

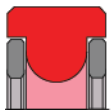
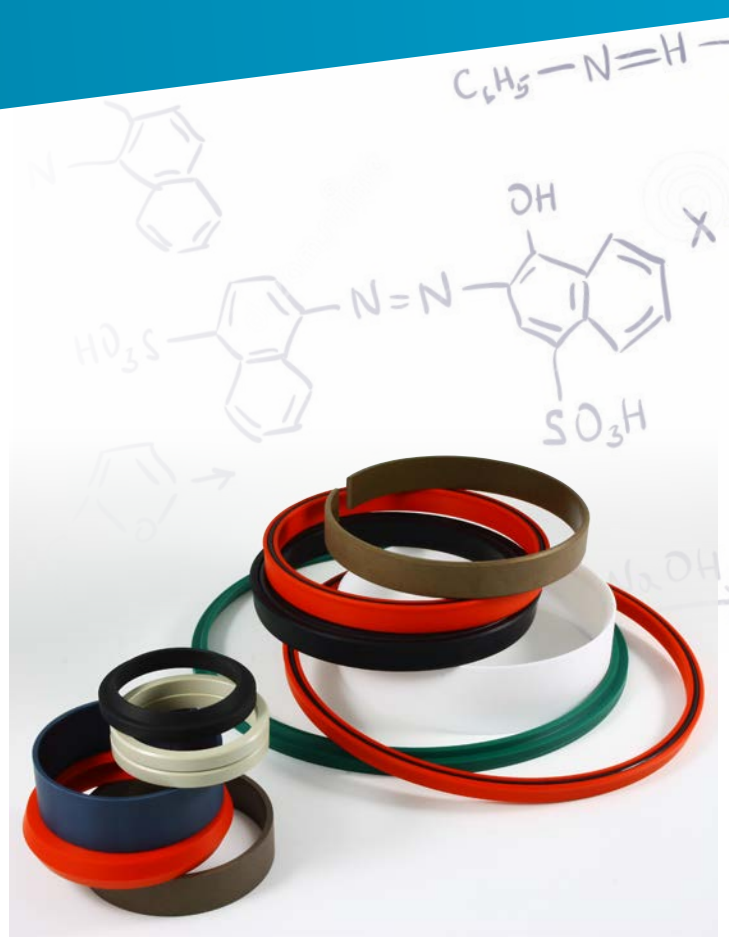
Rapid Seal Expansion

To Serve Our Customers Better

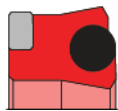
Hi-Tech Seals is pleased to announce the expansion of our Rapid Seal machining operations into two additional facilities. As we continue to increase and develop our value-added services, Hi-Tech Seals has commissioned two new, full production CNC ST-15 Rapid Seal lathes. Located in our Calgary, AB. and Newmarket, ON. facilities, these lathes offer the capability to increase our service levels to clients in these regions. This expansion also augments our Rapid Seal centres located in Edmonton, AB. and Winnipeg, MB. This increase in capacity and machining flexibility will enable us to offer our clients the highest level of service, dependability, and competitive pricing available throughout our Rapid Seal operational network.

Our new CNC ST-15s offer state of the art seal machining capabilities and are backed by a comprehensive inventory of materials used for standard and custom seal parts. We offer a selection of elastomeric materials including, but not limited to nitrile (NBR), hydrogenated nitrile (HNBR), fluorocarbon/Viton™ (FKM), and ethylene propylene (EPDM) in standard Shore A 85 and 90 durometer hardnesses. Some materials are available in a softer 70 and 75 durometer hardnesses. We offer a full range of polyurethane (PU) materials for various applications including our premium grade HPU-95, which is a hydrolysis resistant PU compound. We carry various engineered thermoplastic materials which include virgin and various filled PTFE compounds, nylon, acetal, filled and unfilled PEEK, polyethylene (UHMW) and Hytrel®.

