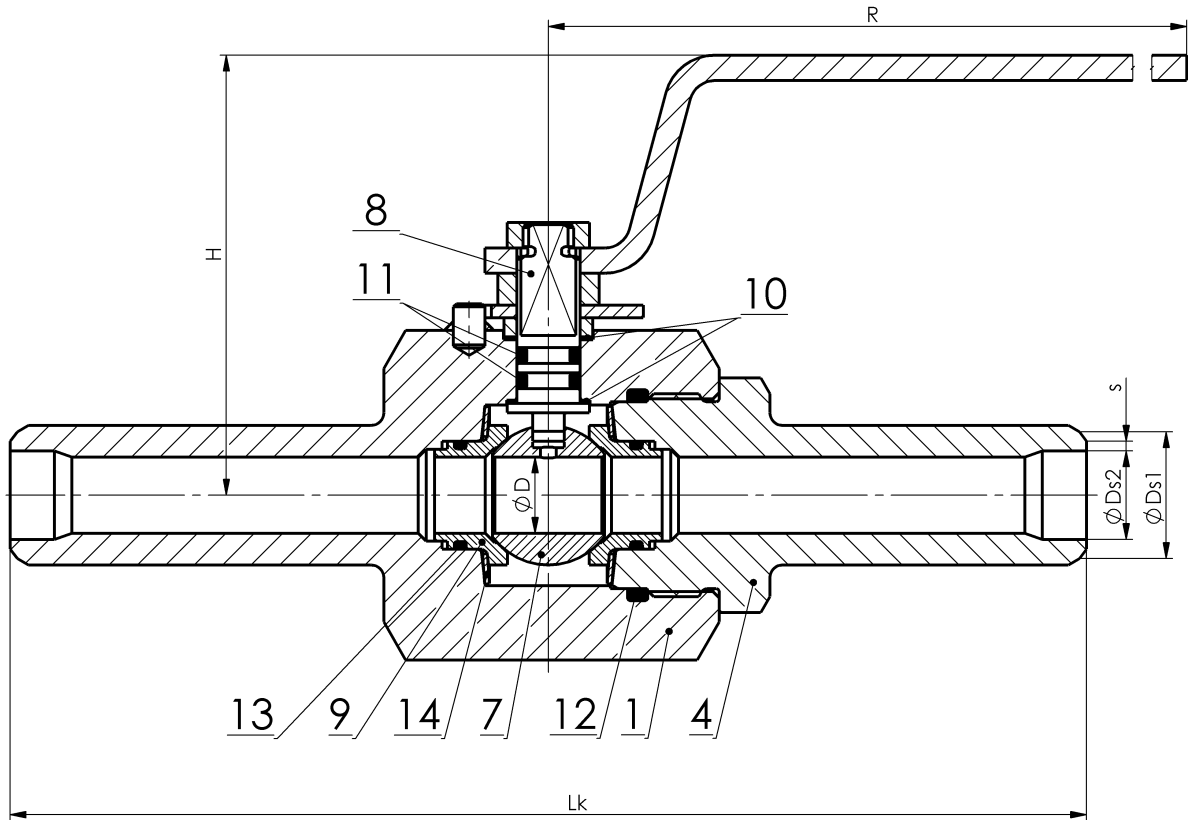


## BUTT WELD END BALL VALVE, METAL-TO-METAL

according to EN (DIN) standards, with full bore  
KM 9103.X-01-MD5 (MDS)  
DN 10–50 PN 16, 25, 40, 63, 100, (160)



