

NEW!

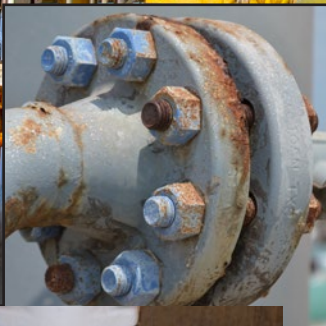
Moisture-Proof Seal
Non-Metallic Grease Injection Fitting
Safety Relief Vent



ADVANCE PRODUCTS & SYSTEMS, LLC

KLEERBAND®

FLANGE PROTECTORS & RADOLID® PROTECTION CAPS

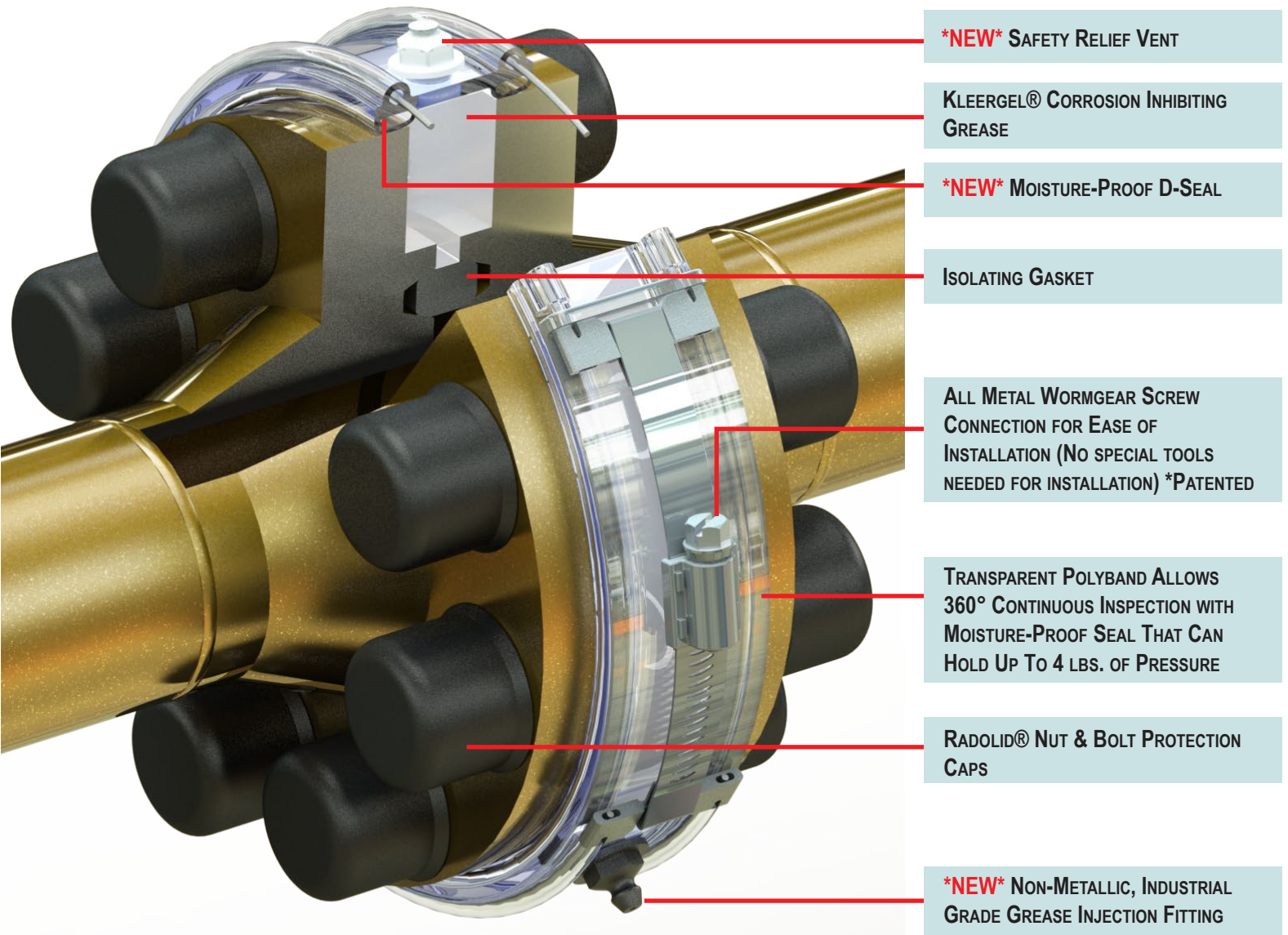


RADOLID® BOLT PROTECTION CAPS • KLEERGEL® CORROSION INHIBITOR GREASE
-SEE PAGE 3



ISO 9001:2015 CERTIFIED COMPANY - FM537405
WWW.APSONLINE.COM

Kleerband® Flange Protectors:



NEW Moisture-Proof Seal

NEW Non-Metallic Grease Injection Fitting

NEW Safety Relief Vent

Controlling corrosion and being aware of its damaging effects is paramount in pipeline maintenance. With the use of Kleerband® Flange Protectors, Radolid® nut & bolt protection caps, and Kleergel® corrosion inhibiting grease, flanges and hardware remain safe from hazardous and unsightly corrosion that can cause leakage, failure, or even shutdown of equipment. The down time, coupled with the cost of cutting and welding a new flange, replacing flange bolts, nuts and seals, can become very expensive.



The Kleerband® Flange Protectors are designed to protect flange face, studs, and gaskets on raised face, full face, and ring joint flanges from atmospheric corrosion

encountered in chemical plants, refineries, gas plants, offshore platforms, onshore oil fields, metering stations, water and wastewater plants, pump stations, and underground pipelines.

Kleerband® Flange Protectors are also designed for use on cathodically isolated flanges to prevent foreign matter from shorting out or bridging over an isolating gasket. All Kleerband® Flange Protectors are equipped with an exclusive safety relief vent and non-metallic grease injection fitting that assures complete loading of flange cavities. The extruded, transparent polyband allows continuous visual inspection without removal of the protector and provides a moisture-proof seal that can hold up to 4 lbs. of pressure. In addition, it is non-corroding, providing many years of service life and is completely reusable.

