

LOCTITE®

“Do It Right” User’s Guide

**The “WHEN, WHERE & HOW” to Use
Loctite® Maintenance Products**



Excellence is our Passion

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The primary function of this User's Guide is to help you, the maintenance professional, with the proper selection and use of Loctite® products. A wide variety of preventative maintenance, as well as repair techniques, are explained in step-by-step detail. Consider this a supplemental service manual for every piece of equipment in your plant. Our goal is to make it easier for you to use our products to your benefit for faster repair times, reduced downtime, and extended equipment life. Additional information on these products, as well as others, is available by contacting your local Henkel adhesives and sealants representative at the telephone number listed on the back cover of this guide.

“Always refer to Technical Data Sheet prior to product selection”

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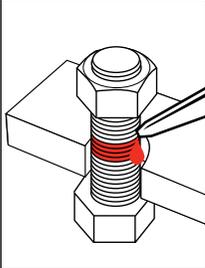
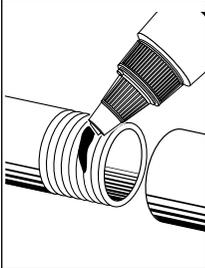
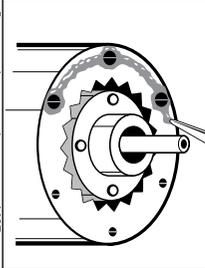
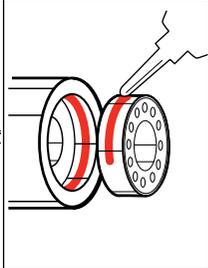
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INTRODUCTION

INTRODUCTION TO ANAEROBIC ADHESIVES AND SEALANTS

Anaerobic adhesives and sealants were developed by Loctite in 1953 and since then have significantly evolved to the most technically advanced range of industrial maintenance products available today. Products that increase equipment reliability, reduce costs and improve quality throughout industry.

Anaerobic adhesives and sealants are resins that convert from liquid to a tough structural solid in the absence of air and the presence of metal. The primary functions of anaerobic resins are:

Threadlocking	Thread Sealing	Gasketing	Retaining
			

Each one of these functions is based upon control of five major variables: strength, viscosity, adhesion, flexibility, and temperature resistance. These five parameters give anaerobics users considerable latitude in adjusting properties for optimum performance in specific application areas.

Another variable that should be considered is the substrate in which the adhesive will be applied. For certain substrates or other special requirements, the use of a primer is recommended.

WHY USE A PRIMER?

1. Primers activate inactive surfaces.
2. Primers speed up cure times for faster return to service.
3. Primers speed curing time through larger gaps and deep threads (limits apply)*.
4. Primers substantially reduce cure times on cold parts (refer product TDS)*.

Primers act as cleaning agents.

Active surfaces (primer optional): brass, copper, bronze, iron, soft steel.

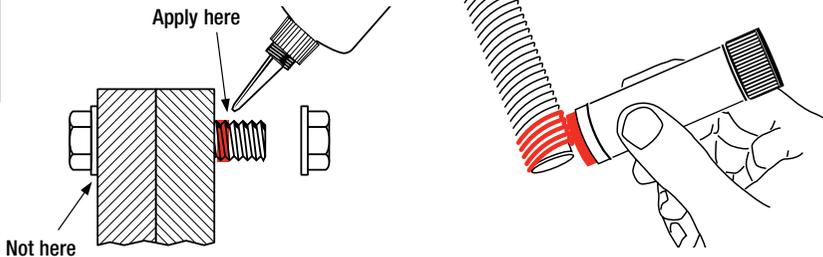
Inactive surfaces (primer required): aluminum, stainless steel, magnesium, zinc, black oxide, cadmium, titanium, nickel, others.

*Refer to relevant product Technical Data Sheet

THREADLOCKING

THROUGH HOLES (BOLTS AND NUTS)

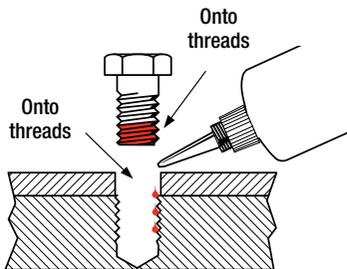
LIQUID AND SEMISOLIDS



1. Clean all threads (bolt and nut) with Loctite ODC-Free Cleaner & Degreaser.
2. If required, apply on all threads Loctite 7649 Primer or Loctite 7471 Primer. Allow to dry.
3. Select the appropriate strength Loctite threadlocker.
4. Insert bolt into through hole assembly.
5. Apply several drops of liquid threadlocker onto bolt at tightened nut engagement area or, when using the stick product, completely fill the root of the threads at the area of engagement.
6. Assemble and tighten nut to required torque.

BLIND HOLES (HEX HEAD SCREWS, ETC.)

LIQUID ONLY



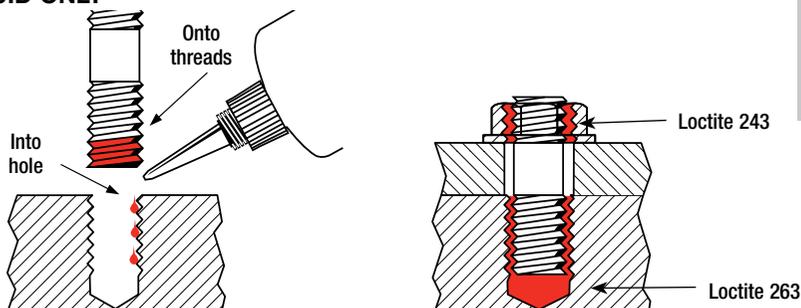
1. Clean all threads (bolt and hole) with Loctite ODC-Free Cleaner & Degreaser.
2. If required, spray (bolt and hole) with Loctite 7649 Primer or Loctite 7471 Primer. Allow 30 seconds to dry.
3. Select the appropriate strength Loctite threadlocker.
4. Squirt several drops down the sides of the female threads.
5. Apply several drops onto bolt.
6. Assemble and tighten nut to required torque.

Note: Using Loctite threadlockers can reduce stripping of threads in aluminum or magnesium housings caused by galvanic corrosion.

THREADLOCKING

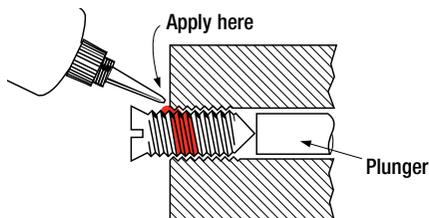
BLIND HOLES (STUDS, ETC.)

LIQUID ONLY



1. Clean all threads (bolt and hole) with Loctite ODC-Free Cleaner & Degreaser.
2. If required, apply on all threads Loctite 7649 Primer or Loctite 7471 Primer. Allow to dry.
3. Apply several drops of Loctite 263 Threadlocker down the sides of the female threads.
Note: Use Loctite 277 Threadlocker if stud is over 25mm diameter.
4. Apply several drops of Loctite 263 Threadlocker onto stud threads.
5. Install studs.
6. Position cover, head, etc.
7. Apply drops of Loctite 243 Threadlocker onto exposed threads.
8. Assemble and tighten nut to required torque.

ADJUSTMENT SCREWS

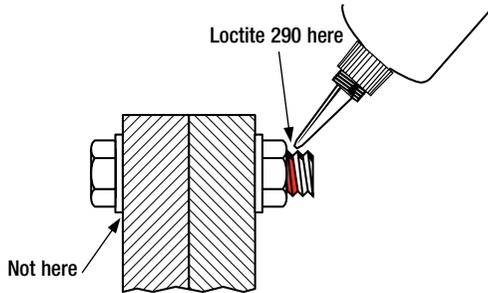


1. Adjust screw to proper setting.
 2. Apply several drops of Loctite 290 Threadlocker at screw and body juncture.
 3. Avoid touching bottle tip to metal.
- Note:**
- If readjustment is difficult, apply heat to screw with soldering iron (230°C).
 - The viscosity of the Threadlocker must be compatible to the thread pitch.

THREADLOCKING

PRE-ASSEMBLED FASTENERS

LIQUID ONLY



1. Clean bolts and nuts with Loctite ODC-Free Cleaner & Degreaser.
2. Assemble components.
3. Tighten nuts.
4. Apply several drops of Loctite 290 Threadlocker at the nut and bolt juncture.
5. Avoid touching bottle tip to metal.

Note: For preventive maintenance on existing equipment, **RETIGHTEN** nuts to required torque and apply Loctite 290 Threadlocker at the nut and bolt juncture.

LOCTITE® THREADLOCKER QUICK SELECTOR

Use	Strength	Product	Colour
Small Screws	Low	Loctite 222	Purple
Nuts & Bolts	Medium	Loctite 243 / Loctite 248	Blue
Pre-assembled	Medium	Loctite 290	Green
Nuts & Bolts	High	Loctite 263 / Loctite 268	Red
Studs (up to 25mm)	High	Loctite 263	Red
Studs (over 25mm)	High	Loctite 277	Red

THREADLOCKING

TECHNICAL DATA

PRODUCT	Loctite 222	Loctite 243	Loctite 263	Loctite 290
Size of Thread*	up to M36	up to M36	up to M36	up to M20
Strength	Low	Medium	High	Medium
Breakaway/Prevail Torque (N.m) on M10	6/4	26/5	33/33	10/29
Temperature Range (°C)	-55 to 150	-55 to 180	-55 to 180	-55 to 150
Cure Speed	Slow/Med	Medium	Medium	Medium
Primer	7471	7649	7649	7649
Colour	Purple	Blue	Red	Green
Viscosity (c.P)	1,200 Thixotropic Liquid	2,250 Thixotropic Liquid	500 Liquid	20 Liquid

WHEN TO USE PRIMERS

Primers are used when the surfaces to be threadlocked and sealed are not active enough to cause curing to take place or when the cure is required to be accelerated. The table below shows common materials and when to use primer.

Select the correct primer from the above.

ACTIVE SURFACES (PRIMER NOT REQUIRED)		INACTIVE SURFACES (PRIMER REQUIRED)	
Brass	Copper	Aluminium	Black Oxide
Bronze	Iron	Stainless Steel	Anodised
		Magnesium	Passivated Surfaces
		Zinc	Titanium
		Nickel	Galvanised

Primers are used when temperature is low and quick turnaround time is required as well as when there is a gap situation <0.2mm.

CHARACTERISTICS/ADVANTAGES OF ANAEROBIC THREADLOCKERS

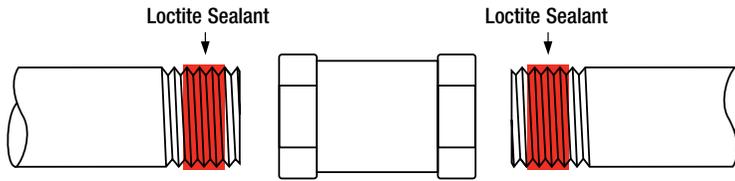
- Flat washer can still be used with threadlockers.
- Threadlockers lubricate threads for proper assembly torque tension ratio.
- Threadlockers work on all size and types of fasteners.
- Threadlocker strength is selectable (High, Medium, Low) depending on requirements.
- Threadlockers improve breakaway and prevailing torque.
- Threadlockers lock and seal, preventing corrosion and leakage.
- High strength threadlockers can be disassembled with heat (see page 31).
- All anaerobic threadlockers have high chemical resistance.

IMPORTANT NOTE: Do not use anaerobic threadlockers on most thermoplastics (ABS, PVC, etc). Softening and/or stress cracking may occur.

* The viscosity of the Threadlocker must be compatible to the thread pitch.

THREADSEALING

STANDARD FITTINGS – PIPES, HYDRAULIC, OR AIR



1. Clean parts of contamination. If required, spray Loctite 7649 Primer or Loctite 7471 Primer onto threaded parts (male and female). Allow to dry.

