DSS VALVES

Build Options

AIS AMERICAN IRON & STEEL COMPLIANT

BAA BUY AMERICAN ACT COMPLIANT

DSSVALVES.COM

TABLE OF CONTENTS

Body Insert Options 4

Body Modification Options 6

Body Coating Options. 8

Bore Hardfacing Options 10

Bolting Options 12

Gate Hardfacing Options 12

Topworks Painting and Modifications 13

Flange Modifications 16

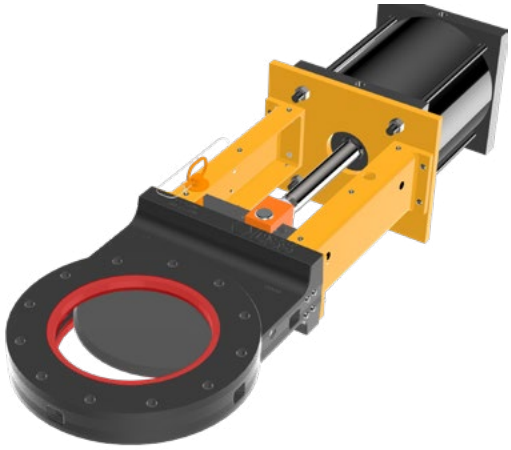
Lock-Out / Override Options 17

Instrumentation Accessories 18

Miscellaneous Options. 21

Body Insert Options

Wear Ring (Inlet & Outlet) **S1**

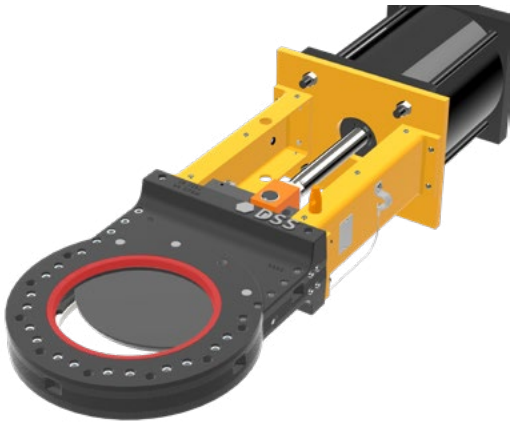


Wear Ring installed on inlet & outlet port of valve body ('dual' wear rings). Ni-hard Wear Rings provide excellent protection to the valve in any abrasive application while maintaining the original port size. These are often used in mining, power, paper, and steel applications.

56HRC (standard material: A532 Type 1A Ni-Hard).

The Wear Ring is a replaceable insert. It is also able to be rotated for maximum longevity (e.g. for applications where sliding bed erosion is experienced).

Wear Ring (Inlet) **S2**



Wear Ring installed on inlet port of valve body ('single' wear ring). A Ni-hard Wear Ring provides excellent protection to the valve in any abrasive application while maintaining the original port size. This is often used in mining, power, paper, and steel applications.

56HRC (standard material: A532 Type 1A Ni-Hard).

The Wear Ring is a replaceable insert. It is also able to be rotated for maximum longevity (e.g. for applications where sliding bed erosion is experienced).

Bore Reducer (Inlet & Outlet) **S3**

Bore Reducer installed on the inlet & outlet port of valve body ('dual' bore reducer).

The S3 option is used to reduce the inlet and outlet ID of the valve. The Bore Reducer is a replaceable insert.

The material and diameter of the bore reduction must be specified by the client.

Body Insert Options

Bore Reducer (Inlet) **S4**

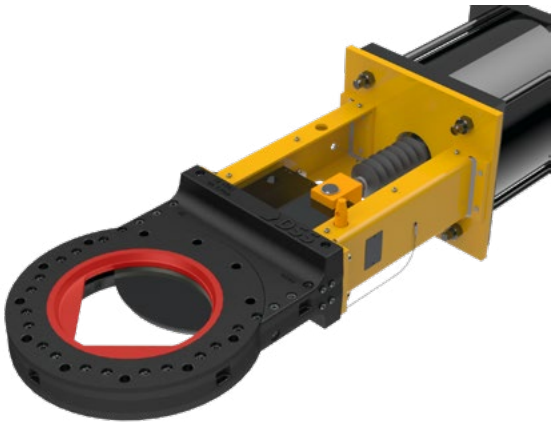
Bore Reducer installed on the inlet port of valve body ('single' bore reducer).

The S4 option is used to reduce the inlet ID of the valve, but retains the standard outlet ID. This protects the valve sealing areas and can be used to take a pressure drop in the piping system or match corresponding pipe ID.

