

**PIPE EQUIPMENT
SPECIALISTS LTD**



OFFICIAL UK DISTRIBUTOR

Link-Seal®



Link-Seal® modular seals are considered to be the premier method for permanently sealing pipes of any size passing through casing pipes, walls, floors and ceilings. In fact, any cylindrical object may be quickly, easily and permanently sealed, as they pass through barriers, by the patented Link-Seal® modular seal design.

Ductile iron, concrete, metal as well as plastic pipes may be hydrostatically sealed within walls to hold up to 1.4 bar (20 psig) 12m (40ft of static head). Electrical or telecommunications cable may be sealed within conduit as they enter vaults or manholes. The annular space between carrier pipes passing through casings may be sealed against the entry of water, soil or backfill material.

With a wide variety of hardware/elastomer combinations, Link-Seal® modular seals are easily configured to achieve the best possible match for service conditions encountered. High temperature seals, fire seals (Factory Mutual Approved) and oil resistant seals may be ordered to meet special or unique service applications. For the system approach, metal or non-conductive Century-Line® sleeves with water stops may be ordered with Link-Seal® modular seals to ensure correct positioning and a water tight seal of the installation within poured concrete walls.

Link-Seal® modular seals are also available for a wide variety of special applications, temperature extremes, exotic chemical combinations and for "out of round" or non-centered applications. Please contact us for your special application

PIPE EQUIPMENT SPECIALISTS LTD

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Certificate Number: 1253

Benefits/Features

Saves Time and Money

Link-Seal® modular seals install in up to 75% less time compared to lead-oakum joints, hand-fitted flashings, mastics, or casing boots.

Positive Hydrostatic Seal

Link-Seal® modular seals are rated at 1.4 bar (20 psig) 12m (40ft of head), which exceeds the performance requirements of most applications.

Long Seal Life

Link-Seal® modular seals are designed for use as a permanent seal. Seal elements are specially compounded to resist aging and attack from ozone, sunlight, water, and a wide range of chemicals.

Maximum Protection Against Corrosion

Standard fasteners have a two-part zinc dichromate and proprietary corrosion inhibiting coating. Corrosion resistant 316 stainless steel available for maximum corrosion protection.

Certifications/Approvals

Factory Mutual Fire Approved. Also a wide variety of approvals from various Federal agencies, associations, code groups, laboratories, and organizations.

ISO Quality Assurance

Link-Seal® modular seals are manufactured in an ISO 9001:2000 certified facility.

Configure a Link-Seal® Modular Seal to Match Your Application

16 sizes, color-coded EPDM, Nitrile, and Silicone elastomers may be used with various hardware options to match performance characteristics with service conditions.

Typical Applications for sealing wall penetrating pipes

Century-Line® Model CS Sleeves in combination with low-durometer EPDM (blue) Link-Seal® Modular Seals

Century-Line® Model CS Sleeves are ideal for poured wall construction. Made of HDPE thermoplastic, they are lightweight and easy to handle. Molded-in and reinforcing ribs serve to anchor the sleeve in the wall and resist pour forces. Nailor end caps are provided to make placement in forms simple and accurate. Sleeves are available in 16 diameters, up to 25", and any length. In the event of a field change they can be shortened with ordinary hand tools.

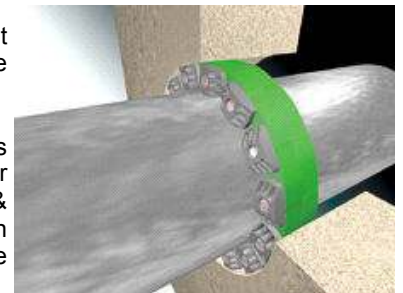
Typical Applications - Mechanical Contractors - Interior Piping Systems * Floor Sleeves * Wall Sleeves * Manhole Pipe Entry Seals * Waste Treatment Plants * Cased Road Crossings * Elevator Shafts * Power Generating Dams * Thermal Storage Systems * Fire Protection Wall Penetrations * Cased Railroad Crossings * Electrical Isolation of Pipes * Precast Concrete Pipe Seals * Insulated Pipe Seals * Dual Containment Seals * Marine Applications * Noise Dampening



Pre-cast or Cored Wall Openings in Combination with Nitrile (green) Link-Seal® Modular Seals

Link-Seal® Modular Seals are also commonly installed in cored wall openings or pre-cast openings such as those formed by the use of Cell-Cast® Disks for pipe penetration hole forms.

