

## Data Sheet

# Partner Valve/High Quality Ball Valve LENO™ MSV-S

### Description

LENO™ MSV-S is a partner valve for all manual balancing valves in the LENO family. LENO™ MSV-S can also be applied as a high quality ball valve.

LENO™ MSV-S is a shut off valve with high capacity drain:

- Removable handle for easy mounting.
- Handle can be turned both to the left and to the right when shutting off the ball valve.
- Screw will stay in the handle when it is dismounted.
- Drain with high kv-value.
- 6mm hexagon key to drain the valve.
- Measure pressure.
- Cover caps to protect 3/4" drain thread.
- Space for insulation between valve body and handle.
- Replaceable cover caps (different colours) for easy identification of flow/return, domestic hot/cold water and circulation.
- Cover cap to protect screw inside handle from dirt.

LENO™ MSV-S can be mounted in heating/cooling and domestic hot water systems as a shut off valve with drain.

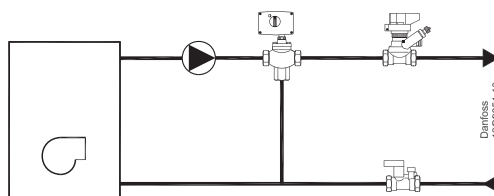


It is recommended to use LENO™ MSV-S together with all LENO family balancing valves.

DN 15 and 20 valves are available with internal or external thread. Other dimensions with internal thread.

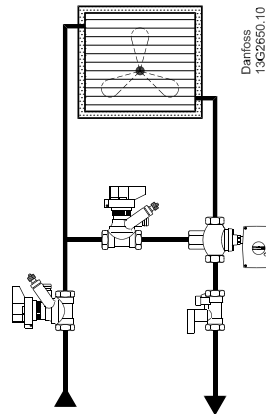
LENO™ MSV-S is a new generation of partner/ball valves for heating, cooling and domestic hot water systems.

### Application



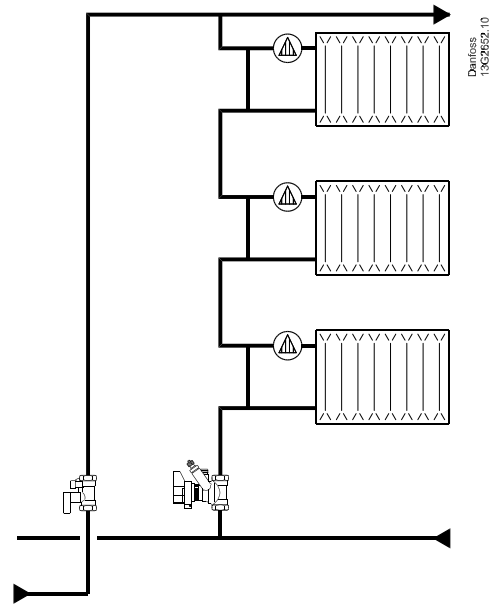
Boiler, flat station or heat pump in 1-family houses.

- For balancing.
- Shut-off function for service/repair.



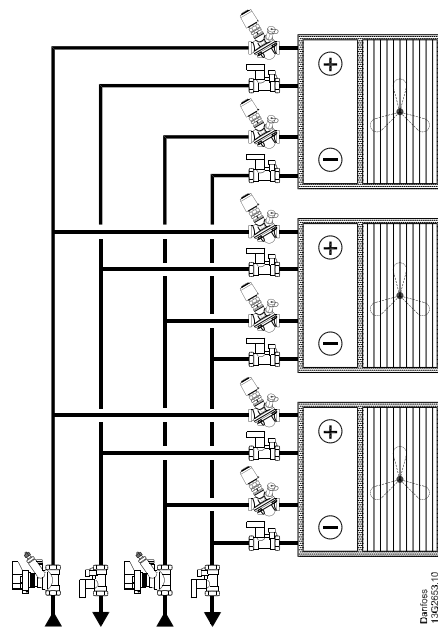
Air handling unit

- For constant flow.
- For balancing.
- Shut-off function for service/ repair.



1-pipe system

- For balancing.
- Shut-off function for service/repair.




Fan coils

- For flow verification.
- Shut-off function for service/ repair.