The material and diameter of the bore reduction must be specified by the client.

The Bore Reducer is a replaceable insert.

V-Port **S5**



The V-Port option is commonly used in throttling or modulating services.

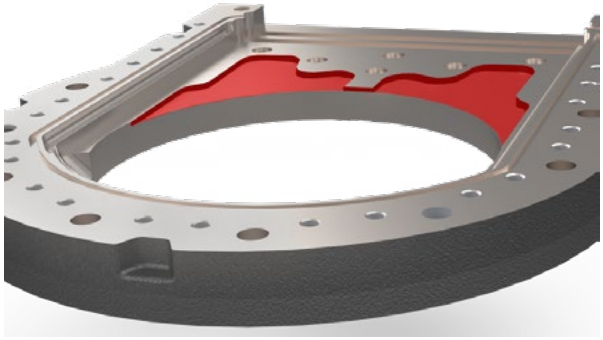
Please consult DSS Valves for your throttling requirements, we are able to provide custom solutions including CFD analysis.

60 degree, 90 degree options are available.

This is a replaceable part.

Body Modification Options

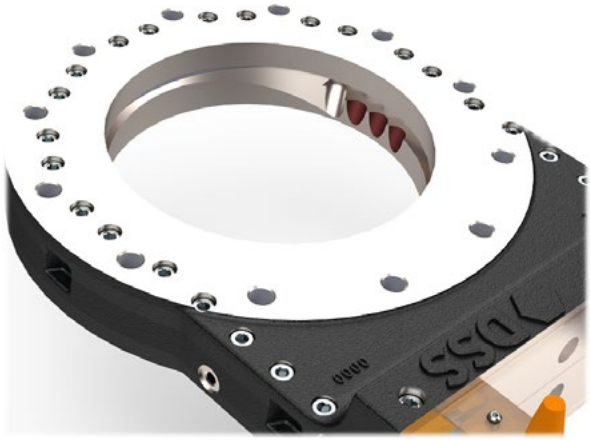
Chest Relief **S7**



A relief is machined out of the chest on both sides of the gate and below the atmospheric seal. This is commonly used in applications with very fine media (powder) that tend to pack-up.

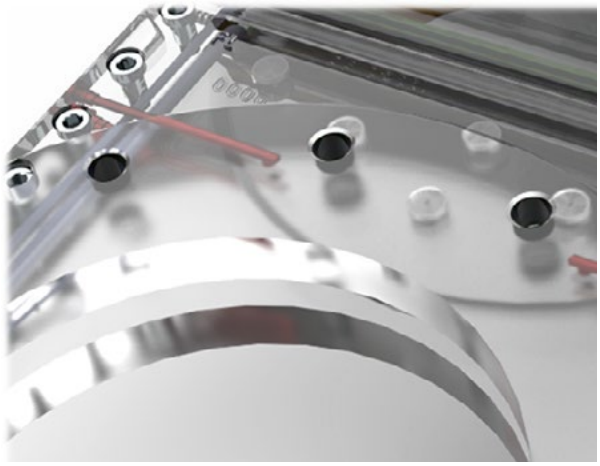
This option is commonly used with Purge Ports (option S9 or S10).

Gate Guide Modification **S8**



The internal gate guides are 'notched' to have less surface area within the sealing areas of the valve for media to adhere.

Purge Ports (Chest) **S9**



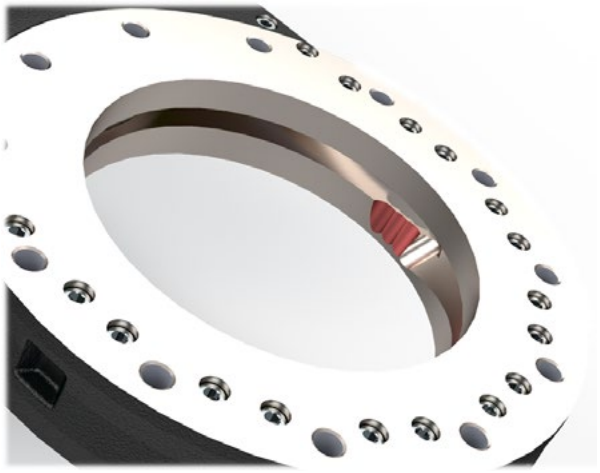
External purges that allow a purge of the chest area with air, water or any media compatible with the valve body and process.

Body Modification Options

Purge Ports (Nose) **S10**

External purges that allow a purge of the seat area with air, water, or any media compatible with the valve body and process.

