KOFLOW

# BALL VALVES

## Ball Valve Model Schedule Illustration

1 2 3 4 5 6 7 8

**① Codes of Nominal Diameter**

British series indicated by A××in value, and metric series indicated by G××mm value.

**② Codes of Driving Modes (For handle or lever drive, this code can be omitted.)**

3—Manual Operator; 6—Pneumatic; 6S—Pneumatic Spring Return; 6A—Pneumatic Control; 5—Gear Drive; 7—Hydraulic; 8—Airdraulic; 8H—Airdraulic with Emergency Cutoff; 9—Electric

**③ Codes of Valve Types**

FB-Float Ball Valve; TB-Fixed Ball Valve

**④ Codes of Nominal Pressure Class**

1—PN1.6 class150 ; 2—PN2.5; 3—class300; 4—PN4.0 class400 ; 6—PN6.4 class600

9—class900; 10—PN10.0; 15—class1500; 16—PN16.0; 20—PN20.0; 25—class2500;

**⑤ Codes of Connecting Modes**

RF—Raised Face Flange; FF—Fully Flat Face Flange; MFM—Male and Female Flange; TG—Tongued and Grooved Flange; RJ—Ring Junction Flange; BW—Butt Welding; SW—Socket Welding; NPT—Threaded Connection

**⑥Codes of Structural Modes**

1—Full Bore Straightway; 2—Reducing Straightway; 3T—T-shaped Three-Way; 3L—L-shaped Three-way; 4—Four-way; 5—Overall Top Installed (Full Bore); 5A—Overall Top Installed (Reducing); 6—Track Ball Valve (Full Bore); 6A—Track Ball Valve (Reducing); 7H—Eccentric Half Ball; 7F—Eccentric Full Ball; 8—All Welded (Full Bore); 8A—All Welded (Reducing)

**⑦ Codes of Shell Materials**

C—WCB; C5—C5; C6—WC6; C9—WC9; BL—LCB; CL—LCC

8—CF8; 8M—CF8M; 3—CF3; 3M—CF3M; ML—MONEL

**⑧ Codes of Ball Materials**

1—WCB; 2—CF8; 3—CF8M; 4—CF3; 5—CF3M

1F—A105or25 2F—304; 3F—316; 4F—304L; 5F—316L

**⑨ Codes of Seat Materials**

F—PTFE; N—Nylon; G—Carbon Fiber; P—PPL; E—PEEK; M—MOLON

**Note:* The letters of " K " 、 " E " 、 " O " and " J " are placed in front of the codes of valve types, respectively representing hydrogen sulphide resistant, extension bar, oxygen, and jacketed ball valve.**

**Example: A8 " TB3RF1C2F means API 8 " worm gear drive, fixed ball valve, 300Lb, raised face flange, full bore, body material WCB, ball material CF8, and seat of F4.**

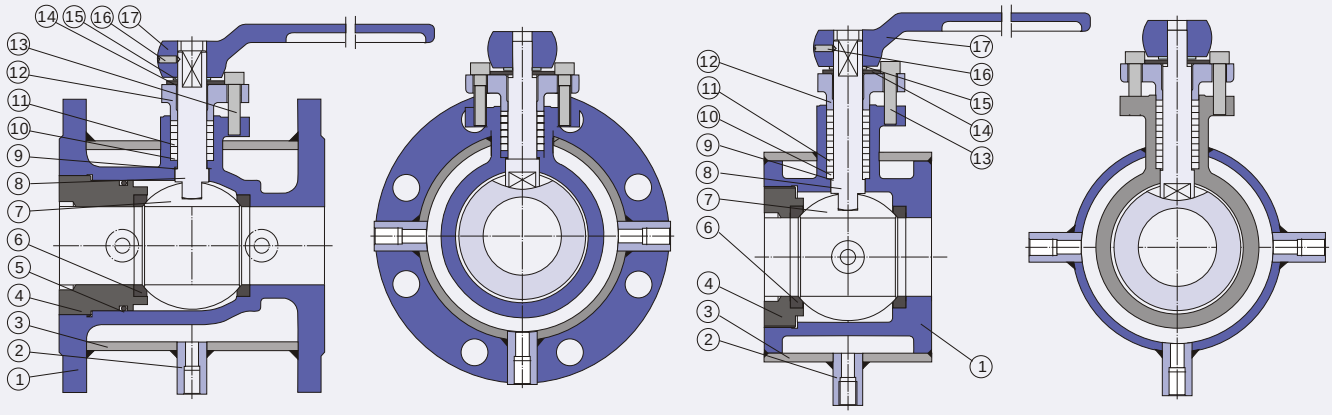
*** The figures mentioned hereunder don't have the codes of caliber and valve material, they are to be specified by users.**

