Ball Valves

PRODUCT INFORMATION

Serving the Gas Industry Worldwide

RMG
by Honeywell

The GAZOMET Corporation was founded in 1862. Since 1954, it has been manufacturing a variety of products for the needs of the Polish gas industry. In 1969, GAZOMET designed and manufactured the first Polish ball valves for gas systems. The GAZOMET of today is an experienced manufacturer meeting various needs and demands of the gas & oil industry. The company's partnership with leading manufacturers, both in Poland and abroad, results in the state-of-the-art engineering solutions meeting the most rigorous requirements defined by the Customer. The GAZOMET products are in conformity with the strictest technical standards, while assuring maximum safety during operation. The company has implemented and actively follows procedures of the ISO 9001 Quality System with regards to design, manufacturing and after-sales services of gas stations, gas reduction-metering stations, gas transmission accessories, fittings, safety systems for gas networks, process and transmission pipelines, components and fixtures, pressure tanks, gas odorising stations, gas meters, as well as steel structures and crane facilities.


CERTIFICATE

GAZOMET Sp. z o.o.

ul. Sarnowska 2, 63-900 Rawicz

EN ISO 9001:2008

GAZOMET manufactures ball valves with a diameter ranging from DN 6 to DN 500 and the pressure of up to PN 420. GAZOMET ball valves are distinctive products for their novel design reflected in a number of patented applications, patents as well as approved utility models (also foreign). The ball valves are delivered to natural gas mines, gas storage facilities, natural gas grids, natural gas distribution networks for the gas and oil industry. The valves also find application in piping and plumbing networks for transmission of water and other media, both aggressive and neutral. GAZOMET has implemented and strictly observes the system of quality assurance under the Pressure Equipment Directive 97/23/EC, which allows the products to be manufactured in accordance with the recognized standards and be CE-labelled. GAZOMET has the right to use the API Official Monogram on the products manufactured in conformity with conditions set by the "API Spec. 01 and API Spec. 6D", the official publication of the American Petroleum Institute, and the provisions of the Licence Agreement.

Flexibility of applied technical solutions, manufacturing precision, efficient order processing and short lead time combined with expert service are a strong foundation of the company's achievements.
We are kindly inviting you to have your share in our successes, offering you our partnership in various projects. Your participation in creative design and engineering programs may bring significant and substantial profits to your organisation while providing the proof of your recognition and appreciation for our efforts in the gas industry.

Why should GAZOMET ball valves be considered as a reliable solution for your application?
The reasons are as follows:

- they meet end-user's expectations:
  safety, high leak proof degree, outstanding performance,
- they are leak-proof on both sides, at high and low pressures
- they are full bore valves,
- they are produced of the best materials,
- balls of the valves demonstrate outstanding surface finish due to a unique "super-finish" manufacturing process,
- the applied engineering solutions guarantee their long-term service life in unfriendly environment,
- they are designed with consideration of national criteria and recommendations and in conformity with international standards,
- they are characteristic of uniform and stable operation torque,
- all have got required approvals and certificates.


TÜV NORD

CERTYFIKAT

CE 0045


CE 0085

DVGW

EG-Baumusterprüfbescheinigung

EC type examination certificate


CE 0085

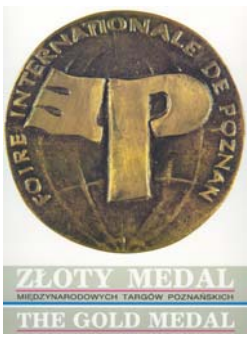
DVGW

EG-Baumusterprüfbescheinigung

EC type examination certificate

Awards:
(selected examples)

- Gold Medal for a gas installation safety system - ASB The International Fair of the Pomerania and The Kujawy Region IG (POL-GAZ EXPO - The International Pomerania and Kujawy Fair - 1996)
- Distinction - a gas injection odorising station (POL-GAZ EXPO-The International Pomerania and Kujawy Fair-1998)
- Distinction - a KPK gas ball valve (POL - GAZEXPO - The International Pomerania and Kujawy Fair - 1998)
- Gold Medal for a KDKa ball valve with metal-metal seal (POL-GAZ EXPO - The International Pomerania and Kujawy Fair - 2000)
- Gold Medal for a ball valve with metal-metal seal (The International Poznań Fair - 2001)
- Distinction for the BIG® - Gas Installation Safety System (The Gas Industry Fair, Kraków - 2004)
- Gold Medal for the BIG® - Gas Installation Safety System (The International Poznań Fair - 2004)
- Award of the Chamber of the Natural Gas Industry in Warsaw - the EXPO GAS Fair in Kielce - for a gas ball valve of NOK NOS type, welded by an electron beam, The Chamber of the Natural Gas Industry in Warsaw - 2004
- Gold medal for a gas ball valve of NOK NOS type, welded with electron beam (The International Poznań Fair - 2004)
- Great Gold Medal at the International Poznań Fair-2004
- The 3rd place - the EMC 500 meter of natural gas energy value (The Gas Industry Fair, Kraków-2005)
- The 1st place - a NOK/NOS gas ball valve, welded by the electron beam method, The Gas Industry Fair, Kraków - 2005
- Distinction - the EMC 500 meter of natural gas energy value, The EXPO GAS Fair, KIELCE - 2005
- GRAND PRIX - for a NOK/NOS gas ball valve, welded by an electron beam, The NAFTA GAZ Fair - Warszawa - 2005
- A Special Award for the Automatic Gas Station Control System – THE EXPO GAS FAIR, KIELCE - 2006
- Honourable mention – KKS/KKK ball valve
  - TOP ENTRY design
  - EXPO GAS KIELCE 2007 Fairs
- Golden Medal – KKS/KKK ball valve
  - TOP ENTRY design
  - Poznan International Fair – TECHNOGAZ 2007
- Acanthus Aureus
  - Poznan International Fair
  - TECHNOGAZ 2007



I. Applications

A. Ball valves, produced by GAZOMET, are dedicated mainly to the gas and oil industry.
Their application includes:
- gas distribution
- gas transmission,
- processing lines,
- natural gas mines
- underground gas stores.

B. Ball valves from GAZOMET are also applied in other industry sectors, where resistance to aggressive media is required:
- hot water,
- fuels.

The actual production programme includes ball valve diameters, ranging from DN6 to DN500 and pressures from PN16 to PN420. GAZOMET ball valves in their standard version can be used in temperatures from -30°C to +60°C, while their special versions allow for broader application of temperature ranging from -50°C up to+150°C.

PRODUCTION PROGRAMME OF BALL VALVES FOR GAS, OIL, WATER AND OTHER MEDIA

ANSI-Class	PN																			
2500	420						NOK			NOK		NOK								
1500	260						NOK			NOK		NOK	NOK		NOK	NOK				
							NOS			NOS		NOS	NOS							
900	150						NOK			NOK		NOK	NOK		NOK	NOK	NOK			NOK	
															NOS	NOS	NOS			NOS	
600	110								KDK	KDK		KDK	KDK								
									KDS	KDS		KDS	KDS								
										KDKa											
										KDSa											
							NOK			NOK					NOK	NOK	NOK	NOK	NOK	NOK	NOK
							NOS								NOS	NOS	NOS	NOS	NOS	NOS	NOS
	100			KOC	KOC	KOC	KOC		KDK	KDK		KDK	KDK								
					KOK	KOK	KOK			KDKa											
		KOZ	KOZ	KOZ	KOZ	KOZ	KOZ														
							NOK			NOK					NOK	NOK	NOK	NOK	NOK	NOK	NOK
	63								KDK	KDK		KDK	KDK								
										KDKa											
													NOK		NOK	NOK	NOK	NOK	NOK	NOK	NOK
300	50								KDK	KDK		KDK	KDK								
	40				KOK	KOK	KOK														
	25																				
								BVs	BVs	BVs	BVs	BVs	BVs	BVs	BVs	BVs					
								BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	NOK	NOK	NOK	NOK	NOK
																	NOS	NOS	NOS	NOS	NOS
150	20																				
									BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	NOK	NOK	NOK	NOK	NOK
	16			KOM	KOM	KOM	KOM										NOK	NOK	NOK	NOK	NOK
								BVk	BVk	BVk	BVk	BVk	BVk		BVk						
								BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn					
ANSI-Class	DN	6	8	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
		1/4"	5/16"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	20"

