DETROIT SEALING COMPONENTS

Sealing Solutions for Oil and Gas Industry

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About Detroit Sealing Components

Detroit Sealing Components (DSC) is a stocking warehouse and distributor of imported molded rubber goods, with a legacy rooted in the precision molded rubber industry. Leveraging decades of experience, our skilled leadership and technical staff provide innovative and robust sealing solutions, delivering them to your doorstep with exceptional efficiency and value.

Located in Plymouth, Michigan, DSC's headquarters and warehouse are strategically situated near high-traffic shipping lanes, ensuring swift and cost-effective delivery of your goods.

Our Products

DSC offers a wide range of products, including:

- Standard and Custom O-Rings
- Standard and Custom X-Rings
- Standard and Custom Back-up Rings
- Gaskets
- Washers
- Hydraulic and pneumatic seals
- T-seals
- Oil seals
- Diaphragms
- Grommets
- Rubber ball
- Infinite size O-Rings
- PTFE products
- LSR products
- V-seals

Industries We Serve

Our products cater to various industries, such as:

- Automotive
- General Industry
- Water and Sanitary
- Healthcare
- Oil and Gas
- Agriculture and Construction
- Aerospace
- Food and Beverage
- Renewable Energy
- Automated Assembly

Custom Solutions

At DSC, we go beyond standard solutions. We take customer design parameters and bring custom solutions to life. Utilizing tools like computer-aided design and finite element analysis, combined with our extensive experience, we ensure each solution meets the unique needs of your application. Designs can be bench tested under close-to-actual customer test conditions to ensure product viability and robust performance in the final product assembly.

Materials and Certifications

Materials play a critical role in any molded rubber design. DSC collaborates with top polymer producers, offering access to hundreds of compounds across all rubber types, including:

- Fluorocarbon (FKM)
- Nitrile (NBR)
- Hydrogenated Nitrile (HNBR)
- Carboxylated Nitrile (XNBR)
- Ethylene Propylene Diene (EPDM)
- Polyacrylate (ACM)
- Ethylene Acrylic (AEM)
- Styrene-Butadiene (SBR)
- Chloroprene (CR)
- Perfluoro elastomer (FFKM)
- Fluoroelastomer Propylene (FEPM)
- Fluorosilicone (FVMQ)
- Silicone (VMQ)
- Liquid Silicone (LSR)
- Polyurethane (PU/AU/EU)
- Thermoplastic Polyurethane (TPU)
- Epichlorohydrin (ECO)
- Butyl (IIR)

Additionally, many material certifications exist for different standard specifications across various industries. Multiple material compounds may be certified to the same specification, allowing for the correct compound to be used in specific applications. If a suitable material compound does not exist, we can custom develop and test it in our fully equipped, ISO 17025 accredited lab to meet these requirements cost-effectively.

Our Commitment

At Detroit Sealing Components, we strive to meet and exceed the challenges of every customer. As a solution-based sealing and molded components supplier, whether you need a standard O-Ring or a custom-designed, tooled, and tested part for the most challenging applications, we deliver robust and cost-effective solutions with exceptional service, speed, and reliability.

Elastomeric Compounds for the Oil & Gas Industries

RGD material features

The RGD-resistant compounds listed in the table below have been thoroughly tested and certified independently by Element Hutchins. Each compound's compliance with specific standards, including NORSOK M-710 / ISO 23936, NACE TM0297, API6A, and TOTAL GS EP PVV 142, is clearly identified within the table. Upon request, DSC can provide detailed test data for reference.

