



“Do It Right” User’s Guide

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



Excellence is our Passion

TABLE OF CONTENTS

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.

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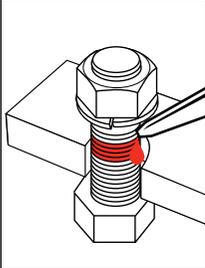
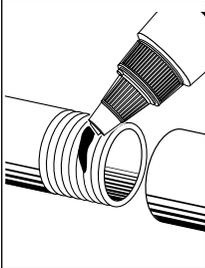
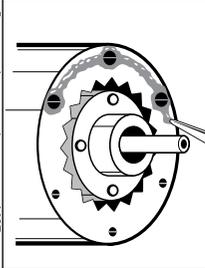
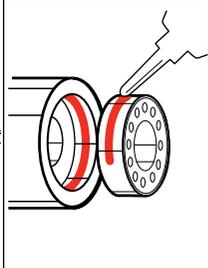
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INTRODUCTION

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 cure times for faster return to service.
3. Primers speed curing through larger gaps and deep threads.
4. Primers substantially speed cure times on cold parts.
5. Primers act as cleaning agents.

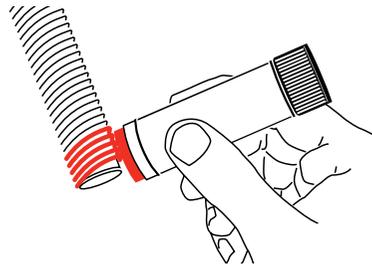
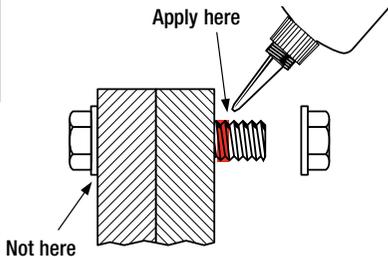
Active surfaces (primer optional): brass, copper, bronze, iron, soft steel, nickel.

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

THREADLOCKING

THROUGH HOLES (BOLTS AND NUTS)

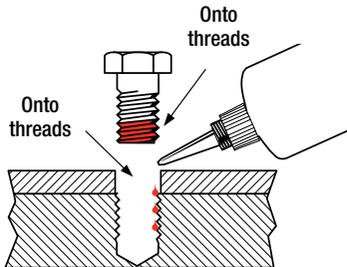
LIQUID AND SEMISOLIDS



1. Clean all threads (bolt and nut) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, apply on all threads with Loctite® 7649 Primer or Loctite® 7471 Primer. Allow to dry.
3. Select the proper strength Loctite® threadlocker.
4. Insert bolt into through hole assembly.
5. Apply several drops of liquid threadlocker onto bolt at targeted 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 as usual.

BLIND HOLES (CAP SCREWS, ETC.)

LIQUID ONLY



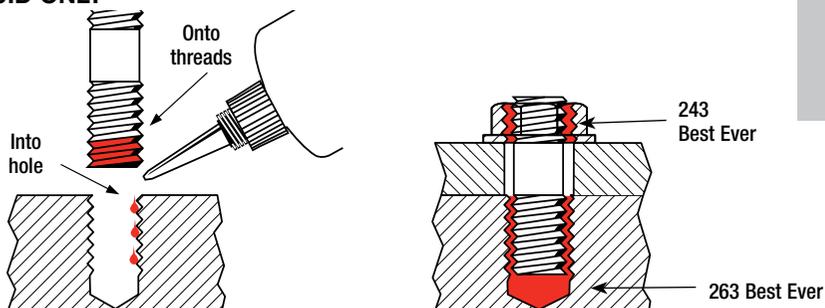
1. Clean all threads (bolt and hole) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray (bolt and hole) with Loctite® 7649 Primer or Loctite® 7471 Primer. Allow 30 seconds to dry.
3. Select the proper strength Loctite® threadlocker.
4. Squirt several drops down the sides of the female threads.
5. Apply several drops to bolt.
6. Tighten as usual.

Note: Using Loctite® threadlockers will virtually eliminate stripped threads in aluminum or magnesium housings caused by galvanic corrosion.

THREADLOCKING

BLIND HOLES (STUDS, ETC.)

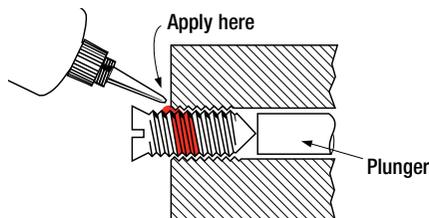
LIQUID ONLY



1. Clean all threads (bolt and hole) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray all threads with Loctite® 7649 Primer or Loctite® 7471 Primer. Allow to dry.
3. Squirt several drops of Loctite® 263 Best Ever 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 Best Ever Threadlocker onto stud threads.
5. Install studs.
6. Position cover, head, etc.
7. Apply drops of Loctite® 243 Best Ever Threadlocker onto exposed threads.
8. Tighten nuts as required.



1. Adjust screw to proper setting.
2. Apply several drops of Loctite® 222 or 290 Threadlocker at screw and body juncture.
3. Avoid touching bottle tip to metal.

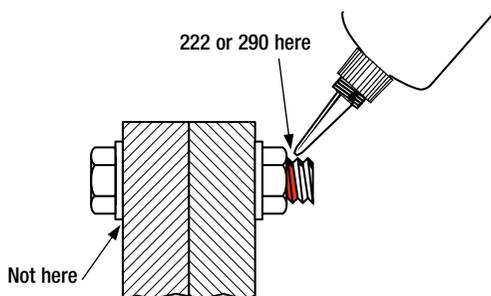
Note:

- If readjustment is difficult, apply heat to screw with soldering gun (230°C).
- Loctite® 222 Threadlocker is a weaker version of Loctite® 290 Threadlocker.

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® 222 or 290 Threadlocker at the nut and bolt juncture.
5. Avoid touching bottle tip to metal.

Note: For preventive maintenance on existing equipment, RETIGHTEN nuts and apply Loctite® 222 or 290 Threadlocker at the nut and bolt juncture.

LOCTITE® BRAND THREADLOCKER QUICK SELECTOR

Use	Strength	Product	Colour
Small Screws	Low	222	Purple
Nuts & Bolts	Medium	243 Best Ever / QuickStix 248	Blue
Pre-assembled	Medium	290	Green
Pre-assembled	Low	220	Blue
Nuts & Bolts	High	263 Best Ever / QuickStix 268	Red
Studs (up to 25mm)	High	263 Best Ever	Red
Studs (over 25mm)	High	277	Red

THREADLOCKING

TECHNICAL DATA

PRODUCT	222	243 BEST EVER	263 BEST EVER	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 MIO	6/4	26/5	33/33	10/29
Temperature Range (°C)	-55 to 150	-55 to 200	-55 to 150	-55 to 150
Cure Speed	Slow/Med	Medium	Medium	Medium
Primer	7471	7471	7649	7649
Colour	Purple	Blue	Red	Green
Viscosity (c.P)	1,200 Thixotropic Liquid	2,250 Thixotropic Liquid	500 Thixotropic Liquid	20

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

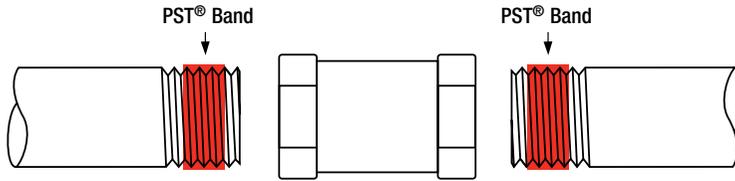
CHARACTERISTICS/ADVANTAGES OF ANAEROBIC THREADLOCKERS

- 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 (SAE or Metric).
- 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 (250°C for 5 minutes).