II. Materials

PROPERTIES OF APPLIED MATERIALS	
Material	**Properties**
Polytetrafluoroethylene, PTFE	• Chemical resistance to almost any substance • Broad working temperature range (-200°C to +260°C) • No water absorbing • Resistance to environmental ageing • Low friction and wear coefficients • Physiological neutrality • Outstanding dielectric properties • Tensile strength of 527 MPa
Polytetrafluoroethylene + filler (PTFE + C)	• The applied fillers improve PTFE properties • Compressive strength is increased • The coefficient of thermal expansion is reduced • Improved abrasion resistance
Polyacetal POM	• High mechanical resistance and rigidity • High fatigue resistance • Resistance of strength properties to environmental humidity • High hardness and consequent abrasion resistance • Low friction coefficient in standard materials combinations • Good sliding properties • Little impact strength variations within the -40°C to 100°C temperature range
Nitril rubber NBR	• Working temperature ranges from -30°C to +100°C • Resistant to mineral oils and greases, aliphatic hydrocarbons propane, butane, petrol, water up to 60°C • Irresistant to silicone oils and greases, aromatic and chlorinated hydrocarbons (e.g, benzene, trichloroethylene), concentrated acids and lyes
Silicone rubber MVO	• Working temperature ranges from -50°C to + 200°C • Resistant to mineral oil and greases, diluted salt solutions, alcohols, oxygen, ozone, water to 60°C • Irresistant to aliphatic hydrocarbons, aromatic, concentrated acids and bases, water steam
Fluoric rubber FKM, FPM	• Working temperature ranges from -20°C to + 250°C • Resistant to mineral oil and greases, aliphatic and chlorinated hydrocarbons, synthetic oils, inorganic acids, water to 60°C • Irresistant to concentrated organic acids, acetone and water steam.
Ethylene-propylene rubber, EPDM	• Working temperature ranges from -50°C to + 130°C propylene EPDM • Resistant to hot water and water steam, brake fluid, hard-flammable hydraulic fluids HFD, glycol, acetone, acid and base solutions • Irresistant to aromatic hydrocarbons (toluene, xylene), oils, petrol
Graphite	• Working temperature ranges from -200°C to + 650°C • Resistant to almost all media (except strong oxidants) • It is not susceptible to ageing processes • Very low friction coefficient • Non-flammable

MATERIAL SPECIFICATION FOR BALL VALVES																	
	Body			**Ball**			**Stem**			**Ball seals**				**Other seals**			
Ball type	Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Acid-resistant steel	Acid-resistant cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitril rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
KOM	+			+			+			+				+			
KOC		+		+	+			+				+		+			
KOZ		+		+	+			+		+		+		+			
KOK		+		+	+			+				+		+			
BVn		+			+			+	+	+				+			
BVk		+			+			+	+	+				+			
BVs		+			+			+	+	+				+			
NOK		+		+	+	+		+	+			+		+			+
NOS		+		+	+	+		+	+			+		+			+
KDK			+		+	+		+				+		+	+		+
KDKa			+		+	+		+					+	+	+		+
KDS			+		+	+		+				+		+	+		+
KDSa			+		+	+		+					+	+	+		+

MATERIAL SPECIFICATION FOR BALL VALVES (CONTINUED)					
	Material	**Standard**	**Symbol**	**Tensile strength Rm [MPa]**	**Yield point Rm [MPa]**
Body	Brass. Pressure cast steel.	PN-EN 1652	CuZn38Pb2	340÷420	240
	Pressure steel.	PN-EN 10213-2	GP240GH	420÷600	240
	Pressure steel.	PN-EN 10222-4	P355NH	490÷630	355
	Pressure steel.	PN-EN 10216-2	P235GH	360÷500	235
	Pressure steel	PN-EN 10216-2	P265GH	410÷570	265
Ball	High-alloy cast steel	PN-EN 10213-4	GX5CrNi 19-10	440÷640	175
Stem	High-alloy steels	PN-EN 10088	X6Cr17	400÷630	240
			X17CrNi 16-2	800÷950	600
			X5CrNi 18-10	500÷700	190
			X20Cr13	700÷850	500
			X30Cr13	850÷1000	650
Ball seals	Polytetrafluoroethylene	-	PTFE	-	-
	Polytetrafluoroethylene	-	PTFE+C	-	-
	strengthened Polyacetal				
	Acid proof steel	-	POM C	-	-
		PN-EN 10213-4	-	-	-
Other seals		-	NBR	-	-
	Nitril rubber	-	VMQ	-	-
	Silicone rubber	-	FKM	-	-
	Fluoric rubber Ethylene-	-	EPDM	-	-
	propylene rubber Graphite				
		-	-	-	-

III. Flanges

The mounting flange and valve face in ball valves are normally manufactured in conformity with the PN-EN 1092-1 standard or ASME B 16.5 (equivalent to PN-ISO 7005-1) presented in the table below.

Table 1.

KOŁNIERZE			
Ciśnienie/klasa		**Przylga**	
PN	**ANSI**	**PN-EN 1092-1**	**ASME B16.5 (PN-EN 1759-1)**
16		B1	
20	**150**		RF (B1)
25		B1	
40		B1	
50	**300**		RF (B1)
63		B2	
100		B2	
110	**600**		RF (B1)
150	**900**		RTJ (J)
260	**1500**		RTJ (J)
420	**2500**		RTJ (J)

Other options of mounting flanges and valve faces are available.

IV. External anti-corrosion protection coating

Ground version

Surface preparation

- abrasive blast treatment - Sa21/2 Class, meeting the Polish PN-ISO 8501-1 Standard washing and phosphate treatment with SUR-TEC fluid
- flushing in IZOPROPANOL alcoholPrime coat
- epoxy paint - SEEVENAX Grundierung 144 (white colour), coat thickness 40 ÷ 80 µm

Top coat

- polyurethane paint - ALEXIT Decklack 460-80 (yellow colour RAL 1023), coat thickness 80 ÷ 120 µm

Underground version - Set I

Surface preparation

- abrasive blast treatment - Sa21/2 Class in conformity with the Polish PN-ISO 8501-1 Standard

Insulation coating

- polyurethane coat - PROTEGOL 32-55(black colour), coat in Class B (coat thickness above 1.5 mm), following EN 10290 andDIN 30677 part 5

Underground version - set II
Surface preparation
- abrasive blast treatment - Sa21/2 Class in conformity with the Polish PN-ISO 8501-1 Standard
- flushing in IZOPROPANOL alcohol Prime coat
- epoxy paint - SEEVENAX Grundierung 144 (white colour), coat thickness 40 ÷ 80 µm

Top coat
- polyurethane paint - ALEXIT Decklack 460-80 (yellow colour RAL 1023), coat thickness 170 ÷ 210 µm

Optional anti-corrosion protection systems are available with different paint sets and colours.

V. Tests

Ball valve testing is performed in conformity with General Specifications (GS), defined on the basis of current regulations and standards. Tests of ball valves may also be performed, according to the American API6D Standard, German DIN 3230 Standard, part 5 or following individual criteria.
The scope of production series tests, as defined in GS, includes:
pressure test - hydraulic test with pressure of 1,5 x PS*
external leak-proof test – pneumatic test with pressure of 1.1 x PS
valve closure test – pneumatic test with pressure of 0.6 MPa and 1.1 x PS for each side
performance test
Ball valves are made in leakproof class A, meeting the Polish PN-EN 12266-1 Standard.

VI. Pipeline tests

Mechanical strength and leakproof tests of mounted ball valves.

Ball valve in opened position
- hydraulic test - max. pressure 1.5 x PS
- pneumatic test - max. pressure 1.25 x PS

Note: When a pipeline is filled with test medium, close slightly the ball valve (10° ÷ 20°) in order to allow the transfer of test medium into the space between the ball and the body (Fig. 1). Leave the ball valve in this position during the entire test.

** PS - rated pressure – specified on the name plate*

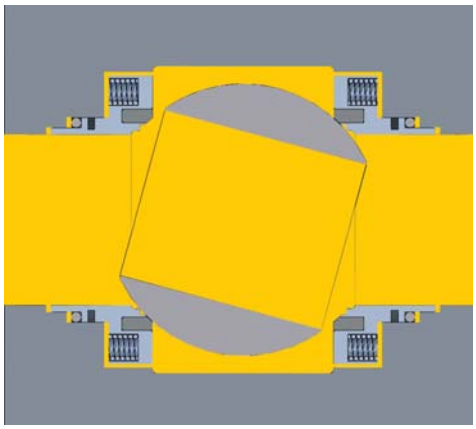


Fig. 1

Ball valve in closed position
- hydraulic or pneumatic test -max. rated pressure

VII. Documents at delivery

Ball valves are delivered with the following documents:
- Technical acceptance certificate 3.1 acc. to PN-EN 10204 Polish Standard
- Declaration of Conformity, acc. to 97/23/EC Directive(CE symbol)
- Assembly and operation manuals
- Warranty certificate

VIII. Special version

Ball valve with metal-metal sealing
Ball valves with metal-metal sealing (KDKa and KDSa) have been the first Polish design implemented in production. This type of sealing guarantees long durability and stability in harsh conditions. Ball valves of this type, having special sealing packages, are fireproof and maintain leakproof properties in temperatures of up to 650°C over a 30-minute time.

Photo: Balll valve in fire test

Ball valve with staged opening

KPK-DN100/PN16 B ball valves with two-stage opening provide entirely novel performance features. A new technical solution applied in this valve is a special ball with by-pass ports. While opening the valve in the first stage, the ball is rotated by about 10°, exposing the by-pass ports, then it is automatically locked by the pawl on the wrench. At this stage, the medium flows through the by-pass ports, while the main seals of the ball valve adhere to the ball, preventing the risk of mechanical damage caused by high flow rate and contamination of the medium. In the second stage of the valve opening, after unlocking the pawl on the wrench, the valve is entirely opened. The valve closure is smooth and does not involve the pawl.

