

The best solution for replacing the existing valve
to perfect isolation without pipe revision



The Perfect isolation system

BOXY[®]
LINE BLIND

Free from leakage trouble

“Typical commercial line blinding processes cannot guarantee to be 100% leak free”

Typical Process

Leakage trouble may cause big losses facilities and humans such as environmental pollution fluids personal accidents by inhalation of toxic gases or unexpected explosions that can lead to extreme danger.

Typical blank work has had actual problems at the site such as :



- Environmental pollution during blinding work
- Exposure to workers to hazardous toxic fluids
- Potential hazards of sparking
- Need for tools, gaskets, cranes, etc
- Need for a specialist or trained worker
- High labor costs
- Long time to shut off the line

BOXY[®] Process

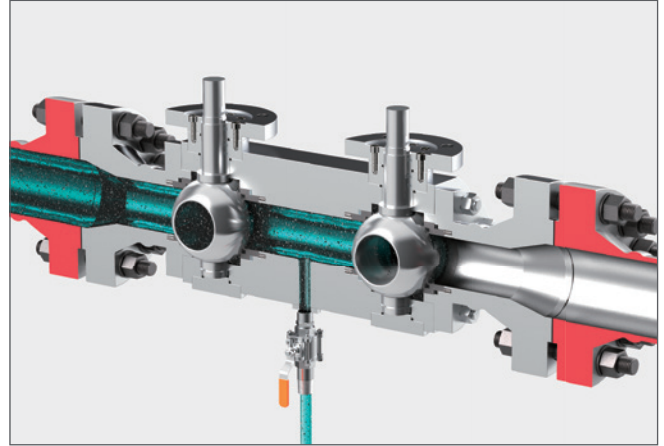
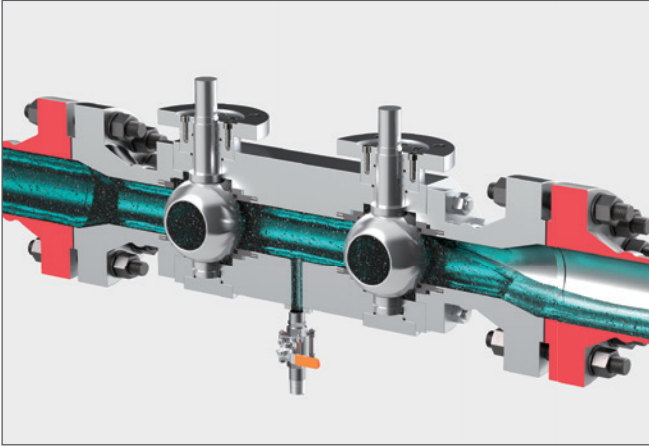
BOXY has developed the innovative BOXY Line blind to replace existing blank, spectacle plate, and DBB (Double Block and Bleed) valves without pipe revision.



- No need for pipeline revision to replace existing isolation method (Typical valve or Blank with Spool piece etc.)
- Positive shutoff in a short time
- No ground pollution
- Safe working environment
- No need for tools, gaskets, cranes, etc/
- Only one person with hand-wheel operation
- Minimum maintenance required
- No line spreading

What is the difference?

Typical valves for line blocking have potential leakage downstream, however, BOXY Line blind guarantees 100% isolation.

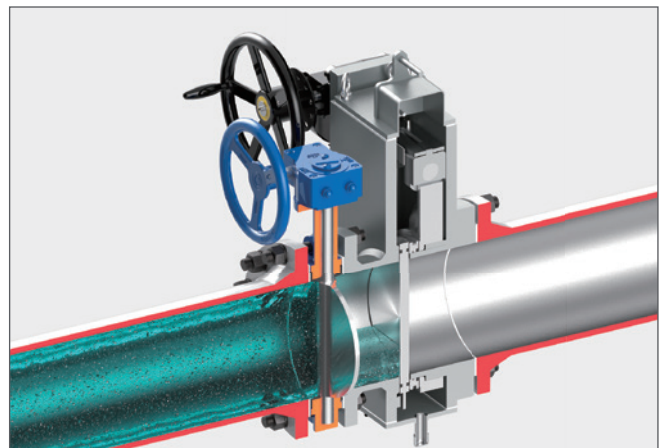
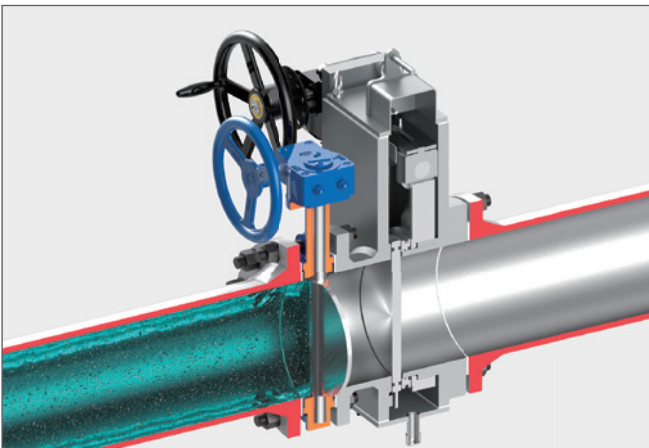


Typical Valve (i.e., DBB)

Typical valves cannot guarantee no fluid leakage downstream.

When the line is required to shut off completely for maintenance, a double ball valve can be used. During the process, fluid can pass through the 1st valve and reaches to 2nd valve.

To avoid leakage to downstream, bleed line shall be always open for draining out the pass-through fluid until the maintenance is completed.



BOXY + Butterfly Valve

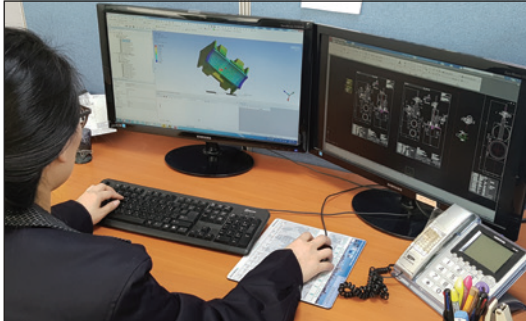
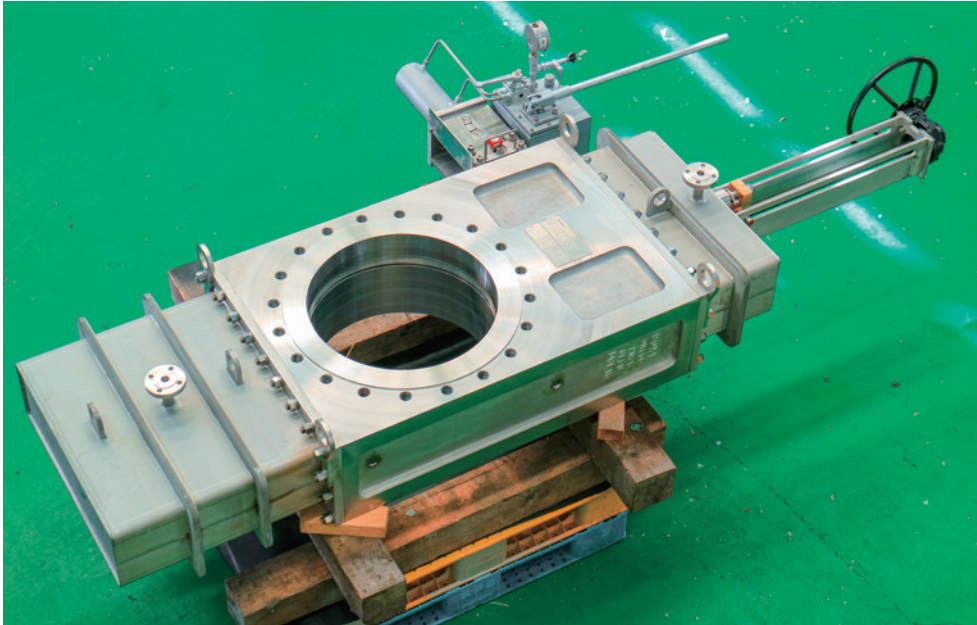
BOXY guarantees perfect isolation

Even though the upstream Butterfly valve leaks and the fluids reaches to BOXY Line blind, it shall never leak downstream. Draining between the Butterfly valve and BOXY Line Blind is required only when re-opening the BOXY Line blind, If the sealing of the Line blind is damaged, a gasket can be replaced at the site easily.

