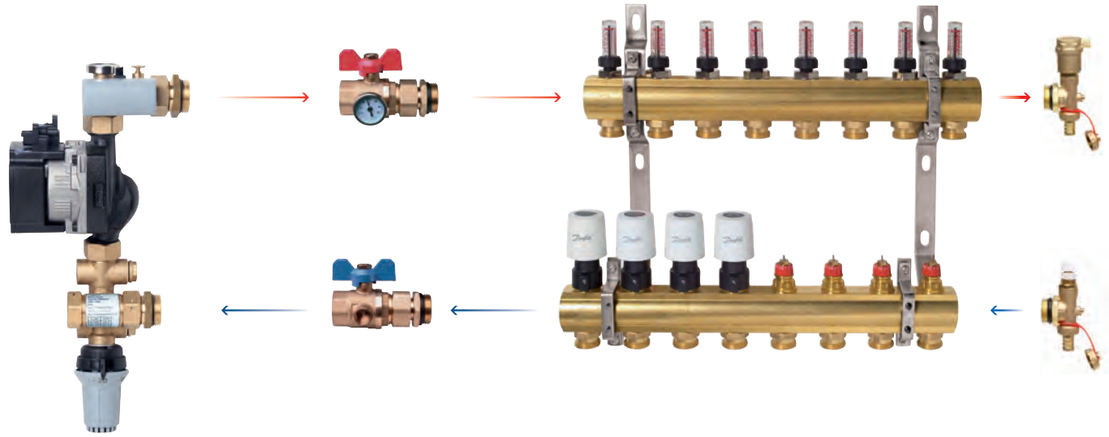
MANIFOLDS, MIXING SHUNTS AND CABINETS

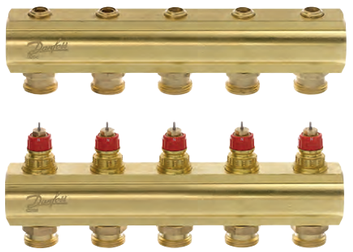
MEET THE FAMILY
MANIFOLDS AND MIXING SHUNTS

Combine a **mixing shunt** → … with the **ball valves** → … then the **manifolds** → and then an **air vent type**



FHF

With pre-setting but without flow meter. FHF with flow meter (FHF-F) is shown on the above picture.



FH-ME (BasicPlus)

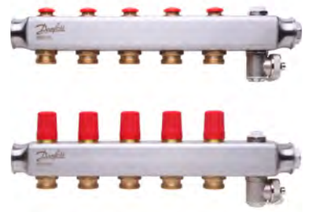
No flow meter and no pre-setting.

SSM-F

With pre-setting and flow meter.

SSM

With pre-setting and without flow meter.



Mixing shunt

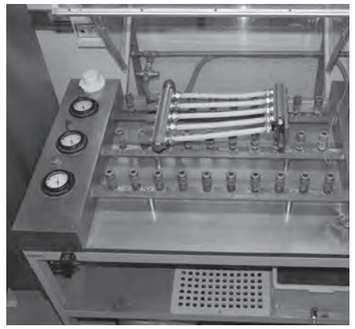
Mounting the mixing shunt is extremely easy, as it is very compact from only 110 mm in installation dimension. The mixing shunt is mounted directly on the manifold on either the left or right-hand side, it can also be angle mounted with angle fittings as accessories.

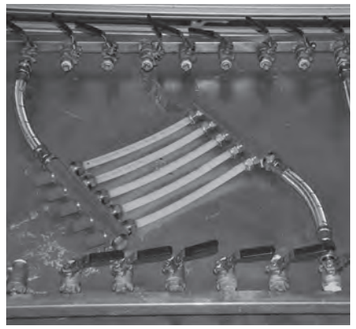
Product highlights:
- Prefabricated for quick and easy mounting
- Very compact - fits into cabinets

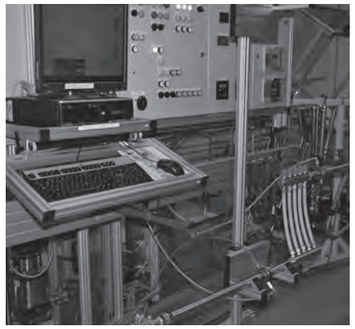
TESTED TO LAST FOR DECADES

We have minimized failure rates so you can maximize your business.