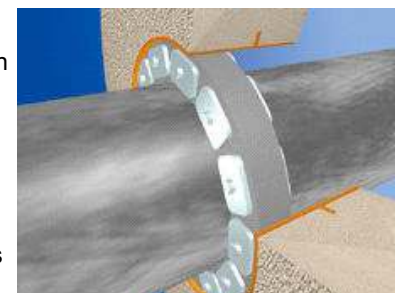
Typical Applications - Flexible Sign & Pole Supports * Electrical Isolation of Pipe Supports for Corrosion Protection * Mining * Pulp & Paper * Decorative Fountains * Bank Tube Transfer Systems * Pool Contractors * Electrical Contractors * Marine Applications * Waste & Water Treatment * Telecommunications * Railway Crossings * Valve Pits * Refrigeration Buildings * Overhead Signs * Guard Post Assemblies * Power Generation Dams * Offshore Oil Rigs * High Pressure Tank Guards * Underground Steel Tanks * Centuryline



Model WS Steel Sleeves in combination with Silicone (grey) Link-Seal® Modular Seals

Model WS Steel Sleeves are made from heavy-wall welded or seamless pipe. A full circle water-stop plate acts as a positive water seal and anchor to prevent thrust movement. The 2in collar (water-stop) is continuously welded on both sides. Model WS is available in a wide range of diameters and any length. Sleeves are protected by a coating of red primer. Hot dip galvanizing is available on request.

Typical Applications - Precast Concrete Manufacturers * Perimeter Berm Installations Around Tank Farms * Flow Restrictors in Sewer Maintenance * Fluid Overflow Devices * Noise and Sway Dampener * Through Deck Fire Breaks * Parking Garage Column Protectors * Cable TV Installations * Bridge Construction * Septic Tank Installations * Coal Preparation Plants * Pile Driving Operations * Flag Pole Installations * Driving Contractors * Tunneling Operations



Link-Seal® Hardware and Seal Options

Model "C" or "L" Link-Seal Modular Seal



Suitable for use in water, direct ground burial and atmospheric conditions. Provides electrical insulation where cathodic protection is required.

Color: Black or Blue

Type: Standard

Seal Element: EPDM (Black), EPDM (Blue)

Pressure Plates: Reinforced Nylon Polymer

Bolts & Nuts: Steel with 2-part Zinc Dichromate & Proprietary Corrosion Inhibiting Coating

Temp. Range: -40 to +250F. (-40 to +121C.)*

* = Sustained operation near temperature limits may affect life expectancy.

Model "S-316" Link-Seal Modular Seal



For chemical processing waste water treatment. EPDM rubber is resistant to most inorganic acids and alkalis, some organic (chemicals acetone, alcohol, ketone).

Color: Black or Blue

Type: Stainless

Seal Element: EPDM (Black), EPDM (Blue)

Pressure Plates: Reinforced Nylon Polymer

Bolts & Nuts: 316 Stainless Steel

Temp. Range: -40 to +250F. (-40 to +121C.)*

* = Sustained operation near temperature limits may affect life expectancy.

Model "S61" Link-Seal® Modular Seal



NSF 61 Certified for use in potable water (drinking water)

Color: Black

Type: Stainless

Seal Element: EPDM (Black)

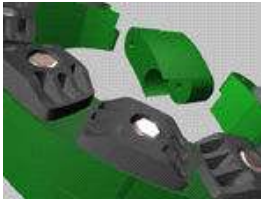
Pressure Plates: Blue Reinforced Nylon Polymer

Bolts & Nuts: 316 Stainless Steel

Temp. Range: -40 to +250F. (-40 to +121C.)*

* = Sustained operation near temperature limits may affect life expectancy.