Note: Primer is not required for active metals.

2. Apply a band of Loctite PST Thread Sealant to male threads starting one to two threads from end of pipe.
3. Assemble parts snugly. Do not overtighten.
4. If initial pressure exceeds 1000 psi*, wait 30 minutes before pressurizing.

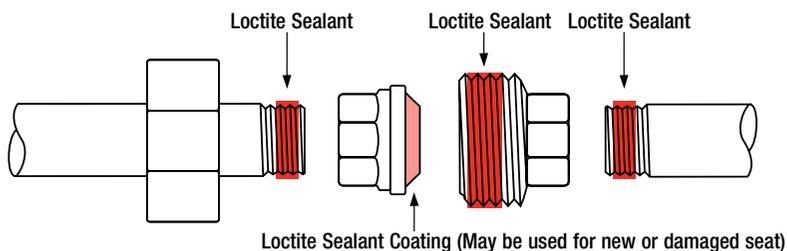
Note:

- For general purpose thread sealing, use Loctite 565 PST Thread Sealant or Loctite 561 PST Pipe Sealant.
- For fine filtration systems requiring zero contamination, use Loctite 569 or Loctite 542 Thread Sealant for hydraulic/pneumatic fittings.
- For easier disassembly or large diameter fittings, use Loctite 567 Thread Sealant.
- If sealing chemicals or strong acids/bases, refer to Fluid Compatibility Chart.
- If sealing potable water systems, use Loctite 577 Pipe Sealant or Loctite 55 Pipe Sealing Cord.
- Do not use on oxygen rich or strong oxidizers (chlorine) systems.
- For PVC or ABS pipe, use Loctite 5331 (pressure <500kpa only) or Loctite 55 Pipe Sealing Cord.

**Depending on conditions*

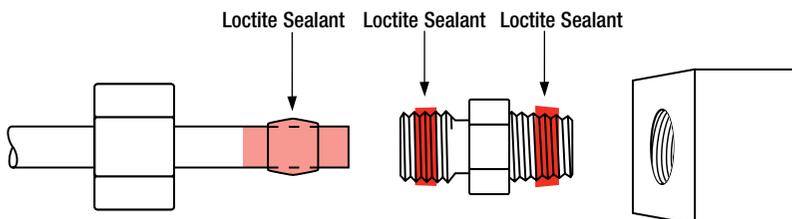
THREADSEALING

PIPE UNIONS



1. Disassemble and, if necessary, spray all components with Loctite 7649 Primer or Loctite 7471 Primer. Allow to dry.
2. Apply a thin coating of Loctite 567 PST Thread Sealant to union face.
3. Apply a band of Loctite 567 PST Thread Sealant to male threads.
4. Assemble parts snugly.

COMPRESSION FITTINGS



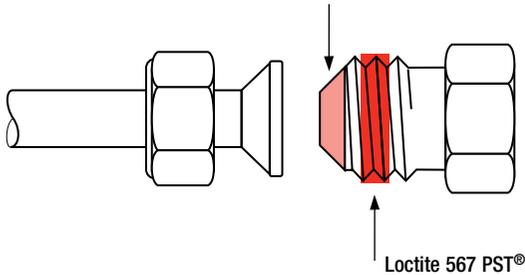
1. Slide fitting nut and ferrule back approximately 20mm from end of tubing.
2. If required, spray the entire assembly with Loctite 7649 Primer. Allow to dry.
Note: Primer is not required for active metals.
3. Apply a thin coating of Loctite 567 PST Thread Sealant to tubing where ferrule will be located.
4. Slide ferrule forward over Loctite 567 PST Thread Sealant coated tubing, then apply a thin bead of Loctite 567 PST Thread Sealant coating to ferrule.
5. Slide ferrule forward over Loctite 567 PST Thread Sealant coated tubing.
6. Apply a small band of Loctite 567 PST Thread Sealant to male threads.
7. Assemble and tighten normally.

Note: Do not use on plastic fittings or tubing.

THREADSEALING

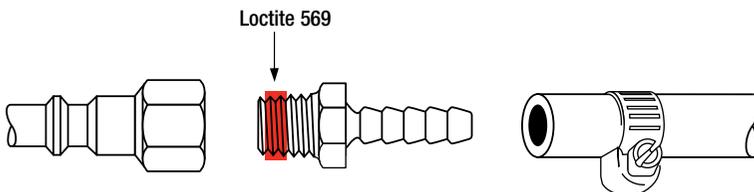
FLARED/SWAGED FITTINGS

Loctite 567 PST® Coating (for new or damaged flare or seat)



1. Disassemble and, if necessary, apply to all components Loctite 7649 Primer or Loctite 7471 Primer. Allow to dry.
2. Apply a thin coating of Loctite 567 PST Thread Sealant to fitting face.
3. Apply a band of Loctite 567 PST Thread Sealant to male threads.
4. Assemble parts snugly.

HOSE ENDS – AIR & HYDRAULIC



1. If necessary, spray adapter threads with Loctite 7649 Primer or Loctite 7471 Primer. Allow to dry.
2. Apply a coating of Loctite 569 Thread Sealant to male hose stem threads upon installation or adding accessory device. Tighten to require torque.
3. Insert barbed hose stem into hose I.D. with slight twisting motion.
4. Install appropriate hose clamp.

Note: Loctite 569 Thread Sealant may attack synthetic rubber tubing.

THREADSEALING

LOCTITE® THREAD SEALANT QUICK SELECTOR

Application	Product	Primer	Instant Seal	Max. Pressure	Steam Pressure	Temp Range
All Metal Fittings	Loctite 567 Master Pipe Sealant (Low Medium Strength)	Loctite 7649	500 psi	10,000 psi (24hrs)	n/a	-55°C to 205°C
High Filtration / Zero Contamination Systems	Loctite 569 Hydraulic Sealant (Medium Strength)	Loctite 7471	500 psi (10 min)	10,000 psi (24hrs)	n/a	-55°C to 150°C
All Metal Fittings	Loctite 577 High Pressure Pipe Sealant (High Strength)	Loctite 7649	500 psi	10,000 psi (24hrs)	n/a	-55°C to 150°C

Note: Ambient conditions and material configurations can affect cure times. (Refer to relevant TDS.)

FLUID COMPATIBILITY

1. Refer to Fluid Compatibility Chart (see pages 38-39).
2. Contact your local Industrial Distributor.
3. Call Henkel Technical Information on 1300 88 555 6.

THREADSEALING

TECHNICAL DATA

PRODUCT	Loctite 569	Loctite 542	Loctite 567	Loctite 577	Loctite 55 SEALING CORD
Size of Thread	up to 19mm	up to 25mm	up to 76mm	up to 76mm	up to 100mm
Strength	Low	Medium	Low	Medium	Low
Breakaway/Prevail Torque (N.m) on MIO	2.8/1.1	15/9	1.7 / N/A	11/6	N/A
Temperature Range (°C)	-55 to 150	-55 to 150	-55 to 205	-55 to 150	-55 to 149
Cure Speed	Medium	Medium	Slow	Medium	Instant
Optional Primer	7471	7649	7649	7649	N/A
Colour/Format	Brown/Liquid	Brown/Liquid	White/Gel	Yellow/Gel	White/Cord
Viscosity (c.P)	400	2000	540,000	24,000	N/A

WHEN TO USE PRIMERS

Primers are used when the surfaces to be threadlocked and sealed are not active enough to allow curing to take place or when the cure is required to be accelerated. The table below shows common materials and when to use primer.

Select the correct primer from the table.

ACTIVE SURFACE (PRIMER NOT REQUIRED)		INACTIVE SURFACE (PRIMER REQUIRED)	
Brass	Copper	Aluminium	Black Oxide
Bronze	Iron	Stainless Steel	Anodised
		Magnesium	Passivated Surfaces
		Zinc	Titanium
		Nickel	Galvanised

Primers are used when temperature is low and quick turnaround time is required as well as when there is a gap situation <0.2mm.

CHARACTERISTICS/ADVANTAGES OF ANAEROBIC THREAD SEALING

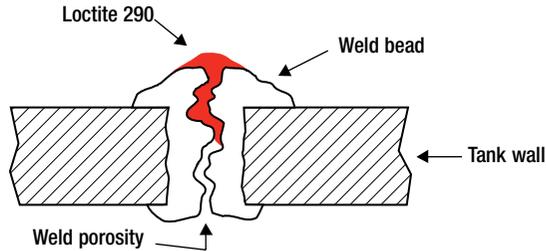
- Anaerobic thread sealants flow into and completely fill all voids, eliminating leak paths.
- Anaerobic thread sealants seal and threadlock simultaneously.
- Thread sealants work on all size and types of fittings (see quick selector).
- Thread sealant strength is selectable (Medium or Low) depending on requirements.
- Thread sealants can be disassembled with normal tools.
- Loctite 55 Pipe Sealing Cord is a non curing impregnated nylon cord.

IMPORTANT NOTE: Do not use anaerobic sealants on plastic pipe or plastic fittings. For plastic fittings use Loctite 55 Pipe Sealing Cord.

* The viscosity of the Sealants must be compatible to the thread pitch.

POROSITY SEALING

EXISTING WELD POROSITIES AND CASTINGS



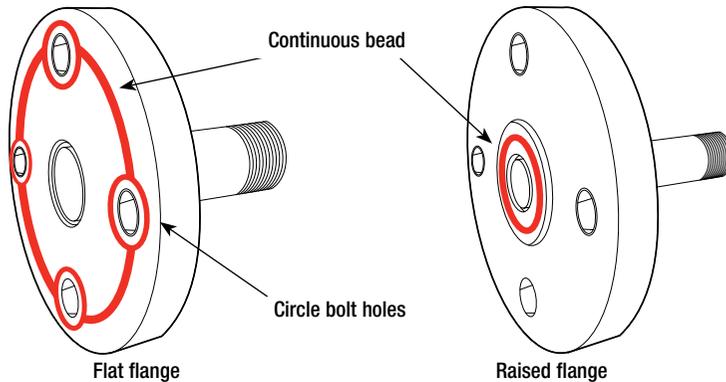
1. IMPORTANT! TAKE PROPER SAFETY PRECAUTIONS IF WORKING WITH FLAMMABLE LIQUID TANKS. AVOID USE WITH COMPRESSIBLE GASSES.
2. Wire brush repair area to remove paint, rust, etc.
3. Clean repair area with Loctite ODC-Free Cleaner & Degreaser.
4. Apply localized heat to bring repair area to approximately 120°C.
5. Allow repair area to cool to approximately 85°C.
6. Brush or spray sealant on repair area.
Note:
 - Steel – Use Loctite 290 Threadlocker at 85°C.
 - Aluminum/Stainless Steel – Use Loctite 290 Threadlocker at 50°C.
- Note:**
 - Not recommended for “blowholes.”
 - Maximum porosity sealed – 0.1mm.
7. Allow to cure for 30 minutes (High Pressure, above 150 psi — 1 hour).
8. Clean with Loctite ODC-Free Cleaner & Degreaser to remove excess sealant. Do not grind.
9. Paint as required.
Note: Casting repair uses same procedure.

SEALING NEW WELDS — PREVENTATIVE MAINTENANCE

1. Remove all slag and scale while hot.
2. Apply sealant when weld is 85°C and falling.
3. Follow information above.

FORM-IN-PLACE GASKETING

SEALING CAST RIGID FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite Chisel Paint Stripper. Use mechanical removal technique if required.

Note: Avoid grinding.

2. Clean both flanges with Loctite ODC-Free Cleaner & Degreaser.
3. Where required spray Loctite 7649 Primer or Loctite 7471 Primer on only one surface. Allow 1-2 minutes to dry.
4. Apply a continuous bead of Loctite Gasket Eliminator Flange Sealant to the other surface.

