Gate Valve Seals
Tubing Hanger Seals
Casing Head Seals
Pack off Seals
BOP Seals

Wellhead Equipment Seals

Guangzhou JST Seals Technology Co., Ltd.

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JST has a complete technical system, including material formulation laboratory , comprehensive performance laboratory for high & low temperature and high pressure products, -196℃ cryogenic temperature laboratory, equipped with high and low temperature tensile testing machine, material abrasion testing machine, material immersion testing machine, low temperature retraction testing machine , DSC vulcanization tester, carbon black dispersion analyzer, creep tester, finite element analysis (FEA) , and in combination with the company's PLM system, it can make deeper researches on elastomer materials, polymer composites and product performance.

We have elastomer seal production workshop, polymer seal production workshop, class 10,000 clean room, and tooling processing workshop.

JST's products and services cover oil & gas drilling, chemicals, semiconductor, new energy, construction machinery, LNG, aerospace, nuclear & wind power, medical equipment and other industries, and meet the complex and harsh working conditions and technical requirements of various industries with its strength.

Product Series

JST materials receive rigorous internal and thirty-party tests and have obtained NORSOK M-710 immersion test certificates by Element laboratory in UK, Alpine laboratory in US, and laboratory of China University of Petroleum, as well as RGD test certificate by BV and API 6A PR2 test certificate by DNV for sealing of various devices.

NORSOK M-710 immersion test certificates

PTFE
PEEK
HNBR
FKM
Aflas

RGD test certificate

HNBR
FKM

API 6A PR2 test certificate

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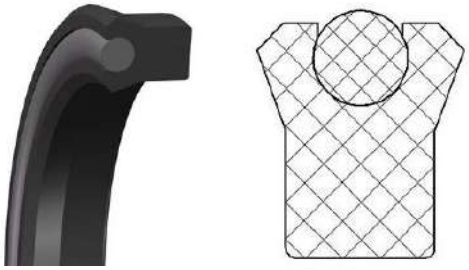
ESA

The ESA valve rubber seal is a type of Polypak, it combines a rubber o-ring type and a conventional lip type seal to produce a unique sealing device.

Polypak is an extruded seal with a symmetrical profile and can be used in rod or piston applications. Its rectangular cross-section ensures the stability of the gland and is an economic choice for use as a separate seal or with a buffer seal.

Advantages:

1. Normally used for low pressure valve stem
2. Excellent sealing performance
3. High friction
4. High torque
5. Cost-effective
6. High wear resistance
7. High seal ability



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
0~15,000 PSI	PU	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	NBR/HNBR/FKM

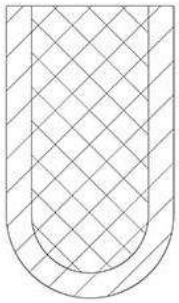
ESU

The ESU series stem packings, also known as u packing, are designed to be placed between the stem and bonnet of gate valves. This stem packing gives you a reliable seal for superior performance.

Its shell is made of virgin PTFE and the filler could be NBR, HNBR or FKM.
Stem U packing is commonly used in oilfield valves. For a valve sealing system to be successful, the correct compound choice is also important for effective sealing and long-term service. Using superior materials and manufacturing processes.

Advantages:

1. Suitable for low pressure application
2. Excellent sealing performance
3. Easy to install
4. Cost-effective



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
0~15,000 PSI	PU	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PTFE+ NBR/HNBR/FKM

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ESH

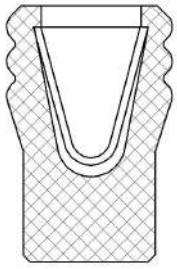
Spring energized valve stem packing contributes to the overall performance of industrial operations. They serve the vital task of keeping oil and liquids in while keeping contaminants out.

Our spring energized seal family is supported by a variety of spring types and materials, depending on the seal shape and application. We have a range of standard materials and profiles, and can provide a variety of choices. Most materials are also NACE approved.

JST's spring energized seals comply with API Q1 specification and can be used for API 6A valves and API 6D ball valves.