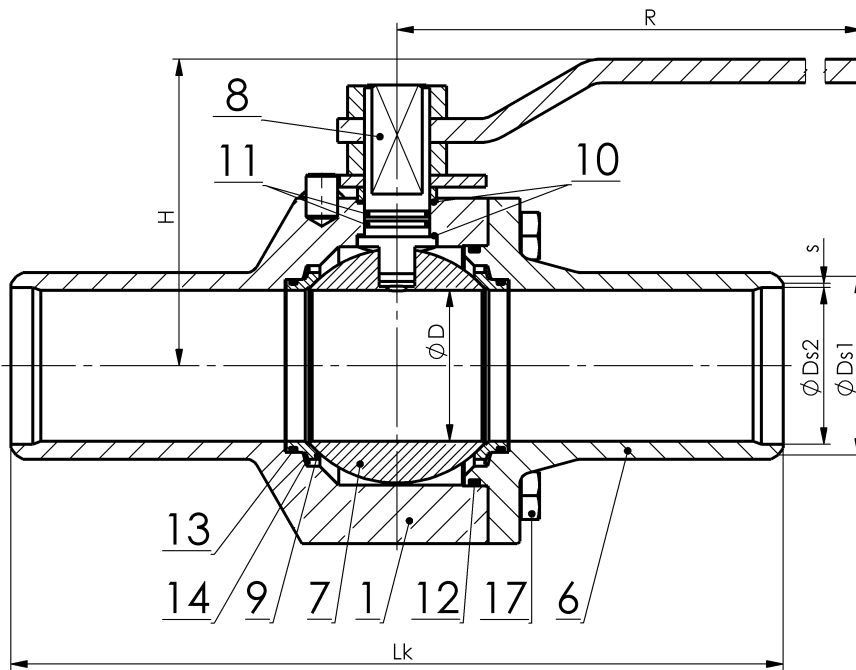
### Materials

Type KM 9103.X-01-MD5(MDS)		Material			
		Carbon steel		Stainless steel	
Position	Component	X=1 For common temperatures from -20°C to +200°C	X=5 For low temperatures from -30°C to +200°C	X=3 For temperatures from -50°C to +200°C	X=4 For temperatures from -50°C to +200°C
1	Body	1.0577, S355J2	1.0565, A350 LF2	1.4541, A182 F321	1.4571, A182 F316
4	Socket				
7	Ball	ČSN 17 029 (hardened), 1.4034 (hardened), 1.4541+Stellite		1.4541+Stellite	1.4571+Stellite
8	Stem	1.4021, ČSN 17 027	1.4021, ČSN 17 027	1.4541, A182 F321	1.4571, A182 F316
9	Seat	ČSN 17 029 (hardened), 1.4034 (hardened), 1.4541+Stellite		1.4541+Stellite	1.4571+Stellite
10	Gasket	PTFE+C, PEEK			
11	Sealing	NBR, HNBR, EPDM, FPM, FPM+FEP			
12	Sealing	NBR, HNBR, EPDM, FPM, FPM+FEP			
13	Sealing	NBR, HNBR, EPDM, FPM, FPM+FEP			
14	Spring	ČSN 17 029 (hardened), 1.4310, 1.4401		1.4310, 1.4401	1.4401

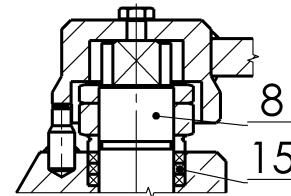
Operating temperature range can be reduced based on selected sealing materials.

## BUTT WELD END BALL VALVE, METAL-TO-METAL

according to EN (DIN) standards, with full bore  
**KM 9103.X-01-MD5 (MDS)**  
**KM 9103.X-03.2-MD5 (MDS)**  
**DN 65–150 PN 16, 25, 40, 63, 100, (160)**



**KM 9103.X-03.2-MD5 (MDS)**  
 DN 150-200, PN 16-63  
 DN 100-150, PN 100



### Materials

Type KM 9103.X-01-MD5(MDS) Type KM 9103.X-03.2-MD5(..)		Material			
Position	Component	Carbon steel		Stainless steel	
		X=1 For common temperatures from -20°C to +200°C	X=5 For low temperatures from -30°C to +200°C	X=3 For temperatures from -50°C to +200°C	X=4 For temperatures from -50°C to +200°C
1	Body	1.0577, S355J2	1.0565, A350 LF2	1.4541, A182 F321	1.4571, A182 F316
6	Socket				
7	Ball	ČSN 17 029 (hardened), 1.4034 (hardened), 1.4541+Stellite		1.4541+Stellite	1.4571+Stellite
8	Stem	1.4021, ČSN 17 027	1.4541, ČSN 17 027	1.4541, A182 F321	1.4571, A182 F316
9	Seat	ČSN 17 029 (hardened), 1.4034 (hardened), 1.4541+Stellite		1.4541+Stellite	1.4571+Stellite
10	Gasket	PTFE+C, PEEK			
11	Sealing	NBR, HNBR, EPDM, FPM, FPM+FEP			
12	Sealing	NBR, HNBR, EPDM, FPM, FPM+FEP			
13	Gasket	NBR, HNBR, EPDM, FPM, FPM+FEP			
14	Spring	ČSN 17 029 (hardened), 1.4310, 1.4401		1.4310, 1.4401	1.4401
15	Packing	Graphite			
17	Bolt	8.8, A2-70, A193 B7	A2-70, A320 L7	A2-70, A193 B8	A2-70, A193 B8

Operating temperature range can be reduced based on selected sealing materials.

### Dimensions and weights

PN 16, 25, 40, 63	DN	øD	øDs1	øDs2	s	Trubka / Pipe	Lk	S1	S2	H	R	Hm / W
	10	9,5	18	13	-	17,1×2	270	41	27	69,5	115	1,3
	15	14	22	16	-	21,3×2,6	270					
	20	19	27,5	21,5	-	26,9×2,6	270					
	25	25	34	28,5	-	33,7×2,6	270	60	46	100	200	2,9
	32	30	43	37	-	42,4×2,6	270					
	40	38	49	42,5	1,5	48,3×2,9	270					
	50	47	61	53,2	1,5	60,3×3,2	300	95	80	140	300	11,5

PN 16, 25, 40	DN	øD	øDs1	øDs2		Trubka / Pipe	Lk	S1	S2	H	R	Hm / W
	65	62	77	69,5	-	76,1×3,2	360	-	-			
	80	76	90	81,5	-	88,9×4	390	-	-	155,5	500	33
	100 *	98	115	106	-	114,3×4	450	-	-			
	125 **	119	***					525	-	-		
150 **	150						600	-	-			

