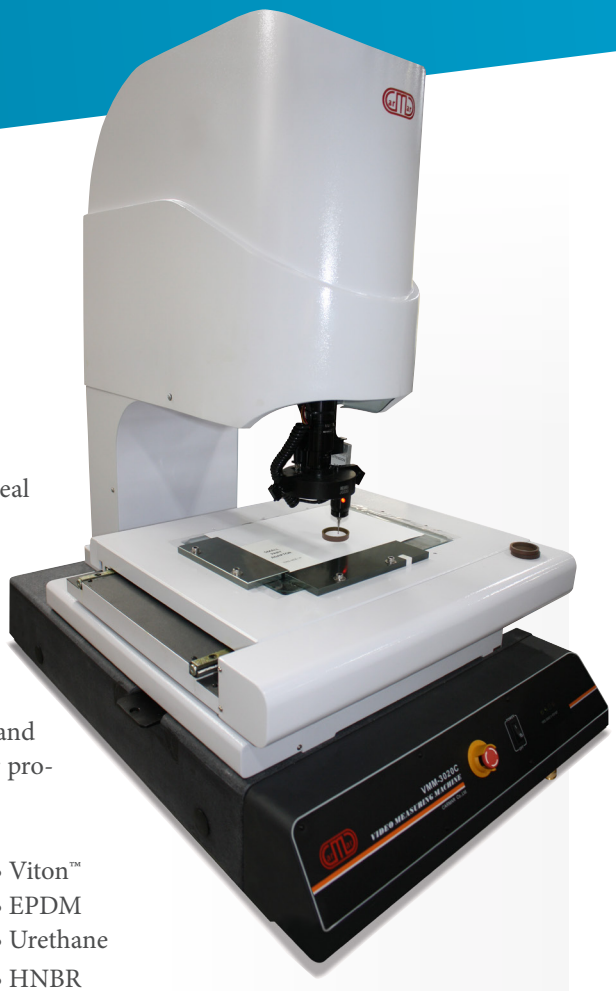
Specialists in Seals & Service
Hi-Tech Seals Inc.

TECH TALK
VOLUME 56

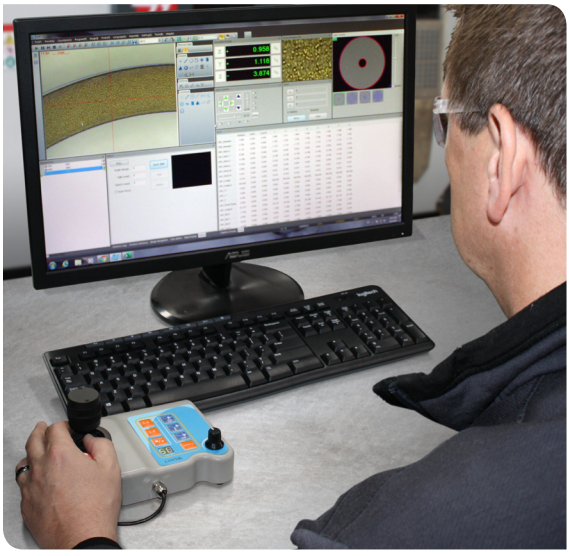


Rapid Seal Success

Improving Quality for Our Customers

Over the past 18 months, Hi-Tech Seals has heavily invested in our Rapid Seal operations and capabilities to better serve our customers. We have grown our Rapid Seal operation to include Calgary, AB. and Newmarket, ON. This has provided customers within these regions with faster turnaround times for new, prototype, and replacement parts. Purchasing locally sourced machined parts saves companies money on costly downtimes and the trouble of hunting down hard to find replacement parts. To meet the growing Rapid Seal demands in these branches we have increased our on-hand tube and billet stock; both our tube and billet material stock are available for production or direct sale. These materials include, but are not limited to:

- Virgin PTFE
- Moly Glass PTFE
- Glass filled PTFE
- Carbon Graphite PTFE
- Carbon filled PTFE
- Bronze filled PTFE
- PEEK
- Carbon filled PEEK
- Glass filled PEEK
- Hytrel®
- Derlin®
- Nylon
- UHMW
- Aflas® FEPM
- Nitrile
- Viton™
- EPDM
- Urethane
- HNBR



Another investment that augments our Rapid Seal department's capability is our new inspection device. The device utilizes a high-resolution camera with strong zoom capability to obtain a more accurate measurement of a part's ID, OD, and height. These, along with other capabilities, allow us to provide our customers with a more accurate inspection of the manufactured parts. This new investment is part of our continued commitment to supply customers with top quality products that meet and exceed their needs.

