



S&S Valve

BUTTERFLY VALVE

CASTING VALVE

BELLOWS VALVE

FORGED VALVE

BALL VALVE

CRYOGENIC VALVE

CONTROL VALVE



PREFACE

The competition in every field of industry has become ever fiercer and the worldwide competition is also an international stream of the business. No exception to this principal can be made for “S&S Valve”, which has shared in the development of the industrial society on the basis of noteworthy technical know-how. However, “S&S Valve” hereby declares further dynamic advancement of valve engineering and manufacturing through the reinforcement of its power of competition through ceaseless technical development, innovation and collaboration with the advanced technical professionals all over the world. We called it “the globalization of valve business”.

Since the valve business begun in 1979 we, S&S valve has been accumulated technology manufacturing a cryogenic, high temperature & pressure valves (Ball, Gate, Globe, Check), and Control valves (cryogenic control valve, PRV, PSV, Desuperheater and Actuator to be installed for industrial plants, power plants, LNG carrier / receiving terminal and offshore plant including FPSO, FSRU. For over three decades, we’ve been supplied them to Global EPC companies and shipyard located at home and abroad.

In particular, with having recognition from those big end-users for our competitive technology and lots of manufacturing experience & references for high-temperature and pressure casting valves

including metal seated ball and cryogenic valves, we’ve successfully registered as a Qualified vendor at global end-users like GE / Siemens / NE / Saudi Electric Company / Saudi Aramco / KOC / KNPC / Takreer / KOGAS / KHNP and large EPC companies. We’ve honored to be selected as the excellent suppliers in 2013 by DSME for the reason of supplying highest quality valves and on-time delivery for the world's first FPSO project which was awarded by Shell and Petronas.

We’ve proved our superior quality with acquiring world-class certificates of Quality Assurance such as ISO, ASME, KEPIC, API 6D, CE, SIL, FE (fugitive emission) and Classifications of LR / DNV / ABS / BV and secured our position as a Global Maker through continuous research and development and unstinted investment for R&D.

All employees of S&S Valve will promise to do our best to supply with our best quality products to customers at reasonable prices at the desired delivery.

Very Truly Yours,

BYUNGHUN AHN
PRESIDENT

BRIEF HISTORY

- 1979 Established Korea Special Valve Industry Company
- 1983 Obtained a manufacturing license by Korea Electric Power Corporation (KEPCO) for High Pressure Valves for Power Plant Equipment
Obtained a manufacturing license by Korea Gas Safety Corporation (KGS) for High Pressure Equipment
Registered & supplied Manual Cryogenic Valves to Korea Gas Safety Corporation
- 1984 Changed company name to “Seo Heung Metal Co., Ltd.”
- 1986 Entered into a technical license agreement with KENSEI Valve Co., Ltd. (Japan) for High Pressure Forged Valves
- 1989 Entered into a technical license agreement and co-manufacturing agreement with KEROTEST GLOBAL COMPANY (U.S.A) for producing nuclear valves
Obtained a license to manufacture valves for Nuclear Power Plant Equipment by the Minister of Science and Technology (Korea)
- 1994 Obtained ISO 9001 certificate by TÜV-Rheinland
- 1995 Registered own trademark “SAVE” brand
- 1996 Entered into a technical license agreement and co-manufacturing agreement with COPES VULCAN INC. (USA) for producing Pneumatic Control Valves
- 1997 Obtained a license to manufacture Control Valves for Power Plant Equipment by Korea Electric Power Corporation (KEPCO)
- 1999 Obtained a license of API 6D certificate (License No. 6D-0304)
Obtained a license of KEPIC-MN (Nuclear Quality Assurance System) from Korea Electric Association (KEA)
- 2001 Approved by class LLOYD register for manufacturing various raw materials
Approved by class BV register as the provisions of rule note CNR320 to manufacture Forged, Casting and Cryogenic Valves
- 2003 Obtained CE certificate from TÜV-Rheinland for Industrial Control & Safety Valves
Registered with Korea Gas Corporation (KOGAS) for Control & Safety Valves for cryogenic service
- 2008 Obtained ASME “N & NPT” certificate
CI renewal and changed company name to "S&S Valve Co., Ltd."
- 2010 Additional 2 valve package registered to KHNP (totally 10 packages registered)
Vendor registered SEC, ADGAS AND TAKREER
- 2011 Granted an award by Chinese National Ocean Oil Cooperation (CNOOC) to manufacture and supply Cryogenic Globe & Check Valves for Zhejiang Ningbo LNG terminal
- 2012 Supplied Cryogenic Ball Valves for Shell Prelude FPSO
Supplied casting ball valves for TAKREER Ruwais Refinery Expansion (#2 & #7) through GS E&C
- 2013 Granted an award by CNOOC to manufacture and supply Cryogenic Globe & Check Valves for Hainan LNG terminal
Supplied Cryogenic Globe, Check, Ball, Gate, Control Valves for Petronas FLNG
- 2014 Supplied Valves for SEC Jedda South Power Plant PJT & Shuqaiq Steam Power Plant PJT through HHI
Granted an award to manufacture and supply Cryogenic Ball valves for Chinese Hudong-Zhonghua Shipbuilding
- 2015 Relocated factory to Jinju city
Supplied for TGF Project through MHI
- 2016 Supplied for LNG FSRU of Hudong Zhonghua
Qualified supplier of KEPCO & KPS for Control Valve, Forged Valve, Cast Valve and Safety Valve
- 2017 Supplied for Panama LNG terminal project thru Posco E&C
Supplied for Swan FSRU H.2993 thru HHI
Qualified supplier of KEPCO E&C for Control Valve, Forged Valve and Cast Valve
- 2018 Supplied for Maran Gas LNGC / FSRU
Qualified supplier of KOSPO, KOWEPO, KOMIPO, EWP, KOSEP for integrated management of High Pressure, High Temp Forged Valve and Control Valve
- 2019 Supplied for Hai Linh Vung Tau LNG terminal, the first LNG receiving terminal project in Vietnam
- 2021 Supplied Cryogenic Valves for Airfirst ALPS project
- 2022 Supplied Cryogenic Valves for Wartsila Gas Solutions's Jiangnan CMA CGM Container FGSS & Hudong CMA CGM Container FGSS projects
- 2023 Supplied Cryogenic Valves for DongHwa Entec EPS 7000 PCTC FGSS project

BUSINESS POLICY & VISION

"S&S Valve" hereby declares further dynamic advancement of valve engineering and manufacturing through the reinforcement of its power of competition through ceaseless technical Research & Development, Innovation and Collaboration with the advanced technical professionals all over the world. We called it "the globalization of valve business"



FACTORY & HEAD OFFICE

JINJU Factory (공장동)

29, Saneop-ro 111beon-gil, Jeongchon-myeon,
Jinju-si, Gyeongsangnam-do, Korea
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전화번호: 055-762-0618
팩스: 055-790-9575



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팩스: 055-790-9575



SEOUL Head Office (서울 사무소)

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전화번호: 02-735-6521
팩스: 02-735-2433



FACILITY

Pattern / Mold Storage



- Casting Valves : Class 150~4500 /Size 1/2"~36", oversize special Ball, Gate, Globe, Bellows-seal, Check Valves
- Forged Valves : Class 150~4500 / Size 1/2~2", oversize special Ball, Gate, Globe, Y-Globe, Needle, Bellows-seal
- Carbon Steel : A105, WCB, WCC, CN7M, LCB, SA105 etc
- Stainless Steel : F304, F316, CF3, CF8 etc.
- Special material : MONEL, ALLOY20, INCOLOY

Machining Shop



- Lathe M/C line**
- WL520
- Miling M/C line**
- KMB03
- Drill Line**
- NBTG540
- CNC Line**
- PUMA10S
- PUMA12
- QT35N

Welding / Heat treatment Shop



Welding is performed in accordance with the Welding Procedure Specification (WPS) and the Procedure Qualification Record (PQR) that have been approved in accordance with ASME Sec.IX.

Heat treatment shall be conducted in accordance with the heat treatment specification for each material and each size approved by the purchaser.

MV Assembly Shop / CV Assembly Shop



Manual Valve Assembly Space

Control Valve Assembly Space

Inspection Shop



Inspections
Material Tests
Radiography Test (RT)
Penetrant Test (PT)
Ultrasonic Test (UT)
In accordance with ASME B16.34 Chapter 8

Dimensional Check
All manufactured valves shall undergo dimensional check

Visual Inspection
All valves shall be checked whether there is any scratch, crack etc in accordance with MSS-SP-55

Test Shop

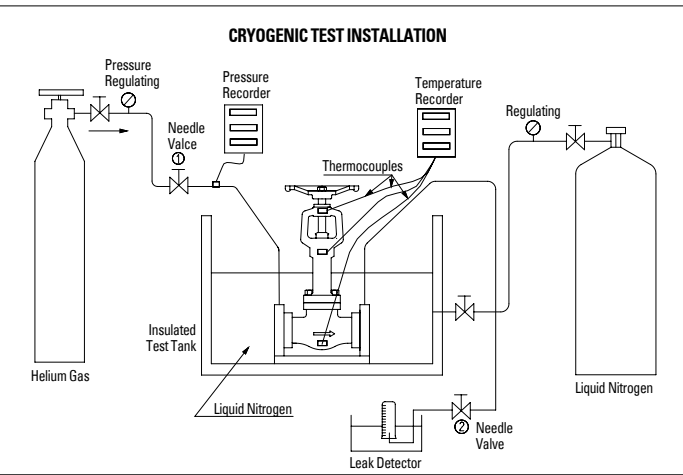


Pressure and Pneumatic tests
All manufactured valves shall be tested to check the strength and tightness of valves in accordance with API 598 as follows and the test results shall be submitted to the purchaser in the form of record charts recorded by an automatic pressure recorder.

CRYOGENIC TEST SHOP

Cryogenic Performance Test

Prepare the test equipment suitable for cryogenic test in accordance with BS 6364, Appendix A and install thermocouples in proper locations on the valve body, bonnet and gland housing to measure cryogenic test temperature (-196℃).
Cool down the valve by submerging the valve body, bonnet and upper end of connection part in a liquefied nitrogen container. Purge the valve inside with helium gas during cool-down process and check the temperature of the inside and outside of the valve body, bonnet and gland housing.
Keep the valve in the liquefied nitrogen container at least 1 hour until the temperature of the valve body and bonnet are stabilized.



Cryogenic Pressure Test

The test medium shall be helium gas. The valve shall be tested with the wedge slightly opened at 1.1 times the normal pressure of the valve for 15 minutes.



Cryogenic Operation Test

The valve shall be opened and closed 5 times at the differential pressure condition of normal working pressure at the cryogenic temperature of -196℃



Ambient Temperature Restoration Test

Valve leakage shall be checked by the same method of the initial proving test. The maximum allowable leakage for each valve size shall conform to API 598, Table 6.

PAINTING / PACKING SHOP

Painting

The surfaces shall be free from foreign materials such as oil, grease, rust and blasted with steel shots, steel grits or other equivalent abrasives to secure necessary roughness. The treated surface condition shall conform to SA 2 1/2 or over of ISO-8501-1.



Packing

Valves are dry, clean, and free from moisture, dirt and loose foreign materials of any kind. Valves are protected from rust, corrosion and mechanical damage during transportation, shipment and storage. Valve ends are protected with a plastic cap or plug.





Casting Valves

The SAVE Casting valves are able to meet customer's needs and precision machining always ready for it.

Those valves are available in size 1/2" to 72", ANSI CL. 150 to CL. 4500.

Our wide range of products are base on the need of customers and we can solve any special requirement of customers.

Our development for new technology is being continued.



Bellows Valves

The SAVE Bellows valves are usefull for strict requirement of user's conditions such as polysilicon, petrochemical, toxic gas and hazard plant.

Design features of the SAVE Bellows valves

API602 / BS1873

ANSI/ASME B16.34 / API598



Forged Valves

The SAVE Forged steel valves have various features, all kind of body, trim materials, every end connections, satisfaction many user's specifications, and structural integrity of the valve under the various conditions, and so on.

In Korea, SAVE brand is familiar and famous at the industrial forged steel valve market.

