit
- Replacement of the shaft seals (O-ring) without draining the heating system
- Compression or solder fitting inserts
- For sizing, see diagram on page 6. Observe the technical guide "Control of underfloor heating systems".

Mixer with compression fitting inserts

Connection R	a mm	b mm
1/2"	168	120
3/4"	187	136
1"	209	151

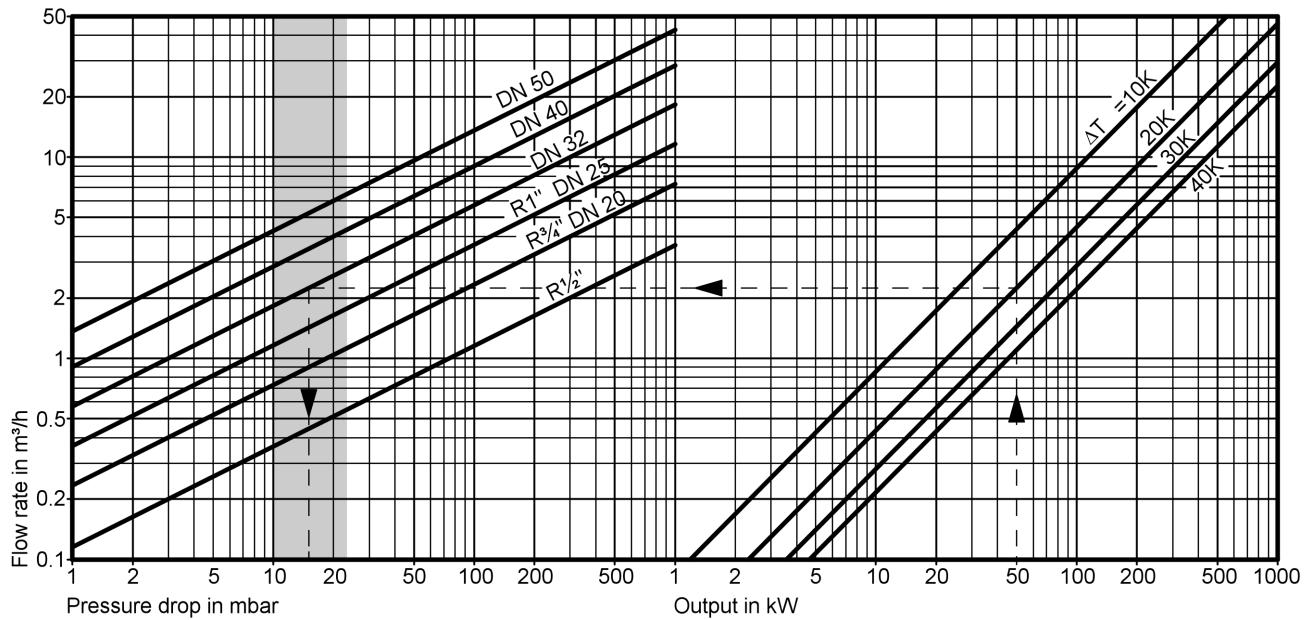
Mixer curve



- (A) Boiler flow
- (B) Heating flow
- (C) Heating return

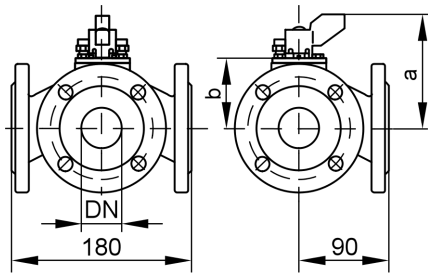
Heating mixer-3 – one-way mixing for heating circuits (cont.)

Calculating the internal diameter and pressure drop



Int. dia. DN	Connection R	k_{vs} value m ³ /h	max. Δp_{v100}
–	½"	3.8	see shaded sizing area in the diagram
20	¾"	6.9	
25	1"	10.5	
32	–	18.5	
40	–	28.5	
50	–	42.0	

Heating mixer-3 – DN 40 and DN 50

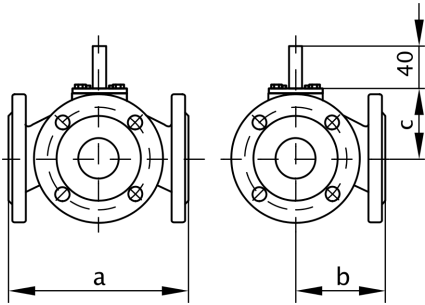


Int. dia. DN	a mm	b mm	Weight kg
40	96	56	6.0
50	103	63	6.5

- With PN 6 flanges
- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 110 °C
- Flange connections to ISO 7005
- Casing: Cast iron GG 20
 - Shaft: stainless steel
 - Rotary damper: Hot-pressed brass
- Leakage max. 0.1 % of k_{vs} value
- With manual control lever
- Flow and bypass curve: Linear

Heating mixer-3 – one-way mixing for heating circuits (cont.)