Extended Flushouts **S31**

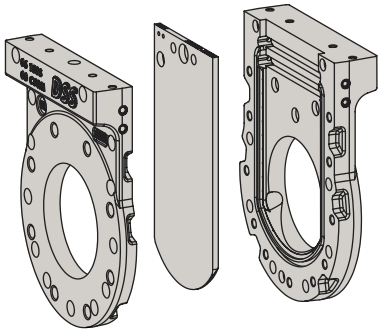


The last one-third of the gate guide is removed allowing solids to drop-out and get flushed from the sealing surfaces.

Body Coating Options

Xylan® reduces internal friction and prevents galling.

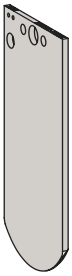
Xylan Bodies & Gate **S19**



Xylan 1010 body and gate.

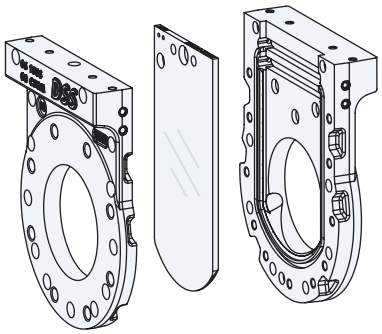
Needed for Carbon Steel and Ni-Resist.

Xylan Gate **S20**



Xylan 1010 gate only.

Clear Xylan Bodies & Gate **S42**



Clear Xylan 1010 body and gate.

Clear Xylan used in applications where a pigmented coating could affect the final product (e.g. pulp & paper, food handling).

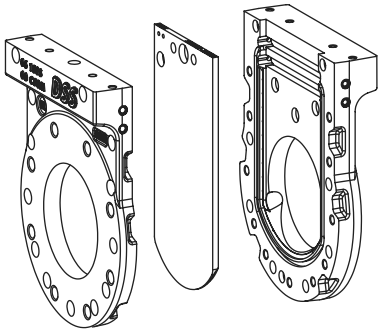
Clear Xylan Gate **S43**

Clear Xylan 1010 gate only.

Body Coating Options

Xylan® reduces internal friction and prevents galling.

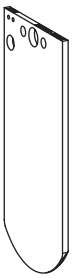
White Xylan Bodies & Gate **S45**



White Xylan 1010 body and gate.

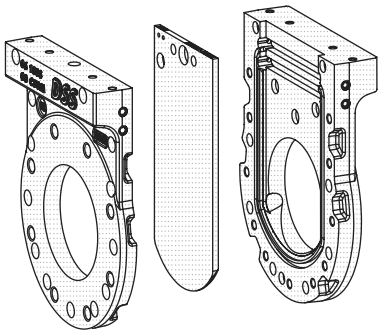
Clear Xylan used in applications where a pigmented coating could affect the final product (e.g. food handling).

White Xylan Gate **S46**



White Xylan 1010 gate only.

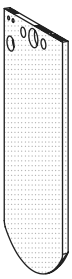
SevereGuard™ Bodies & Gate **S44**



Our SevereGuard™ technology is a treatment that consists of fluorinated ethylene propylene being applied through a powdered Teflon process. The FEP melts and flows during baking to provide a nonporous finish which leads to superb chemical resistance.

When compared directly to the Xylan® 1010 finish, the SevereGuard™ treatment is better able to reduce friction and has a superior impact strength.

SevereGuard™ Gate **S48**



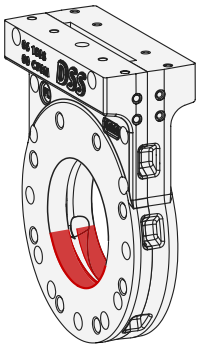
Our SevereGuard™ technology is a treatment that consists of fluorinated ethylene propylene being applied through a powdered Teflon process. The FEP melts and flows during baking to provide a nonporous finish which leads to superb chemical resistance.

When compared directly to the Xylan® 1010 finish, the SevereGuard™ treatment is better able to reduce friction and has a superior impact strength.

Bore Hardfacing options

These options serve to significantly increase the wear resistance of the valve bore and critical sealing areas of the valve.