SAVE forged steel valves continuous development will satisfy your demands.



Ball Valves

The SAVE Ball Valves are have various features and manufactured in the type, One piece End-entry, Two piece and Three piece bolted construction.

Those valves can be supplied Full or Reduce port in forged and casting construction.

Bolted body connections give of service and maintenance on site.

especially, Top entry construction give more convenience to maintain on site.

Valves can be supplied either Raised Face, Ring Type Joint, Socket welded or Screwed end connections.

Pressure rating is from ANSI CL. 150 to CL. 4500.



Cryogenic Valves

The SAVE Cryogenic valves are usefull for strict requirement of user's conditions such as production, storage, transportation of LNG, LQ2, LH2 Etc.

Design features of the SAVE cryogenic valves BS6364 / API607

ANSI/ASME B16.34 / API598

Fire satety certification by TÜV Rheinland Korea

Licensed by KSGC (Korea Gas Satety Public Corporation)



Butterfly Valves

The SAVE Butterfly valves have a wide range of products to satisfy various clients' requirements. Especially, it provides excellent sealing performance in cryogenic service and easy maintenance and also saves your cost.

Based on the excellent design of concentric, high-performance (double and triple offset), various end types are applicable such as wafer, flanged and Butt-weld with soft seat, fire safe and even metal seat structure are feasible to be manufactured by S&S Valve.



Control Valves

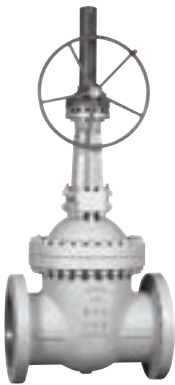
The SAVE Control valves have features with a compact valve body with excellent flow control and minimal pressure loss.

There is a wide range of standard and high duty trims available which can be fitted with in the same valve body.

The design incorporates the characterized trim for pressure, temperature, level of flow applications.

GATE VALVES - OS & Y, BB TYPE

CC



STANDARD MATERIALS

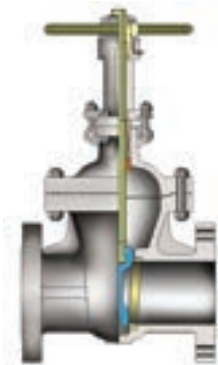
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ²⁾
SEAT	ASTM A105-(H.F)
DISC	ASTM A217-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) All the Stainless Steel Available
2) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9,
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 36"
- 2) Applicable Rating : ASME 150# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5,
API 598 / 600 and ISO10434
- 5) Constructions
 - End Connection : Butt-Welded or Flanged Type
 - BB (=Bolted Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



LIFT CHECK VALVES - BC TYPE

C6



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ²⁾
SEAT	ASTM A276-410(H.F)
GASKET	GRAPHITE

NOTE

1) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9,
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 24"
- 2) Applicable Rating : ASME 150# ~ 600#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5, and
API 598 / 600
- 5) Constructions
 - End Connection : Butt-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore



GATE VALVES - OS & Y, PSB TYPE

CC(PSB)



STANDARD MATERIALS

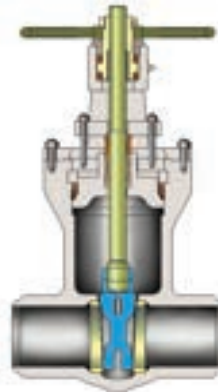
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ²⁾
SEAT	ASTM A105-(H.F)
DISC	ASTM A217-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9 / C12A
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 36"
- 2) Applicable Rating : ASME 600# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5,
API 598 / 600
- 5) Constructions
 - End Connection : Butt-Welded Type
 - PSB (=Pressure Seal Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



SWING CHECK VALVES - BC TYPE

C8



STANDARD MATERIALS

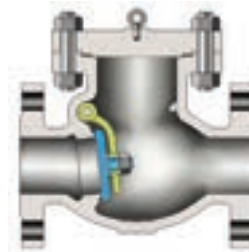
PART NAMES	MATERIALS ¹⁾
BODY	NOTE ²⁾
COVER	NOTE ²⁾
SEAT	A150-(H.F)
DISC	ASTM A217-CA15
ARM	ASTM A216-WCB
DISC NUT	ASTM A194-8
GASKET	GRAPHITE
HINGE PIN	ASTM A276-410

NOTE

1) All the Stainless Steel Available
2) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9,
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 48"
- 2) Applicable Rating : ASME 150# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5, and
API 598 / 594 / 1868
- 5) Constructions
 - End Connection : Butt-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Class 600 and over : Ring-joint Bonnet
 - Full Bore



GLOBE VALVES - OS & Y, BB TYPE

CD



STANDARD MATERIALS

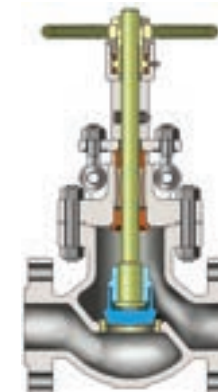
PART NAMES	MATERIALS
BODY	NOTE ²⁾
BONNET	NOTE ²⁾
SEAT	ASTM A105-(H.F)
DISC	ASTM A217-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) All the Stainless Steel Available
2) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9,
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 24"
- 2) Applicable Rating : ASME 150# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5,
API 598 / 623 and BS1873
- 5) Constructions
 - End Connection : Butt-Welded or Flanged Type
 - BB (=Bolted Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



SWING CHECK VALVES - PSC TYPE

C8(PSC)



STANDARD MATERIALS

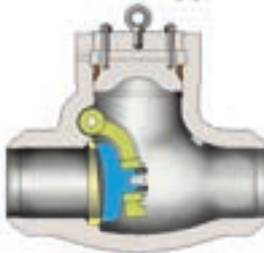
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	A150-(H.F)
DISC	ASTM A217-CA15
ARM	ASTM A216-WCB
DISC NUT	ASTM A194-8
GASKET	GRAPHITE
HINGE PIN	ASTM A276-410

NOTE

1) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9 / C12A
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 36"
- 2) Applicable Rating : ASME 600# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5, and
API 598 / 594
- 5) Constructions
 - End Connection : Butt-Welded Type
 - PSC (=Pressure Seal Cover) Type
 - Full Bore



GLOBE VALVES - OS & Y, PSB TYPE

CD(PSB)



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-(H.F)
DISC	ASTM A217-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9 / C12A
LOW TEMP. : ASTM A352-LCB / LC1 / LC2 / LC3

SPECIFICATIONS

- 1) Valve Size : 2" ~ 16"
- 2) Applicable Rating : ASME 600# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.10 / 16.25 / 16.34 / 16.5,
API 598 / 600
- 5) Constructions
 - End Connection : Butt-Welded Type
 - PSB (=Pressure Seal Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



PARALLEL SLIDE GATE VALVES - OS & Y, PSB TYPE

CV (PSB)



STANDARD MATERIALS

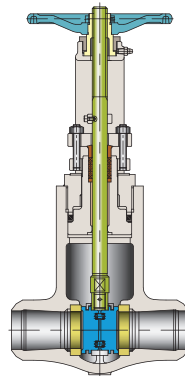
PART NAMES	MATERIALS ¹⁾
BODY	NOTE ¹⁾
BONNET	NOTE ²⁾
SEAT	A105 (H.F) ³⁾
DISC	A576-1020 (H.F) ³⁾
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) All the Stainless Steel Available
2) HIGH TEMP. : ASTM A216-WCB, ASTM A217-WC1 / WC6 / WC9
3) Hard Facing : Stellite, Ni-Cr Coating, Nickel Alloy Overlay

SPECIFICATIONS

- 1) Valve Size : 2" ~ 24"
- 2) Applicable Rating : ASME 600# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.34 / 16.10 / 16.25
- 5) Constructions
 - End Connection : Flanged Type
 - PSB(=Pressure- Seal Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



PLUG VALVES



STANDARD MATERIALS

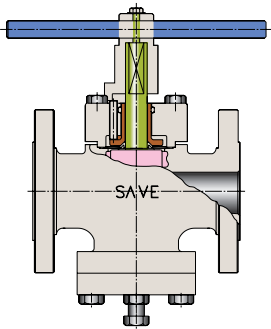
PART NAMES	MATERIALS ¹⁾
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SLEEVE	PIFE
PLUG	STAINLESS STEEL
WEDGE RING	RTFE

NOTE

1) ASTM A216-WCB / A352-LCB / A351-CF8(M)

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 18"
- 2) Applicable Rating : ASME 150# ~ 600#
- 3) Temperature : -50°C ~ 230°C
- 4) Code & Standard : API, ASTM, API
Designed by ASME B16.34 / B16.5, API 599
- 5) Constructions
 - End Connection : Flanged



PRESSURE REDUCTING VALVES (PRV)



STANDARD MATERIALS

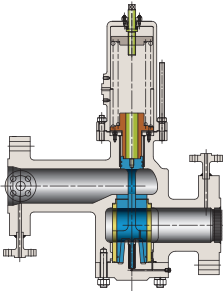
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SPRING CASE	NOTE 1)
DISC	NBR
DISC HOUDER	ASTM A276-304
STEM	ASTM A276-304
DIAPHRAGM	EPDM
SEAT	ASTM A276-304

NOTE

1) ASTM A105 / A216-WCB / A351-CF8(M)

SPECIFICATIONS

- 1) Valve Size : 1" ~ 12"
- 2) P1 (Upstream Pressure): 10, 20, 30 kg/cm²
P2 (Downstream Pressure): 0.3~2, 0.5~5, 0.8~7 kg/cm²
DP : 0.5 kg/cm²
- 3) Temperature: up to 538°C
- 4) Rangeability: 30:1



FORGED STEEL GATE VALVES - OS & Y, BB TYPE

11



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	304L SS

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5, API 602
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, BB (=Bolted Bonnet) Type
 - Full Bore / Reduce Bore
 - Rising Stem / Non Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - OS & Y, BB TYPE

12



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	304L SS

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5
BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, BB (=Bolted Bonnet) Type
 - Full Bore / Reduce Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



LIFT CHECK VALVES - BC TYPE

13



STANDARD MATERIALS

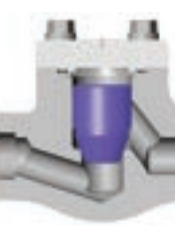
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A276-410-HF
DISC	ASTM A276-410
GASKET	GRAPHITE

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5 and BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore / Reduce Bore



SWING CHECK VALVES - BC TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A276-410-HF
DISC	ASTM A276-410
HINGE	ASTM A351-CF8M
GASKET	GRAPHITE

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

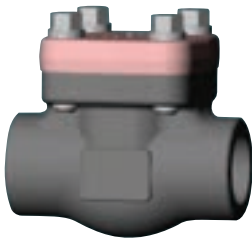
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore / Reduce Bore



BALL CHECK VALVES - BC TYPE

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STANDARD MATERIALS

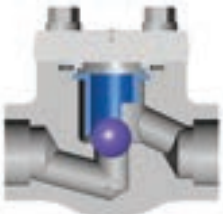
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A105-HF
BALL	ASTM A276-304
GASKET	GRAPHITE

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5,
and BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore / Reduce Bore



FORGED STEEL ANGLE GLOBE - OS & Y, BB TYPE

16



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	304L SS

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34, BS5352
- 5) Constructions
 - End Connection : Socket-Welded Type
 - BB (=Bolted Bonnet) Type
 - Full Bore / Reduce Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL NEEDLE GLOBE VALVES - OS & Y, BB TYPE

17



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	304L SS

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5, BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BB (=Bolted Bonnet) Type
 - Full Bore / Reduce Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



SCREW DOWN CHECK VALVES - OS & Y, BB TYPE

18



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	304L SS

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5
and BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BB (=Bolted Bonnet) Type
 - Full Bore / Reduce Bore
 - Rising Stem / Rising Hand wheel



FORGED STEEL GATE VALVES - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASTM A276-410
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Non Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - OS & Y, WB TYPE

22



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5,
BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



LIFT CHECK VALVES - WC TYPE

23



STANDARD MATERIALS

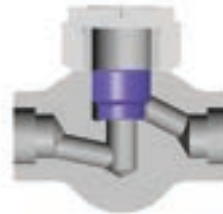
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-HF
DISC	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
and BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - WC (=Welded Cover) Type
 - Full Bore