Photo: KPK ball valve – by-pass ports

Photo: KPK ball valve

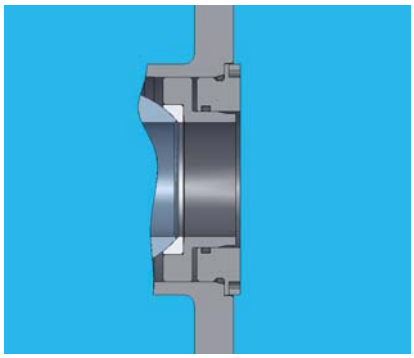
GAZOMET manufactures also ball valves in stainless steel version for application in systems filled with aggressive media. Ball valves of this type are individually designed and adjusted to submitted performance conditions, especially to the type of medium and the application temperature and pressure. Ball valves designed in this way, guarantee quality performance for many years of operation.

Photo: Ball valve in stainless steel version

IX. Engineering solutions

Cross-coupling

GAZOMET has introduced a new solution to ball valve design, linking the ball with the stem with a cross coupling. This allows for the ideal adjustment of the ball position to the seals in the full rotation range (90°). Such a configuration eliminates unfavourable stress in the valve, which makes the rigid stem mounting and the cross coupling more stable. Reduced torque provides uniform distribution of ball pressure on the seals around the entire circumference, which improves leakproof performance of the whole sealing system



Independent retaining ring

Serially manufactured, the KSK ball valves have got a special (not found in products of other manufacturers) “independent retaining ring” to eliminate stresses, transferred from gas pipeline, which can be detrimental to ball valve performance. This solution provides stable torque and long-term leakproof properties.

Sealing compensation

Ball valves manufactured by GAZOMET are provided with elastic compensation of the main sealing. This compensation is ensured by the special corrosion-resistant spring packages. This solution allows for a uniform and controlled pressure of the sealing package to be applied to the ball surface, eliminating mounting stresses and improving the performance of the ball valve under a wide range of temperatures and pressures. All this provides a reliable ball valve performance in the long run. GAZOMET always uses the double, independent sealing compensation, while maintaining the “Double Block and Bleed (DBD) function, which guarantees some leakproof properties of the valve in its inlet and outlet sections while completely closed (Fig.2) or opened (Fig. 3). This feature enables leakproof tests to be performed via the plug or the drain valve.

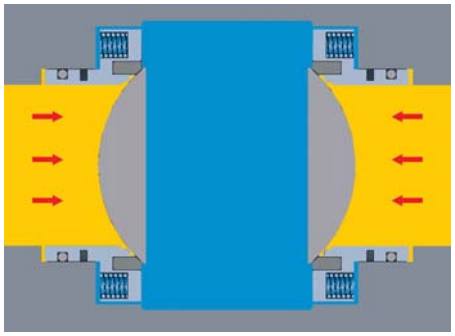


Fig. 2

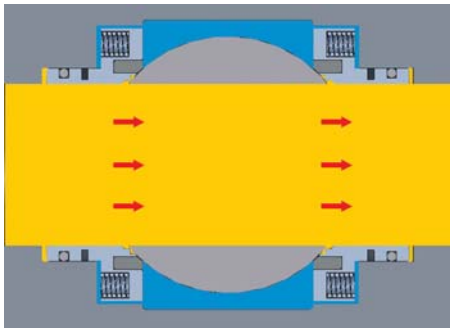


Fig. 3

GAZOMET proposes two solutions of sealing compensation:

1.Single Piston Effect (SPE) - single sealing

At the inlet this solution provides a tight closure around the seal that is pressed upon by the force coming from the spring package and the medium inlet pressure (Fig.4). In the SPE configuration, the excessive pressure, which may occur in the dead zone of the ball valve during the closing or opening procedure, is automatically released into the pipeline at the outlet of the valve (Fig.5).

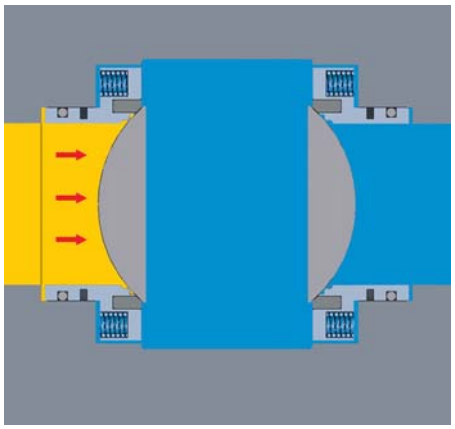


Fig. 4

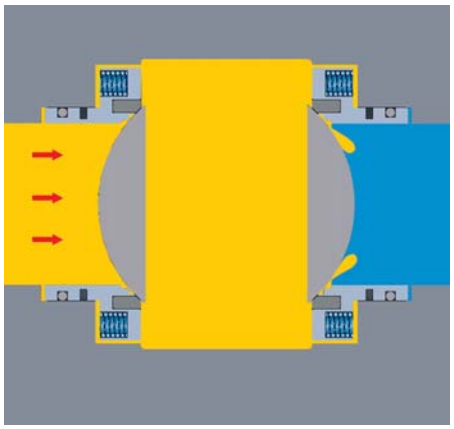


Fig. 5

2.Double Piston Effect (DPE) – double sealing

The valve tighness is ensured by a complex sealing package at the inlet, where the seal is pushed by the forces produced by the spring package and the inlet medium pressure (Fig. 6), and at the outlet, where the seal is affected by the forces produced by the spring package and the medium pressure in the dead zone of the valve (fig. 7). This solution ensures that the valve is leakproof even if the first package fails. The DPE system does not have the feature of automatic pressure release, which may occur in the dead zone of ball valve, when it is being opened or closed.

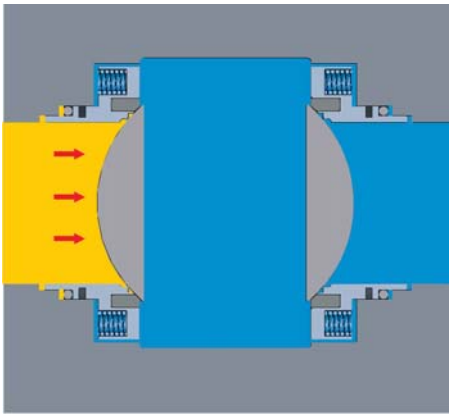


Fig. 6

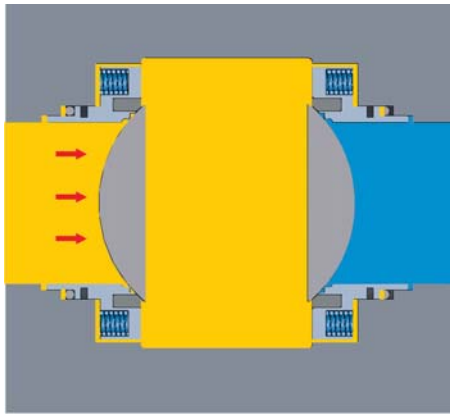
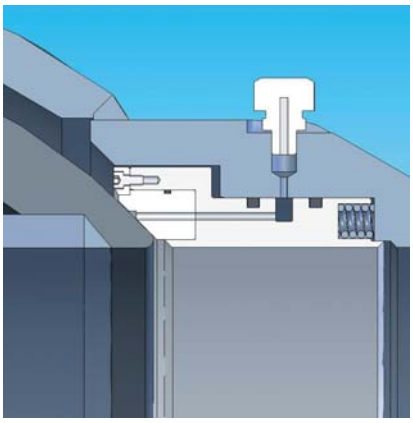


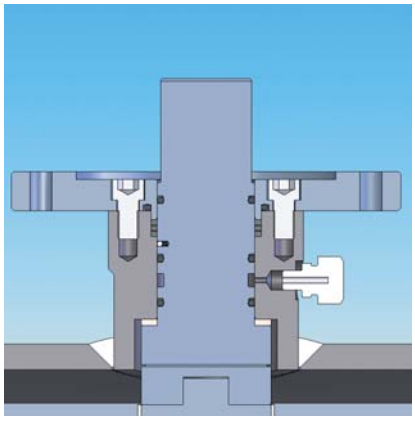
Fig. 7

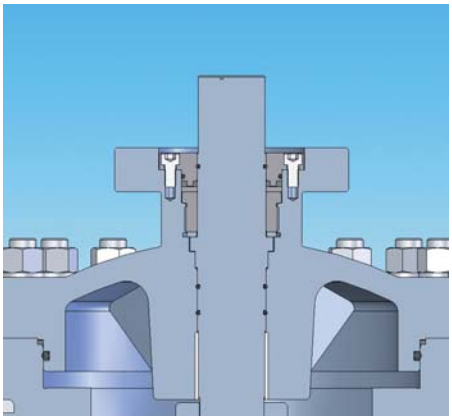
Safety sealing system
Ball valves, especially those with larger diameters, have been designed to include a safety sealing system and lubrication. In case of failure of any valve seal, the system injects sealing paste onto the defective area to restore sealing properties.