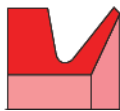
Hi-Tech Seals' Rapid Seal currently offers over 120 pre-programmed seal profiles for multiple applications. The pre-programmed seal profiles are categorized as:



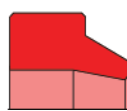
Rod Seals



Piston Seals



Lip Seals



Wipers



Guide Rings




Back-Up Rings



Gaskets

We also machine custom parts from provided samples, drawings, or existing metal dimensions. If needed, our engineering and drafting department can assist with the design and creation of custom parts for your specific application.

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For more information contact a Hi-Tech Seals location near you to speak with a representative or refer to our Manufacturing Brochure for a complete listing of standard profiles and available materials. 

Gerry Kasper has worked at Hi-Tech Seals as our Eastern Regional Manager based out of our Newmarket facility for over 18 years. He has 33+ years' experience in the sealing industry.

Sliding into A Complimentary Market

With Dry Sliding Bearings

Dry sliding bearings are composed of a unique combination of materials, consisting of a carbon steel backing, an intermediate layer of sintered bronze, and self-lubricating polytetrafluoroethylene (PTFE) sliding lining. This combination offers a resilient centralization device, preventing metal on metal contact in dynamic, high load applications. Dry sliding bearings also have good wear resistance, excellent heat conductivity, low thermal expansion, and a low friction over a wide range of loads, speeds and temperatures. They are suitable for reciprocating, oscillating, rotating, and sliding movements.



Depending on your unique applications, Hi-Tech Seals offers a range of dry sliding bearing materials and design options to meet the performance requirements. The most common utilized designs are made from carbon steel, sintered bronze, and either a filled PTFE or loaded PTFE. Dry Sliding bearings are used in a wide variety of industries, including:

- Oil Exploration
- Agriculture
- Hydraulics & Valves
- Automotive
- Material Handling
- All Terrain Vehicles (ATVs)
- Lawn & Outdoor Equipment
- Medical & Dental

	Carbon Steel, Sintered Bronze, and filled PTFE	Carbon Steel, Sintered Bronze, and loaded PTFE
Working Temperature	-190°C to 280°C	-190°C to 280°C
Coefficient of Friction	0.03 – 0.20	0.03 – 0.06
Max. Speed (Dry)	2.5 m/s	2.5 m/s
Max. Speed (Oil)	10 m/s	6 m/s
Max. Static Load	250 N/mm ²	250 N/mm ²
Max. Dynamic Load	140 N/mm ²	150 N/mm ²
PV Max. (Short Periods)	3.6 N/mm ² × m/s	3.6 N/mm ² × m/s
PV Max. (Continuous Dry)	1.8 N/mm ² × m/s	2.0 N/mm ² × m/s

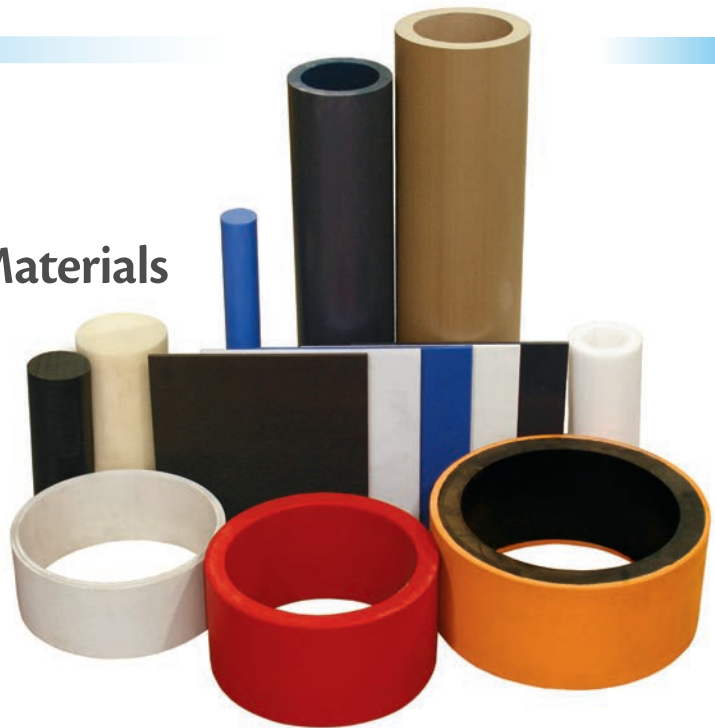
Shaft Information

Recommended Shaft Surface Finish – 0.4 to 0.8 micron Ra.
Hardness Minimum – 180 H85

