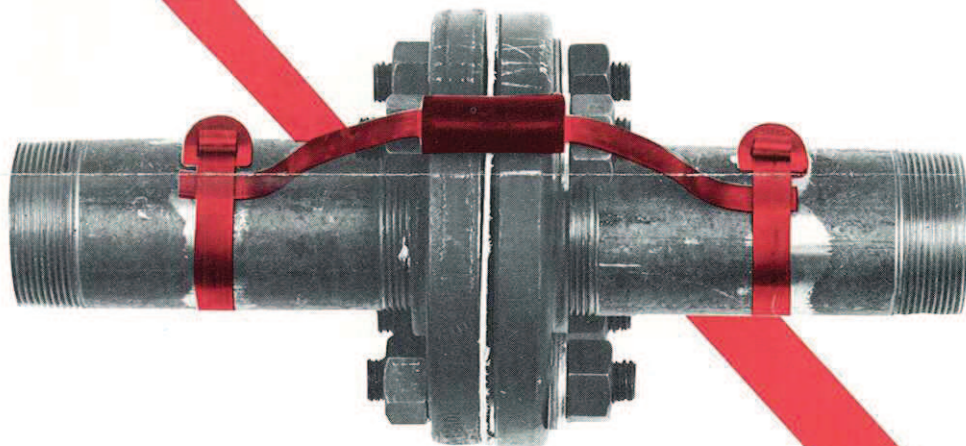


# INTRODUCING

# FLANGE GUARD™



REDUCE DOWNTIME  
MAINTENANCE AND  
REPLACEMENT COSTS

- EASILY INSTALLED  
IN MINUTES WITH  
SIMPLE HAND TOOLS
- ECONOMICAL
- WEATHERPROOF

NOW YOUR INSULATED PIPE FLANGES CAN BE PROTECTED AGAINST ARC-OVERS AND GASKET DESTRUCTION EASILY AND ECONOMICALLY. THE THOMPSON FLANGE GUARD PREVENTS THE BUILD-UP OF HIGH-VOLTAGE CHARGES WITHOUT DEGRADING THE CATHODIC VOLTAGE ISOLATION QUALITIES OF THE FLANGE.

THE PROTECTIVE CHARACTERISTICS OF THE FLANGE GUARD HAVE BEEN CONFIRMED BY AN ACCREDITED TESTING LABORATORY AND FIELD TESTED BY MAJOR UTILITIES AT THEIR MOST TROUBLESOME LOCATIONS WITH 100% EFFECTIVENESS. WRITE FOR DETAILS AND PRICES. ©



**THOMPSON**  
LIGHTNING PROTECTION INC.

901 Sibley Highway  
St. Paul, Minnesota 55118 • Phone 651/455-7661





Since 1910

# THOMPSON LIGHTNING PROTECTION, INC.

901 Sibley Highway • Saint Paul, MN. 55118-1792 • 651-455-7661  
1-800-777-1230 • Fax 651-455-2545 • Email: [tlp@tlpinc.com](mailto:tlp@tlpinc.com)

## THE FLANGEGUARD

The use of insulated flanges is common practice in the construction of gas distribution systems. Typically, such flanges are used between the supply line and the customer's facility to prevent the cathodic corrosion protection voltage on the supply pipe from entering the customer's system where it would otherwise find its way to ground. During periods of disturbed atmospheric conditions and nearby lightning strikes, strong earth currents and, thereby, voltage gradients are developed in the earth. Such gradients can easily result in a voltage potential difference of many thousands of volts between the supply pipe and the customer's grounded system. This difference of potential appears across the insulated flange and often exceeds the breakdown voltage rating of the insulating material resulting in an arc-over and destruction of the gasket and insulating sleeves.

To prevent the build-up of destructive charges, buried siamese diodes are commonly installed at insulated flanges. These devices work well but are expensive and require a considerable amount of labor to install. The desire to find a simpler, more economical way of protecting their flanges prompted one of the major utilities to commission Thompson Lightning Protection, Inc. to design an alternative protection system. The result was the development of the Flangeguard.

At the conclusion of the Flangeguard development work, a quantity of the developmental models were installed by two major utilities at their most troublesome locations for testing. At the conclusion of this two and one half year test, which included three summer thunderstorm seasons, it was reported that not a single insulated flange had been damaged. Before committing themselves to a more extensive use of the arrester, however, they deemed it prudent to have the device tested by an accredited testing laboratory. This was done at their own expense and based upon the favorable laboratory report and the results of their own field testing, an order was placed for a large quantity of the arresters.

In practice, the Flangeguard is placed across the insulated flange with connections to the pipe on each side as per the attached drawing. Under normal conditions the arrester is completely non-conductive and preserves the electrical insulation of the flange as required to isolate the low cathodic protection voltage. As the static voltage across the flange increases under the influence of disturbed atmospheric conditions, the electrical resistance of the Flangeguard automatically lowers, allowing the potential across the flange to equalize. Conduction through the arrester begins at just over 100 volts and its resistance approaches zero at about 300 volts. In effect, a Flangeguard protected flange appears as a perfect insulator at cathodic protection voltages but for the fraction of a second required to equalize high-voltage static charges, it becomes, effectively, a non-insulating flange. The device may be used either indoors or out. The active element of the Flangeguard is expected to accommodate in excess of 10,000 discharges, the equivalent of many years of service.