IMPORTANT NOTE: Do not use anaerobic threadlockers on most thermoplastics (ABS, PVC, etc). Softening and/or stress cracking may occur. Anaerobic threadlockers can be used with 7649 Primer on Nylon and thermoset plastics. All anaerobic threadlockers have high chemical resistance.

THREAD SEALING

STANDARD FITTINGS – PIPES, HYDRAULIC, OR AIR



1. Clean parts of contamination. If necessary, spray Loctite® 7649 Primer or Loctite® 7471 Primer onto threaded parts (male and female). Allow 30 seconds to dry.

Note: Primer is not required for brass parts.

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® QuickStix 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.

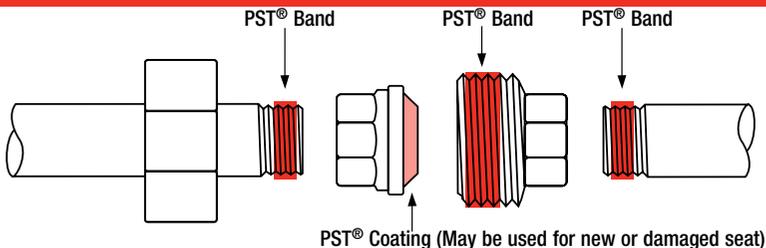
• If sealing potable water systems, use Loctite® 577 Pipe Sealant or Loctite® 55 Pipe Sealing Cord.

• Do not use on oxygen or strong oxidizers (chlorine).

• For PVC or ABS pipe, use Loctite® 5331 No More Leaks.

**Depending on conditions*

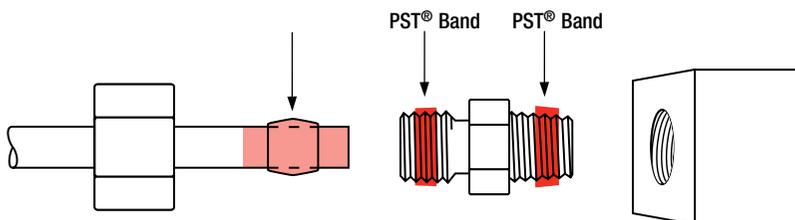
PIPE UNIONS



1. Disassemble and, if necessary, spray all components with Loctite® 7649 Primer or Loctite® 7471 Primer. Allow 30 seconds 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.

THREAD SEALING

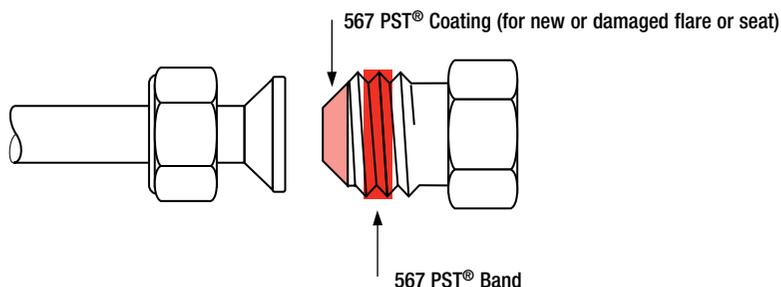
COMPRESSION FITTINGS



1. Slide fitting nut and ferrule back approximately 20mm from end of tubing.
2. If necessary, spray the entire assembly with Loctite® 7649 Primer. Allow 30 seconds to dry.
- Note:** Primer is not required for brass parts.
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.

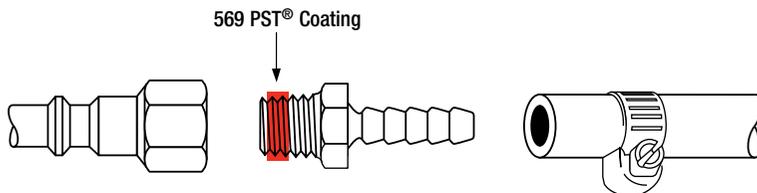
FLARED/SWAGED FITTINGS



1. Disassemble and, if necessary, apply to all components Loctite® 7649 Primer or Loctite® 7471 Primer. Allow 30 seconds 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.

THREAD SEALING

HOSE ENDS – AIR & HYDRAULIC



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

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

LOCTITE® BRAND THREAD SEALANT QUICK SELECTOR

Application	Product	Primer	Instant Seal	Max. Pressure	Steam Pressure	Temp Range
All Metal Fittings	567 Master Pipe Sealant (Low Medium Strength)	7649	500 psi	10,000 psi (24hrs)	n/a	-55°C to 205°C
All Metal Fittings and High Filtration / Zero Contamination Systems	569 Hydraulic Sealant (Medium Strength)	7471	500 psi (10 min)	10,000 psi (24hrs)	n/a	-55°C to 150°C
All Metal Fittings	577 High Pressure Pipe Sealant (High Strength)	7649	500 psi	10,000 psi (24hrs)	n/a	-55°C to 150°C
All Metal Fittings	5770 High Temp Steam and Gas (High Strength)	7649	500 psi	10,000 psi (24hrs)	235 psi	-55°C to 280°C

FLUID COMPATIBILITY

1. Refer to Fluid Compatibility Chart.
2. Contact your local Industrial Distributor.
3. Call Henkel Technical Information. See back cover for the Henkel Technical Information number in your area.

THREADSEALING

TECHNICAL DATA

PRODUCT	569	542	567	577	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	4/2	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 130
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 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 SURFACE (PRIMER NOT REQUIRED)		INACTIVE SURFACE (PRIMER REQUIRED)	
Brass	Copper	Aluminium	Black Oxide
Bronze	Iron	Stainless Steel	Anodised
		Magnesium	Passivated Surfaces
		Zinc	Titanium
		Nickel	

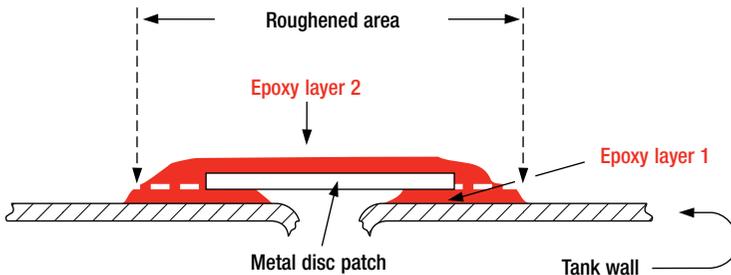
CHARACTERISTICS/ADVANTAGES OF ANAEROBIC THREAD SEALING

- 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 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.

PUNCTURE SEALING

TANKS, VESSELS, ETC.