Advantages:

1. Meet API standards for design, materials, function and performance
2. Sizes ranging from 2-1/16" to 7-1/16"
3. Pressures ranging from 5,000 to 15,000 PSI
4. PR2 tested



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~15,000PSI	PU, LU, PX, LX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

ESI

Spring energized valve stem packing contributes to the overall performance of industrial operations. They serve the vital task of keeping oil and liquids in while keeping contaminants out.

Spring energized valve stem packing is a highly reliable option when elastomer or polyurethane seals do not meet the operating limitations, equipment parameters or environmental conditions of the application. Even when those seals may meet basic needs, many engineers turn to spring energized seals to improve reliability and high performance.

A valve stem packing assembly in the form of a stacked array, comprising

(a) a plurality of seal ring elements each having a generally V-shaped cross-sectional configuration;

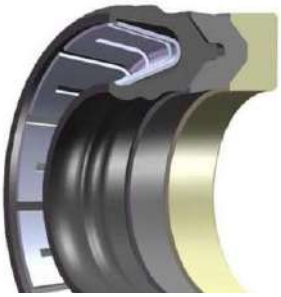
(b) a plurality of backup/energizing rings interspersed between and in supportive relationship with the seal ring elements, said backup/energizing rings having a generally Y-shaped cross-sectional configuration;

(c) a spring-energized lip seal ring adjacent one of the backup/energizing rings, said lip seal ring including a central base and a pair of sealing lips extending therefrom whereby the lip seal ring has a generally U-shaped cross-sectional configuration;

(d) an adapter ring having a generally T-shaped cross-sectional configuration and extending into a supportive relationship with the lip seal ring to prevent dislocation of said seal ring when the packing assembly is in functional position between a valve stem and a surrounding valve element, and said valve stem is cycled in a translatory manner.

Advantages:

1. Meet API standards for design, materials, function and performance
2. Sizes ranging from 2-1/16" to 7-1/16"
3. Pressures ranging from 5,000 to 20,000 PSI
4. PR2 tested



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~20,000 PSI	PU, LU, PX, LX, KU, KX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

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ESY

Spring energized valve stem packing contributes to the overall performance of industrial operations. They serve the vital task of keeping oil and liquids in while keeping contaminants out.

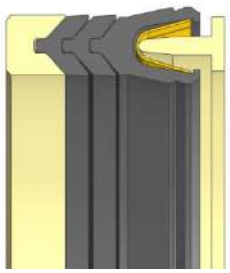
JST's valve stem packing seals use the unique combination of spring energizer and traditional V-shaped spring to form a set of effective configurations, which can withstand various high pressures and temperatures and corrosion chemicals.

A valve stem packing assembly in the form of a stacked array, comprising

(a) a plurality of seal ring elements each having a generally V-shaped cross-sectional configuration;
(b) a plurality of backup/energizing rings interspersed between and in supportive relationship with the seal ring elements, said backup/energizing rings having a generally Y-shaped cross-sectional configuration;
(c) a spring-energized lip seal ring adjacent one of the backup/energizing rings, said lip seal ring including a central base and a pair of sealing lips extending therefrom whereby the lip seal ring has a generally U-shaped cross-sectional configuration;
(d) an adapter ring having a generally T-shaped cross-sectional configuration and extending into a supportive relationship with the lip seal ring to prevent dislocation of said seal ring when the packing assembly is in functional position between a valve stem and a surrounding valve element, and said valve stem is cycled in a translatory manner.

Advantages:

1. Meet API standards for design, materials, function and performance
2. Sizes ranging from 2-1/16" to 7-1/16"
3. Pressures ranging from 5,000 to 20,000 PSI
4. PR2 tested



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~20,000 PSI	PU, LU, PX, LX, KU, KX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

EST

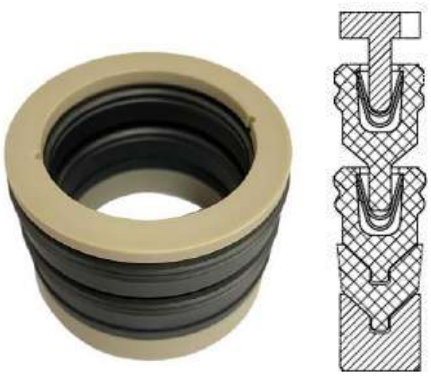
The valve stem packing is an essential component of valves, which is covered around the valve stem. The purpose of valve packing is to prevent leakage.

