For product availability, technical information and material safety data sheets (MSDS) call:

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Or visit Loctite at: www.loctite.com.au

LOCTITE®

Do It Right Users' Guide

The "when, where and how" to use Loctite® maintenance products

Henkel Technologies

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 Loctite adhesives and sealants representative at the telephone number listed on the back cover of this guide.

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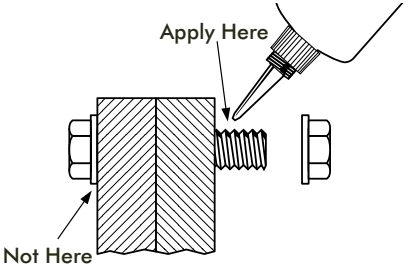
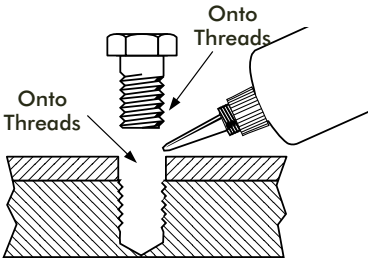
THREADLOCKING

THROUGH HOLE (BOLTS AND NUTS)



1. Clean all threads (bolt and nut) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray all threads with Loctite® Primer (Refer to Technical Data). Allow to dry.
3. Select the proper strength Loctite Threadlocker product.
4. Insert bolt into through hole assembly.
5. Apply several drops of Threadlocker onto bolt at targeted tightened nut engagement area. Avoid touching bottle tip to metal.
6. Assemble and tighten nut as usual.

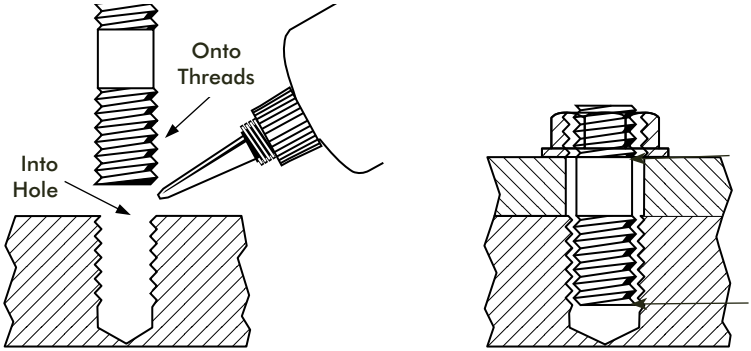
BLIND HOLES (CAP SCREWS, ETC.)



1. Clean all threads (bolt and hole) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray (bolt and hole) with Primer (Refer to Technical Data). Allow to dry.
3. Select the proper strength Threadlocking product.
4. Squirt several drops down the sides of the female threads.
5. Apply several drops to bolt. Avoid touching bottle tip to metal.
6. Tighten as usual.

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

BLIND HOLES (STUDS, ETC.)

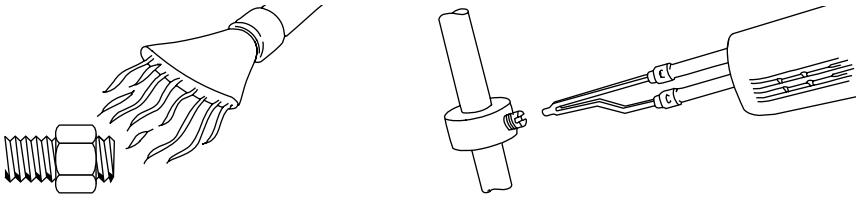


1. Clean all threads (bolt and hole) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray all threads with Primer (Refer to Technical Data). Allow to dry.
3. Squirt several drops Loctite® **262** Threadlocker down the sides of the female threads. Avoid touching bottle tip to metal.

   Note: Use **277*** Threadlocker if stud is over 25mm diameter.
4. Apply several drops **262** Threadlocker onto stud threads.
5. Install studs.
6. Position cover, head, etc.
7. Apply drops of Loctite® **243** Threadlocker onto exposed threads.
8. Tighten nuts as required.