Our Rapid Seal division has access to over 120 pre-programmed sealing profiles that can be created in dimensions and materials that will best suit your application. Our popular profiles include rod, piston, wipers, back-ups, bearings and lip seals. We can machine custom parts from customer provided samples, drawings, or existing metal dimensions. When required, our engineering and drafting department can assist with the design and creation of custom parts for your specific application.

Boucherville is Relocating!

Big Changes Coming Soon

New Address:
Hi-Tech Seals Inc.
2101 Rue Léonard-de-Vinci
Ste-Julie, QC J3E 1Z2
Canada

We are proud to announce that our Boucherville, QC. branch is relocating. The move will begin during the month of June. Although we will remain operational during this time, we kindly ask that our customers have extra patience. For customers who will require counter service during the relocation, we ask that you call in advance to ensure that we will be able to assist you properly. The new facility spans over 6150 sq. ft. and will allow us to increase in-house stock. For more information regarding the relocation, contact a representative today.

Meet Cam MacNeil

Welcome to Hi-Tech Seals!

We are proud to welcome Cameron (Cam) MacNeil to the Hi-Tech Seals' team. Cam started mid-April as our new Vice President of Sales. He brings with him almost 30 years of experience from the industrial distribution and manufacturing sector.

Cam believes hard work and having a positive work environment are two key elements to enjoying ones workday. Throughout his career he has never been afraid of a challenge. This same dedication and determination converted what was a previously unproductive territory into a number one ranking in Canada for over 7 years.

Cam is passionate about ensuring his workplace values its employees and customers, all whilst keeping operations efficient and safe. He feels it is crucial to connect with colleagues, nurture their strengths, and recognize their contributions as important members of the team.

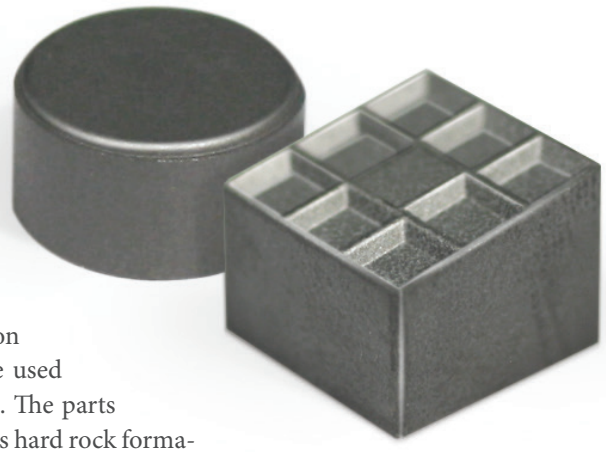
Hi-Tech Seals family culture, quality assurance program, and customer care values are what impressed Cam and interested him in joining our team. Cam hopes his many years of experience will assist Hi-Tech Seals and its knowledgeable staff in continued growth, prosperity, and diversification.

Fun Facts: he has 4 kids and 2 dogs, loves music, being active, and spending time with his large extended family.

Hi-Tech Seals is thrilled to welcome Cam on board and is confident that he will be a great asset and a valuable team member. We are looking forward to seeing him flourish within our company.

Technically Speaking

Case Study on Drill Inserts



Client Profile

This client provides innovative and tailored hardfacing solutions for various industries. They are a specialist in creating product life extensions for commodity type items.

Application

Hi-Tech Seals was given the opportunity to work with our client on various profiles for tungsten carbide drilling inserts. The inserts are used on various types of equipment for the oil & gas and mining sectors. The parts themselves face some of the most extreme environments, from various hard rock formations to the harshest chemicals.

Challenges

Profiled tungsten carbide inserts are a commodity type item with many suppliers across the world. One of the challenges Hi-Tech Seals' faced was finding a tungsten carbide that would outperform other drill bit inserts in the market. The new material would also have to be reasonably priced, have acceptable lead times, and ease our clients overall buying process.

