

CRYOGENIC

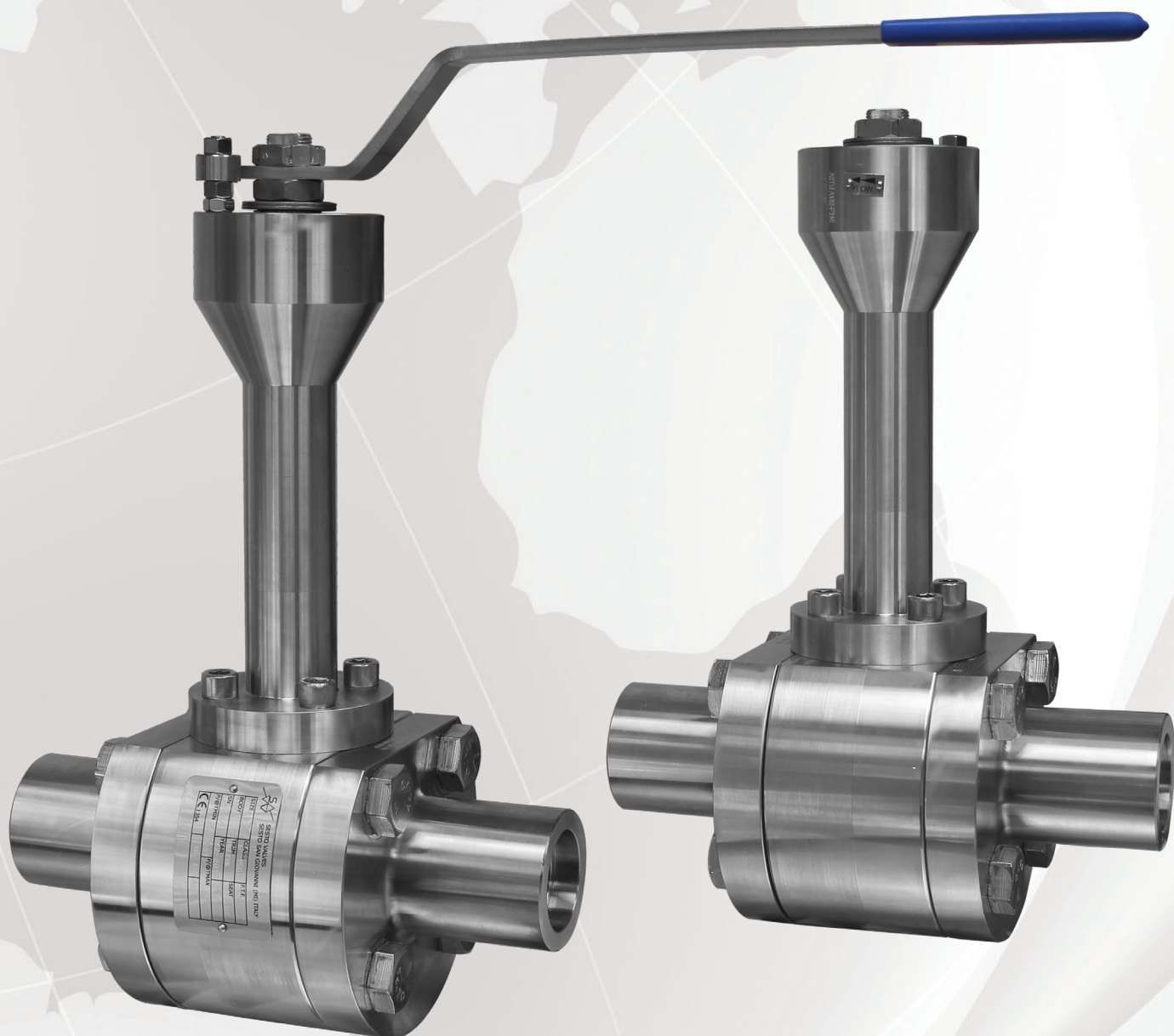
PED



NACE



SIL2
Safety Integrity Level



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Introduction



Sesto Valves is a premium high performance ball valve manufacturer headquartered in Sesto San Giovanni, Italy. We source only the best materials from our global partners to ensure quality and competitive pricing.