FORGED STEEL NEEDLE GLOBE VALVES - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
STEM	ASTM A276-410
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5,
BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL Y-GLOBE VALVES - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GATE VALVES - FOR NUCLEAR POWER PLANT - OS & Y, BB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME (S)A479-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASME (S)A479-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASME (S)A479-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 600#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, BB (=Bolted Bonnet) Type
 - Full Bore
 - Rising Stem / Non Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL Y-GLOBE VALVES - FOR NUCLEAR POWER PLANT - OS & Y, BB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME (S)A105-H.F
DISC	ASME (S)A479-410
STEM	ASME (S)A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASME (S)A479-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

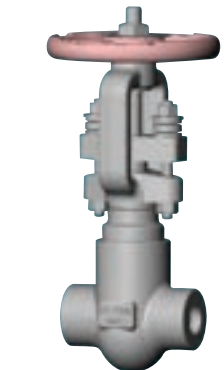
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 600#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BB (=Bolted Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GATE VALVES - FOR NUCLEAR POWER PLANT - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME (S)A479-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASME (S)A479-410
GLAND PACKING	GRAPHITE
GLAND	ASME (S)A479-410

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - WB (=Welded Bonnet) Type
 - Live Loaded Packing Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - FOR NUCLEAR POWER PLANT - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME (S)A105-H.F
DISC	ASME (S)A479-410
STEM	ASME (S)A479-410
GLAND PACKING	GRAPHITE
GLAND	ASME (S)A479-410

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : 900#~2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34
- 5) Constructions
 - End Connection : Socket-Welded Type
 - WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Live Loaded Packing Type
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL Y-GLOBE VALVES - FOR NUCLEAR POWER PLANT - OS & Y, WB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME (S)A105-H.F
DISC	ASME (S)A479-410
STEM	ASME (S)A479-410
GLAND PACKING	GRAPHITE
GLAND	ASME (S)A479-410

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

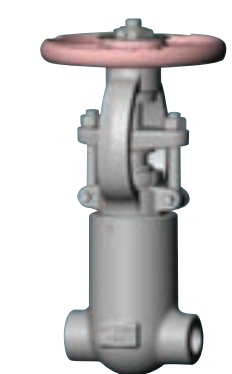
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded Type
 - WB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Live Loaded Packing Type
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GATE VALVES - OS & Y, PSB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM (S)A276-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASTM (S)A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM (S)A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 1500# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - PSB (=Pressure-Seal Bonnet) Type
 - Full Bore
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - OS & Y, PSB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 1500# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5, BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - PSB (=Pressure-Seal Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - OS & Y, PSB TYPE

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STANDARD MATERIALS

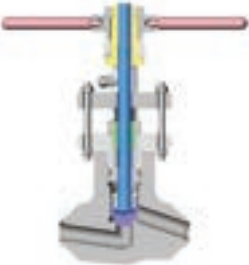
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

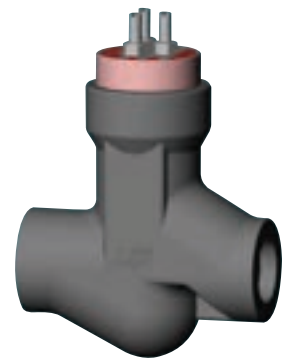
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 2500# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.25 / 16.34
- 5) Constructions
 - End Connection : Butt-Welded Type
 - PSB (=Pressure-Seal Bonnet) Type
 - Full Bore
 - Rising Stem / Non-Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



LIFT CHECK VALVES - PSC TYPE

73



STANDARD MATERIALS

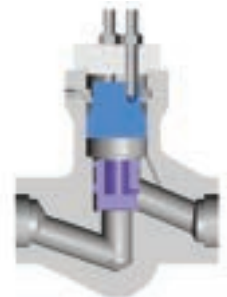
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A105-HF
DISC	ASTM A276-410
GASKET	GRAPHITE

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 1500# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5, and BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - PSB (=Pressure-Seal Bonnet) Type
 - Full Bore



FORGED STEEL Y-GLOBE VALVES - OS & Y, PSB TYPE

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STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 1500# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34, BS5352
- 5) Constructions
 - End Connection : Socket-Welded Type
 - PSB (=Pressure-Seal Bonnet) Type
 - Full Bore
 - Rising Stem / Non-Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



Y-CHECK VALVES - FOR NUCLEAR POWER PLANT - BC TYPE

3A



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASME (S)A105-HF
DISC	ASME (S)A479-410
GASKET	GRAPHITE
SPRING	INCONEL

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

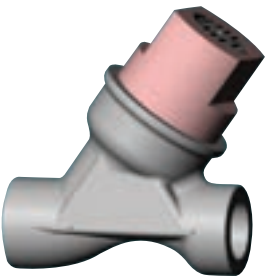
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 600#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.10 / 16.11 / 16.34
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore



Y-CHECK VALVES - FOR NUCLEAR POWER PLANT - WC TYPE

4A



STANDARD MATERIALS

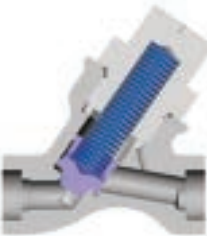
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASME (S)A105-HF
DISC	ASME (S)A479-410
SPRING	INCONEL

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 2500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34
- 5) Constructions
 - End Connection : Socket-Welded Type
 - WC (=Welded Cover) Type
 - Full Bore



FORGED STEEL Y-GLOBE VALVES - PMD TYPE

5T



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
DIAPHRAGM	INCONEL 718
SEAT	ASME (S)A105-H.F
DISC	ASME (S)A479-410
STEM	ASTM A276-410
SPRING	INCONEL X-750
GLAND PACKING	GRAPHITE

NOTE

1) ASTM (S)A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 600# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34
- 5) Constructions
 - End Connection : Socket-Welded Type
 - PMD (=Packless Metal Diaphragm) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GATE VALVES - OS & Y, BB TYPE

A1



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-410-H.F
WEDGE	ASTM A217-CA15
STEM	ASTM A479-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34 / 16.5, API 600
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, BB (=Bolted Bonnet) Type
 - Full Bore
 - Rising Stem / Non Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES - OS & Y, BB TYPE

A2



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASME A105-H.F
DISC	ASTM A276-410
STEM	ASTM A479-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5, API 600 / BS1873
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, BB (=Bolted Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



LIFT CHECK VALVES - BC TYPE

A3



STANDARD MATERIALS

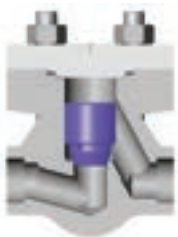
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A276-410-HF
DISC	ASTM A276-410
GASKET	GRAPHITE

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

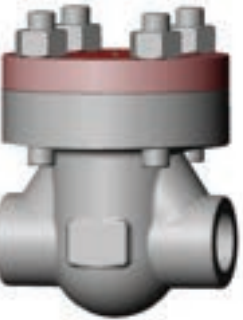
SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.34
and API 600
- 5) Constructions
 - End Connection : Socket-Welded Type
 - BC (=Bolted Cover) Type
 - Full Bore



SWING CHECK VALVES - BC TYPE

A4



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
COVER	NOTE ¹⁾
SEAT	ASTM A276-410-HF
DISC	ASTM A276-410
HINGE	ASTM A351-CF8M
GASKET	GRAPHITE

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5, and
API 600
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - BC (=Bolted Cover) Type
 - Full Bore



FORGED STEEL NON-BONNET VALVES



STANDARD MATERIALS

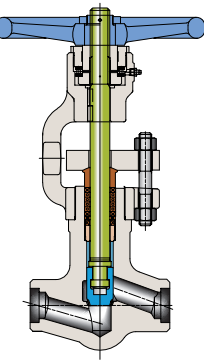
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-410

NOTE

1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 900# ~ 4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.11 / 16.25 / 16.34 / 16.5, and
BS5352
- 5) Constructions
 - End Connection : Socket-Welded or Flanged Type
 - OS & Y, WVB (=Welded Bonnet) Type
 - Full Bore
 - Rising Stem / Rising Hand wheel
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



CAST STEEL TOP ENTRY BALL VALVES - TRUNNION BALL TYPE

CE



STANDARD MATERIALS

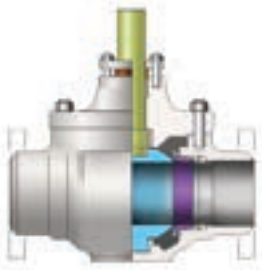
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	SOFT
BALL	ASTM A276-304 / 316 OR A351-CF8 (M)
STEM	ASTM A276-304
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE

1) CAST STEEL, STAINLESS STEEL

SPECIFICATIONS

- 1) Valve Size : 2" ~ 42", oversize special
- 2) Applicable Rating: ANSI 150#~4500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.25 / 16.34 / 16.5
API 6D
- 5) Constructions
 - End Connection : Butt-Welded or Flanged Type
 - Trunnion Ball Type
 - Reduce Bore / Full Bore
 - Fire Safety Construction
 - Manual or Motor Operated
(Pneumatic, Electric, or Hydraulic)



CAST STEEL SIDE ENTRY BALL VALVES - FLOATING BALL TYPE (2-PIECES)

CY 2PCS



STANDARD MATERIALS

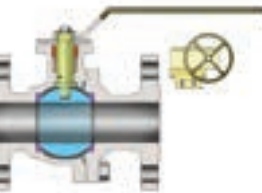
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
CONNECTOR	NOTE ¹⁾
SEAT	RTFE, NYLON
BALL	ASTM A351-CF8M
STEM	ASTM A276-316
GASKET	NOTE ²⁾
PACKING	GRAPHITE

NOTE

1) ASTM A216-WCB, A352-LCC, A351-CF3(M), A351-CF8(M)
2) PTFE / GRAPHITE

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 12", oversize special
- 2) Applicable Rating : ANSI 150#~600#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, ASME, ASTM
Designed by ASME B16.10 / 16.34 / 16.5 / 16.25
API6D / 608
- 5) Constructions
 - Two Pieces Type
 - End Connection : RTJ or Flanged Type
 - Floating Ball Type
 - Reduce Bore / Full Bore
 - Blow-out Proof Stem / Cavity Relieving Seats / Anti-static Design
 - Pressure Balancing Hole
 - Fire Safety Construction



CAST STEEL SIDE ENTRY BALL VALVES - TRUNNION BALL TYPE (2-PIECES)

CZ 2PCS



STANDARD MATERIALS

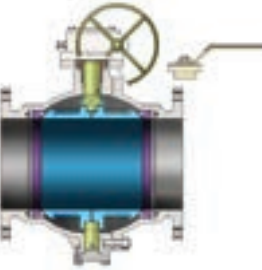
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
CONNECTOR	NOTE ¹⁾
SEAT	RTFE, NYLON
BALL	ASTM A351-CF8M
STEM	ASTM A276-316
GASKET	NOTE ²⁾
PACKING	GRAPHITE
TRUNNION	ASTM A276-316 / A240-316

NOTE

1) ASTM A216-WCB, A352-LCC, A351-CF3(M), A351-CF8(M)
2) PTFE / GRAPHITE

SPECIFICATIONS

- 1) Valve Size : 2" ~ 24", oversize special
- 2) Applicable Rating : ANSI 150#~1500#
- 3) Temperature : Up to 538°C
- 4) Code & Standard : API, BS, ASME, ASTM
Designed by ASME B16.10 / 16.34 / 16.5 / 16.25
API6D
- 5) Constructions
 - Two Pieces Type
 - End Connection : Butt-Welded or Flanged Type
 - Trunnion Ball Type
 - Full Bore / Reduce Bore
 - Blow-out Proof Stem
 - Double Seal, Double Block & Bleed / Anti-static Design
 - Pressure Relieving Seats / Pressure Balancing Hole
 - Fire Safety Construction



CAST STEEL SIDE ENTRY BALL VALVES - TRUNNION BALL TYPE (3-PICES)

