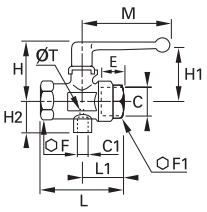
Universal Series, Vented

0489 3/2 In-Line Vented Ball Valve, Female BSPP and Metric Thread



Nickel-plated brass, NBR



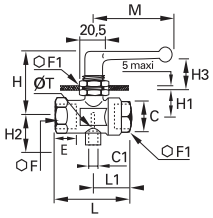
C	C1	DN		E	F	F1	H	H1	H2	L	L1	M	ØT	kg
G1/4	M5x0.8	7	0489 07 13	12	24	24	46	43	17	59	31	69	2	0.270
G3/8	M5x0.8	10	0489 10 17	12	24	24	46	43	17	59	31	69	2	0.243
G1/2	G1/8	13	0489 13 21	15	27	27	47	44	24	67	34	69	2	0.310
G3/4	G1/4	18	0489 18 27	16.5	32	38	63	54	33	80	39	108	2.5	0.670
G1	G1/4	23	0489 23 34	19	41	46	67	57	37	94	47	108	3	1.050

Maximum working pressure: 40 bar

0449 3/2 Panel-Mountable In-Line Ball Valve, Female BSPP and Metric Thread



Nickel-plated brass, NBR



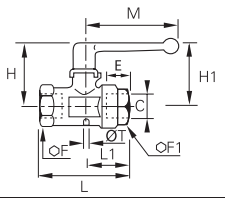
C	C1	DN		E	F	F1	H	H1	H2	H3	L	L1	M	ØT	kg
G1/4	M5x0.8	7	0449 07 13	12	24	27	50	20	17	21	59	31	69	2.5	0.313
G3/8	M5x0.8	10	0449 10 17	12	24	27	50	20	17	21	59	31	69	2.5	0.291
G1/2	G1/8	13	0449 13 21	15	27	27	52	23	24	21	67	34	69	4	0.352

Maximum working pressure: 20 bar

0469 3/2 In-Line Vented Ball Valve, Female BSPP Thread



Nickel-plated brass, NBR

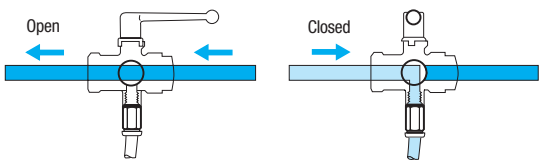


C	DN		E	F	F1	H	H1	L	L1	M	ØT	kg
G1/8	4	0469 04 10	8	14	14	35	29	44	25	48	1.5	0.092
G1/4	7	0469 07 13	12	24	24	46	43	59	31	70	2	0.268
G3/8	10	0469 10 17	12	24	24	46	43	59	31	70	2	0.246
G1/2	13	0469 13 21	15	27	27	47	44	67	34	70	2	0.294
G3/4	18	0469 18 27	16.5	32	38	63	54	80	39	108	2.5	0.668
G1	23	0469 23 34	19	41	46	67	57	94	47	108	3	1.026

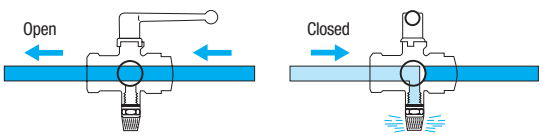
Maximum working pressure: 40 bar

Operation of Vented Ball Valves

With vent connected to a tube = collection of purged media



With vent connected to a silencer = noiseless discharge to atmosphere



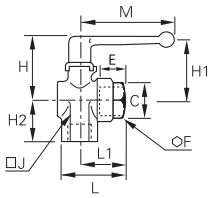
You will find our ranges of fittings, tubing and silencers in Chapters 1, 3 and 9.