Compound Number		V9117AA	V9118AA	V9123AA	V9181AA	V9194AA	V9526AA	V9617AA	V9623AA	H9100AA	H9120AA	V7617AA	V7618AA	9021A	9091A
Polymer		FKM	FKM	FKM	FKM	FKM	FKM	FKM	FKM	HNBR	HNBR	FKM	FKM	FFKM	FFKM
Hardness (Shore A)		90	90	90	90	90	95	95	95	90	90	75	75	90	90
Test Condition	NORSOK M710 (ISO 23936)	●	●	●	●	●	●	●	●	●	●			●	●
	NACE TM0297	●												●	
	TOTAL EP PVV 142	●		●						●					
	API 6A H2S Sour Fluid resistant	●	●	●	●	●		●	●	●	●	●	●	●	●
Compound Features		Recommended for low temperature environments	Excellent chemical compatibility in a wide range of industrial applications	Low and stable compression set at high temperatures	Recommended for very low temperature environments	Recommended for very low temperature environments	Excellent extrusion resistance	Recommended for low temperature or high pressure environments	Recommended for low compression set or high pressure environments	Excellent abrasion resistance	Recommended for low temperature environments	Recommended for low temperature environments	Excellent chemical compatibility in a wide range of industrial applications	Broad chemical resistance, steam resistant with excellent compression set at high temperatures	Recommended for low temperature environments
Dynamic Service Temperature		-22 ~ 428°F -30 ~ 220°C	23 ~ 428°F -5 ~220°C	5 ~ 428°F -15 ~220°C	-40 ~ 428°F -40 ~220°C	-49 ~ 428°F -45 ~220°C	5 ~ 428°F -15 ~220°C	-22 ~ 428°F -30 ~220°C	5 ~ 428°F -15 ~220°C	5 ~ 266°F -15 ~130°C	-40 ~ 266°F -40 ~130°C	-22 ~ 428°F -30 ~220°C	23 ~ 428°F -5 ~220°C	32 ~ 536°F 0 ~280°C	-22 ~ 446°F -30 ~230°C
Static Service Temperature		-40 ~ 482°F -40 ~ 250°C	-4 ~ 482°F -20 ~250°C	-13 ~ 482°F -25 ~250°C	-49 ~ 482°F -45 ~250°C	-58 ~ 482°F -50 ~250°C	-13 ~ 482°F -25 ~250°C	-40 ~ 482°F -40 ~ 250°C	-13 ~ 482°F -25 ~250°C	-40 ~ 302°F -40 ~150°C	-67 ~ 302°F -55 ~150°C	-40 ~ 482°F -40 ~ 250°C	-13 ~ 482°F -25 ~250°C	14 ~ 572°F -10 ~300°C	-40 ~ 482°F -40 ~ 250°C
Synthetic and Mineral Lubricants Resistance		Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Aliphatic Hydrocarbons		Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Aromatic Hydrocarbons		Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent	Excellent	Excellent	Excellent
Chemical Resistance		Good	Good	Good	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Excellent	Excellent

EN549 Material Features

Rubber material for seals and diaphragms used in gas appliances and equipment.

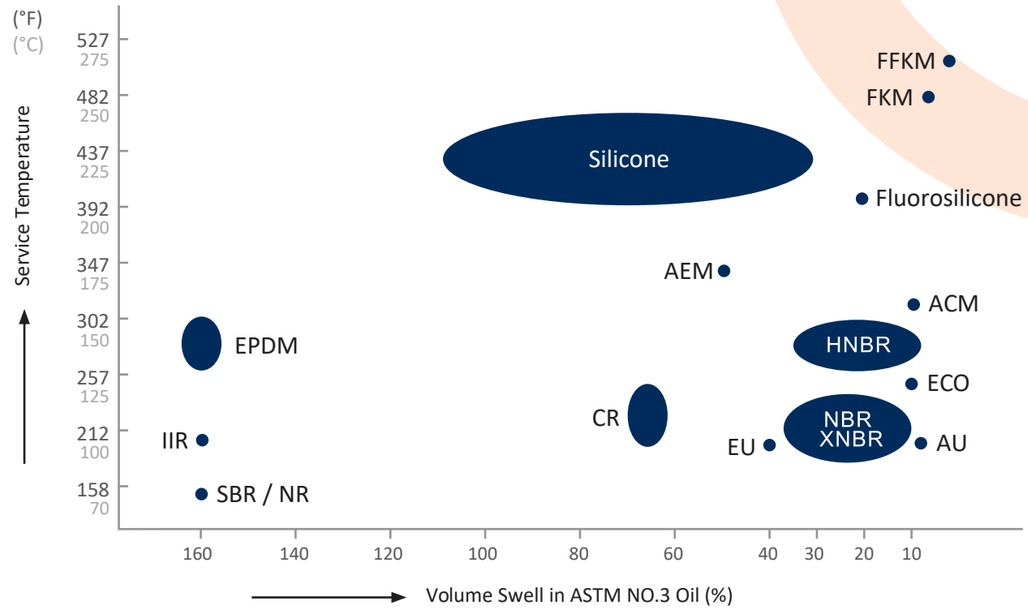
Compound Number	H7000AA	H7007AR	N5017AA	N6017AA	N6967AA	N7000AA	N7017AA	N8614AA	N9026AA	V7500AC	V8000CT
Polymer	HNBR	HNBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR	FKM	FKM
Hardness (Shore A)	70	70	50	60	70	70	70	90	90	75	80
Temperature Range	C1/H3 (32 UP TO +212 °F) (0 UP TO +100 °C)	C2/H3 (-4 UP TO +212 °F) (-20 UP TO +100 °C)	B2/H2 (-4 UP TO +176 °F) (-20 UP TO +80 °C)	B2/H2 (-4 UP TO +176 °F) (-20 UP TO +80 °C)	B3/H3 (-22 UP TO +176 °F) (-30 UP TO +80°C)	B1/H3 (32 UP TO +176 °F) (0 UP TO +80 °C)	B2/H3 (-4 UP TO +176 °F) (-20 UP TO +80 °C)	B1/H3 (32 UP TO +176 °F) (0 UP TO +80 °C)	B2/H3 (-4 UP TO +176 °F) (-20 UP TO +80 °C)	E1/H3 (32 UP TO +302 °F) (0 UP TO +150 °C)	E1/H3 (32 UP TO +302 °F) (0 UP TO +150 °C)