## Technical Specifications of Ball Valve

| Technical Specifications | API Series | GB Series |
|---|---|---|
| Design Specifications | API6D、API608、BS5351 | GB/T12237、JB/T7745 |
| Pressure and Temperature Class | ASME B16.34 | GB/T9124 |
| Face-to-face | ASME B16.10 | GB/T12221、GB/T15188.1 |
| Flange Type and Dimensions | ASME B16.5 、ASME B16.47 | GB/T9113 、JB/T79 |
| Butt Welded | ASME B16.25 | GB/T12224 |
| Socket Welded | ASME B16.11 | / |
| Threaded | ASME B16.1.20 | / |
| Inspection and Test | API598 、API6D | JB/T9092、GB/T13927 |
| Fireproofing Test | API6FA 、API607 | JB/T6899-1993 |
| Quality Inspection of Cast Steel Body | MSS -SP-55 | JB/T9092-1999 |

# JACKETED BALL VALVE

## Valve Structural Diagram




Flanged Connection

Wafer Connection

## Manufacturing Specifications of Jacketed Ball Valve

| Standard | API Series | GB Series |
|---|---|---|
| Basic Design Specifications | ANSI B16.34 | |
| Pressure-Temperature Rating | ANSI B16.34 | GB/T12224 |
| Structural Length | ASME B16.10 | |
| Connecting Flange | ASME B16.5 | GB/T9113/HG20596 |
| Inspection & Test | API598 | JB/T9092 |

## Materials of Main Parts

| No. | Part Name | Materials | |
|---|---|---|---|
| | | GB | ASTM |
| 1 | Valve Body | GB/T12229 WCB | A216 WCB |
| 2 | Connecting port | GB/T699 25 | A105 |
| 3 | Jacket | GB/T699 25 | A105 |
| 4 | Locknut | GB/T699 25 | A105 |
| 5 | O-ring | VITON | |
| 6 | Sealing Ring | PTFE/RPTFE/NYLON/PEEK | |
| 7 | Ball | GB/T1220 2Cr13 | A105+ENP/F304 |
| 8 | Valve Stem | GB/T1220 2Cr13 | A182 F6a |
| 9 | Gasket | PTFE+SS | |
| 10 | Packing Seat | GB/T1220 2Cr13 | A182 F6a |
| 11 | Packing | Flexible Graphite/PTFE | |
| 12 | Packing Gland | GB/T12229 WCB | A216 WCB |
| 13 | Bolt | GB/T699 35 | A193 B7 |
| 14 | Spacer | GB/T700 Q235+Zn | |
| 15 | Ring | GB/T1222 65Mn | |
| 16 | Bolt | GB/T699 35 | A193 B7 |
| 17 | Handle | GB/T700 Q235 | |

## Range of Supply

| Nominal Diameter | | class |
|---|---|---|
| DN | in | 150Lb、300Lb PN1.0~4.0MPa |
| 15 | 1/2 | △/● |
| 20 | 3/4 | △/● |
| 25 | 1 | △/● |
| 40 | 1 1/2 | △/● |
| 50 | 2 | △/★/● |
| 80 | 3 | △/★/● |
| 100 | 4 | △/★/● |
| 150 | 6 | △/★/● |
| 200 | 8 | △/★/● |

Note: ●stands for handle operated valves;
☆stands for gearbox operated valves;
—stands for no option of this.
Those not covered in the table can be custom made to users' requirements.

# JACKETED BALL VALVE

## Application:

Jacketed ball valves are mainly used in the industries of petroleum, chemicals, pharmaceuticals, metallurgy, electric power and etc. to handle high viscosity medium that can be solidified at ordinary temperature. The jacket of ball valve is welded between the seal faces at both ends of the valve. On the side and at the bottom of the valve there are standard connection ports for jacket. Provided with a jacket, the types of end connection may be flanged and wafer. Steam or other heat insulating mediums may freely pass through the jacket, to ensure pasty mediums smoothly through the valve.

## Structural Features:

1、To prevent the pasty medium in pipeline from being solidified and to lower the heat loss of the low-temperature medium in pipeline

2、The carbon steel pipe welded jackets are more overpressure resistance and reliable than cast ones.

3、Thanks to the conformity of valve diameter and pipe inside diameter, medium makes linear flow of low resistance, most suitable for easily solidified and highly viscous liquid mediums.

