Modular Link Seal

Annular space sealing for pipe & cable penetrations

Product Brochure





SEALS PIPES & CABLES



MODULAR LINK SEAL SYSTEM



PRESSURE-TIGHT PROTECTION

Designed for building, civil, utility, and industrial penetrations, with fast installation, retrofit suitability, and material options for standard, potable water, oil-resistant, and demanding service conditions.

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A Modular Link Seal for your pipes

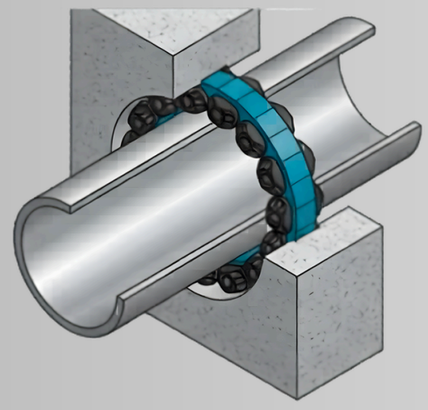
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TotSeal®
Modular Seal



System Overview

TotSeal® modular seals are engineered to provide a permanent mechanical seal for pipes and other cylindrical penetrations through casing pipes, walls, floors, and ceilings. Manufactured as an assembly of interconnecting rubber seal elements, the system compresses into the annular space to form a reliable hydrostatic barrier against water, soil, and backfill. TotSeal® is offered in 21 dimensional types to suit carrier pipe outside diameters from 10.0 mm to 3000.0 mm, depending on the selected type. Seal elements are available in EPDM, EPDM L (40 Shore A), Nitrile and Silicone compounds; EPDM reaches 1450 psi tensile strength and 400% elongation. For standard applications, TotSeal® provides hydrostatic sealing performance up to 1.4 bar (20 psig), or approximately 12 m (40 ft) of static head.



Engineered Features

- Offered in 21 size configurations to suit a wide range of annular spaces
- Compatible with carrier pipe O.D. ranges from 10 mm to 3000 mm
- Dimensional options include actual thicknesses from 12.2 mm to 92.0 mm
- Designed for wall thickness requirements from 75 mm to 150 mm
- Available in EPDM, EPDM L (soft), Nitrile and Silicone compounds
- Tensile strength: EPDM 1450 psi, Nitrile 1300 psi, Silicone 860 psi



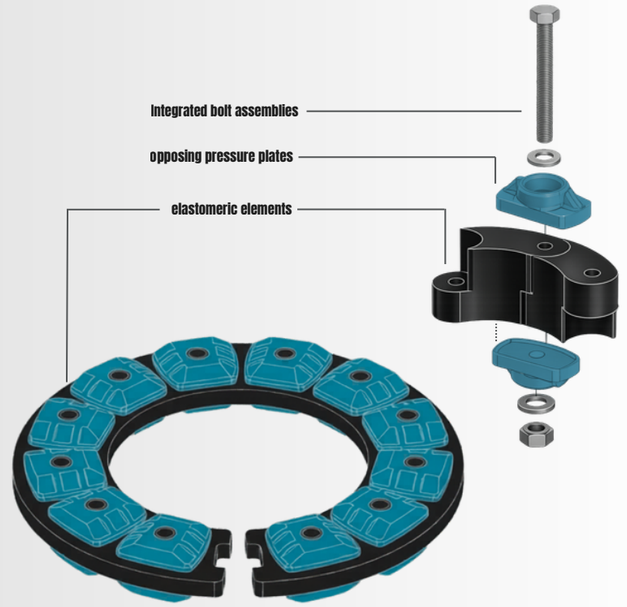
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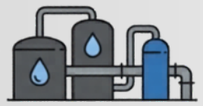
Working Principle

The system is shipped as a modular belt of interconnecting elastomeric links. During installation, the belt is wrapped around the carrier pipe, joined at the ends, and inserted into the annular space.

Tightening the integrated bolt assemblies draws the opposing pressure plates together, compressing the elastomeric elements. This uniform radial expansion creates a permanent, gas- and water-tight hydrostatic seal while simultaneously centering and structurally isolating the pipe within the penetration.



Industry Applications



Water & Wastewater:
Treatment plants, manhole entry seals, fluid overflow devices, septic tank installations.