UL157 Material Features

The basic standard that covers the test methods used to investigate elastomeric gaskets and seals is ANSI/UL 157.

	Compound Number	V7015AA	V7500AA	C7100AA	N5017AA	N7060AA	N8017AA	S7000AB	F7004BU02
	Polymer	FKM	FKM	CR	NBR	NBR	NBR	Silicone	Fluorosilicone
	Hardness (Shore A)	70	75	70	50	70	80	70	70
	UL Listing Service Temp Range	-76 ~ 392°F -60 ~ 200°C	-40 ~ 392°F -40 ~ 200°C	-40 ~ 140°F -40 ~ 60°C	-40 ~ 140°F -40 ~ 60°C	-40 ~ 140°F -40 ~ 60°C	-40 ~ 140°F -40 ~ 60°C	-76 ~ 275°F -60~135°C	-67 ~ 176°F -55~80°C
Test Condition	UL157	●	●	●		●		●	●
	UL 778					●			
	UL 50E	●	●		●	●	●	●	●
	UL87A	E85				E85			E85
	UL 87B	B20				B100			B100
	UL 87C	Diesel							Diesel
	End Use	B, C(Ethanol), D, G	B, C(Ethanol), D, F, G, H, J	R(R-12, R-22, R-134a)	F, G, J	A(Water,Dry Chemical), B,C(Ethanol), D, F, G, J	F, G, J	L, M, N, O	B, C(Ethanol), D, G

Oil And Heat Resistance Comparison Chart



AFLAS®

AFLAS® (a TFE/propylene polymer) offers superior resistance to bases and steam compared to standard grades of Viton. It is suitable for use in environments containing amines, amides, and certain bases. (AFLAS® is a registered trademark of AGC Inc.)

Compound Number	V7045AA	V7545AA	V8045AA	V9045AA
Polymer	AFLAS®	AFLAS®	AFLAS®	AFLAS®
Hardness (Shore A)	70	75	80	90
Temperature Range	23~482°F -5~250°C	23~482°F -5~250°C	23~482°F -5~250°C	23~482°F -5~250°C

Basic Products and Materials for Oil & Gas Industry

		Well Drilling & Exploration	Well Test & Completion	Wellheads : Packer & hangers	Blow-Out Preventers (BOPs)	Ball Valves and Pump & Compressor	Subsea Production
Basic Product Types	O-Ring	●	●	●	●	●	●
	PF	●		●		●	●
	PA	●	●	●	●	●	●
	TR	●					
	RB						●
	Hammer Union	●	●			●	●
	T-Seal	●	●	●	●	●	●
	S-Seal	●	●	●	●	●	●
	Delta Ring	●		●	●	●	●
	U-Cup						●
	Guide Ring			●	●		●
	WB						●
	Back-up Ring	●	●	●	●	●	●
	VD	●		●			
	VP	●	●	●		●	●
	V-Packing	●	●	●			
Elastomer * Certified to AED / RGD Standards	FKM*	●	●	●	●	●	●
	HNBR*	●	●	●	●	●	●
	FEPM	●	●	●	●	●	●
	FFKM*	●	●	●	●	●	●
Thermoplastic	PEEK	●	●	●	●	●	●
	PTFE	●	●	●		●	●
	TPU	●				●	●

Products

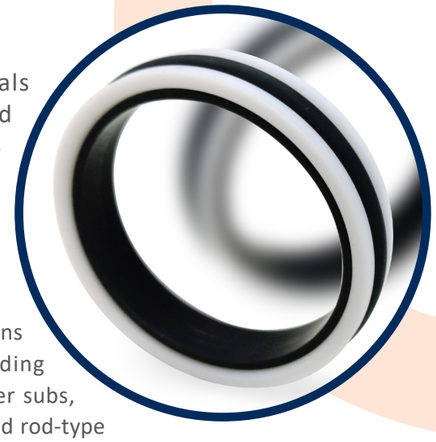
O-Rings

DSC offers O-Rings in a wide range of elastomeric compounds, including RGD-resistant materials, which are specifically recommended for use in the challenging environments of oil and gas industry applications. DSC sources precision O-Rings in all standard sizes, such as AS 568, Metric, SMS 1586, JIS B2401, BS 4518, GB/T3452.1, and JASO F404, as well as custom non-standard sizes to meet unique requirements.