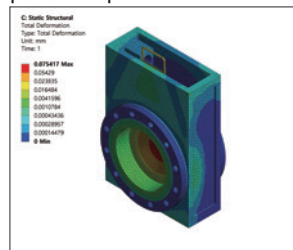
Features of BOXY[®]

BOXY[®] quick Line blind offers three essential features

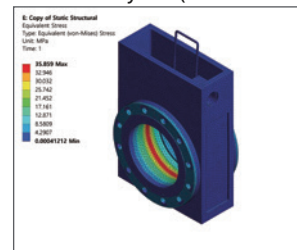
- Zero leakage to the downstream
- No air/ground pollution during blinding / de-blinding work
- Quick & Safe operation by one operator





F.E Analysis DBX type, NPS 10, ASME 150Lbs, WCB valve, part coupled thermal - structural F.E Analysis (ANSYS 17.2)



Total Deformation



Equivalent Stress

TYPICAL BLINDING WORK	BOXY LINE BLIND	SAVING EFFECT
 <p>1~12 hours</p> <p>5-10 men</p>	 <p>1min to 10min</p> <p>by 1 man</p>	<ul style="list-style-type: none"> • Guarantee zero leakage to down stream • Quick and safe operation • No need tools, crane, gaskets, bolts • Only one operator can isolate heavy pipeline • No maintenance except gasket replacement

About BOXY[®]

We have focused solely on line-blocking technology for over 20 years. Numerous installation references and site experiences with BOXY's innovative isolation blinding system prove it to be the safest and most practical method among all piping isolation facilities around the world.

From its simple design and easy operation, BOXY technology comes from long-term experience and development. A strong point of BOXY is its solid structure, with minimum maintenance required. As a specialist in the most advanced technology for pipeline isolation, we promise to provide qualified products and services to meet your needs at every site.

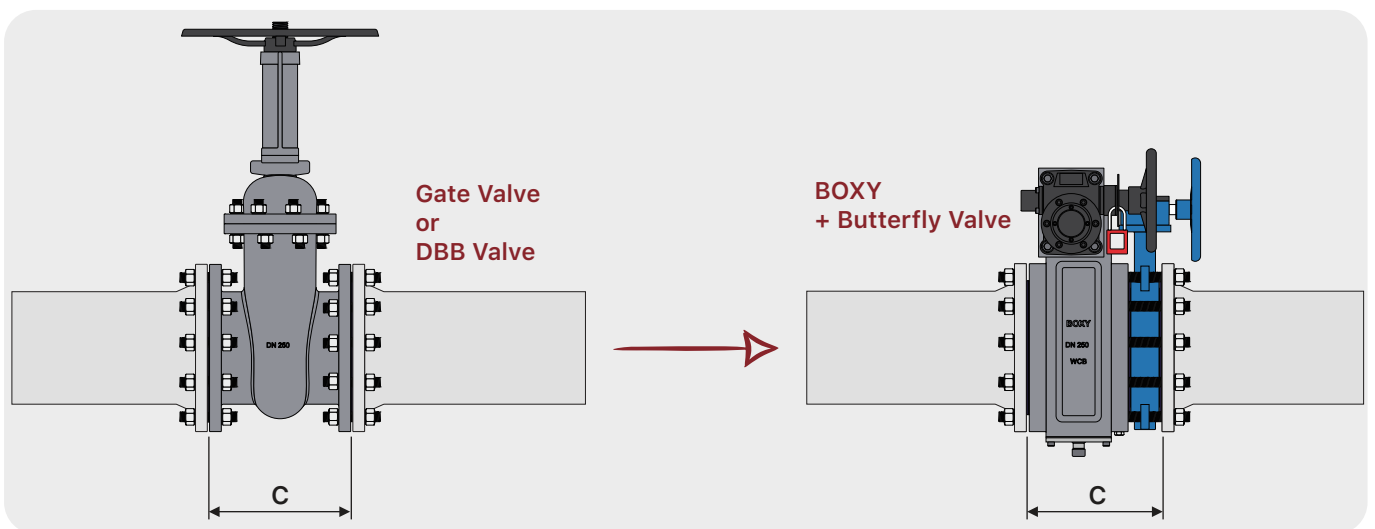
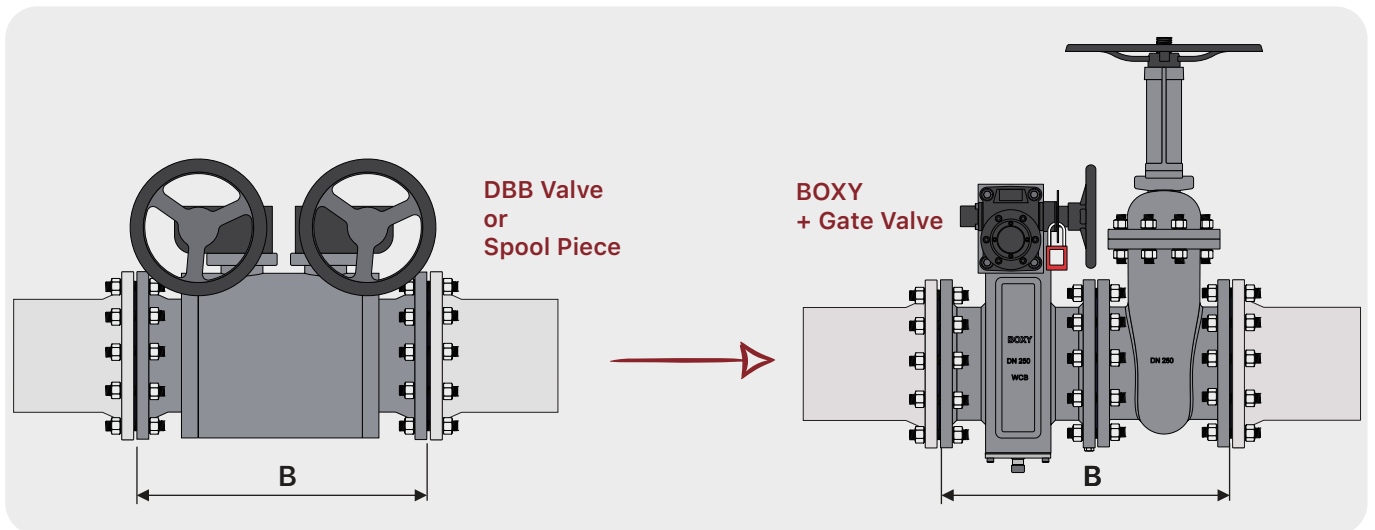
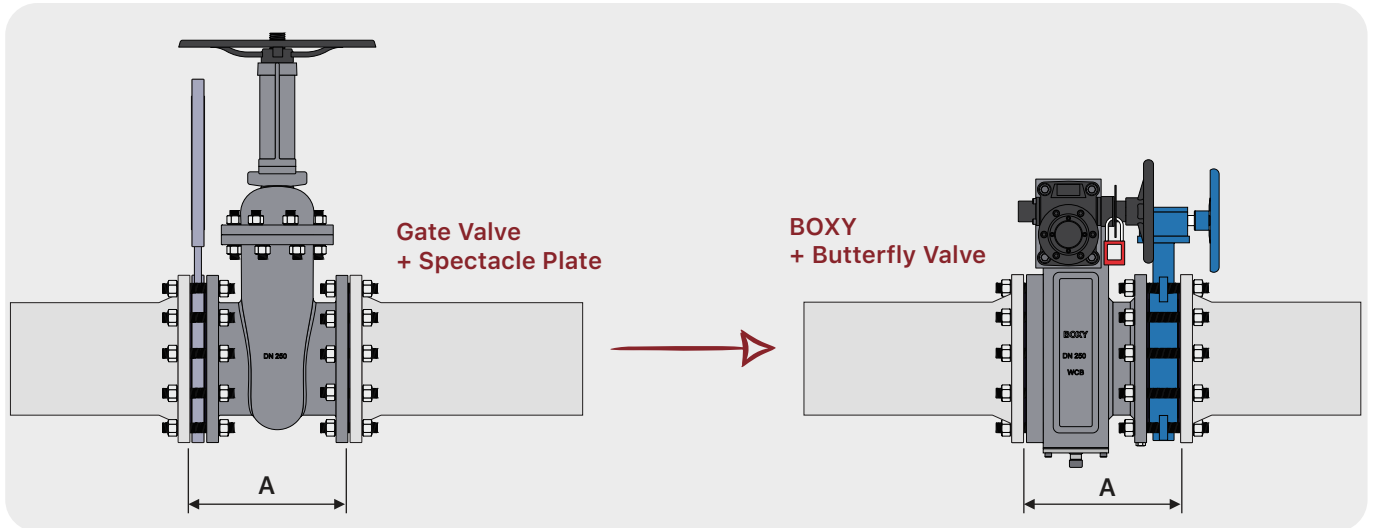