4、One-piece structure of ball valve body, small volume and light weight compared with their counterparts.

## Table of Options for Valve Actuators

| SIZE | | PN10 | | PN16 | | PN25 | | PN40 | | 150Lb | | 300Lb | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | Pneumatic | Electric | Pneumatic | Electric | Pneumatic | Electric | Pneumatic | Electric | Pneumatic | Electric | Pneumatic | Electric |
| 15 | 1/2 | AG06 | / | AG06 | / | AG06 | / | AG06 | / | AG06 | / | AG06 | / |
| 20 | 3/4 | AG06 | / | AG06 | / | AG06 | / | AG06 | / | AG06 | / | AG06 | / |
| 25 | 1 | AG06 | / | AG09 | / | AG09 | / | AG09 | / | AG09 | / | AG09 | / |
| 40 | 1 1/2 | AG09 | / | AG09 | / | AG09 | / | AG09 | / | AG09 | / | AG09 | / |
| 50 | 2 | AG09 | QB12.5 | AG09 | QB12.5 | AG13 | QB12.5 | AG13 | QB12.5 | AG09 | QT12.5 | AG13 | QB12.5 |
| 80 | 3 | AG09 | QB12.5 | AG13 | QB12.5 | AG13 | QB25 | AW13 | QB25 | AG13 | QT12.5 | AW13 | QB25 |
| 100 | 4 | AG13 | QB25 | AW13 | QB25 | AW13 | QB50 | AW13 | QB50 | AW13 | QT25 | AW13 | QB50 |
| 150 | 6 | AG13 | QB50 | AW17 | QB50 | AW13 | QB100 | AW17 | QB100 | AW17 | QT50 | AW17 | QB100 |
| 200 | 8 | AW13 | QB50 | AW17 | QB50 | AW17 | QB100 | AW17 | QB200 | AW17 | QT50 | AW17 | QB200 |

Note: the types of pneumatic actuator listed are from Alpha, and the types of electric actuators are from Changzhou Power Station Auxiliary Equipment Works

### Output Torque of Pneumatic Actuator (NM)

| Type | Air supply pressure | | | |
|---|---|---|---|---|
| | 0.4MPa | 0.5MPa | 0.6MPa | 0.7MPa |
| AG06 | 28 | 35 | 42 | 49 |
| AG09 | 85 | 106 | 127 | 148 |
| AG13 | 280 | 350 | 420 | 490 |
| AW13 | 480 | 350 | 720 | 840 |
| AW17 | 1000 | 1250 | 1500 | 1750 |

### Output Torque of Electric Actuator (NM)

| Type | Output Torque | Stem Diameter | Output Speed | Motor Power |
|---|---|---|---|---|
| QB12.5 | 125 | 22 | 1r/min | 0.05KW |
| QB25 | 250 | 28 | 1r/min | 0.09 KW |
| QB50 | 500 | 50 | 1r/min | 0.18 KW |
| QB100 | 1000 | 50 | 1r/min | 0.25 KW |
| QB200 | 2000 | 60 | 1r/min | 0.55 KW |

# JACKETED BALL VALVE

PN1.0~4.0MPa CLASS150~300

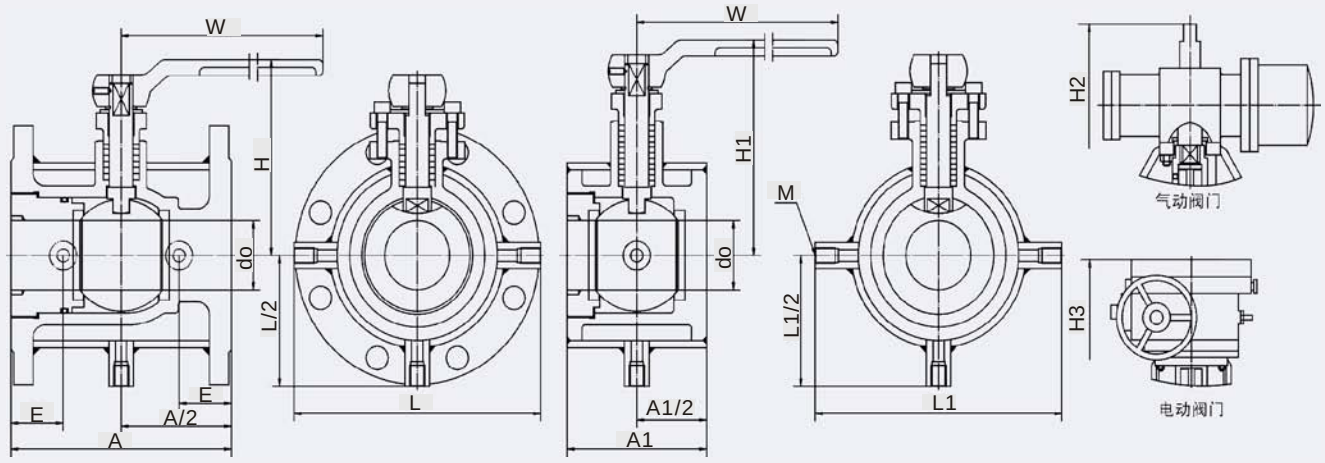



Figure No.