Infrastructure & Transport:
Cased road and railroad crossings, bridge construction, tunneling operations.



Industrial & Power:
Power generation dams, coal preparation plants, offshore oil rigs, high-pressure tank guards, perimeter berms.



Commercial Construction:
Fire protection wall penetrations, thermal storage systems, noise and sway dampening, precast concrete vault seals.

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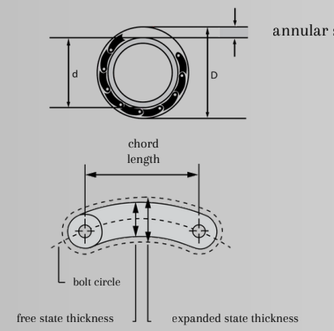


CHOOSING THE RIGHT SEAL

Use the following method to select the correct TotSeal®. Calculate the annular space. The annular space is half the difference between the actual pipe O.D. and the actual wall opening I.D . If you have selected the correct size TotSeal® modular seal, the free state thickness should be less than the annular space and the expanded state thickness should be more than the annular space (column 2 and 3).

$$\frac{\text{Wall Opening I.D. (D) – Actual Pipe O.D (d)}}{2} = \text{Annular Space}$$

Select from the chart below the size closest to the annular space calculated. Usually more choices can be made due to size overlap.

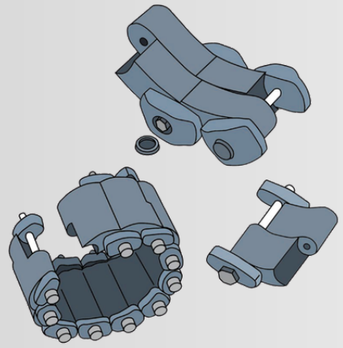


Type	Actual Thickness	Free State Thickness	Expanded State Thickness	Chord Length	Necessary Wall Thickness	Carrier Pipe O.D. Min	Carrier Pipe O.D. Max
	mm	mm	mm	mm	mm	mm	mm
TS 200	12.2	12.7	15.7	28.5	75.0	21.3	323.9
TS 265	15.5	16.0	20.0	41.0	75.0	50.0	406.4
TS 275	15.5	16.0	20.0	23.0	75.0	10.0	90.0
TS 300	17.5	18.0	22.5	38.5	100.0	44.5	250.0
TS 310	17.5	18.0	22.5	57.5	100.0	60.3	406.4
TS 315	20.5	21.1	26.0	38.5	100.0	37.0	315.0
TS 325	22.3	23.2	29.0	79.0	120.0	133.0	711.0
TS 340	25.5	26.5	34.0	40.0	120.0	30.0	323.9
TS 360	31.5	32.6	42.0	54.0	120.0	40.0	406.4
TS 400	35.0	36.3	46.0	92.0	140.0	139.7	1220.0
TS 410	36.3	37.6	48.5	66.0	140.0	60.3	323.9
TS 425	27.0	28.4	36.0	92.0	140.0	144.0	1220.0
TS 440	42.5	44.0	55.0	99.0	140.0	139.7	1220.0
TS 475	39.6	41.2	50.0	66.8	140.0	60.3	1220.0
TS 500	57.2	60.3	71.5	98.0	150.0	100.0	1220.0
TS 525	52.3	54.5	63.5	98.0	150.0	133.0	1220.0
TS 575	46.0	48.0	58.0	79.0	150.0	130.0	1220.0
TS-600 / TS-615	78.5	81.5	98.0	152.5	150.0	219.0	3000.0
TS 625	80.0	83.0	98.0	106.7	150.0	133.0	2000.0
TS 650	69.0	71.0	84.0	106.0	150.0	133.0	2000.0
TS 700	92.0	95.0	110.0	155.5	150.0	219.6	3000.0

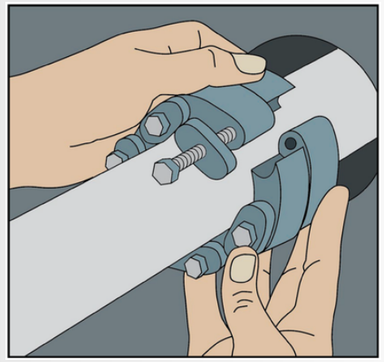
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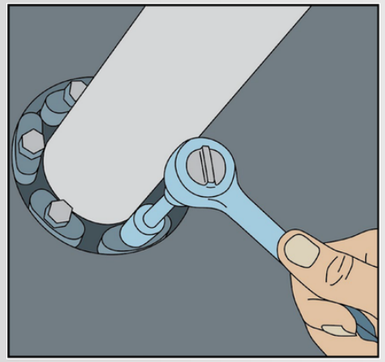
INSTALLATION