Note: Circle all bolt holes with sealant, if appropriate.

5. Mate Parts. Assemble and tighten as required.

Note: Immediate assembly not required; however, avoid delays over 45 minutes.

6. Allow to cure:

- a. No pressure – immediate service
- b. Low pressure (up to 500 psi) – 30 to 45 minutes
- c. High pressure (500 to 2500 psi) – 4 hours
- d. Extreme high pressure (2500 to 5000 psi) – 24 hours

Note: Ambient conditions can influence these times.

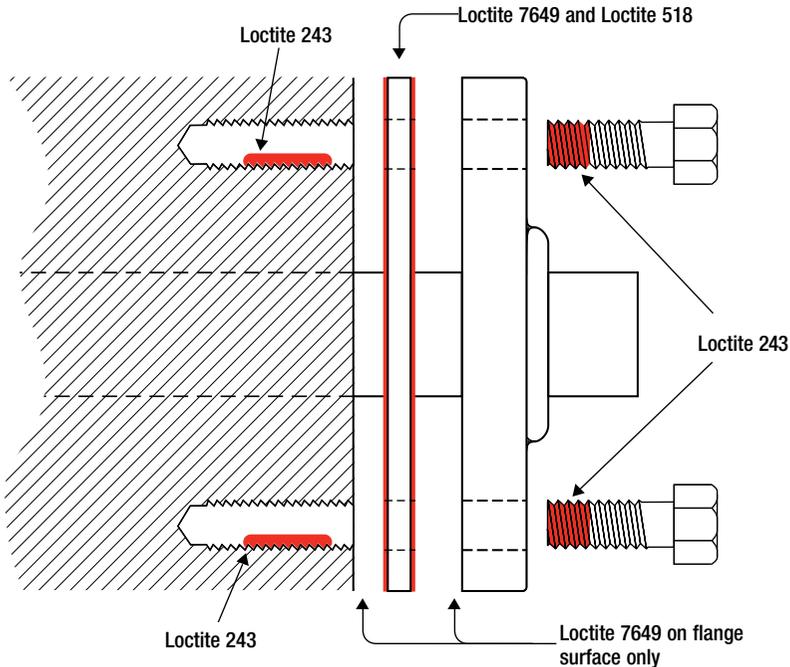
LOCTITE® GASKETING QUICK SELECTOR

Use	Product	Gap Fill	Temp. Range
General	Loctite 518 Gasket Eliminator	0.25mm	-55°C to 150°C
General	Loctite 515 Gasket Eliminator	0.25mm	-55°C to 150°C
High Temperature	Loctite 510 Gasket Eliminator	0.25mm	-55°C to 200°C

Note: Ensure that assembly time is within product fixturing time.

GASKET DRESSING

SEALED FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite Chisel Gasket Remover. Use mechanical removal technique if required.
Note: Avoid grinding.
2. Clean both flanges with Loctite ODC-Free Cleaner & Degreaser.
3. Spray Loctite 7649 Primer on both flange faces and both sides of the precut gasket. Allow 30 seconds to dry.
4. Smear Loctite Gasket Eliminator Flange Sealant to both sides of precut gasket with a clean applicator.
5. Place coated gasket on flange surface and assemble parts immediately.
Note:
 - If cover bolts screw into blind holes (as above), apply Loctite 243 Threadlocker into hole and on threads. Tighten as required.
 - If it is a threaded through bolt assembly, apply Loctite 243 Threadlocker or Loctite 248 Threadlocker to bolt threads.
6. Tighten bolt as required.

FLANGE SEALING

TECHNICAL DATA

PRODUCT	Loctite 510	Loctite 515	Loctite 518
Flange Type	Rigid	Rigid	Rigid Alloy
Temperature	-55 to 200	-55 to 150	-55 to 150
Gap Fill (mm)	up to 0.25mm	up to 0.25mm	up to 0.25mm
Cure Speed	24 hrs / Slow	24 hrs / Medium	Fast
Optional Primer	7649	7471 / 7649	7471 / 7649
Viscosity (c.P)	High	High	High Thixotropic
Oil Resistance	Excellent	Excellent	Excellent

WHEN TO USE PRIMERS

Primers are used when the surfaces to be sealed are not active enough to cause curing to take place or when the cure is required to be accelerated. The table below shows common materials and when to use primer. Select the correct primer from the table.

ACTIVE SURFACES (PRIMER NOT REQUIRED)		INACTIVE SURFACES (PRIMER REQUIRED)	
Brass	Copper	Aluminium	Black Oxide
Bronze	Iron	Stainless Steel	Anodised
		Magnesium	Passivated Surfaces
		Zinc	Titanium
		Nickel	Galvanised

Primers are used when temperature is low and quick turnaround time is required.

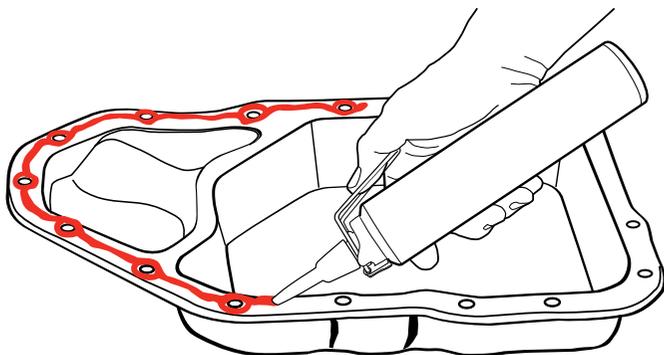
CHARACTERISTICS/ADVANTAGES OF GASKETING

- Form-in-place gasketing resists compression set.
- Form-in-place gasketing fills all voids eliminating gaps.
- Form-in-place gasketing provides a universal fit and is always in stock.
- Form-in-place gasketing provides on-site applications and saves you time.
- Form-in-place gasketing is easy to clean up.

IMPORTANT NOTE: Do not use anaerobic flange sealants on most thermoplastics (ABS, PVC, etc). Softening and/or stress cracking may occur.

FORM-IN-PLACE SILICONES

STAMPED OR SHEET METAL FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite Chisel Paint Stripper.
2. Clean both flanges with Loctite ODC-Free Cleaner & Degreaser.
3. Apply a continuous bead of Loctite Instant Gasket or Loctite Maxx high performance silicones to sealing surface. Circle all bolt holes.
 - Note:**
 - Use proper bead diameter to seal flange width and depth.
 - Minimize excessive material “squeeze in.”
4. Assemble within 10 minutes by pressing together. Tighten as required.
5. Clean up any excess or squeeze out.
6. Cure times will vary with temperature, humidity, and gap. Typical full cure time is 24 hours.

LOCTITE® MAXX SERIES SILICONES QUICK SELECTOR

PRODUCT	Loctite 587 BLUE MAXX	Loctite 5900 BLACK MAXX	Loctite 5699 GREY MAXX	Loctite COPPER MAXX
Flange Type	Flexible	Flexible	Japanese Vehicle	Flexible
Temperature¹	-60 to 260°C	-60 to 200°C	-60 to 200°C	-60 to 316°C
Gap Fill (mm)	6mm	6mm	3mm	6mm
Sensor Safe	Yes	Yes	Yes	Yes
Cure (Tack Free)	10 - 50 min.	5 min.	10 min.	20 - 60 min.
Full Cure	24 - 72 hrs.	24 hrs.	24 hrs.	24 - 96 hrs.
Oil Resistance	Excellent	Excellent	Excellent	Excellent
Instant Seal	No	Yes ²	No	No

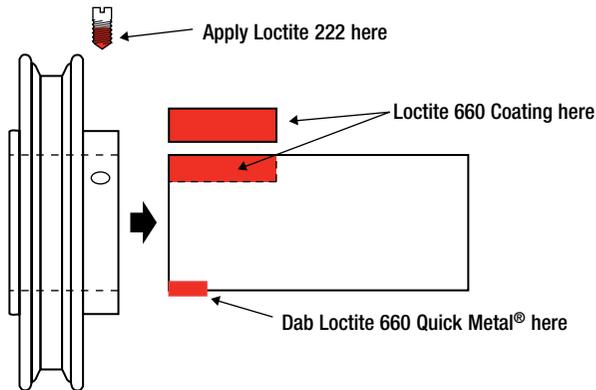
Note: Ensure that assembly time is within product skin overtime.

¹ Continuous service. Intermittent temperature higher than established range.

² Seals instantly at zero gap.

STRENGTHEN KEYED ASSEMBLIES

STANDARD DUTY



ASSEMBLY

1. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
2. If necessary, apply onto all parts (I.D. and O.D.) Loctite 7649 Primer or Loctite 7471 Primer.
3. Apply Loctite 660 Quick Metal Retaining Compound coating into keyway and on key.
4. Apply Loctite 660 Quick Metal Retaining Compound onto shaft opposite keyway or evenly spaced around shaft.
5. Assemble parts. Wipe off excess.
6. Apply Loctite 222 Threadlocker to set screw.
7. Tighten set screw.
8. Allow 30 minutes prior to service.

- Note:**
- Loctite 660 Quick Metal Retaining Compound is NOT recommended for gaps exceeding 0.25mm on shaft or keyway.
 - See REPAIRING BADLY WALLOVED KEYWAY, page 21, for procedure.

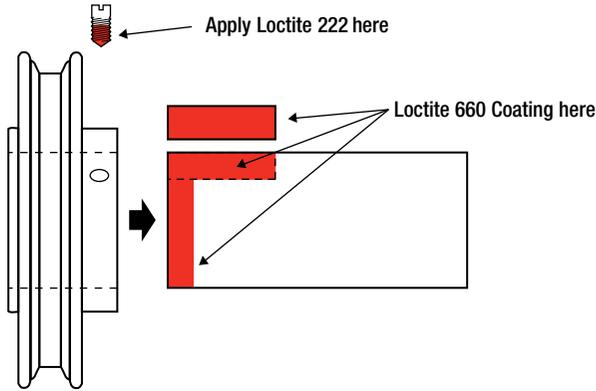
DISASSEMBLY

1. Tap component and key with hammer.
2. Pull as usual.

- Note:** Loctite 660 Quick Metal Retaining Compound is not a metal rebuild product.

STRENGTHEN KEYED ASSEMBLIES

HEAVY DUTY



ASSEMBLY

1. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
2. Apply a coating of Loctite 660 Quick Metal Retaining Compound coating around shaft, into keyway, and on key.
3. Assemble parts. Wipe off excess.
4. Apply a dab of Loctite 222 Threadlocker to screw.
5. Tighten set screw.
6. Allow 30 minutes prior to service.

- Note:**
- If gap exceeds 0.12mm, use Loctite 7471 Primer on appropriate area (shaft or keyway).
 - Loctite 660 Quick Metal Retaining Compound are NOT recommended for gaps exceeding 0.25mm on shaft or keyway.
 - See REPAIRING BADLY WALLOVED KEYWAY, page 21, for procedure.

DISASSEMBLY

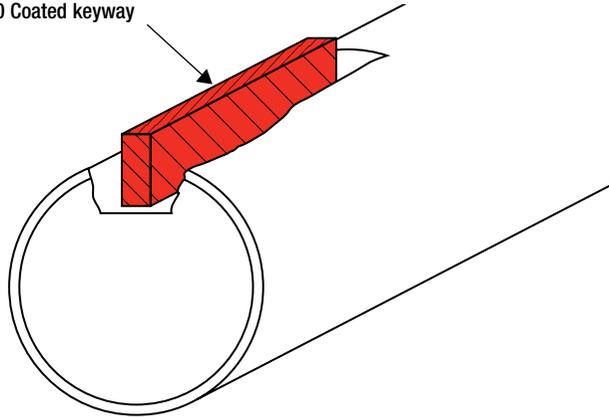
1. Tap component and key with hammer.
2. If necessary, apply localized heat (230°C for five minutes).
3. Pull while hot.