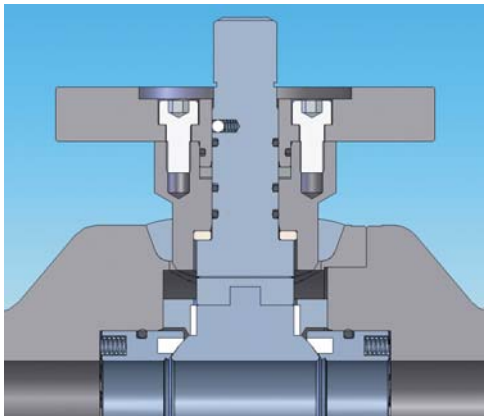
Stem sealing
Depending on ball valve type, GAZOMET offers two stem-sealing solutions:

1. Single-stage - consisting of two “o-ring” seals
2. Multi-stage – combining o-ring and MUPU seals with graphite fireproof package. This solution allows for the replacement of the upper seals with undisturbed pipeline operation (note: proceed with replacement acc. to the „Operation Instructions"). All the stems are anti-blow protected and mounted either on the inside or the outside of the housing; a protective flange is used in the latter.





Antistatic protection
In ball valves, the ball is electrically insulated by plastic seals from the valve body. Opening or closing of the ball valve, as well as friction of the flowing medium, induces electrical charges on the ball surface. Metallic connection of the ball, the stem and the body will carry the electrical charge.
Antistatic protection is very important when flammable and explosive media are used.



X. New technologies

Electron beam welding
In the GAZOMET valves that have a uniform, non-disassamblable body, a new welding technology, electron beam welding, has been implemented. This method melts the area of adherence of the connected objects with the heat obtained from an electron beam emiting heat energy that is directed onto a welding surface. The main characteristic feature of this process is the welding of the adhering surfaces by melting parent material of the two objects without adding any welding flux.

The process reveals high manufacturing efficiency, minimal heat spread and provides aesthetic welding shapes. It introduces only slight stresses to the engineering structure and allows for fusing different materials of considerable thickness.

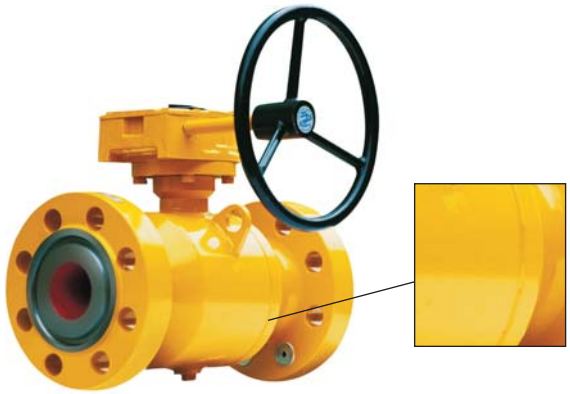


Photo: A ball valve - the body welded by an electron beam

Numerically controlled machine tools

GAZOMET is a manufacturing organisation, where the stock of machine tools is subject to continuous upgrading. A consequent investment process allows for systematic replacement of conventional machine tools with new, more precise and efficient machine tools that are numerically controlled.

The Boehringer turning centre is one of the latest CNC machines, used by GAZOMET. This machine provides high rigidity of machining, high efficiency and manufacturing precision. It allows the machining of parts that are up to 550 mm in diameter, with length of up to 1000 mm and max weight of 800 kg. This machine is equipped with an additional “C” axle, which, with the use of driven tools, enables drilling operations and milling around the perimeter.

Photo: Turning centre

Supfina superfinisher

Extensive manufacturing experience of GAZOMET combined with application experience of the end-user leads to conclusion that the high quality of ball valves, i.e., their tightness, depends on the performance and matching of the two main elements: the ball and the sealing. In the dynamic sealing provided by the sealing component, the quality of the ball manufacturing, especially its perfectly smooth surface, miniscule deviations in shape and the radial run-out are the key important features. In order to meet these requirements, GAZOMET possesses a special ball superfinisher. The SUPFINA superfinisher is the only new generation machine tool in Europe, which provides high quality surface finish (Ra parameter< 0,16 μm) and roundness deviations < 0.02 mm.

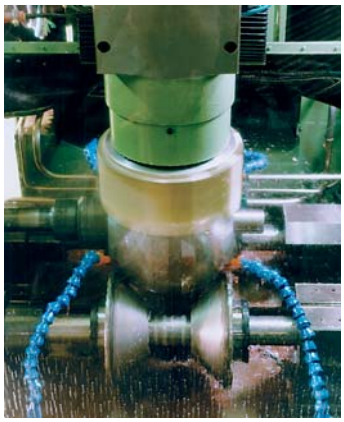


Photo: SUPFINA superfinisher for balls of ball valves

Photo: Testing laboratory

XI. Drives

All ball valves, depending on the torque required to open a valve, are equipped with a wrench or a worm gear. Optionally, ball valves may have their own drive system: electric, pneumatic or electro-hydraulic.

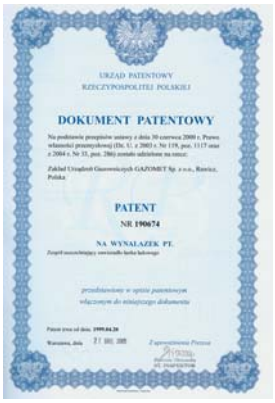
Manual drive (a worm gear)

Electric drive (AUMA)

Pneumatic drive (NIWATEC)

Electro-hydraulic actuator (Fahlke)

XII. Patents (examples)



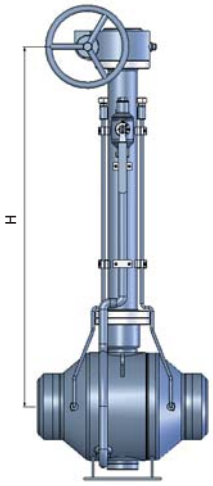
XIII. Certificates

CERTIFICATES		
Certifying unit / laboratory	**Type of certificate**	**Product**
TÜV Poland	CE 97/23/WE modul H	Fittings. Ball valves with welding or flange attachment
DVGW Bonn /EBI	EG-Baumusterpruf-bescheinigung Certyfikat badania typu	KOZ/KOK ball valves
DVGW Bonn /EBI	EG-Baumusterpruf-bescheinigung Certyfikat badania typu	KDK/KDS ball valves
DVGW Bonn /EBI	EG-Baumusterpruf-bescheinigung Certyfikat badania typu	KKK/KKS ball valves
API Washington USA	API Spec. 6D	Ball valves (6D)
INiG Kraków	Certificate of conformity	Ball valves: KOG DN 15, KOM DN 10, DN 15, DN 20, DN 25 MOP5-20 T2 (-20^0 + 60^{0}C)
INiG Kraków	Certificate of B level safety	Ball valves: KOG DN 15, KOM DN 10, DN 15, DN 20, DN 25 MOP5-20 T2 (-20^0 + 60^{0}C)
INiG Kraków	Certificate of B level safety	Ball valves: KSK DN 32, 40, 50, 65, 80, 100 MOP16 T2 (-20^0 + 60^{0}C)
Проматомнадзор Białoruś Minsk	РАЗРЕШЕНИЕ	Шаровые краны (KOM, KOG, KOC, KOZ, KOK, KSK, KZK, KZS, KDK,KDS, KNK, KNZ, KNS, KPK, KKK, KKS, NOK, NOS) наземной или подземной установки с колонками KL, KT под приводное устройство и приводом к крану KKK (P раб 6,3 МПа)
ГОССТАНДАРТ РОССИИ Rosja Moskwa	СЕРТИФИКАТ СОТВЕТСТВИЯ	Краны шаровые дла газа PN 0,6-26,0 МПа, DN 25-500 типов : KOM, KOG, KSK, KOK, KZK, KNK, KNZ, KKK, KZS, KNS, KKS, KPK, KDK, KDS, KDKa, KDSa, NOK, NOS, KOZ, KOC, KSKw
ОРГАН З СЕРТИФІКАЦІЇ – ЦДС ТИСК	СЕРТИФІКАТ ВІДПОВІДНОСТІ	Газова арматура та обланання
Strojirensky zkusebni ustav autorizovana osoba Czechy Brno	CERTIFIKAT VYROBKU	Kulove kohouty plynove pro PN16 az PN63 kurki kulowe PN16-63

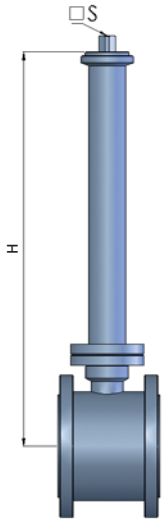
Ball valves intended for underground application come with stem extensions.
GAZOMET offers two types of extensions:

Rigid extension (KL_o, KL)
It is of constant height measured from the ball valve axis to the upper part of the stem or to the drive rotation axis.

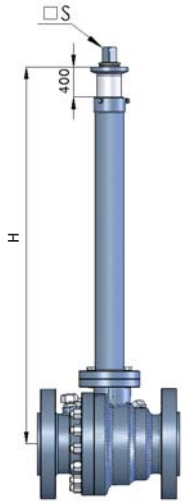
Telescopic extension (TC)
An extension of specified height with height regulation mode (400 mm). No drive can be mounted on a telescopic extension.