Hi-Tech Seal's Solution

We reviewed a variety of possible carbide materials for our client. With the help of our engineering department, we found a tungsten carbide that greatly enhanced the performance of the various profiles. We were able to do this while meeting the price and delivery needs of our client.

Results

To test the solution we provided, our client performed two impact trials. The trials consisted of taking their current tungsten carbide profiles and our samples and subjecting them to heavy impact. The only difference was in the second trial the tungsten carbide profiles were heated up. In both tests the Hi-Tech Seals tungsten carbide drill bit insert compound outperformed the competition. The experience instilled both comfort and confidence in the client knowing they made the right decision in trusting us with this opportunity.

Our XRF Gun

Helping to Identify Your Metals

We recently acquired an upgraded XRF (X-ray fluorescence) gun in order to better perform material inspections on metal components. XRF refers to a non-destructive testing method that uses X-rays to determine the elemental composition of the test material. We can perform inspections on various sizes and shapes of product or material samples.

From this material inspection our engineering department can create Positive Material Identification (PMI) reports. PMI is a paid service we offer to tested materials, using the XRF gun and various lab equipment, in order to provide you with a technical report detailing our analysis. Please contact us at *engineering@hitechseals.com* for any questions or further details.

Fibre Reinforced Polymers

Ancient Technology in a Composite World

Fibre reinforced polymers (FRP) are a composite material made up of a polymeric matrix of resin, filler, and additives. When combined they take advantage of their unique strengths to overcome their individual weakness. Composite materials date as far back as 1500BC when they were used by Egyptian settlers who used a mixture of mud and straw. These materials began gaining popularity during World War II when the advancement in plastics were used to manufacture aircraft and weaponry.

FRP Bearings

FRP composites are becoming a popular material choice in applications where there is relative motion between two surfaces. This is due to their many physical attributes over traditional bronze and alloy materials. An example of this is in plain bearings, also referred to as bushings. These are often used in rotating, reciprocating, or sliding applications. Plain bearings consist of a filament-wound material combined with a variety of low friction wear resistant fillers allowing them to be used in non-lubricated high speed, high load environments.

FRP Bearings can operate in corrosive applications and have high compression strengths up to 60,000 PSI static loads and 30,000 PSI dynamic loads. They have low friction, low wear, and are self-lubricating which reduces maintenance time and costs. Standard and custom bearing profiles are available in both imperial and metric sizes. FRP bearings are used in a variety of industries, including:

- Agricultural Equipment
- Industrial
- Construction
- Railroad
- Energy
- Fluid Power
- Hydro Generation
- Water & Waste
- Marine

FRP Tubes

Composite tubes are an excellent alternative to aluminum or steel as they provide remarkably high strength and are corrosion resistant. FRP tubes are nonmagnetic, low maintenance, and have long life cycles. The tubes deliver lightweight corrosion free durability across countless industries and applications. Composite tubes are used in a variety of industries, including pneumatic, hydraulic cylinder, transportation, medical, and electrical generations. We offer a wide range of bore, wall thickness, and tube lengths in various materials and colors. Contact us for more information.

Understanding Abbreviations

Making Sense of it All

This is the last edition in a four-part series on understanding common abbreviations we encounter in the sealing industry. The previous editions covered ASTM materials, organization and standards, and products and product related abbreviations. This edition will cover various abbreviations that have not been covered previously.

Abbr.	Full Name	Description
CAM	Computer Aided Manufacturing	CAM is the use of a machine to control and automate machine tools during manufacturing. CAM is often used alongside CAD files.
CAD	Computer Aided Design	CAD is used to aid in the creation, analysis, and modifications of product designs. Also known as computer-aided design and drafting (CADD).
HPHT	High Pressure, High Temperature	HPHT refers to wells that are hotter or have higher pressures than typical applications. Formally defined as having a bottom hole temperature higher than 300°F and a pore pressure of at least 0.8 psi/ft or requiring a BOP with a rating larger than 10,000 psi.
LT	Low Temperature	LT materials are designed to meet below average application temperatures. These materials are modified to retain their physical properties that are typically lost in low temperature environments.
CT	Close Tolerance	CT products have reduced acceptable tolerance than typical seals. This helps with increasing the sealing efficiency.
CLTE	Coefficient of Linear Expansion	CLTE indicates the extent to which a material changes in shape, area, and volume when heated. Over small temperature ranges the expansion of uniform linear objects is proportional to the temperature change.
SDS	Safety Data Sheet	SDS contains information regarding a chemical's potential health effects, a hazard evaluation, measures to protects employees, and procedures to follow in case of an emergency.
SADS	Seal Application Data Sheet	SADS is an easy to fill form that allows customers to pass along any required information regarding the seal application. Often includes data such as, dimensions, gland types, temperatures, pressure, and more.