CZ 3PCS



STANDARD MATERIALS

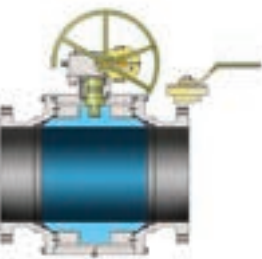
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
CONNECTOR	NOTE ²⁾
SEAT	RTFE, NYLON
BALL	ASTM A351-CF8M
STEM	ASTM A276-316
GASKET	NOTE ³⁾
PACKING	GRAPHITE
TRUNN ON	A276-316 / A240-316

NOTE

1) ASTM A105N / A350-LF2 / A182-F316
2) ASTM A105N / A216-WCB / A350-LF2 / A352-LCC / A182-F316 / A351-CF8M
3) PTFE / GRAPHITE

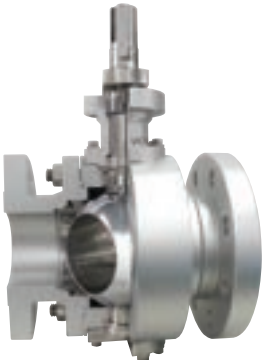
SPECIFICATIONS

- 1) Valve Size: 2"~48", oversize special
- 2) Applicable Rating: ASME 150#~1500#
- 3) Temperature: Up to 538°C
- 4) Code & Standard: API, ASME, ASTM
Designed by ASME B16.10 / 16.34 / 16.5 / 16.25
API6D
- 5) Constructions
 - Three Pieces Type
 - End Connection: Flanged, RTJ or
Butt-welded Type
 - Trunnion Ball Type
 - Full Bore / Reduce Bore
 - Blow-out Proof Stem
 - Double Seal, Double Block & Bleed / Anti-static Design
 - Pressure Relieving Seats / Pressure Balancing Hole
 - Fire Safety Construction



METAL SEATED BALL VALVES

CM



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-316-(H.F) ²⁾
BALL	ASTM A351-CF8(M) (H.F) ²⁾
STEM	ASTM A564-360, AISI 1020+ENP Coating
GASKET	NOTE ³⁾
PACKING	GRAPHITE
TRUNN ON	ASTM A564-360, AISI 1020+ENP Coating

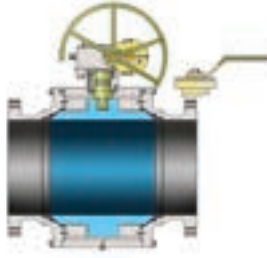
NOTE
1) ASTM A216-WCB/WCC,A217-WC6/WCC9
A351-CF8/CF8M
2) Hard Facing : TCC, Ni-Cr Alloy
3) GRAPHITE

SPECIFICATIONS

1) Valve Size: 2"~24", oversize special
2) Applicable Rating: ANSI 150#~4500#
3) Temperature: Up to 650℃
4) Code & Standard: API, BS, ASME, ASTM
Designed by ASME B16.10 / 16.34 / 16.5
API6D

5) Constructions

- End Connection: Flanged, RTJ or Butt-welded Type
- Trunnion Ball Type / Metal Seat Type
- Full Bore / Reduce Bore
- Blow-out Proof Stem
- Double Seal, Double Block & Bleed / Anti-static Design
- Pressure Relieving Seats / Pressure Balancing Hole
- Fire Safety Construction



FORGED STEEL METAL SEATED BALL VALVES - FREE FLOATING METAL-SEATED BALL TYPE

FM



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
SEAT CONNECTOR	NOTE ¹⁾
BALL	316SS / 410SS WITH (H.F) ³⁾
SEAT	NOTE ³⁾
GASKET	ASTM A182-F316L
STEM	ASTM A182-F316
SPRING	INCONEL

NOTE
1) ASTM A105 (WITH TC), A182-F316 (WITH TC), A182-F22 (WITH TC),
A216-WCB (WITH TC), A217-WC6 (WITH TC), or A217-WC9 (WITH TC)
2) ASTM A105 / A216-WCB / A217-WC6 / A217-WC9 / A182-F22 / A182-F316
316SS / 410SS WITH TC
3) Hard Facing : Stellite, TCC, Ni-Cr Alloy

SPECIFICATIONS

1) Valve Size: 1" ~ 4", oversize special
2) Applicable Rating : ANSI 600#~4500#
3) Temperature : up to 650℃, over temperature special
4) Code & Standard : API, ASME, ASTM
Designed by ASME B16.11 / 16.34, MSS-SP - 72

5) Constructions

- 2-Piece Body
- End Connection : Socket-Welded Type
- Floating Ball Type
- Std. Multi-Coil Spring for Live Loading
- Blow-out Proof Stem / Precise Metal Gasket
- Integral Seat for Zero Leakage / Hard Coating on the Ball
- Dual Stem Guiding for Reducing Torque
- Reduce Bore / Full Bore
- Bubble-tight Std.
- Fire Safety Construction
- Manual Operating



FORGED STEEL SIDE ENTRY BALL VALVES - FLOATING BALL TYPE (2-PIECES OR 3-PIECES)

FY 3PCS



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
CONNECTOR	NOTE ¹⁾
SEAT	RTFE, PTFE OR NYLON
BALL	ASTM A276-316 OR A182-F316(L)
STEM	ASTM A276-316(L)
GASKET	PTFE OR GRAPHITE
GLAND	ASTM A276-316

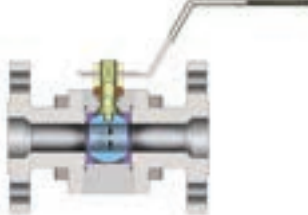
NOTE
1) ASTM A105N / A350-LF2 / A182-F316
2) ASTM A105N / A216-WCB / A350-LF2 / A352-LCC / A182-F316 / A351-CF8M
3) GRAPHITE

SPECIFICATIONS

1) Valve Size : 1/2"~2", oversize special
2) Applicable Rating : ASME 300# ~ 2500#
3) Temperature : Up to 538℃
4) Code & Standard : API, ASME, ASTM
Designed by ASME B16.10 / 16.34 / 16.5,
API6D

5) Constructions

- 3-Piece Flanged Body
- End Connection : Flanged Type
- Floating Ball Type
- Reduce Bore / Full Bore
- Bubble-tight Std.
- Fire Safety Construction
- Manual Operating



3-WAY BALL VALVES



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	RTFE
BALL	410SS / 316SS
FLANGE PIECE	NOTE ¹⁾

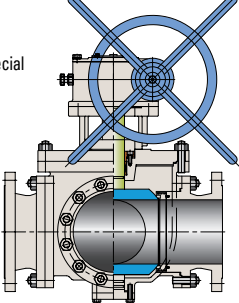
NOTE
1) ASTM A216-WCB / A352-LCB / A351-CF8(M)

SPECIFICATIONS

1) Valve Size : 2 1/2" ~ 10"
2) Applicable Rating : ANSI 150#~300#
3) Temperature : up to 200℃, over temperature special
4) Code & Standard : ASME B16.34 / B16.05

5) Constructions

- T-port, L-port



FORGED STEEL GATE VALVES (CRYOGENIC)

1C



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A182-F304L(H.F)
WEDGE	ASTM A351-CF3(M) / CF8(M) OR EQUIVALENT-(H.F)
STEM	ASTM A276-304(L) / 316(L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-304 / 316

NOTE
1) Forged Steel, ASTM A182-F304(L) / F316(L)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 1500#
3) Temperature : Down to -196℃
4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.11/16.5
5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Socket-Welded, Butt-Welded or Flanged Type
- Long Extended Bonnet
- Pressure Relief Design (Pressure Balance Design)
- Fire Safety / Anti-static Design
- Non Rising Hand wheel



FORGED STEEL GLOBE VALVES (CRYOGENIC)

1D



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A182-F304L(H.F)
DISC	ASTM A276-304(L) / 316(L)-(H.F)
STEM	ASTM A276-316(L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Forged Steel, ASTM A182-F304(L) / F316(L)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 1500#
3) Temperature : Down to -196℃
4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.11/16.5
5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Socket-Welded, Butt-Welded or Flanged Type
- Long Extended Bonnet
- Pressure Relief Design (Pressure Balance Design)
- Fire Safety / Anti-static Design
- Rising Hand wheel



FORGED STEEL LIFT CHECK VALVES (CRYOGENIC)

1L



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT & DISC	ASTM A276-304L(H.F)
GASKET	GRAPHITE
SPRING	304SS

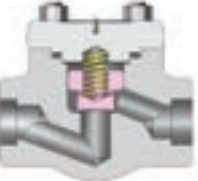
NOTE
1) Forged Steel, ASTM A182-F304(L) / F316(L)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 1500#
3) Temperature : Down to -196℃
4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.11/16.5
5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Socket-Welded or Flanged Type
- Reduce Bore / Full Bore
- Seat Welded on Body



FORGED STEEL SWING CHECK VALVES (CRYOGENIC)

1M



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-304(L) / 316(L)-(H.F)
DISC	ASTM A351-CF8(M) / CF3(M), A276-304(L) / 316(L)-(H.F)
GASKET	GRAPHITE
ARM	ASTM A351-CF8(M) / CF3(M)

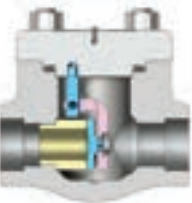
NOTE
1) Forged Steel, ASTM A182-F304(L) / F316(L)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 1500#
3) Temperature : Down to -196℃
4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.11/16.5
5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Socket-Welded or Flanged Type
- Full Bore / Reduce Bore



CAST STEEL GATE VALVES (CRYOGENIC)

C1



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-304L (H.F)
WEDGE	ASTM A276-304(L)(H.F) / 316(L)(H.F) OR EQUIVALENT
STEM	ASTM A276-316 (L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Cast Steel, ASTM A351-CF8(M) / CF3(M)

SPECIFICATIONS

1) Valve Size : 2' 1/2" ~ 48"

2) Applicable Rating : ASME 150# ~ 1500#

3) Temperature : Down to -196℃

4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.25/16.5

5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Flanged, Butt-Welded or RTJ Type
- Long Extended Bonnet
- Pressure Relief Design (Pressure Balance Design)
- Fire Safety / Anti-static Design



CAST STEEL SWING CHECK VALVES (CRYOGENIC)

C9



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-304(L) / 316(L)-(H.F)
DISC	ASTM A351-CF8(M) / CF3(M), A276-304(L) / 316(L)-(H.F)
GASKET	GRAPHITE
ARM	ASTM A351-CF8(M) / CF3(M)

NOTE
1) Cast Steel, ASTM A351-CF3(M) / CF8(M)

SPECIFICATIONS

1) Valve Size : 2' ~ 36"

2) Applicable Rating : ASME 150# ~ 1500#

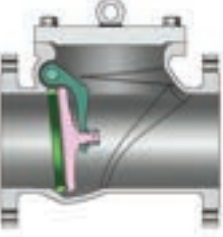
3) Temperature : Down to -196℃

4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.25/16.5

5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Flanged, Butt-Welded or RTJ Type
- Full Bore



TOP ENTRY BALL VALVES (CRYOGENIC)

CE



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	PCTFE
BALL	ASTM A276-304 / 316 OR A351-CF8(M)
STEM	ASTM A276-304 / 316
GASKET	GRAPHITE
BONNET BOLT	ASTM A320 B8M CL2
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A351-CF8(M), CF3(M)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 36", oversize special

2) Applicable Rating : ASME 150# ~1500#

3) Temperature : Down to -196℃

4) Code & Standard : API, BS, ASME, ASTM, KGSC
Designed by ASME B16.34, and ASME B16.25/16.5

5) Constructions

- End Connection : Butt-Welded or Flanged Type
- Extended Bonnet
- Trunnion Ball, Full Bore / Reduce Bore
- Fire Safety Construction (Certified by TÜV)
- Manual or Motor Operated (Pneumatic, Electric, or Hydraulic)
- DBB, DIB

6) Feature : Patent 10-0835853 (Korea)
NEP Certification (No. NEP-MKE-2009-026)



CAST STEEL GLOBE VALVES (CRYOGENIC)

CJ



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-304L(H.F)
DISC	ASTM A276-304(L)(H.F) / 316(L)(H.F) OR EQUIVALENT
STEM	ASTM A276-316(L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Cast Steel, ASTM A351-CF8(M) / CF3(M)