1. IMPORTANT! TAKE PROPER SAFETY PRECAUTIONS WHEN WORKING WITH FLAMMABLE LIQUID TANKS. AVOID USE WITH COMPRESSIBLE GASSES.
2. Clean the repair area with Loctite® ODC-Free Cleaner & Degreaser.
3. Roughen a 25mm - 50mm radius around hole with emery cloth. Clean again.
4. Prepare a metal disc patch slightly larger than hole.
5. Mix Loctite® 3805 Steel & Aluminium Epoxy Filler (A and B) as per directions.
6. Apply a thin layer of Loctite® 3805 to roughened area.
7. Immediately position disc patch over hole.
8. Apply a cover layer of Loctite® 3805 over disc patch and Epoxy layer 1.
9. Allow to cure before service use:
 - a. Liquid storage — 1 hour.
 - b. Low pressure (under 1000kPa) — 1 hour.
 - c. High Pressure — Not Recommended over 1000kPa.
10. Paint as required.

SEALING CRACKS

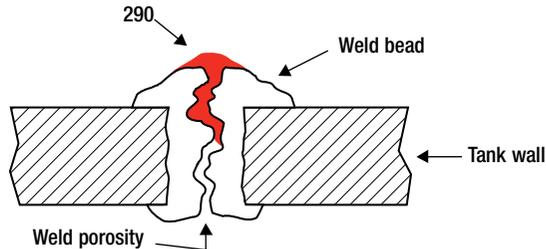
1. Drill termination holes to prevent further cracking.
2. Follow directions above. Modify as needed.

SEALING PINHOLES

1. Follow directions above. No disc patch needed.

POROSITY SEALING

EXISTING WELD POROSITIES AND CASTINGS



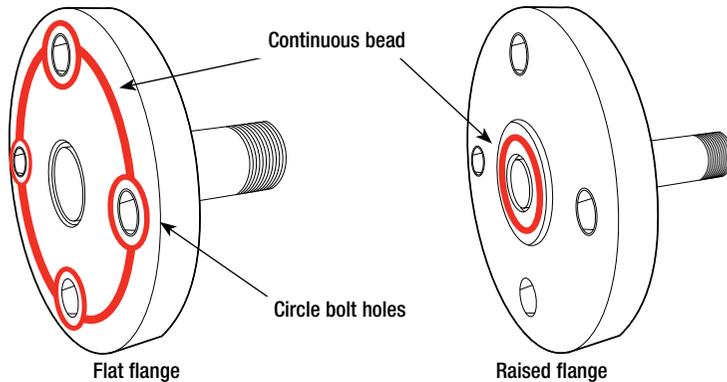
1. **IMPORTANT! TAKE PROPER SAFETY PRECAUTIONS IF WORKING WITH FLAMMABLE LIQUID TANKS. AVOID USE WITH COMPRESSIBLE GASSES.**
2. Wire brush to remove paint, rust, etc. from repair area.
3. Clean repair area with Loctite® ODC-Free Cleaner & Degreaser.
4. Apply localized heat to bring repair area to approximately 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® 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 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.

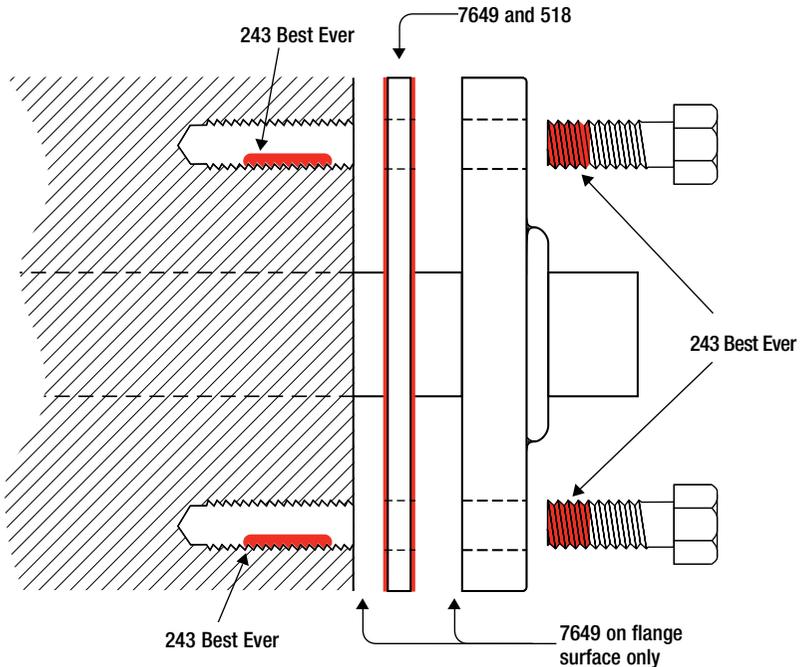
6. Allow to cure:
 - a. No pressure – immediate service
 - b. Low pressure (up to 500 psi) – 30 to 45 minutes
 - c. High pressure (500 to 2500 psi) – 4 hours
 - d. Extreme high pressure (2500 to 5000 psi) – 24 hours

LOCTITE® BRAND GASKETING QUICK SELECTOR

Use	Product	Gap Fill	Temp. Range
General	518 Gasket Eliminator®	0.5mm	-55°C to 150°C
General	515 Gasket Eliminator®	0.5mm	-55°C to 150°C
High Temperature	510 Gasket Eliminator®	0.25mm	-55°C to 200°C

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 into blind holes (as above), apply Loctite® 243 Best Ever Threadlocker into hole and on threads. Tighten normally.
 - If it is a through bolt assembly, apply Loctite® 243 Best Ever Threadlocker or Loctite® QuickStix 248 Threadlocker to bolt threads.
6. Tighten as per standard practice.

FLANGE SEALING

TECHNICAL DATA

PRODUCT	510	515	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 0.5mm	up to 0.5mm
Cure Speed	Medium	Medium	Fast
Optional Primer	7471	7649	7649
Viscosity (c.P)	12,000	262,500	800,000
Oil Resistance	Excellent	Excellent	Excellent
Petrol Resist.	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 SURFACE (PRIMER NOT REQUIRED)		INACTIVE SURFACE (PRIMER REQUIRED)	
Brass	Copper	Aluminium	Black Oxide
Bronze	Iron	Stainless Steel	Anodised
		Magnesium	Passivated Surfaces
		Zinc	Titanium
		Nickel	

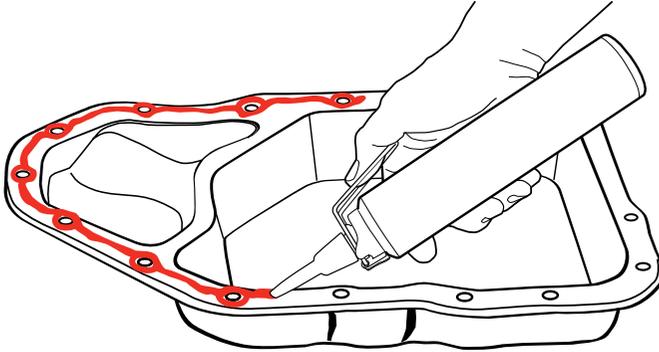
CHARACTERISTICS/ADVANTAGES OF GASKETING

- 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. Anaerobic flange sealants can be used with **7649** Primer on Nylon and thermoset plastics.