A(G)(3、6、9)FB1(2、3)RF1

## Main Dimensions

PN1.0、1.6MPa CLASS150 mm

| DN | NPS | A | A1 | do | H | H1 | H2 | H3 | W | M | L | L1 | E | Flange specification | Weight Manual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 1/2 | 110 | 50 | 15 | 63 | 101 | 126 | / | 130 | ZG3/4 | 147 | 110 | 58.5 | DN40（1 1/2） | 7.04 |
| 20 | 3/4 | 117 | 55 | 20 | 82 | 101 | 126 | / | 160 | ZG3/4 | 147 | 117 | 58.5 | DN40（1 1/2） | 7.74 |
| 25 | 1 | 127 | 60 | 25 | 85 | 106 | 137 | / | 160 | ZG3/4 | 156 | 127 | 63.5 | DN50（2） | 10.7 |
| 40 | 1 1/2 | 165 | 80 | 40 | 100 | 125 | 169 | / | 230 | ZG3/4 | 181 | 165 | 62.5 | DN65（2 1/2） | 14.5 |
| 50 | 2 | 178 | 90 | 51 | 153 | 135 | 179 | 576 | 230 | ZG3/4 | 218 | 178 | 68 | DN80（3） | 17.9 |
| 80 | 3 | 229 | 120 | 76 | 195 | 217 | 258 | 643 | 400 | ZG3/4 | 275 | 229 | 82 | DN150（6） | 37.3 |
| 100 | 4 | 254 | 140 | 102 | 213 | 265 | 322 | 715 | 700 | ZG3/4 | 300 | 254 | 83 | DN200（8） | 56 |
| 150 | 6 | 292 | 160 | 152 | 235 | 355 | 415 | 848 | 1100 | ZG1 | 403 | 292 | 95 | DN250（10） | 93 |
| 200 | 8 | 330 | 180 | 203 | 342 | 410 | 527 | 903 | 1500 | ZG1 | 492 | 330 | 100 | DN300（12） | 160 |

PN2.5、PN4.0MPa CLASS300 mm

| DN | NPS | A | A1 | do | H | H1 | H2 | H3 | W | M | L | L1 | E | Flange specification | Weight Manual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 1/2 | 110 | 50 | 15 | 63 | 101 | 126 | / | 130 | ZG3/4 | 147 | 110 | 58.5 | DN40（1 1/2） | 7.24 |
| 20 | 3/4 | 117 | 55 | 20 | 82 | 101 | 126 | / | 160 | ZG3/4 | 147 | 117 | 58.5 | DN40（1 1/2） | 8.24 |
| 25 | 1 | 127 | 60 | 25 | 85 | 106 | 137 | / | 160 | ZG3/4 | 156 | 127 | 63.5 | DN50（2） | 11.5 |
| 40 | 1 1/2 | 165 | 80 | 40 | 100 | 125 | 169 | / | 230 | ZG3/4 | 181 | 165 | 62.5 | DN65（2 1/2） | 18.4 |
| 50 | 2 | 178 | 90 | 51 | 153 | 135 | 179 | 576 | 230 | ZG3/4 | 218 | 178 | 68 | DN80（3） | 25.1 |
| 80 | 3 | 229 | 120 | 76 | 195 | 217 | 258 | 643 | 400 | ZG3/4 | 275 | 229 | 82 | DN150（6） | 55.4 |
| 100 | 4 | 254 | 140 | 102 | 213 | 265 | 322 | 715 | 700 | ZG3/4 | 300 | 254 | 83 | DN200（8） | 76.4 |
| 150 | 6 | 292 | 160 | 152 | 235 | 355 | 415 | 848 | 1100 | ZG1 | 403 | 292 | 95 | DN250（10） | 118 |
| 200 | 8 | 330 | 180 | 203 | 342 | 410 | 527 | 903 | 1500 | ZG1 | 492 | 330 | 100 | DN300（12） | 200 |