We'll See You There!

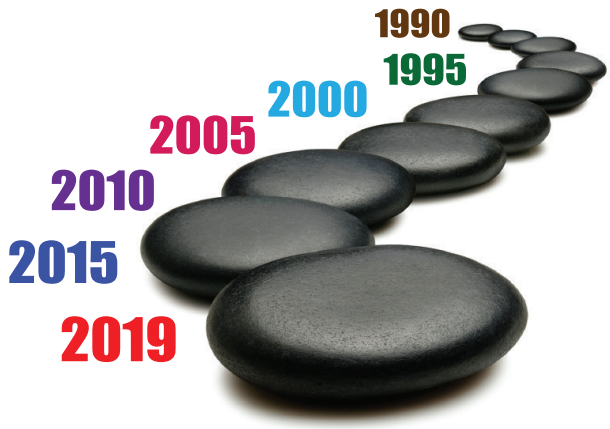
We are in the midst of another busy trade show season. We will be attending shows in various cities across North America. If you're in the area, be sure to say "Hi" and learn what's new at Hi-Tech Seals.

Valve World Americas Expo & Conference (VWAM) – Houston, TX, June 19-20th

- VWAM covers various valve related topics that are key in today's market. This expo is a place where professionals come to display their newest and latest products, make business relationships, and exchange ideas and opinions. Visit us at booth #1149.

Louisiana Gulf Coast Oil Expo (LAGCOE) – New Orleans, LA, October 9-11th

- LAGCOE's vision is to be a robust, sustainable community of energy companies and volunteers that promote energy education and awareness; connects businesses with opportunities and; highlights the Gulf Coast's technical innovations to the world. Visit us at booth #320.



Milestones

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

5 YEAR ANNIVERSARY
Janice Fraser
Nataliya Valer
Sam Johnson

20 YEAR ANNIVERSARY
Brian Benkendorf

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

Conroe Relocation

Now Open for Business

We are excited to announce our Conroe branch has successfully relocated to its new facility. Our team would like to thank our customers for their patience during our move. We look forward to providing you with the same level of excellent service from our new facility.

Our new facility is over 14,000 Sq. ft. Over time, the additional space will allow us to increase our on-hand inventory and the in-house services we offer to better serve our customers. For more information regarding the move, contact us today.

DEFINING TERMS

Technical Terminology and What They Mean

Carbon Black

A finely divided form of carbon that can be produced though various processes; each process imparts different properties to the carbon black. It is often used as a filler to enhance the physical properties of materials.

Glass Transition Point

The temperature above which an amorphous polymer is soft and rubbery. Below the glass transition point an amorphous polymer is hard and brittle. Also referred to as glass transition temperature or Tg.

Polymer

A material formed by the chemical combination of various individual units of one or more monomers. Polymers are also commonly referred to as elastomers.

Vulcanizing Agent

A material that helps cross link rubber to produce a change in the physical properties of the rubber. Examples of vulcanizing agents include sulfur, peroxides, polysulfides, and quinones.

HTS Word Search

Complete the word search and you could win a Bluetooth Speaker from BOSE
Better sound through research®

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

LAGCOE
BENKENDORF
CONROE
VULCANIZING
XRF GUN
CAMERON MACNEIL
BOUCHERVILLE
TUNGSTEN CARBIDE
RAPID SEAL
BILLET STOCK
CLOSE TOLERANCE
RELOCATION

Please fax your responses to 780.409.9149 by August 15th, 2019.

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

Congratulations to last edition's Trivia winner, Floyd Livingston!

Hi-Tech Seals Branches:

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

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

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

Montreal | 2101 Rue Léonard-de-Vinci | Ste-Julie, QC | J3E 1Z2 | Ph: 450.655.7325 | Fax: 450.655.7359

Conroe | 12064 FM 3083 | Conroe, TX | United States | 77301 | Ph: 936.206.3124 | Fax: 936.756.0538