KL_o



KL



KT

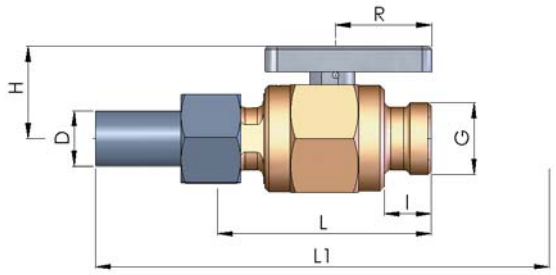
COLUMNS FOR BALL VALVES KL RIGID, KT (TELESCOPIC)					
Column	H*	S	Weight	Application for valves	
	mm	mm	kg	Type of ball valve	DN
KT-22-A	850÷1150	22	11,2	BVn, BVs KDK, KDS	32, 40, 50, 65, 80, 100 40, 50, 80
KT-22-B	1200÷1600		14,7		
KT-22-C	1600÷2000		17,5		
KT-22-D	1900÷2300		19,6		
KT-27-A	850÷1150	27	15,4÷19,4	BVn, BVs KDK, KDS	100, 125, 150 100
KT-27-B	1200÷1600		19,8÷23,4		
KT-27-C	1600÷2000		23,4÷27,4		
KT-27-D	1900÷2300		26,6÷30,6		
KL-22	acc. to requirements	22	-	BVn, BVs KDK, KDS	32, 40, 50, 65, 80, 100 40, 50, 80
KL-27		27	-	BVn, BVs KDK, KDS	100, 125, 150 100
KL-36		36	-	BVn, BVs	200
KL_o		-	-	NOK, NOS	150÷500

* Dimensions demonstrate slight differences depending on the ball valve type and size.

Notes:
1. The “H” dimension can be changed on the Customer’s request.
2. KL_o extensions, in their standard configuration, feature a vent plug.

KOM

A full bore ball valve, bi-directional, mountable in any position by spherical-conical joint. The ball valve housing is made of brass and a screwed-in connector pipe.
The stem features a blow-out protection and is mounted together with the sealing set on the inside of the body. The ball “floats” between two seals, one seal set in the body and the other in the connector pipe.



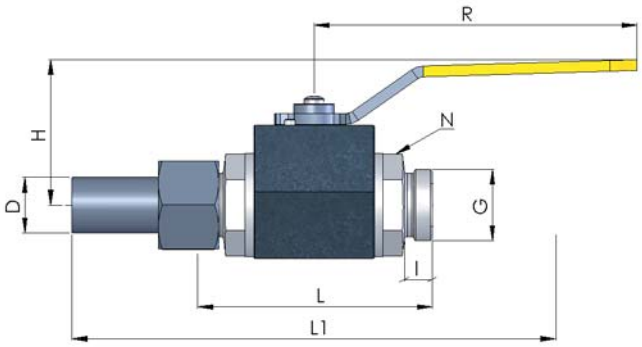
Standard accessories:
wrench

Optional accessories:
connector pipes

KOM									
	mm							inches	weight
PN	DN	L	L_1	H	D	R	I	G	kg
16	10	52	128	30	14	32	10	G ½”	0,4
	15	72	158	32	20	38	17	G ¾”	0,6
	20	100	195	43	25,8	45	22	G 1”	1,1
	25	130	225	51	32	155	19	G 1¼”	2,4

MATERIAL SPECIFICATION - KOM BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Acid-resistant cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitril rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
+			+			+			+				+			

A full bore ball valve, bi-directional, mountable in any position by spherical-conical joint. The ball valve housing is made of steel and two screwed-in connector pipes.
The stem has a blow-out protection and is mounted together with the sealing set from the body inside. The ball "floats" between two seals, set in the connector pipes.



Standard accessories:
wrench

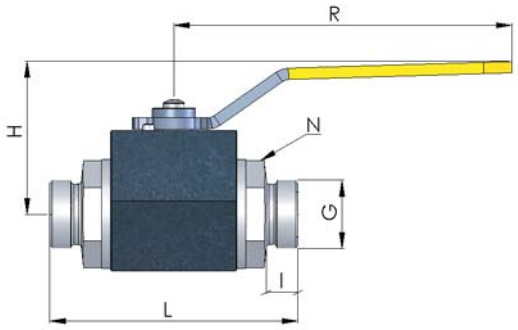
Optional accessories:
connector pipes

KOC										
	mm								inches	weight
PN	DN	L	L_1	H	D	R	I	N	G	kg
100	10	75	150	43	14	94	11	27	G ½"	0,64
	15	100	185	45	20	94	16	32	G ¾"	0,8
	20	130	225	65	25,8	150	23	41	G 1"	1,7
	25	130	225	67	32	150	20	50	G 1¼"	2,4

MATERIAL SPECIFICATION- KOC BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+		+	+			+				+		+			

KOZ

A full bore, bi-directional ball valve, mountable in any position with cutting rings – acc. to PN-ISO 8434-1. The ball valve housing is made of steel and two screwed-in connector pipes.
The stem has a blow-out protection and is mounted together with the sealing set on the inside of the body. The ball "floats" between two seals set in the connector pipes.



Standard accessories:
wrench

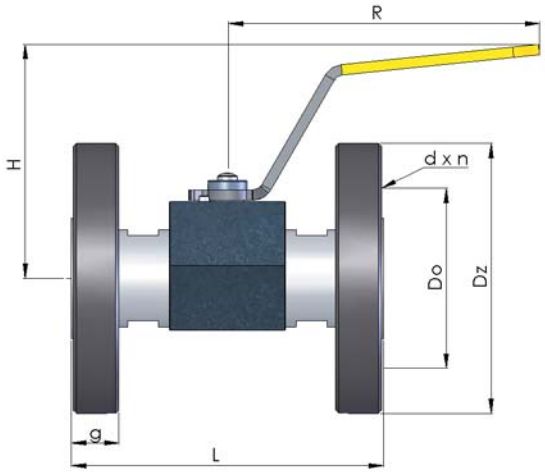
Optional accessories:
connector pipes

KOZ									
	mm							weight	Connector pipe
PN	DN	L	H	R	I	N	G	kg	
100	6	78	37	94	11	22	M14x1,5	0,35	ø 8x1
	8	78	37	94	11	22	M16x1,5	0,35	ø 10x1
	10	80	43	94	11	27	M18x1,5	0,65	ø 12x1
	15	90	45	94	12	32	M27x2 M26x1,5	0,74	ø 18x1,5
	20	110	65	150	14	41	M30x2	1,6	ø 22x1,5
	25	120	67	150	14	50	M36x2	2,11	ø 28x1,5

MATERIAL SPECIFICATION - KOZ BALL VALVE																	
Body			Ball			Stem			Ball seals				Other seals				
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+		+	+			+		+		+		+			

A full bore, bi-directional valve mountable in any position. The ball valve housing is made of steel, two screwed-in connector pipes and two loose flanges.
The stem has a blow-out protection and is mounted together with the sealing set on the inside of the body. The ball "floats" between two seals, set in the connector pipes.

In a standard version, flanges and valve face are made acc. to Table 1 (p.5)



Standard accessories:
wrench

Optional accessories:
mounting elements (flanges, seals, bolts, nuts)

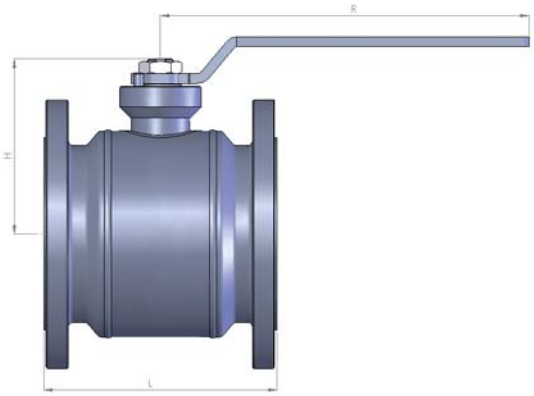
KOK										
	mm								pcs.	weight
PN	DN	L	H	R	D_z	g	D_o	d	n	kg
40	15	130	90	125	95	18	65	14	4	2,5
100		130	90	125	105	22	75	14	4	3,4
40	20	150	112	160	105	20	75	14	4	4,1
100		150	112	160	130	24	90	18	4	5,9
40	25	160	115	160	115	20	85	14	4	5,4
100		160	115	160	140	26	100	18	4	7,8

MATERIAL SPECIFICATION- KOK BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+		+	+			+				+		+			

BVn

Full way, bidirectional ball valve may be installed in any position. The valve body is made from steel frame welded into a uniform, undismountable part. The ball is situated in a “floating” manner between the gaskets mounted in the compensation rings.
The shank is protected against being blown out and mounted along with a set of seals from inside the body and it has got the ball sealing with **spring compensation**.

In a standard version, the flanges and valve faces are made acc. to the Table (p.5).