** Worldwide or Application-Specific Alternative*

HIGH STRENGTH DISASSEMBLY



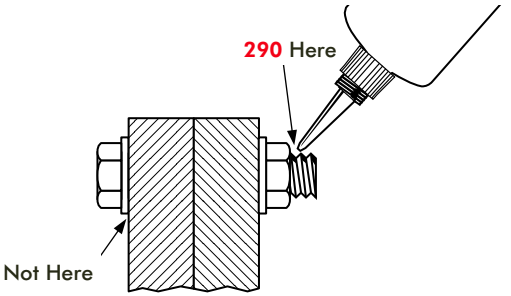
Localized Heating Methods

1. Apply localized heat to nut or stud (230°C for 5 minutes).
2. Disassemble while HOT.

   Note: Use standard hand tools for disassembly of low and medium strength Threadlockers.

THREADLOCKING

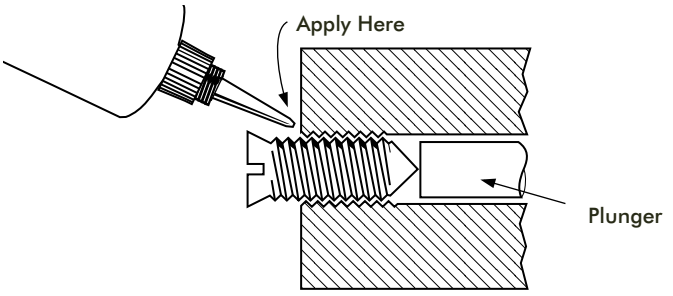
PRE-ASSEMBLED FASTENERS



1. Clean bolts and nuts with Loctite® ODC-Free Cleaner & Degreaser.
2. Assemble components.
3. Tighten nuts.
4. Apply 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 and apply Loctite® **290** Threadlocker at the nut and bolt juncture.

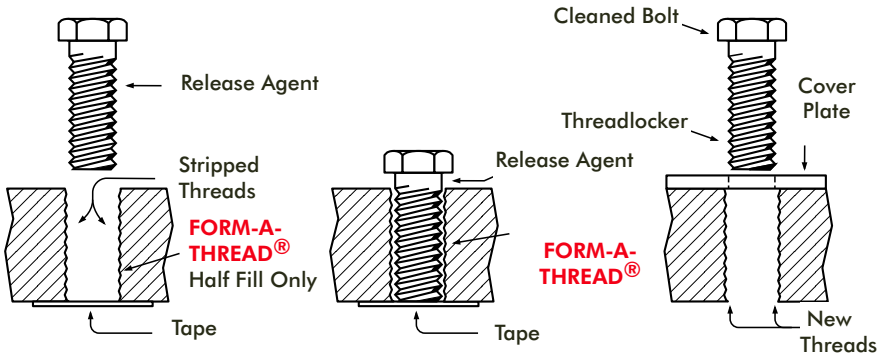
ADJUSTMENT SCREWS



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

Note:
- If re-adjustment is difficult, apply heat to screw with soldering gun (230°C).
- Use Loctite **222** when low strength locking is required.

STRIPPED THREAD REPAIR



STANDARD THREAD REPAIR

1. Follow instructions on Loctite® **FORM-A-THREAD®** package.
2. If cover plate is used for bolt alignment:
   (a) Apply release agent to mating faces around repair area.
   (b) Use "waxed" paper or similar film between faces.
3. A "jiggling/twisting" motion when initially inserting bolt improves threadconformation.
   Note: NOT intended for engine stud repair.

SMALL HOLE/FINE THREAD REPAIR

OPTION 1. Drill out damaged hole to oversize then follow STANDARD THREAD REPAIR.

OPTION 2. Apply **FORM-A-THREAD®** to screw and insert into damage hole. Clamp in place while product cures.

STUD INSTALLATION — PERMANENT (LIGHT DUTY)

1. Use stud or cut "all thread" to desired length.
2. Do NOT apply release agent to stud.
3. Proceed as STANDARD THREAD REPAIR.
4. Allow 30 minutes to cure.
5. Assemble as required.

THREADLOCKING

QUICK SELECTOR

LOCTITE® THREADLOCKER QUICK SELECTOR

Use	Strength	Product	Color
Small Screws	Low	222	Purple
Nuts & Bolts	Medium	243	Blue
Pre-Assembled	Medium	290	Green
Nuts & Bolts	High	262	Red
Studs (up to 25mm)	High	262	Red
Studs (over 25mm)	High	277	Red

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): Aluminium, stainless steel, magnesium, zinc, black oxide, cadmium, titanium, others.

PREVENTING FASTENER SEIZURE — ANTI-SEIZE

LOCTITE® ANTI-SEIZE QUICK SELECTOR

Type	Max Temp.	
Heavy Duty	1315°C	General purpose, stainless steel compatible, lead copper and sulphur free.
Silver Grade	870°C	General purpose heavy duty, high temperature grade.
Nickel	760°C	Marine applications, highly chemical resistant, copper free.