Universal Series, Vented

0462 3/2 Right-Angled Ball Valve with Vent, Female BSPP Thread



Nickel-plated brass, NBR



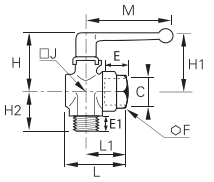
C	DN		E	F	H	H1	H2	J	L	L1	M	kg
G1/8	6	0462 06 10	8	19	38	31	20	22	37	27	48	0.192
G1/4	6	0462 06 13	12	19	38	31	24	22	38	28	48	0.185
G3/8	9	0462 09 17	12	24	45	43	27	25	46	31	69	0.261
G1/2	12	0462 12 21	15	27	47	44	33	29	49	34	69	0.312
G3/4	18	0462 18 27	16.5	38	59	51	40	39	60	39	108	0.698
G1	23	0462 23 34	19	46	63	55	47	48	72	47	108	1.066

Maximum working pressure: 20 bar

0461 3/2 Right-Angled Ball Valve with Vent, Male/Female BSPP Thread



Nickel-plated brass, NBR

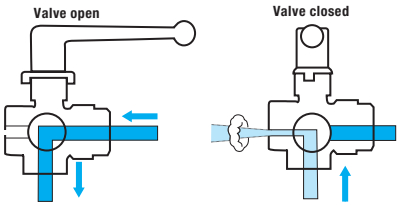


C	DN		E	E1	F	H	H1	H2	J	L	L1	M	kg
G1/8	6	0461 06 10	8	7	19	38	31	20	22	37	27	48	0.182
G1/4	6	0461 06 13	12	9	19	38	31	24	22	38	28	48	0.186
G3/8	9	0461 09 17	12	11	24	45	43	27	25	46	31	69	0.257
G1/2	12	0461 12 21	15	12	27	47	44	33	29	49	34	69	0.304
G3/4	18	0461 18 27	16.5	12	38	59	51	40	39	60	39	108	0.648

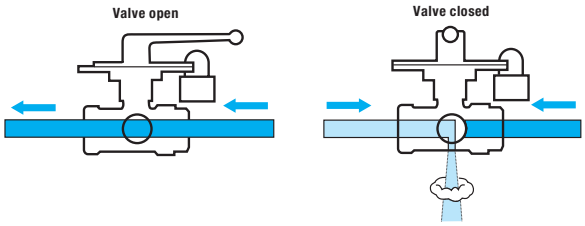
Maximum working pressure: 20 bar

Operation of Right-Angled Vented Ball Valves

With pin-hole vent = purge to atmosphere without silencer



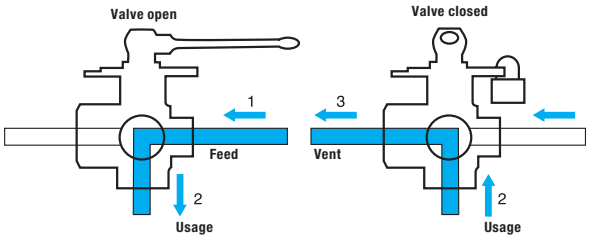
Operation of Lockable Vented Ball Valves



Removable lever: where the lever is obstructed in its movement, it can be refitted the opposite way.

Operation of 3/2 Lockable Valves

Drilled below and square in the horizontal plane, these valves provide a connection between:
either port 1 and port 2, or port 2 and port 3.



Removable lever: where the lever is obstructed in its movement, it can be refitted the opposite way.

Ball Valves, Universal Series

This range of valves has patented **seal wear compensating** technology for **reliable** and **durable** sealing, **protecting** any system whether under pressure or **vacuum**.

Product Advantages

Durability & Reliability

- Automatic seal wear compensation for long-term reliability
- Robust, corrosion-resistant materials
- 100% leak-tested in production
- Date coding to guarantee quality and traceability

Versatility & Performance

- Ideal for ensuring the performance of pneumatic circuits
- Customised valves for all special applications
- Unequalled performance under vacuum
- Smooth operation thanks to self-lubricating seals
- Large range of working pressures and temperatures
- Lever can be repositioned and replaced
- Many configurations to satisfy all system requirements



