

KLEIN

Designed for applications involving hazardous media.

General applications

Model 1900 is mainly designed for heat transfer fluids up to 425°C (800°F) and all other non critical pollutant chemicals (gaseous applications in the chemical and petrochemical industries).

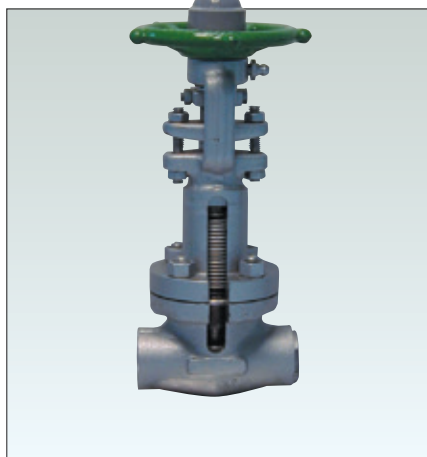
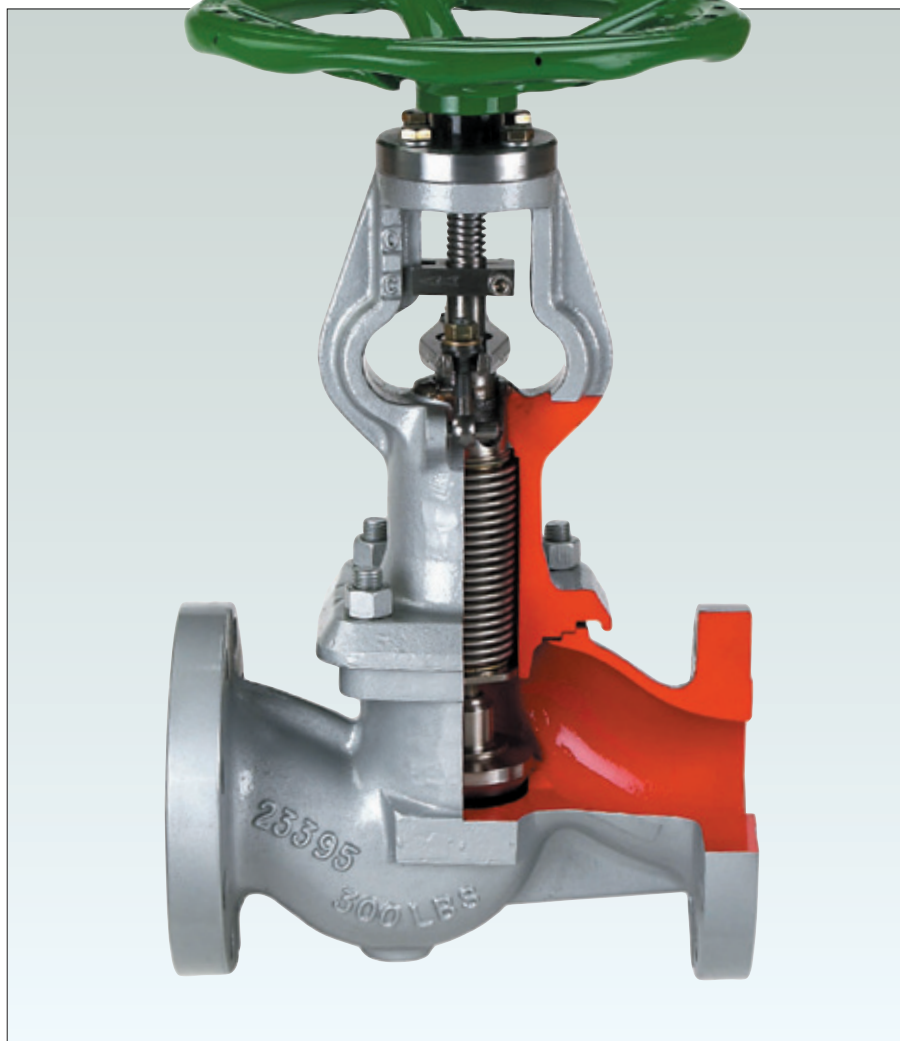
Model 1900 is particularly recommended for applications where:

- a long bonnet is needed for heat dissipation,
- the bellows has to be protected from the flow, i.e. in case of erosion, flashing, high velocity, etc.

