



# Engineered Solutions for Unique Sealing Requirements



## Industry Recognized Personnel

Fluid Sealing Management Program  
with Documented Customer Cost  
Savings

Innovative & Patented Technology

## Engineering Support Services

Stock and Fabricate Products from  
more than 20 Premium Fluid-Sealing  
Product Manufacturers

6 Manufacturing Locations Nationwide

8140 Quality Drive  
Prince George, VA 23875

800-334-6013  
[vsptechnologies.com](http://vsptechnologies.com)

## Industry Recognized Personnel

### Professional & Degreed Engineers

- ▶ 2 professional engineers
- ▶ 14 degreed engineers

### Fluid Sealing Specialists

- ▶ 10 territory account sealing specialists
- ▶ 21 in-house customer service specialists

- ▶ Six Sigma trained or certified
- ▶ Active in various industry technical associations including:
  - ▶ Pressure Vessel Research Council
  - ▶ Association of American Railroads
  - ▶ Bureau of Explosives
  - ▶ American Society for Testing Materials Committee F03
  - ▶ American Society of Mechanical Engineers - ASME B16.20 Committee G, PCCC-1, Pressure Vessel & Piping Division, Section X11, Section VIII
  - ▶ American Society of Mechanical Engineers - ASME Section 10, RTP



Association of  
American Railroads



## Engineering Support Services

### Engineering & Application Assistance

- ▶ Gasket design & flange modeling
- ▶ Torque values & assembly guidance
- ▶ Troubleshooting
- ▶ Specification development
- ▶ Flange Assembly Training
- ▶ Bolted Joint Engineering Training

### Sourcing Services

- ▶ Item Description/SAP Support
- ▶ Storeroom surveys and OEM conversions
- ▶ Electronic & web-based purchasing & invoicing

### Six Sigma Sealing Management Program

- ▶ RideTight® Transportation Program
- ▶ Hydro2Hydro® Transportation Program
- ▶ Gasket Management Program



## Innovative & Patented Technology

VSP Technologies' Engineers & Specialists currently have 14 patents for fluid-sealing products with more pending.



**PITA®**

U.S. Patents #7,455,301 & 8,066,843

Expanded PTFE encapsulated corrugated 316 SS metal insert uses no glue offers complete chemical inertness with low minimum stress to seat and low torque loss.



**CycleTight®**

U.S. Patent #6,824,140

Engineered for general purpose railcar manways. Utilizes a 316SS insert encapsulated in highly compressible ePTFE to provide widest chemical compatibility, seal against uneven surfaces and compensate for railcar vibration to support multiple re-use.



**CargoTight®**

U.S. Patent #9,944,459

Engineered for tank trailers and tank containers. Non-contaminating virgin PTFE complies with FDA 21 CFR 177.1550. V-Notch™ centers CargoTight on the manway nozzle and works together with dynamic stainless steel spring core to minimize the effects of gasket relaxation.



**OPRA™**

U.S. Patent #6,682,081

One Piece Reduced Area gasket design from any sheet type gasket material for all lightly loaded flanges. Reduced area allows for 20-50% lower torque than conventional full-face gaskets. Standard designs for B16.5 flanges or designed specifically for non standard flanges.



**AB-326™**

U.S. Patent #5,964,468

Low-stress anti-buckling spiral wound prevents radial buckling without problematic or costly inner rings. One spiral wound gasket for all size, type and pressure class flanges. Available with graphite, PTFE, or fire safe InpHerno™ filler.



**LoadLock®**

U.S. Patent Pending

Expanded PTFE & 316 SS metal tang laminate uses no glue. Chemical inertness, low sealing stress, high load capacity and extreme blow-out resistance.



**Checkmate™**

Superior engineered interference fit jointing technology replaces antiquated "Dove-Tail" designs for sectioned gaskets. Produces a tight torturous leak path for all media. Tightest sealing sectioned gasket with mechanically rigid joints.



**Torq-Kit™**

Gaskets, studs, nuts and washers in exact conformance to your plant specifications. Assembly instruction, torque guidance, lubrication and flange ID tags ensure required performance/reliability is achieved.



**RAFF™**

U.S. Patent #6,682,081

Reduced area full-face, proprietary low creep ePTFE sealing & non-rotational ring design safeguards against flange breakage while sealing with available bolt load. Designed for low bolt load FRP/plastic and thin, flat-faced flanges.

## Innovative & Patented Technology

VSP Technologies deploys a team of Engineers and Fluid Sealing Specialists who provide engineered solutions for your unique sealing requirements.



**FR-PITA®**

U.S. Patents #7,455,301 & 8,066,843

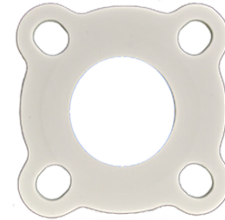
Combines VSP's patented PITA® gasket and OPRA™ design technologies to create an extremely low stress-to-seal, high tightness gaskets specifically engineered for FRP piping and equipment flanges.



**NonVeloPe™**

Available May 2019

One-piece, unitized construction of the PTFE envelope and chemically inert filler completely encapsulates the corrugated insert, completely eliminating installation issues associated with traditional envelope gaskets caused by the loose envelope.