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

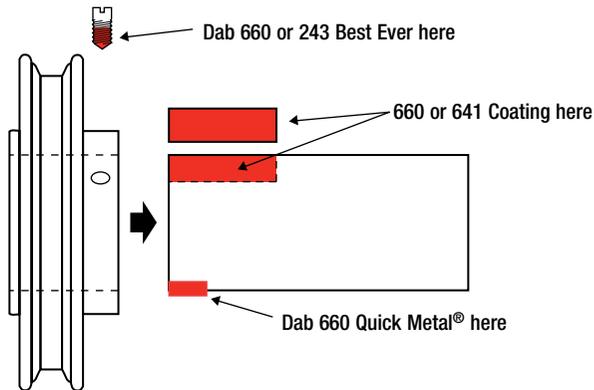
PRODUCT	587 BLUE MAXX	5900 BLACK MAXX	5699 GREY MAXX	COPPER MAXX	INSTANT GASKET
Flange Type	Flexible	Flexible	Japanese Vehicle	Flexible	Flexible
Temperature¹	-60 to 260°C	-60 to 200°C	-60 to 200°C	-60 to 316°C	-60 to 200°C
Gap Fill (mm)	6mm	6mm	3mm	6mm	6mm
Sensor Safe	Yes	Yes	Yes	Yes	Yes
Cure (Tack Free)	30 min.	5 min.	10 min.	60 min.	5 min.
Full Cure	24 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs.
Oil Resistance	Excellent	Excellent	Excellent	Excellent	Excellent
Instant Seal	No	Yes ²	No	No	Yes ²

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 or Loctite® 641 Bearing Mount coating into keyway and on key.
4. Apply dab(s) of Loctite® 660 Quick Metal® Retaining Compound or Loctite® 641 Bearing Mount onto shaft opposite keyway or evenly spaced around shaft.
5. Assemble parts. Wipe off excess.
6. Apply Loctite® 660 Quick Metal® Retaining Compound or Loctite® 243 Best Ever dab to set screw.
7. Tighten set screw.
8. Allow 5-10 minutes prior to service.

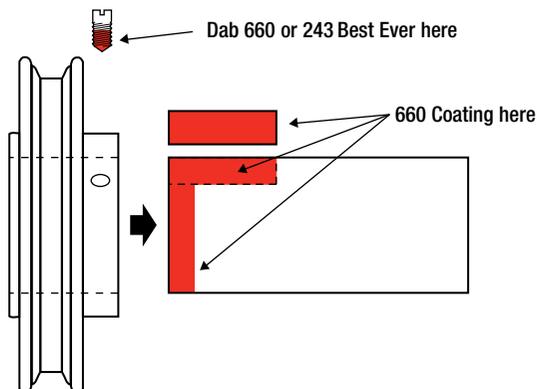
- Note:**
- Loctite® 660 Quick Metal® Retaining Compound or Loctite® 641 Bearing Mount is NOT recommended for radial gaps exceeding 0.25mm on shaft or keyway.
 - See REPAIRING BADLY WALLOVED KEYWAY, page 21, for procedure.

DISASSEMBLY

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

STRENGTHEN KEYED ASSEMBLIES

HEAVY DUTY



ASSEMBLY

1. Clean all parts with Loctite[®] ODC-Free Cleaner & Degreaser.
2. Apply a coating of Loctite[®] 609 or Loctite[®] 680 Retaining Compound coating around shaft, into keyway, and on key.
3. Assemble parts. Wipe off excess.
4. Apply a dab of Loctite[®] 609 or Loctite[®] 680 Retaining Compound.
5. Tighten set screw.
6. Allow 30 minutes prior to service.

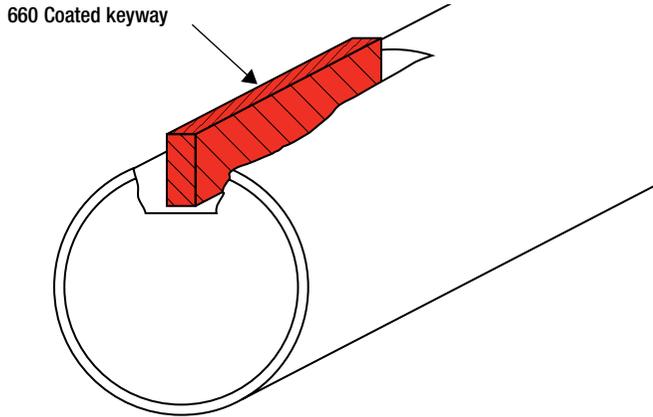
- Note:**
- If gap exceeds 0.12mm, use Loctite[®] 7471 Primer on appropriate area (shaft or keyway).
 - Loctite[®] 609 and Loctite[®] 680 Retaining Compound are NOT recommended for radial gaps exceeding 0.2mm on shaft or keyway.
 - See REPAIRING BADLY WALLOVED KEYWAY, page 21, for procedure.

DISASSEMBLY

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

STRENGTHEN KEYED ASSEMBLIES

REPAIRING BADLY WALLOWED KEYWAY

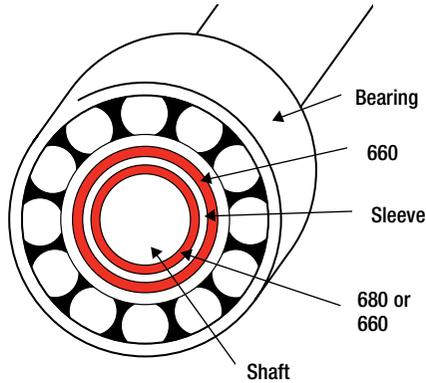


1. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, apply onto all parts with Loctite® 7471 Primer. Allow to dry.
3. Apply a coating of Loctite® 660 Quick Metal® Retaining Compound into keyway.
4. Assemble as required using Loctite® 660 Quick Metal® Retaining Compound.
5. 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.
 - Higher strengths are obtained by NOT using Loctite® 7471 Primer with small (0.05mm to 0.1mm) gap, and allowing longer cure (4-24 hours).

SHAFT MOUNTED ASSEMBLIES

REPAIRING BADLY WORN SHAFT

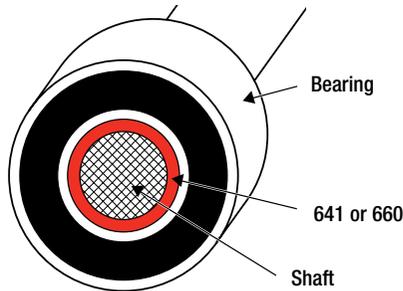


1. Determine a minimum radial gap.
2. Select and trim appropriate sleeve to allow component slip fit.
3. Roughen sleeve O.D. with emery cloth.
4. Clean all parts with Loctite[®] ODC-Free Cleaner & Degreaser.
5. Apply a coating of Loctite[®] 680 or Loctite[®] 660 Quick Metal[®] Retaining Compound around 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 0.2mm.
 - Higher strengths are obtained by NOT using Loctite[®] 7471 Primer with small (0.05mm to 0.1mm) gap, and allowing longer cure (4-24 hours).

SHAFT MOUNTED ASSEMBLIES

SLIP-FIT - LIGHT/HEAVY DUTY



ORIGINAL

1. Machine shaft to 0.5mm 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 Loctite® 641 Bearing Mount or 660 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 0.1mm, 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® 641 Bearing Mount and Loctite® 660 Quick Metal® Retaining Compound are NOT recommended for radial gaps exceeding 0.5mm.
 - See procedure for BADLY WORN SHAFT page 19.