SPECIFICATIONS

1) Valve Size : 2' ~ 24"

2) Applicable Rating : ASME 150# ~ 1500#

3) Temperature : Down to -196℃

4) Code & Standard : BS, ASME, ASTM, KGSC
Designed by BS6364, ASME B16.34, and ASME B16.25/16.5

5) Shell & Seat Leak Test : ASME B16.34, BS6364

6) Constructions

- End Connection : Flanged, Butt-Welded or RTJ Type
- Long Extended Bonnet
- Fire Safety / Anti-static Design



THREE-PIECE BALL VALVES (CRYOGENIC)

D1,E1



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	PCTFE
BALL	ASTM A276-304 / 316 or A351-CF8(M)
STEM	ASTM A276-304 / 316
CONNECTOR	NOTE ¹⁾
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A182-F304(L), F316(L)

SPECIFICATIONS

1) Valve Size : 1/2" ~ 1 1/2", oversize special

2) Applicable Rating : ASME 150# ~ 1500#

3) Temperature : Down to -196℃

4) Code & Standard : API, BS, ASME, ASTM, KGSC

5) Constructions

- End Connection : Socket-Welded, Butt-Welded or Flanged Type
- Extended Bonnet
- Floating Ball, Full Bore
- Fire Safety Construction
- Manual or Motor Operated (Pneumatic, Electric, or Hydraulic)



SAFETY VALVES - Series SF-5200 (Pilot-Operated)

SF5200



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-316(LJSS-(H.F)
DISC	316(LJSS
PILOT SEAT	304(LJSS, 316(LJSS
PILOT DISC	304(LJSS, 316(LJSS
SPRING	304SS, 316SS OR INCONEL
PIPING	STAINLESS STEEL

NOTE
1) Cast Steel, ASTM A531-CF3(M) / CF8(M)

SPECIFICATIONS

1) Valve Size : 2' x 3" ~ 8" x 10", oversize special

2) Applicable Rating : Up to ASME 1500# x 300#

3) Temperature : Down to -196℃

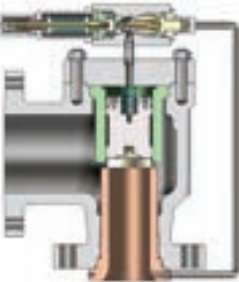
4) Code & Standard

- Orifice : API RP 520, MFG. Standard
- Cryogenic Test : BS6364, MFG. Standard
- Shell Test : API RP 598, ASME B16.34, KOGAS Standard

• Seat Leakage Test : API RP 527

5) Constructions

- End Connection : Flanged Type
- Full Bore / Full Nozzle
- Screwed Nozzle
- Self-alignment Trim



SAFETY VALVES - Series SF-7200 (Gas Or Vapor Service for Conventional Type) - Series SF-7900 (Liquid Service for Conventional Type)

SF7200, SF7900



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-316L(H.F)
DISC	316(LJSS
STEM	304(LJSS, 316(LJSS
GUIDE	304(LJSS, 316(LJSS
SPRING	304SS, 316SS OR INCONEL

NOTE
1) Cast Steel, ASTM A351-CF3(M), CF8(M)

SPECIFICATIONS

1) Valve Size : 1/2" x 3/4" ~ 12" x 16", oversize special

2) Applicable Rating : ASME 600# x 150# ~ 1500# x 300#

3) Temperature : Down to -196℃

4) Code & Standard

- Orifice : API RP 520, MFG. Standard
- Cryogenic Test : BS6364, MFG. Standard
- Shell Test : API RP 598, ASME B16.34, KOGAS Standard

• Seat Leakage Test : API RP 527

5) Constructions

- End Connection : Flanged Type
- Full Bore / Full Nozzle / Screwed Nozzle
- Self-alignment Trim
- Packed Cap & Lever to be optional



SAFETY VALVES - Series SF-8200 (Gas or Vapor Service for Conventional Type) - Series SF-8900 (Liquid Service for Conventional Type)

SF8200, SF8900



STANDARD MATERIALS	
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-316(H.F)
DISC	316(LJSS
STEM	304(LJSS, 316(LJSS
GUIDE	304(LJSS, 316(LJSS
SPRING	304SS, 316SS OR INCONEL

NOTE
1) Cast Steel, ASTM A351-CF3(M), CF8(M)

SPECIFICATIONS

1) Valve Size : 1/2" x 3/4" ~ 12" x 16", oversize special

2) Applicable Rating : ASME 150# x 150# ~ 300# x 300#

3) Temperature : Down to -196℃

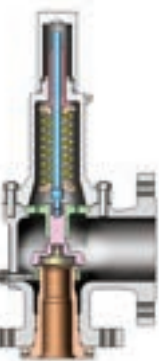
4) Code & Standard

- Orifice : API RP 520, MFG. Standard
- Cryogenic Test : BS6364, MFG. Standard
- Shell Test : API RP 598, ASME B16.34, KOGAS Standard

• Seat Leakage Test : API RP 527

5) Constructions

- End Connection : Flanged Type
- Full Bore / Full Nozzle / Screwed Nozzle
- Self-alignment Trim
- Packed Cap & Lever to be optional



SAFETY VALVES - Series SF-9600 (Gas, Vapor or Liquid Service for Conventional Type)

SF9600



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-316(L)-(H.F)
DISC	316(L)SS
STEM	304(L)SS
GUIDE	304(L)SS
SPRING	304SS, 316SS OR INCONEL

NOTE
1) (F)304SS, (F)316SS

SPECIFICATIONS

- 1) Valve Size : 1/2" x 1/2" ~ 1" x 1"
- 2) Applicable Set Pressure : Up to 210kgf/cm²
- 3) Temperature : Down to -196℃
- 4) Code & Standard
 - Orifice : API RP 520, MFG. Standard
 - Cryogenic Test : BS6364, MFG. Standard
 - Shell Test : API RP 598, ASME B16.34, KOGAS Standard
 - Seat Leakage Test : API RP 527
- 5) Constructions
 - End Connection : Screwed Type
 - Full Bore / Full Nozzle / Screwed Nozzle
 - Self-alignment Trim
 - Non Lever (Lever to be optional)



GLOBE CONTROL VALVES (CRYOGENIC) - Series SS-1050

SS1050



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	STAINLESS STEEL
STEM	ASTM A276-304
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Forged Stainless Steel, ASTM A351-CF8(M)

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 24", oversize special
- 2) Applicable Rating : ANSI 150# ~ 4500#, JIS 10k-63k
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME, ASTM, KGSC
 - Designed by BS6364, ASME B16.34, and ASME B16.11/16.25/16.5
- 5) Allowable Seat Leakage : ASME Class III , IV , V , BS6364
- 6) Constructions
 - End Connection : Socket-Welded, Butt-Welded, or Flanged Type
 - Long Extended Bonnet
 - Actuator : Cylinder or Diaphragm Type
 - Quick Change Typed Trim



ANGLE GLOBE CONTROL VALVES (CRYOGENIC) - Series SS-2050

SS2050



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	STAINLESS STEEL
STEM	ASTM A276-304
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Forged Stainless Steel, ASTM A351-CF8(M), High Strength Aluminium

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 24", oversize special
- 2) Applicable Rating : ASME 150# ~ 4500#, JIS 10k-63k
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME, ASTM, KGSC
 - Designed by BS6364, ASME B16.34, and ASME B16.25/16.5
- 5) Allowable Seat Leakage : ASME Class I ~ V, BS6364
- 6) Constructions
 - End Connection : Butt-Welded, or Flanged Type
 - Long Extended Bonnet
 - Actuator : Cylinder or Diaphragm Type
 - Quick Change Typed Trim



CAST STEEL NEEDLE VALVES (CRYOGENIC)



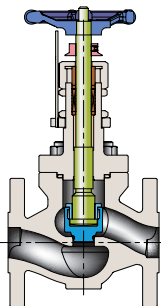
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	ASTM A276-304L(H.F)
DISC	ASTM A276-304L(H.F) / 316(L)(H.F) OR EQUIVALENT
STEM	ASTM A276-316(L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) Cast Steel, ASTM A351-CF8(M) / CF3(M)

SPECIFICATIONS

- 1) Valve Size : 1/2" ~ 2"
- 2) Applicable Rating : ASME 150# ~ 2500#
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME, ASTM, KGSC
 - Designed by BS6364, ASME B16.34, and ASME B16.25/16.5
- 5) Shell & Seat Leak Test : ASME B16.34, BS6364
- 6) Constructions
 - End Connection : Flanged, Butt-Welded or RTJ Type
 - Long Extended Bonnet
 - Fire Safety / Anti-static Design



CAST STEEL AXIAL CHECK VALVES (CRYOGENIC)



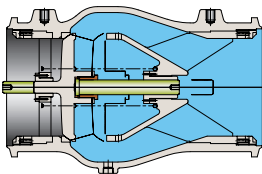
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
DIFFUSER	NOTE ¹⁾
DISC	NOTE ¹⁾ + HF ³⁾
STEM	ASTM A276-316(L)
SPRING	INCONEL X-750
SEAT	NOTE ²⁾ + HF ³⁾

NOTE
1) Cast Steel, ASTM A351-CF8(M) / CF3(M)
2) ASTM A240-316(L) / A276-316(L)
3) HF = Stellite #6

SPECIFICATIONS

- 1) Valve Size : 3" ~ 36"
- 2) Applicable Rating : ASME 150# ~ 1500#
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME, ASTM, API
 - Designed by BS6364, ASME B16.34, API 6D
- 5) Shell & Seat Leak Test : API 598, ASME B16.34
- 6) Constructions
 - End Connection : Flanged, Butt-Welded, Socket-welded
 - Metal tp Metal Seat
 - Uni-Direction
 - Reduced Bore



CAST STEEL DUAL CHECK VALVES (CRYOGENIC)



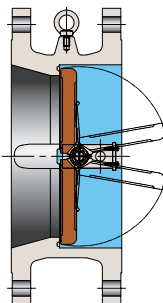
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
STOP PIN	ASTM A276-316
DISC	ASTM A351-CF8(M)
SPRING	INCONEL X-750

NOTE
1) ASTM A351-CF8(L) / CF2(M)

SPECIFICATIONS

- 1) Valve Size : 2" ~ 24"
- 2) Applicable Rating : ASME 150# ~ 3000#
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME, ASTM, API
 - Designed by BS6364, ASME B16.34, API 598 type "A"
- 5) Constructions
 - End Connection : Wafer, Lugged, Flanged



CAST STEEL J-T VALVES (JOULE-THOMSON VALVES) (CRYOGENIC)



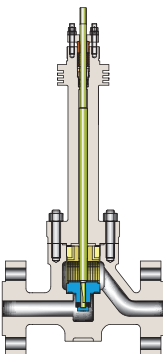
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS + STELLITE
CAGE	316SS
PLUG & STEM	316SS or INCONEL
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE

NOTE
1) ASTM A351-CF8(M) / CF3(M)

SPECIFICATIONS

- 1) Valve Size : 1" ~ 2 1/2", oversize special
- 2) Applicable Rating : ASME 1500# ~ 4500#
- 3) Temperature : Down to -196℃
- 4) Code & Standard : BS, ASME
 - Designed by BS6364, ASME B16.34
- 5) Constructions
 - End connections : RTJ FLG'D Butt-Welded



FORGED STEEL GATE VALVES (LONG BELLOWS TYPE) - OS & Y, BB TYPE

1G



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-321
SEAT	ASTM A276-410-H.F
WEDGE	ASTM A271-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 800#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 62 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5,
 API 602, MSS-SP 117
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • OS & Y, BB (=Bolted Bonnet) Type
 • Reduce Bore
 • Rising Stem/Non Rising Hand wheel
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES (LONG BELLOWS TYPE) - OS & Y, BB TYPE

1H



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-321
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 800#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 62 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5,
 MSS-SP 117, BS5352
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type
 • Reduce Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