At BOXY, all our members share our Company Philosophy

- > To produce the best quality material and products
- > Achieve outstanding customer service through quick responsiveness and communication
- > Build a strong, positive reputation among our global customers

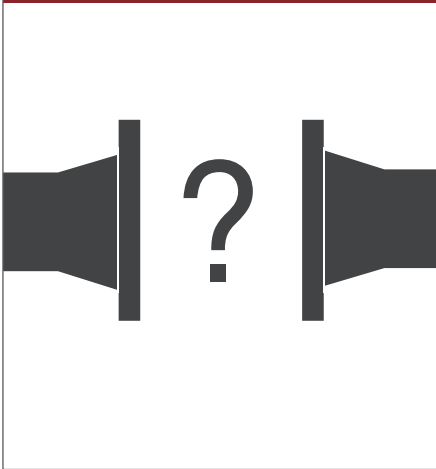
Replacing existing equipment without line modification

BOXY Line blind can be installed without any line modification at a same space where existing isolation equipment, such as Gate Valve with Spectacle Plate, Gate Valve with spool piece, or DBB Valve is installed. BOXY Line blind enhances facility safety level and reduces maintenance costs.



Product Selection Guide

Customer requirement



BOXY's proposal



Pipe Line Checking

- Size and pressure rating
- Face to face dimension
- End connection
- Max working temperature
- Max working pressure

Material Checking

- Body / trim material
- Fluid information
- Sealing gasket

Other Requirements

- Fire safety
- Automatic system
- Blind Storage
- Sensors
- NACE requirement

Check-marked information must be delivered to BOXY for selecting a proper line blind.

Material

Carbon Steel, Stainless Steel, Duplex, Hastelloy, Alloys and other special materials are available

PRODUCT CODE

Example Code : DBX 8 - AN 300 - WCB / SS304 / FKM
①Type ②Size ③Pressure rating ④Body Material ⑤Blind Material ⑥Sealing Gasket

① Type

DBX : Divided Blind Plate
SBX : Single Blind Plate

② Size

NPS 8"(inches)
DN200 (DIN)

③ Pressure rating

AN300 : ASME Class 300
PN16 : DIN PN 16
JS10K : JIS 10K

④ Body Material

WCB / CS : Carbon Steel
SS304 : Stainless Steel 304
C276 : Hastelloy C276

⑤ Blind Material

SS304 : Stainless Steel 304
SS316L : Stainless Steel 316L
C276 : Hastelloy C276

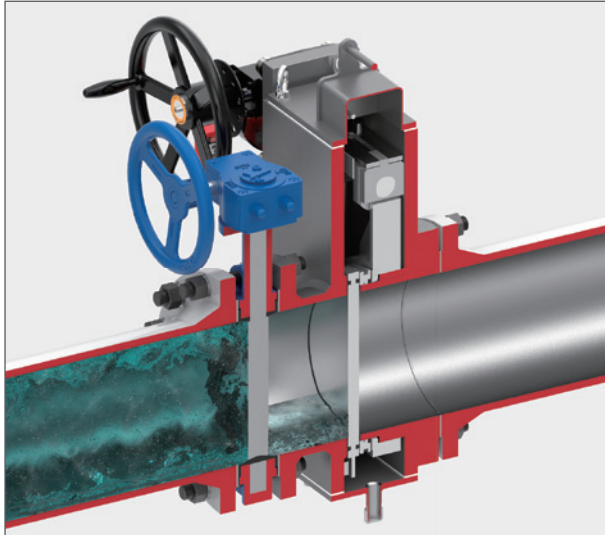
⑥ Sealing Gasket

NBR / HNBR : Nitrill Rubber, Buna-N
FKM / FPM : Viton
FEPV / PFAV / PFAS : Teflon Encapsulated O-ring
VMQ / FVMQ : Silicone, Fluorosilicone
EPDM : Ethylene Propylene Rubber
FFKM / FFPM : Perfluoro Elastomer, Kalrez, Chemrez
PTFE : Solid Teflon, Engineering PTFE
GR : Graphite Mold Gasket
SPW : Spiral Wound Gasket

Reliability of BOXY[®] technology

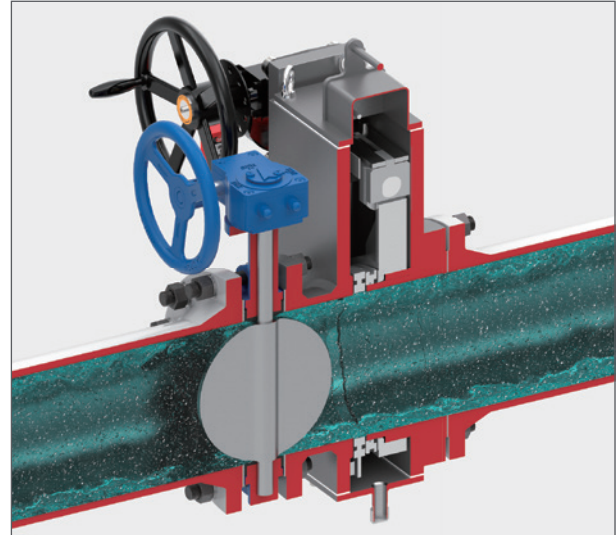
Absolute Shut-off

The pipeline can be isolated with the blind plate. If leakage occurs during the blinding on/off process, the fluid will lead to the bottom of the body, not spilling on the ground.



No Dead Space

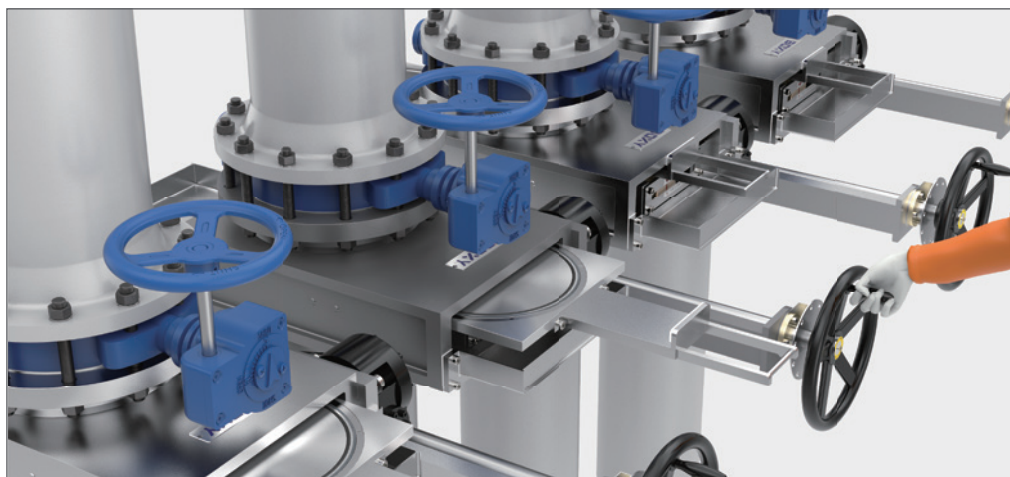
Zero dead space design of BOXY Line Blind ensures the line flows in full bore and prevents contaminations



Easy Operating

Even heavy facilities can be blinded / de-blinded with easy & safe hand-wheel operation.