Model "OS-316" Link-Seal Modular Seal



Nitrile rubber is resistant to oils, fuel and many solvents (gasoline, motor oil, kerosene, methane, jet fuel, hydraulic fluid, water, etc.).

Color: Green

Type: Oil Resistant

Seal Element: Nitrile (Green)

Pressure Plates: Reinforced Nylon Polymer

Bolts & Nuts: 316 Stainless Steel

Temp. Range: -40 to +210F. (-40 to +99C.)*

* = Sustained operation near temperature limits may affect life expectancy.

Model "T" Link-Seal Modular Seal



Silicone rubber is ideal for temperature extremes. "T" model is Factory Mutual approved.

Color: Grey

Type: High/Low Temperature

Seal Element: Silicone (Grey)

Pressure Plates: Steel Zinc Dichromate

Bolts & Nuts: Steel with 2-part Zinc Dichromate & Proprietary Corrosion Inhibiting Coating

Temp. Range: -67 to +400F. (-55 to +204C.)*

* = Sustained operation near temperature limits may affect

Model "FD/FS" Link-Seal Modular Seal



Double Seal for added protection.

Color: Grey

Type: Fire Seals

Seal Element: Silicone (Grey)

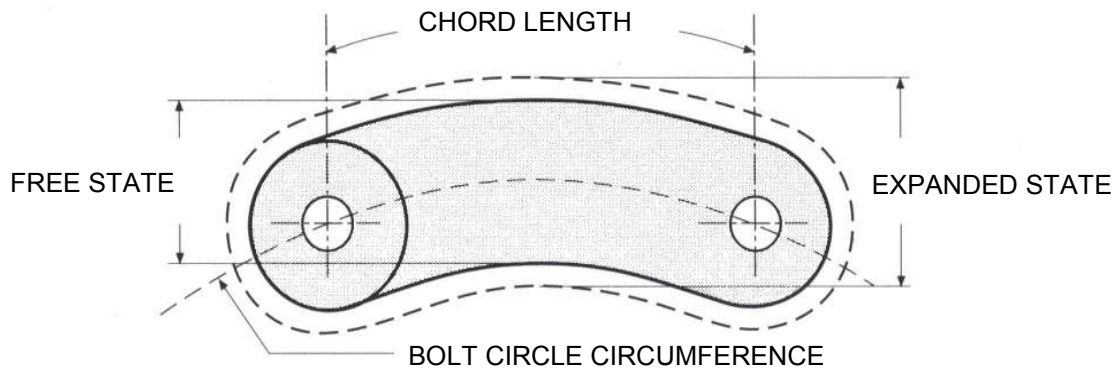
Pressure Plates: Steel Zinc Dichromate

Bolts & Nuts: Steel with 2-part Zinc Dichromate & Proprietary Corrosion Inhibiting Coating

Temp. Range: -67 to +400F. (-55 to +204C.)*

* = Sustained operation near temperature limits may affect life expectancy.

LINK SEAL® SELECTION TABLE



MODEL	SEALING RANGE (mm) [ANNULAR SPACE]		CHORD LENGTH (mm)
	FREE STATE	EXPANDED	
LS200	12.7	15.7	30.0
LS275	16.0	20.0	25.1
LS300	18.0	22.5	40.0
LS315	21.1	26.0	38.4
LS325	23.2	30.0	79.4
LS340	25.5	34.0	41.4
LS360	32.0	42.0	55.1
LS400	36.3	46.0	93.1
LS410	37.0	48.5	67.6
LS425	28.4	37.0	93.1
LS475	41.3	48.5	68.3
LS500	60.3	71.5	99.1
LS525	55.4	63.5	99.1
LS575	48.0	58.0	79.5
LS625	83.0	98.0	106.7

SEALING RANGE

This is size of the annular gap between the outer pipe inside diameter, and the outside diameter of the inner pipe or cable. From this you can determine which seal to use from the above table.

$$\text{Sealing Range (mm)} = \frac{\text{Inside Diameter (mm)} - \text{Pipe or Cable Outside Diameter (mm)}}{2}$$

BOLT CIRCLE CIRCUMFERENCE

$$\text{Bolt Circle Circumference (mm)} = [\text{Sealing Range (mm)} + \text{Pipe OD (mm)}] \times 3.14$$

NUMBER OF LINKS

The number of links required is the bolt circle circumference divided by the link chord length. The chord length is taken from the above table (the same line as the chosen seal).