Our valves are 100% manufactured and tested in Italy so we can control our product quality and provide easy traceability. Sesto Valves offers a full line-up of floating or trunnion mounted ball valves, 3-way multiport ball valves, fully welded ball valves and double-block-and-bleed ball valves suitable for any application ranging from standard duty to critical service, including exotic materials and super alloys.

Our products can be supplied as simple manual shutoff valves or with customized automation and controls for unique requirements. Focused on the chemical, petrochemical and energy industry, Sesto Valves provides solutions for exploration, production and distribution as well as a wide variety of industrial applications.



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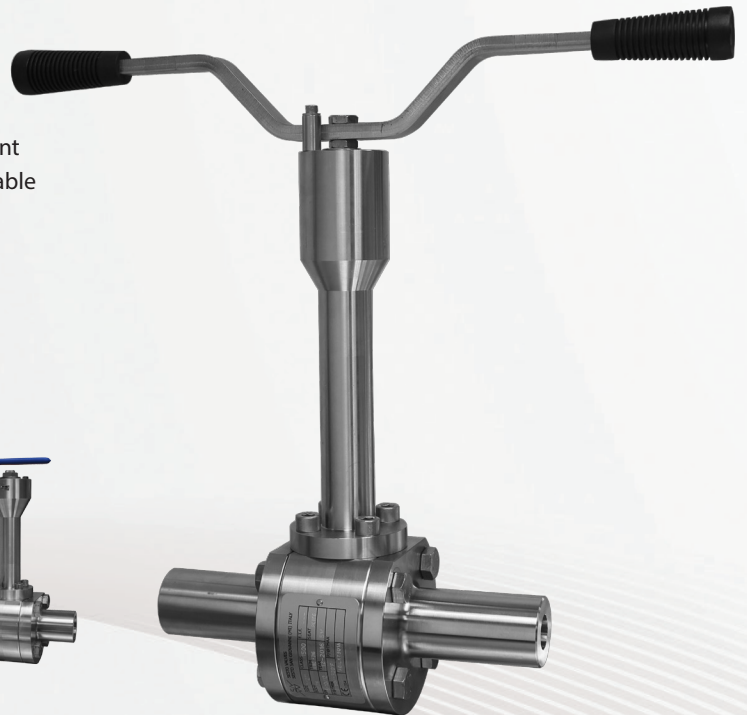
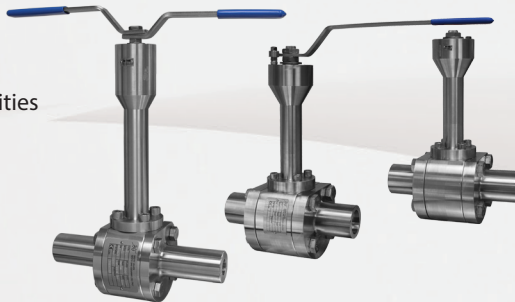
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Features and Benefits

- Class 150 to Class 2500
- Size Range ¼" thru 12" (Class Dependent)
- Floating and Trunnion, Full and Reduced Bore
- Body Wall Thickness ASME B16.34, Forged or Cast Versions
- Cryogenic tested to -196°C (-320°F)
- Fire-Safe Design API 607
- Vented Ball Standard
- Blowout Proof, Low Torque Guided Stem Design
- Live-Loaded Packing and Anti-Static Capable
- Fugitive Emissions ISO 15848
- PTFE, TFM, CTFM, PCTFE (KEL-F®) and Metal Seats Available
- Valves are degreased, cleaned and packaged prior to shipping
- Custom Face-to-Face Lengths Available per Customer Requirement
- Manual, Electric, Pneumatic, or Electro-Hydraulic Operators Available

Partial List of Applications

- LNG Storage
- LNG Terminals and Transportation
- Liquefied Industrial Gases
- Cargo and Bunkering Systems
- Regasification
- Aerospace Industry
- Gas Production Facilities
- Food & Beverage
- Refrigeration
- Pharmaceutical



150# to 2500#
¼" thru 12"