BOXY Line blind has a compact design with a short dimension.



Reduce Potential for Environmental Pollution

BOXY Line Blind's fully enclosed body design prevents accidental spilling of hazardous materials to the ground or air, and enable operator to be safe from toxic or explosive environments



No need for Tools

No lifting tools are required to switch OPEN / CLOSE procedure



Safety Lock

Installed safety lock allows operation by authorized personnel only



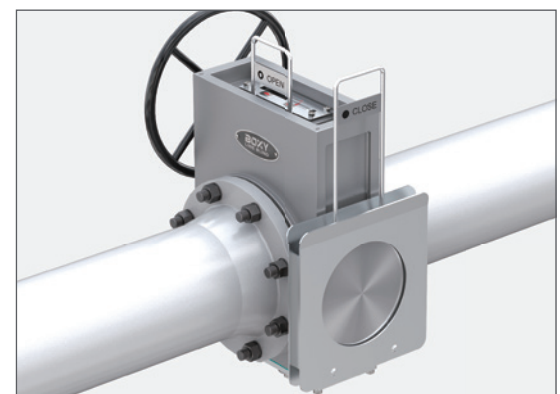
Tighten/Untighten Limit Indicator

Torque limit indicator provides correct positioning of tightening / releasing operation



Blind Plate Storage

Devices for gasket protection storage of blind plates in quick and convenient place



DBX Type



GENERAL INFORMATION

INSTRUCTION & FEATURES

DBX Type of Line Blind have advantages in oil terminal & offshore applications where is limited installation space and marine pollution is strictly prohibited.

The enclosed body / unique design prevent ground pollution and it allows for installation at parallel pipelines.

TECHNICAL SPECIFICATIONS

NOMINAL DIAMETER

NPS 1 (DN25) - NPS40 (DN1000)

PRESSURE RATING

ASME Class 150 to Class 1500

Other pressure classes up to ASME Class 2500

Available upon request

FUNCTION

Gas & Liquid Perfect Isolation

(Zero Leakage)

TEMPERATURE RANGE

Standard Design : -20°C ~ +200°C

High Temp. Design : +200°C ~ +816°C

Cryogenic Design : -196°C

MATERIALS

BODY : Carbon Steel, Stainless Steel, Special Material (Duplex, Hastelloy, Monel, Inconel etc.)

BLIND : Stainless Steel, Special Material (Duplex, Hastelloy, Monel, Inconel etc.)

MOVING PARTS / SEALING SURFACE are Anti-corrosion Materials

OPERATION METHOD

Manual Operation

Electric, Pneumatic or Hydraulic Operation

APPLICATIONS

• OIL TERMINAL •

- Oil & Chemical tank farm
- Loading Station
- Pump isolation
- LNG tank
- Airport fuel line

• REFINERY •

- Ethylene Furnace
- Decoking line
- Steam & Vapor line
- FCCU Fractionator isolation (overhead & bottom line)
- Catalyst service
- Flare gas line

• CHEMICAL PLANT •

- Reactor Blowdown
- Chemical Cleaning isolation
- Mixing lines
- Regeneration gas line
- Filtration system
- Loading station
- Transfer line