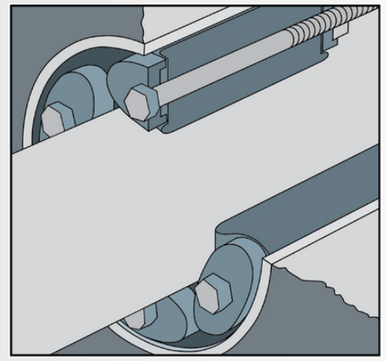
TotSeal® seals are delivered pre-assembled as a chain of rubber links.



1. Loosen the rear pressure plate with nut just enough to enable the links to move freely. Connect both ends of the belt around the pipe or cable. The minimum number of links per type is given in the link-count table.



2. Slide belt assembly into annular space. The seal bolt heads have to be recessed below the wall opening.

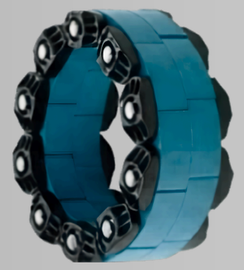


3. Use a hand socket or off-set wrench only. Start at 12 o'clock. Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner until links have been equally compressed.

We advise you to use hand tools only!

Information about products (construction, sizes etc) are only indicative and without further obligations. We are free to add modifications in case of development and improvement of our production. Our warranty is limited to damaged material found to be defective by production. The purchaser accepts full responsibility for purchased goods and installation of all goods furnished and for any defects or damage suffered as a result of defective installation of such goods.

TotSeal® Modular Seal



RUBBER COMPOUNDS

TotSeal® links are moulded from four rubber compounds. Choose the compound according to the medium, temperature and chemical exposure at the wall penetration. All values are typical values tested to ASTM standards.

Property	Unit	ASTM	EPDM	EPDM L	Nitrile	Silicone
Hardness	Shore A	D-2240	50 ±5	40 ±5	50 ±5	50 ±5
Tensile strength	psi (MPa)	D-412	1450 (10.0)	1450 (10.0)	1300 (9.0)	860 (5.9)
Elongation	%	D-412	400	400	300	250
Compression set	% (22 h)	D-395	15 @ 70 °C	15 @ 70 °C	45 @ 100 °C	40 @ 177 °C
Specific gravity	–	D-297	1.10	1.10	1.15	1.40

EPDM L is the soft grade for low closing forces. Compression set tested 22 h at the stated temperature. Values are typical and not a specification limit.

WHICH COMPOUND?

EPDM / EPDM L

Standard choice for water, wastewater, groundwater and outdoor installations. Very good weather and ozone resistance.

Nitrile (NBR)

For contact with oils, fuels and hydrocarbons – petrochemical plants, fuel lines and contaminated soil.

Silicone

For high-temperature service. Compression set tested at 177 °C, the highest of the range.

LINK COUNT

Minimum number of links (modules) per TotSeal® type. The final number of links depends on the actual pipe O.D. – larger pipes need more links. Ask YTMPipe for an exact link calculation for your project.

Type	Min. links
TS 200	4
TS 265	5
TS 275	4
TS 300	5
TS 310	5
TS 315	5
TS 325	6
TS 340	4
TS 360	5
TS 400	**6**
TS 410	**5**
TS 425	6
TS 440	6
TS 475	5
TS 500	5
TS 525	6
TS 575	5
TS 600 / 615	6
TS 625	5
TS 650	5
TS 700	6

SELECTION EXAMPLE

Pipe O.D. 219.1 mm in a 300 mm core-drilled opening:
Annular space = (300 – 219.1) / 2 = 40.5 mm
TS 400 fits: free state 36.3 mm < 40.5 mm < expanded state 46.0 mm, and 219.1 mm is inside its pipe range (139.7 – 1220 mm). Necessary wall thickness: 140 mm. TS 410 also fits (37.6 / 48.5 mm, pipe range 60.3 – 323.9 mm).

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