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

MAXIMUM STRENGTH

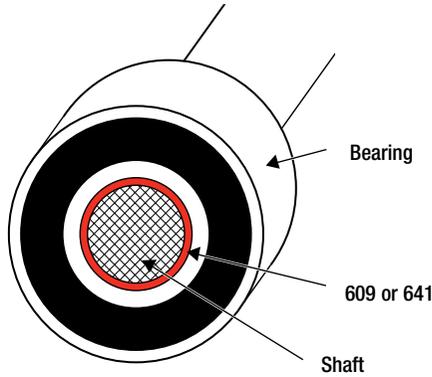
1. Same as above, except use Loctite® 680 Retaining Compound with Loctite® 7471 Primer or no primer.
2. Allow 4-24 hours to cure.

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

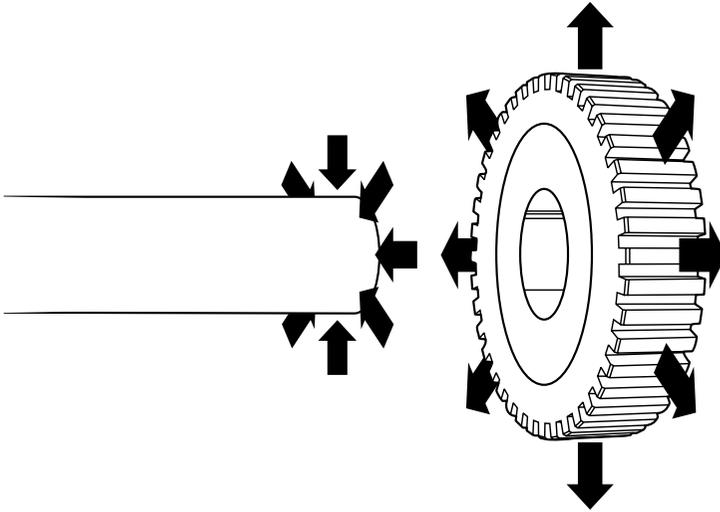
1. Clean shaft O.D. and component I.D.
2. Apply a bead of Loctite® 609 or Loctite® 641 Retaining Compound to circumference of shaft at leading edge of insertion or leading area of engagement.
Note:
 - Retaining compound will always be squeezed to the outside when applied to shaft.
 - Do NOT use with Loctite® Anti-Seizes or similar product.
3. Press as usual. Wipe off excess.
4. No cure time required.
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.

SHAFT MOUNTED ASSEMBLIES

SHRINK FIT



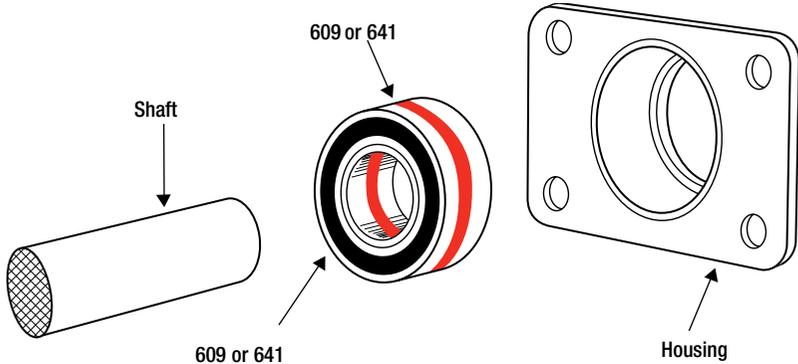
ASSEMBLY

1. Clean the shaft O.D. and component I.D.
2. Cool the shaft to cause contraction, or heat the component to cause expansion.
3. Apply a brush film of Loctite® 641 Retaining Compound to the shaft or lower temperature part.
4. Install component and allow temperatures to equilibrate.
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.

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 0.5mm to 0.1mm diametral slip fit.
3. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser and spray with Loctite® 7649 Primer or Loctite® 7471 Primer.
4. Apply Loctite® 609 or 641 Retaining Compound to component O.D.
5. Install component. Do not rotate.
6. Wipe off excess.
7. Allow five minutes to cure prior to service.

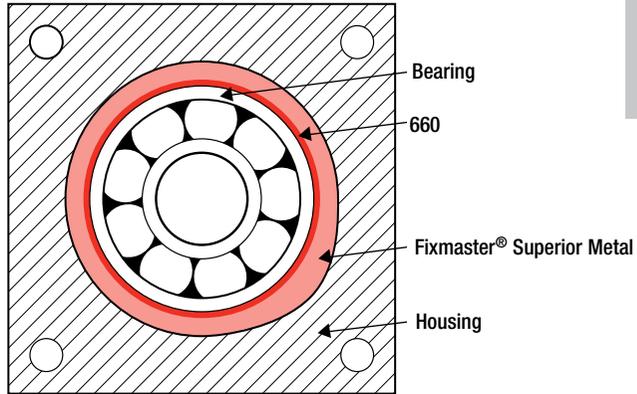
WORN

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® 609 and Loctite® 641 are NOT recommended for radial gaps exceeding 0.5mm.
 - See procedure for BADLY WORN HOUSING page 27.

HOUSED COMPONENTS

REPAIRING BADLY WORN HOUSING



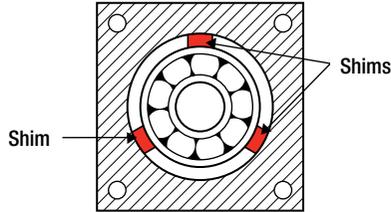
ASSEMBLY

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. Pull 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.

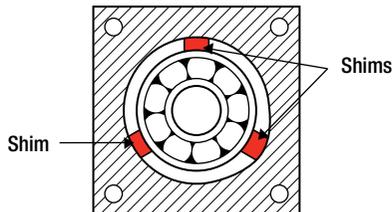
HOUSED COMPONENTS

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® 380 Instant Adhesive.
7. Assemble per instructions on page 26.

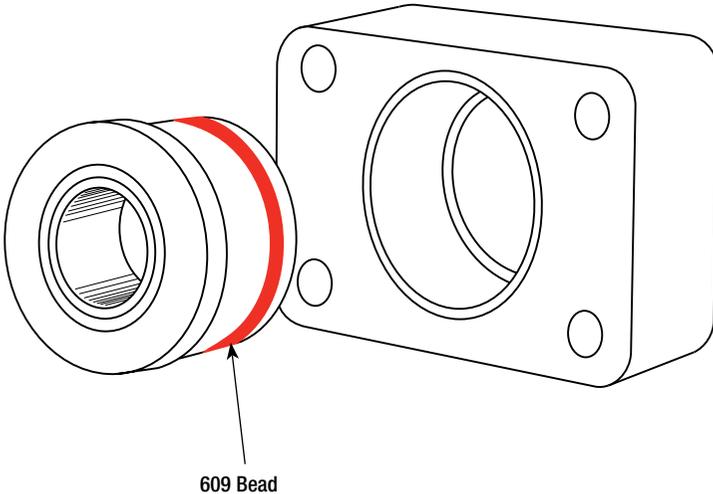


EXCESSIVE / UNEVEN WEAR

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.

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.

Note: Virtually any Loctite® retaining product will work here. Medium strength liquid is recommended due to normal gap and strength requirement.

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.
- It is not generally necessary to remove pre-applied sealant from seal O.D.