Applications

Pneumatics
Vacuum
Transportation
Packaging
Textile
Sawmill
Rubber & Plastics

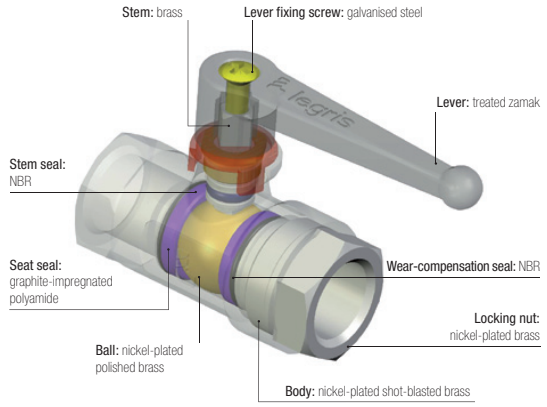
Technical Characteristics

Compatible Fluids	Industrial fluids
Working Pressure	Vacuum to 40 bar
Working Temperature	-20°C to + 80°C

Tightening Torques	Threads	G1/8	G1/4	G3/8	G1/2	G3/4	G1
	daN.m	0.10 to 0.20	0.10 to 0.20	0.15 to 0.25	0.20 to 0.35	0.50 to 0.70	0.50 to 0.70
	Threads	G1¼	G1½	G2			
	daN.m	0.40 to 0.60	0.80 to 1.20	0.80 to 1.20			

Reliable performance is dependent upon the type of fluid conveyed, component materials and tubing being used.
Guaranteed for use with a vacuum of 755 mm Hg (99 % vacuum).

Component Materials



Silicone-free

Regulations

DI: 97/23/EC (module PED A - diameters greater than 25 mm)
DI: 2006/42/EC (Machinery Directive)
DI: 2002/95/EC (RoHS)
RG: 1907/2006 (REACH)

Universal Series

Installation Options

Lockable Valves

Our lockable ball valves have been developed in order to prevent potentially dangerous consequences caused by unintended operation. Lockable in different positions, this range meets international safety requirements, such as ISO 4414.

The valves are lockable:

- at one point: models 0432 and 0439
- at three points: models 0437 and 0438

Vented Valves

To stop fluid circulation and vent the circuit, 2 venting systems are provided:

- with threaded exhaust, to allow discharge of downstream media
- with pin-hole vent, for applications with no special discharge requirement

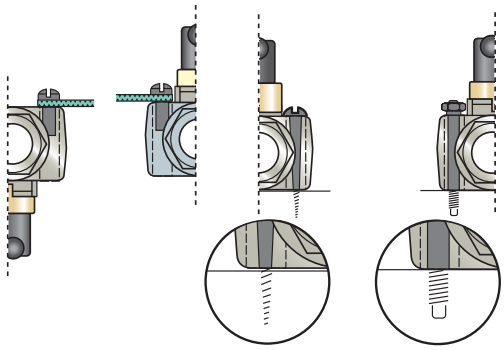
Fluid flow direction is indicated by an arrow on the valve body.

Mountable Valves

On steel plate:
- bulkhead fixing
- complete valve below bulkhead

On frame:
- assemble with bolts

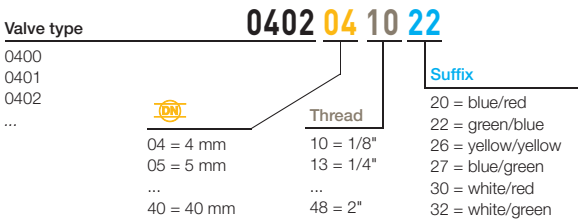
On wooden panel:
- assemble with woodscrews



Universal Customised Valve Series

Based on the standard components of the universal series, this range allows the valve to be adapted to specific needs.
There are 6 product versions available on request.

Product Codes



Identification

Each series may be easily identified by a colour marking on the lever.



Suffix Specification

Identification		Body		Lever			Ball		Stem and Wear-Compensation Seals			Seat Seals			Application Examples
Suffix on the body	Colour bands on the lever	Nickel-plated brass	Chemical nickel-plated brass	Standard	Nickel-plated brass	Chemical nickel-plated brass	Nickel-plated polished brass	Chemical nickel-plated brass	EPDM	FKM	PTFE white	Rilsan: graphite-impreg-nated	Filled PTFE	PTFE white	
20		●		●			●			●		●			Hydrocarbons
22		●		●				●		●			●		Industrial fluids and high temperature
26*		●			●			●			● olive			●	Corrosive liquids or high temperature
27			●			●		●		●			●		Industrial fluids and/or harsh environments
30**		●		●			●		●			●			Gaseous oxygen circuits
32		●		●				●	●				●		Water and steam circuits

*degreased **oxygen-compatible grease

A usage chart in this chapter shows which type of valve to use according to the fluid being conveyed.