HARDFACED PORT **BOTTOM THIRD**



NOTE:
S1 or S3 Required

Martensitic Hardfacing — S17

Bottom one third of valve bore is overlaid with martensitic hardfacing.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

TCO & Martensitic Hardfacing — S17.2

Bottom one third of valve bore is overlaid with tungsten carbide, Rc hardness of 85.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

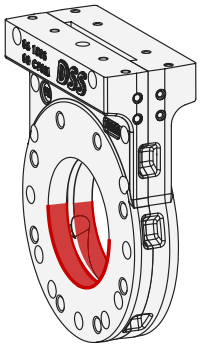
CCO — S17.6

Bottom one third of valve bore is overlaid with chrome carbide, Rc hardness of 68–72.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

TCO & CCO — S17.8

Bottom one third of valve bore is overlaid with tungsten carbide (Rc hardness of 85), and chrome carbide (Rc hardness of 68–72). The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

HARDFACED PORT **BOTTOM HALF**



NOTE:
S1 or S3 Required

Martensitic Hardfacing — S17.05

Bottom half of valve bore is overlaid with martensitic hardfacing.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

CCO — S17.11

Bottom half of valve bore is overlaid with chrome carbide, Rc hardness of 68–72.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

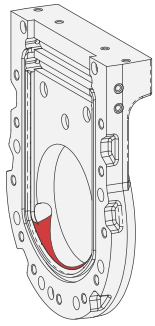
TCO & Martensitic Hardfacing — S17.13

Bottom half of valve bore is overlaid with tungsten carbide, Rc hardness of 85.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

TCO & CCO — S17.15

Bottom half of valve bore is overlaid with tungsten carbide and chrome carbide.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

HARDFACED PORT **SEAL AREA ONLY**



Martensitic Hardfacing — S17.0

Seal area of valve bore is overlaid with martensitic hardfacing.

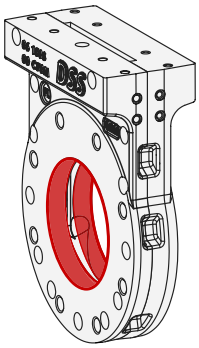
CCO — S17.10

Seal area of valve bore is overlaid with with chrome carbide, Rc hardness of 68–72.

Bore Hardfacing options

These options serve to significantly increase the wear resistance of the valve bore and critical sealing areas of the valve.

HARDFACED PORT **FULL PORT**



NOTE:
S1 or S3 Required

Martensitic Hardfacing — S17.1

The entire valve bore is overlaid with martensitic hardfacing.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

TCO & Martensitic Hardfacing — S17.3

The entire valve bore is overlaid with tungsten carbide, Rc hardness of 85.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

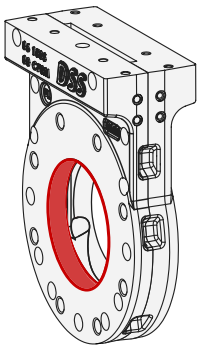
CCO — S17.7

The entire valve bore is overlaid with chrome carbide, Rc hardness of 68–72.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

TCO & CCO — S17.9

The entire valve bore is overlaid with tungsten carbide (Rc hardness of 85), and chrome carbide (Rc hardness of 68–72). The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

HARDFACED PORT **FULL BORE INLET/ BACK BODY SIDE ONLY:**



NOTE:
S2 or S4 Required

Martensitic Hardfacing — S17.5

Full bore inlet (back body side only) is overlaid with martensitic hardfacing.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

CCO — S17.12

Full bore inlet (back body side only) is overlaid with chrome carbide, Rc hardness of 68–72.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

TCO & Martensitic Hardfacing — S17.14

Full bore inlet (back body side only) is overlaid with tungsten carbide, Rc hardness of 85.
The back-up metal to metal seat is overlaid with martensitic hardfacing.

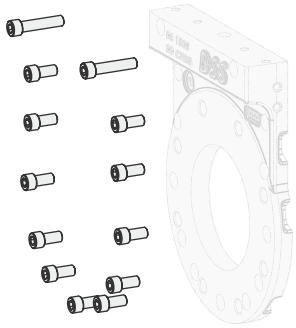
TCO & CCO — S17.16

Full bore inlet (back body side only) is overlaid with tungsten and chrome carbide.
The back-up metal to metal seat is overlaid with chrome carbide hardfacing.

S1: WEAR RING (INLET & OUTLET)
S2: WEAR RING (INLET)
S3: BORE REDUCER (INLET & OUTLET)
S4: BORE REDUCER (INLET)

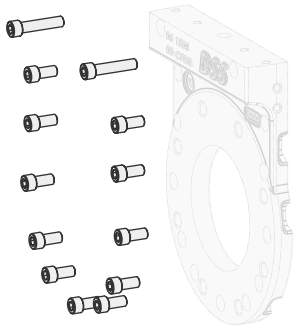
Bolting Options

Stainless Steel Bolts (316) **S13**



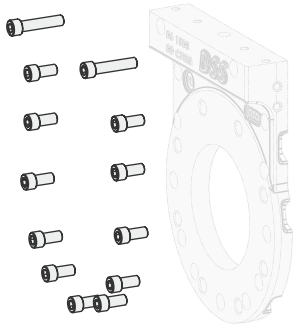
Upgrade body bolting to 316SS (F837-02 CW S8).

