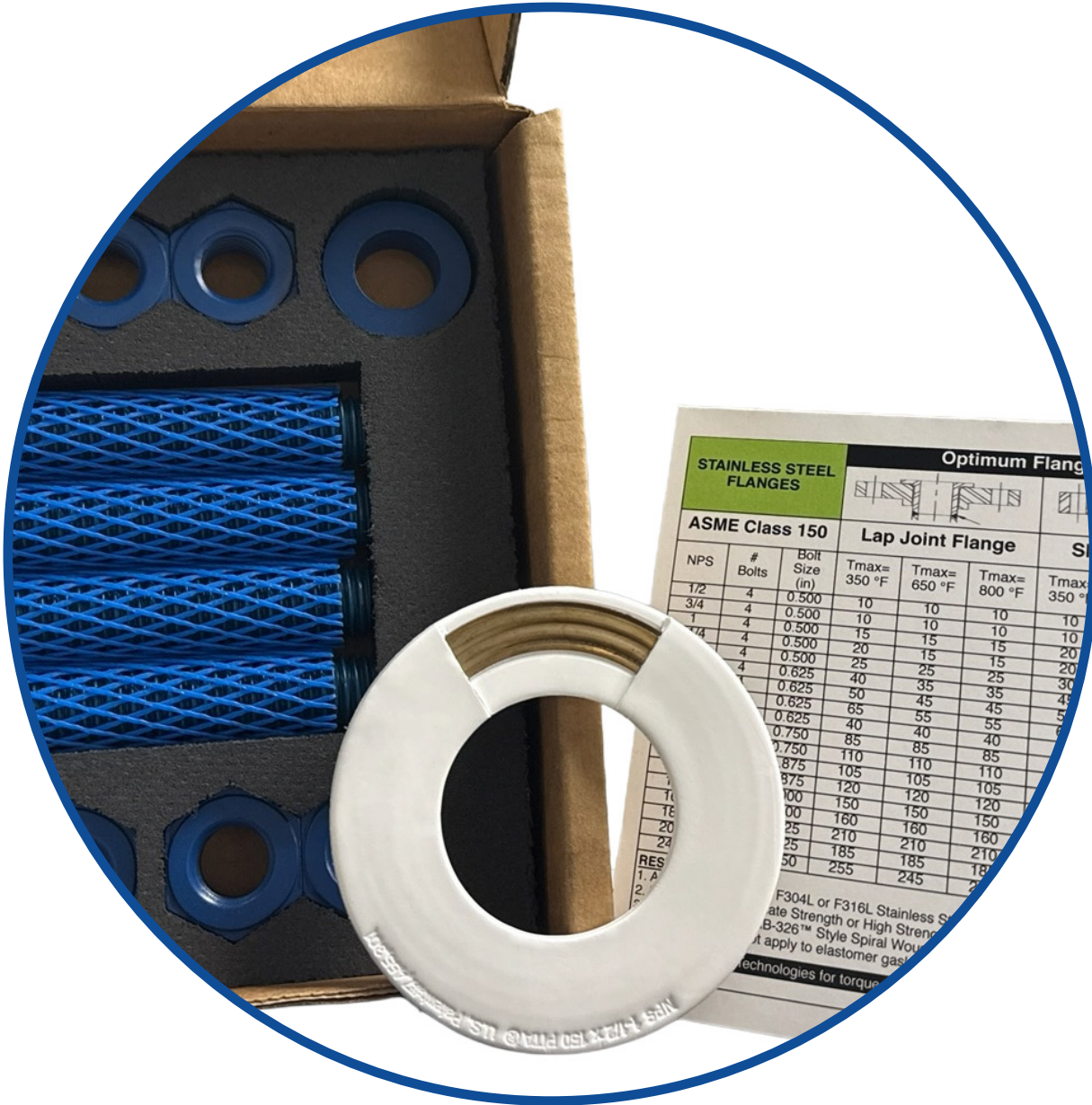
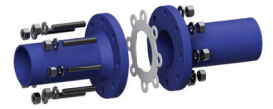




Torq-Kit™

Increasing Flange Reliability

TORQ-KIT



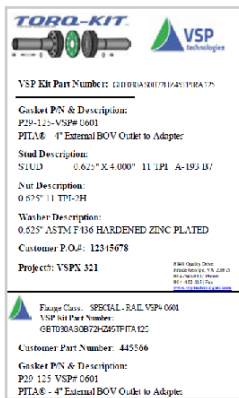
VSP Technologies deploys a team of Engineers and Fluid Sealing Specialists who provide engineered solutions for your unique sealing requirements.