Ball Valves: Usage Chart

The chart below shows the compatibility between valves and fluids along with their pressure and temperature characteristics.

Certain models have a maximum working pressure which differs from that given in this table. In this case, the pressure is shown in the heading for the model number in question.

N.B.: Above 32 mm or 1¼" diameters, divide the maximum pressure by 2.

If the fluid you are using is not shown in this chart, please contact us.

Chemical Description	Maximum Pressure (bar)	Temperature °C		Universal and Light Series	Standard Series	DVGW series	Customised Series					
		Min.	Max.				20	22	26	27	30	32
"Aromatic" hydrocarbons	20	-20	+60					●				
Acetone and other ketones	20	-20	+60									●
Acetophenone	20	-20	+60									●
Acetylene - Acetone	20	-20	+60									●
Acetylene (gas)	20	-20	+60	●	●	●						
Alcohol (100%)	20	-20	Boiling									●
Aluminium (liquid suspension, thick)	40	-20	+90	●	●	●						
Amyl alcohol	20	-20	Boiling									●
Animal fats, greases	20	+5	+200		●	●			●			
Antifreeze or glycol (diluted)	40	-20	+40	●	●	●						
Argon (gas) Ar	20	-20	+60	●	●	●						
Barium - Hydroxide	20	-20	+40									●
Benzaldehyde	20	-20	+60									●
Benzene	20	-20	+60					●				
Benzyl alcohol	20	-20	Boiling					●				
Borax (pastes or solutions)	20	-20	+60									●
Brake fluids (automobile)	20	-20	+90									●
Bromochlorotrifluorethane	20	-20	+60		●	●			●			
Butadiene (hydrocarbon)	20	-20	+60							●		
Butane	20	-20	+60	●	●	●						
Butanol	20	-20	Boiling					●				
Butyl alcohol	20	-20	Boiling					●				
Butylene (hydrocarbon)	20	-20	+60					●				
Carbon dioxide gas CO_2	40	-20	+60	●	●							
Castor oil	40	-20	+90	●	●							
Compressed air	20	-25	+180					●				
Creosotes	20	-20	+60							●		
Cresols	20	-20	+60							●		
Crude oil	20	-20	+40				●					
Cutting oil	40	-20	+90	●	●							
Decalin (hydrocarbon, solvent)	20	-20	+60							●		
Detergents (solutions)	20	-20	+100									●
Diacetone alcohol	20	-20	Boiling									●
Diesel oils	40	-20	+90	●	●							
Di-Esters	20	-20	+90					●				
Di-Isobutylene	20	-20	+60							●		
Di-Pentane	20	-20	+60					●				

The above recommendations are given in good faith. However, since each application is different, it is advisable to undertake tests in actual working conditions.