The tightness of the valve is one of the most important factors for the quality and performance of the valve. Especially for the imported valve, the requirements for the sealing performance of the valve are higher, requiring zero leakage when closed, including internal leakage and external leakage; The most important factor affecting the sealing performance is the valve sealing ring.

JST EST valve stem packing has good sealing performance under working pressure and a certain temperature range, and can automatically improve the sealing performance with the increase of pressure, which is suitable for gate valves. This seal has passed the PR2 tests. They are built to meet the American Petroleum Institute's high standards for design, materials, function and performance.

Advantages:

1. The friction between the seal ring device and the moving part should be small, and the friction coefficient should be stable
2. The sealing ring has strong anti-corrosion ability, is not easy to aging, has long working life and good wear resistance, and can be automatically compensated to a certain extent after wear
3. The structure is simple, easy to use and maintain, so that the sealing ring has a longer life



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~20,000 PSI	PU, LU, PX, LX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

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ESB/ESC

ID/OD Face Seal for Gate Valves, are spring-loaded, pressure-energized lip seal that improve gate and seat service life for gate valves.

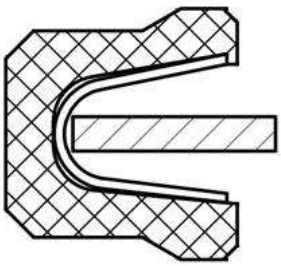
It is an end face mechanical seal with both rigid and flexible elements, which gives consistent contact at the sealing interface. ID face seals and OD face seal are combined used for valves.

JST ID/OD face seal is spring loaded with a pressure energized lip seal. It is used for the valve seat.

JST provides ID/OD face seals with two different materials for valves. A common option is virgin peek spring energized by a stainless-steel spring. Another option is glass moly filled PTFE with stainless steel springs, which are very durable and can withstand the worst conditions. When conditions are not extreme, a more cost-effective material option is glass moly filled PTFE. This ID/OD face seal is a good choice and has very good durability.

Advantages:

1. Sizes ranging from 1-13/16" to 7-1/16"
2. Pressures ranging from 5,000-20,000 PSI
3. PR2 tested



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~20,000PSI	PU, LU, PX, LX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

ESE

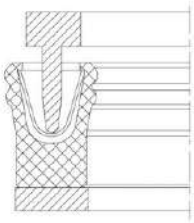
It is an end face spring energized seal with both rigid and flexible elements, which gives consistent contact at the sealing interface.

Internal and external lip seals energized with v-springs are suitable for static and slow dynamic applications. The spring preload is from light to medium, which can maintain low friction. Since the V-spring allows the seal to handle slight misalignment, some seal deflection can be tolerated without permanent deformation.

For high pressure applications, the length of the column base of this seal can be increased, and for high pressure applications, it can also be combined with the support ring.

Advantages:

1. Suitable for high pressure valve seat
2. Excellent sealing performance



Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
5,000~15,000PSI	PU, LU, PX, LX	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	PEEK+Elgiloy/SS steel+Filled PTFE

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ESJ

The PTFE gate valve seat seal is made of durable teflon, it is compatible with a variety of valves, and used in rotating equipment to minimize o-ring movement.

Wellhead sealing ring is a key sealing component for wellhead equipment. The typical sealing applications include wellhead gate valve, wellhead plug valve, wellhead choke valve, wellhead and Christmas tree. They can be exposed to harsh fluids to high temperature, pressure and contact forces. In this case, the performance of the seal and how long it lasts largely depend on the choice of sealing materials.

Seal technology is committed to improving the efficiency and safety of on-site operation. Various seal rings can be designed and manufactured according to user requirements.