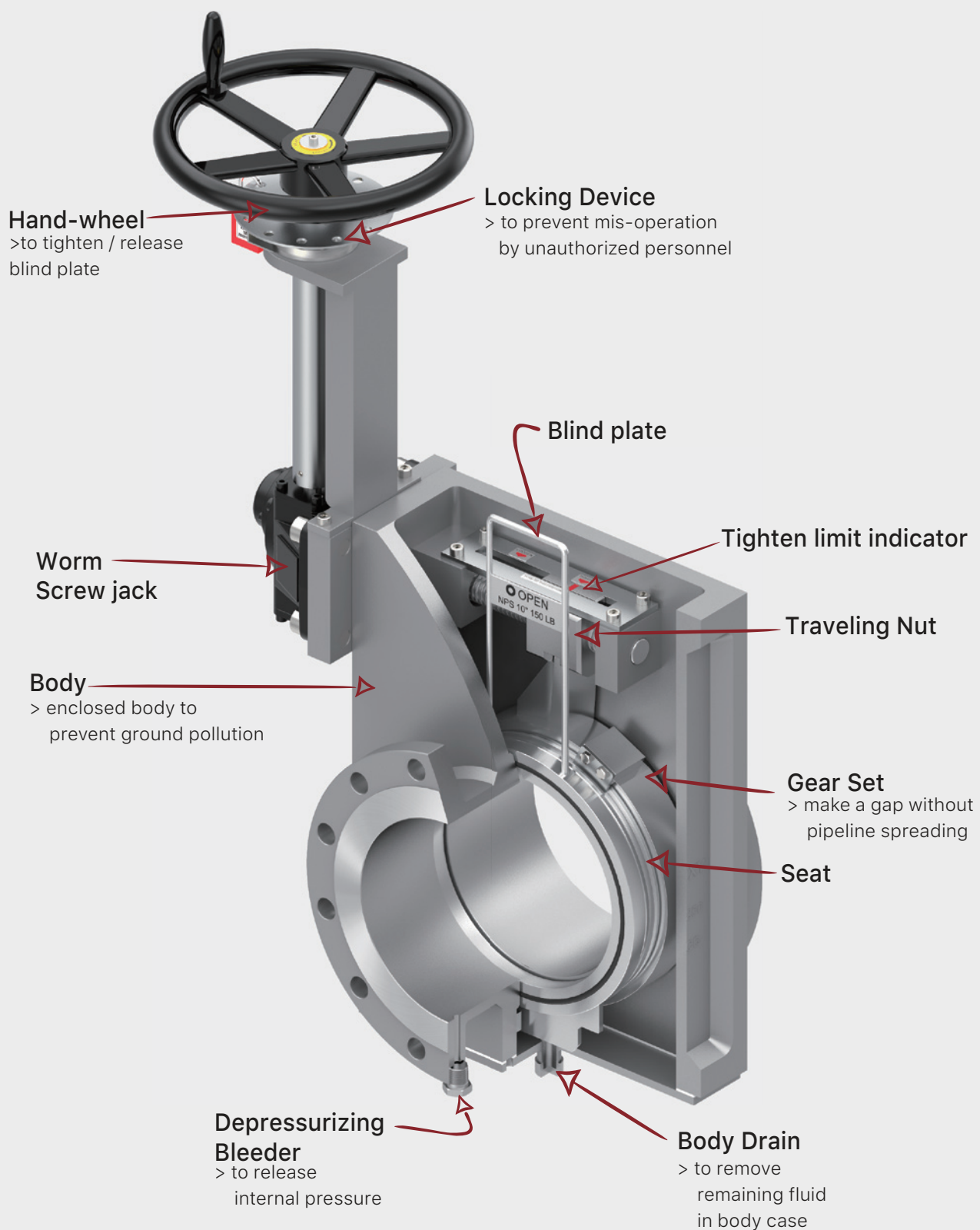
• OFFSHORE •

- FPSO
- LNG ship
- Shipboard lines
- Vessel inlet
- Inert Gas system

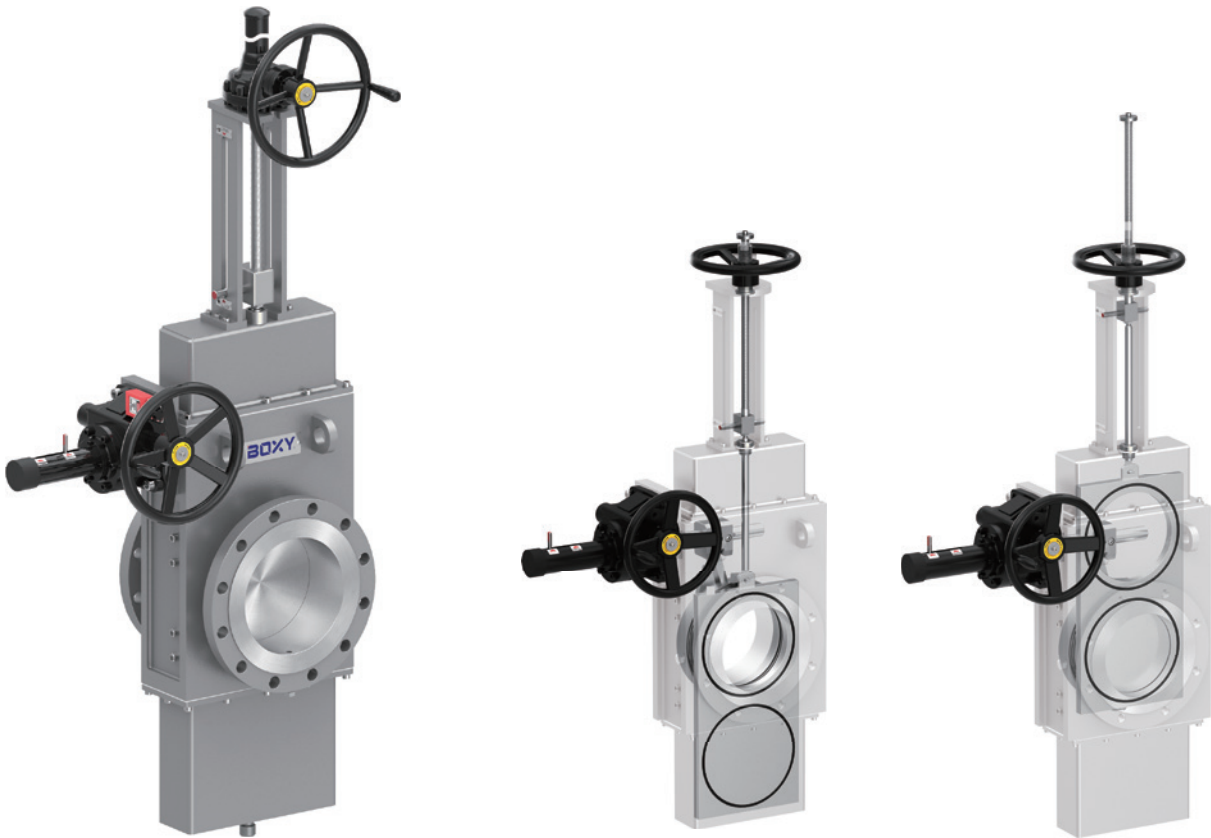
• STEEL •

- Coke Oven Gas
- Blast Furnace Gas

DBX Part Description



SBX Type



GENERAL INFORMATION INSTRUCTION & FEATURES

SBX Type Line Blind has many advantages in gaseous fluid or severe pipelines with acid, flammable, toxic or carcinogenic fluid.

The fully enclosed body with a unique design prevents environmental pollution and allows for installation at parallel pipelines.

TECHNICAL SPECIFICATIONS

NOMINAL DIAMETER

NPS 1 (DN25) - NPS40 (DN1000)

PRESSURE RATING

ASME Class 150 to Class 1500

Other pressure classes up to ASME Class 2500

Available upon request

FUNCTION

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Electric, Pneumatic or Hydraulic Operation

APPLICATIONS

• OIL TERMINAL •

- Oil & Chemical tank farm
- Loading Station
- Pump isolation
- LNG tank
- Airport fuel line

• REFINERY •

- Ethylene Furnace
- Decoking line
- Steam & Vapor line
- FCCU Fractionator isolation (overhead & bottom line)
- Catalyst service
- Flare gas line

• CHEMICAL PLANT •

- Reactor Blowdown
- Chemical Cleaning isolation
- Mixing lines
- Regeneration gas line
- Filtration system
- Loading station
- Transfer line

