



Model 2020 is designed for critical applications involving hazardous media.

descote is known worldwide by the chemical industry as the VALVE SPECIALISTS for HAZARDOUS MEDIA.

General applications

Model 2020 is designed for all lethal, corrosive, inflammable, pyrophoric, noxious media such as Volatile Organic Compounds (VOC's), Hazardous Liquefied Gas (HLG), Hazardous Air Pollutants (HAP), etc.

Model 2020 is recommended for applications where zero ppm leakage to the atmosphere is a primary requirement.

Main application is isolation valve for:

- pressure gauges, transmitters, liquid level instrumentation, etc.
- orifice type flow meter systems
- sample bottles
- pilot plants
- laboratories

It is commonly used on the following processes and production units: Chlor-alkali, PCA (polycarbonate), TDI, MDI and HDI (isocyanates), bleaching, AHF alkylation (P.P. and UOP, alkylation and LAB processes), ECH (epichlorhydrin), VCM, HCN, pesticides, insecticides, CFC's, HFA, HFC, etc.

And on many other process using dry chlorine (Cl₂), phosgene (CoCl₂), dry hydrogen chloride (A. HCl), anhydrous fluorhydric acid (A. HF), etc.



Larger size bellows sealed globe valves for the above applications are available (see documentation for Model 2100B and 2500). Selection of the most appropriate valve design depends upon many factors including local and international standards and regulations. It should also include service conditions, maintenance, safety and emission monitoring requirements. Our valve specialists are here to help you with your choice.

Quality Assurance

Design and manufacturing is ISO 9001 approved. Our manufacturing processes are also approved by the TÜV.

Pneumatically actuated Model 2020 with Bimatic diaphragm actuator and open/close limit switches

www.descote.com

Bellows sealed instrumentation globe valve Model 2020

technical data

Features

- Forged body eliminating porosity

Ease of operation

- Forged steel handwheel
- Open/close visual indicator
- Tin coated and greased for life stem threads: avoids corrosion and seizing
- Stem threads protected from any contact with the atmosphere

Zero emission

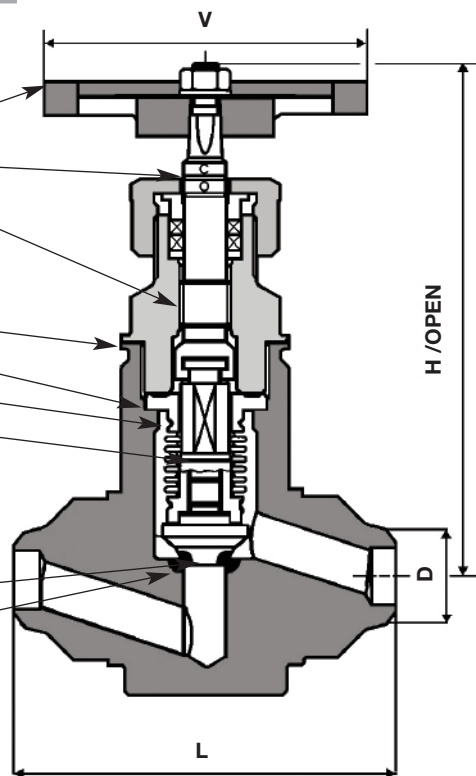
- Body-bonnet lip seal welded (optional)
- Fully entrapped body/bonnet gasket
- Stem sealed by multi wall hydroformed bellows
- Anti-rotation device to prevent bellows torsion
- Secondary stem sealing with stuffing box
- Additional back seat on stem

Zero seat leakage

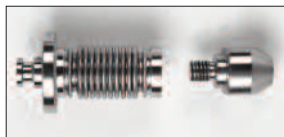
- Hard metal/metal seat and disc
- Integral seat, stellite deposit
- Soft seatings (optional)

Easy maintenance

- Removable bellows & stem
- Renewable disc



Bellows to eliminate fugitive emissions



Metal bellows provides a continuous metallic barrier between the process fluid and the atmosphere to achieve zero emissions.

The bellows are multiwalled, hydroformed and guaranteed for 2 000 full O/C cycles at the maximum valve pressure rating at ambient temperature. All bellows can be equipped with a leak detection port for continuous monitoring.