**PITA® DNA™**

U.S. Patents #7,455,301, 8,066,843 & 6,682,081

Combines VSP's patented PITA® gasket and OPRA™ design technologies in a gasket that can be used in both ASME Class 150 and DIN PN 10 flanges in chemical service allowing for reduced customer inventory.

## Product Lines Represented

As one of the largest, most diversified fluid-sealing distributors in the country, VSP maintains one of the most comprehensive inventories available anywhere.

### Gasketing Products

- ▶ DuPont®
- ▶ Flexitallic®
- ▶ Garlock®
- ▶ Gore®
- ▶ Graftech
- ▶ Inertex®
- ▶ Klinger
- ▶ SGL Polycarbon
- ▶ Teadit®
- ▶ Thermodyn Corp.
- ▶ Thermoseal

### Expansion Joints

- ▶ Garlock®
- ▶ Hosemaster
- ▶ IAFD
- ▶ Unaflex

### Non-Metallic Bearings

- ▶ Thordon

### Specialty Fasteners

- ▶ VSP Torq-Kits™

### Compression Packing

- ▶ American Braiding
- ▶ EGC Enterprises
- ▶ Garlock®
- ▶ Gore-GFO®
- ▶ Sepco®
- ▶ Teadit®

### Hydraulic Seals

- ▶ Garlock®

### Mechanical Seals

- ▶ AESSeal®
- ▶ Sepco®
- ▶ U.S. Seal MFG

### Rotating Equipment Reliability Components

- ▶ Trico
- ▶ Des-Case

### Bearing Isolators/ Radial Seals

- ▶ AESSeal®
- ▶ Isomag®
- ▶ Garlock®



# Fluid Sealing Management Program

## \$135,000,000+ Documented Cost Savings

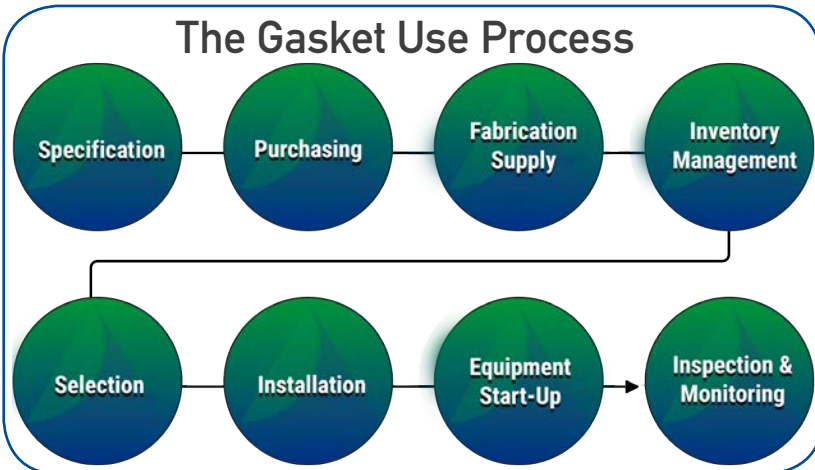
### Gasket Management Program & Value Added Services Reduce Total Cost of Ownership

- ▶ Develop site and equipment specific gasket specifications
- ▶ Establish detailed purchasing specifications linked to gasket
- ▶ Create detailed assembly procedures for connections including assembly torque
- ▶ Provide electronically accessible database containing all information stated above
- ▶ Conduct on-site flange assembly training following ASME PCC-1, Appendix A guidelines
- ▶ Enable on-going access to VSP engineering staff
- ▶ Determine exact specification materials and gasket sizes to client site
- ▶ Verify with VSP crosscheck ensures material and dimensional accuracy to current standards
- ▶ Produce documented cost savings report quarterly
  - ▶ Targets all areas of product usage cost
  - ▶ Goal is a dramatic increase in fluid sealing product performance, reliability, and value
  - ▶ Root cause failure analysis & corrective action



**Total Cost of Ownership (TCO)** encompasses much more than just the upfront costs associated with purchasing a gasket, but rather takes into consideration costs involved with installation, use and gasket failure.

### The Gasket Use Process



### In the fluid sealing industry, gaskets don't fail - the process fails.

That is why using Six Sigma methodology, our Gasket Management programs are built around VSP being involved in every step of the gasket use process enabling us to:

- ▶ Identify and understand limitations within current processes
- ▶ Optimize processes by designing and implementing solutions based on particular needs
- ▶ Control future outcomes by establishing standards and conducting training to ensure solutions, and cost savings, are sustained

## 6 MANUFACTURING LOCATIONS



- ISO 9001:2015 Certified
- Over \$4-million fluid sealing product inventory
- Manufacturing of proprietary, specialty & composite gaskets
- Research & Development
- 11 CNC controlled Atom flash cutters
- Flo waterjet cutter
- Zund digital cutter
- PTFE fusion bonding
- Custom O-Ring vulcanizing
- Stud fabrication from bar stock



**Prince George, VA**  
Corporate Headquarters, R&D, Technical Services



**Houston, TX**



**Kingsport, TN**



**Parkersburg, WV**



**Lake Charles, LA**



**Baton Rouge, LA**