During production and development, all components are subjected to various tests to maximize their efficiency and working life.







Pressure test

In a pressure test, the manifolds, fittings and pipes are assembled and placed under pressure. In this way, the manifold, fittings and pipes can be tested to withstand even unrealistic pressures.

Temperature test

In a temperature test, the floor heating system is exposed to different heat levels. These variations make the components expand and contract, allowing us to test the sustainability of the different components.

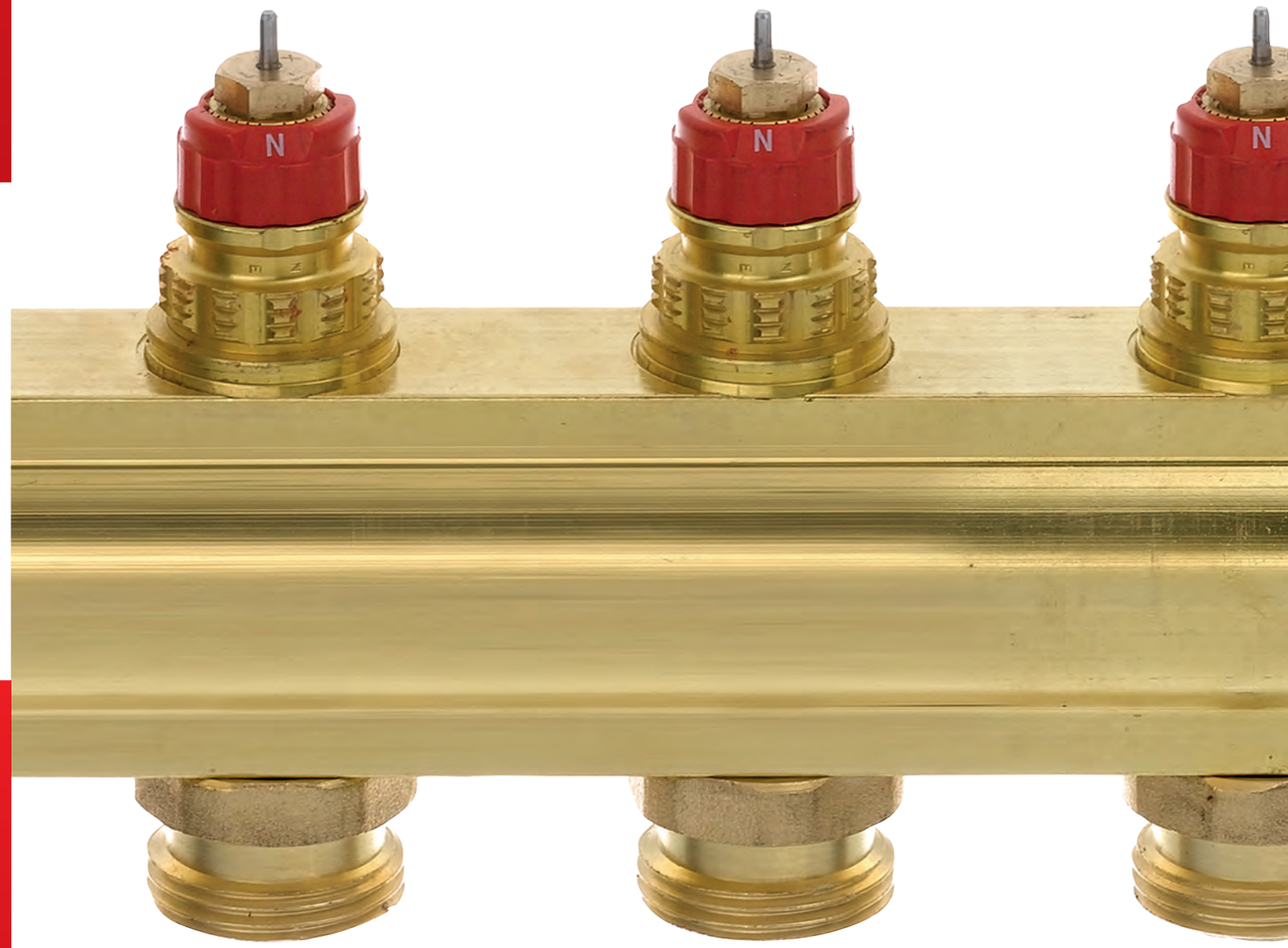
Capacity test

In a capacity test, the flow through the valves is tested, enabling us to find the kvs-value. This allows us to calculate how much energy each circuit can provide to the room.

High quality **brass**

The purity and quality of the brass used in Danfoss manifolds minimizes the risk of corrosion and leakages.

FHF and FHF-F manifolds are all produced according to the CW617N standard, which ensures a very high brass quality.



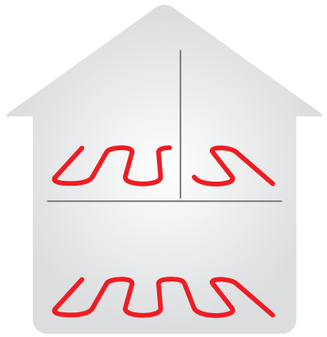