T-Seals

T-Seals are compact, three-piece, double-acting seals composed of a T-shaped elastomeric element and two rigid anti-extrusion rings. These compact sealing components are designed to fit into standard O-Ring grooves and are often used to retrofit failing O-Rings. The T-Seal's geometry prevents spiraling, and its use of rigid backup materials enables it to withstand extremely high pressures and large extrusion gaps.

T-Seals are suitable for both dynamic and static applications and are widely used in various oilfield equipment, including intensifiers, jacks, cylinders, tensioners, shock subs, bumper subs, valves, and pumps. DSC sources T-Seals in both piston-type and rod-type configurations to meet diverse application needs.



Hammer Union Seals

Hammer unions, also known as wing unions, are quick-connect/disconnect couplings commonly used in temporary flow lines or equipment that requires periodic disassembly. The hammer union seal is a large elastomeric annular seal with a rectangular cross-section, designed to be 'actuated' when compressed between the coupling components during assembly. Exposed to the gases and fluids flowing through the coupling, selecting the optimal rubber compound for the seal is critical. DSC sources hammer union seals in sizes ranging from 2" to 4", offering various compounds, including RGD-resistant options, to meet diverse application needs.

S-Seals

The S-Seal is a compact, single-piece elastomeric seal featuring two metal anti-extrusion rings molded into its outer edges. These bi-directional seals are designed to fit into O-Ring type grooves while offering superior performance under high pressures (up to 20,000 psi) and extreme temperatures that would typically cause O-Rings to fail.

DSC's S-Seals are ideal for use in sealing wellheads, connectors, downhole tools, high-pressure valves, and other demanding oil and gas applications. The anti-extrusion springs can be manufactured from a variety of materials, including different metals and PEEK, to suit specific requirements.

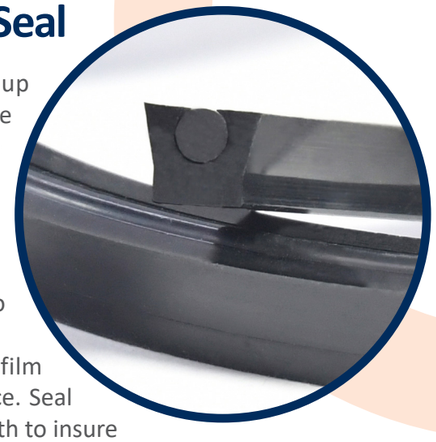
Products

FS-Seals

FS-Seals are robust interference sealing elements designed to handle large clearances and rough surfaces, such as those found between a wellhead and a rough mill casing. These seals feature a large cross-section and are system-pressure energized, making them capable of bridging significant extrusion gaps and sealing against inconsistent equipment diameters.

FS-Seals are ID Seals capable of withstanding pressures up to 10,000 psi across a wide temperature range. To enhance their anti-extrusion performance, two toroidal springs are molded into the outer edges of the primary sealing face. DSC offers FS-Seals in various elastomeric compounds, including RGD-resistant materials, delivering reliable solutions for chemically aggressive and highly abrasive environments.

Symmetrical Rod / Piston U-Cup Seal



DSC Symmetrical Rod/Piston U-Cup Seals are TPU U-Cup seals with an NBR O-Ring as the energizing element. These seals are available in two types: UH1, featuring a square design with a straight lip, and UH2, designed with a deep profile and beveled lip.

- UH1– The O-Ring energized lips assure a uniform, positive lip contact plus excellent low pressure sealing. Seal depth is equal to radial width. UH1 is used to interchange an existing hydraulic packing and/or O-Rings.
- UH2 –The back beveled sealing lip provides greater film breaking and increased until loading at the sealing surface. Seal depth is generally 1.5 times the cross section of radial width to insure seal stability in most rugged applications. ROD SEAL use is preferred.

Packer Elements

Packer elements are flexible elastomeric components used to seal the space between the outside diameter of the production tubing and the casing, liner, or wellbore. Sealing is typically achieved by expanding the device once it is positioned at its desired location within the well.