Standard accessories:
wrench

Optional accessories:
extension; drive; antistatic protection; mounting elements (flanges, seals, bolts, nuts)

BVn														
	mm												pcs.	weight
PN	DN	L	H	h[4]	s[4]	P	R	D_k	D_z	g	D_o	d_o	n	kg
16	32	130	104,5	30	17	-	200	76	140	18	100	18	4	6
	40	140	108,5	30	17	-	200	82,5	150	18	110	18	4	6,8
	50	150	116	30	17	-	200	89	165	18	125	18	4	8,3
	65	170	127	30	17	-	200	115	185	18	145	18	8[1]	11
	80	180	145	35	22[3]	-	300	140	200	20	160	18	8	14,8
	100	190	160,5	35	22[3]	-	300	168	220	20	180	18	8	18
	125	325	200,5	43	27	-	600	219	250	22	210	18	8	44
	150	350	220,5	43	27	-	600	273	285	22	240	22	8	59
	200	400	235	2)	2)	230	2)	324	340	24	295	22	12	90
20	32	-	-	-	-	-	-	-	-	-	-	-	-	-
	40	140	108,5	30	17	-	200	82,5	127	19,1	98,4	15,9	4	6,8
	50	150	116	30	17	-	200	89	152	20,6	120,6	19	4	8,3
	65	170	127	30	17	-	200	115	178	23,8	139,7	19	4	11
	80	180	145	35	22[3]	-	300	140	190	24	152,4	19	8	14,8
	100	190	160,5	35	22[3]	-	300	168	229	25,4	190,5	19	8	18
	125	325	200,5	43	27	-	600	219	254	25,4	215,9	22,2	8	44
	150	350	220,5	43	27	-	600	273	279	27	541,3	22,2	8	59
	200	400	235	2)	2)	230	2)	324	343	30,2	298,4	22,2	8	90

BVn														
	mm												pcs.	weight
PN	DN	L	H	h[4]	s[4]	P	R	D_k	D_z	g	D_o	d_o	n	kg
25	32	130	104,5	30	17	-	200	76	140	18	100	18	4	6
	40	140	108,5	30	17	-	200	82,5	150	20	110	18	4	6,8
	50	150	116	30	17	-	200	89	165	20	125	18	4	8,3
	65	170	127	30	17	-	200	115	185	22	145	18	8	11
	80	180	145	35	22[3]	-	300	140	200	24	160	18	8	14,8
	100	190	160,5	35	22[3]	-	300	168	235	24	190	22	8	18
	125	325	200,5	43	27	-	600	219	270	26	220	26	8	44
	150	350	220,5	43	27	-	600	273	300	26	250	28	8	59
	200	400	235	[2]	[2]	230	[2]	324	360	30	310	26	12	90

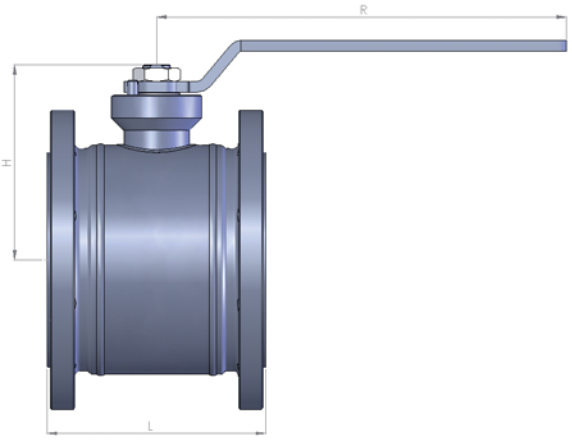
[1] the number of openings needs to be agreed on (8 or 4)
[2] the ball valve with a transmission
[3] for the ball valves intended for the SK heads - the value of s=17
[4] applicable only for the ball valves intended for: heads, drives, columns etc.

MATERIAL SPECIFICATION- BVn BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+			+			+	+	+				+			

BVk

Full way, bidirectional ball valve may be installed in any position. The valve body is made from steel frame welded into a uniform, undismountable part. The ball is situated in a “floating” manner between the gaskets mounted in the compensation rings.
The shank is protected against being blown out and mounted along with a set of seals from inside the body and it has got the ball sealing with **spring compensation**.

In a standard version, the flanges and valve faces are made acc. to the Table (p.5).



Standard accessories:
wrench

Optional accessories:
extension; drive; antistatic protection; mounting elements (flanges, seals, bolts, nuts)

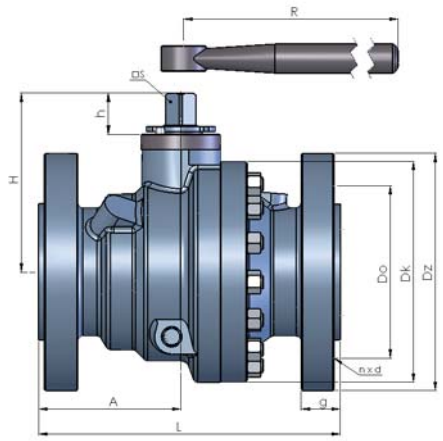
BVk													
	mm											pcs.	weight
PN	DN	L	H	h[3]	s[3]	R	D_k	D_z	g	D_o	d_o	n	kg
16	32	90	104,5	30	17	200	76	140	18	100	M16	4	5
	40	100	108,5	30	17	200	82,5	150	18	110	M16	4	6
	50	110	116	30	17	200	89	165	18	125	M16	4	7
	65	130	127	30	17	200	115	185	18	145	M16	8[1]	9,5
	80	140	145	35	22[2]	300	140	200	20	160	M16	8	12,8
	100	160	160,5	35	22[2]	300	168	220	20	180	M16	8	16
	150	240	220,5	43	27	600	273	285	-	240	M20	8	44,5

[1] the number of openings needs to be agreed on (8 or 4)
[2] for the ball valves intended for the SK heads - the value of s=17
[3] applicable only for the ball valves intended for: heads, drives, columns etc.

MATERIAL SPECIFICATION- BVk BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+			+			+	+	+				+			

A full bore, bi-directional valve, mountable in any position. The valve body is made of two cast iron castings joined with bolts. The stem has a blow-out protection and is mounted together with the sealing set on the inside of the body. Moreover the stem features a multi-stage sealing system with a fireproof packing. The upper seal can be replaced while the valve is in operation.
In the DN40 and DN 50 valves, the ball is “floating”, while in the DN80 and DN100 valves, the ball is set in trunnions. In this valve, the ball is connected with the stem by **a cross coupling** and the ball seal is **spring compensated**.

In a standard version, the flanges and valve faces are made acc. to the Table (p.5)



Special version
KDKa-DN50 - a fireproof ball valve with metal-metal sealing.

Standard accessories:
wrench; vent plug

Optional accessories:
extension; drive; antistatic protection; mounting elements (flanges, seals, bolts, nuts)

KDK/KDKa

	mm												pcs.	weight
PN	DN	L	A	H	h	s	R	D_k	D_z	g	D_o	d_o	n	kg
50	40	241	116	130	32	17	350	142	155	21	114,5	22	4	16,8
63		241	116	130	32	17	350	142	170	28	125	22	4	20,5
100		241	116	130	32	17	350	142	170	28	125	22	4	20,5
110		241	116	130	32	17	350	142	155	29,5	114,5	22	4	17,4
50	50	230	90	148	38	22	500	157	165	22,5	127	18	8	20,9
63		230	90	148	38	22	500	157	180	26	135	22	4	24,3
100		230	90	148	38	22	500	157	195	30	145	26	4	26,5
110		230	90	148	38	22	500	157	165	32,5	127	18	8	22,3
50	80	310	145	178	38	22	500	226	210	29	168,5	22	8	46,1
63		310	145	178	38	22	500	226	215	28	170	22	8	47,2
100		310	145	178	38	22	500	226	230	36	180	26	8	52,2
110		310	145	178	38	22	500	226	210	39	168,5	22	8	47,7
50	100	350	165	208	48	27	600	256	255	32	200	22	8	71,7
63		350	165	208	48	27	600	256	250	30	200	26	8	72,1
100		350	165	208	48	27	600	256	265	40	210	30	8	77,6
110		350	165	208	48	27	600	256	275	45,5	216	26	8	80,3

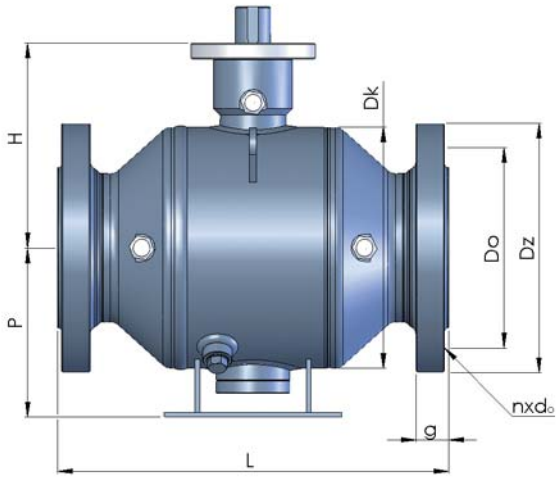
KDK / KDKa

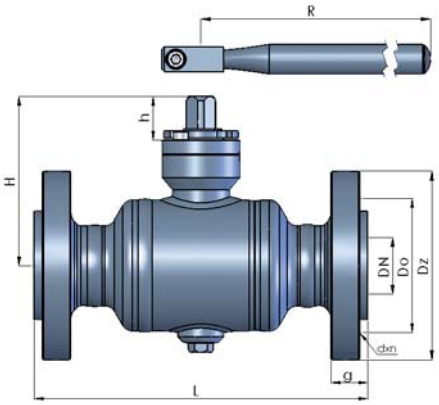
MATERIAL SPECIFICATION –KDK BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
		+		+	+		+				+		+	+		+

MATERIAL SPECIFICATION - KDKa BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
		+		+	+		+					+	+	+		+

A full bore, bi-directional valve, mountable in any position. The seal body is a single non-disassemblable unit. The stem features a blow out protection and is mounted either from the inside of the body or from the outside and protected with a flange.
The stem features a multi stage-sealing with a fireproof packing. The upper seal can be replaced wile the valve is in operation. Depending on the valve size and pressure, the ball is either “floating” or set in trunnions.