Ordering

**LENO™ MSV-S valve with internal thread**

Type	Material	Size	$k_{vs}$ (m <sup>3</sup> /h)	Drain flow Kvs (m <sup>3</sup> /h)	Connection	Code no.
	DZR** Brass	DN 15	3.0	0.3	R <sub>p</sub> 1/2"	<b>003Z4011</b>
		DN 20	6.0	0.3	R <sub>p</sub> 3/4"	<b>003Z4012</b>
		DN 25	9.5	0.3	R <sub>p</sub> 1"	<b>003Z4013</b>
		DN 32	18	0.3	R <sub>p</sub> 1 1/4"	<b>003Z4014</b>
		DN 40	26	0.3	R <sub>p</sub> 1 1/2"	<b>003Z4015</b>
		DN 50	40	0.3	R <sub>p</sub> 2"	<b>003Z4016</b>


**LENO™ MSV-S valve with external thread**

Type	Material	Size	$k_{vs}$ (m <sup>3</sup> /h)	Drain flow Kvs (m <sup>3</sup> /h)	Connection	Code no.
	DZR** Brass	DN 15	3.0	0.3	G 3/4" ***	<b>003Z4111</b>
		DN 20	5.9	0.3	G 1"	<b>003Z4112</b>

\*\*Corrosion resistant brass

\*\*\*Eurocone DIN V 3838



**LENO™ MSV-BD/S set solution**


Type	Material	Size	$k_{vs}$ (m <sup>3</sup> /h)	Drain flow Kvs (m <sup>3</sup> /h)	Connection	Code no.
	DZR** Brass	DN 15	3.0	0.3	R <sub>p</sub> 1/2"	<b>003Z4051</b>
		DN 20	6.0	0.3	R <sub>p</sub> 3/4"	<b>003Z4052</b>
		DN 25	9.5	0.3	R <sub>p</sub> 1"	<b>003Z4053</b>
		DN 32	18	0.3	R <sub>p</sub> 1 1/4"	<b>003Z4054</b>
		DN 40	26	0.3	R <sub>p</sub> 1 1/2"	<b>003Z4055</b>
		DN 50	40	0.3	R <sub>p</sub> 2"	<b>003Z4056</b>

\*Drain flow is measured at 1 bar static pressure and 0.1 bar differential pressure.

**Accessories**


Type	Code no.
Cover cap handle - green, small handle fits DN15 - 25 valve, 5 pcs.	<b>003Z4210</b>
Cover cap handle - green, big handle fits DN32 - DN50 valve, 5 pcs.	<b>003Z4211</b>

Type	Material	Size	Code no.
	Adaptor for RLV-K 3/4"	DN15	003L0294
	Adaptor insert 1" ext. thread - flat seal	DN20	003Z4072

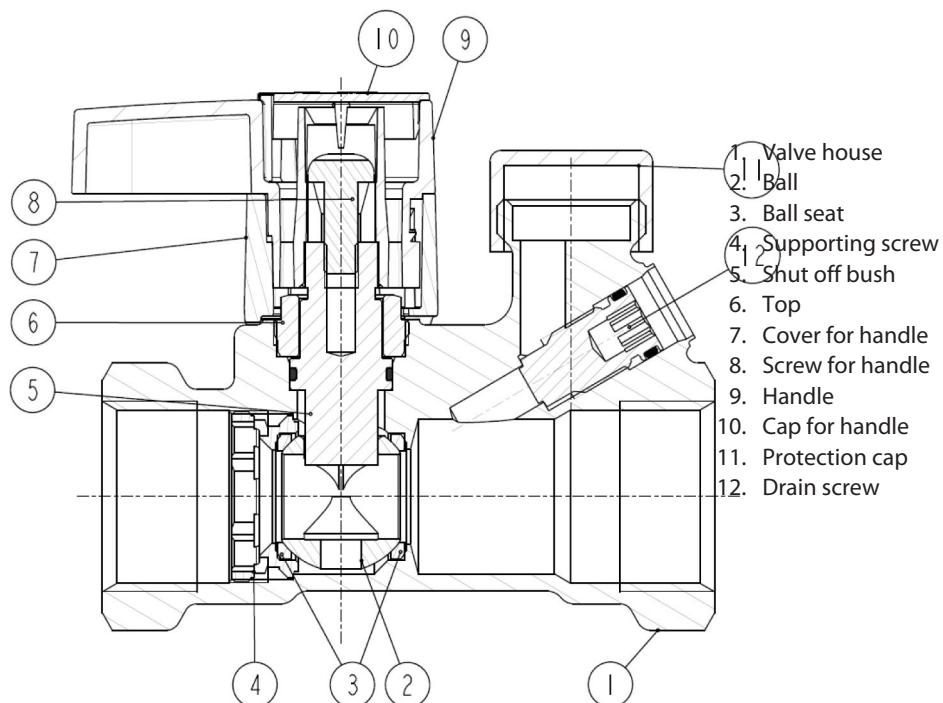
	Adaptor 1¼" ext. thread - flat seal	DN25	003Z4073
	Adaptor 1½" ext. thread - flat seal	DN32	003Z4074
	Adaptor 1¾" ext. thread - flat seal	DN40	003Z4075
	Adaptor 2¼" ext. thread - flat seal	DN50	003Z4076