RETAINING COMPOUNDS

LOCTITE® RETAINING COMPOUND QUICK SELECTOR

Application	Loctite® Product	Loctite® Primer
Shaft Mount – Press fit		
Medium Strength	609 Retaining Compound	NONE
	641 Retaining Compound	7649
Shaft Mount – Shrink fit		
Medium Strength	641 Retaining Compound	NONE
Shaft Mount – Slip Fit		
Small Gap (0.05mm radial max.)	609 Retaining Compound	7649
Larger Gap (0.25mm radial max.)	660 Quick Metal® Retaining Compound	7471
Maximum Strength (0.25mm radial max.)	680 Retaining Compound	7471
Maximum Temperature (204°C) (0.2mm radial max.)	620 Retaining Compound	7649/7471
Medium Strength	641 Retaining Compound	7649
Housing Mount – Press Fit		
Maximum Strength	609 Retaining Compound	NONE
Medium Strength	641 Retaining Compound	7649
Low Strength	243 Best Ever Threadlocker	NONE
Housing Mount – Slip Fit		
Maximum Strength	680 Retaining Compound	NONE
High Strength	660 Quick Metal® Retaining Compound	NONE
Controlled Strength	660 Quick Metal® Retaining Compound	7471
Medium Strength	641 Retaining Compound	7649
Low Strength	243 Best Ever (QuickStix 248) Threadlocker	7649/7471

- 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

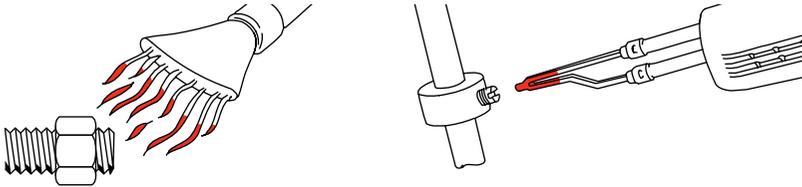
THREADLOCKING, THREAD SEALING & RETAINING

LOW AND MEDIUM STRENGTH PRODUCTS

Disassemble with hand tools.

HIGH STRENGTH PRODUCTS

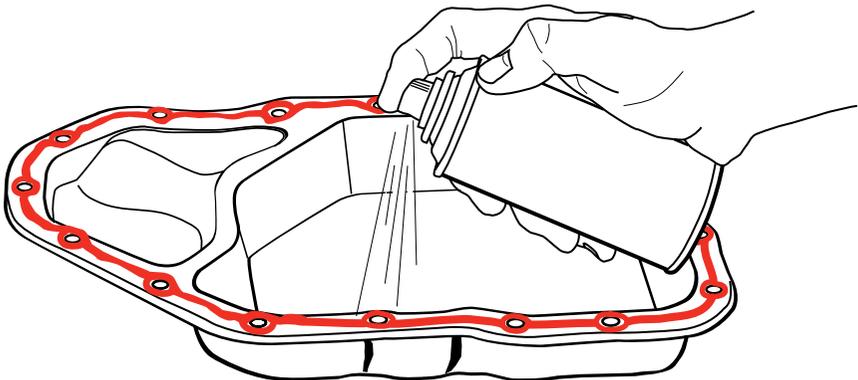
- Apply localized heat (260°C or higher) to assembly for 5 minutes.
- Disassemble with hand tools while hot.



GASKETING

- Disassemble flange using hand tools.

Note: For anaerobic gaskets, clean with Loctite® Chisel® Gasket Remover.



BONDING

INTRODUCTION TO BONDING ADHESIVES

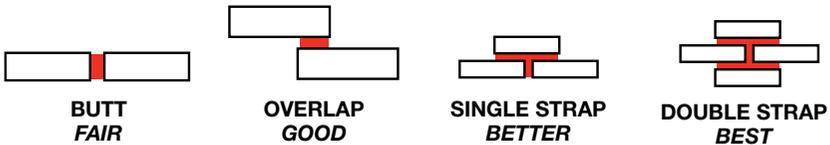
Within the broad range of Loctite® brand adhesives you will always find the solution to your bonding challenge. It is, however, extremely important to have at least a basic knowledge of adhesive methodology in order to bond two substrates together successfully. The three major causes of bonding failures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

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

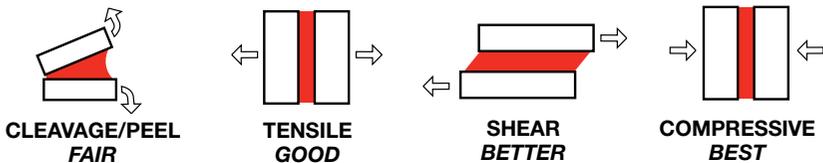
BONDING ASSEMBLY

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

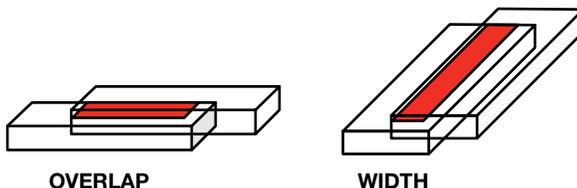


TYPES OF JOINT STRESS DISTRIBUTION



JOINT WIDTH VS. OVERLAP

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



SURFACE PREPARATION

Abrasive Methods

Rubbing or striking a surface with hard, coarse material.

Abrasive examples

- Sanding: Rubbing with abrasive paper or cloth (for small area/superficial wear-down)
- Blasting: Striking with steel grit, sand, or other abrasive material (for large areas/deep wear-down)

Chemical Methods

Cleaning process that uses solvents to dissolve contaminants.

Chemical examples

- Solvent Dip: Immersing in solvent
- 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® BRAND ADHESIVE QUICK SELECTOR

PRODUCT	TYPICAL APPLICATIONS
401 - A general purpose Instant Adhesive	Metal, plastic, rubber, cork, wood, paper, leather, etc
406 – A low viscosity Instant Adhesive ideal for difficult to bond surfaces.	Plastic, rubber, metal, etc
454 – A no run, no drip Gel Instant Adhesive suitable for bonding porous materials.	Metal, plastic, rubber, cork, wood, paper, leather, etc
480 – A high impact, high shear strength, toughened Instant adhesive	Metal, most rubbers, plastics, etc
TAK PAK® – An Instant Adhesive used with spray mist Accelerator 7452	Components on PC boards, metal, plastic, rubber, etc
324 – An Impact Resistant Structural Adhesive for gaps up to 1mm. Used with Activator 7075.	Metal, timber, glass
330 Multibond® – A Structural Adhesive for gaps up to 0.5mm. Used with Activator 7387.	Metal, plastic, timber, glass, etc
3801 - A five minute, general purpose two part clear epoxy	Metal, timber, ceramic, concrete, fibreglass, etc
3805 – A high strength two part Steel and Aluminium Epoxy Filler suitable for gap filling	Metal, timber, ceramic, concrete

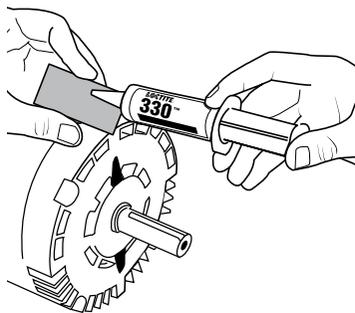
BONDING

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 bonded with adhesives.