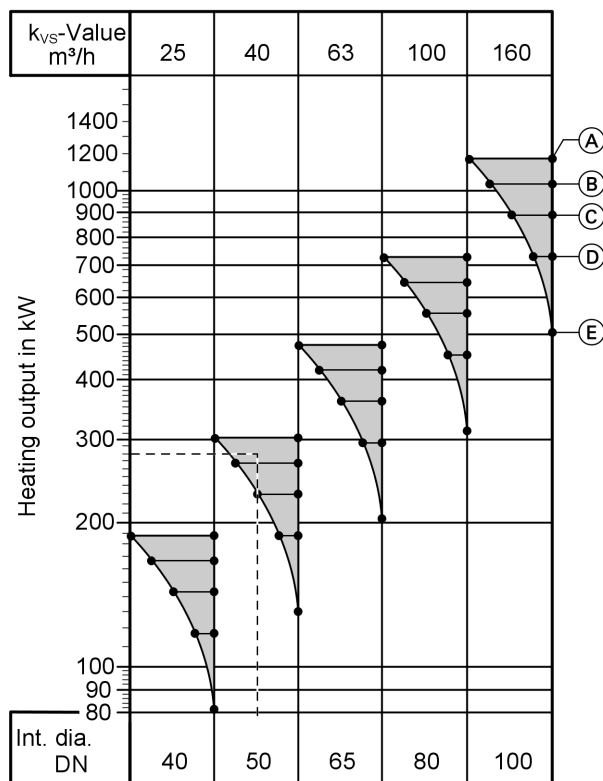
Heating mixer-3 – DN 65 to DN 100



Int. dia. DN	a mm	b mm	c mm	Weight kg
65	200	100	43	9.5
80	230	115	52	14.5
100	260	130	68	18.3

- With PN 6 flanges
- Permiss. operating pressure: 6 bar (PN 6)
- Permissible flow temperature: 110 °C
- Flange connections to ISO 7005
- Casing: Cast iron GG 20
 - Shaft: stainless steel
 - Rotary damper: Hot-pressed brass
- Leakage max. 0.1 % of k_{vs} value
- Flow and bypass curve: Linear

Calculating the internal diameter and pressure drop for $\Delta T = 20$ K



Pressure drops below 40 mbar should be avoided; in these cases use the next smallest mixer.

Pressure drop

- Ⓐ = 100 mbar
- Ⓑ = 80 mbar
- Ⓒ = 60 mbar
- Ⓓ = 40 mbar
- Ⓔ = 20 mbar

Int. dia. DN	k_{vs} value m^3/h	max. Δp_{V100} mbar	k_{vs}/k_{vR}
40	25	300	> 100
50	40	300	> 100
65	63	300	> 100
80	100	300	> 100
100	160	300	> 100

Example:

Heating circuit output:	280 kW
Temperature differential (Heating water) ΔT :	20 K
Mixer:	DN 50
Pressure drop:	≈ 80 mbar

Heating mixer-3 – one-way mixing for heating circuits (cont.)

For other temperature differentials (ΔT_{new}), the required internal diameter of the mixer and the pressure drop can be determined via the calculated output (\dot{Q}_{new}) at a constant mass flow rate:

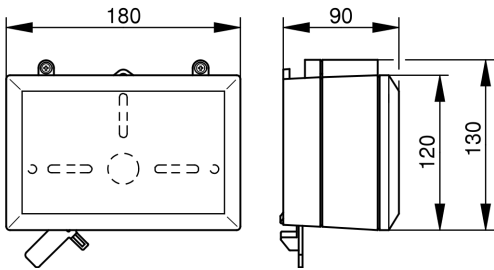
$$\begin{aligned}\dot{Q}_{\text{new}} &= \frac{\dot{Q}_{\text{prev.}} \cdot \Delta T_{\text{prev.}}}{\Delta T_{\text{new}}} \\ &= \frac{280 \text{ kW} \cdot 20 \text{ K}}{25 \text{ K}} \\ &= 224 \text{ kW}\end{aligned}$$

Heating circuit output: 224 kW
Mixer: DN 50
Pressure drop: $\approx 60 \text{ mbar}$

Mixer motors

For heating mixer DN 20 to 50 and R ½" to 1¼"