Why try and protect flanges the old way when APS has the new, clear advantage to prevent corrosion



APS presently manufactures Kleebrand® Flange Protectors to fit all ANSI flanges 150# series to 2500# series, from 1/2" diameter to 144" diameter. Also available are Flange Protectors to fit API 2000# to 15,000# flanges, API Integral flanges, API obsolete flanges, and AWWA flanges. Available in standard 1 1/2" and 2 1/2" widths. Wider widths available in original design upon request.

Stainless Steel Flange Protectors

The 7100 series flange protector is manufactured with 22 gauge 304L or 316L stainless steel band, stainless steel worm-gear strap, and grease fitting. This standard coupling is practically indestructible and is appropriate for extreme temperatures. APS



Flange Protectors are manufactured according to ANSI B16.5 specifications up to 24". Above 24", please provide the specifications of your flange including the circumference.

Shrink Sleeves



Shrink sleeve flange shields consist of multiple components (i.e., shrink sleeve, skirting, mastic filler material, masking tape), require numerous tools for installation (i.e., propane tank, torch, hose, regulator, knife, rags, approved solvent, temperature measuring device, hammer, screwdriver, pliers), along with safety equipment (i.e., gloves, goggles and a fire watch), and extra time and personnel to properly install. Due partly to its

many installation steps, it is an awkward and complicated method of flange protection. Once installed, flanges cannot be inspected for corrosion without removal of the shrink sleeves and the necessity to repeat the entire installation process. In addition, shrink sleeves are very expensive and must be burned or cut off for removal.