Stainless Steel Bolts (304) **S14**



Upgrade body bolting to 304SS equivalent (F837-01).

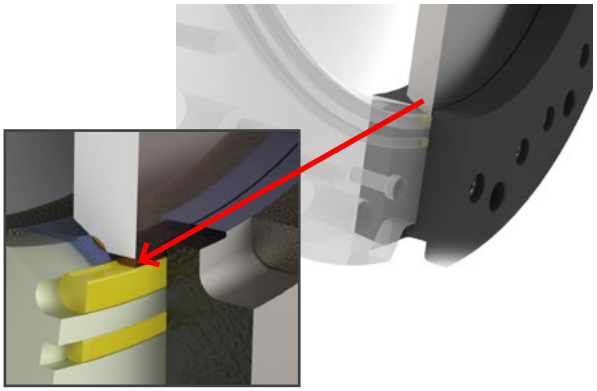
Xylan Coated Bolts **S41**



Body bolts and top structure bolts ASTM A574 coated in 1424 Xylan.

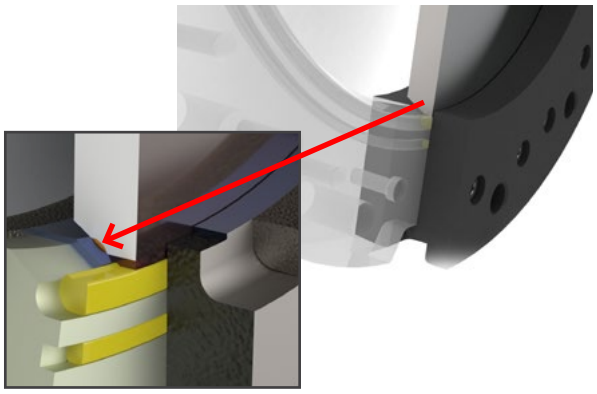
Gate Hardfacing Options

Stellite Tipped Gate **S15**



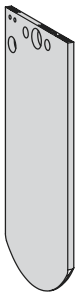
Leading edge of gate is overlaid with Stellite 6 to harden this critical area. Commonly used for high cycle applications in demanding services.

Chrome Carbide Gate Nose **S28**



Gate surface which seals against the metal seat is overlaid with Chrome Carbide.

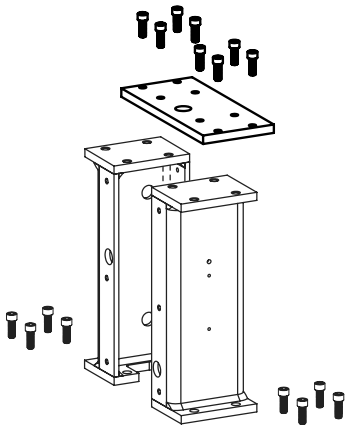
Hardchrome Gate **S16**



Gate is electroplated with chrome to provide enhanced wear and corrosion resistance.

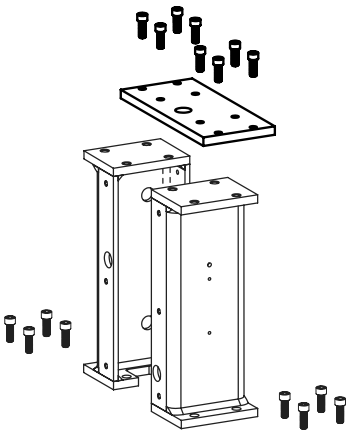
Topworks Painting and Modifications

Stainless Steel Top Structure (304) **S11**



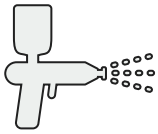
Upgraded topworks to 304SS.
Includes: Top Plate, Yokes, Bolting.

Stainless Steel Top Structure (316) **S12**



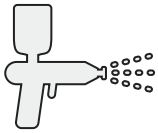
Upgraded topworks to 316SS.
Includes: Top Plate, Yokes, Bolting.

Special Paint: TopWorks **S21**



This option is used as needed.
Customer must specify the coating material.

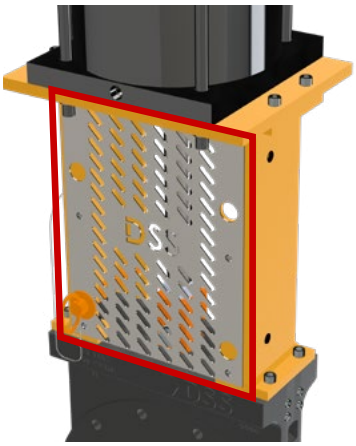
Special Paint: Actuator **S22**



This option is used as needed.
Customer must specify the coating material.