Manifolds with pre-setting
Reduce call-backs and provide comfort and savings for your customers

A study with 537 plumbers from seven countries shows that installers are called back to approx. 20% of installations. The saving potential for leaving behind a well-functioning system is enormous.

TIP! Make sure to explain the importance of perfect hydronic balancing to your customers.

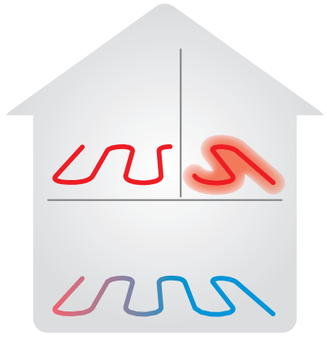
Typical installation **with** pre-setting

With hydronic balancing, the right amount of water will be distributed to the right rooms. Hydronic balancing can be achieved via manifold pre-setting or by using the automatic balancing feature available with some Danfoss Icon™ room controls.



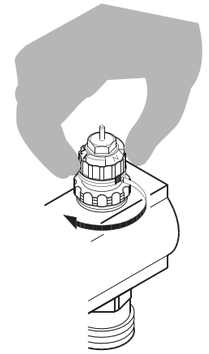
Typical installation **without** pre-setting

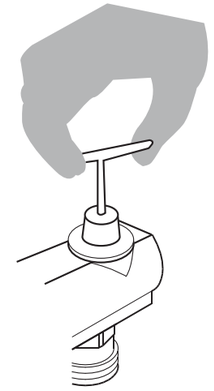
Without hydronic balancing valves, you risk the scenario of very uneven heat distribution which decreases comfort.



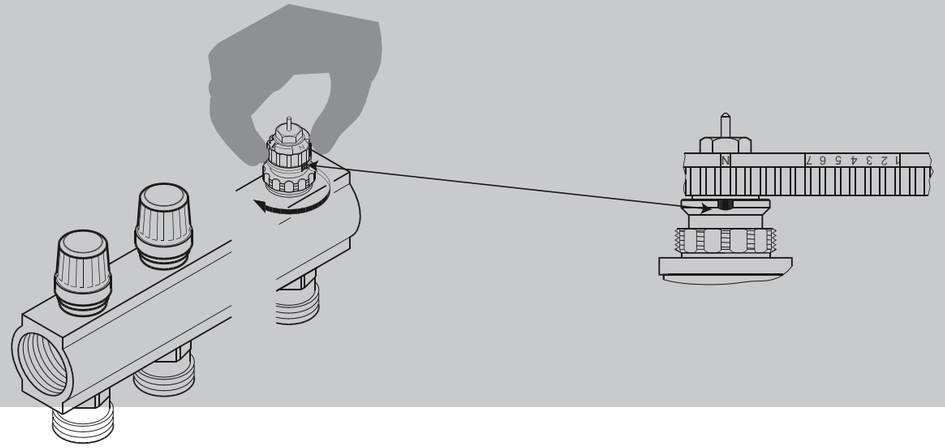
More than just pre-setting
We give you the best solutions on the market