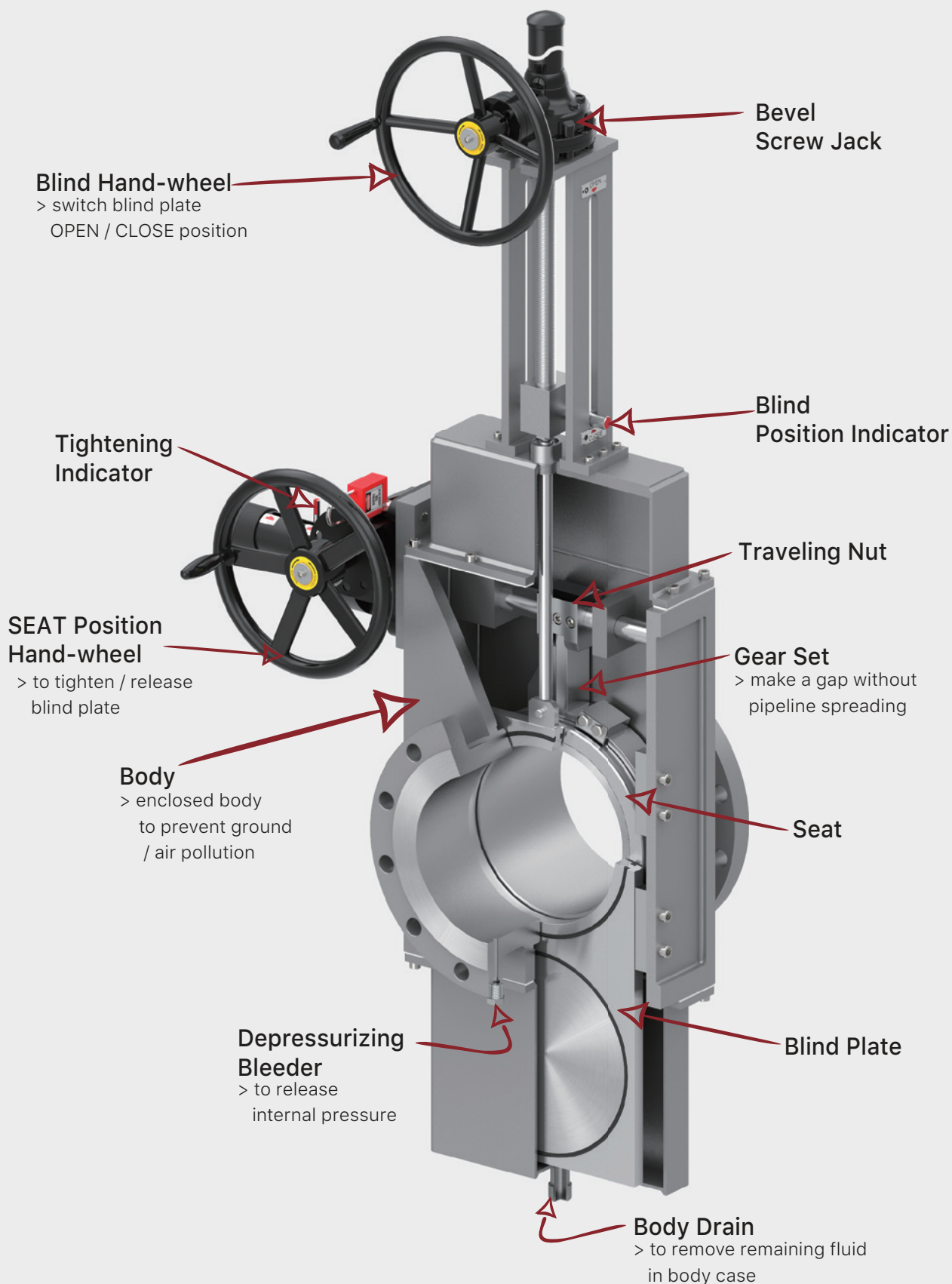
• OFFSHORE •

- FPSO
- LNG ship
- Shipboard lines
- Vessel inlet
- Inert Gas system

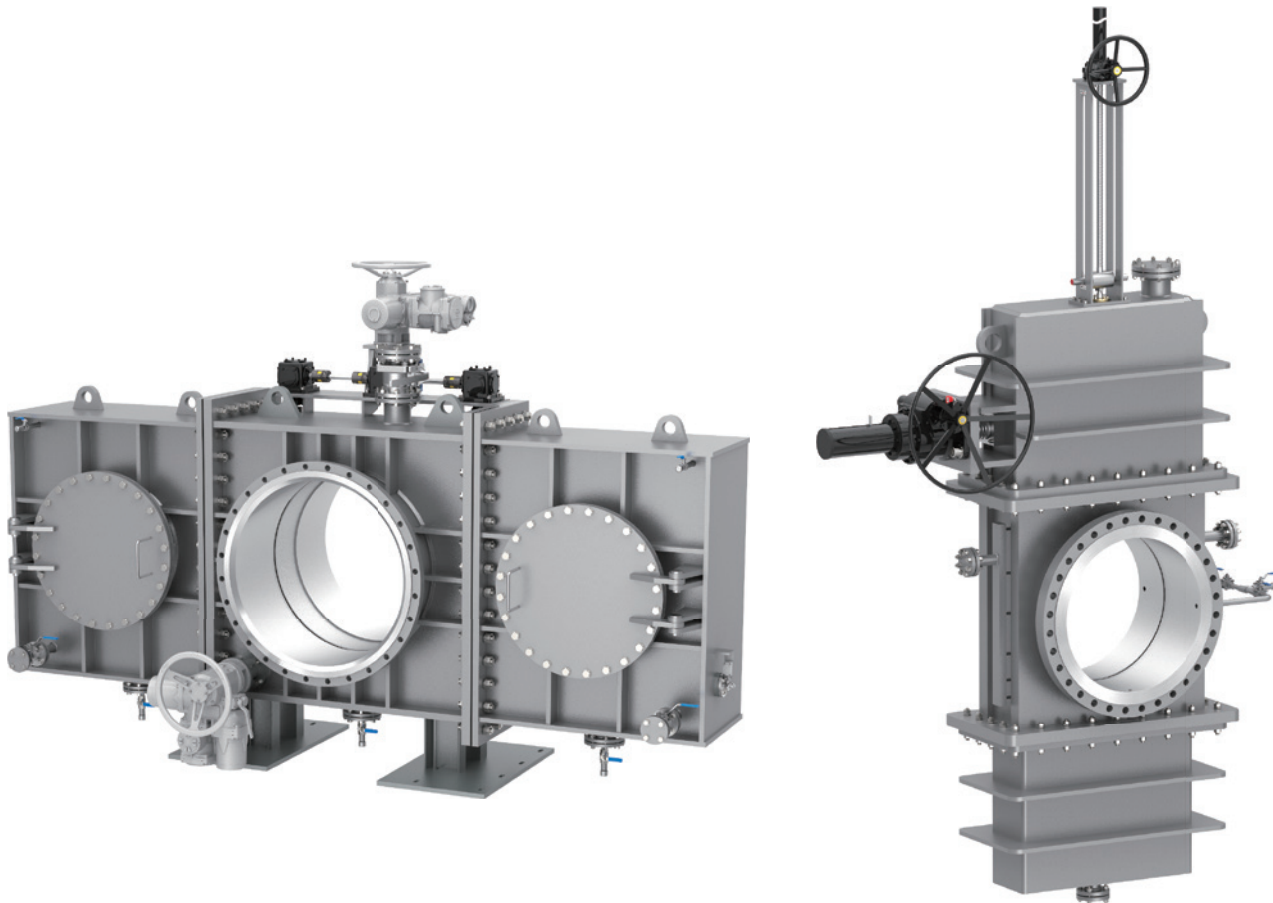
• STEEL •

- Coke Oven Gas
- Blast Furnace Gas

SBX Part Description



GOGGLE Type



GENERAL INFORMATION INSTRUCTION & FEATURES

Goggle type line blind is a good solution to isolate large diameter, high temperature and/or toxic gas pipelines for maintenance and inspection.

Large diameter and Heavy pipeline isolation work

TECHNICAL SPECIFICATIONS

NOMINAL DIAMETER

NPS 20 (DN500) - NPS100 (DN2500)

PRESSURE RATING

ASME Class 150 to Class 1500

Other pressure classes up to ASME Class 2500

Available upon request

FUNCTION

Gas & Liquid Perfect Isolation

(Zero Leakage)

TEMPERATURE RANGE

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High Temp. Design : +200°C ~ +816°C

Cryogenic Design : -196°C

MATERIALS

BODY : Carbon Steel, Stainless Steel, Special Material (Duplex, Hastelloy, Monel, Inconel etc.)

BLIND : Stainless Steel, Special Material (Duplex, Hastelloy, Monel, Inconel etc.)

MOVING PARTS / SEALING SURFACE are Anti-corrosion Materials

OPERATION METHOD

Manual Operation

Electric, Pneumatic or Hydraulic Operation

APPLICATIONS

• OIL TERMINAL •

- Oil & Chemical tank farm
- Loading Station
- Pump isolation
- LNG tank
- Airport fuel line

• REFINERY •

- Steam & Vapor line
- FCCU Fractionator isolation (overhead & bottom line)
- Catalyst service
- Flare gas line

• CHEMICAL PLANT •

- Reactor Blowdown
- Chemical Cleaning isolation
- Mixing lines
- Regeneration gas line
- Filtration system
- Loading station
- Transfer line