- Note:** Loctite 660 Quick Metal Retaining Compound is not a metal rebuild product.

STRENGTHEN KEYED ASSEMBLIES

REPAIRING BADLY WALLOWED KEYWAY

Loctite 660 Coated keyway

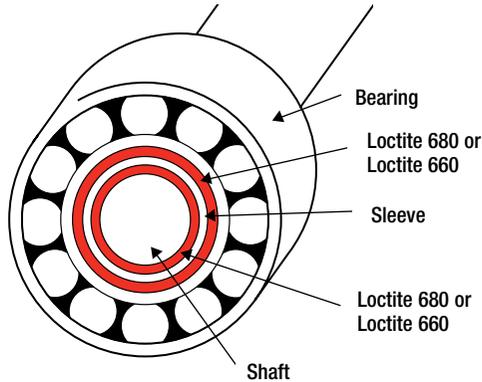


1. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
2. If necessary, apply onto all parts with Loctite 7471 Primer. Allow to dry.
3. Apply a coating of Loctite 660 Quick Metal Retaining Compound into keyway.
4. Assemble as required.
5. Allow a 30 – to 60 – minute cure time (when using a primer).

- Note:**
- Loctite 660 Quick Metal Retaining Compound is NOT recommended for lateral gaps exceeding 0.25mm.
 - Loctite 660 Quick Metal Retaining Compound is not a metal rebuild product.

SHAFT MOUNTED ASSEMBLIES

REPAIRING BADLY WORN SHAFT

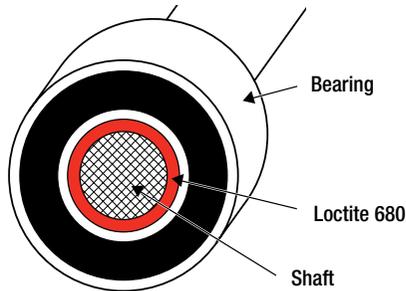


1. Determine a minimum radial gap between shaft and bearing.
2. Select and trim appropriate sleeve to allow component slip fit.
3. Roughen sleeve O.D. with emery cloth.
4. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
5. Apply a coating of Loctite 680 or Loctite 660 Quick Metal Retaining Compound around the shaft.
6. Install sleeve.
7. Apply a coating of Loctite 660 Quick Metal Retaining Compound to sleeve O.D.
8. Install component as required onto sleeved shaft.
9. Allow a 30 – to 60 – minute cure time (when using a primer).

- Note:**
- Loctite 660 Quick Metal Retaining Compound is NOT recommended for radial gaps exceeding 0.25mm.
 - Loctite 660 Quick Metal Retaining Compound is not a metal rebuild product.

SHAFT MOUNTED ASSEMBLIES

SLIP-FIT - LIGHT/HEAVY DUTY



ORIGINAL

1. Machine shaft to 0.05mm radial slip fit with 50-80 rms finish (second cut).
2. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
3. Spray all parts (I.D. and O.D.) with Loctite 7649 Primer. Do NOT use primer for heavy duty applications.
4. Apply a coating of 680 Quick Metal Retaining Compound around shaft and engagement area.
5. Assemble parts with rotating motion.
6. Wipe off excess.
7. Allow a 2 hours cure time prior to service.

Follow directions above and additionally:

WORN SHAFT

1. Determine radial gap.
2. If radial gap exceeds 0.2mm, Loctite 7649 Primer must be used.
3. Take steps to maintain concentricity with large gaps.
 - Larger gaps require longer cure times (30-60 minutes).
 - Loctite 660 Quick Metal Retaining Compound are NOT recommended for radial gaps exceeding 0.2mm.
 - See procedure for BADLY WORN SHAFT page 22.

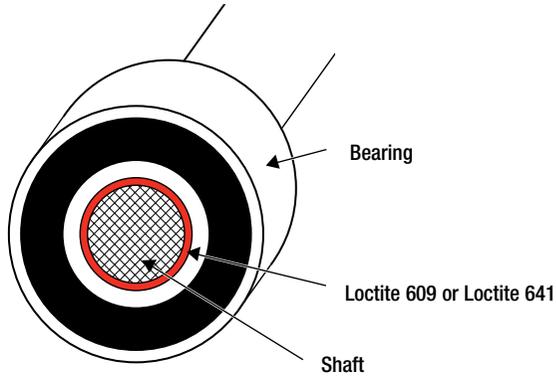
Note: Loctite 660 Quick Metal Retaining Compound is very fast fixturing (30 seconds or less) with Loctite 7649 Primer.

MAXIMUM TEMPERATURE (230°C continuous)

1. Same as above, except use Loctite 620 Retaining Compound with Loctite 7471 Primer.

SHAFT MOUNTED ASSEMBLIES

PRESS FIT



STANDARD

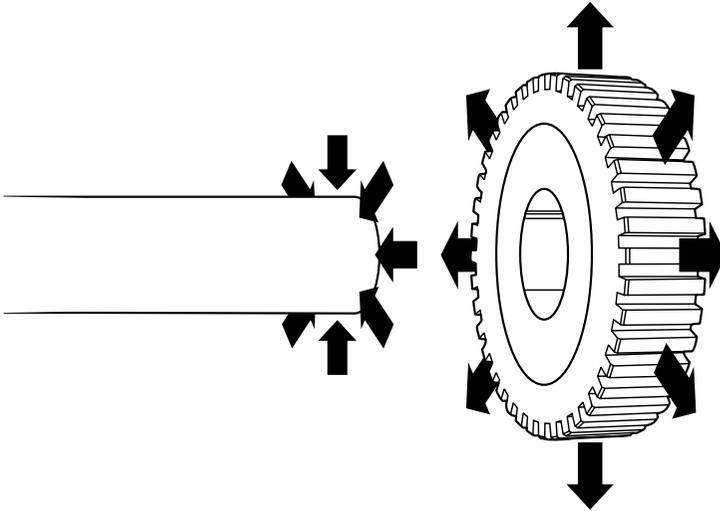
1. Clean shaft O.D. and component I.D.
2. Apply a bead of Loctite 609 or Loctite 641 Retaining Compound to circumference of shaft at leading edge of insertion or leading area of engagement.
Note:
 - Retaining compound will always be squeezed to the outside when applied to shaft.
 - Do NOT use with Loctite® Anti-Seizes or similar product.
3. Press as usual. Wipe off excess.
Note: Loctite 609 or Loctite 641 Retaining Compound is used due to low viscosity and wetting properties.

TANDEM MOUNT

1. Apply retaining compound to bore of inside component.
2. Continue assembly as above.
Note: Loctite 609 and Loctite 641 Retaining Compound are not recommended for radial gaps exceeding 0.1mm.

SHAFT MOUNTED ASSEMBLIES

SHRINK FIT



ASSEMBLY

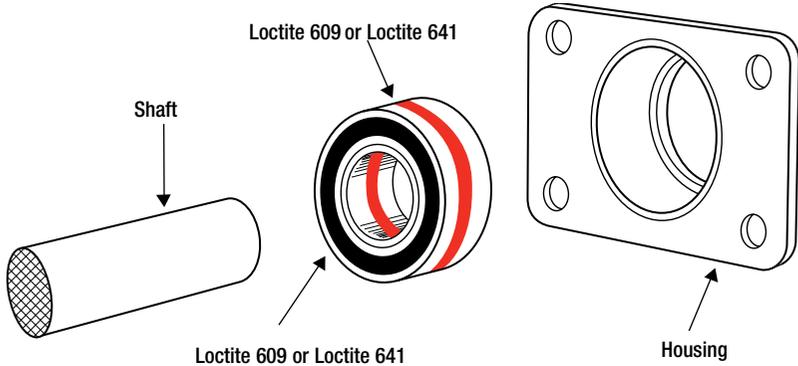
1. Clean the shaft O.D. and component I.D. with Loctite ODC-Free Cleaner.
2. Cool the shaft to cause contraction, or heat the component to cause expansion.
3. Brush a film of Loctite **641** Retaining Compound to the shaft or lower temperature part.
4. Install component and allow temperatures to reach ambient.
5. Wipe off excess.

Note: Loctite **641** Retaining Compound will add lubricity for easier assembly while sealing and protecting the bond area from environmental exposure and filling gaps for a more complete contact area.

Loctite **641** Retaining Compound are not recommended for radial gaps exceeding 0.1mm.

HOUSED COMPONENTS

SLIP FIT



ORIGINAL

1. Select component to fit shaft.
2. Machine to reduce component O.D. or increase housing I.D. to permit approximate 0.05mm to 0.1mm diametral slip fit.
3. Clean all parts with Loctite ODC-Free Cleaner & Degreaser.
4. If required, spray with Loctite 7649 Primer or Loctite 7471 Primer.
5. Apply Loctite 609 or Loctite 641 Retaining Compound to component O.D.
6. Install component. Do not rotate.
7. Wipe off excess.
8. Allow five minutes to cure prior to service.

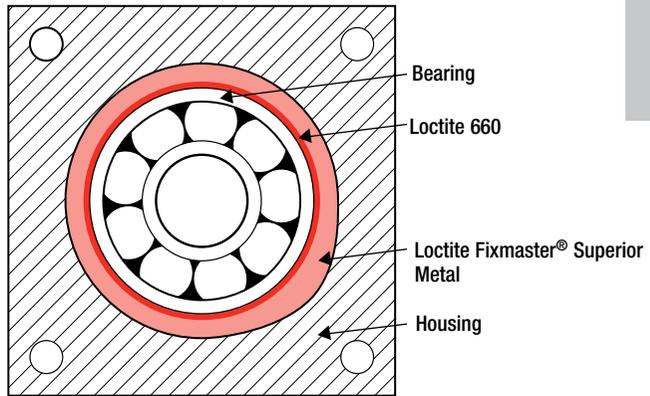
WORN

Procedures identical to original slip fit, and additionally:

1. Determine the maximum radial gap.
2. If the maximum gap exceeds 0.1mm, Loctite 7649 Primer must be used.
3. Take steps to maintain concentricity on large gaps.
 - Large gaps require longer cure times (30-60 minutes).
 - Loctite 660 Quick Metal Retaining Compound IS NOT recommended for radial gaps exceeding 0.25mm.
 - See procedure for BADLY WORN HOUSING page 27.

HOUSED COMPONENTS

REPAIRING BADLY WORN HOUSING



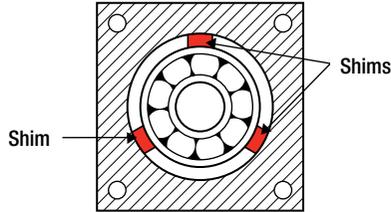
ASSEMBLY

1. Roughen housing I.D. with emery cloth or abrasive media.
2. Clean the housing I.D. with Loctite ODC-Free Cleaner & Degreaser.
3. Clean the component O.D. and apply a release agent.
4. Prepare (mix) Loctite Fixmaster Superior Metal.
5. Apply a coating of Loctite Fixmaster Superior Metal to the I.D. of the housing.
6. Position the component in housing. Maintain concentricity.
7. Pack Loctite Fixmaster Superior Metal into the gaps and voids.
8. Wipe off excess material.
9. Allow to cure 30 minutes.
10. Remove component.
11. Clean the release agent from component O.D.
12. Clean and roughen the housing I.D.
13. Assemble with Loctite 660 Quick Metal Retaining Compound as required.
14. Recommended for light duty service.

Note: This procedure is for use when machining is not an option. If you want a procedure for using Loctite Fixmaster Superior Metal and machining back to original tolerance, then contact your local Henkel Adhesive and Sealants Specialist on 1300 88 555 6.

