

### CDI Seals

CDI Seals uses a combination of Technology, Innovation, and Reliability to manufacture high performance devices for the diverse applications found in the Industrial, Scientific, Consumer or Energy sectors.

CDI's Technology driven manufacturing processes provide the versatility necessary to ensure the best possible sealing solution for our customers' unique requirements.

The CDI engineers utilize Innovation in design and materials to overcome the challenges presented by strict emission standards, aggressive media, and high temperature/pressure applications.

CDI has a reputation for Reliability throughout industry by providing consistently superior sealing products for over 30 years. CDI has the experience required to manufacture reliable seals and components for all forms of industry.

With manufacturing operations in Houston, Texas, Hamburg, Germany & Hampton, UK that are supported by partners or service centers located in the North America, South America, Europe, Asia and the Pacific Rim CDI is a company of Global capabilities.

### Fenner Advanced Sealing Technologies

Working closely with our customers using the most advanced materials and technology to supply sealing solutions for the most demanding performance-critical applications.

FAST (Fenner Advanced Sealing Technologies) manufactures and distributes specialist seals, and provides advanced sealing solutions for process and fluid power applications throughout Europe, North America and the Asia Pacific region.

Applications include: mining, automation, earth-moving and construction machinery, petrochemical, oil, gas and downstream activities, as well as the pharmaceutical, medical, semiconductor and aerospace sectors.

Recommendations and design information are based on our experience, testing in specific conditions and industry standards; and is for general guidance. It does not constitute a guarantee or warranty of performance of any product. Customer must decide suitability for his purpose. Testing in the actual equipment and conditions of use is always recommended.

### CDI Seals

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# Oilfield products

[www.cdiseals.com](http://www.cdiseals.com)



# Oilfield products

- Swivel Packing
- Geothermal Packers
- FS Seals
- VTR/ATPV-Sets
- Custom Machined and Molded Elastomeric Parts
- Custom Machined Plastic Parts
- Die-formed wire mesh and graphite components

CDI Seals has designed and manufactured seals and sealing components for Oilfield applications for over 30 years. CDI Seals has built a reputation for high-quality, innovative sealing solutions for many of the industry's toughest applications. At CDI Seals, material development and technologically advanced designs unite to create reliable seals for extreme environments. The ability to process all types of elastomers and plastics gives CDI Seals the versatility to contend with the problems inherent in ever-changing Oilfield operations.

Technology – Innovation – Reliability



## V-Type Downhole Packing

The traditional "V" packing configuration remains a viable seal option when manufactured using the high performance materials offered by CDI Seals. CDI uses advanced design technology to manage the ever increasing demand for high pressure/high temperature sealing capabilities. The addition of the LP2 rings to conventional V-sets combines the low friction media resistance found in other CDI composite seals with a beveled lip profile for ease of installation during "stab-in" operations.



## S-Seals

CDI Seals' innovative version of the S-Seal is ideal for use in Oilfield equipment including Well Heads, Risers, Choke & Kill lines, Extended Neck Hangers or similar services. The CDI S-Seal incorporates metal garter springs with a uniquely designed "shape factor" elastomeric seal element to withstand large extrusion gaps and high pressures. Materials are available to accommodate every Oilfield media.



## OptiSeal®

The spring energized Optiseal has been successfully designed, manufactured and marketed by CDI Seals for over two decades. CDI's combination of materials and seal configurations is efficiently used to manage variations in temperature, pressure, and media. The Optiseal is the design of choice for applications requiring a high performance seal. Optiseals are used extensively in Valves, Chokes, Swivel Joints, and Actuators.



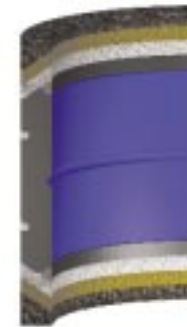
## Sigma²™ Seals

The Sigma²™ is a bi-directional version of the SigmaSeal that was developed for Polished Bore Receptacles, Sliding Sleeves & Stroking Stab-In applications. As a self-energizing seal, the Sigma² replaces bonded seals and vee stacks allowing for minimal axial gland lengths. The CNC machined Sigma² eliminates the need for tooling associated with molded seals. The materials chosen for Sigma² are compatible with Well Bore fluids and are designed to withstand pressure and temperature extremes in hostile environments.



## Ram Blocks

CDI Seals manufactures Oilfield industry standard BOP Ram Blocks for coil tubing and Wireline services. CDI Ram Blocks are supplied in spec grade NBR or HNBR. Custom sizes, configurations, and materials can be supplied upon request.



## PiPacker™

CDI Seals has established itself as a leading designer of Oilfield packoffs by the development of the patented PiPacker™ system. The axial dimensions of the PiPacker w/SinterMesh® backup system are precisely calculated for specific operating parameters based on individual mandrel, casing and gauge ring sizes. CDI Seals' exclusive design programs ensure consistent "sets" by pre-determining a maximum setting force that is minimized by using the patented SinterMesh® back up system. CDI PiPackers are available in NBR, HNBR, FKM, & Aflas® and has tested and approved for 15,000 psi service.



## Bonded Seals

CDI Seals fabricates the complete size range of rubber to metal bonded seals used in work-over and sand control operations. CDI uses an exclusive two phase manufacturing process to produce highly reliable bonded seals capable of controlling either conventional well bore fluids or exotic media. CDI has overcome the problems customarily associated with bonding Viton® and Aflas® to corrosion resistant metal and is able to provide seals for high temperature and/or H2S applications.



## O-Ring Loaded Lip Seals

CDI Seals has enhanced the proven sealability of the conventional o-ring loaded lip seal designs through the use of proprietary compounds developed by CDI specifically for oilfield conditions. CDI has an extraordinary HNBR, compound I1888, that mirrors the wear characteristics of polyurethane with a substantially higher temperature of 325°F. Internally lubricated versions of HNBR and FKM are prime examples of innovative CDI compounds that can be employed to yield a high performance version of an OL Seal. Aflas®, Viton®, and Perfluorelastomers are also available.