TYPICAL APPLICATIONS

Used as a final pre-assembly cleaning treatment to remove most greases, oils, lubrication fluids, metal cuttings and fines, for all surfaces to be bonded with adhesives. It is designed to be used as a spray or in immersion cleaning processes, at room temperature or heated.



CLEANING

HAND CLEANING

YUK OFF ORANGE

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

YUK OFF Orange hand Cleaner removes grease, grime, paint, 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, paint, 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 Best Ever, 263 Best Ever
 † Use Loctite #277, 271, 554, 270, 277, 554
 ■ Not Recommended
 □ <10% (same as ●)
 >10% (same as †)
 * <5% (same as ●)
 <5% (same as †)

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

- Carboxymethyl Cellulose
- Carnauba Wax
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- Magnesium Hydroxide
- Magnesium Sulfate
- Maleic Acid
- Maleic Anhydride
- Manganese Chloride
- Manganese Sulfate
- Melamine Resin
- Menthol
- Mercaptans
- Mercuric Chloride
- Mercuric Nitrate
- Mercury
- Mercury Dry
- Methane
- Methyl Alcohol
- Methyl Acetate
- Methyl Bromide
- Methyl Carbitol
- Methyl Cellulosic §
- Methyl Chloride
- Methyl Ethyl Ketone
- Methyl Isobutyl Ketone
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- Nickel Ammonium Sulfate
- Nickel Chloride
- Nickel Cyanide
- Nickel Fluoborate
- Nickel Ore Fines
- Nickel Plating Bright
- Nickel Sulfate
- Nicotinic Acid
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- Nitration (Acids)
- Nitric Acid
- Nitric Acid 10%
- Nitric Acid 20%
- Nitric Acid Anhydrous
- Nitric Acid Fuming
- Nitro Aryl Sulfonic Acid
- Nitrobenzene-Dry
- Nitrocellulose
- Nitrofurane
- Nitroguanidine
- Nitrosoparaffins-Dry
- Nitrosyl Chloride
- Norite Carbon
- Nuchar
- Oakite § Compound
- Oil, Cresote
- Oil, Emulsified
- Oil, Fuel
- Oil, Lubricating
- Oil, Souble
- Oleic Acid, hot
- Oleic Acid, cold
- Ore Fines-Flotation
- Ore Pulp
- Organic Dyes
- Oxalic Acid Cold
- Ozone, 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	● Polyisofluid 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 Oil	● Potassium Nitrate	● Sodium Carbonate	● Sulfur Solution	● Vinyl Acrylate 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
Pentaerythritol Sol.	● Potassium Phosphate	● Sodium Ferricyanide	● Sulphuric Acid 40-75%	● Viscose	● Ethylene
Perchloroethylene (Dry)	● Potassium Silicate	● Sodium Formate	● Sulphuric Acid 75-95%	● Vortex-Hydroclone	● Ethylene Oxide
Perchloroethylene (Dry)	● Potassium Sulfate	● Sodium Glutamate	● Sulphuric Acid 95-100%	● Water-Acid - Below pH7	● Freon § (11-12-21-22)
Perchloric Acid Perchloromethyl Mercaptan	● Potassium Xanthate	● Sodium Hydrogen Sulfate	● Sulphurous Acid	● Water pH7 to 8	↑
	● Press Board Waste	● Sodium Hydroxide	● Sulfuryl Chloride	● Water Alkaline - Over pH8	↑
Pernmanganic Acid	● Propionic Acid	● Sodium Hydroxide	● Surfactants	● Water Mine Water	● Furnace Gas hot
Persulfuric Acid	● Propyl Alcohol	● Sodium Hydrochloride	● Synthetic Latex	● Water River	● Furnace Gas cold
Petroleum Ether	● Propyl Bromide	● Sodium Hydroxide	● Taconite - Fines	● Wax	● Gas drip oil
Petroleum Jelly	● Propylene Glycol	● Sodium Hydro. 20% cold	● Talc - Slurry	● Wax Chlorinated	● Gas flue
Phenol Formaldehyde Resins	● Pumice	● Sodium Hydro. 20% hot	● Tankage - Slurry	● Wax Emulsions	● Gas manufacturing
Phenol Sulfonic Acid	● Pyranol	● Sodium Hydro. 50% cold	● Tannic Acid (cold)	● Weed Killer Dibromide	● Gas natural
Phenolic Glue	● Pyridine	● Sodium Hydro. 50% cold	● Tarn	● Weisberg Sulfate Plating	● Helium
Phenogluconol	● Pyrogallol Acid	● Sodium Hydro. 70% cold	● Tar & Tar Oil	● Wood ground pulp	● Hydrogen Gas-cold
Phosphoric Ester	● Pyrogen Free Water	● Sodium Hydro. 70% hot	● Tartaric Acid	● Wort Lines	● Hydrogen Chloride
Phosphoric Sand	● Pyrole	● Sodium Hypochlorite	● Television Chemicals	● X-Ray Developing Bath	● Hydrogen Cyanide
Phosphoric Acid 85% hot	● Pyromellitic Acid	● Sodium Lignosulfonate	● Tergitol §	● Xylene	● Hydrogen Sulfide wet & dry
Phosphoric Acid 85% cold	↑	● Sodium Metasilicate	● Terpineol	● Zealan	● Isobutane
Phosphoric Acid 50% hot	↑	● Sodium Molten	● Tetraethyl Lead	● Zeolite Water	● Methane
Phosphoric Acid 50% cold	↑	● Sodium Nitrate	● Tetrahydrofuran	● Zinc Acetate	● Methyl Chloride
Phosphoric Acid 10% cold	↑	● Sodium Nitrite-Nitrate	● Tetranitromethane	● Zinc Bromide	● Natural gas dry
Phosphoric Acid 10% hot	↑	● Sodium Perborate	● Textile Dyeing	● Zinc Chloride	● Nitrogen gas
Phosphorous Molten	● Rayon Acid Bath	● Sodium Peroxide	● Textile Finishing Oil	● Zinc Cyanide-Alk.	● Nitrous Oxide
Phosphotungstic Acid	● Rayon Spin Bath	● Sodium Persulfate	● Textile Printing Oil	● Zinc Fines Slurry	● Oil-Solvent Vapor
Photographic Sol.	● Resorcinol	● Sodium Phosphate-Mono	● Thiocyanic Acid	● Zinc Flux Paste	● Oxygen
Phthalic Acid	● River Water	● Sodium Phosphate-Tri	● Thioglycolic Acid	● Zinc Galvanizing	● Ozone
Phytate	● Road Oil	● Sodium Potassium Chloride	● Thionyl Chloride	● Zinc Hydroxylite	● Producer Gas 50 PSI
Phytate Salts	● Rosal	● Sodium Salicylate	● Thiophosphoryl Chloride	● Zinc Oxide in Water	● Propane
Pickling Acid, Sulfuric	● Rosin-Wood	● Sodium Sesquicarbonate	● Thiourea	● Zinc Oxide in Oil	● Propylene
Picric Acid Solutions	● Resin in Alcohol	● Sodium Silicate	● Thorium Nitrate	● Zinc Sulfate	● Steam
Pine Oil Finish	● Resin Size	● Sodium Silicofluoride	● Thymol	● Zincolate	● Sulfur Dioxide
Plating Sol. as follows:	● Rubber Latex	● Sodium Stannate	● Tin Tetrachloride	● Zirconyl Nitrate	● Sulfur Dioxide dry
Brass-Cyanide	● Safral	● Sodium Sulfate	● Tinning Sol. DuPont	● Zirconyl Sulfate	● Sulfur Trioxide Gas
Bronze-Cyanide	● Salt Alkaline	● Sodium Sulfide	● Titania Paper Coating		● Sulfuric Acid Vapor
Chromium & Cadmium	● Salt Electrolytic	● Sodium Sulfite	● Titanium Oxide Slurry		
Cyanide	● Salt Refrg.	● Sodium Sulfoxylate	● Titanium Oxy Sulfate		
Cobalt Acid	● Sand-Air Blown Slurry	● Sodium Thiocyanate	● Titanium Sulfate		
Copper Alk.	● Sand-Air Phosphatic	● Sodium Thiosulfate	● Titanium Tetrachloride		
Gold Cyanide	● Sea Coal	● Sodium Tungstate	● Toluol		
Iron-Acid	● Sea Water	● Sodium Urate	● Toluene		
Lead-Fluoro	● Selenium Chloride	● Solv. Oxid. Ethanol Soluble Oil	● <i>n</i> -Toluene Sulfonic Acid		
Nickel Bright	● Sequestrene	● Solvent Naphthas	● Transil Oil		
Platinum	● Sewage	● Sorbic Acid	● Trichloroacetic Acid		
Silver-Cyanide	● Shellac	● Sour Gasoline	● Trichloroethane 1, 1, 1		
Tin-Acid	● Shower Water	● Soybean Sludge-Acid	● Trichlorethylene		
Tin Alk. Barrel	● Silica Gel	● Spensol Solution	● Trichlorethylene-Dry		
Zinc Acid	● Silica Ground	● Stannic Chloride	● Tricresyl Phosphate		
Zinc Alk. Cyanide	● Silicone Tetrachloride	● Starch	● Triethanolamine		
Polyacrylonitrile Slurry	● Silicone Fluids	● Starch Base	● Triethylene Glycol		
			● 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		
222 LOW STRENGTH SUPER SCREW LOCK	10 ml bottle	22220
	50 ml bottle	22250
	250 ml bottle	22270
243 BEST-EVER MEDIUM STRENGTH SUPER NUT LOCK	10 ml bottle	44089
	50 ml bottle	44092
	250 ml bottle	44094
263 BEST-EVER HIGH STRENGTH SUPER STUD LOCK	10 ml bottle	44279
	50 ml bottle	44130
	250 ml bottle	44131
290 MEDIUM STRENGTH SUPER WICK-IN	10 ml bottle	29020A
	50 ml bottle	45076
	250 ml bottle	30937
THREAD SEALANTS		
569 HYDRAULIC/PNEUMATIC SEALANT	50 ml bottle	56950
	250 ml tube	56970
542 HYDRAULIC/PNEUMATIC SEALANT	10 ml tube	25344
	50 ml tube	54266
567 MASTER PIPE SEALANT	50 ml tube	56747A
	250 ml tube	56741
577 UNIVERSAL PIPE SEALANT	50 ml tube	19259
	250 ml tube	34112
55 PIPE SEALANT CORD	150m	31899
RETAINING COMPOUNDS		
609 MEDIUM/HIGH STRENGTH GENERAL PURPOSE	10 ml bottle	30013
	50 ml bottle	30015
	250 ml bottle	30014
620 HIGH STRENGTH HIGH TEMPERATURE	50 ml bottle	62050
	250 ml bottle	62070
660 QUICK METAL [®] HIGH STRENGTH PRESS FIT REPAIR	6 ml tube	66010A
	50 ml tube	66040
680 HIGH STRENGTH/HIGH VISCOSITY	50 ml bottle	68050
	250 ml bottle	68070
641 MEDIUM STRENGTH BEARING MOUNT	10ml bottle	21314
	50ml bottle	45079
	250ml bottle	45081