A Danfoss manifold with pre-setting offers better distribution of water and energy, which ensures the right temperatures in different rooms.





	Danfoss **throttle** pre-setting	**Typical** non-Danfoss pre-setting
Comparison	• No tools required. Can be done quickly and easily	• Tools required. Time consuming
	• Precise pre-setting scale visible on valve	• Normally not visible on valve
	• Easy to use pre-setting guide	• More complex pre-setting
	• Pre-setting can be checked after installation (visible setting)	• Pre-setting cannot be checked without a visible scale
	• Spindle and valve seat produced as 1 piece – provides extreme accuracy	• Spindle uses manifold as seat. Difficult to set accurately



Accurate pre-setting **example**

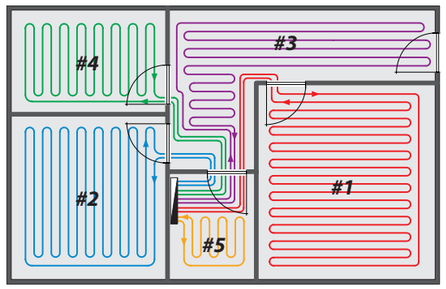
How to pre-set the valves on a Danfoss manifold:

Step 1: Identify the column that describes the longest pipe in the system (in the below example 100 meters)

Step 2: Identify the row that describes the second longest pipe in the system (in the below example 85 meters)

Step 3: The column and row intersect in a cell with a value (in the below example the value "5,5"). This is the pre-setting value of the valve connected to the pipe in question

Step 4: Repeat step 2 and 3 for the next pipes



20 x 2 mm

	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50
120	n														
115	7	n													
110	6	6,5	n												
105	5,5	6	7	n											
100	5	5,5	6	7	n										
95	4,5	5	5,5	6,5	7	n									
90	4	4,5	5	5,5	6	7	n								
85	4	4	4,5	5	5,5	6	7	n							
80	3,5	4	4	4,5	5	5,5	6	7	n						
75	3,5	3,5	4	4	4,5	5	5,5	6	7	n					
70	3	3,5	3,5	4	4,5	4,5	5	5,5	6	7	n				
65	3	3	3,5	3,5	4	4	4,5	5	5	6	7	n			
60	3	3	3	3,5	3,5	4	4	4,5	4,5	5	6	7	n		
55	2,5	3	3	3	3,5	3,5	3,5	4	4	4,5	5	6	6,5	n	
50	2,5	2,5	2,5	3	3	3	3,5	3,5	4	4	4,5	5	5,5	6,5	n
45	2	2,5	2,5	2,5	3	3	3	3	3,5	3,5	4	4,5	4,5	5	6
40	2	2	2	2,5	2,5	2,5	3	3	3	3,5	3,5	4	4	4,5	5
35	1,5	1,5	1,5	2	2	2,5	2,5	2,5	2,5	3	3	3,5	3,5	4	4,5
30	1	1	1	1,5	1,5	2	2	2	2,5	2,5	2,5	3	3	3,5	4
25	1	1	1	1	1,5	1,5	1,5	1,5	2	2	2,5	2,5	2,5	3	3,5
20	1	1	1	1	1	1	1	1	1	1,5	1,5	2	2	2,5	2,5
15	1	1	1	1	1	1	1	1	1	1	1	1	1,5	1,5	2
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

#1 100 m
#2 85 m
#3 70 m
#4 60 m
#5 40 m

MIXING & MIDI SHUNTS **WHAT TO CONSIDER**

1.