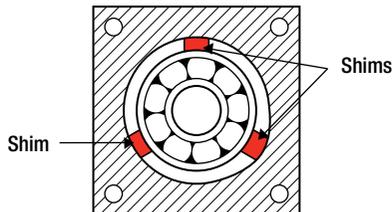
HOUSED COMPONENTS

COMPONENT CENTERING



EXCESSIVE / EVEN WEAR

1. Position the component in bore.
2. Select three equilateral mounting points.
3. Determine the radial gap at those points.
4. Select appropriate shim stock.
5. Cut three pieces approximately 3mm wide to fit bore depth.
6. Bond the shims to bore at mounting points using Loctite 480 Instant Adhesive.
7. Assemble per instructions on page 26.



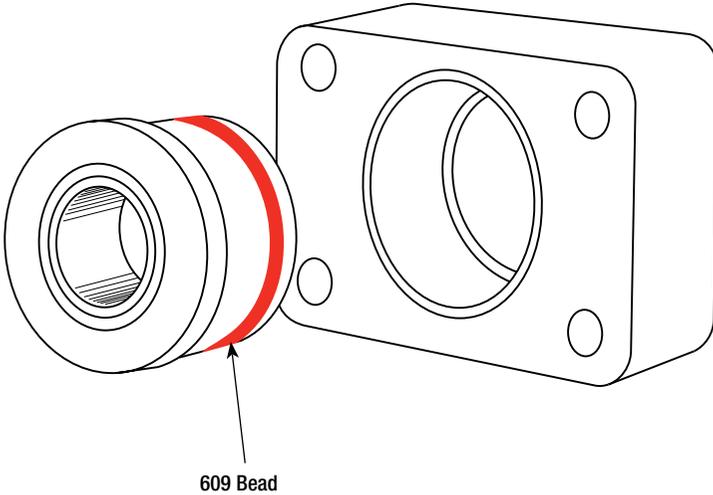
EXCESSIVE / UNEVEN WEAR

1. Position the component in bore.
2. Select three equilateral mounting points.
3. Determine the radial gap at those points.
4. Select and cut appropriate shim stock for each point.
5. Bond the shims to bore at mounting points using Loctite 480 Instant Adhesive.
6. Assemble per instructions on page 27.

Note: • Ensure that assembly time is within product fixturing time.

HOUSED COMPONENTS

SEALING/RETAINING — METALLIC SEAL



1. Clean the housing I.D. and seal O.D. with Loctite ODC-Free Cleaner & Degreaser.
2. Spray both the housing and seal with Loctite 7649 Primer.
3. Apply a bead of Loctite 609 Retaining Compound to the leading edge of metallic seal O.D.
4. Install as usual.
5. Wipe off excess.
6. Allow to cure for 30 minutes.

Note:

- Loctite 609 Retaining Compound is normally used with worn seal housings to prevent leakage or slippage.

RETAINING COMPOUNDS

LOCTITE® RETAINING COMPOUND QUICK SELECTOR

Application	Loctite® Product	Loctite® Primer (if required)
Shaft Mount – Press fit		
Medium Strength	Loctite 609 Retaining Compound	NONE
	Loctite 641 Retaining Compound	NONE
Shaft Mount – Shrink fit		
Medium Strength	Loctite 641 Retaining Compound	NONE
Shaft Mount – Slip Fit		
Small Gap (0.05mm radial max.)	Loctite 609 Retaining Compound	Loctite 7649/7471
Larger Gap (0.25mm radial max.)	Loctite 660 Quick Metal Retaining Compound	Loctite 7471
Maximum Strength (0.1mm radial max.)	Loctite 680 Retaining Compound	Loctite 7471
Maximum Temperature (204°C) (0.2mm radial max.)	Loctite 620 Retaining Compound	Loctite 7649/7471
Medium Strength	Loctite 641 Retaining Compound	Loctite 7649
Housing Mount – Press Fit		
Maximum Strength	Loctite 609 Retaining Compound	NONE
Medium Strength	Loctite 641 Retaining Compound	NONE
Low Strength	Loctite 243 Threadlocker	NONE
Housing Mount – Slip Fit		
Maximum Strength	Loctite 680 Retaining Compound	NONE
High Strength	Loctite 660 Quick Metal® Retaining Compound	NONE
Medium Strength	Loctite 641 Retaining Compound	Loctite 7649
Low Strength	Loctite 243 Threadlocker	Loctite 7649

- Note:**
- Softer metals (aluminum, bronze, etc.) provide lower shear strengths than ferrous components.
 - Excessive gap reduces shear strengths.
 - Ideal surface finish — 50 to 80 rms.

Refer to Technical Data Sheets for more information.

DISASSEMBLY

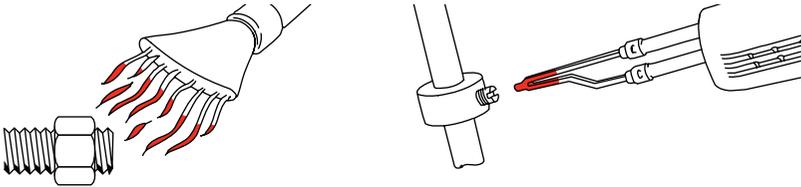
THREADLOCKING, THREAD SEALING & RETAINING

LOW AND MEDIUM STRENGTH PRODUCTS

Disassemble with hand tools.

HIGH STRENGTH PRODUCTS

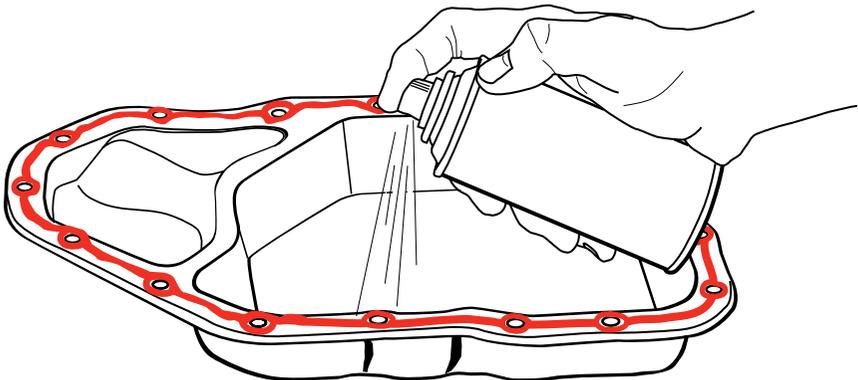
- Apply localized heat (260°C or higher) to assembly for 5 minutes.
- Disassemble with hand tools while hot.



GASKETING

- Disassemble flange using hand tools.

Note: For anaerobic gaskets, clean with Loctite® Chisel® Paint Stripper.



BONDING

INTRODUCTION TO BONDING ADHESIVES

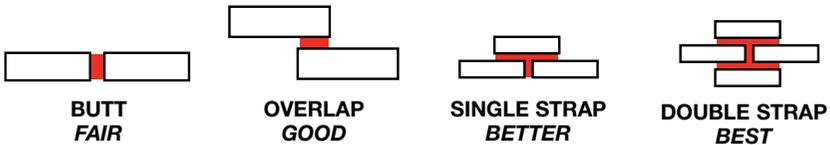
Within the broad range of Loctite adhesives you will always find the solution to your bonding challenge. It is, however, extremely important to have at least a basic knowledge of adhesive methodology in order to bond two substrates together successfully. The three major causes of bonding failures are attributed to:

- Poor evaluation of the bonding assembly
- Inadequate substrate preparation
- Improper adhesive selection
- Unsuitable joint design

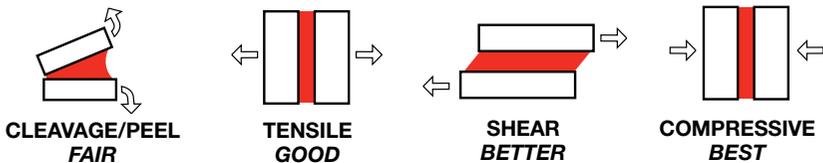
BONDING ASSEMBLY

Bonding assembly has a direct impact in the adhesive performance. Choose a combination of types of joints or joint stress distribution that maximizes bonding strength. Below are different types of joints and stress distribution:

TYPES OF JOINTS

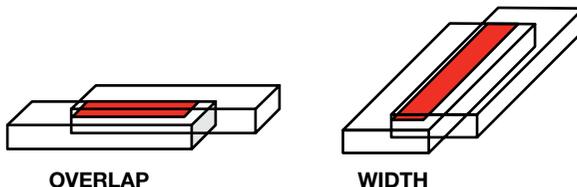


TYPES OF JOINT STRESS DISTRIBUTION



JOINT WIDTH VS. OVERLAP

A wider bond line (Width) will be stronger than a lengthier one (Overlap):



BONDING

SURFACE PREPARATION

Abrasive Methods

- Sanding: Rubbing with abrasive paper or cloth (for small area/superficial wear-down)
- Blasting: with abrasive material (for large areas/deep wear-down)

Chemical Methods

Cleaning process that uses solvents to dissolve contaminants.

Chemical examples

- Solvent Wipe: Rubbing with solvent-soaked wipe
- Vapour Degreasing: Solvent in vapour form
- Ultrasonic Cleaning: Solvent dip method with high frequency sound waves that vibrate the dirt away

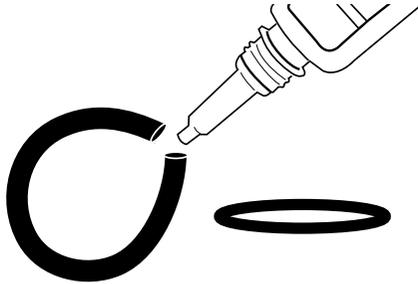
LOCTITE® ADHESIVE QUICK SELECTOR

PRODUCT	TYPICAL APPLICATIONS
Loctite 401 - A general purpose Instant Adhesive	Metal, plastic, rubber, cork, wood, paper, leather, etc
Loctite 406 – A low viscosity Instant Adhesive ideal for difficult to bond surfaces	Plastic, rubber, metal, etc
Loctite 454 – A no run, no drip Gel Instant Adhesive suitable for bonding porous materials	Metal, plastic, rubber, cork, wood, paper, leather, etc
Loctite 480 – A high impact, high shear strength, toughened Instant adhesive	Metal, most rubbers, plastics, etc
Loctite TAK PAK KIT – An Instant Adhesive used with spray mist Accelerator Loctite 7452	Components on PC boards, metal, plastic, rubber, etc
Loctite 324 – An Impact Resistant Structural Adhesive for gaps up to 0.5mm. Used with Loctite Activator 7075	Metal, timber, glass
Loctite 330 Multibond – A Structural Adhesive for gaps up to 0.5mm. Used with Loctite Activator 7387	Metal, plastic, timber, glass, etc
Loctite 3801 – A five minute, general purpose two part clear epoxy	Metal, timber, ceramic, concrete, fibreglass, etc
Loctite 3805 – A high strength two part Steel and Aluminium Epoxy Filler suitable for gap filling	Metal, timber, ceramic, concrete

Note: Polyeofin plastics require substrates to be primed with Loctite **770** Primer prior to bonding. Refer to TDS

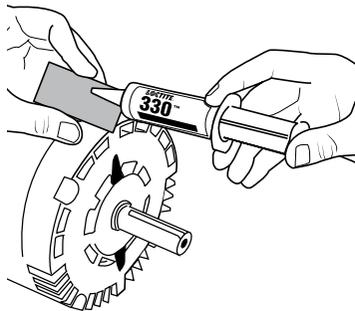
BONDING

O-RING MAKING



1. Cut the starting end of the cord stock with a clean razor blade. Ensure the cut is clean and square. Do not touch the clean cut end.
2. Measure cord stock to appropriate length. For precise measurement, use Loctite O-Ring Tool or the ruler provided in the Loctite O-Ring Making Kit.
3. Cut the measured end of the cord stock with a clean razor blade. Ensure the cut is clean and square to optimize bond area.
4. Apply one drop of Loctite 406 Instant Adhesive and mate the two ends of the cord stock.