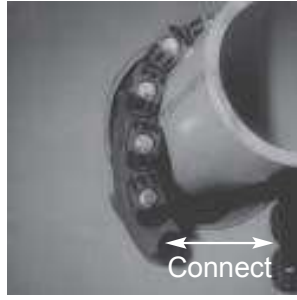
$$\text{Number of Links} = \frac{\text{Bolt Circle Circumference (mm)} (\text{rounded to the nearest whole number})}{\text{Chord Length (mm)}}$$

Every effort is made to ensure that information given in this table is correct but Pipe Equipment Specialists Ltd. cannot be held responsible for mistakes in printing or misinterpretation that could lead to prosecution on incorrectly purchased products.

Installation Techniques - Link-Seal® Modular Seals



1. Center the pipe, cable or conduit in wall opening or casing. Make sure the pipe will be adequately supported on both ends. Link-Seal® modular seals are not intended to support the weight of the pipe.



2. Loosen rear pressure plate with nut just enough so links move freely. Connect both ends of belt around the pipe.



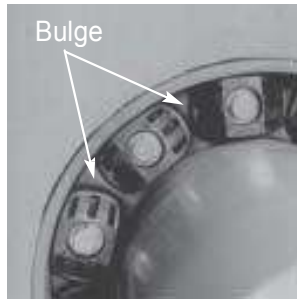
3. Check to be sure all bolt heads are facing the installer. Extra slack or sag is normal. Do not remove links if extra slack exists. Note On smaller diameter pipe, links may need to be stretched.



4. Slide belt assembly into annular space. For larger size belts, start inserting Link-Seal modular seal assembly at the 6 O'Clock position and work both sides up toward the 12 O'Clock position in the annular space.



5. Start at 12'O Clock and tighten bolt until rubber begins to "bulge". Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner until links have been uniformly compressed. (Approx. 2 or 3 rotations)



6. Make 2 or 3 more passes at 4 turns per bolt **MAXIMUM**, tightening all bolts clockwise until all sealing elements bulge



7. If the seal doesn't appear to be correct using the instructions provided, Call Pipe Equipment Specialists on 00 44 (0) 1642 769 789. Repeat Tightening after approx 2 hours.

Max. torque at 23°C			
For types G, S316 rubber black, O and OS316 rubber green, type T rubber grey Shore 50' ± 5'	For types BC and BS316 rubber blue Shore 40' ± 5'	For types LS version KTW/W270 Shore 50' ± 5'	Type
2 Nm	2 Nm	2 Nm	LS 2010 to LS275
8 Nm	6 Nm	8 Nm	LS 300 to LS 360
27 Nm	20 Nm	27 Nm	LS 400 to LS 475
65 Nm	50 Nm	65 Nm	LS 500 to LS 575
110 Nm	65 Nm	-	LS 615
65 Nm	50 Nm	65 Nm	LS 625 to LS 700

Always Wear Safety Equipment When Using Link-Seal® Modular Seals!



Link-Seal® Modular Seal - Do's

- Make sure pipe is centered.
- Install the belt with the pressure plates evenly spaced.
- Install the exact number of links indicated in sizing charts.
- Check to make sure pipe is supported properly during backfill operations.
- Make sure seal assembly and pipe surfaces are free from dirt



Link-Seal® Modular Seal - Do Not's

- Don't Install the belt with the pressure plates aimed in irregular directions. (Staggered)
- Don't Install Link-Seal® modular seals with spiral weld pipe.
- Don't torque each bolt completely before moving on to the next.
- Don't use high speed power tools (450 rpm or less)
- Do not use power tools with Link-Seal modular seal 316 stain- less steel bolts.

Pipe Equipment Specialists Ltd Standard Terms & Conditions of Sale Apply. Please visit.
www.pipe-equipment.co.uk/TermsAndConditionsOfBusiness.dwt

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