TEMPERATURE

IS THERE A HIGH TEMPERATURE HEAT SOURCE?
(e.g. boiler or district energy)

YES

NO

NO NEED FOR MIXING SHUNT

2.

VARIABLE SPEED

USE A MIXING SHUNT
Should it be with a variable speed pump for extra energy saving?

YES

CHOOSE VARIABLE SPEED

FHM-C1
» 15-70

FHM-C2
» 15-70

MIDI-SHUNT
Solution with 1 circuit, up to 20 m²

NO

CHOOSE FIXED SPEED

FHM-C5
» 15-40

FHM-C6
» 15-60

MANIFOLDS
WHAT TO CONSIDER

1.

BALANCED SYSTEM
Is balancing via pre-setting or flow meters required?

YES

NO
CHOOSE FH-ME (BASICPLUS) OR FHF-B

2.

FLOW METER
Are flow meters required?

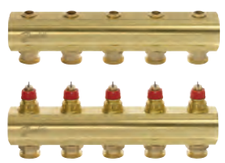
YES

NO
CHOOSE FHF WITH PRE-SETTING

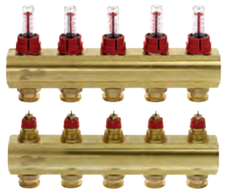
3.

CHOOSE
FHF-F OR SSM-F WITH BOTH PRE-SETTING AND FLOW METER

FH-ME (BasicPlus)
No flow meter and no pre-setting



FHF
With pre-setting



FHF-F
With pre-setting and flow meter

SSM-F
With presetting and flow meter
Premounted components

SSM
With pre-setting and without flow meter.

End caps
088U0582

Connection piece
088U0583

End section
088U0786

End section
088U0785

In-wall cabinet
088X0900

On-wall cabinet
088X0905

Ball valves
088U0822

Reduction bushes
088U0584

Mounting brackets
088U0585

MANIFOLD
OVERVIEW

Manifolds	Code no.	Number of outputs	Flow meter	Pre-setting	Control valves for actuators	Solution	Material	Working Pressure
FHF-F	088U0522-32	From 2+2 (088U0522) – To 12+12 (088U0532)	✓	✓	✓ (TWA-A)	Only manifold[1)]	Brass	6 bar
FHF	088U0502-12	From 2+2 (088U0502) – To 12+12 (088U0512)		✓	✓ (TWA-A)	Only manifold[1)]	Brass	10 bar
FH-ME (BasicPlus)	088U0612-18	From 2+2 (088U0612) – To 8+8 (088U0618)			✓ (TWA-A)	Only manifold[1)]	Brass	10 bar
FHF-B with shut-off	088U0542-52	From 2+2 (088U0542) – To 12+12 (088U0552)				Only manifold[1)]	Brass	10 bar
SSM-F	088U0752-62	From 2+2 (088U0752) – To 12+12 (088U0762)	✓	✓	✓ (TWA-A)	Assembled[2)]	Stainless steel	6 bar
SSM	088U0802-12	From 2+2 (088U0802) – To 12+12 (088U0812)		✓	✓ (TWA-A)	Assembled[2]	Stainless steel	10 bar

[1)] You will need to order end-piece (1 pcs. 088U0582 or 2 pcs. end section 088U0786 or 088U0785), mounting brackets (088U0585) and ball valves (088U0822).
[2)] You will only need to order mounting brackets (088U0585).

Accessories	Code no.	Description
End caps (2 pieces)	088U0582	Used where air vents are not used.
End section – automatic air vent	088U0785	Includes automatic air vent and drain valve.
End section – manual air vent	088U0786	Includes manual air vent and drain valve.
Mounting brackets (2 pieces)	088U0585	Used to mount manifold.
Reduction bushes	088U0584	Enables connection between ¾" pipe and 1" manifold.
Connection piece	088U0583	For combining two or more manifolds.
Ball valves (2 pieces)	088U0822	To shut off water to entire manifold.

