



KLEIN

Recommended for non critical hazardous applications

General applications

Model 1450 is designed for

- heat transfer fluids applications, thermal oils (mineral oils),
- non critical hazardous fluids such as refrigerating media and other non critical gaseous applications up to +300°C (+572°F)
- low and medium pressure saturated steam

It is commonly used as isolation valve:

- on heat transfer equipment: heat exchangers, heating coils, autoclaves,
- for draining and air venting
- on steam PRV's and TRV's
- steam heater or steam mains isolation

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.



PED compliance

With Pressure Equipment Directive (PED) 97/23 CE.

ATEX certification

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

Quality Assurance

Design and manufacturing are ISO 9001 approved.

POLYSTAR - SW

Features

Ease of operation – Free maintenance

- One-piece rising stem
- Internal protected stem thread
- Anti-friction yoke nut

Safety

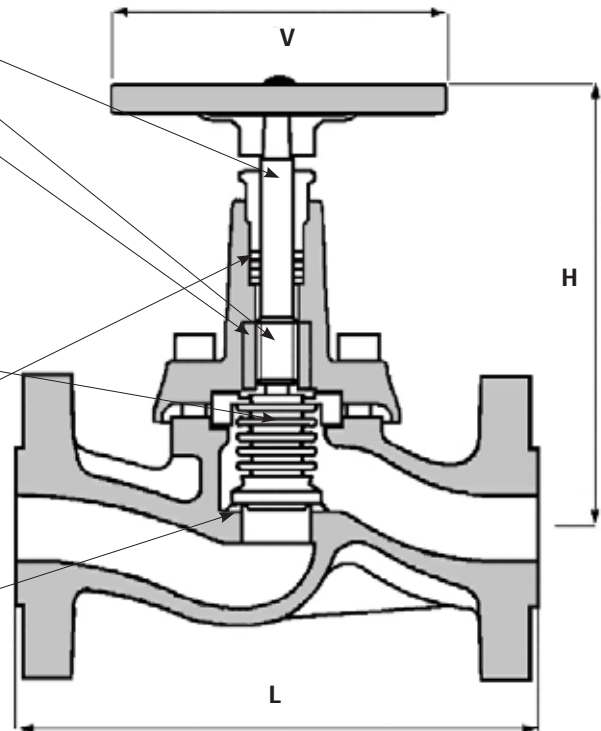
- Deflector on bonnet

Zero emission

- Stem sealed by multi wall hydroformed bellows
- Entrapped double gasket
- Secondary sealing by an additional safety packing
- Bellows exposed to the fluid for self cleaning

Zero seat leakage

- Metal/metal seat or HTSS seat



Bellows to eliminate fugitive emissions

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

For added security there is also a safety packing for secondary sealing.

The bellows is multiwalled, hydroformed and guaranteed for 10 000 full O/C cycles at the maximum design pressure of the valve at 20°C.



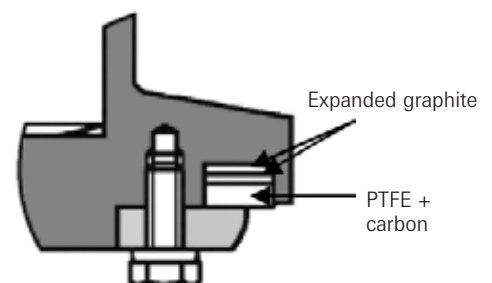
HTSS technology for tight shut-off

The unique HTSS (High Temperature Soft Seat) double sealing technology can be provided on Model 1450.

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 PTFE 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.



Manufacturing range

We classify our manufacturing range as follows

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)

Standard range - Class A – Straight valves

Type	End connection	Pressure Class	DN 15	20	25	32	40	50	65	80	100	125	150
CS	Flanges - BW	ISO PN40											
	SW - Threaded	ISO PN50 - Class 300											

Additional range - Class B products

- Parabolic disc
- Special end connections
- Other materials

For superior dimensions, please refer to Model 1700 or Model 1900 valve documentation.

Face to face dimensions

Manufactured to international standards: ISO 5752 – ANSI B16.10 – NF EN 558 – BS 2080 – DIN 3202 – JIS B2002.

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

Dimensions are available on our technical datasheets.

Material selection

Manufacturing range is 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

	Carbon steel - Type 20	
	ASTM	EN
Cast body/bonnet	A216 WCB	EN 1.0625
Forged body/bonnet	A105	EN 1.0565
Gasket	Graphite	Graphite
Bolts & nuts	B7/2H	Class 8.8
Packing	Graphite	Graphite
Stem	AISI 410	EN 1.4406
Seatings	316L	EN 1.4404
Bellows	AISI 316Ti	EN 1.4571
Handwheel	GGG. 50	EN JG 400

Class B material selection

- Hardened seat/disc contact: stellite, 17.4 PH
- Other body/bonnet grades: CF8, CF3, LCC, LF2
- Other materials upon request

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.

Valves are systematically delivered with EN 10204 2.2. conformity certificate.

EN 10204 3.1.B material body/bonnet certificate can be supplied upon request.

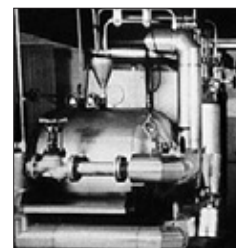
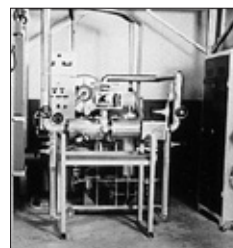
In-house thermal oils and high temperature test

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 1450 is supplied with a metal/metal or HTSS seat.

Other disc options are also available.



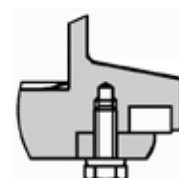
B option

Parabolic disc available with conical or conical stellite seating or HTSS



CS option

Conical stellite disc



TM option

PTFE soft disc up to +180°C (+356°F)