DSC offers a variety of homogeneous elastomeric downhole packer elements in both standard and custom designs. DSC's RGD elastomeric compounds enable these packer elements to perform exceptionally well in the harsh and demanding conditions of the well environment. Additionally, metallic and non-metallic backup materials can be incorporated into DSC's packer elements when required.

BOP Seal

DSC offers a broad range of BOP (Blowout Preventer) seals, designed for use in large, specialized valves or mechanical devices that seal, control, and monitor oil and gas wells to prevent blowouts and ensure rig safety. DSC's portfolio includes both inner and outer BOP seals, available in standard configurations as well as custom designs to meet specific needs.

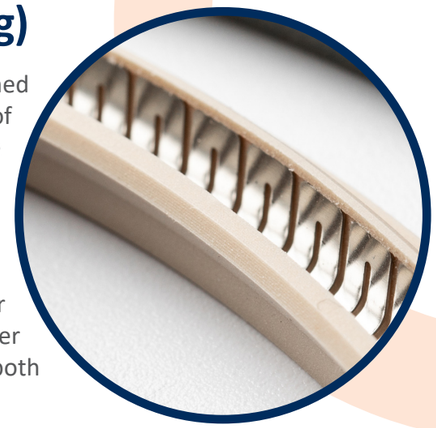
Products

Custom Rubber Molded Parts

DSC offers a wide range of precision custom rubber molded parts, from simple designs to complex components, crafted using a vast array of elastomeric compounds, including RGD-resistant materials. These parts can be manufactured through compression molding, injection molding, or transfer molding processes, meeting virtually any size or quantity requirement. All molds and tooling are produced in-house using modern, precision equipment.

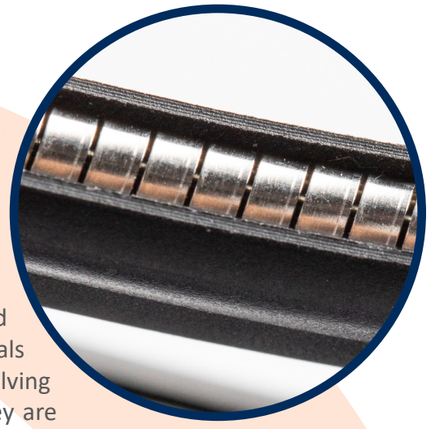
Spring Energized Seals (V-Spring)

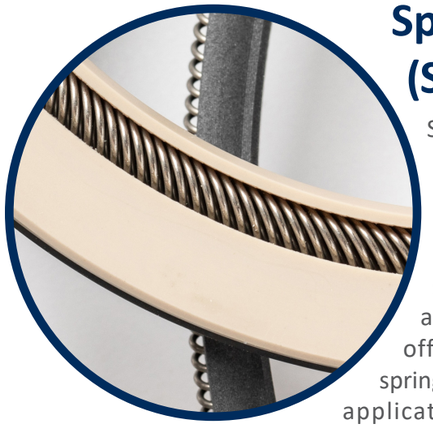
Spring energized seals with a V-shaped spring are designed to provide consistent spring loading at the leading edge of the PTFE seal jacket, thanks to the long beam leg of the V-spring. These seals can fully replace standard fractional inch and AS568 O-Rings without the need for any modifications. Standard spring materials include 301SS and 316SS, with additional options such as Elgiloy and Hastelloy available for enhanced corrosion resistance. For applications involving abrasive media, an optional scraper lip is available. V-spring energized seals are suitable for both reciprocating and rotary applications.



Spring Energized Seals (Helical Spring)

Spring energized seals with a helical spring are designed for medium- to heavy-load applications, featuring a high spring rate to ensure evenly distributed load across each individual band. These seals can fully replace standard inch fractional and AS568 O-Rings without requiring any modifications. The standard spring material is 17-7PH, while NACE-compliant options, such as Elgiloy and Hastelloy, are also available. However, spring energized seals with a helical spring are not suitable for applications involving wide gland tolerances, eccentricity, or misalignment. They are predominantly used in static applications.





Spring Energized Seals (Slant Coil Spring)

Spring energized seals with a slant coil spring feature a canted coil spring manufactured from metal wire stock. This design provides a flat load curve under compression, ensuring consistent loads across the deflection range. Standard spring materials include 300-series stainless steels, with other corrosion-resistant alloys available as needed. Light, medium, and high-load variants are offered to cover a wide range of applications. Slant coil spring energized seals are suitable for both static and dynamic applications and are particularly popular in electronic and semiconductor industries due to their reliable performance.

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