Advantages:

1. Cost-effective
2. Durable

Working Conditions

Working Pressure	Working Temperature	Working Medium	Material
0~15,000PSI	PU	Hydraulic fluids, crude oil, sour oil/gas, H2S, salty water	Filled PTFE/PEEK

ESS/ESR

The one-piece S-Seal eliminates installation problems that can occur when using multiple component seals. It can be stretched into place without splitting or compromising the non-extrusion elements of the seal.

S-seal sealing materials need to withstand pressures as high as 20 000 psi and temperatures of 177° C (350° F).

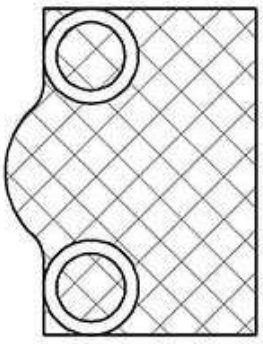
JST S-seal is made to perform in toughest situations, delivering reliable high-pressure static sealing. JST S-Seal elastomers are qualified to API 6A FF/HH (10% sour gas) and meet additional certifications which may include ISO 23936-2, NORSOK M-710.

JST S-seal is available in material NBR, HNBR, FKM with 2 integral anti-extrusion springs. Spring seals can be manufactured in a variety of standard or non-standard sizes, allowing them to be retrofitted into existing O-ring grooves.

JST ESS series is for piston. ESR series is for rod.

Product Highlights：

1. Designed to withstand pressures to 20,000 psi and temperatures to 350°F.
2. Single-piece design means easier installation, equipment assembly and maintenance.
3. Engineered to fit existing AS568 style and ISO 3601-2 style grooves.
4. Available for static and dynamic applications in materials suitable for demanding downhole environments.
5. Material is certified with NORSOK M710 H2S immersion test.
6. Rapid gas decompression resistance.



Working Conditions

Pressure	Temperature range	Medium	Material
0~20,000 PSI	LU, PU, SX	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316/INCONEL

STA/STB

T-seals are three-piece seals with an elastomeric lip and hard plastic anti-extrusion rings, it is proved to be of long-time service. The standard design will fit into an O-ring gland and can be machined or net moulded.

T-seals provide excellent sealing solutions for static or reciprocating dynamic applications. They can be designed to be modified into existing O-ring grooves (piston and connecting rod directions) or optimized for specific application requirements.

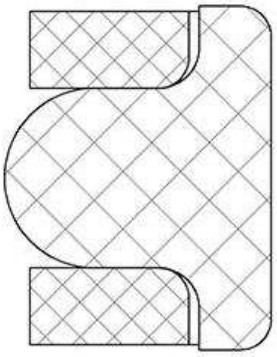
JST produces customizable T-seals from a variety of materials to meet almost any gland size. T-seals are manufactured by machining or moulding made of different HNBR or FKM-types as sealing material and a backup ring made of PEEK.

The use of backup rings allows T-seals to be used in high-pressure applications while maintaining high sealing efficiency at low pressure. The design of the T-seal uses the system pressure to actively energize the backup ring to ensure effective resistance to extrusion in unidirectional and bidirectional pressure applications under static and dynamic conditions.

Due to the symmetrical geometry of T-seals, the installation procedure is usually simpler than other seal designs.
JST STA series T-seal is for piston. STB series T-seal is for rod.

Advantages:

1. Improve equipment reliability
2. Extend seal and equipment service life
3. Reduce installation time, delay and damage
4. Protect system from loose materials



Working Conditions

Pressure	Temperature range	Medium	Material
0~10,000PSI	LU, PU, SX	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ PEEK/POM/ Filled PTFE

ESD

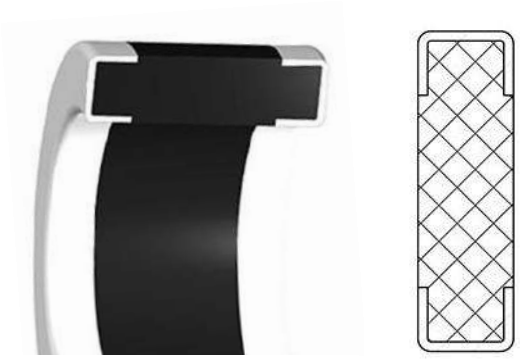
Lockdown screw seal is used mainly in geothermal applications, HNBR packing with stainless steel caps provide superior performance over metal pressure seals.