In standard versions, the flanges and valve faces are made acc. to Table 1. (p.5)





Standard accessories:
worm gear or wrench; vent plug; anti-static protection

Optional accessories:
extension; drive; vent plug; safety sealing system; mounting elements (flanges, seals, bolts, nuts)

NOK														
	mm												pcs.	weight
PN	DN	L_{RF}	L_{RTJ}	P	R	H	h	D_k	D_z	D_o	d_o	g	n	kg
100	25	216	-	-	200	108	28	76,1	140	100	18	24	4	11
class 600		216	-	-	200	108	28	76,1	125	89	18	24,5	4	11
150		254	254	-	200	108	28	85	150	101,5	26	36	4	13
260		254	254	-	200	108	28	85	150	101,5	26	36	4	13
420		-	308	-	400	126	30	115	160	108	26	41,35	4	21
63	50	292	-	85	500	148	38	114	180	135	22	26	4	21
100		292	-	85	500	148	38	114	195	145	26	28	4	23
class 600		292	-	85	500	148	38	114	165	127	18	32,5	8	23
150		368	368	-	500	162	34	150	216	165	26	45,5	8	42
260		368	368	-	500	162	34	150	215	165	26	45,5	8	45
420		-	454	-	-	211	-	169	235	1717,5	29,5	51	8	63
63	80	356	-	114	500	182	38	168	215	170	22	28	8	48
100		356	-	114	500	182	38	168	230	180	26	32	8	50
class 600		356	-	114	500	182	38	168	210	168,5	22	39	8	45
150		470	-	140	-	202	42	219	240	190,5	26	46,5	8	100
260		470	(470)	140	-	202	42	219	265	203	32,5	56	8	105
420		-	584	180	-	191	-	234	305	228,5	35,5	67	8	152

NOK

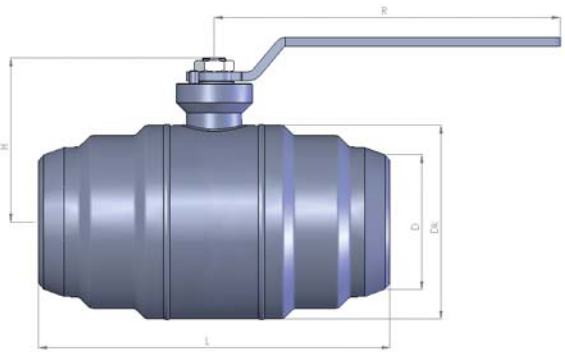
NOK														
	mm												pcs.	weight
PN	DN	L_{RF}	L_{RTJ}	P	R	H	h	D_k	D_z	D_o	d_o	g	n	kg
63	100	432	-	140	600	217	48	219	250	200	26	30	8	84
100		432	-	140	600	217	48	219	265	210	30	36	8	85
class 600		432	-	140	600	217	48	219	275	216	26	45,5	8	88
150		546	-	211	-	252	-	310	290	235	32,5	52,4	8	95
260		546	549	211	-	252	-	310	310	241,5	35,5	61,9	8	100
63	150	559	-	245	-	225	-	298	345	280	33	36	8	194
100		559	-	245	-	225	-	298	355	290	33	44	12	194
class 600		559	-	245	-	225	-	298	355	292	29,5	55	12	194
class 900		610	613	245	-	225	-	298	380	317,5	32,5	63	12	210
63	200	660	-	285	-	344	-	406	415	345	36	42	12	340
100		660	-	285	-	344	-	406	430	360	36	52	12	351
class 600		660	-	285	-	344	-	406	420	349	32,5	55,5	12	351
class 900		737	740	285	-	344	-	424	470	393,5	39	70,5	12	463
16	250	787	-	330	-	370	-	475	405	355	26	26	12	315
20		787	-	330	-	370	-	475	405	362	26	30,5	12	315
25		787	-	330	-	370	-	475	425	370	30	32	12	315
class 150		787	-	330	-	370	-		406	362	25,4	31,8	12	315
63		787	-	330	-	370	-	475	470	400	36	46	12	510
100		787	-	330	-	370	-	475	505	430	39	60	12	510
class 600		787	-	330	-	370	-	475	510	432	35,5	63,5	16	510
class 900		838	841	330	-	397	-	495	546	470	39	77	16	730
16	300	838	-	380	-	432	-	590	460	410	26	28	12	485
20		838	-	380	-	432	-	590	485	432	26	32	12	485
25		838	-	380	-	432	-	590	485	430	30	34	16	485
class 150		838	-	380	-	432	-	590	483	431,8	25,4	33,4	12	485
63		838	-	380	-	432	-	590	530	460	36	52	16	754
100		838	-	380	-	432	-	590	585	500	42	68	16	754
class 600		838	-	380	-	432	-	590	560	486	35,5	67	20	754
16	350	889	-	420	-	420	-	640	520	470	26	30	16	525
20		889	-	420	-	420	-	640	535	476	29,5	35	12	525
25		889	-	420	-	420	-	640	550	490	33	38	16	525
class 150		889	-	420	-	420	-	640	533	476,2	28,6	36,5	12	525
63		889	-	420	-	420	-	640	600	525	39	56	16	895
100		889	-	420	-	420	-	640	655	560	48	74	16	895
class 600		889	-	420	-	420	-	640	605	527	39	72	20	895
16	400	991	-	465	-	548	-	734	580	525	30	32	16	927
20		991	-	465	-	548	-	734	600	540	29,5	37	16	927
25		991	-	465	-	548	-	734	620	550	36	40	16	927
class 150		991	-	465	-	548	-	734	597	539,8	28,6	38,1	16	927
63		991	-	465	-	548	-	734	670	585	48	60	16	1420
100		991	-	465	-	548	-	734	715	620	48	78	16	1420
class 600		991	-	465	-	548	-	734	685	603	42	76,5	20	1420
class 900		1130	1140	465	-	557	-	710	705	616	45	100	20	1831
16	500	1194	-	555	-	680	-	850	715	650	33	44	20	1650
20		1194	-	555	-	680	-	850	700	635	32,5	43	20	1650
25		1194	-	555	-	680	-	850	730	660	36	48	20	1650
class 150		1194	-	555	-	680	-	850	698	635	31,8	44,5	20	1650
63		1194	-	555	-	680	-	850	800	705	48	68	20	2470
100		1194	-	555	-	680	-	850	870	760	56	94	20	2470
class 600		1194	-	555	-	680	-	850	815	724	45	91	24	2470

MATERIAL SPECIFICATION – NOK BALL VALVE																
Body			**Ball**			**Stem**			**Ball seals**				**Other seals**			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+			+	+		+	+		+	+		+			+

BVs

Full way, bidirectional ball valve may be installed in any position. The valve body is made from steel frame welded into a uniform, undismountable part. The ball is situated in a “floating” manner between the gaskets mounted in the compensation rings.
The shank is protected against being blown out and mounted along with a set of seals from inside the body and it has got the ball sealing with spring compensation.

In a standard version, the flanges and valve faces are made acc. to the Table (p.5).



Standard accessories:
wrench

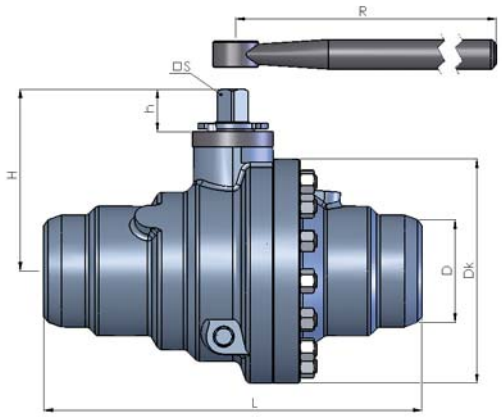
Optional accessories:
extension; drive; antistatic protection

BVs										
	mm									weight
PN	DN	L	H	h	s	P	R	D_k	D	kg
25	32	178	104,5	30	17	-	200	76	42,4	3,5
	40	190	108,5	30	17	-	200	82,5	48,3	4,2
	50	216	116	30	17	-	200	89	60,3	4,6
	65	241	127	30	17	-	200	115	76,1	7,8
	80	283	145	35	22	-	300	140	88,9	13,5
	100	305	160,5	35	22	-	300	168	114,3	19,5
	125	381	200,5	43	27	-	600	219	139,7	41,2
	150	457	220,5	43	27	-	600	273	168,3	69
	200	600	235	[1]	[1]	230	[1]	324	219,1	127

[1] the ball valve with a transmission

MATERIAL SPECIFICATION- BVs BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Polacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+			+			+	+	+				+			

A full bore, bi-directional ball valve, mountable in any position. The valve body is made of two cast iron castings joined with bolts. The stem features a a blow-out protection and is mounted on the inside of the body. Moreover the stem features a multi-stage sealing system with a fireproof packing. The upper seal can be replaced while the valve is in operation.
In the DN40 and DN50 valves, the ball “floats” wheras in the DN80 and DN100, it is mounted in trunnions. In this valve, the ball is linked with the stem by **a cross coupling** and the ball sealing is **spring compensated**.



