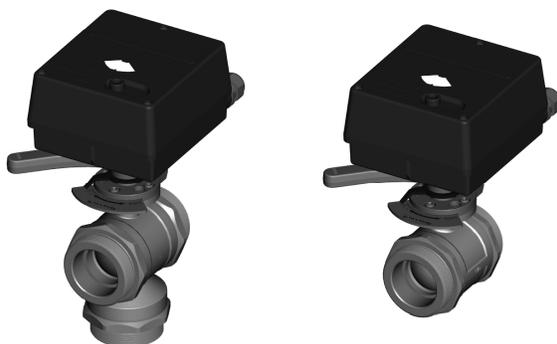


VBGx-xx-xx Externally Threaded Control Ball Valves

PN25 (DN40 TO DN50)

SPECIFICATION DATA



APPLICATION

The VBG2 2-Way and VBG3 3-Way Control Ball Valves control hot and chilled water with glycol solutions up to 50% according to VDI2035 in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions.

Features

- Sizes from DN40 to DN50 with external (male) BSPP (G) connections 2-1/4" to 2-3/4".
- Equal percentage flow characteristic.
- Suitable actuators: M6061/M7061; N05xx and S05xx (requiring 5112-11/U Linkage Kit ordered separately)
- Removable manual operating handle to control valve during installation or in the event of power failure.
- Actuator can be mounted on the valve in any of four orientations.
- Wide range of K_{vs} choices from 25 to 63.
- Nickel-chrome plated brass ball.
- Valve installs in a globe valve "T" pattern, no extra elbows or piping required.
- Mixing or diverting control for 3-way valves.
- Leakage rate A, air bubble-tight (according to EN 12266-1).

Specifications

Valve type	Control Ball Valve
Body pattern	2-way (VBG2-xx-xx), 3-way (VBG3-xx-xx)
Nominal pressure	PN25
Media temperature	+5 ... +120 °C (+41 ... +248 °F)
Connection type	Male BSPP, threaded connections, flat sealing
Controlled fluid	Chilled or hot water according to VDI2035 with up to 50% Glycol. Not for use with steam or fuels.
Leakage rate	Air bubble-tight according to EN 12266-1 for port A to B and for port A to AB; all other flow directions: 0.1% of K_{vs}
Capacity index (K_{vs})	see Table 1 and Table 2
Close-off pressures	see Table 1 and Table 2
Materials:	
Body	DZR Brass
Stem	Brass
Ball	Chrome-plated brass
Seat	Teflon® seals with EPDM O-rings
Flow control insert	Noryl®
Flow Characteristics:	
2-way	Equal percentage
3-way	
Straight-through flow	A to AB, Equal percentage
Angled flow	B to AB, Linear
Approvals/Standards	CE

SUITABLE ACTUATORS

- M6061A1013
- M7061E1012
- N05xx (requires 5112-11/U Linkage Kit ordered separately)
- S05xx (requires 5112-11/U Linkage Kit ordered separately)

MODELS

Table 1. VBG2 Two-way control ball valves

DN	Kvs A-B	Order number	Close-off Pressure (kPa) with actuators (listed in section "Suitable Actuators")	External Thread interface size
40	25	VBG2-40-25	680	2 1/4"
	40	VBG2-40-40		
50	40	VBG2-50-40		2 3/4"
	63	VBG2-50-63		

Table 2. VBG3 Three-way control ball valves

DN	Kvs A-AB	Kvs B-AB	Order number	Close-off Pressure (kPa) with actuators (listed in section "Suitable Actuators")	External Thread interface size
40	25	20	VBG3-40-25	270	2 1/4"
	40	32	VBG3-40-40		
50	40	32	VBG3-50-40		2 3/4"
	63	50	VBG3-50-63		