*World's largest manufacturer of lightning protection equipment*

⑥ NOTE: UPON COMPLETION OF INSTALLATION, SEAL CLEANED AREA OF PIPE / FLANGE GUARD WITH NO-OX-ID - NON OXIDIZING FINISH.

③ CUT FLANGE GUARD TO REQUIRED LENGTH GRIND & CLEAN SURFACE OF PIPE IN AREA OF FLANGE GUARD BONDING LOCATION - TYP.

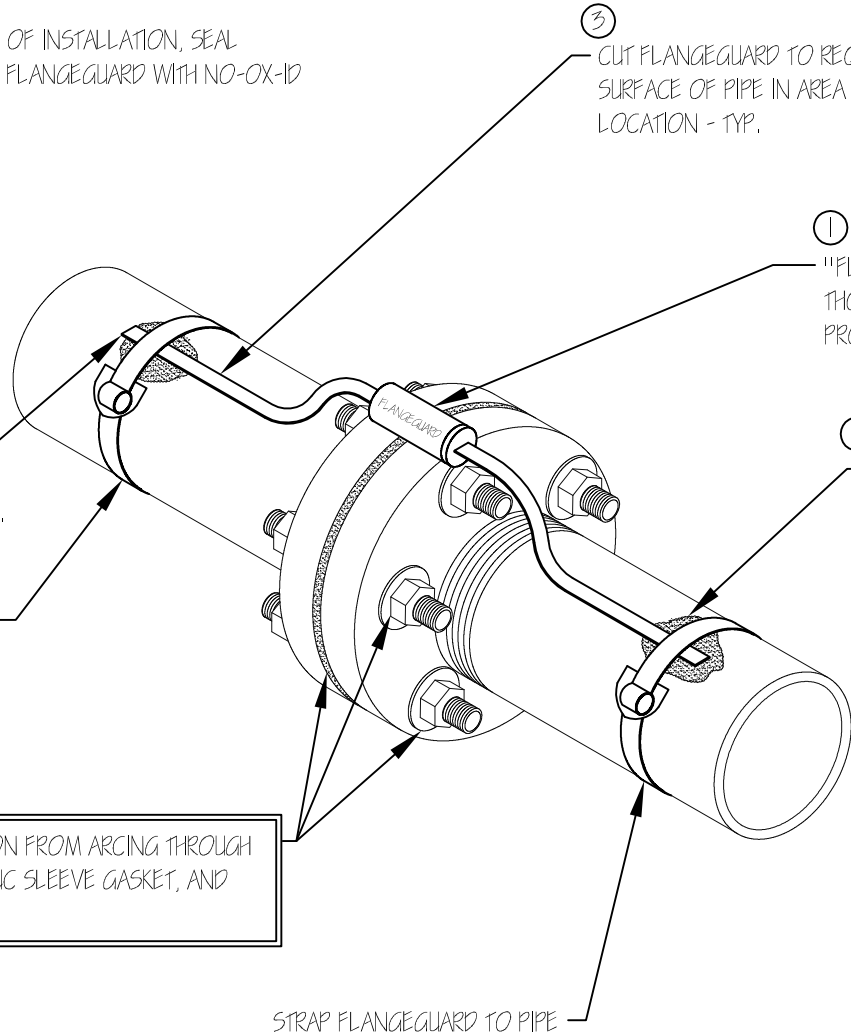
① "FLANGE GUARD" BY THOMPSON LIGHTNING PROTECTION, INC.

② CLEAN SURFACE OF PIPE FOR PROPER BONDING CONNECTION.

④ FOLD END OF FLANGE GUARD STRAP UNDER STRAP FOR A TIGHTER BONDING CONNECTION.

⑤ STRAP FLANGE GUARD TO PIPE - SEE DETAIL BELOW.

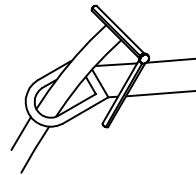
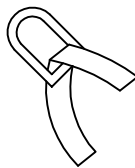
"FLANGE GUARD" - PROTECTION FROM ARCING THROUGH GASKETS AT MAIN GASKET, STUC SLEEVE GASKET, AND FLANGE-WASHER AREA.



## FLANGE GUARD INSTALLATION

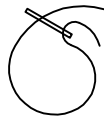
### BONDING STRAP INSTRUCTIONS ( CUT OFF BAND TO PROPER LENGTH)

1. PASS ONE END THROUGH YOKE AND BEND BACK ABOUT 1 1/2" AND FLATTEN DOWN.



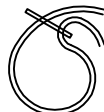
4. INSERT FREE END IN SLOT OF RATCHET.

2. PASS BAND AROUND WORK & THROUGH YOKE.



5. TURN DOWN UNTIL CLAMP IS TIGHT.

3. REPEAT AND PASS END THROUGH A SECOND TIME, DRAW UP FREE END SNUG W/ FINGERS OR PLIERS.



6. BACK OFF SLIGHTLY TO REMOVE RATCHET. CLAMP IS NOW SECURELY LOCKED

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