Topworks Painting and Modifications

Metal Bonnet Covers (304SS) **S34**

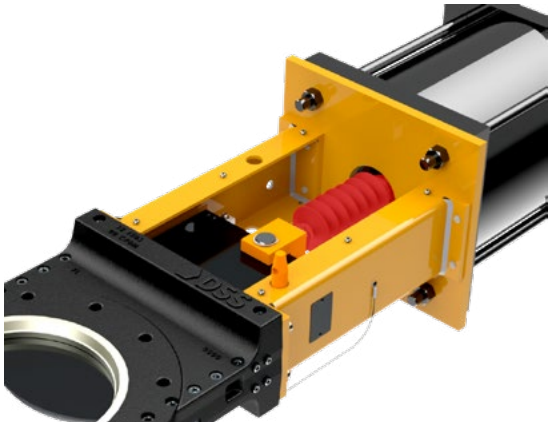


In place of standard dust covers.

Expanded Metal Bonnet Covers (304SS) **S47**

In place of standard dust covers. Expanded version allows for easy access to Top Structure during wash down operation.

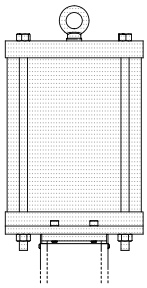
Rod Boot (Cylinder) **S38**



To protect the rod and seals on pneumatic or hydraulic cylinder.

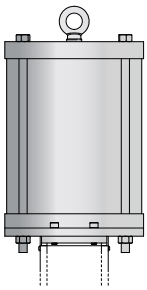
Topworks Painting and Modifications

Corrosive/Marine Coating (Cylinder) **S49**



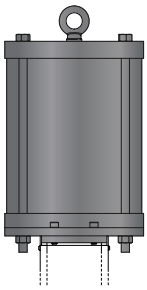
Cylinder acid resistant enhanced coating protection for acidic or marine. Available in all temperature ranges.

Ultra Corrosive Construction (Cylinder) **S50**



Cylinder Stainless Steel (ultra-corrosive) actuator. Available in all temperature ranges.

High Temperature Construction (Cylinder) **S51**



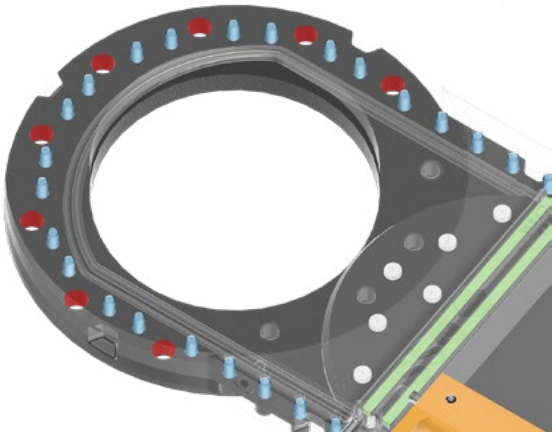
Extends cylinder temperature range to 205°C (400°F) — seals are upgraded to Viton and barrel is steel with chromed internal diameter.

High Vibration/Cycle Construction (Cylinder) **S52**

Cylinder is permanently lubricated with carboxylated seals. Upgrade features red Loctite (the piston to piston rod), blue Loctite (the nuts on tie rods), and blue Loctite (the gland bushing).

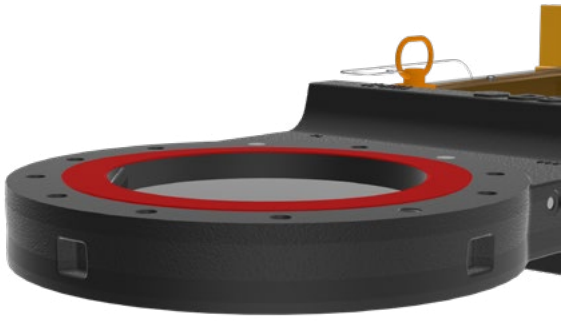
Flange Modifications

Drilled Through Flange Holes **S6**



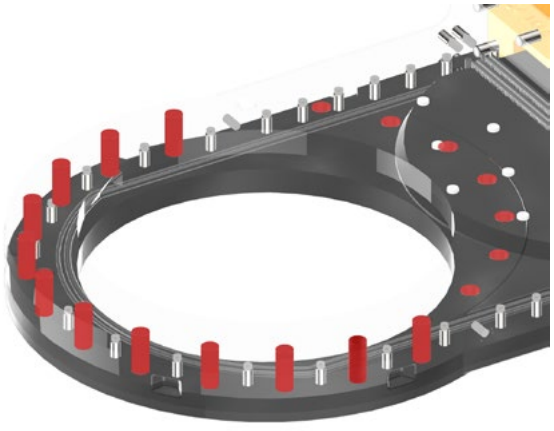
Our valves have tapped flange holes standard, but can be drilled on request. The blind flange holes in the 'chest' must always remain threaded.