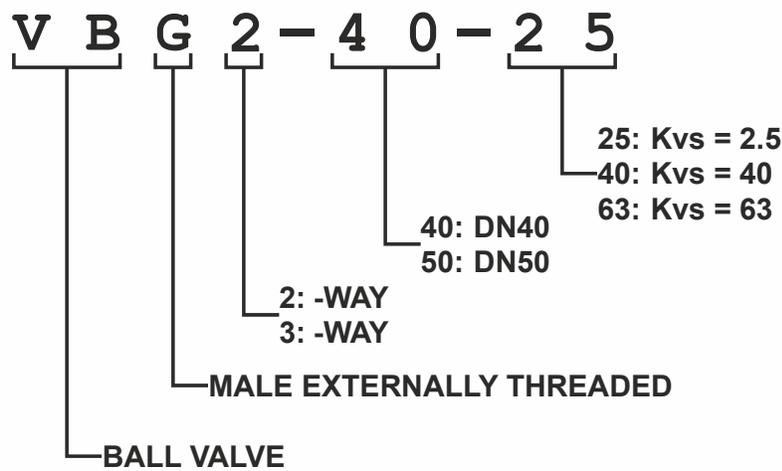


Fig. 1. VBG product key

Table 3. Valve accessories and replacement parts

Part no.	Description
5112-21/U	Replacement stem assembly for VBG DN40-50
AC-40TF	Fittings accessories for VBG DN40
AC-50TF	Fittings accessories for VBG DN50
5112-51/U	Linkage kit (preassembled on VBG DN40-50) for M6061/M7061
5112-11/U	Linkage Kit, for attachment to actuators N05xx and S05xx

Table 4. Connection sets

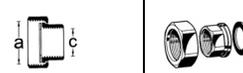
Connection	Pipe size	DN	O.S. no.	Connection set	Description
Internal thread	R 1-1/2"	40	AC-40TF		Consisting of 1 union nut, 1 tailpiece, and 1 gasket
	R 2"	50	AC-50TF		

Table 5. Connection set dimensions

Connection sets	a	c	O.S. no
	G 2-1/4"	G 1-1/2"	AC-40TF
	G 2-3/4"	G 2"	AC-50TF

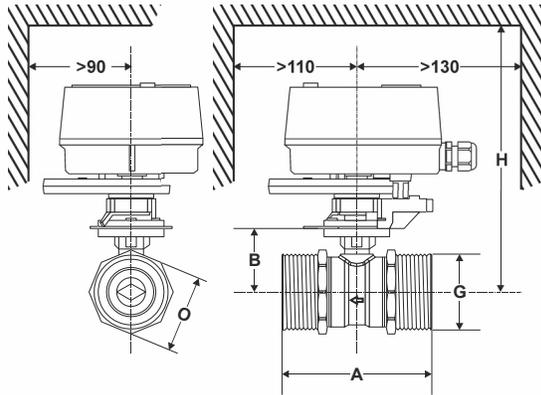


Fig. 2. M6061/M7061 + 2-way ball valve (see also Table 6)

Table 6. VBG2 dimensions (in mm)

DN	A	B	G	H	O
40	104	64	G2-1/4"	225	75
50	116	64	G2-3/4"	225	85

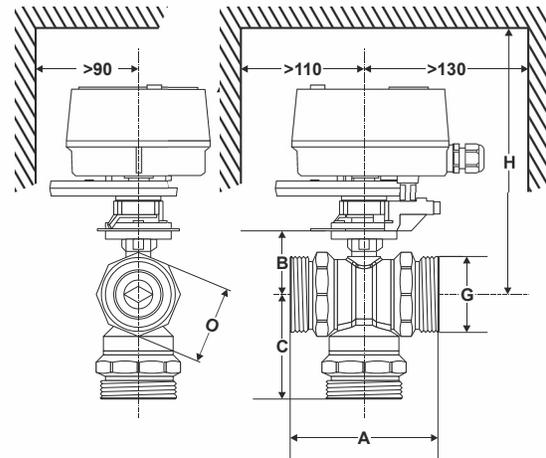


Fig. 3. M6061/M7061 + 3-way ball valve (see also Table 7)