Tape products must be wrapped completely around the circumference of the flange, though not all flanges can be accessed in this manner. Tape covered flanges are not easily filled and usually result in voids in the flange cavity where condensation forms. Tape products, besides trapping moisture, are non-fillable and not inspectable, making it necessary to cut away and dispose of this non-reusable means of protection.

Tapes



Wax Fillers



Wax and epoxy fillers are both messy and difficult to apply. These fillers require many tools and are extremely time-consuming. Wax must be melted and poured into a form until it hardens. Epoxy must be injected under high pressure, or troweled on the flanges, leaving potential voids. Both wax and epoxy fillers have a tendency to shrink and separate from the flange surface over time, allowing moisture to migrate between the filler and the flange causing hidden corrosion growth. Once installed, wax and epoxy fillers are non-inspectable for corrosion, and are messy and difficult to remove and dispose of safely.

Specifications:

Kleebrand® Flange Protectors are manufactured of 100% virgin vinyl compound. The polyvinyl chloride resin used to make this compound, as well as the plasticizers and all of the other ingredients, have been granted approval by the FDA in accordance with regulations.

Compound Physical Evaluation

Hardness - Shore A (± 3) - instantaneous.....	75
- 10 second delay.....	70
Specific Gravity (± .02)	1.20
Tensile Strength (PSI)	2200
100% Modulus (PSI).....	1000
Elongation (%).....	420
Low Temperature Brittleness (°F).....	-40
Operating Temperature (°F).....	Min.-13
Operating Temperature (°F).....	Max.+167

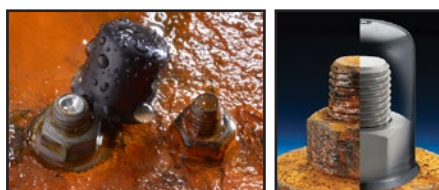
APS' Radolid® Protection Caps:

Radolid® are used to eliminate corrosion of nuts and bolts, thus allowing quick removal when necessary. These caps are easily installed by being pressed on to the bolted joint by hand. The barbed edge snaps in place, preventing the caps from accidentally being removed. Manufactured of high density black or white UV-resistant polyethylene, these caps are reusable and will keep nuts and bolts corrosion free for years. (APS recommends coating the nuts, studs and bolt heads with APS Kleergel® Corrosion Inhibitor Grease for added protection.)

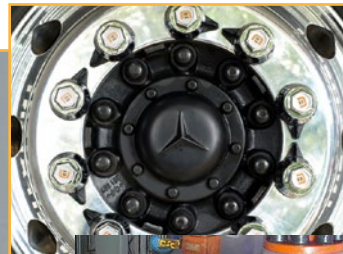


Unprotected

Protected



Practical, efficient and reusable



Size Range: 1/4" to 3 3/4" diameter bolt or stud
Standard Operating Temperature: Min -84 °F / Max +210
Other high temp material available to 428°F Max

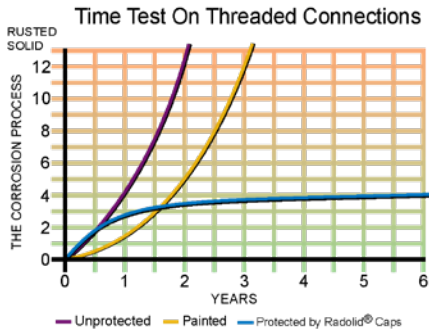
Kleergel® Corrosion Inhibitor Grease

is non-flammable, non-staining, non-toxic and able to maintain good viscosity over wide temperature ranges (-50°F to 500°F). This high-performance synthetic grease is NSF H-1 "food-grade" approved and can be utilized on potable water systems or food processing equipment without contaminating the water or other products. Kleergel® has optical clarity, is 100% waterproof, dielectric and will not damage wood, leather, plastic, fabrics, metals or painted surfaces. Enhanced with special anti-wearing, anti-rusting and anti-oxidative additives, Kleergel® increases machinery life expectancy and reduces energy consumption by decreasing friction.