It is commonly used on primary circuits using synthetic thermal oils, i.e. polymer fibers and polymer-related processes such as polyethylene, polypropylene, PVC and PET units.

And on any other applications involving Volatile Organic Compounds (VOC's), Hazardous Air Pollutants (HAP), etc.

It is also appropriate on steam and medium pressure superheated steam applications.



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.

Quality Assurance

Design and manufacturing are ISO 9001, version 2000, approved.

PED compliance

With module H, cat. III, Pressure Equipment Directive (PED) 97/23 EC.

ATEX certification

Valves can also be delivered in conformity with ATEX 94/9/CE, group II, cat.2. directive upon request.

Features

Ease of operation

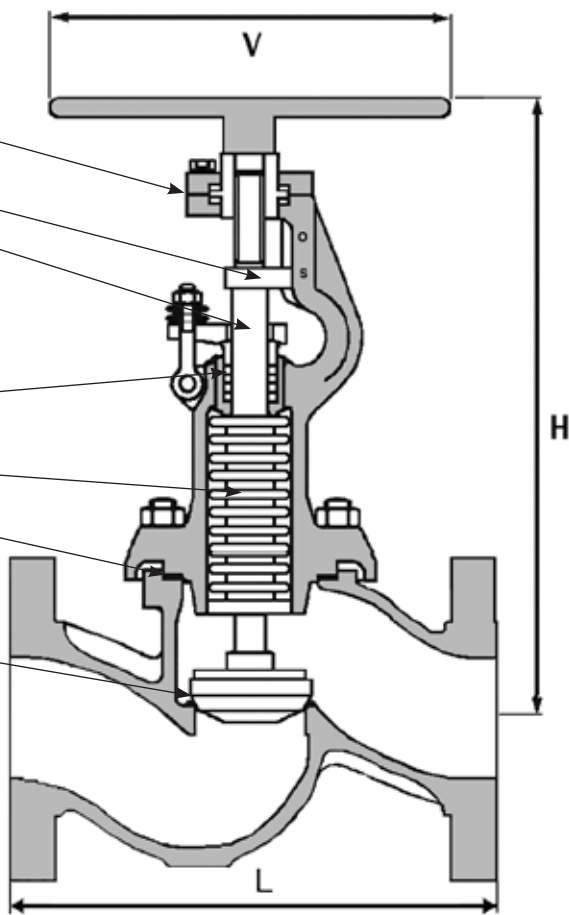
- Yoke bushing with needle bearings and lubrication points (DN15 to DN50 - 1/2" to 2")
- Position indicator, torsion limiter
- One-piece, non-rotating stem
For size 8" (DN200) and above, stainless steel valves are systematically equipped with a gear box.

Zero emission

- Secondary stem sealing by additional safety packing
- Multi wall hydroformed bellows, protected from the flow
- Fully entrapped body/bonnet gasket for maximum joint integrity

Zero seat leakage

- Hard faced, knife-edge conical seating to cut through process impurities and providing tight shut off
- Flat Stainless Steel seating (optional)
- HTSS High Temperature Soft Sealing (optional)



Bellows to eliminate fugitive emissions

Metal bellows welded to the stem and bonnet provides a continuous metallic barrier between the process fluid and the atmosphere to achieve zero emissions.
 For size $\leq 2''$, valve is supplied with a 2 parts welded forged bonnet.
 For size above 2'', valve is supplied with an integral cast bonnet.
 For added security there is also a safety packing for secondary sealing.
 The bellows are multi walled, hydroformed and guaranteed for 30 000 cycles at design pressure of the valve at 20°C.