BONDING METAL LABEL



1. Clean surface.
2. Spray Loctite 7387 Depend Activator onto main part. Let dry for two minutes.
3. Apply Loctite 330 Depend Adhesive onto back of label.
4. Press label onto activated surface and hold for a few seconds.
5. Handling strength reached in 5 minutes. Full cure in 24 hours.

RUSTPROOFING

OPTIMUM USE OF LOCTITE® EXTEND® RUST TREATMENT

SURFACE PREPARATION — OLD STEEL:

Loose or “flaky” rust must be removed. Only conversion of firmly bonded rust will result in durable protection. Oil, grease, old paint, mill scale, form oil, fingerprints, water soluble surfaces and chlorides must be removed to allow Loctite Extend 754 Rust Treatment to react with rust. Ideal surfaces will show light rust as well as bare metal surfaces.

RUST CONVERSION TIME AND APPEARANCE:

Two coats of Loctite 754 Extend Rust Treatment are recommended.

The first coat should develop a purple-black color within seconds. The second coat should dry to a black color. The second coat should be applied within 15-30 minutes of the first coat.

APPLICATION CONDITIONS:

Loctite 754 Extend Rust Treatment may be applied when surface and air are between 10°C and 32°C. Reaction is slower at lower temperatures. If temperature is too hot, film may surface dry and bubble. High humidity is beneficial; it slows drying but assists rust conversion. Loctite 754 Extend Rust Treatment should not be applied in conditions of condensing humidity (e.g., fog, dew), on ice, in rain or in heavy sea (salt spray atmospheres. Steel surface may be damp but not wet (i.e., continuous visible film of water). DO NOT APPLY LOCTITE 754 EXTEND RUST TREATMENT TO SURFACES IN DIRECT SUNLIGHT.

APPLICATION EQUIPMENT METHODS:

Loctite 754 Extend Rust Treatment may be applied by brush, roller, or spray. Brush or roller is suitable for small areas. Avoid sags and ridges and keep edges wet by coating about a square yard at a time. Roll away from previously coated area and then roll back. Do not pour unused material back into the original container. NEVER add solvents to Loctite 754 Extend Rust Treatment.

Spray application is recommended for larger areas. Airless spray equipment is faster, and provides more effective conversion due to improved surface penetration. Conventional air-spray equipment may be used, but Loctite 754 Extend Rust Treatment may require thinning up to 10% with water for proper spraying.



CLEANING

GENERAL PURPOSE PARTS CLEANING

Loctite ODC-Free Cleaner & Degreaser is a non-aqueous, hydrocarbon-based, non-CFC solvent designed for cleaning and degreasing of surfaces to be assembled with an aerobics or bonded with adhesives and sealants.

TYPICAL APPLICATIONS

Used as a final pre-assembly cleaning treatment to remove most greases, oils, lubrication fluids, metal cuttings and fines.



LOCTITE CHISEL PAINT STRIPPER

Loctite Chisel Paint Stripper removes gasket sealants in 10-15 minutes

Benefits

Removes cured gasket sealants and traditional gaskets in 10 to 15 minutes with minimal scraping. Usable on most types of surfaces is designed to aid removal of cured chemical gaskets by softening the gasket material on the flanges. Once applied, the product develops a foam-like layer on the gasket, preventing it from running off the desired location, thus allowing it to work for the required duration.

Typical applications

It is particularly suitable for removing gaskets from aluminum or other soft metal flanges where excessive scraping could easily lead to flange surface damage. It may also be used to aid removal of adhesives, baked-on grease or oil, built-up carbon deposits, dried oils, paint, varnish, etc. from metal flanges or surfaces.



CLEANING

HAND CLEANING

YUK OFF ORANGE

For fast, effective hand cleaning without skin-irritating petroleum solvents.

YUK OFF Orange hand Cleaner removes grease, grime, oil and ink, and contains aloe as well as lanolin to keep hands from cracking and drying out. It's even biodegradable.



LOCTITE® INDUSTRIAL HAND WIPES

Premoistened with a powerful cleaning formula, Loctite Industrial Hand Wipes are used for removing tar, grease, wax, ink, lubricants and adhesives. While effective on tough grime the fresh citrus scented cleaning formula is enhanced with natural oils and emollients.

The abrasive, yet non-scratching, fabric aids in cleaning and replaces the need for messy and ineffective rags and soap.

Typical applications for this product include maintenance, industrial, plumbing, manufacturing, transportation, painting, marine, agriculture and recreation.



FLUID COMPATIBILITY CHART

for metal threaded fittings sealed with Loctite® Sealants

LIQUIDS, SOLUTIONS & SUSPENSIONS

LEGEND:
 ● Use Loctite 567, 565, 569, 545, 577, 542, 565, 243, 263
 † Use Loctite #277, 271, 554, 270, 277, 554
 ■ Not Recommended
 □ <10% (same as ●)
 * >10% (same as †)
 + <5% (same as ●)
 <5% (same as †)

Abrasive Coolant	● Aromatic Gasoline	● Carbonylmethyl Cellulose	● Dimethyl Sulfoxide	● Gold Cyanide	● Lye
Acetaldehyde	● Aromatic Solvents	● Carnauba Wax	● Dioxane Dry	● Grandine	● Machine Coating Color
Acetate Solvents	● Arsenic Acid	● Cassin	● Dioxidene	● Grape Pomace Graphite	● Magnesium Carbonate
Acetamide	● Asbestos Slurry	● Cassin Water Paint	● Dipentene - Pinene	● Grease Lubricating	● Magnesium Slurry
Acetic Acid	● Ash Slurry	● Cellite	● Diphenyl	● Green Soap	● Magnesite
Acetic Acid - glacial	□ Asphalt Emulsions	● Cellulose \$	● Distilled Water (Industrial)	● Grinding Lubricant	● Magnesium Bisulfite
Acetic Anhydride	● Asphalt Molten	● Cellulose Pulp	● Dowtherm \$	● Gritty Water	● Magnesium Carbonate
Acetone	● Bagasse Fibers	● Cellulose Xanthate	● Drying Oil	● Groundwood Stock	● Magnesium Chloride
Acetyl Chloride	● Barium Acetate	● Cement Dry/Air Blown	● Dust-Flue (Dry)	● GRS Latex	● Magnesium Hydroxide
Acetylene (Liquid Phase)	● Barium Carbonate	● Cement Grout	● Dye Liquors	● Gum Turpentine	● Magnesium Sulfate
Acid Clay	● Barium Chloride	● Ceramic Slurry	● Emery - Slurry	● Gum Paste	● Maleic Anhydride
Acrylic Acid	● Barium Hydroxide	● Ceramic Enamel	● Emulsified Oils	● Gypsum	● Manganese Chloride
Acrylonitrile	● Barium Sulfate	● Chalk	● Enamel Frt Slip	● Halane Sol	● Manganese Sulfate
Activated Alumina	● Battery Acid	● Chemical Pulp	● Esters General	● Halogen Tin Plating	● Mesamine Resin
Activated Carbon	● Battery Diffuser Juice	● Chestnut Tanning	● Ethyl Acetate	● Halowax \$	● Mercaptans
Activated Silica	● Bauxite (See Alumina)	● China Clay	● Ethyl Alcohol	● Harvel-Trans Oil	● Mercuric Chloride
Alcohol-Allyl	● Benzaldehyde	● Chloral Alcoholate	● Ethyl Amine	● Heptane	● Mercuric Nitrate
Alcohol-Amyl	● Benzene	● Chloramine	● Ethyl Bromide	● Hexachlorobenzene	● Mercury
Alcohol-Benzyl	● Benzene Hexachloride	● Chlorinated Hydrocarbons	● Ethyl Cellosolve \$	● Hexadiene	● Mercury Dry
Alcohol-Butyl	● Benzene in Hydrochloric Acid	● Chlorinated Paperstock	● Ethyl Cellosolve Slurry \$	● Hexamethylene Tetramine	● Methane
Alcohol-Furfuryl	● Benzoic Acid	● Chlorinated Solvents	● Ethyl Formate	● Hexane	● Methyl Alcohol
Alcohol-Hexyl	● Benzotriazole	● Chlorinated Sulphuric Acids	● Ethyl Silicate	● Hydrazine	● Methyl Acetate
Alcohol-Isopropyl	● Beryllium Sulfate	● Chlorinated Wax	● Ethylene Diamine	● Hydrazine Hydrate	● Methyl Bromide
Alcohol-Methyl	● Bicarbonate Liqueur	● Chlorine Dioxide	● Ethylene Dibromide	● Hydrobromic Acid	● Methyl Cellulose \$
Alcohol-Propyl	● Bilge Lines	● Chlorine Liquid	● Ethylene Glycol	● Hydrochloric Acid	● Methyl Chloride
Alum-Ammonium	● Bleach Liquor	● Chlorine Dry	● Ethylenediamine Tetramine	● Hydrocyanic Acid	● Methyl Ethyl Ketone
Alum-Chrome	● Bleached Pulps	● Chromic Acid	● Fatty Acids	● Hydrofluoric Acid	● Methyl Isobutyl Ketone
Alum-Potassium	● Borax \$ Liquors	● Chromic Acid 50% (cold)	● Fatty Acids Amine	● Hydrogen Peroxide (dil)	● Methyl Lactate
Alum-Sodium	● Boric Acid	● Chromic Acid 50% (hot)	● Fatty Alcohol	● Hydrogen Peroxide (con)	● Methyl Orange
Alumina	● Brake Fluids	● Chromium Acetate	● Ferric Chloride	● Hydroponic Sol	● Methylene Chloride
Aluminum Acetate	● Brine Chlorinated	● Chromium Chloride	● Ferric Nitrate	● Hydroquinone	● Mineral Spirits
Aluminum Bicarbonate	● Brine Cold	● Chromium Sulfate	● Ferric Sulfate	● Hydroxyacetic Acid	● Mixed Acid, Nitric/Sulfuric
Aluminum Bisulfate	● Bromine Solution	● Chromic Acid 10%	● Ferrocerane-Oil Sol	● Hypo	● Monochloroacetic Acid
Aluminum Chloride	● Butadiene	● Chromic Acid 50% (cold)	● Ferrous Chloride	● Hypochlorous Acid	● Morpholine
Aluminum Sulfate	● Butyl Acetate	● Chromic Acid 50% (hot)	● Ferrous Oxalate	● Ink	● Mud
Ammonia Anhydrous	● Butyl Alcohol	● Chromium Chloride	● Ferrous Sulfate 10%	● Ink in Solvent-Printing	
Ammonia Solutions	● Butyl Amine	● Chromium Sulfate	● Ferrous Sulfate (Sat)	● Iodine in Alcohol	● Nalco Sol.
Ammonium Bisulfite	● Butyl Cellosolve \$	● Classifier	● Fertilizer Sol	● Iodine-Potassium Iodide	● Naphtha
Ammonium Borate	● Butyl Chloride	● Clay	● Flotation Concentrates	● Iodine Solutions	● Naphthalene
Ammonium Bromide	● Butyl Ether - Dry	● Coal Slurry	● Fluoride Salts	● Ion Exchange Service	● Naval Stores Solvent
Ammonium Carbonate	● Butyl Lactate	● Coal Tar	● Fluorine, Gaseous or Liquid	● Ion Exclusion Glycol	● Neomate
Ammonium Chloride	● Butyl Resin	● Cobalt Chloride	● Fluorolube	● Iron Exclusion Glycol	● Neoprene Emulsion
Ammonium Chromate	● Butyraldehyde	● Copper Ammonium Formate	● Fluosic Acid	● Irish Moss Slurry	● Neoprene Latex
Ammonium Fluoride	● Butyric Acid	● Copper Chloride	● Flux Soldering	● Iron Ore Taconite	● Nickel Acetate
Ammonium Formate	● Cadmium Chloride	● Copper Cyanide	● Fly Ash Dry	● Iron Oxide	● Nickel Ammonium Sulfate
Ammonium Hydroxide	● Cadmium Plating Bath	● Copper Liqueur	● Foam Latex Mix	● Isobutyl Alcohol	● Nickel Chloride
Ammonium Hypsulfite	● Calcium Sulfate	● Copper Naphthenate	● Formaldehyde (cold)	● Isobutyraldehyde	● Nickel Chlorate
Ammonium Iodide	● Calcium Acetate	● Copper Plating, Alk. Process	● Formaldehyde (hot)	● Isooctane	● Nickel Fluoroborate
Ammonium Molybdate	● Calcium Bisulfate	● Copper Plating, Alk. Process	● Formic Acid (dil cold)	● Isopropyl Acetate	● Nickel Ore Fines
Ammonium Nitrate	● Calcium Chloride	● Core Oil	● Formic Acid (dil hot)	● Isopropyl Ether	● Nickel Plating Bright
Ammonium Oxalate	● Calcium Chloride Brite	● Corundum	● Formic Acid (cold)	● Itaconic Acid	● Nickel Sulfate
Ammonium Persulfate	● Calcium Citrate	● Creosote	● Formic Acid (hot)	● Jet Fuels	● Nicotinic Acid
Ammonium Picrate	● Calcium Ferrocyanide	● Creosote-Cresylic Acid	● Freon \$	● Jeweler's Rouge	● Nitrate Sol.
Ammonium Sulfate	● Calcium Formate	● Cyanide Solution	● Fuel Oil	● Jig Table Slurry	● Nitrate Acid(s)
Ammonium Sulfate Scrubber	● Calcium Hydroxide	● Cyanuric Chloride	● Fuming Nitric Red	● Kaolin-China Clay \$	● Nitric Acid
Ammonium Thiocyanate	● Calcium Lactate	● Cyclohexane	● Fuming Sulfuric	● Kelp Slurry	● Nitric Acid 10%
Amyl Acetate	● Calcium Nitrate	● Cylinder Oils	● Fuming Oleum	● Furfural	● Nitric Acid 20%
Amyl Amine	● Calcium Phosphate	● De-ionized Water	● Furfural	● Gallic Acid	● Nitric Acid Anhydrous
Amyl Chloride	● Calcium Silicate	● De-ionized Water Low Conductivity	● Gallium Sulfate	● Gasoline-Acid Wash	● Nitric Acid Fuming
Aniline	● Calcium Sulfamate	● Developer, photographic	● Gasoline-Aik Wash	● Lactic Acid	● Nitro Aryl Sulfonic Acid
Aniline Dyes	● Calcium Sulfate	● Dextrin	● Gasoline-Aviation	● Lacquer Thinner	● Nitrobenzene-Dry
Anodizing Bath	● Calcium Sulfite	● Diacetone Alcohol	● Gasoline Copper Chloride	● Lignin Extract	● Nitrocellulose
Antichlor Solution	● Camphor	● Diammonium Phosphate	● Gasoline Ethyl	● Lapping Compound	● Nitrofurane
Antimony Acid Salts	● Carbitol	● Diamylamine	● Gasoline Methyl	● Latex-Natural	● Nitrogenamine
Antimony Oxide	● Carbolic Acid (phenol)	● Diazotaceous Earth Slurry	● Gasoline Motor	● Latex-Synthetic	● Nitroparaffins-Dry
Antioxidant Gasoline	● Carbon Bisulfide	● Diacetone Acetate	● Gasoline Sulfate	● Latex-Synthetic Raw	● Nitrosyl Chloride
Aqua Regia	● Carbon Black	● Dibutyl Phthalate	● Gluconic Acid	● Laundry Wash Water	● Norite Carbon
Argon	● Carbon Tetrachloride	● Dichlorophenol	● Glue-Animal Gelatin	● Laundry Bleach	● Nuchar
Armeen \$	● Carbonic Acid	● Dichloroethyl Ether	● Glue-Plywood	● Laundry Blue	
Archlor \$	● Carbowax \$	● Dicyandamide	● Glutaric Acid	● Laundry Soda	● Oakite \$ Compound
		● Diethyl Ether	● Glycerine Lye-Brine	● Lead Arsenate	● Oil, Creosote
		● Diethyl Ether Dry	● Glycerine Lye-Brine	● Lead Oxide	● Oil, Emulsified
		● Diethylene Glycol	● Glycol	● Lead Sulfate	● Oil, Fuel
		● Diethylamine	● Glycol	● Lime Sulfur Mix	● Oil, Lubricating
		● Diethylene Glycol	● Glycolic Acid	● Lime Sulfur Mix	● Oil, Sulfide
		● Diethylamine	● Glycolic Acid	● Lime Sulfur Mix	● Oleic Acid, hot
		● Diethylamine	● Glyoxal	● Lime Sulfur Mix	● Oleic Acid, cold
		● Diethylamine	● Gold Chloride	● Lime Sulfur Mix	● Ore Fines-Flotation
		● Diethylamine		● Lithium Chloride	● Ore Pulp
		● Diethylamine		● Lithium Chloride	● Organic Dyes
		● Diethylamine		● LOX (Liquid O2)	● Oxalic Acid Cold
		● Diethylamine		● Ludox	● Oxone, wet