For more information on these and other dry sliding bearings, contact a knowledgeable representative today. 

Technically Speaking

Hi-Tech Seals' Machinable Materials



This edition of Technically Speaking will continue with the first half of the sixth installment of our Hi-Tech Seals compounds series. Previous installments have covered the keys to compounding successful sealing solutions, downhole tool industry compounds, rapid gas decompression (RGD) compounds, mud and motor boot compounds, and UL listed materials. In this Technically Speaking edition we will feature a selection of our machinable materials, MV81, MH91, and MN81.

Our in-house rubber & plastic machining facilities are located in Edmonton, AB, Calgary, AB, Winnipeg, MB, and Newmarket, ON. Our experienced staff can quickly design and manufacture new, replacement, and prototype parts. Whether a pre-programmed or custom profile, Hi-Tech Seals has several CNC lathes, multiple NC machines, milling and live tooling capabilities at our disposal to complete the parts. In-house, Hi-Tech Seals is capable of supplying parts with profile ranges from ¼” (6mm) ID up to 29” (736 mm) OD.

MV81 is our Shore A 85 durometer Viton™ (FKM) machinable material. It is FDA approved and resistant against mineral oil, HFD-U, HETG=biological base, and cold water.

MH91 is our Shore A 95 durometer hydrogenated nitrile (HNBR) machinable material. It is resistant against to mineral oil, HFC, and cold water.

MN81 is our Shore A 85 durometer nitrile (NBR) machinable material. It is ideal for general applications and is resistant against mineral oil, HFC, and cold water.

	DIN Standard	MV81	MH91	MN81
Original Physical Properties				
Hardness, Shore A	53505	85	95	85
Tensile Strength, MPa	53504	10.3	22.7	15.2
Elongation, %	53504	207	137	226
Modulus @ 100%, MPa	53504	6.5	19.2	8.8
Compression Set, 24 hrs @ 175°C, %	ISO 815	7.7	-	-
Compression Set, 24 hrs @ 150°C, %	ISO 815	-	36.9	-
Compression Set, 24 hrs @ 100°C, %	ISO815	-	-	12
General Operating Temperature		-26°C to 204°C	-40°C to 160°C	-40°C to 120°C

Complete specification sheets with DIN callouts are available through your Hi-Tech Seals representative. 



High Temp. Steam Composite

In extreme conditions where high pressure is the concern, metal back-up rings can enhance the materials pressure rating, at elevated temperatures to 10,000 psi.

In both applications, XS65 improves reliability, increases safety, extends service life, and can reduce maintenance costs, saving companies both time and money.

- HPHT (High Pressure, High Temperature)
- High Tensile, Flexural, and Compressive Strength
- Low Degree of Cold Flow
- Low CLTE
- Low Coefficient of Friction
- High Creep Resistance
- Good Wear Properties
- High Dimensional Stability

Hi-Tech Seals can create parts from both plates and tube stock. XS65 plates are available in 12" x 12" squares ranging from 0.25" to 1.5" in thickness. Tube stock sizes range from a 1.0" ID x 2.0" OD tube up to 22" ID x 24" OD. Additional size restrictions may apply.