JST's lockdown screw packing seal will effectively seal the bolts that secure and position tubing and casing hangers and joints.

The U-shaped packing consists of a metal Jack firmly bonded to the NBR or HNBR or FKM filler.
It uses HNBR with metal end cap, which is suitable for L-X, HH, PSL 3

Advantages:

1. Easy to install and remove
2. Replaces V packing
3. Excellent sealing performance
4. Good extrusion resistance



Working Conditions

Pressure	Temperature range	Medium	Material
0~20,000PSI	LU, PU, SX	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316

SFS

The FS-seal is a relatively large cross section spring energized elastomer casing and tubing hanger seal for wellheads that always has the springs on the internal surface.

FS-seals are used against rough surface finish and wider dimensional and geometrical tolerances of casing and tubing.

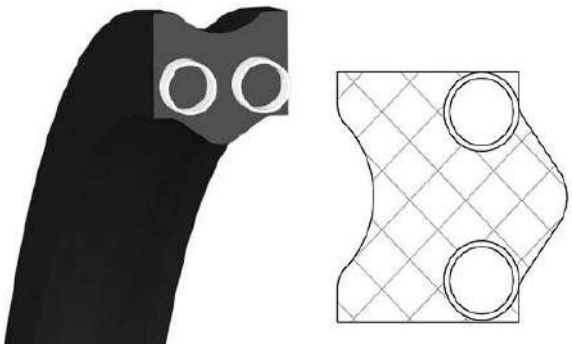
Sealing materials utilized for wellheads need to withstand pressures as high as 20000 psi, and temperature from –46°C to +177°C (–20°F to +350°F).

JST has tooling for standard sizes from 4-1/2" to 30". FS-seal material includes NBR, HNBR, FKM with 2 integral anti-extrusion springs.

FS seal is a custom designed spring energized elastomer seal, which combines the advantages of the overall support assembly and the flexibility of elastomer seal, and can provide the maximum extrusion resistance in the demanding high-pressure sealing environment. FS seal is ideal for many chemical processing, chemical transportation and oil and gas applications, such as oilfield casing and tubing.

Advantages:

1. Improve equipment reliability
2. Extend seal and equipment service life
3. Reduce installation time, delay and damage
4. Protect system from loose materials
5. Material is certified with NORSOK M710 H2S immersion test.
6. Rapid gas decompression resistance



Working Conditions

Pressure	Temperature range	Medium	Material
0~20,000 PSI	LU, PU, SX	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316/INCONEL

SPS

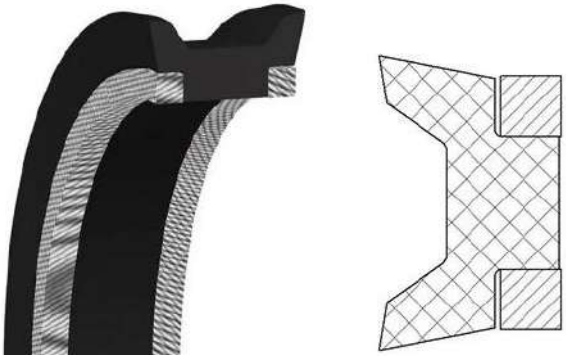
P seal is constructed from an elastomer with back up rings for anti-extrusion. Energized by the injection of sealant, it is a static seal that is used to seal rough casing and tubing. Backup rings are available in Mesh Stainless Steel or Solid Carbon Steel.

The standard P Seal is a one-piece molded seal utilizing molded-in anti-extrusion device. This design enhances assembly by eliminating the loose anti-extrusion devices used in other designs.

P seal is installed in the lower sealing area of casing spool or tubing head. It is used to provide redundant well safety between casing annulus and flange connection of casing head, casing spool or tubing head. In some cases, it can also provide special sealing capacity for fracturing equipment.