FLUID COMPATIBILITY CHART

for metal threaded fittings sealed with Loctite® Sealants

Paint-Insseed Base	● Polypentek	● Silver Cyanide	● Steam Low Pressure	● Tungstic Acid	● GASES
Paint-Water Base	● Polyisulfolide Liquor	● Silver Iodide-Aqu.	● Stearic Acid	● Turpentine	● Acetylene
Paint-Remover-Sol. Type	● Polyvinyl Acetate Slurry	● Silver Nitrate	● Steep Water	● UCON § Lube	● Acid & Alkali Vapours
Paint-Vehicles	● Polyvinyl Chloride	● Size Emulsion	● Sterilization Steam	● Udylite Bath-Nickel	● Air
Palmitic Acid	● Porcelain Fit	● Skelly Solve E, L	● Stillage Distillers	● Undercyclic Acid	● Amine
Paper Board Mill Waste	● Potash	☐ Slate to 400 Mesh	● Stoddard Solvent	● Unicrome Sol. Alk.	● Ammonia
Paper Coating Slurry	● Potassium Acetate	● Soap Lvs	● Styrene	● Uranium Salts	● Butane
Paper Pulp	● Potassium Alum. Sulfate	● Soap Solutions (Spearates)	● Styrene Butadiene Latex	● Uramyl Nitrate	● Butadiene Gas/Liquid
Paper Pulp with Amun.	● Potassium Bromide	● Soap Stone Air Blown	● Sulfamic Acid	● Uramyl Sulfate	● Butylene Gas/Liquid
Paper Pulp with Dye	● Potassium Carbonate	● Soda Pulp	● Sulfan-Sulfuric Anhydride	● Urea Ammonia Liquor	● By-Product Gas (Dry)
Paper Pulp, bleached	● Potassium Chlorate	● Sodium Acetate	● Sulfathiazole	● Vacuum to 100 Micron	● Carbon Dioxide
Paper Pulp, bleached-washed	● Potassium Chloride Sol	● Sodium Acid Fluoride	● Sulfite Liquor	● Vacuum below 100 Micr.	● Carbon Disulfide
	● Potassium Chromate	● Sodium Aluminate	● Sulfite Stock	● Vacuum Oil	● Carbon Monoxide
Paper Pulp Chlorinated	● Potassium Cyanide Sol.	● Sodium Arsenate	● Sulfonated Oils	● Vanadium Pentoxide	● Chlorine Dry
Paper Groundwood	● Potassium Dichromate	● Sodium Benzene Sulfonate	● Sulfones	● Slurry	● Chlorine Wet
Paper Rag	● Potassium Ferricyanide	● Sodium Bichromate	● Sulfonic Acids	● Varnish	● Coke-oven Gas-cold
Paper Stocks, fine	● Potassium Hydroxide	● Sodium Bisulfite	● Sulfonyl Chloride	● Varsol-Naphtha Solv.	● Coke-oven Gas-hot
Paradichlorobenzene	● Potassium Iodide	● Sodium Bromide	● Sulfur Slurry	● Versene §	†
Paraffin Molten	● Potassium Nitrate	● Sodium Carbonate	● Sulfur Solution	● Vinyl Acetate Dry or Chloride	● Cyanogen Chloride
Paraffin Oil	● Potassium Perchlorate	● Sodium Chlorate	● In Carbon Disulfide	● Monomer	● Cyanogen Gas
Parafomaldehyde	● Potassium Permanganate	● Sodium Chlorite	● Sulphuric Acid 0-7%	● Vinyl Chloride Latex Emul.	● Ethane
Pectin Solution Acid	● Potassium Persulfate	● Sodium Cyanide	● Sulphuric Acid 7-40%	● Vinyl Resin Slurry	● Ether-see Diethyl Ether
Pentachlorothane	● Potassium Phosphate	● Sodium Ferricyanide	● Sulphuric Acid 40-75%	● Viscose	● Ethylene
Pentaerythritol Sol.	● Potassium Silicate	● Sodium Formate	● Sulphuric Acid 75-95%	● Vortex-Hydroclone	● Ethylene Oxide
Perchlorethylene (Dry)	● Potassium Sulfate	● Sodium Glutamate	● Sulphuric Acid 95-100%	● Water-Acid - Below pH7	● Freon § (11-12-21-22)
Perchloric Acid Perchloromethyl	● Potassium Xanthate	● Sodium Hydrogen Sulfate	● Sulphurous Acid	● Water pH7 to 8	†
Mercaptan	● Press Board Waste	● Sodium Hydroxide	● Sulfuryl Chloride	● Water Alkaline - Over pH8	†
Pernmanganic Acid	● Propionic Acid	● Sodium Hydroxide	● Surfactants	● Water Mine Water	● Furnace Gas cold
Persulfuric Acid	● Propyl Alcohol	● Sodium Hydrochloride	● Synthetic Latex	● Water River	● Gas drip oil
Petroleum Ether	● Propyl Bromide	● Sodium Hydroxide	● Taconite - Fines	● Wax	● Gas flue
Petroleum Jelly	● Propylene Glycol	● Sodium Hydro. 20% cold	● Talc - Slurry	● Wax Chlorinated	● Gas manufacturing
Phenol Formaldehyde Resins	● Pumice	● Sodium Hydro. 20% hot	● Tankage - Slurry	● Wax Emulsions	● Gas natural
Phenol Sulfonic Acid	● Pyranol	● Sodium Hydro. 50% cold	● Tannic Acid (cold)	● Weed Killer Dibromide	● Helium
Phenolic Glue	● Pyridine	● Sodium Hydro. 50% hot	● Tamin	● Weisberg Sulfate Plating	● Hydrogen Gas-cold
Phenogluconol	● Pyrogallol Acid	● Sodium Hydro. 70% cold	● Tar & Tar Oil	● Wood ground pulp	● Hydrogen Chloride
Phosphoric Ester	● Pyrogen Free Water	● Sodium Hydro. 70% hot	● Tartaric Acid	● Wort Lines	● Hydrogen Cyanide
Phosphoric Sand	● Pyrole	● Sodium Hypochlorite	● Television Chemicals	● X-Ray Developing Bath	● Hydrogen Sulfide wet & dry
Phosphoric Acid 85% hot	● Pyromellitic Acid	● Sodium Lignosulfonate	● Tergitol §	● Xylene	● Isobutane
Phosphoric Acid 85% cold	† Quebracho Tannin	● Sodium Metasilicate	● Terpineol	● Zealan	● Methane
Phosphoric Acid 50% hot	†	● Sodium Molten	● Tetraethyl Lead	● Zeolite Water	● Methyl Chloride
Phosphoric Acid 50% cold	† Rag Stock Bleached	● Sodium Nitrate	● Tetrahydrofuran	● Zinc Acetate	● Natural gas dry
Phosphoric Acid 10% cold	† Rare Earth Salts	● Sodium Nitrite-Nitrate	● Tetratromethane	● Zinc Bromide	● Nitrogen gas
Phosphoric Acid 10% hot	† Rayon Acid Bath	● Sodium Perborate	● Textile Dyeing	● Zinc Chloride	● Nitrous Oxide
Phosphorous Molten	● Rayon Spin Bath	● Sodium Peroxide	● Textile Finishing Oil	● Zinc Cyanide-Alk.	● Oil-Solvent Vapor
Phosphotungstic Acid	● Rayon Spin Bath spnt	● Sodium Persulfate	● Textile Printing Oil	● Zinc Fines Slurry	● Oxygen
Photographic Sol.	● Resorcinol	● Sodium Phosphate-Mono	● Thiocyanic Acid	● Zinc Flux Paste	● Ozone
Phthalic Acid	● River Water	● Sodium Phosphate-Tri	● Thioglycolic Acid	● Zinc Galvanizing	● Producer Gas 50 PSI
Phytate	● Road Oil	● Sodium Potassium Chloride	● Thionyl Chloride	● Zinc Hydroxylite	● Propane
Phytate Salts	● Rosal	● Sodium Salicylate	● Thiophosphoryl Chloride	● Zinc Oxide in Water	● Propylene
Pickling Acid, Sulfuric	● Rosin-Wood	● Sodium Sesquicarbonate	● Thioures	● Zinc Oxide in Oil	● Steam
Picric Acid Solutions	● Resin in Alcohol	● Sodium Silicate	● Thorium Nitrate	● Zinc Sulfate	● Sulfur Dioxide
Pine Oil Finish	● Resin Size	● Sodium Silicofluoride	● Thymol	● Zinc Sulfate	● Sulfur Dioxide dry
Plating Sol. as follows:	● Rubber Latex	● Sodium Stannate	● Tin Tetrachlorida	● Zinc Sulfate	● Sulfur Trioxide Gas
Brass Cyanide		● Sodium Sulfate	● Tinning Sol. DuPont	● Zinc Sulfate	● Sulfuric Acid Vapor
Bronze Cyanide		● Sodium Sulfide	● Titania Paper Coating	● Zincolate	
Chromium & Cadmium		● Sodium Sulfite	● Titanium Oxide Slurry	● Zirconolite	
Cyanide		● Sodium Sulfite	● Titanium Oxy Sulfate	● Zirconyl Nitrate	
Cobalt Alk.		● Sodium Sulfolite	● Titanium Sulfate	● Zirconyl Sulfate	
Copper Acid		● Sand-Air Blown Slurry	● Titanium Tetrachloride		
Copper Alk.		● Sand-Air Phosphatic	● Toluol		
Gold Cyanide		● Sea Coal	● Toluene		
Iron-Acid		● Sea Water	● o-Toluene Sulfonic Acid		
Lead-Fluoro		● Selenium Chloride	● Transil Oil		
Nickel Bright		● Sequestrene	● Trichloroacetic Acid		
Nickel Bright		● Sewage	● Trichloroethane 1, 1, 1		
Platinum		● Shellac	● Trichlorethylene		
Silver-Cyanide		● Shower Water	● Trichlorethylene-Dry		
Tin-Alk. Barrel		● Silica Gel	● Trioresyl Phosphate		
Zinc Acid		● Silica Ground	● Triethanolamine		
Zinc Alk. Cyanide		● Silicone Tetrachloride	● Triethylene Glycol		
Polyacrylonitrile Slurry		● Silicone Fluids	● Trioxane		

