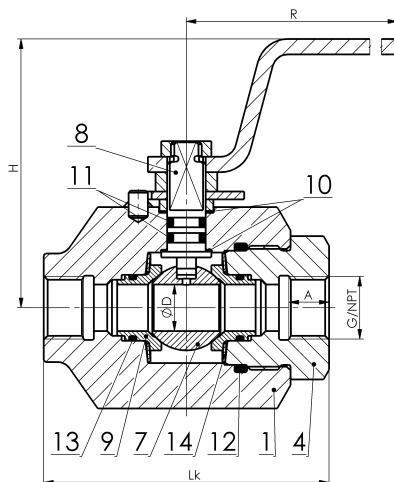


## THREADED END BALL VALVE, METAL-TO-METAL

KM 9101.X-01-MD5 (MDS) – connecting thread G  
KM 9101.X-02-MD5 (MDS) – connecting thread NPT  
DN 10–50 PN 16, 25, 40, 63, 100, (160)



### Materials

		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
2	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

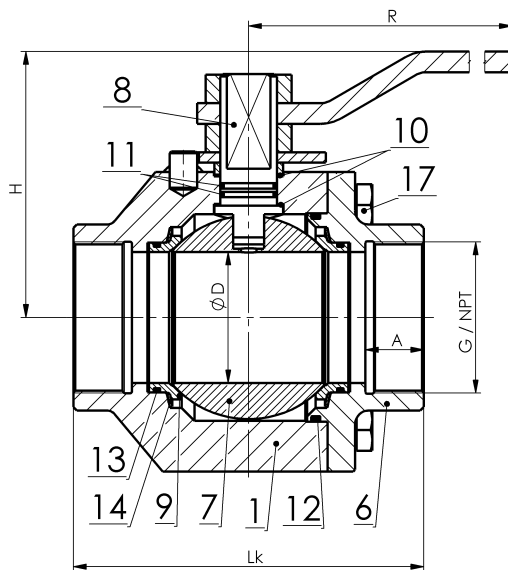
Operating temperature range can be reduced based on selected sealing materials.

### Dimensions and weights

PN 16, 25, 40, 63, 100	DN	øD	G	NPT	A	Lk	S1	S2	H	R	Hm / W
	10	9,5	3/8"	3/8-18	13						
15	14	1/2"	1/2-14	15	80	50	34	74	120	1.5	
20	19	3/4"	3/4-14	16,5							
25	25	1"	1-11,5	19,5							
32	30	1 1/4"	1 1/4-11,5	21,5							
40	38	1 1/2"	1 1/2-11,5	23							
50	47	2"	2-11,5	26							

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

**DN 65–100 PN 16, 25, 40, 63, 100, (160)**



### Materials

Type KM 9101.X-01-MD5(MDS) Type KM 9101.X-02-MD5(MDS)		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	1.4021, A182 F321	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	PTFE, PTFE+C			
14	Spring	ČSN 17 029 (hardened), 1.4310, 1.4401		1.4310, 1.4401	1.4401
17	Bolt	8.8, 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 PN 40, 63	DN	øD	G	NPT	A	Lk	H	R	Hm / W
	65	62	2 ½"	2 ½-8	31				
	80*	76	3"	3-8	34				
	100**	98	4"	4-8	40				
PN 100	DN	øD	G	NPT	A	Lk	H	R	Hm / W
	65*	62	2 ½"	2 ½-8	31				
	80**	76	3"	3-8	34				
	100**	98	4"	4-8	40				

\* = gearbox recommended, \*\* = with gearbox only. Dimensions in [mm], weights in [kg].

### **Application**

Threaded end ball valves type KM 9101.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 9131.X-01-MD5).

### **Connection to piping**

Overall dimensions are shown in the tables of dimensions.

- internal thread G according to EN ISO 228-1 – type KM 9101.X-01-...
- internal thread NPT according to ANSI B 1.20.1 – type KM 9101.X-02-...
- dimension of ball bore according to EN 1983
- end-to-end dimension of DN 10–50 not standardized
- end-to-end dimension of DN 65–100 not standardized

### **Testing**

According to EN 12 266-1 as a standard, i.e. shell strength test P10, P11, seat tightness test P12 (water pressure  $1,1 \times PN$  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.

### Optional accessories, adjustments and services

- 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
- 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