Hi-Tech Seals' XS65 is universally chemical resistant. Common XS65 applications include:

- Steam Expansion Joints
- Completion & Production Packers
- Centrifugal Pumps
- BOP Seals
- Debris Barrier Seals
- Pressure Release Valve Seals
- Rod & Piston Seals


For more information on Hi-Tech Seals' XS65 compound contact a Hi-Tech Seals representative. [H](#)

Properties	ASTM	Values
Hardness, Rockwell	D785	M-46
Tensile Strength, psi	D638	3,200
Elongation, %	D638	22
Specific Gravity	D792	2.28
Coefficient of Friction	-	0.18-0.20
Coefficient of Linear Exp., -40°C to 149°C	E831 TMA	2.7×10^{-5}
Continuous Service Temp.	-	357°C / 675°F



Low Durometer Billet Stock

Hi-Tech Seals now carries 75 durometer, Shore A nitrile (NBR), hydrogenated nitrile (HNBR), and fluorocarbon (FKM) billet stock. This allows us to machine softer prototype parts, that better match the production requirements of 70 – 75 durometer parts. This can aid with eliminating costly moulding charges when developing a low durometer product. In addition, due to higher elongation properties, Hi-Tech Seals now has the ability to prototype mud motor boots.


With the lower durometer materials, our machining department is able to hold similar tolerances to those typically held by harder machined materials. Contact a Hi-Tech Seals representative for more information on our low durometer billet stock. 



Conflict Free Minerals A Case for Ethics

Armed conflict and human right concerns from around the world have drawn attention to the raw mineral mining practices in many regions of the globe. With that, several companies and nations have taken a stand against this conflict by refusing to use conflict minerals. Conflict minerals include Columbite-Tantalite (Tantalum), Cassiterite (Tin), Gold, Wolframite (Tungsten) and derivatives from these minerals.


Even though Hi-Tech Seals is not a manufacturer of the metals, but rather a distributor, we ensure our suppliers are compliant with United States legislation, Dodd-Frank Wall Street Reform, and the Consumer Protection Act. These legislations, acts, and regulations prevent conflict minerals from being supplied.

To obtain a Conflict Free Mineral Statement of Compliance, or for any other conflict free mineral questions, contact Stephanie Berrigan, Purchasing Manager, at: stephanie.berrigan@hitechseals.com. 

Upcoming Trade Shows

Join Us and See What is New at Hi-Tech Seals!

Hi-Tech Seals is proud to be exhibiting once again at this year's Lloydminster Heavy Oil Show (LHOS). The LHOS is the world's premier showcase for heavy oil knowledge and technology. It will be held in Lloydminster, Saskatchewan, September 12th & 13th. Visit us at booth #255 to see what is new at Hi-Tech Seals.

Hi-Tech Seals is happy to announce that we will be exhibiting at the 2018 Permian Basin International Oil Show (PBOIS) in Odessa, Texas, October 16th – 18th. The PBOIS is an international industry show that has been around for over 70 years. It is one of the largest petroleum expositions in the world. Petroleum, oil, and gas professionals come from all corners of the globe to the PBOIS to learn about the latest technology, the newest equipment, establish new contacts, and to conduct business. Visit us in building B, booth # B 84 & 85. 



MILESTONES

We are pleased to share with you employees that have achieved milestones of service in recent months.

Five years:


Amanda York
Justin Sawler
Sapphire Soriano

Ten years:


Csaba Fojt

Fifteen years:

Jane Krause
Justin Campeau

From all of us at Hi-Tech Seals, we thank you for your hard work and dedication over the years. 

Urethane Ring Type Joint Gaskets

Hi-Tech Seals' urethane ring type joint gaskets (RTJU) are an effective, non-damaging method of testing a flange before use. Their unique shape energizes the seal under pressure, replicating a stainless-steel R and BX RTJ. Lasting up to 100 tests, RTJUs are suitable for water and nitrogen pressure tests. 



DEFINING TERMS

Technical Terminology and What They Mean

Mould Shrinkage

The difference in dimensions, expressed in inches per inch, between a moulded product and the mould cavity in which it was moulded. Both the mould and the moulded product should be at room temperature when being measured.