Raised Face Flange **S18**



Raised face option in accordance with ASME B16.5 and/or B16.47.

UNC Flange Threads **S29**



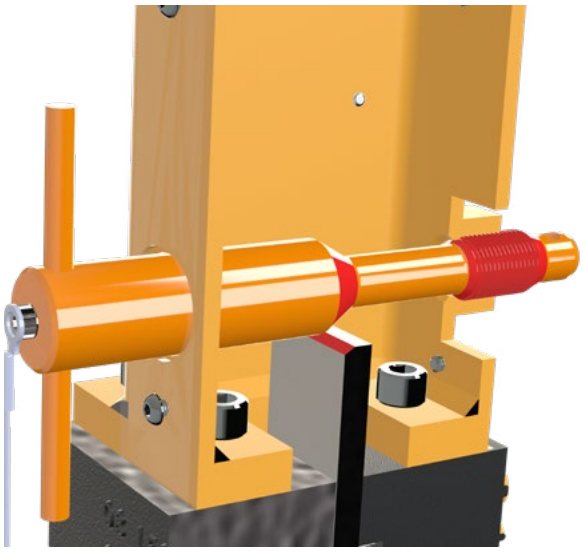
Use when thread major diameter is larger than one inch and coarse pitch series (UNC) is desired over the DSS standard of 8-UN pitch series.

Lock-Out / Override Options

Manual Override (Cylinder) **S35**

Manual override for pneumatic cylinder.

Positive Lock-Out **S54**

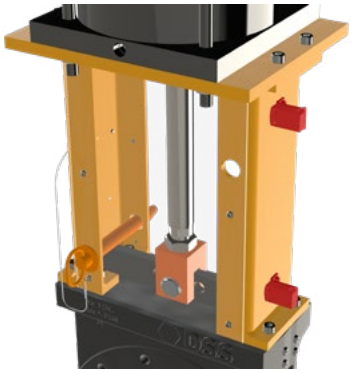


Positive Lock-Out Pins provide a physical contact between the pin and the gate that can only occur if the gate is fully seated.

While the pin does not guarantee that the valve cannot be opened, it does provide down force to assure the gate does not drift open when actuators are de-engergized.

Instrumentation Accessories

Limit Switches **S23**



These are typically used with automated valves, but can also be used within manually operated valves.

Switches are set to show when the valves are in the fully opened or closed position

Proximity Switches (Hawkeye) **S24**

Open/closed proximity switches. DSS standard is Stonel™.

Hawkeye model HK3077SG (open switch) and HK3077SR (closed switch).

Positioner **S25**

Positioner for modulating and control applications, normally used in conjunction with CV series of valve.

Positioner details must be defined at time of quotation. Valve position can be provided to the positioner by a mechanical linkage arm or a cylinder mounted transducer for a linkageless design (see options S36/S37).

Position Indicator **S26**

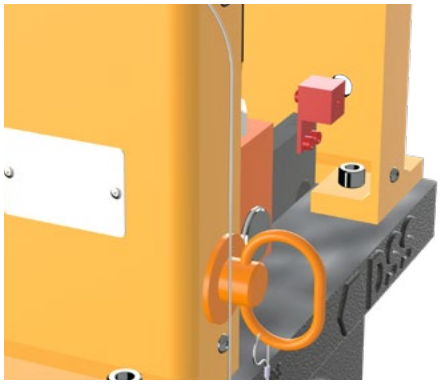
This option is used when the operators cannot get near the valve. The S26 provides a highly visible external tab to show position of valve.

Instrumentation Accessories

Control Solenoid **S27**

Used with our standard pneumatic double-acting cylinder.
It controls the supply air to fully open and close valve.