• OFFSHORE •

- FPSO
- LNG ship
- Shipboard lines
- Vessel inlet
- Inert Gas system

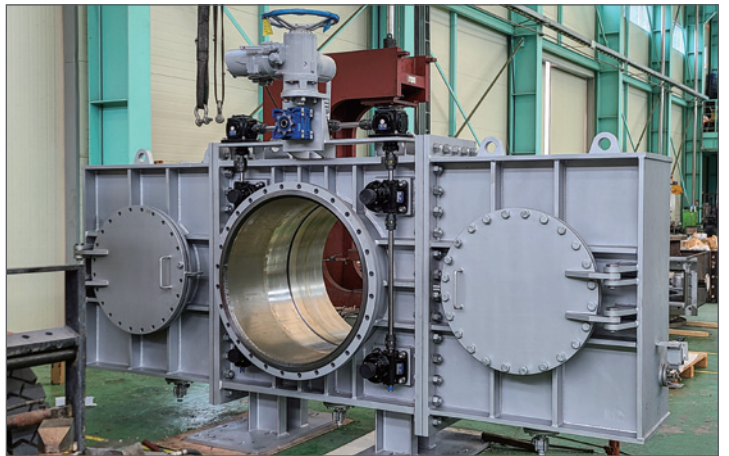
• STEEL •

- Coke Oven Gas
- Blast Furnace Gas

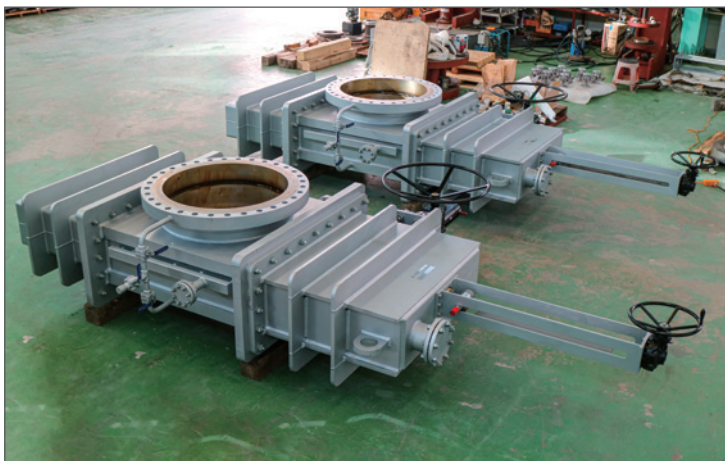
Project References



Swing Type / Goggle valve



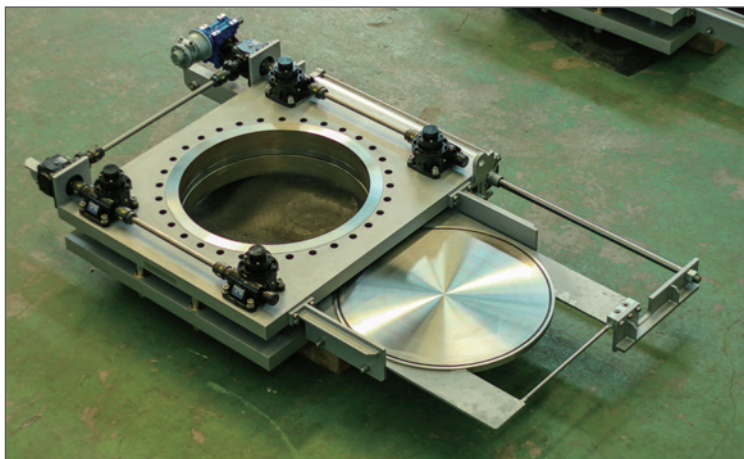
Fully enclosed BOXY Goggle valve / for steel mill



SBX type / Fully enclosed design with air cleaning system



High pressure Goggle valve



Goggle valve with pneumatic actuators



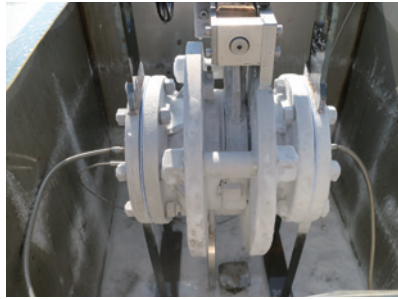
Fully enclosed BOXY Goggle valve

Manufacturing & Certificates

BOXY Line Blind does extensive physical testing on designs for optimal quality control. Our designs are developed using professional design software and validated by finite element analysis



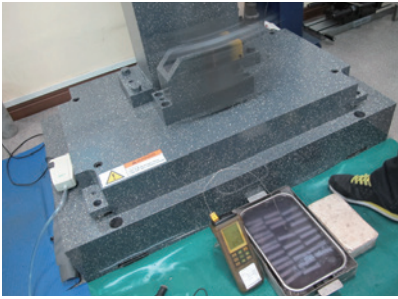
Fire Safety Test (API607)



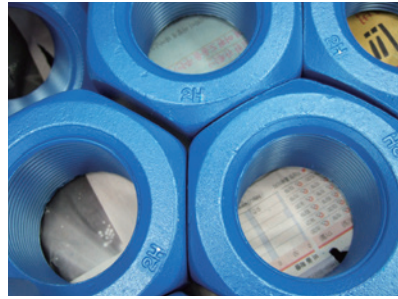
Cryogenic Test (-196°C)



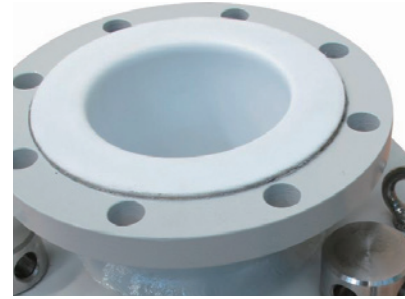
Helium Leak Test (VDI 2440)



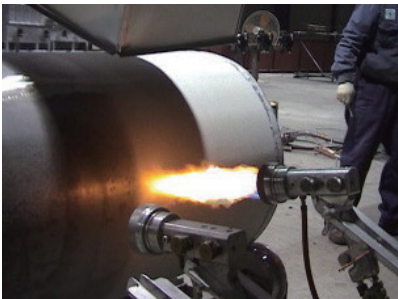
Impact Test (ASTM A370-12)



Xylan Coating



PTFE Lining



Metal Spray



Weld Built up



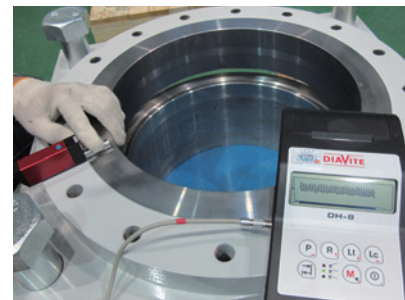
Weld built up (ASME Sec IX)



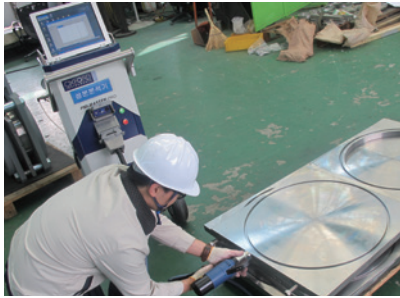
Pressure Test (API 598)



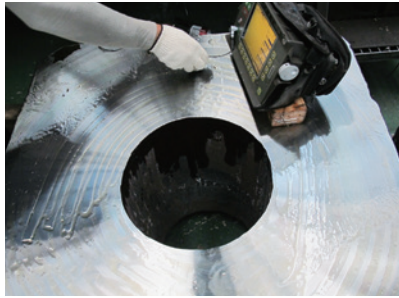
Class 5500 Pressure test



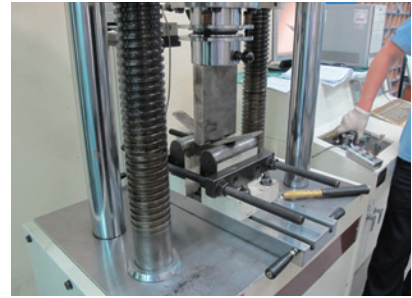
Surface Roughness Inspection (ASME Sec.V Art.5)



PMI (ASME Sec II Part A,B,C)



NDE (UT)



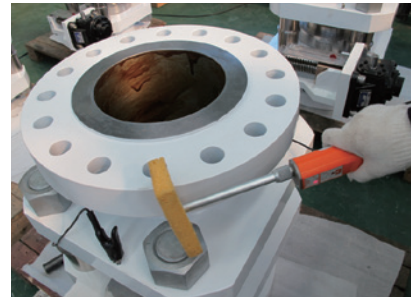
Bend Test (ASTM E190)



Tensile Test



Dry Film Thickness Inspection (ISO 19840)



Holiday detection (NACE RP0188)

Warranty

BOXY Line Blind has a warranty of 36 months after delivery, provided that it is installed properly according to the vendor's instructions. With the exception of sealing materials.

Assistance

BOXY Line Blind may provide engineering and/or technical information to assist our customers in proper field installation and/or field service. Every request for adjustments and/or modifications will be responded to in a timely manner. Customer satisfaction is our highest priority.

Certificate

CE-PED Module H.