Table 7. VBG3 dimensions (in mm)

DN	A	B	C	G	H	O
40	115	64	86	G2-1/4"	225	75
50	132	72	101	G2-3/4"	230	85

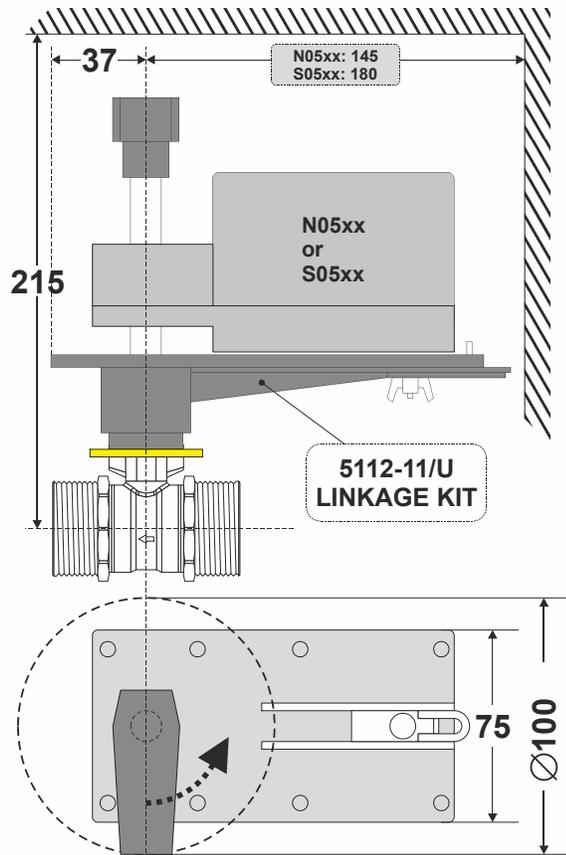


Fig. 4. N05xx / S05xx with 5112-11/U)

Mounting

When installing the valve, care must be taken that the flow direction is correct (see section "Typical Operation" below). The valve must not be mounted with the stem pointing downward.

The valve is supplied complete with mounting instructions. The water quality must meet VDI 2035 requirements.

NOTE: Mount the actuator by hand, only. Do not use a tool, as this could result in damage

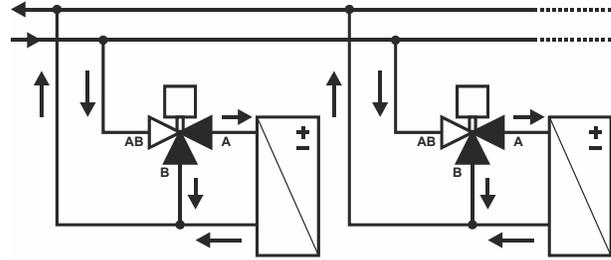


Fig. 7. Three-way diverting valve operation

Typical Operation

All types of valves should be mounted in the return flow. If the D_p -values exceed 300 kPa, attention should be paid to the development of noise.

Two-Way Valves

Direction of flow always from port A to port B

Port B: Outlet

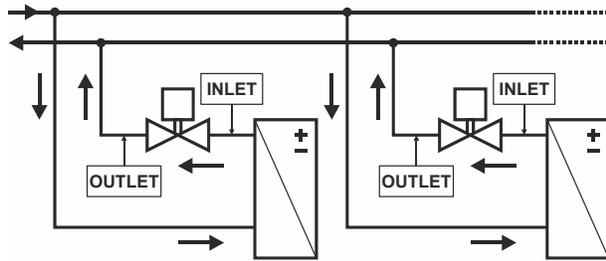


Fig. 5. Two-way valve operation

Three-Way Valves

These valves are used preferably as mixing valves. This means:

Port AB: Total flow outlet

Port A: Controlled flow inlet

Port B: Bypass inlet

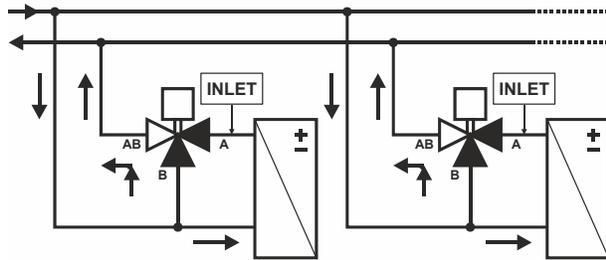


Fig. 6. Three-way mixing valve operation

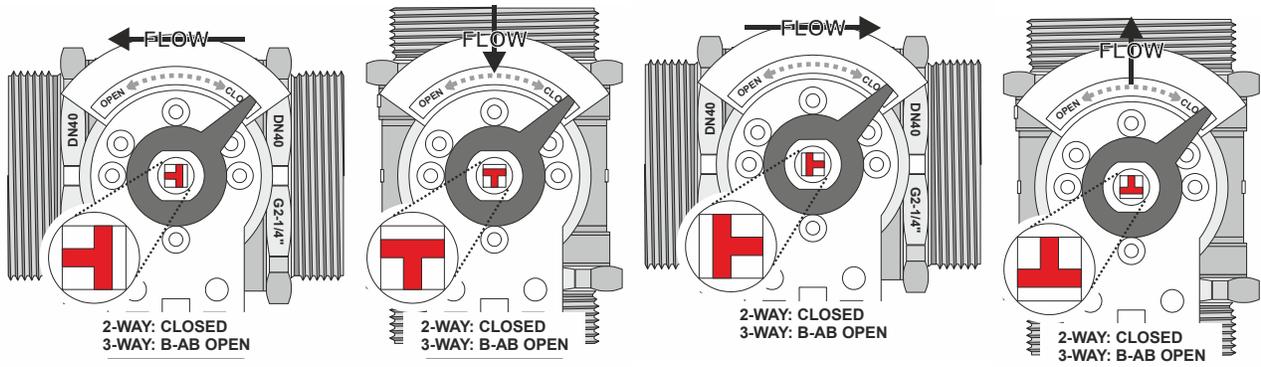


Fig. 8. Orientation of ball in valve / Linkage Positions for M6061/M7061

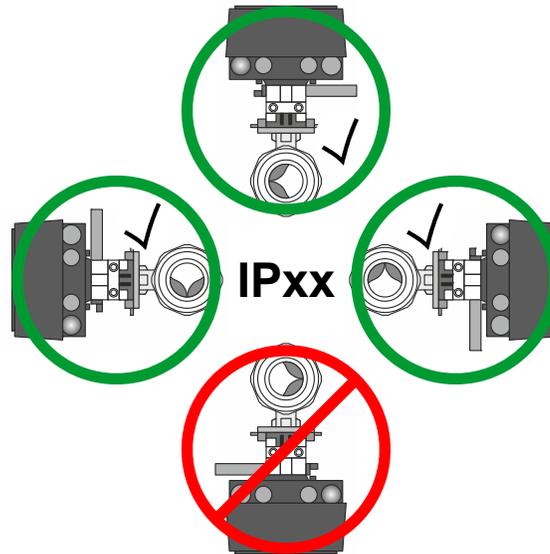


Fig. 9. Acceptable valve orientation for listed actuators

DISPOSAL OF VBG CONTROL BALL VALVES

OBSERVE LOCAL REQUIREMENTS ON PROPER WASTE RECYCLING / DISPOSAL!

- Dezincification-resistant brass body
- Chrome-plated brass ball
- Teflon® seals with EPDM O-rings
- Noryl® flow control insert
- Stainless steel screws
- Aluminum DN 40/50 plate and adapter
- PA6.6 + 30% GF Plastic DN 40/50 scale
- PE Plastic bag for DN40/50 linkage parts

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