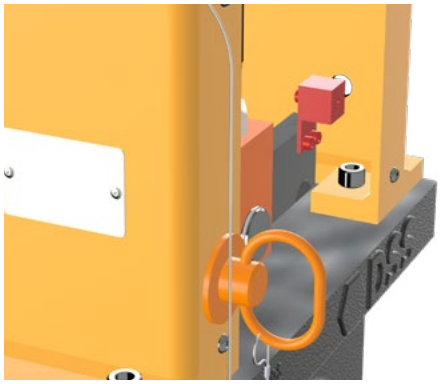
Prepared for Proximity Switch **S32**



Target installed for inductive type proximity switches (see option S57 for magnetic type switches). Valve yokes are prepared to accept M18x1 threaded cylindrical switches.

Switches not included.

Proximity/Limit Switch Prep Only 316SS **S53**



Option S32 with stainless steel target in place of mild (low-carbon) steel.

Switches not included.

Instrumentation Accessories

Internal Transducer (Balluff) **S36**

An LDT (linear displacement transducer) is installed in the cylinder rod to provide position feedback over the full length of the valves stroke.

This option can be used standalone to provide position monitoring or, in conjunction with a positioner, to provide linkageless feedback. This option avoids the mechanical pitfalls associated with vibration and hazards associated with industrial environments.

Internal Transducer (ROTA) **S37**

An LDT (linear displacement transducer) is installed in the cylinder rod to provide position feedback over the full length of the valves stroke.

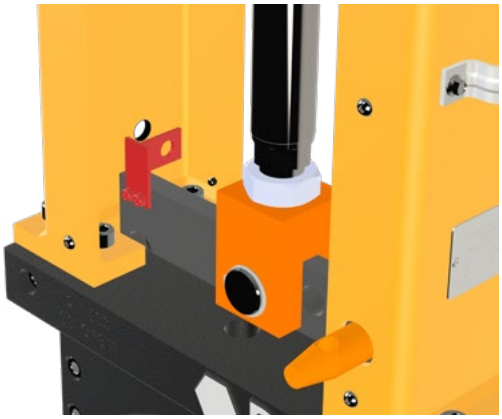
This option can be used standalone to provide position monitoring or, in conjunction with a positioner, to provide linkageless feedback. This option avoids the mechanical pitfalls associated with vibration and hazards associated with industrial environments.

Proximity Switches (Hawkeye — Explosion Proof) **S56**

Open/closed proximity switches for explosion proof areas (Ex d, Zone 1 or Class I and II, Div. 1).

DSS standard is StoneL Hawkeye model HX35S01SA (open and close switch).

Prox/Limit Switch Prep only — Explosion Proof (Hawkeye) **S57**



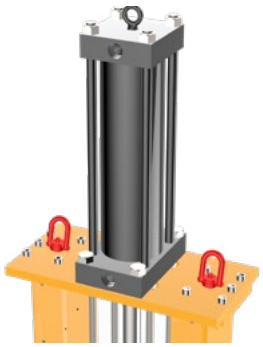
Target installed for magnetic type proximity switches (see option S32 for inductive type switches).

Valve yokes are prepared to accept M18x1 threaded cylindrical switches.

Switches not included.

Miscellaneous Options

Lifting Lugs **S30**



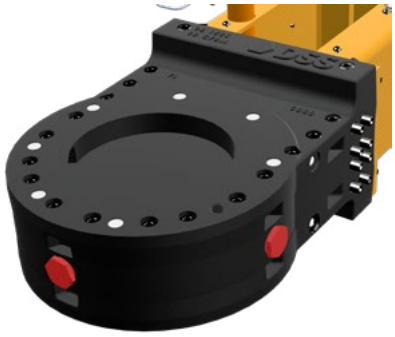
360 degree swivel lifting lugs installed on the actuator mounting plate.

Also available in low temperature construction (see option S55).

Lifting Lugs Low Temperature **S55**

Low Temperature 360 degree swivel lifting lugs installed on the actuator mounting plate (-40°C or -40°F).

Body Materials Compatible Drain Plugs (DBB Valves) **S40**



Bleed ports are supplied with plugs matching the center body material of construction.

Other (Specify) **S99**

Special options required by the customer and not covered by listed S options.

Ready When You Are

Located in Niles, Michigan, our manufacturing facility is primed and ready to serve your severe service needs. With over 90,000 square feet of manufacturing space and a dedicated crew in operation around the clock, we take pride in our ability to deliver a *cutting edge valve* at an industry leading pace.

To learn more, contact us at **info@dssvalves.com** directly. We look forward to working with you.

Contact Us

DSS Valves
1800 Mayflower Road
Niles, MI 49120
USA

TEL: 269-409-6080
FAX: 269-409-6099
info@dssvalves.com
DSSVALVES.COM

DSS® VALVES