Part no. 7450 657



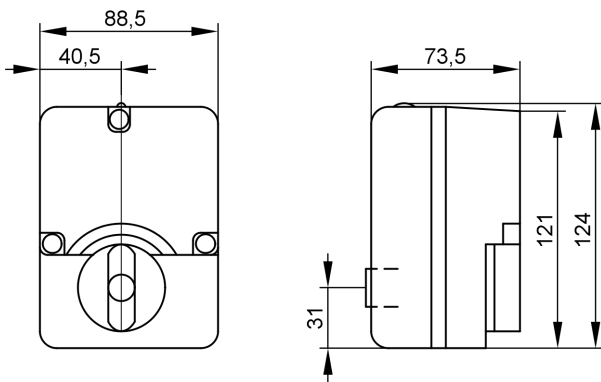
- Single-phase synchronous motor with gearbox and 2 limit switches; reversible rotation
- Order plug-in connector [52] for mixer motor and plug-in connector [20] for heating circuit pump separately (see control unit accessories).

Rated voltage: 230 V~
Rated frequency: 50 Hz
Power consumption: 4 W
Protection: IP 42 to EN 60529; safeguard through appropriate design and installation

Permissible ambient temp. during operation: 0 to +40 °C
during storage and transport: -20 to +65 °C
Torque: 3 Nm
Runtime for 90° <: 120 s

For heating mixer-3 with flanges DN 40 and 50

Part no. 9522 487



- Single-phase synchronous motor with gearbox and 2 limit switches; reversible rotation
- With manual adjusting button and switch for automatic or manual operation
- Order plug-in connector [52] for mixer motor and plug-in connector [20] for heating circuit pump separately (see control unit accessories).

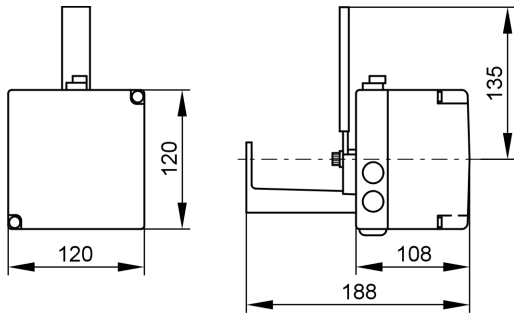
Rated voltage: 230 V~
Rated frequency: 50 Hz
Power consumption: 3 W
Protection: IP 42 to EN 60529; safeguard through appropriate design and installation

Permissible ambient temp. during operation: -15 to +50 °C
during storage and transport: -30 to +65 °C
Torque: 5 Nm
Runtime for 90° <: 135 s

Mixer motors (cont.)

For heating mixer-3 with flanges DN 65 to 100

Part no. Z004 344



- Single-phase synchronous motor with gearbox and 2 limit switches; reversible rotation
- With manual adjusting button and switch for automatic or manual operation
- Order plug-in connector [52] for mixer motor and plug-in connector [20] for heating circuit pump separately (see control unit accessories).

Rated voltage: 230 V~
 Rated frequency: 50 Hz
 Power consumption: 4 W
 Protection: IP 42 to EN 60529; safeguard through appropriate design and installation

Permissible ambient temp. during operation: -15 to +50 °C
 during storage and transport: -30 to +65 °C
 Torque: 12 Nm
 Runtime for 90° <: 125 s

Installation examples

Connections between the boiler and the safety equipment to EN 12828 must not be able to be shut off. Therefore when installing mixers-4 install special safety flow and return pipes.

For this, Viessmann boilers offer separate connections. The heating circuit pumps should be installed in the flow lines of the heating circuit downstream of the mixer. The pump pressure does not affect the mixer for closed mixers, but is reduced in the system.

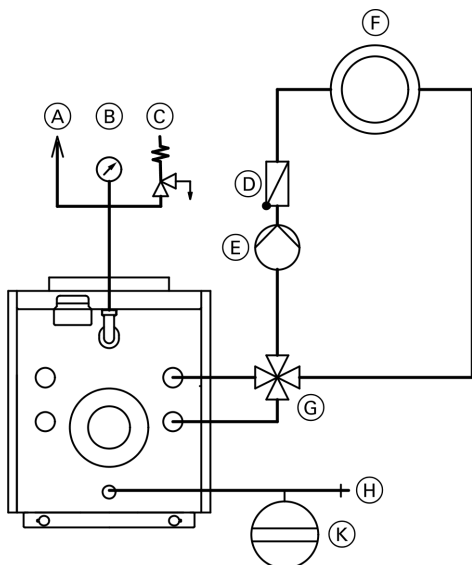
Capturing the temperature when using plastic pipes

For plastic pipes the temperature should be captured by the flow temperature sensor, which must be fitted downstream of the heating circuit pump on a metal pipe.