8140 Quality Drive, Prince George, VA 23875
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Standard Torq-Kit™ Components

Custom Torq-Kit™ Options Available



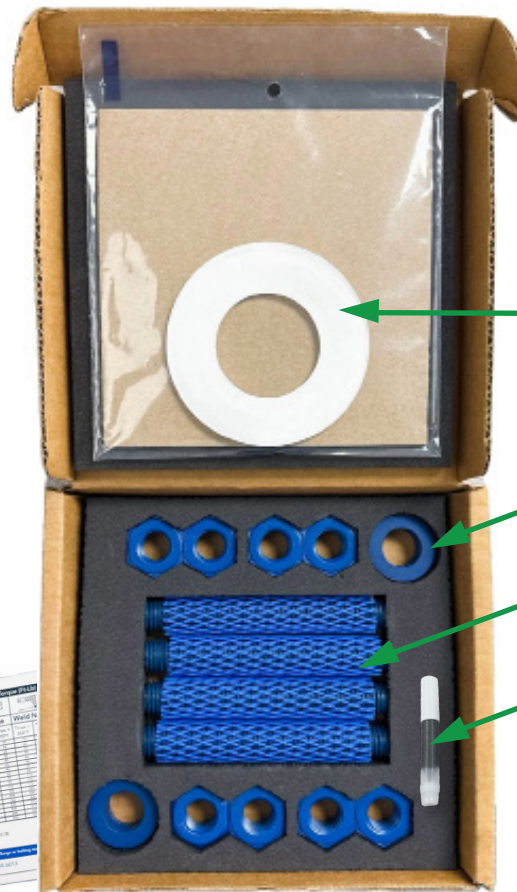
Kit Label

Installation Date	Final Torque
Installed By	
Inspected By	
Gasket Material	
Comments	
☐ Lubricated ☐ Non-Lubricated	

USI U47250A.VSP

Installation Tag

Instructions &
Torque Guide



Flange & Process
Specific Gasket

Nuts & Washers

Stud/Bolts with
Protective Sleeve

Lubrication

VSP Technologies supplies a complete range of industrial-grade fasteners and protective coatings for our Torq-Kits, ensuring durability and performance in demanding applications.

Everyday Causes of Poor Reliability & Performance of Flange Connections

Incorrect Material Selection

- Process conditions often change over time (pressure, temperature, media)
- Gasket materials must be verified against current operating conditions
- Compatibility between gasket, flange, and fasteners is critical

Improper Gasket Size or Type

- Full-face gaskets may require more compressive load than the system can deliver
- Mismatch between gasket design and flange capability leads to unreliable sealing
- Design verification is essential to ensure required sealing stress is achievable

Bolt Yielding & Reusability Issues

- Missing or incorrect torque specifications can overstress fasteners
- Yielded bolts lose integrity and cannot be safely reused
- Common in standard pipe flanges without controlled installation practices

Washer Degradation

- Worn or case-hardened washers can deform under load
- Leads to inconsistent nut factors and inaccurate assembly bolt loads
- Reduces confidence in achieving proper gasket stress

Over-or Under-Torquing

- Over-torque damages gasket structure and sealing capability
- Under-torque results in insufficient compressive stress
- Corrosion and poor lubrication often contribute to both conditions

Poor Installation Practices

- Failure to use calibrated torque tools
- Incorrect tightening sequences (not following star patterns)
- Lack of proper lubrication during assembly
- All contribute to uneven load distribution and sealing failure

Incorrect Fastener Specifications

- Improper material grade
- Incorrect length or diameter
- Incompatibility with flange requirements



Torq-Kit™

Increasing Flange Reliability

Case Study

The Challenge

A large industrial site was planning a maintenance project to clean and repair a (> 96" ID) recovery column, with 24 flanged column sections. Each flange required two gaskets and (104) 1-1/8" studs, and a planning and execution challenge to ensure all components and part were on the job site when required.

The Solution

VSP Torq-Kit™ was specified to eliminate all sourcing, quality and logistical concerns. VSP Torq-Kit™ kits have all necessary components in one container including proper assembly instructions specific to each connection. The lower total cost was really a secondary benefit. Supporting the maintenance planner, VSP took care of sourcing, sizing, fabricating and packaging all components in one box and delivering and staging the kits exactly where required.

The Result

The column was repaired quickly and passed initial leak test with zero leaks at the flange connections.

Torq-Kit™ : Developed to Meet Industry Needs

- ▶ Assembly instructions provided with each kit – Ensures proper field assembly
- ▶ Nuts, studs, washers & gaskets kitted together reducing time spent locating components
- ▶ Weatherproof installation tag – Documents proper assembly, aids in final inspection
- ▶ Specialty packaging – all components arrive un-damaged and ready to use
- ▶ Customizable configurations – Designed to adapt to users' unique needs and specific application requirements

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