Certifications and Compliance

Sesto Valves are designed and manufactured to internationally recognized standards including but not limited to the following:

Fire Testing: API 607, API 6FA, BS 6755 Part II

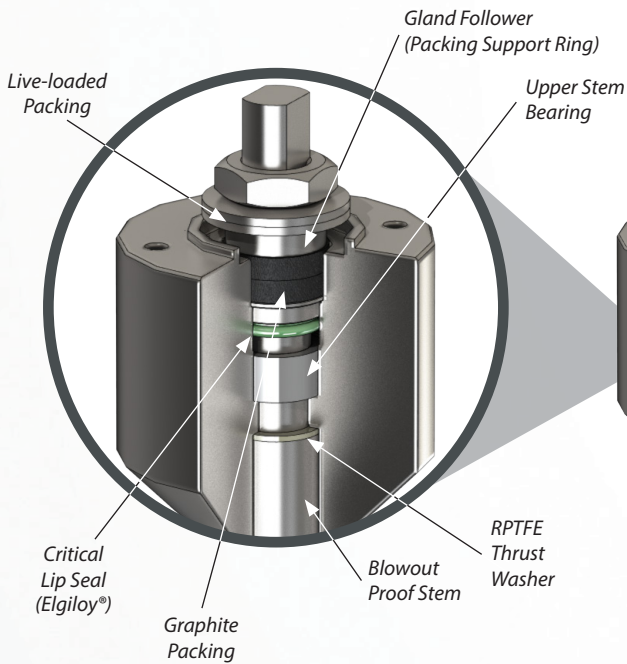
Testing: API 6A, API 598, API 17D, ISO 5208, BS 6755 Part I

Marking: API 6A, MSS-SP-25, PED

Certifications: API607, SIL, NACE, MR0175, PED, Fugitive Emissions

TrueCryo Design vs. Modified Valves for Cryo Service

Sesto "True Cryo" Solution	Competitor Modified Cryo Valve	The Sesto Difference
Forged 316 Body	Cast 316 Body	The forged body eliminates the possibility of any leaks due to poor castings.
1-PC Extended Stem	2-PC Bolted Stem Extension	Our stem is made of one solid piece extended to the valve body. The packing is insulated and there is no leak path in the extension. Our proprietary extension seal design helps maintain flow temperatures giving the end user energy savings.
PCTFE (KEL-F®) Seats lapped to the ball as standard	No lapping and use of PTFE based materials	Our seats are lapped to the ball giving us very tight tolerances and shut-off while lowering our torques dramatically. Our seats do not leak.
Fully Tested Valves to -196°C (-320°F)	Hydrostatic Testing only at ambient temperatures	We test our valves per industry standards and perform tests to Cryogenic Temperatures -196°C (-320°F) and then test again at ambient temperature with water.