Manufacturing range

We classify our manufacturing range as follows:

Class A - our most standard products - finished valves, raw materials and semi finished components always available

Class B - made to order products - these are class A products adapted to meet specific customer requirements, they may use alternative materials, have accessories fitted (e.g. limit switches), have minor design changes (e.g. special flange drilling) or have special tests and controls.

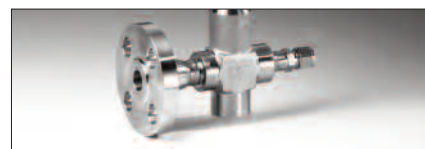
| | Standard range - Class A product | Additional range - Class B products |
|-------------------------------|---|---|
| Rating | ISO PN 100/ ANSI Class 600/BS 5352 Class 800 | ISO PN250 to 420 – ANSI Class 1500 to 2500 lbs |
| Temperature | -50°C to +400°C / -55°F to +750°F | -196°C to +800°C / -320°F to +1500°F |
| Seat | Ø 10 mm - 3/8" | 3 mm to 12 mm - 1/8" to 1/2" |
| Body pattern | Straight | Angle |
| End connections | Integral seat, stellite deposit <ul style="list-style-type: none"> • BW : 1/4" to 1" – ANSI B16.25 • SW : 1/4" to 3/4" – ANSI B16.11 • Threaded "NPT" ANSI B1.20.1 or Threaded "GAS" ISO 7/1 & BS 21 <ul style="list-style-type: none"> - male 1/4" to 1" - female 1/4" to 3/4" | Swaged in body seat <ul style="list-style-type: none"> • Panel mounting devices • Metal ring coupling : Grayloc®, • Twin compression fittings : Swagelok®, Gyrolok® • Flanges : <ul style="list-style-type: none"> - DIN PN16 to PN400 - ANSI Class 150 to Class 2500 - ISO PN16 to PN420 |
| Construction standards | ASME B16.34, DIN 3840, BS 5352 Fire safe design | ASME B31.3 (Cat.M), NACE |
| Operation | <ul style="list-style-type: none"> • Manual actuation • Pneumatic actuation | <ul style="list-style-type: none"> • Electrical / solenoid actuation |
| Valve function | <ul style="list-style-type: none"> • Manual ON/OFF • Actuated ON/OFF | <ul style="list-style-type: none"> • Manual FLOW CONTROL |



BW connection



Swagelok® compression fittings



Mixed connections

Dimensions

| Standard range Class A products | | Additional range Class B products |
|---------------------------------|---|--|
| | mm | |
| H open | 125 | Valves with flanged ends are manufactured in accordance with international standards : ISO 5752, ANSI B16.10, BS2080, DIN 3202 NFEN 558. Special dimensions upon request |
| V | 85 | |
| L | 90 | |
| Flow coefficient (Cv) | 1 to 2 depending on end connections and seat diameter | |

Materials selection

We manufacture valves in a wide range of materials, from carbon steels to special alloys. Materials are selected according to actual service conditions (fluid, temperature, pressure, etc.) and environmental circumstances (salted environment) to ensure optimum life of the valve:

- Our standard manufacturing range is based upon the most widely used materials, **Class A Bill of Materials (BoM)**
- In addition, we offer a **Class B materials selection** to fulfill customers specific needs.

| (ASTM standard) | Class A BoM | | Class B materials selection |
|-----------------------------|-----------------|-----------------|--|
| | Type 321 | Type 326 | |
| Body & bonnet | A 182 F316L | A182 F316L | A105/A350LF2~LF3 |
| Disc & disc seat | Hastelloy® C276 | Hastelloy® C276 | A182F304/304L/316/321 |
| Bellows | S.S. 316Ti | Hastelloy® C276 | Alloy 20, Monel® 400, Hastelloy® C276, |
| Lower Stem | S.S. 316L | Hastelloy® C276 | Inconel® 600, Incoloy® 800H, Nickel 200 |
| Body seat | Stellite | Stellite | Soft seat disc, Graphite gasket, Monel® K500 body seat |
| Gasket & packing | PTFE | PTFE | For other materials, please consult descote |

Inspection & Quality control

descote production specifications have very strict non-destructive testing and examination requirements. These are based upon: National and international standards (ASME B31.3, MSS SP, ASME B16.34, ASTM.)

