

LOCTITE*Adhesives for more
reliable assemblies***APPLICATION CASE HISTORY****No. 135**

Whirlpool Uses Loctite FIP Flange Sealants To Improve Product Quality, Reduce Costs

Leaks Eliminated, Gasketing Costs Cut Over 60%

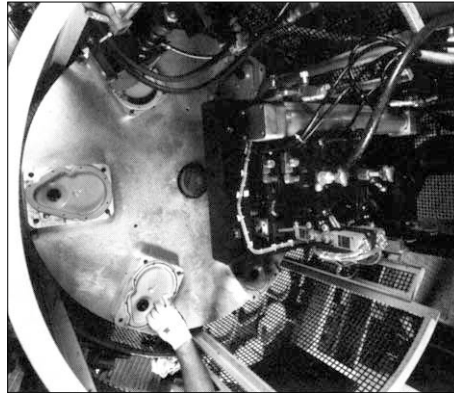
Whirlpool Corporation, like most manufacturers today, wants to increase production and cut costs while improving product quality. Using Loctite's "Formed-in-Place" (FIP) Anaerobic Flange Sealants in place of cut gaskets has helped them achieve this goal.

During the development of a new model washing machine, the engineering staff at Whirlpool analyzed the assembly process of their transmission case flanges. It required tacking down a cut gasket into position and torquing the fasteners in the case. Not only was this process extremely labor intensive, but leakage was present.

Loctite suggested FIP Anaerobic Flange Sealants. Unlike conventional gasketing methods, FIP technology doesn't require extreme compression loading to form a reliable seal. And anaerobics offer true "metal-to-metal" flange contact, dramatically improving structural load-carrying capability.

Loctite Anaerobic FIP Flange Sealants are single-component, gel-like materials which cure rapidly in close-fitting metal joints where their "inside-out" cure behavior compliments high speed production. They offer virtually unlimited "open" time, remaining in a liquid state in the presence of air. This characteristic enables multiple application methods and reduces housekeeping problems associated with the use of evaporation and/or moisture-curing materials.

Whirlpool found that by automatically dispensing Loctite's Anaerobic FIP Flange Sealant 18010 onto the gear case flange, they could eliminate the leaks associated with the cut gasket. In addition, they also eliminated two manufacturing steps and reduced their gasketing costs by more than 60%. Above all, Whirlpool has been able to increase product quality and reliability to their customers at reduced costs.



Whirlpool's evaluation of Loctite FIP Flange Sealants for use in assembling a new model washing machine resulted in a structurally-superior joint and the elimination of leaks in the transmission case flanges.

Loctite Anaerobic FIP Flange Sealants are engineered to offer these design advantages:

Reliability Improvements

- Seals all surface imperfections, reducing leaks and warranty costs.
- Allows true "metal-to-metal" designs.
- Eliminates compression set and fastener loosening associated with conventional gaskets.
- Adds structural integrity to assemblies.

Cost Reduction Opportunities

- Relaxes machining and quality control standards.
- Reduces labor content using automated application.
- Eliminates retorquing operations often necessary when using conventional gaskets.
- Enables the use of smaller fasteners, lighter flanges.
- Eliminates the need to inventory different-sized gaskets.

Ease of Application

- Single component materials, no mixing required.
- Applies semi- or fully-automatically by robotic tracing, silkscreen and other methods.

Serviceability

- Increased shelf-life vs. most composite gasket materials.
- Easy disassembly and clean up.

Loctite Americas

U.S.A.
Loctite Corporation
1001 Trout Brook Crossing
Rocky Hill, Connecticut 06067
860-571-5100
Telefax: 860-571-5465

CANADA
Loctite Canada Inc.
2225 Meadowpine Blvd.
Mississauga, Ontario L5N 7P2
800-263-5043 (within Canada)
905-814-6511
Telefax: 905-814-5391

MEXICO
Loctite Company de México, S.A. de C.V.
Calzada de la Viga s/n, Fracc. Los Laureles
Loc. Tulpetlac, C.P. 55090
Ecatepec de Morelos, Edo. de México.
01-800-8499-412
Telefax: 011-525-787-9404