CNC Lathe

A computer numerical controlled (CNC) machine used to create shapes and parts from a variety of materials, including rubbers and plastics. A CNC lathe uses CAD or CAM files to manufacture either standard or custom profiles.

Mandrel

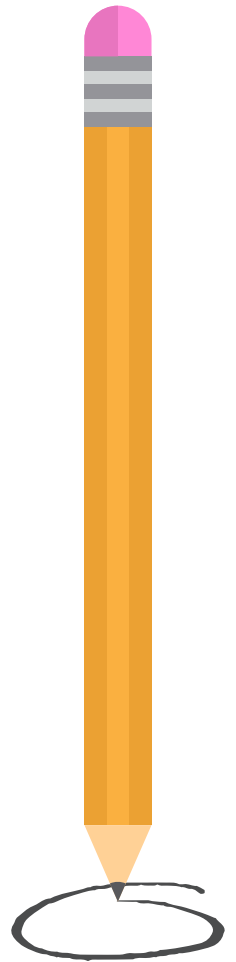
A shaft or spindle in a lathe. Material rod or tube stock is secured to it while producing various parts and components.

Temperature Retraction, TR-10 Test

A method for evaluating the low temperature characteristics of a part. A material specimen is stretched about 50 %, frozen, and then gradually warmed at a constant rate. The temperature at which the material retracts 10% from the elongated position is considered the TR-10 value. The TR-10 is considered a good indicator of low temperature sealing ability since it is the lowest temperature at which the specimen exhibits rubber-like properties and resilience.

June Tech Talk

A R D K D Y S C A M P E A U L
E A K R E T E M O R U D W O L
L P N X J J L V U S W N B D K
B I E Z J R F Z J M E C T V R
A D U C N C L U H W O J W Y A
E S S N I G U H M N O O N L U
N E F N K V B A F A E U J A S
I A V G Q K R L J Q Z J T Y E
H L W D F K I E R U S S E R P
C H G I E C C A S E F X E A K
A V L T T M A W K M A H X G C
M T Y F T H T K O M A S P L V
F D R Y S L I D I N G E B A A
J E M W W C N V P R Y S T C W
E I W R D H G X T L F X Z S P



HTS Word Search

Complete the word search and be entered to win!

CALGARY	MACHINEABLE
CAMPEAU	NEWMARKET
CONFLICT FREE	PRESSURE
DRY SLIDING	RAPID SEAL
KRAUSE	SELF LUBRICATING
LOW DUROMETER	STEAM SERVICE

Please fax your responses to 780.409.9149 by July 15th, 2018.

Name: _____
Company: _____
Location: _____
Day Time Phone #: _____

Congratulations to last edition's winner Richard Bérubé!

Hi-Tech Seals Branches:

Head Office & Branch | 9211 - 41 Ave NW | Edmonton, AB | T6E 6R5 | Ph: 780.438.6055 | Fax: 780.434.5866

Manufacturing Centre | 9504 - 41 Ave NW | Edmonton, AB | T6E 6G9 | Ph: 780.439.4894 | Fax: 780.436.9502

Calgary Branch | Bay #3, 5940 - 30 St. SE | Calgary, AB | T2C 1X8 | Ph: 403.720.2856 | Fax: 403.279.2662

Winnipeg Branch | 445 Egesz St. | Winnipeg, MB | R2R 2V5 | Ph: 204.775.7881 | Fax: 204.775.7954

Toronto Branch | 1180 Kerrisdale Blvd; Unit #8 | Newmarket, ON | L3Y 8Z9 | Ph: 905.953.9666 | Fax: 905.953.8739

Montreal Branch | 1450 Rue Nobel, Suite #20 | Boucherville, QC | J4B 5H3 | Ph: 450.655.7325 | Fax: 450.655.7359

Conroe Branch | 105 Gladstell St. | Conroe, TX | United States | 77301 | Ph: 936.206.3124 | Fax: 936.756.0538