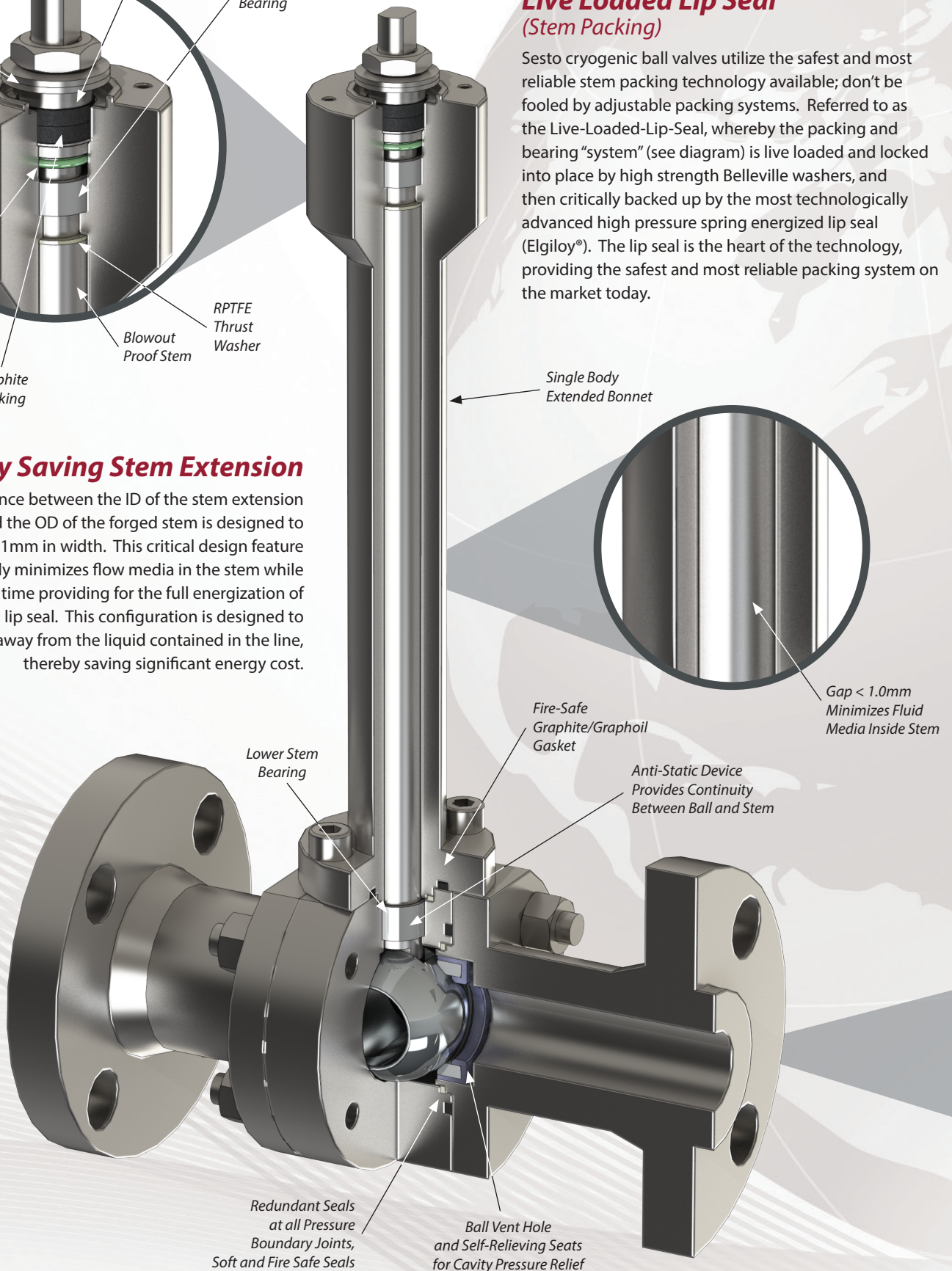


Live Loaded Lip Seal (Stem Packing)

Sesto cryogenic ball valves utilize the safest and most reliable stem packing technology available; don't be fooled by adjustable packing systems. Referred to as the Live-Loaded-Lip-Seal, whereby the packing and bearing "system" (see diagram) is live loaded and locked into place by high strength Belleville washers, and then critically backed up by the most technologically advanced high pressure spring energized lip seal (Elgiloy®). The lip seal is the heart of the technology, providing the safest and most reliable packing system on the market today.

Energy Saving Stem Extension

The clearance between the ID of the stem extension housing and the OD of the forged stem is designed to be less than 1mm in width. This critical design feature significantly minimizes flow media in the stem while at the same time providing for the full energization of the critical lip seal. This configuration is designed to keep heat away from the liquid contained in the line, thereby saving significant energy cost.



Example Part Number

FIGURE	BORE	SIZE	CLASS	ENDS	BODY	BALL	STEM	BOLTS	NUTS	SEATS	OPERATOR	PACKING	SPECIAL
FS3	F	0M	G	SW	XO	XO	NO	TO	YO	AK	T	01	C