Advantages:

Anti-high pressure and Anti-extrusion



Working Conditions

Pressure	Temperature range	Medium	Material
0~20,000 PSI	LU, PU, SX	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316

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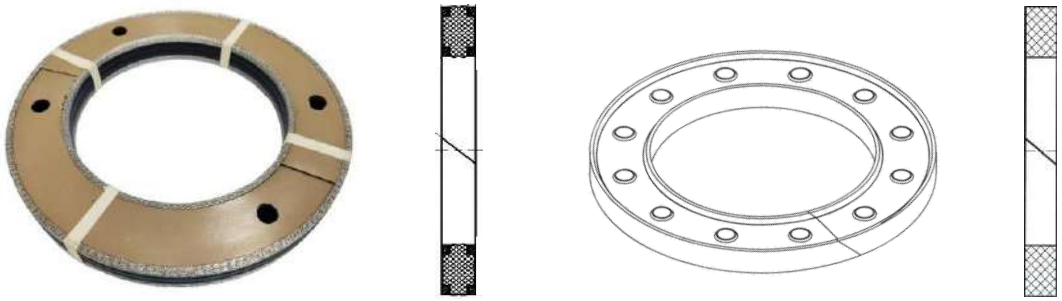
KWQ

In the drilling operation and oil and gas testing process, a casing head pack off seal, also called slip hanger, as a basic part of a wellhead assembly, is installed at the upper end of a casing string for suspending the casing string of each casing layer and sealing annular spaces between the casings of two adjacent casing layers. A slip seal is a main seal of the slip-type casing head, and performances there of directly affect the application range and normal use of the casing head.

Wellhead secondary pack off seals used to seal the hanger to the wellhead. The seal assembly may include a seal element and a lockdown member. The seal assembly is attachable to either one of the wellhead members by coupling the lockdown member to a locking surface on the wellhead member. The lockdown member and locking surface may include corresponding profiles for mating engagement thereby preventing relative movement between the wellhead member and seal assembly.

Pack off seal vary considerably in design. They generally comprise a square or rectangular section profile that is compressed axially in a housing to generate a radial sealing force against a casing or tubing. The packer may be homogeneous rubber, or incorporate reinforcement in the form of fabric, steel mesh.

Wellhead secondary pack off seals designed by JST can withstand the high pressure of 15,000 psi and the temperature range from –46°C to +121°C (–20°F to +250°F).



Working Conditions

Pressure	Temperature range	Medium	Material
0~15,000 PSI	LU, PU	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316

FPQ

JST's Inner and Outer BOP Seals could be made according to customer requirements. These seals are used in various type of Blow Out Preventors (BOP's).

Our special proprietory manufacturing process ensures that the rubber and metal plates remain bonded to each other even under the most severe applications. In BOP, inner seal and outer seal are used together.

With the help of blowout preventer seals, a well can be safely sealed off when needed. Safety is a priority to anyone working on a rig, which is why the selection of a quality blowout preventer packing seal is imperative.

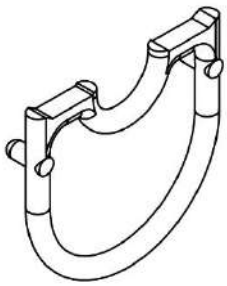
We manufacture our BOP seals from superior materials to meet the most stringent quality standards.

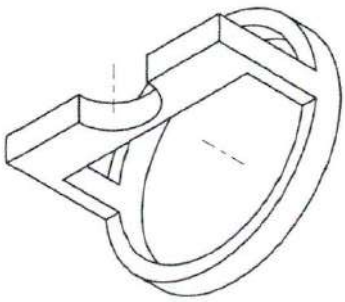
The BOP seal is made of metal frame and rubber material could be NBR, HNBR, FKM.

The BOP is equipped with an improved sealing assembly for sealing, and the pipeline extends through the BOP to the wellbore. The seal assembly includes an elastic seal and a plurality of circumferentially spaced metal inserts in the seal to substantially minimize or prevent extrusion of the seal under high fluid pressure. BOP shall be reliably used to seal pipes with different diameters.

Advantages:

Easy to install, excellent quality





Working Conditions

Pressure	Temperature range	Medium	Material
0~15,000 PSI	LU, PU	Oil, water, Gas, H2S, CO2, etc.	NBR/HNBR/FKM+ SS316