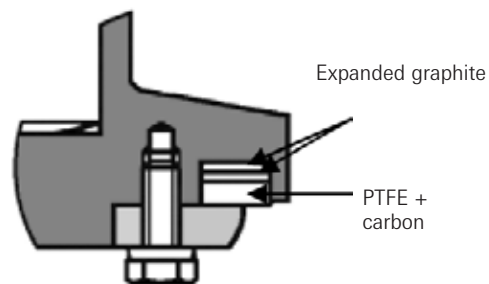
HTSS technology for tight shut-off

The unique High Temperature Soft Sealing (HTSS) double sealing technology can be provided on Model 1900.

This technology is the answer to the requirements for complete tight shut-off in case of high temperature, up to + 300°C (+572°F).

The HTSS disc arrangement is made of one PTFE carbon reinforced ring, backed up by two graphite rings. This arrangement provides the advantages of both metallic and soft seats, giving constant compression and keeping elastic memory.

The soft ring is renewable for easy maintenance.



Actuation

Model 1900 can be actuated with

- BIMATIC pneumatic actuator (see documentation on BIMATIC and 1900BA)
- electrical actuator (type and model to be defined with customer).

Manufacturing range

Class A – standard products – finished valves, raw materials and semi finished components always available

Class B – made to order products – these are products adapted to meet specific 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 products

Additional range – Class B products

Pattern	Rating	End type	Dimensions	
Straight	ISO PN25/40	BW/ Flanged	DN15 to DN500 - 1/2" to 20"	<ul style="list-style-type: none"> • Special end connections • Other dimensions
	ISO PN50/ANSI Class 300	BW/ Flanged	DN15 to DN500 - 1/2" to 20"	
	ISO PN100 ANSI Class 600	BW/SW/Threaded	DN10 to DN50 - 3/8" to 2"	

Face to face dimensions

Manufactured to international standards: ISO 5752 - ANSI B16.10 - NF EN558 - BS 2080 - DIN 3202 - JISB2002.

Face to face for threaded and welded end valves are manufacturer's standard.

Dimensions are available on our technical datasheets.

Material selection

Based upon the most widely used materials, Class A Bill of Materials (BoM).

Additionally, we offer a class B materials selection to fulfill customers' specific needs.

Standard materials - Class A

Class B material selection

	Carbon steel - Type 20	
	ASTM	EN
Body/bonnet - cast	A216 WCB	EN 1.0625
Body/bonnet - forged	A105	EN 1.0565
Gasket	Spiral wound SS + graphite	Spiral wound SS + graphite
Bolts & nuts	A 193.B7	EN 1.7225
Packing	Graphite	Graphite
Stem	AISI 410	EN 1.4406
Disc seating	AISI 316L	EN 1.4404
Bellows	AISI 316 Ti	EN 1.4571
Handwheel	Steel or GGG. 50	Steel or EN JG 400

- Body/bonnet: low temperature carbon steel, A351CF3, CF8, CF3M
- Bellows: Hastelloy®/Inconel®

Tests

All valves are tested according to different international standards such as ISO 5208, API 598, DIN 3230, BS 6755.

Special testing such as helium test can be performed upon request.

Note: for maximum admissible ΔP , please refer to DIN 3356.

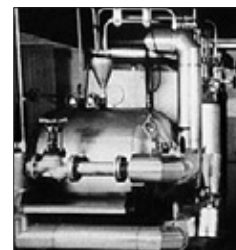
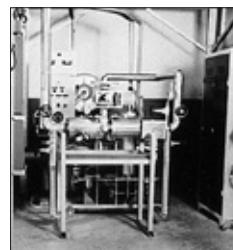
In-house thermal oils and high temperature test

Our testing equipment includes:

- a thermal oil boiler with a circulating pump with a maximum capacity of 6 bar/+330°C (90 psig/+626°F)
- a testing bench using steam with a maximum capacity of 30 bar/+ 236°C (435 psig/+ 457°F).

We can therefore:

- qualify designs and materials at engineering stage
- provide customer with testing under real service conditions.



Disc options

Standard model 1900 is supplied with a metal/metal or a HTSS seat.

Other disc options are also available.



B option

Parabolic disc available with conical or conical stellited seating



CS option

Conical stellited disc



TM option

PTFE soft seat up to +180°C (+356°F)