- industrial standards (EuroChlor, Chlorine Institute)
- customer specific requirements
- our own industrial experience

These requirements are systematically used and include the following examination: dye-pen on welds and machined parts, wall thickness, dimensions, surface finish and hardness, according to materials used.

Tests

All valves are tested according to international standards

In addition, we systematically perform

- **100% HP gas seat test** with an acceptance criteria of 0 bubble 2 minutes duration minimum. This testing ensures zero seat leakage on every valve delivered.

Upon request, we can perform ASME V helium test according to the following criteria:

Guaranteed helium leakage rate

| | |
|---|---|
| Valve shell test | $\leq 10^{-8} \text{ Atm.cm}^3.\text{s}^{-1}$ |
| Valve closure test (Metallic seat) | $\leq 10^{-6} \text{ Atm.cm}^3.\text{s}^{-1}$ |
| Valve closure test (Soft seat) | $\leq 10^{-8} \text{ Atm.cm}^3.\text{s}^{-1}$ |

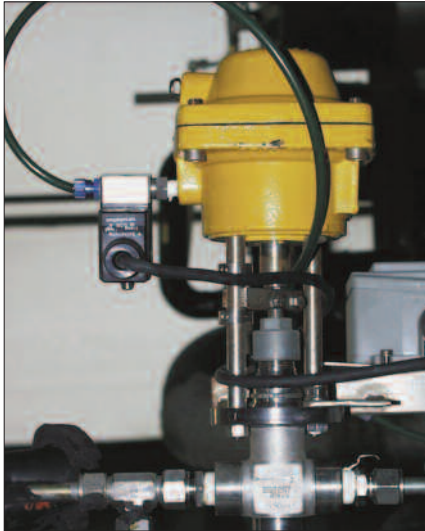
Certificates and traceability

descote applies the ISO 9001 standard to the complete production process. This procedure systematically includes:

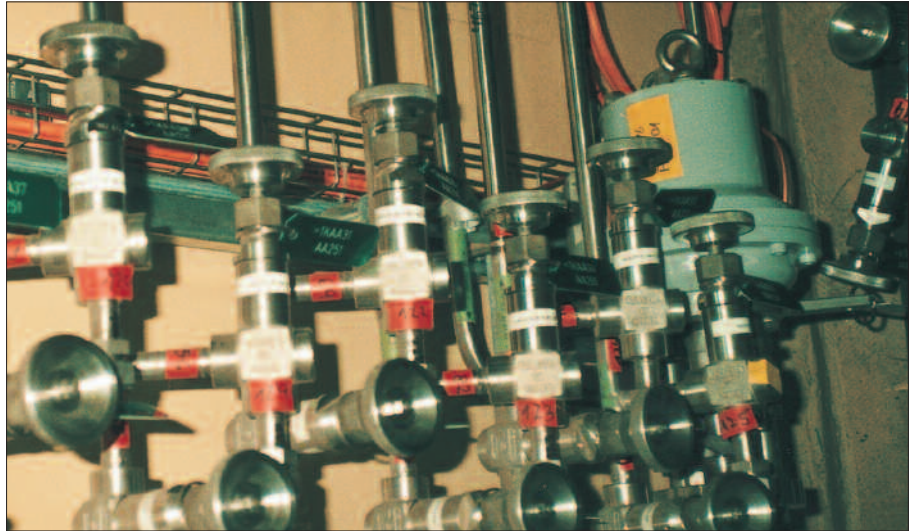
- unique serial number
- a EN10204.3.1.B certificate for traceability of materials, tests, examinations and controls.

The valve serial number provides complete traceability for the lifetime of the valve.

Bellows sealed instrumentation globe valve Model 2020 range



Model 2020 on a pilot plant - CFC substitutes research center - Germany



Model 2020 in a nuclear research center - Switzerland



Pressure transmitter valve isolation on gaseous chlorine - France



Model 2020 on a pilot plant - HF & Fluorine service - USA



Model 2020 on tanks discharge - High pressure (225 bar) carbon monoxide isolation - Germany



Model 2020 on 80 bar HCl container discharge - Great Britain



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