FIGURE	BORE	SIZE	CLASS	ENDS	BODY - BALL - STEM
TS2	F - FULL BORE R - REDUCED BORE	N0 - 1/2"	03 - 3"	A - 150	RF - RF FLANGES BW - BUTT WELD SW - SOCKET WELD RT - RTJ FLANGES TN - NPT THREADED H0 - HUB ENDS BT - BW X NPT
TS3		0T - 3/4"	04 - 4"	B - 300	
TW3		01 - 1"	05 - 5"	D - 600	A1 - R1 X NPT A3 - R1 X RTJ A4 - SW X NPT
TS2		1Q - 1-1/4"	06 - 6"	E - 800	
FSM		1M - 1-1/2"	08 - 8"	F - 900	X0 - ASTM A182 F316L XY - ASTM A182 F304 N0 - XM-19 NITRONIC 50 I0 - INCONEL 625 IC - INCONEL 718 ZA - TITANIUM
FS2		02 - 2"	10 - 10"	G - 1500	
FS3		2M - 2-1/2"	12 - 12"	H - 2500	

BOLTS - NUTS	SEATS	OPERATOR	PACKING	SPECIAL
U0 - ASTM A193 B8 T0 - ASTM A193 B8M Y0 - ASTM A194 GR8M S0 - ASTM A194 GR 8	AK - PCTFE (KEL-F®) AA - RPTFE PT - PTFE M1 - METAL/METAL TCC 150 uM	T - T HANDLE L - LEVER G - GEAR N - BARE STEM F - LEVER WITH LOCKING DEVICE K - GEAR WITH LOCKING DEVICE	01 - PRIMARY ELGILOY® LIP SEAL / SECONDARY GRAPHITE FIRE SAFE 11 - PRIMARY ELGILOY® LIP SEAL / SECONDARY RPTFE NON-FIRE SAFE	C - CRYOGENIC -196C (*INCLUDES EXTENDED STEM/BONNET) L - LOW TEMP -101C (*NON CRYOGENIC TEMPERATURES) X - CUSTOMER SPECIAL 0 - STANDARD

PRODUCT LEGEND

TS2 - TRUNNION SIDE ENTRY 2-PC BODY
TTO - TRUNNION TOP ENTRY 1-PC BODY
TS3 - TRUNNION SIDE ENTRY 3-PC BODY

FSM - FLOATING SIDE ENTRY 1-PC BODY
TW3 - TRUNNION FULLY WELDED 3-PC BODY

FS2 - FLOATING SIDE ENTRY 2-PC BODY
FS3 - FLOATING SIDE ENTRY 3-PC BODY

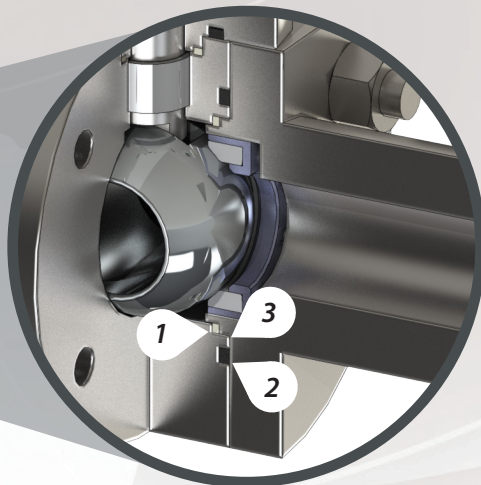
Ball/Seat Lapping

All Sesto cryogenic ball valves utilize lapped ball and seat sets. This precise manufacturing process ensures the lowest operating torque and the tightest possible sealing capability of the ball and seats, while at the same time providing for an extremely long service life for the intended application. Lapping is a surface grinding/polishing process where loose abrasive powders are used as the lapping agent to achieve the extremely tight tolerances.



Cryogenic Testing

Sesto Valves designs and manufactures true cryogenic service ball valves in full compliance with British Standard BS 6364 "Specification for Valves for Cryogenic Service" which includes proof of design testing at severe low temperatures of -196°C (-321°F). Detailed quality inspections are performed before and after cryo testing, and valves are re-assembled and tested again at ambient temperatures for verification.



Triple Body Seal

(Providing Three Levels of Defense)

1. Primary Body Seal (RPTFE)

Soft seal for reliable sealing at all pressures

2. Secondary Body Seal (Graphite)

Provides a fire safe secondary seal.

3. Backup Metal-to-Metal Interface

Forms a labyrinth seal with a torturous flow path.



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