PN 63	DN	øD	øDs1	øDs2		Trubka / Pipe	Lk	S1	S2	H	R	Hm / W
	65	62	77	68,5	-	76,1×3,6	360	-	-			
	80 *	76	90	80,5	-	88,9×4	390	-	-			
	100 **	98	115	104	-	114,3×5	450	-	-	-		
	125 **	119	***					525	-	-	-	
150 **	150						600	-	-	-		

PN 100	DN	øD	øDs1	øDs2	s	Trubka / Pipe	Lk	S1	S2	H	R	Hm / W	
	10	9,5	18	13	-	17,1×2	270						
	15	14	22	16	-	21,3×2,6	270	50	34	74	120	1,8	
	20	19	27,5	21,5	-	26,9×2,6	270						
	25	25	34	27,5	1,5	33,7×2,9	270						
	32	30	43	36	1,5	42,4×3,2	270						
	40	38	49	41	1,5	48,3×3,6	270						
	50	47	61	51	1,5	60,3×4,5	300						
	65 *	62	77	66	-	76,1×5	360	-	-				
	80 **	76	90	77,5	-	88,9×5,6	390	-	-	-			
	100 **	98	115	100	-	114,3×7	450	-	-	-			
	125 **	119	***					525	-	-	-		
	150 **	150						600	-	-	-		

Dimensions in [mm], weights in [kg]. S1 / S2 – Widths across flats for wrench on body / socket.

\* = gearbox recommended, \*\* = with gearbox only, \*\*\* = contact our office.

Dimensions of welding ends according to the dimensional table or customer requirement.

### Application

Butt weld end ball valves type KM 9103.X-01-MD5 (MDS) are isolating valves designed to fully open or close the service fluid flow. They are not designed to be used for throttling or regulating purposes. The scope of application of the ball valves depends directly on their materials and on the properties and temperature of the service fluid. The standard materials are specified in the table of materials. By agreement and based on service conditions, also other materials than those specified in the table may be used.

The ball valves are designated for heating gases (e.g. natural gas, lighting gas, propane-butane mixture, biogas, coke-oven gas), water, steam (not exceeding +150°C), oxygen, and generally for both corrosive and non-corrosive liquids and gases.

The fluids for which the ball valves are designed may contain mechanical impurities – solid particles with sizes not exceeding 0,5 mm. The permissible hardness of mechanical impurities depends on the material of the ball valve seat. For hardened stainless material 1.4034 (MD5), ČSN 17 029 (MD5) or for Stellite (MDS) overlay, the solid particles can be very hard (up to hardness Mohs 7, e.g. sand, etc.).

### Technical description

Ball valve design meets the requirements of EN 1983. The ball valve is with floating ball. The stem design ensures that the stem can not be ejected from the valve body by pressure of the fluid (anti-blow-out stem), internal components are connected to provide conductivity and resistance to formation of electrostatic discharges (anti-static design). Sealing between the ball and valve seats is ensured by metal-to-metal contact.

### Operation

By lever, gear box with a hand wheel, pneumatic actuator, electric actuator. Dimensions of flanges for actuator installation are in accordance with ISO 5211. The actuator size depends on the maximum service pressure drop through the ball.

The method of operation is indicated by the third digit of the type designation, which is "0" for lever and "3" for actuator (e.g. KM 9133.X-01-MD5).

### Connection to piping

Overall dimensions are shown in the tables of dimensions.

- shapes of welding ends according to EN 17292
- dimension of ball bore according to EN 1983
- end-to-end dimension according to EN 12982

### Testing

According to EN 12 266-1 as a standard, i.e. shell strength test P10, P11, seat tightness test P12 (water pressure 1,1×PN and air pressure 0,6 MPa), leakage rate A – zero leakage. If required by the Customer, additional tests may be performed as well.

### Installation, service and maintenance

The ball valves may be installed into the piping in any arbitrary position. They require no special adjustments or maintenance. They are operable at the full pressure drop which equals to PN.

When welding the ball valves type KM 9103.X-01-MD5 into the pipeline, the following procedure must be followed:

1. prior to welding, open the ball valve fully
2. do not release and do not remove the sockets from the body!
3. use a welding procedure with which the temperature around rubber O-rings and seats in the body does not exceed 120 °C. It is possible to limit the temperature, for instance, with a heat absorbing paste.

### Optional accessories, adjustments and services

- different dimensions of welding ends or combinations of ends
- fire-safe design – fire resistance in accordance with EN ISO 10497 (API 607)
- heating jacket – for keeping the fluid liquid
- lockable handle with a padlock – for locking opened / closed position of the valve
- underground set – for underground service
- extended stem – e.g. for the reason of insulation of the valve and pipeline
- up-stream vent hole – for balancing pressure into up-stream pipeline
- limit switches
- documentation according to EN 10204 3.1 or 3.2
- special adjustments according to customer requests
- valves for nominal pressure classes PN 160
- execution according to standard NACE MR 0175 or ISO 15156