ORDERING

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
GASKETING		
510 GASKET ELIMINATOR® HIGH TEMPERATURE	50 ml tube	45077
	250 ml tube	45082
515 MASTER ELIMINATOR®	6 ml tube	51517
	50 ml tube	51531A
	300 ml cartridge	33530
518 FLANGE SEALANT®	6 ml tube	51817
	25 ml syringe	51827
	50 ml tube	25583A
	300 ml cartridge	51845
5900 INSTANT GASKET (aerosol)	190ml	40479
5900 HEAVY BODIED BLACK SILICONE	390g cartridge	20166
5910 BLACK® MAXX RTV SILICONE GASKET MAKER	50g tube	39306
587 BLUE® MAXX RTV SILICONE GASKET MAKER	95g tube	34848
	300ml cartridge	34888
5920 COPPER® MAXX RTV SILICONE GASKET MAKER	85g tube	34249
5699 GREY® MAXX RTV SILICONE GASKET MAKER	95g tube	34238
	300ml cartridge	18581A
ADHESIVES		
330 MULTIBOND® NO-MIX Also (see Activator 7387)	300 ml cartridge	33064
401 PRISM® ULTRA FAST INSTANT ADHESIVE	25ml bottle	40633-25
	100ml bottle	33533
	500ml bottle	33534
406 PRISM® HIGH PERFORMANCE INSTANT ADHESIVE	3g tube	16704
	25ml bottle	40124-25
	100ml bottle	33531
	500ml bottle	33532
454 PRISM® SURFACE INSENSITIVE INSTANT ADHESIVE GEL	3 gm tube	45404
	20 gm tube	A045416
	200g tube	45474
480 PRISM® TOUGHENED INSTANT ADHESIVE	25ml bottle	16819-25
	500g bottle	16887
3805 STEEL & ALUMINIUM FILLER EPOXY	56g tube	24180

ORDERING

CATEGORY	SIZE	ITEM NO.
PRIMERS		
7471 PRIMER T (Acetone)	133g	22477
	3.78L Can	24062A
7649 PRIMER N (Acetone)	100ml	22410A
	3.78L Can	24063A
770 PRISM® PRIMER (Heptane)	100ml bottle	29520A
	946ml	24377A
7387 330 ACTIVATOR	100ml	24058A
	946ml	24059A
7452 TAK PAC ACCELERATOR	20g aerosol	21520
	946ml	24064A
LUBRICANTS		
C5-A® COPPER ANTI-SEIZE	453g brush top	51007
	aerosol 4oz	51144
771 NICKEL ANTI-SEIZE	28g Tube	28182A
	500g	39163
SILVER GRADE ANTI-SEIZE	200g aerosol	76756
	250g tube	76741
	500g brush top	76769
	236ml brush top	76732
	5kg pail	76731
CLEANERS		
YUK OFF ORANGE® pumice formula (lotion)	400ml bottle	31908
	4L pump bottle	31909
	15L pump	31910
ODC-FREE CLEANER & DEGREASER	473ml pump spray	20162
INDUSTRIAL HANDWIPES	75 pack	34943
	130 pack	34944
GENERAL MAINTENANCE		
754 EXTEND® RUST TREATMENT	946ml bottle	75430
	3.78L bottle	75448
O-RING SPLICING KIT "Inch"	Kit	10361
O-RING SPLICING KIT "Metric"	Kit	16224
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. See back cover for the Henkel Technical Information number in your area.

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

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