FORGED STEEL GATE VALVES (COMPACT BELLOWS TYPE) - OS & Y, BB TYPE

1J



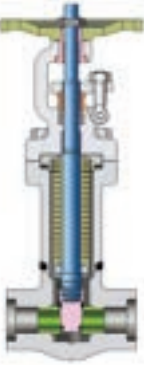
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-316L
SEAT	ASTM A276-410-H.F
WEDGE	ASTM A271-CA15
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 800#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 68 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5,
 API 602, MSS-SP 117
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • OS & Y, BB (=Bolted Bonnet) Type / Compact Type
 • Reduce Bore
 • Rising Stem/Non Rising Hand wheel
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES (COMPACT BELLOWS TYPE) - OS & Y, BB TYPE

1K



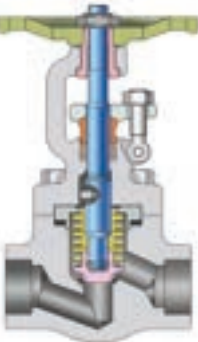
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-316L
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 800#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 102 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5,
 MSS-SP 117
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type / Compact Type
 • Full Bore / Reduce Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



FORGED STEEL Y-GLOBE VALVES (BELLOWS TYPE) - OS & Y, BB TYPE

3K



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-316L
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 150# ~ 800#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 102 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5, MSS-SP 117
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type
 • Full Bore / Reduce Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



FORGED STEEL GLOBE VALVES (BELLOWS TYPE) - OS & Y, BB TYPE

AK



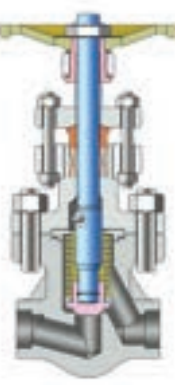
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-316L
SEAT	ASTM A105-H.F
DISC	ASTM A276-410
STEM	ASTM A276-410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A105, A182-F304(L) / F316(L) / F22 / F5 / F9 / F317 / F347 / F321

SPECIFICATIONS

1) Valve Size : 1/2" ~ 2"
2) Applicable Rating : ASME 600# ~ 1500#
3) Temperature : Up to 538℃
4) Bellows Test Pressure : 254 kgf/cm²
5) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.11 / 16.34 / 16.5,
 MSS-SP 117, BS5352
6) Constructions
 • End Connection : Socket-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type
 • Full Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



CAST STEEL GATE VALVES (BELLOWS TYPE) - OS & Y, BB TYPE

C4



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-321
SEAT	ASTM A276-410 / 304(L) / 316(L)-H.F
WEDGE	ASTM A216-WCB, A276-304(L)-316(L)
STEM	ASTM A216-410, A276-304(L)-316(L)
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A216-WCB, A351-CF3(M) / CF8(M)

SPECIFICATIONS

1) Valve Size : 2" ~ 24"
2) Applicable Rating : ASME 150# ~ 600#
3) Temperature : Up to 538℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.25 / 16.34 / 16.5
5) Constructions
 • Bellows-Sealed Construction
 • End Connection : Butt-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type
 • Full Bore / Reduce Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



CAST STEEL GLOBE VALVES (BELLOWS TYPE) - OS & Y, BB TYPE

C5



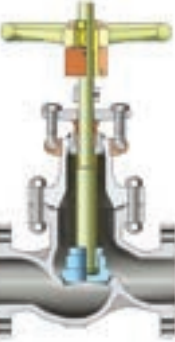
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
BELLOWS	ASTM A240-321
DISC	ASTM A276-304(L) / 316(L) / 410
STEM	ASTM A276-304(L) / 316(L) / 410
GASKET	GRAPHITE
GLAND PACKING	GRAPHITE
GLAND	ASTM A276-316

NOTE
1) ASTM A216, WEB, A351-CF3(M)/CF8(M)

SPECIFICATIONS

1) Valve Size : 2" ~ 24"
2) Applicable Rating : ASME 150# ~ 600#
3) Temperature : Up to 538℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
 Designed by ASME B16.25 / 16.34 / 16.5
5) Constructions
 • Bellows-Sealed Construction
 • End Connection : Butt-Welded or Flanged Type
 • BB (=Bolted Bonnet) Type
 • Full Bore
 • Manual or Motor Operated
 (Pneumatic, Electric, or Hydraulic)



CRYOGENIC BUTTERFLY VALVE (SOFT + METAL SEAT / METAL SEAT)



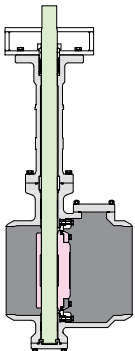
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	STAINLESS STEEL
BONNET	STAINLESS STEEL
SEAT	PCTFE+STAINLESS / STAINLESS STEEL
DISC	STAINLESS STEEL
STEM	STAINLESS STEEL

NOTE
Alternative Materials for body, Disc and other parts are available upon request to meet specific requirements.

SPECIFICATIONS

- 1) Valve Size : 3" ~ 36" oversize special
- 2) Applicable Rating : ASME 150# ~ 300#
- 3) Temperature : Down to -196℃
- 4) Code & Standard : API, BS, ASME, ASTM, ISO
- 5) Typical Applications: Petro-chemical plants / Fire safe line / Exhaust gas line & Steam line / Gas carrier (LNG, Acetylene, Ethylene)



HI-PERFORMANCE BUTTERFLY VALVE (SOFT SEAT : TEFLON)



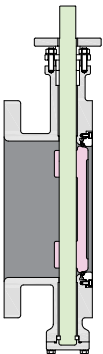
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	CAST STEEL, STAINLESS STEEL, ALLOY STEEL
SEAT	TEFLON
DISC	STAINLESS STEEL, ALLOY STEEL
STEM	STAINLESS STEEL, ALLOY STEEL

NOTE
Alternative Materials for body, Disc and other parts are available upon request to meet specific requirements.

SPECIFICATIONS

- 1) Valve Size : 3" ~ 36" oversize special
- 2) Applicable Rating : ASME 150# ~ 300#
- 3) Temperature : Up to 250℃
- 4) Code & Standard : API, BS, ASME, ASTM, ISO
- 5) Typical Applications: Marine tankers-shipbuilding / Chemical and Petro-chemical plant / Offshore / onshore plants



DOUBLE ECCENTRIC BUTTERFLY VALVE (METAL SEAT)



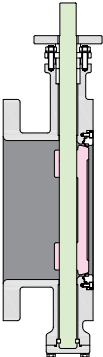
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	CAST STEEL, STAINLESS STEEL, ALLOY STEEL
SEAT	STAINLESS STEEL
DISC	STAINLESS STEEL, ALLOY STEEL
STEM	STAINLESS STEEL, ALLOY STEEL

NOTE
Alternative Materials for body, Disc and other parts are available upon request to meet specific requirements.

SPECIFICATIONS

- 1) Valve Size : 3" ~ 36" oversize special
- 2) Applicable Rating : ASME 150# ~ 300#
- 3) Temperature : 38℃ ~ 538℃
- 4) Code & Standard : API, BS, ASME, ASTM, ISO
- 5) Typical Applications: Petro-chemical plants / Fire safe line / Exhaust gas line & Steam line



DOUBLE ECCENTRIC BUTTERFLY VALVE (SOFT SEAT:RUBBER)



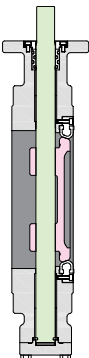
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	CAST STEEL, STAINLESS STEEL, ALLOY STEEL
SEAT	RUBBER
DISC	STAINLESS STEEL, ALLOY STEEL
STEM	STAINLESS STEEL, ALLOY STEEL

NOTE
Alternative Materials for body, Disc and other parts are available upon request to meet specific requirements.

SPECIFICATIONS

- 1) Valve Size : 3" ~ 24" oversize special
- 2) Applicable Rating : ASME 150# ~ 300#
- 3) Temperature : -20℃ ~ 230℃
- 4) Code & Standard : API, BS, ASME, ASTM, ISO
- 5) Typical Applications: cargo oil system in the tanker / Water ballast system / Tank cleaning system / Seat water/Fresh water / Fuel oil and Diesel oil



Cryogenic Butterfly Valve

Primary Characteristics

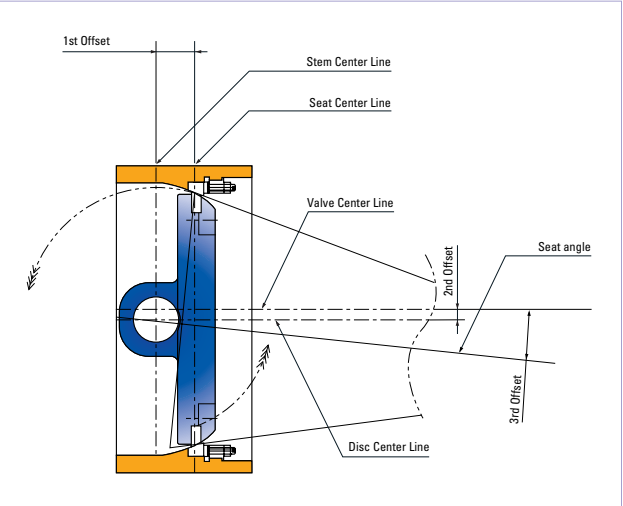
- Triple offset and Double offset Design.
- Bi-directional bubble tight shut-off.
- Fire-safe by design.
- Developed geometry results in zero seat/seal friction.
- Low torques.
- Extended service life.
- Excellent flow and throttling characteristics covering services from Cryogenic to high temperature.

Standard Compliance

- BS 6364 Valves for Cryogenic service.
- Fire Safe approved in accordance with API 607.
- (Metal to Metal Seat / Metal to Metal Seat+Soft)

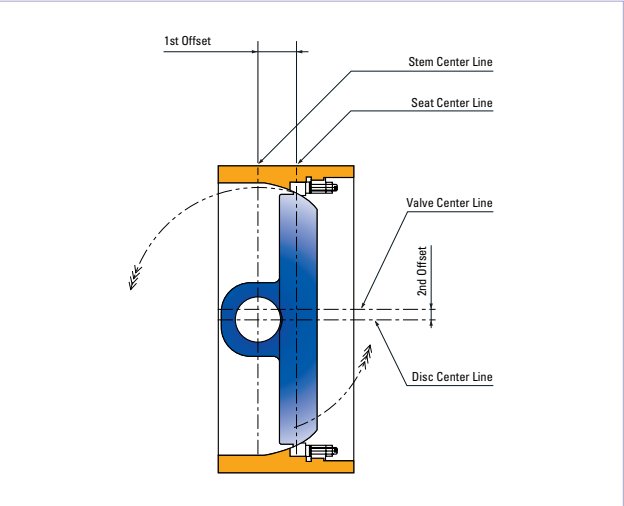
Application

- Gas carrier (Liquefied Natural Gas, Acetylene, Ethylene)
- Receiving terminal
- Liquefied oxygen(-160℃) plant



Triple Eccentric Design

Metal/Soft seated high pressure butterfly valves provide bi-directional bubble tight shut off which achieved by introducing state of the triple eccentric disc geometry. The valve shaft is off set against the seat and the center line of the valve body respectively. The seating edges are machined with a continuously changing slope from an angle on top of the oval seat ring to an angle at the opposite side. This geometry ensures that the seat ring stays clear ensures that the seat ring stays clear of the seat except at the final shut off position which results long life seat.



Double Eccentric Design

It effects friction-free contact between body and seat since the rotation axis '(stem) of the valve disc is shifted from the center by a distance of the width of '1st Offset and 2nd Offset. (See sketch) Because of the Double offset a cam effect is produced which prevent from wearing the seal surface, lessens seating 'torque and offer longer service life and easy operation.

GLOBE VALVE, SS-1000 SERIES (RATING 150# ~ 300#, CASTING)



STANDARD MATERIALS

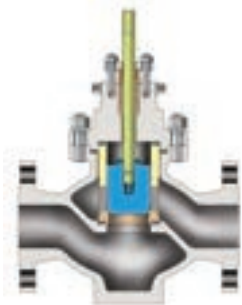
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS OR 410SS ²⁾
PLUG	316SS OR 410SS ²⁾
CAGE	316SS OR 410SS
STEM	316SS + H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
<HIGH TEMP> ASTM A216-WCB, ASTM A217-WC6 / WC9 / C12A
<LOW TEMP> ASTM 352-LCB / LC1 / LC2 / LC3
2) 316SS + Stellite Welding(#6) or 410SS + Q.T

SPECIFICATIONS

- 1) Valve Size : 1" ~ 36", oversize special
2) Applicable Rating : ASTM 150# ~ 300#
3) Temperature : Up to 650℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598 & ISA Standard
5) Allowable Seat Leakage : IV, V, VI, Zero
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC.