Ball Valves: Usage Chart

Chemical Description	Max. Pressure (bar)	Temperature °C		Universal and Light Series	Standard Series	DVGW Series	Customised Series					
		Min.	Max.				20	22	26	27	30	32
Di-Pentene (solvents, varnish)	20	-20	+60					●				
Di-Phenyl-Oxide (thin detergents)	20	-20	+60							●		
Distilled water	40		+90	●	●	●						
Edible fats	20	+5	+200		●				●			
Edible oils	20	+5	+200		●				●			
Erytrene (see Butadiene)	20	-20	+60							●		
Ethane (gas) $CH_2 CH_3$	20	-20	+60	●	●							
Ethane (hydrocarbon gas)	20	-20	+60							●		
Ethyl alcohol	20	-20	+60									●
Ethylene glycol (antifreeze) - see Glycols	20	-20	+120									●
Fatty alcohols	20	-20	Boiling					●				
Fuel oils	40	-20	+40	●	●	●						
Fuels-Diesels	40	-20	+40	●	●							
Gaseous oxygen (ambient air)	20	-20	+40								●	
Glycerine	20	-20	+40	●	●							
Glycol (for antifreeze, lubricants)	40	-20	+40	●	●							
Graphite in suspension in water, oils and greases	40	-20	+90	●	●							
Greases (from petroleum)	40	-20	+90	●	●							
Helium (gas)	20	-20	+60								●	
Heptanal	20	-20	+50	●	●							
Hexane (solvent)	20	-20	+60								●	
Hydraulic oils (petroleum-based)	40	-20	+90	●	●							
Hydrogen (gas)	20	-20	+60								●	
Inks	20	-20	+60							●		
Insecticides	20	0	+40	●	●	●						
Iso-Butane (aliphatic hydrocarbon)	20	-20	+60							●		
Iso-Octane	20	-20	+60							●		
Isopropyl alcohol	20	-20	Boiling									●
Krypton (gas) Kr	20	-20	+60	●	●	●						
Light water	40		+80	●	●	●						
Lighting gas	20	-20	+40			●						
Methane (gas) CH_4	20	-20	+60	●	●	●						
Methanol	20	-20	Boiling									●
Methyl alcohol	20	-20	Boiling									●
Methylated spirit	40	-20	+40	●	●	●						
Mineral oils	40	-20	+90	●	●							
Natural gas	20	-20	+40			●						
Natural waxes (vegetable, beeswax, carnauba, Chinese, lignite)	40	-20	+90							●		
Neatsfoot oil	40	-20	+90	●	●	●						
Neon (Gas) Ne	20	-20	+60	●	●	●						
Nitrogen (gas) N^2	40	-20	+90	●	●	●						
Oil (petroleum-based) and water emulsions	40	-20	+90	●	●	●						

The above recommendations are given in good faith. However, since each application is different, it is advisable to undertake tests in actual working conditions.

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Ball Valves: Usage Chart

Chemical Description	Max. Pressure (bar)	Temperature °C		Universal and Light Series	Standard Series	DVGW Series	Customised Series					
		Min.	Max.				20	22	26	27	30	32
Oils "synthetic"	20	-20	+100									●
Ordinary petrol	20	-20	+40	●	●							
Oxygenated water	40	-20	+30				●					
Paints and relevant solvents	20	-20	+60		●	●			●			
Paraffin oil	40	-20	+90	●	●	●						
Paraffins	20	-20	+60	●	●	●						
Pentane (liquid hydrocarbon)	20	-20	+60	●	●	●						
Pentanols 1 and 2	20	-20	Boiling									●
Petrol "super"	20	-20	+40				●					
Petroleum mineral oils	20	-20	+160					●				
Phenol (aqueous or alcoholic)	20	-20	+60		●	●			●			
Propane	20	-20	+60	●	●	●						
Propanols 1 and 2	20	-20	Boiling									●
Propanone 2	20	-20	+60									●
Propene or Propylene	20	-20	+60					●				
Propyl alcohol	20	-20	Boiling									●
Propylene or Propene	20	-20	+60					●				
Rapeseed oil	40	-20	+90	●	●							
Saponifying liquids	20	-20	+30	●	●	●						
Seawater	40		+80	●	●	●						
Seawater (high temperature)	20		+150			●				●		
Soaps	20	-20	+100									●
Soaps (liquid or paste)	40	-20	+40	●	●	●						
Sodium carbonate (with water)	20	0	+40	●	●	●						
Starch (gels or pastes)	40	+10	+40	●	●	●						
Steam	20	-20	+150									●
Toluene (terpenic hydrocarbon)	20	-20	+60		●	●			●			
Trichlorethylene	20	-20	+65					●				
Turpentine	20	-20	+50	●	●	●						
Varnish and paints	20	-20	+60		●	●			●			
Vaseline	40	-20	+60	●	●	●						
Vaseline oil	40	-20	+90	●	●	●						
Water (carbonated)	40		+90	●	●	●						
Water (high temperature)	20		+150			●						●
Xenon (gas) Xe	20	-20	+60	●	●	●						
Xylene	20	-20	+60					●				

The above recommendations are given in good faith. However, since each application is different, it is advisable to undertake tests in actual working conditions.