NOTE: 1. The above information does not constitute a recommendation of sealant use. It is intended only as a guide for consideration by the purchaser with the expectation of favorable confirming test results. It is impossible to test sealant reaction with the multitude of chemicals in existence, therefore, compatibility has been estimated based on a wide variety of customer experience.
2. With the stringent action of such chemicals as Freon, strong cold acids and caustics, thorough evaluation is suggested. Sealing of hot corrosive chemicals is not recommended.
3. Contact Loctite Corporation for use with chemicals not covered by this information.

§(Listing) (s) may be Brand Name(s) or Trademarks for chemicals of Corporations other than Loctite.

Loctite product numbers in red are worldwide or application-specific products.

ORDERING

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
THREADLOCKERS		
LOCTITE 222 LOW STRENGTH SUPER SCREW LOCK	10 ml bottle	22220
	50 ml bottle	22250
	250 ml bottle	45083
LOCTITE 243 MEDIUM STRENGTH SUPER NUT LOCK	10 ml bottle	44089
	50 ml bottle	44092
	250 ml bottle	44094
LOCTITE 263 HIGH STRENGTH SUPER STUD LOCK	10 ml bottle	44279
	50 ml bottle	44130
	250 ml bottle	44131
LOCTITE 290 MEDIUM STRENGTH SUPER WICK-IN	10 ml bottle	29020A
	50 ml bottle	45076
	250 ml bottle	30937
THREAD SEALANTS		
LOCTITE 569 HYDRAULIC/PNEUMATIC SEALANT	50 ml bottle	56950
	250 ml tube	56970
LOCTITE 542 HYDRAULIC/PNEUMATIC SEALANT	10 ml tube	25344
	50 ml tube	54294
LOCTITE 567 MASTER PIPE SEALANT	50 ml tube	56747A
	250 ml tube	56741
LOCTITE 577 UNIVERSAL PIPE SEALANT	50 ml tube	19259
	250 ml tube	34112
LOCTITE 55 PIPE SEALANT CORD	150m	31899
RETAINING COMPOUNDS		
LOCTITE 609 MEDIUM/HIGH STRENGTH GENERAL PURPOSE	10 ml bottle	30013
	50 ml bottle	30015
	250 ml bottle	30014
LOCTITE 620 HIGH STRENGTH HIGH TEMPERATURE	50 ml bottle	62050
	250 ml bottle	62070
LOCTITE 660 QUICK METAL HIGH STRENGTH PRESS FIT REPAIR	6 ml tube	66010
	50 ml tube	66040
LOCTITE 680 HIGH STRENGTH/HIGH VISCOSITY	50 ml bottle	68050
	250 ml bottle	68070
LOCTITE 641 MEDIUM STRENGTH BEARING MOUNT	10ml bottle	21314
	50ml bottle	45079
	250ml bottle	45081

ORDERING

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
GASKETING		
LOCTITE 510 GASKET ELIMINATOR HIGH TEMPERATURE	50 ml tube	45077
	250 ml tube	45082
LOCTITE 515 MASTER ELIMINATOR	6 ml tube	51517
	50 ml tube	51531A
	300 ml cartridge	33530
LOCTITE 518 FLANGE SEALANT	6 ml tube	51817
	25 ml syringe	51827
	50 ml tube	25583A
	300 ml cartridge	51845
LOCTITE 5900 INSTANT GASKET (aerosol)	190ml	40479
LOCTITE 5900 HEAVY BODIED BLACK SILICONE	390g cartridge	20166
LOCTITE 5910 BLACK MAXX RTV SILICONE GASKET MAKER	50g tube	39306
LOCTITE 587 BLUE MAXX RTV SILICONE GASKET MAKER	95g tube	34848
	300ml cartridge	34888
LOCTITE 5920 COPPER MAXX RTV SILICONE GASKET MAKER	85g tube	34249
LOCTITE 5699 GREY MAXX RTV SILICONE GASKET MAKER	95g tube	34238
	300ml cartridge	18581A
ADHESIVES		
LOCTITE 330 MULTIBOND NO-MIX Also (see LOCTITE Activator 7387)	300 ml cartridge	33064
LOCTITE 401 PRISM ULTRA FAST INSTANT ADHESIVE	25ml bottle	40124-25
	100ml bottle	33531
	500ml bottle	33532
LOCTITE 406 PRISM HIGH PERFORMANCE INSTANT ADHESIVE	25ml bottle	40633-25
	100ml bottle	33533
	500ml bottle	33534
LOCTITE 454 PRISM SURFACE INSENSITIVE INSTANT ADHESIVE GEL	3 gm tube	45404
	20 gm tube	A045416
	200g tube	45474
LOCTITE 480 PRISM TOUGHENED INSTANT ADHESIVE	25ml bottle	16819-25
	500g bottle	16887
LOCTITE 3805 STEEL & ALUMINIUM FILLER EPOXY	56g tube	24180

ORDERING

CATEGORY	SIZE	ITEM NO.
PRIMERS		
LOCTITE 7471 PRIMER T (Acetone)	133g	22477
	3.78L Can	24062A
LOCTITE 7649 PRIMER N (Acetone)	100ml	22410A
	133ml Aerosol	21348
	3.78L Can	24063A
LOCTITE 770 PRISM PRIMER (Heptane)	100ml bottle	29520A
	946ml	24377A
LOCTITE 7387 330 ACTIVATOR	100ml	24058A
	946ml	24059A
LOCTITE 7452 TAK PAK ACCELERATOR	20g aerosol	21520
	946ml	24064A
LUBRICANTS		
LOCTITE C5-A COPPER ANTI-SEIZE	453g brush top	51007
	aerosol 4oz	51144
LOCTITE 771 NICKEL ANTI-SEIZE	500g	39163
LOCTITE SILVER GRADE ANTI-SEIZE	200g aerosol	76756
	250g tube	76741
	500g brush top	76769
	236ml brush top	76732
	5kg pail	76731
CLEANERS		
LOCTITE YUK OFF ORANGE pumice formula (lotion)	400ml bottle	31908
	4L pump bottle	31909
	15L pump	31910
LOCTITE ODC-FREE CLEANER & DEGREASER	473ml pump spray	20162
LOCTITE INDUSTRIAL HANDWIPES	75 pack	34943
	130 pack	34944
GENERAL MAINTENANCE		
LOCTITE 754 EXTEND RUST TREATMENT	946ml bottle	75430
	3.78L bottle	75448
LOCTITE O-RING SPLICING KIT "Inch"	Kit	10361
LOCTITE O-RING SPLICING KIT "Metric"	Kit	16224
LOCTITE FIXMASTER METAL MAGIC STEEL STICK	113g	98853

TROUBLESHOOTING

CHECKLIST

1. What type of failure is occurring? Has the application worked before?
2. Was proper and adequate adhesive/sealant used?
3. Was proper and adequate primer/activator used?
4. Do service conditions exceed the capability of the adhesive sealant?
 - (a) operating temperature
 - (b) excessive pressure too soon
 - (c) fluid compatibility
 - (d) impact on environment
5. Were parts adequately cleaned prior to applying adhesive?

Note: If adhesive failure, is cured residue on one or both parts?
If one part is bare, check that part for contamination.
6. Were proper assembly techniques utilized?
7. Was adhesive/sealant allowed adequate cure time prior to service?
8. Do assembly/part conditions exceed capability of the adhesive/sealant?
 - (a) excessive gaps
 - (b) component materials
 - (c) improper joint design
 - (d) inadequate clamping/fixturing
9. If additional assistance is required, please call our HENKEL TECHNICAL INFORMATION LINE 1300 88 555 6.

Note: Reference Materials

- Product selection, cure times, gap fill, etc.; use Product Selector Guide
 - Fluid Compatibility Chart
- Always refer to the latest MSDS and TDS available for each product

LIMITATION OF WARRANTY

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof.

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