- Pressure Equipment
- Approved from Bureau Veritas

ISO 9001

- Quality Management System
- Approved from Bureau Veritas

Fire Safety Test

- Fire Safe design
- Approved from Velosi

TRCU 032/2013

- On safety of equipment for high pressure
- Approved from SERCONS

API Spec. Q1

- Quality Management system
- Approved from API

TSSA

- Boilers & Pressure Vessels
- Approved from TSSA

ABSA

- Boilers & Pressure Vessels
- Approved from ABSA

API 6D

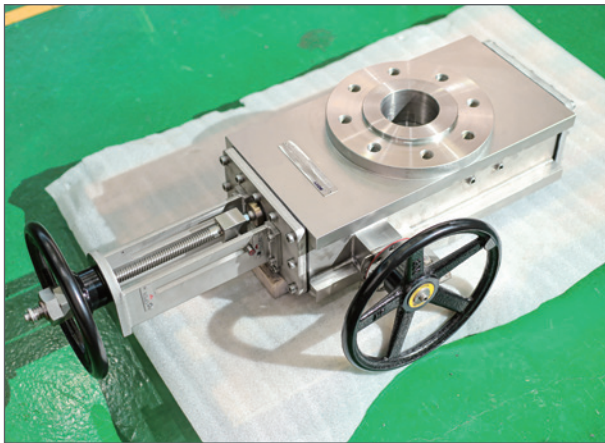
- Specification for pipeline valves
- Approved from API

Applications

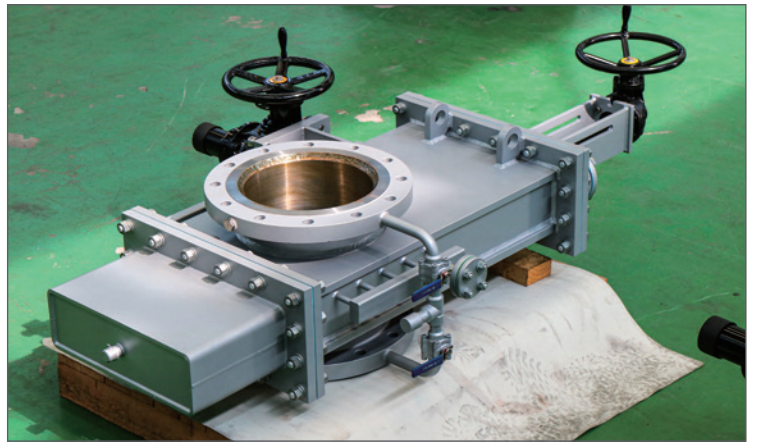
- > Oil & Gas Terminal
- > FPSO / FSO
- > LNG ships
- > Inert Gas System
- > Loading Station
- > Tank farm
- > Product isolation
- > Chemical cleaning isolation
- > COG / BFG isolation
- > Off-shore facility
- > Reactor shut off valve
- > Reactor blow-down
- > Pump isolation
- > Vessel inlets
- > Fuel line
- > Pig launching station
- > Tank vent

Project References

BOXY offers customized solutions in various installation conditions.



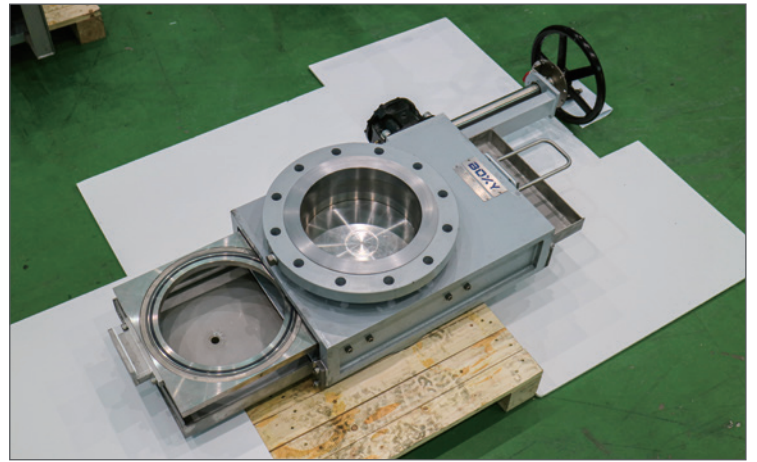
SBX type / Fully Enclosed design



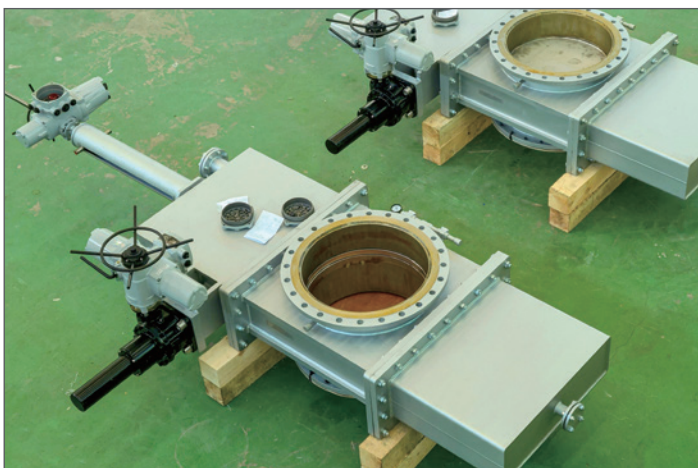
SBX type / Fully enclosed design + air cleaning system



SBX type / Fully enclosed design



SBX type with Drip pan



SBX type / Fully enclosed design + Electrical actuators

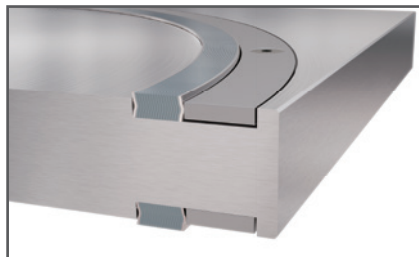


DBX type Fully enclosed design

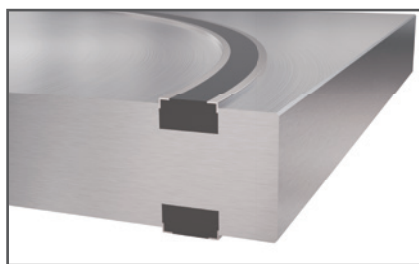
Sealing Material Guidance



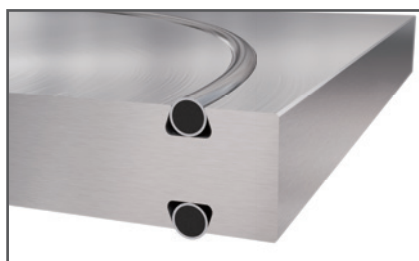
Elastomer O-ring	
FKM	· International Standard
FFKM	· Long durability
FVMQ	· Excellent gas tightness
FEPM	· Easy to purchase
EPDM	· Selection depend on chemical resistance
NBR	



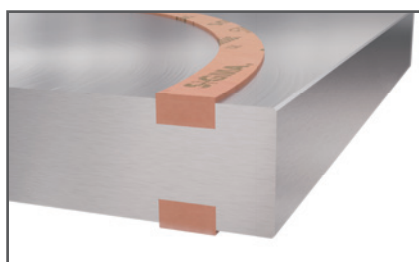
Spiral wound Gasket	
Spiral wound	· High temperature service
	· Cryogenic service
	· Excellent chemical resistance
	· Easy to purchase
	· Low price



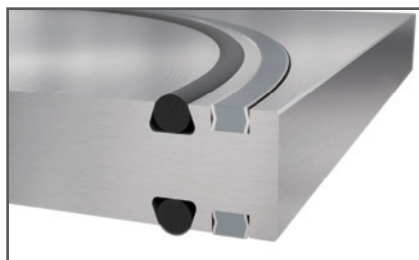
Graphite mold Gasket	
Graphite Mold	· High temperature service
	· Cryogenic service
	· Excellent chemical resistance
	· Stable sealing performance



Teflon Encapsulated O-ring	
PFAV / FEPV / PFAS	· International Standard
	· Excellent chemical resistance with Teflon tube
	· Retaining elasticity with core o-ring
	· Excellent gas tightness
	· Long durability
	· Easy to purchase



Solid Gasket	
Teflon	· Excellent chemical resistance
PTFE	· Excellent tightness
	· Long durability
	· Easy to purchase



Fire safe Gasket	
Spiral wound	· Primary sealing with elastic o-ring
/ Graphite mold	· Secondary sealing with spiral wound gasket
Elastomer O-ring	· Excellent gas tightness
	· Long durability
	· Easy to purchase



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