Special version:
KDSa-DN50 - a fireproof ball valve with metal-metal sealing.

Standard accessories:
wrench; vent plug

Optional accessories:
extension; drive; antistatic protection, safety sealing

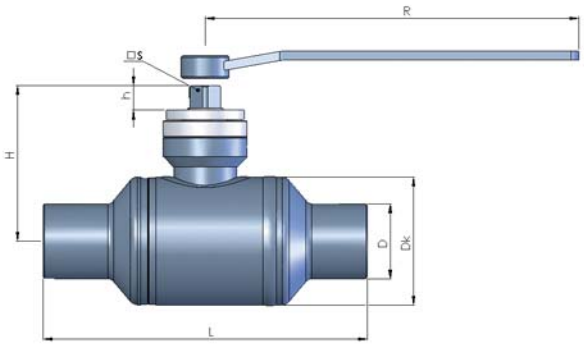
KDS/KDSa									
	mm								weight
PN	DN	L	H	h	s	R	D_k	D	kg
110	40	241	130	32	17	350	142	48,3	10,5
	50	292	148	38	22	500	157	60,3	15,5
	80	356	178	38	22	500	226	88,9	38,0
	100	432	208	48	27	600	256	114,3	60,0

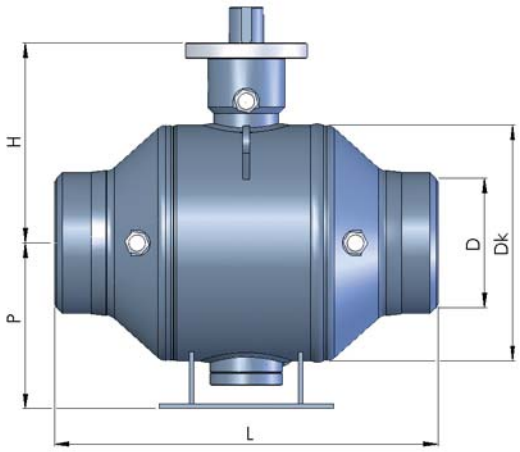
MATERIAL SPECIFICATION - KDS BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
		+		+	+		+				+		+	+		+

MATERIAL SPECIFICATION – KDSa BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
		+		+	+		+					+	+	+		+

NOS

A full bore, bi-directional ball valve can be mounted in any position. The valve housing is a steel, welded non-disassemblable unit. The stem is protected against blowing off and mounted either on the inside or the outside of the body with a protective flange. Moreover the stem features a multi-stage sealing system with a fireproof packing. The upper seal can be replaced while the valve is in operation.
Depending on the valve size and pressure, the ball either “floats” or is set in trunnions.





Standard accessories:
worm gear or wrench; vent plug; antistatic protection

Optional accessories:
extension; drive; vent plug; safety sealing

NOS										
	mm									weight
PN	DN	L	P	R	H	s	h	D_k	D	kg
110	25	216	-	200	108	17	28	76,1	33,7	4,7
260		254	-	200	108	17	28	85	33,7	6,5
260	50	368	-	500	162	22	34	150	60,3	28
260	80	470	140	-	202	27	42	219	88,9	72
260	100	546	211	-	252	-	-	310	114,3	93
110	150	559	210	-	225	-	-	298	168,3	144
class 900		610	210	-	225	-	-	298	168,3	210
110	200	660	285	-	344	-	-	406	219,1	288
class 900		737	285	-	344	-	-	424	219,1	350
25	250	559	330	-	370	-	-	406	273	285
110		787	330	-	370	-	-	475	273	420
class 900		838	330	-	397	-	-	495	273	600
25	300	635	380	-	432	-	-	590	323,9	445
110		838	380	-	432	-	-	590	323,9	638
25	350	762	420	-	420	-	-	640	355,6	510
110		889	420	-	420	-	-	640	355,6	715
25	400	838	465	-	548	-	-	734	406,4	904
110		991	465	-	548	-	-	734	406,4	1150
class 900		1130	465	-	557	-	-	710	406,4	1614
25	500	991	555	-	680	-	-	850	508	1540
110		1194	555	-	680	-	-	850	508	2145

MATERIAL SPECIFICATION - NOS BALL VALVE																
Body			Ball			Stem			Ball seals				Other seals			
Brass	High pressure steel	High pressure cast steel	Alloy steel (with Cr5Ni coating)	Stainless steel	Stainless cast steel	Brass	High-alloy steel	Carbon steels	Polytetrafluoro-ethylene	Polytetrafluoro-etylene + filler	Poliacetal	High-alloy steel	Nitrile rubber	Silicone rubber	Ethylene-propylene rubber	Graphite
	+			+	+		+	+			+		+			+

...everything in one hand

...everything in one hand

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- production organisation - guarantee of reliability;
- highly qualified staff;
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PRODUCTION PROGRAMME OF BALL VALVES FOR GAS, OIL, WATER AND OTHER MEDIA

ANSI-Class	PN																				
2500	420						NOK			NOK		NOK									
1500	260						NOK			NOK		NOK	NOK		NOK	NOK					
							NOS			NOS		NOS	NOS								
900	150						NOK			NOK		NOK	NOK		NOK	NOK	NOK			NOK	
															NOS	NOS	NOS			NOS	
600	110								KDK	KDK		KDK	KDK								
									KDS	KDS		KDS	KDS								
										KDKa											
										KDSa											
							NOK			NOK					NOK	NOK	NOK	NOK	NOK	NOK	NOK
							NOS								NOS	NOS	NOS	NOS	NOS	NOS	NOS
	100			KOC	KOC	KOC	KOC		KDK	KDK		KDK	KDK								
					KOK	KOK	KOK			KDKa											
		KOZ	KOZ	KOZ	KOZ	KOZ	KOZ														
							NOK			NOK					NOK	NOK	NOK	NOK	NOK	NOK	NOK
	63								KDK	KDK		KDK	KDK								
										KDKa											
													NOK		NOK	NOK	NOK	NOK	NOK	NOK	NOK
300	50								KDK	KDK		KDK	KDK								
	40				KOK	KOK	KOK														
	25																				
								BVs	BVs	BVs	BVs	BVs	BVs	BVs	BVs	BVs					
								BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	NOK	NOK	NOK	NOK	NOK
																	NOS	NOS	NOS	NOS	NOS
150	20																				
									BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	NOK	NOK	NOK	NOK	NOK
	16			KOM	KOM	KOM	KOM										NOK	NOK	NOK	NOK	NOK
								BVk	BVk	BVk	BVk	BVk	BVk		BVk						
								BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn	BVn					
ANSI-Class	DN	6	8	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
		1/4"	5/16"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	20"

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GERMANY

Honeywell Process Solutions
RMG Regel + Messtechnik GmbH
Osterholzstrasse 45
34123 Kassel, Germany
Phone: +49 (0)561 5007-0
Fax: +49 (0)561 5007-107

Honeywell Process Solutions
RMG Messtechnik GmbH
Otto-Hahn-Strasse 5
35510 Butzbach, Germany
Phone: +49 (0)6033 897-0
Fax: +49 (0)6033 897-130

Honeywell Process Solutions
RMG Gaselan Regel + Messtechnik GmbH
Julius-Pintsch-Ring 3
15517 Fürstenwalde, Germany
Phone: +49 (0)3361 356-60
Fax: +49 (0)3361 356-836

Honeywell Process Solutions
WÄGA Wärme-Gastechnik GmbH
Osterholzstrasse 45
34123 Kassel, Germany
Phone: +49 (0)561 5007-0
Fax: +49 (0)561 5007-207

POLAND

Honeywell Process Solutions
Gazomet Sp. z o.o.
ul. Sarnowska 2
63-900 Rawicz, Poland
Phone: +48 65 545 02 00
Fax: +48 65 546 24 08

ENGLAND

Honeywell Process Solutions
Bryan Donkin RMG Gas Controls Ltd.
Enterprise Drive, Holmewood
Chesterfield S42 5UZ, England
Phone: +44 (0)1246 501-501
Fax: +44 (0)1246 501-500

CANADA

Honeywell Process Solutions
Bryan Donkin RMG Canada Ltd.
50 Clarke Street South, Woodstock
Ontario N4S 0A8, Canada
Phone: +1 (0)519 53 98 531
Fax: +1 (0)519 53 73 339

USA

Honeywell Process Solutions
Mercury Instruments LLC
3940 Virginia Avenue
Cincinnati, Ohio 45227, USA
Phone: +1 (0)513 272-1111
Fax: +1 (0)513 272-0211

TURKEY

Honeywell Process Solutions
RMG GAZ KONT. SIS. ITH. IHR. LTD. STI.
Birlik Sanayi Sitesi, 6.
Cd. 62. Sokak No: 7-8-9-10
TR - Sasmaz / Ankara, Turkey
Phone: +90 (0)312 27810-80
Fax: +90 (0)312 27828-23

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