Cabinets	Code no.	On-wall	In-wall	Width [1)] [mm]	Depth [2)] [mm]	Height [mm]	Max. FHF/ FHF-F outputs A [3)]	Max. FHF/ FHF-F outputs B [4)]	Max. FHF/ FHF-F outputs C [5)]	Max. FHF/ FHF-F outputs D [6)]
FHF-FCA	088X0900		✓	395	110-170	650	4	2	0	0
FHF-FCB	088X0901		✓	595	110-170	650	8	6	5	3
FHF-FCC	088X0902		✓	795	110-170	650	13	10	9	7
FHF-FCD	088X0903		✓	995	110-170	650	16	12	12	11
FHF-FCE	088X0904*		✓	1195	110-170	650	18	14	13	12
FH-SCA	088X0905	✓		450	119	650	4	2	0	0
FH-SCB	088X0906	✓		700	119	650	8	6	5	3
FH-SCC	088X0907	✓		850	119	650	13	10	9	7
FH-SCD	088X0908	✓		1000	119	650	16	12	12	11
FH-SCE	088X0909*	✓		1300	119	650	18	14	13	12

[1)] In-wall mounted cabinets need a build-in hole, which is about 5 mm larger than the width mentioned in the table and 650 mm above floor surface.
* Minimum order quantity: 11 pcs. Minimum delivery time: 6 weeks.
[2)] The cabinets are adjustable in depth from 110 mm to 170 mm.
[3)] Manifold + airvent
[4)] Manifold + airvent + ball valve
[5)] Manifold + airvent + ball valve + mixing shunt
[6)] Manifold + airvent + mixing shunt

MIXING SHUNT
OVERVIEW

Mixing shunt	Code no.	Features			
		Pump type	Pump speed	Additional accessories included	Pump energy class
FHM-C1	088U0094	UPM3 Auto L 15-70	Variable	-	A
FHM-C2 (without FH-TC)	088U0092	UPM3 Auto L 15-70	Variable	-	A
FHM-C5	088U0093	UPS 15-40	Fixed, non-adaptive	-	C
FHM-C6	088U0096	UPS 15-60	Fixed, non-adaptive	-	C

FHM-C1 (088U0094)
» Speed-controlled UPM3 Auto L 15-70 pump
» Internal non-return valve
» FHD-T thermometer
» FH-TC self-acting thermo-static controller

FHM-C2 (088U0092)
» Speed-controlled UPM3 Auto L 15-70 pump
» Internal non-return valve
» FHD-T thermometer

FHM-C5 (088U0093)
» 3-speed UPS 15-40 pump
» Internal non-return valve
» FHD-T thermometer
» FH-TC self-acting thermo-static controller

FHM-C6 (088U0096)
» 3-speed UPS-15-60 pump
» Internal non-return valve
» FHD-T thermometer
» FH-TC self-acting thermo-static controller

Midi shunt – for small floor heating systems	Code no.	Measurement mm (H x W x D)	Pre-mounted components			
			Pump type	Controls	System size	Actuators
Midishunt with 1 circuit	088U0851	420 x 290 x 100	UPM3 Auto L 15-70	088U1005	Up to 20 m²	✓

Midi Shunt (088U0851)
with 1 circuit,
up to 20 m²

MIDI SHUNT
OVERVIEW

Accessories for mixing shunt	Code no.	Description
Safety thermostat	088U0301	Stops pump if supply temperature is above 55° C
Measurement set	088U0304	Output for measuring flow
Angle fittings	088U0305	For mounting mixing shunt at a diffent angle
Insulation capsule for UPM3 pump	088U0075	Insulation capsule for UPM3 pump

Safety thermostat (088U0301)

Measurement set (088U0304)

Angle fittings (088U0305)

Insulation capsule for UPM3 pump (088U0075)