Use of special heating mixers in underfloor heating systems

see the technical guide "Control of underfloor heating systems".

Boiler with a heating circuit with mixer-4



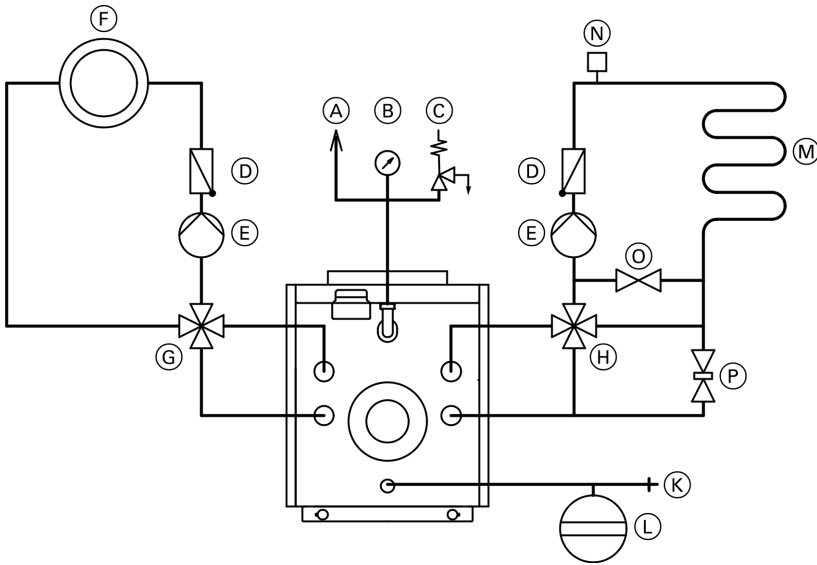
- (C) Safety valve
- (D) Spring-loaded check valve
- (E) Heating circuit pump
- (F) Heating circuit
- (G) Mixer-4 with mixer motor or heating circuit control unit
- (H) Drain
- (K) Expansion vessel

- (A) Air vent valve
- (B) Pressure gauge

5822 077-6 GB

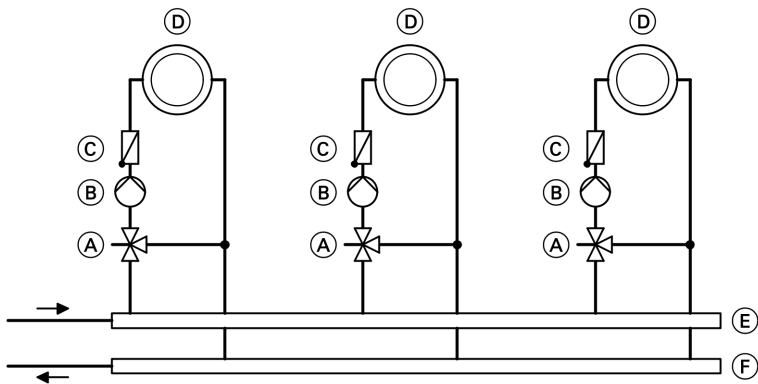
Installation examples (cont.)

Boiler with two heating circuits with mixer-4

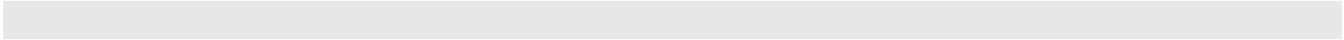


- | | |
|--|--|
| Ⓐ Air vent valve | ⓓ Special heating mixer-4 with mixer motor or heating circuit control unit |
| Ⓑ Pressure gauge | Ⓚ Drain |
| Ⓒ Safety valve | Ⓛ Expansion vessel |
| Ⓓ Spring-loaded check valve | Ⓜ Underfloor heating circuit |
| Ⓔ Heating circuit pump | Ⓝ Temperature limiter (maximum limit) |
| Ⓕ Heating circuit | Ⓞ Bypass |
| Ⓖ Mixer-4 with mixer motor or heating circuit control unit | Ⓟ Butterfly valve bypass |

Heating group control with mixer-3



- | | |
|-----------------------------|--------------------|
| Ⓐ Mixer-3 | Ⓓ Heating circuit |
| Ⓑ Heating circuit pump | Ⓔ Flow distributor |
| Ⓒ Spring-loaded check valve | Ⓕ Return collector |



5822 077-6 GB

Printed on environmentally friendly,
chlorine-free bleached paper



Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Subject to technical modifications.

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5822.077-6 GB