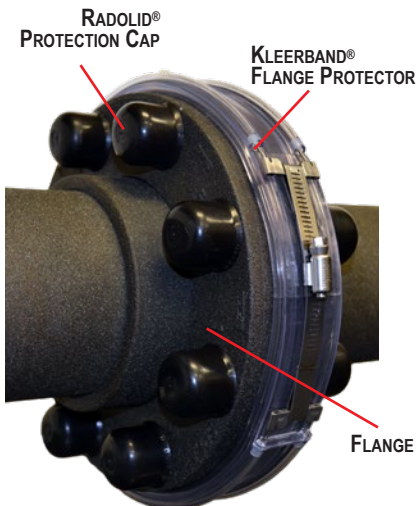


Independent Laboratory Corrosion Test Results Show the Importance of Good Flange and Nut & Bolt Protection

Radolid® Nut Cap Exposure Test



Protects The Entire Flange



Certified copy of test results available on request.

Flange Protection Corrosion Test

Flange assembly #1 was plain and unprotected. Flange #2 was protected with a Kleerband® Flange Protector and Radolid® Nut Caps. Testing consisted of 1000 hours ASTM B 117-18 salt fog exposure.

(Actual test result documents available upon request.)

#1 Unprotected Flange



0-Hours

#2 Protected Flange



1000-Hours Disassembled



End result: Flange, nuts and bolts badly corroded making flange seal failure possible and maintenance difficult at best.



End result: Flange, nuts and bolts in good repair with seal integrity safe for years and maintenance able to be achieved with efficiency.

Kleerband® Flange Protectors prevent this type of damage from occurring. Typical cost to replace and repair this 12" ANSI 600# flange full face or RTJ gasket with nuts and bolts is \$1,450.00.



ORDER INSTRUCTIONS

Kleerband® Flange Protectors

- Flange Size
- Pressure Class
- Type: ANSI or API

Radolid® Protection Caps

- Bolt diameter
- Width across flat of nut
- Special length caps, if required
- Color, if other than black

Kleergel® Corrosion Inhibitor Grease

- 14 oz cartridge
- 35 lb pail

OTHER PRODUCTS AVAILABLE

- Flange Isolating Gasket Kits
- Integra® Series Gaskets
- Casing Spacers & End Seals
- ApogeeAero® Roller Casing Spacers
- Bore & Duct Bank Spacers
- Innerlynx® Modular Mechanical Seals
- Wall Sleeves
- Foreman Nite Caps
- UBolt-Cote® & Atlas Pipe Support® Pads
- IsoJoint® Monolithic Isolating Joints
- Safety Spray Shields



PO Box 60399

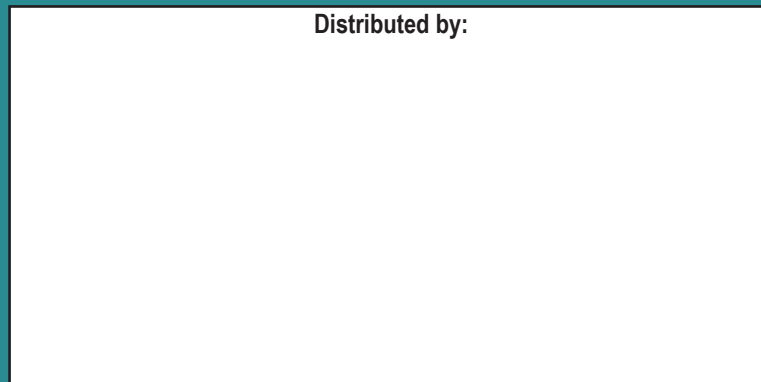
Lafayette, Louisiana 70596-0399

800-315-6009 • 337-233-6116 • Fax 337-232-3860

E-Mail: sales@apsonline.com • Website: www.apsonline.com



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