GLOBE VALVE, SS-1010 SERIES (RATING 600#~4500# CASTING)



STANDARD MATERIALS

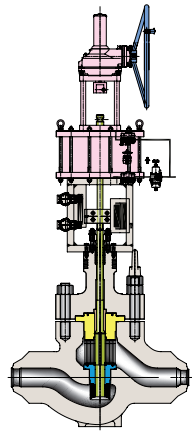
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS OR 410SS ²⁾
PLUG	316SS OR 410SS ²⁾
CAGE	316SS OR 410SS
STEM	316SS + H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
<HIGH TEMP> ASTM A216-WCB, ASTM A217-WC6 / WC9 / C12A
<LOW TEMP> ASTM 352-LCB / LC1 / LC2 / LC3
2) 316SS + Stellite Welding(#6) or 410SS + Q.T

SPECIFICATIONS

- 1) Valve Size : 1" ~ 24", oversize special
2) Applicable Rating : ASTM 600#~4500#
3) Temperature : Up to 650℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598 & ISA Standard
5) Allowable Seat Leakage : IV, V, VI, Zero
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC.



GLOBE VALVE, SS-1110 SERIES (RATING 600#~4500# FORGED)



STANDARD MATERIALS

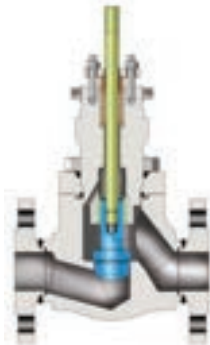
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS OR 410SS ²⁾
PLUG	316SS OR 410SS ²⁾
CAGE	316SS OR 410SS
STEM	316SS+H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
<HIGH TEMP> ASTM A105, ASTM A182-F11 / F22 / F91
<LOW TEMP> ASTM 182-F304 / F316
2) 316SS + Stellite Welding(#6) or 410SS + Q.T

SPECIFICATIONS

- 1) Valve Size : 1" ~ 12", oversize special
2) Applicable Rating : ASTM 150#~4500#
3) Temperature : Up to 650℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598 & ISA Standard
5) Allowable Seat Leakage : IV, V, VI, Zero
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC.



3-WAY VALVE, SS-1030 SERIES (DIVIDING OR MIXING TYPE)



STANDARD MATERIALS

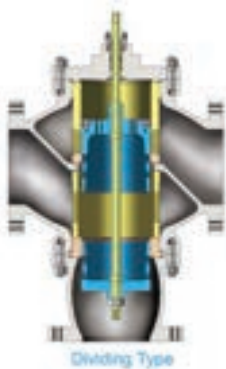
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS OR 410SS ²⁾
PLUG	316SS OR 410SS ²⁾
CAGE	316SS OR 410SS
STEM	316SS+H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
<HIGH TEMP> ASTM A216-WCB, ASTM A217-WC6 / WC9 / C12A
<LOW TEMP> ASTM 352-LCB / LC1 / LC2 / LC3
2) 316SS + Stellite Welding(#6) or 410SS + Q.T

SPECIFICATIONS

- 1) Valve Size : 1" ~ 36", oversize special
2) Applicable Rating : ASTM 150#~900#
3) Temperature : Up to 650℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598 & ISA Standard
5) Allowable Seat Leakage : IV, V, VI
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC.



GLOBE VALVE, SS-1050 SERIES (FOR CRYOGENIC SERVICE, CASTING)



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS+STELLITE WELDING
PLUG	316SS+STELLITE WELDING
CAGE	316SS+NI
STEM	316SS+H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE or GRAPHITE

NOTE

- 1) A351-CF8 / CF8M / CF3 / CF8M / MODEL ETC...

SPECIFICATIONS

- 1) Valve Size : 1" ~ 36", oversize special
2) Applicable Rating : ASTM 150# ~ 4500#
3) Temperature : Up to -196℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598, ISA Standard & BS 6364
5) Allowable Seat Leakage : IV, V, VI
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC..



GLOBE VALVE, SS-1150 SERIES (FOR CRYOGENIC SERVICE, FORGED)



STANDARD MATERIALS

PART NAMES	MATERIALS ¹⁾
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS+STELLITE WELDING
PLUG	316SS+STELLITE WELDING
CAGE	316SS+NI
STEM	316SS+H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) A182-F304 / F316 / F304L / F316L / MODEL ETC...

SPECIFICATIONS

- 1) Valve Size : 1" ~ 10", oversize special
2) Applicable Rating : ASTM 150#~4500#
3) Temperature : Up to -196℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.10 / 16.25 / 16.34 / 16.5
API 598, ISA Standard & BS 6364
5) Allowable Seat Leakage : IV, V, VI
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC..



SPECIAL TYPE, ANTI-SURGE VALVES



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS OR 410SS ²⁾
PLUG	316SS OR 410SS ²⁾
CAGE	316SS OR 410SS
STEM	316SS + H.CR
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
<HIGH TEMP> ASTM A216-WCB, ASTM A217-WC6 / WC9 / C12A
<LOW TEMP> ASTM 352-LCB / LC1 / LC2 / LC3
2) 316SS + Stellite Welding(#6) or 410SS + Q.T

SPECIFICATIONS

- 1) Valve Size : 1" ~ 44" (Globe or Angle)
2) Applicable Rating : ASTM 150#~2500#
3) Temperature : up to 650℃
4) Designed to ANSI B16.34 and ASME VIII standards
5) Allowable Seat Leakage : IV, V, VI, Zero
6) Control Characteristics
EQ%, Linear, Modified, Q-Opening
7) Main features
• Large capacity
• Fast opening (0.5 - 1 second)
• Operating range 50:1 ~ 100:1
• Outlet valve gas speed Limitation (0.3 Mach)
• Sound typically 85dB(A) or less
• Quick change type



SPECIAL TYPE, DESUPERHEATER (MULTI NOZZLE SPRAY OR DAM TYPE)



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	316SS+FULLY STL. #6
PLUG	316SS+FULLY STL. #12
EXTENSION LEG	F22 OR A565 GR.616
STEM	316SS OR 630SS
GASKET	316SS WITH GRAPHITE METAL
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) ASTM A217 WC6 / WC9 / C12A or A351-CF8M

SPECIFICATIONS

- 1) Valve Size : 1"X3" / 1.5"X3" / 1.5"X4" / 2"X4",
oversize special
2) Applicable Rating : ASTM 1500#~4500#
3) Temperature : Up to 650℃
4) Allowable Seat Leakage : IV, V, VI, Zero
5) Main features
• Standard Max. available Cv: 12
• Waterflow turndown of 150:1 or higher
• User friendly design
• Standard leakage class : "V"
• Seperator type is application of "DAM" design



SPECIAL TYPE, FORGED BALL VALVE INTEGRATED METAL SEAT



STANDARD MATERIALS

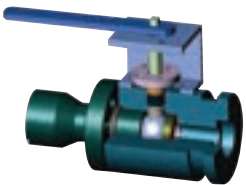
PART NAMES	MATERIALS
BODY	NOTE ¹⁾
SEAT CONNECTOR	BODY MAT'L + N.C COATING
GUIDE SEAT	410SS OR 420SS + STL
BALL	316SS OR INCO + N.C
STEM	ASTM A182 F316
GASKET	316LSS OR 630SS
GLAND PACKING	GRAPHITE

NOTE

- 1) All the Stainless Steel Available
-ASTM A105, ASTM A182-F11 / F22 / F91

SPECIFICATIONS

- 1) Valve Size : 1" ~ 4", oversize special
2) Applicable Rating : ASTM 150#~4500#
3) Temperature : Up to 650℃
4) Code & Standard : API, BS, ASME, ASTM
Design by ASME B16.11 / 16.25 / 16.34 / MSS-SP-72
5) Allowable Seat Leakage : V, VI, Zero
6) Main features
• 2-Piece Body
• End Conn. : R.F/ RTJ / SW / BW
• Floating Ball Type
• Integral Seat for ZERO Leakage
• Manual or Puenmatic, MOV Operating



SPECIAL TYPE, TOP ENTRY BALL VALVE (CASTING OR FORGED)



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	NOTE ¹⁾
BONNET	NOTE ¹⁾
SEAT	SOFT
BALL	ASTM A276-304/316 OR A351-CF8(M)
STEM	316SS+H.CR OR COND. B
GASKET	GRAPHITE
GLAND PACKING	PTFE OR GRAPHITE

NOTE

- 1) All the Stainless Steel Available
- CAST STEEL, STAINLESS STEEL

SPECIFICATIONS

- 1) Valve Size : 1" ~ 36", oversize special
2) Applicable Rating : ASTM 150#~1500#
3) Temperature : -196℃ ~ 538℃
4) Code & Standard : API, BS, ASME, ASTM, KGSC
Design by ASME B16.11 / 16.34 / 16.5 / API 6D
5) Allowable Seat Leakage : IV, V, VI
6) End Conn. : R.F / RTJ / SW / BW
7) Fire Safety Construction
8) Additional Equipments
Pneumatic & MOV Actuator
Positioner, Air set, Solenoid V/V ETC.



SDA. -XDT. -XRS SERIES (PNEUMATIC DIAPHRAGM, LINEAR TYPE)

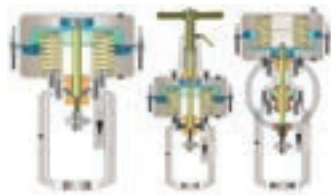


STANDARD MATERIALS

PART NAMES	MATERIALS
YOKE	DUCTILE, CAST STEEL, OR AL
DISPHRAGM CASE	CARBON STEEL
DISPHRAGM ROD	304SS
DISPHRAGM PLATE	304SS
DISPHRAGM	NYLON REINFORCED EPDM
SPRING	OIL TEMPERED WIRE

SPECIFICATIONS

- 1) Diaphragm Size: Ø230mm, Ø270mm, Ø320mm, Ø430mm, Ø550
2) Operating Spring Range: 0.2 ~ 1 bar, 0.8 ~ 2.0 bar, 1.2 ~ 2.4 bar
3) Supply Pressure: 1.4, 1.8, 2.8, 3.5 bar
4) Operating Speed: Depending on Size, Spring Constant, Travel, and Supply Pressure.
Generally Standard Speed is 3 to 5 sec.per One Cycle (Open to Close)
5) Signal Connection: (NJPT 1/4" Female, (NJPT 1/2" Female
6) Ambient Temperature: -40 ~ 80℃
7) Color of Diaphragm Case & Yoke: Blue



SLC SERIES. (PNEUMATIC CYLINDER, LINEAR TYPE)

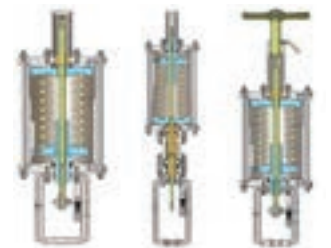


STANDARD MATERIALS

PART NAMES	MATERIALS
YOKE	DUCTILE, CAST STEEL OR AL
PISTON & CYLINDER	STAINLESS STEEL OR CARBON STEEL
STEM	304SS
SPRING SEATS	304SS
LONG BOLTS	CARBON STEEL
SPRING	OIL TEMPERED WIRE, CARBON STEEL, OR ALLOY STEEL

SPECIFICATIONS

- 1) Pistone Size: Ø150mm ~ Ø600mm
2) Operating Spring Range: 1.0 ~ 2.0 bar, 2.0 ~ 3.0 bar, 2.5 ~ 3 bar
3) Supply Pressure: Air4 ~ 7 kgf/cm²
4) Control Characteristics: Throtting, On-off
5) Signal Connection: (NJPT Screwed
6) Ambient Temperature: -25 ~ 80℃
7) Color: Blue, etc.