**Compression fittings for valves with external thread**

Pipe (mm)	Valve thread	PEX fittings, code no.	Alupex fittings, code no.
12 x 1.1	G ¾	<b>013G4150</b>	
12 x 2	G ¾	<b>013G4152</b>	<b>013G4182</b>
13 x 2	G ¾	<b>013G4153</b>	
14 x 2	G ¾	<b>013G4154</b>	<b>013G4184</b>
15 x 1.7	G ¾	<b>013G4165</b>	
15 x 2.5	G ¾	<b>013G4155</b>	<b>013G4185</b>
16 x 1.5	G ¾	<b>013G4157</b>	
16 x 2	G ¾	<b>013G4156</b>	<b>013G4186</b>
16 x 2.25	G ¾		<b>013G4187</b>
17 x 2	G ¾	<b>013G4162</b>	
18 x 2	G ¾	<b>013G4158</b>	<b>013G4188</b>
18 x 2.5	G ¾	<b>013G4159</b>	
20 x 2	G ¾	<b>013G4160</b>	<b>013G4190</b>
20 x 2.5	G ¾	<b>013G4161</b>	<b>013G4191</b>

Steel/copper pipes	Dimension	Code no.
	G ¾ x 15	<b>013G4125</b>
	G ¾ x 16	<b>013G4126</b>
	G ¾ x 18	<b>013G4128</b>
	G 1 x 18	<b>013U0134</b>
	G 1 x 22	<b>013U0135</b>

Design



- 1. Valve house
- 2. Ball
- 3. Ball seat
- 4. Supporting screw
- 5. Shut off bush
- 6. Top
- 7. Cover for handle
- 8. Screw for handle
- 9. Handle
- 10. Cap for handle
- 11. Protection cap
- 12. Drain screw

Technical Data

**Materials and parts in contact with water**

Valve body	DZR brass
O-rings	EPDM
Ball	Brass/chromium plated
Ball sealing	PTFE

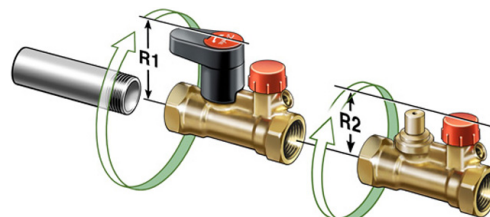
Max. static working pressure	20 bar
Static test pressure	30 bar
Max. flow temperature	120 °C
Min. temperature	-20°C
Cooling liquids	Ethylene glycol / propylene glycol and HYCOOL (max. 30 %)

**Fitting**

Before fitting the valve, make sure that the pipe system is clean and:

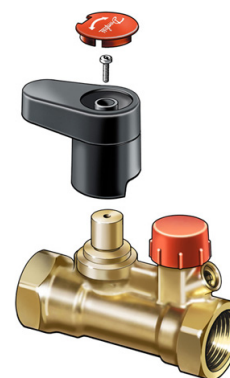
1. The valve can be turned 360 degrees, if threaded pipe is used.