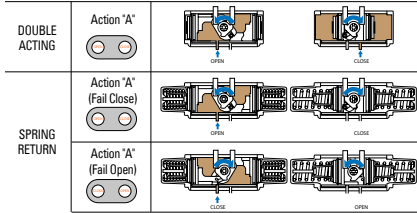


GD SERIES (PNEUMATIC CYLINDER, QUARTER TURN TYPE, RACK&PINION)



STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	AL
COVER	AL
SHAFT	ALLOY STEEL
GASKET	EPDM
STOPPER	ALLOY STEEL
SPRING	OIL-TEMPERED WIRE



SPECIFICATIONS

- 1) Smooth Sliding Cylinder & Piston
2) Spring Quantity Adjustable
3) Long Life Cycle and Stabilized Operating
4) Constructions
• Spring Return Type
• Triple Guiding Piston
• Emergency Locking System (Adjustable Stopper)
Open Position Locking
Close Position Locking
• 50~100% Open Position (Optional)

HD SERIES (PNEUMATIC CYLINDER, QUARTER TURN TYPE, SCOTCH&YOKE)



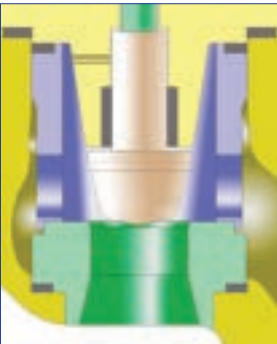
STANDARD MATERIALS

PART NAMES	MATERIALS
BODY	DUCTILE
COVER	DUCTILE
CYLINDER	ASTM A283-C
PISTON	ASTM A283-C
STEM	CARBON STEEL
GASKET	NBR OR EPDM

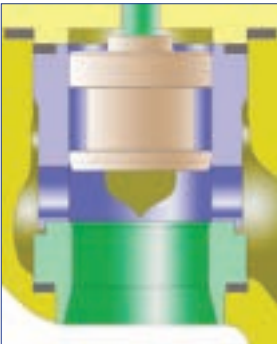
SPECIFICATIONS

- 1) Smooth Sliding Cylinder & Piston
2) Long Life Cycle and Stabilized Operating
3) Large Valve Size Applicable
4) Constructions
• Double Acting Type
• Compact Design
• None Spring Cartridge
5) Accessories (Optional)
• Oil Hydraulic Units
• Limit S/W
- 1) Smooth Sliding Cylinder & Piston
2) Long Life Cycle and Stabilized Operating
3) Large Valve Size Applicable
4) Constructions
• Spring Return Type (Air to Open)
• Welded Spring Unit
• Emergency Shut-off
• Spiring Cartridge Exchangeable
5) Accessories (Optional)
• Hydraulic Units
• Limit S/W

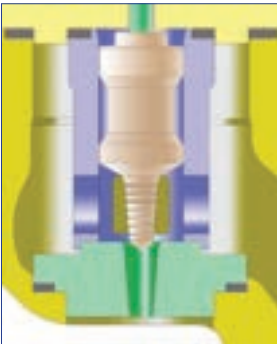
DESIGN OF TRIM



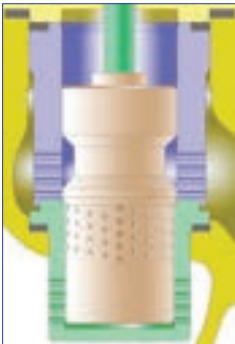
Top Guided Trim



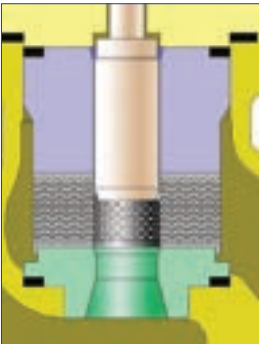
C-Port Trim



Cas Trim



Catrol Trim



Disc stack
Labyrinth Trim

SPECIFICATIONS

- 1) Applicable Fluids :
Steam or Water
2) Size : 1/2" ~ 36" (Std.)
3) Control Characteristics :
On-Off, Linear, Equal Percent
4) Rangeability : 50:1
Max. Allowable Pressure Drop
600psi (42bar)
5) Code & Standard
Std. Seat Leakage : ASME / FCI 70-2
Class IV (Class VI optional)
6) Constructions
• Guiding Type : Top Guided Type
• Flow Direction : Under the wep
• Trim Installation : Quick-change
7) Typical Application
• Thermal Drains
• Air Conditioning Chilled Water Control
• Desuperheater Cooling Water Control
• Fuel Oil and Gas Supply
• Steam Pressure Reducing

SPECIFICATIONS

- 1) Applicable Fluids :
Compressible or Incompressible Fluids
2) Size : 1/2" ~ 36" (Std.)
3) Control Characteristics :
Modified Parabolic, Linear, Equal Percent
4) Rangeability : 50:1
5) Code & Standard
Std. Seat Leakage : ASME / FCI 70-2
Class IV (Class VI optional)
6) Constructions
• Guiding Type : Top Guided Type
• Flow Direction : Under the wep
• Trim Installation : Quick-change
7) Typical Application
• Feed Water Control
• Level Control
• Condensate Recirculation
• Steam Pressure Reducing

SPECIFICATIONS

- 1) Applicable Fluids :
Compressible or Incompressible Fluids
2) Size : 1/8" ~ 2" (Std.)
3) Control Characteristics :
Modified Parabolic, Linear, Equal Percent
4) Rangeability : 50:1
5) Code & Standard
Std. Seat Leakage : ASME / FCI 70-2
Class IV (Class VI optional)
6) Constructions
• Cavitation Prevention
• Guiding Type : Top Guided Type
• Flow Direction : Under the wep
• Trim Installation : Quick-change
7) Typical Application
• Boiler Feed Pump Recirculation
• Reheat Spray Control
• Cooling Water Control

SPECIFICATIONS

- 1) Applicable Fluids :
Compressible or Incompressible Fluids
2) Size : 1/8" ~ 20" (Std.)
3) Control Characteristics :
Linear, Equal Percent
4) Rangeability : 50:1
5) Code & Standard
Std. Seat Leakage : ASME / FCI 70-2
Class IV (Class VI optional)
6) Constructions
• Cavitation and Noise Prevention
• Guiding Type : Cage Guided Type
• Flow Direction : Under / Over the wep
• Trim Installation : Quick-change
7) Typical Application
• Feed Water Control
• Level Control
• Condensate Recirculation
• Steam Pressure Reducing

SPECIFICATIONS

- 1) Applicable Fluids :
Water with High Pressure Differential
2) Size : 1/2" ~ 24" (Std.)
3) Control Characteristics :
Linear, Equal Percent
4) Rangeability : 50:1
5) Code & Standard
Std. Seat Leakage : ASME / FCI 70-2
Class IV
6) Constructions
• General / Disc Stacked /
Soft-seated Labyrinth
• Guiding Type : Cage Guided Type
• Flow Direction : Under the wep
• Trim Installation : Quick-change
7) Typical Application
• Spray Water Control
• Feed Pump Recirculation Control

CERTIFICATES

Certificates of Management System Registration



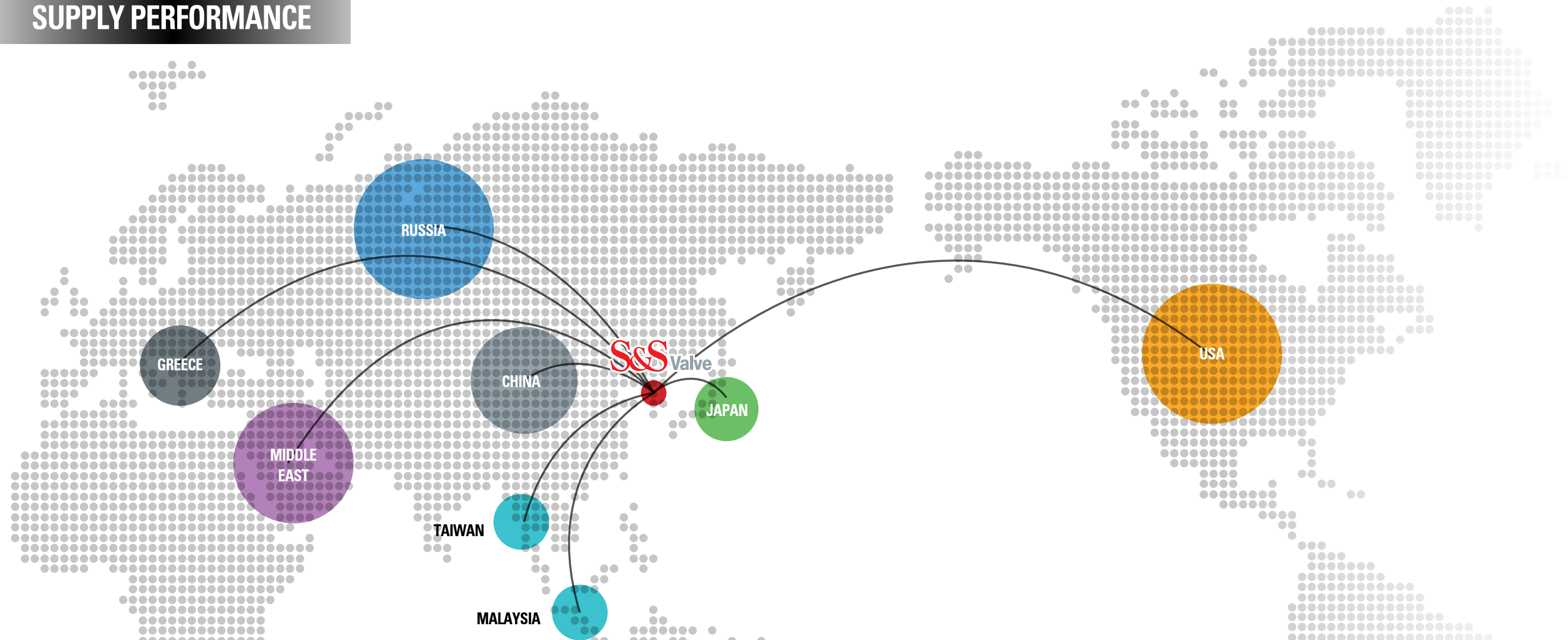
Certificates of Prototype, Functional, Operational Tests and R&D Center



Certificates of Customer Registration



SUPPLY PERFORMANCE



REGISTRATION

ADGAS
TAKREER
SAUDI ELECTRICITY COMPANY
SAUDI ARAMCO
KUWAIT NATIONAL PETROLEUM COMPANY
PETRONAS
NIGC
NIOC (Kala Naft Tehran)
NIOEC
CNOOC
SINOPEC
CNPC
KOGAS
KEPCO
GE Energy
KOC
KNPC
QATAR PETROLEUM
EXXONMOBIL
POGC

KOREA

DSME
SAMSUNG HEAVY INDUSTRIES
HYUNDAI HEAVY INDUSTRIES
POSCO E&C
DAELIM
KOGAS
GS E&C
SK E&C
DOOSAN HEAVY INDUSTRIES
KEPCO

RUSSIA

GAZPROM
SOVCOMFLOT
LUK OIL

SOUTHEASTERN ASIA

PTT
PETRONAS
TAIWAN POWER
CTCI
PERTAMINA

JAPAN

MITSUBISHI HEAVY INDUSTRY
TOSHIBA
IHI
JGC
KOYO DOCKYARD
NAKAKITA
MOL
NYK
HITACHI

EUROPE

MARAN GAS
CARDIFF GAS
CHNDRI
GASLOG
TEEKAY
BW
WARTSILA
TECHNIP FMC
DYNAGAS
BABCOCK LGE
BURCKHARDT COMPRESSION

CHINA

COOEC
CNEC
HUDONG-ZHONGHUA
COSCO SHIPPING
HONGHUA OFFSHORE OIL & GAS
WISON OFFSHORE & MARINE
HUANQIU E&C
CHENGDA ENGINEERING
TIANCHEN ENGINEERING
DALIAN SHIPBUILDING INDUSTRY
JIANGNAN SHIPYARD
NEW YANGZI SHIPBUILDING

USA

GE ENERGY
WESTING HOUSE
CB&I
AMEC FORSTERWHEELER
KBR
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