DN	R1/R2 (mm)
15	62/50
20	66/55
25	71/59
32	117/66
40	119/66
50	122/67



**Removal of Handle**

1. A screw becomes accessible when the cover cap is removed.
2. Loosen the screw and remove the handle.
3. When mounting the handle, valve and handle should fit together. Turn the handle until notch, and the handle will drop smoothly on the valve.

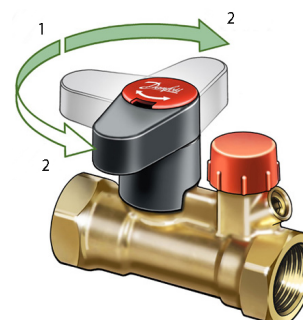


**Open and Close**

Valve can be closed turning the handle in two directions.

Handle align with the valve = Open valve (1)

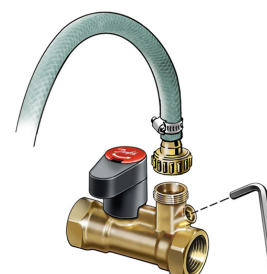
Handle across the valve = Closed valve (2)



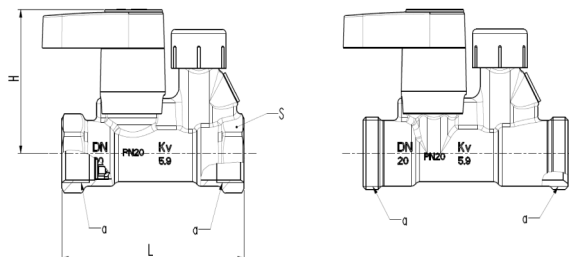
**Draining - High Capacity**

Possible drain through the valve using a 6 mm hexagon key. When handle is closed drain follows from the side where the drain is placed.

Drain cock has 3/4" thread.



Dimensions



Size (DN)	ISO 228-1 a (mm)	L (mm)	H (mm)	S (mm)
15	G 1/2	82	92	27
20	G 3/4	89	95	32
25	G 1	104	98	41
32	G 1 1/4	122	121	50
40	G 1 1/2	122	125	55
50	G2	151	129	67

Size (DN)	ISO 228-1 a (mm)	L (mm)	H (mm)
15	G 3/4A	101.25	92
20	G 1A	108.50	95

Tender Specifications

LENO™ MSV-S can be used in heating, cooling and domestic hot water systems.

Features	LENO™ MSV-S
Balancing / Commissioning	
Presetting	
Fixed orifice	
Self sealing measuring nipples	
Digital visible scale from more sides	
Shut-off function (ball valve)	•
Draining / filling	•
Draining / filling on both sides of the valve	
Removable handle	•
Closing indicator	
Allen key for ball valve	
Parallel measuring nipples	
360° rotating measuring station (drain cock and measuring nipples)	

Removable handle for easy mounting of the valve.  
 Handle can go both left and right when shutting off the ball valve.  
 Cross headed screw can be loosened to dismount the handle.  
 The screw will not fall out when the handle is dismantled.  
 Drain with high kv-value for draining and filling the system.  
 6 mm hexagon key to drain the valve.  
 Space for insulation between the valve body and the handle.  
 Cover caps to protect 3/4" drain thread.  
 Cover cap to protect screw inside handle from dirt.

DN 15 and 20 valves are available with internal or external thread. Other dimensions with internal thread.  
 DN 15 is designed with Euro cone, according to DIN V 3838.

*LENO™ MSV-S has a leakage rate A according to BS 7350 : 1990, the ball valve is 100% tight.*

Valve sizes	DN 15 – DN 50
Pressure class	PN20
Static test pressure	30 bar
Working temperature	-20°C to 120°C

*The valve body is made of DZR brass.  
The ball is made of chromium plated brass.  
O-rings are made of EPDM rubber.*

Danfoss A/S  
Heating Solutions  
Haarupvaenget 11  
8600 Silkeborg  
Denmark  
Phone: +45 7488 8000  
Fax: +45 7488 8100  
Email: [heating.solutions@danfoss.com](mailto:heating.solutions@danfoss.com)  
[www.heating.danfoss.com](http://www.heating.danfoss.com)