Anti-Seize compounds protect mated metal parts against friction, galling and corrosion. Anti-Seize also reduces wrench torque to facilitate assembly and disassembly of threaded connections.

TECHNICAL DATA

PRODUCT	222 SUPER SCREW LOCK	243 SUPER NUT LOCK	262 SUPER STUD LOCK	277 HIGH STRENGTH	290 SUPER WICK-IN
Size of Thread	up to M36	up to M36	up to M36	over M36	up to M20
Strength	Low	Medium	High	High	Medium
Breakaway/Prevail Torque (N.m) on MIO	6/4	20/7	22/32	32/32	10/29
Temperature Range (°C)	-55 to +150	-55 to +150	-55 to +150	-55 to +150	-55 to +150
Cure Speed	Slow/Med	Medium	Medium	Slow	Medium
Primer	7471	7471	7649	7649	7649
Colour	Purple	Blue	Red	Red	Green
Viscosity (c.P)	1,200 Thixotropic Liquid	2,250 Thixotropic Liquid	1,800 Thixotropic Liquid	7,000	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	

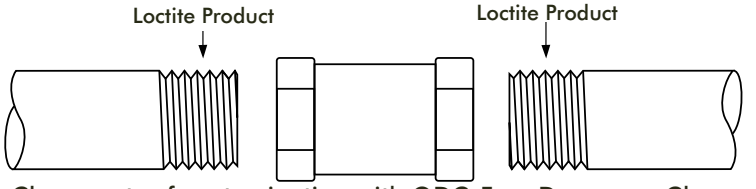
CHARCTERISTICS/ADVANTAGES OF ANAEROBIC THREADLOCKERS

- 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 (230°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.

THREADSEALING

STANDARD FITTINGS — PIPE, HYDRAULICS, POTABLE WATER OR AIR



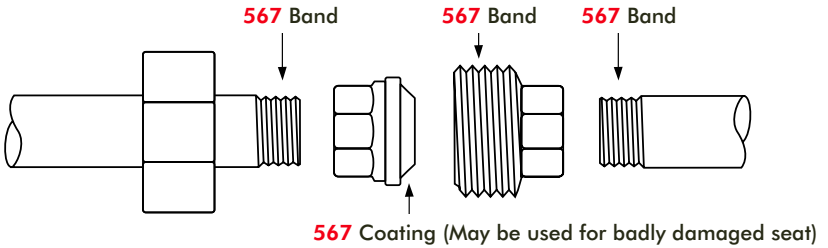
1. Clean parts of contamination with ODC-Free Degreaser Cleaner. If necessary, spray Loctite® Primer (Refer to Technical Data) onto threaded parts (male and female). Allow to dry.
   Note: Primer is not required for brass parts.
2. Apply a band of Loctite Product to male threads starting one to two threads from end of pipe.
3. Assemble parts snugly. Do not overtighten.
4. If initial pressure exceeds 6.9 MPa*, wait 30 minutes before pressurizing.

Note:

- For stainless steel components, use PST® Pipe Sealant **567**.
- For general purpose thread sealing, use PST® Pipe Sealant **567**.
- For fine filtration systems requiring zero contamination, use Hydraulic/Pneumatic Sealant **569**.
- If sealing chemicals or strong acids/bases, refer to Fluid Compatibility Chart (in **567** brochure).
- If sealing potable water system use universal pipe sealant **577** or **55** Pipe Sealing Cord.
- Do not use on oxygen or strong oxidizers (chlorine).
- Do not use Loctite **567** or **577** on PVC or ABS pipe. Use Loctite **55**.

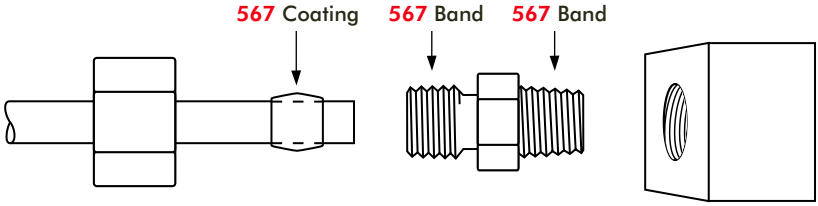
**Depending on conditions*

METAL PIPE UNIONS



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

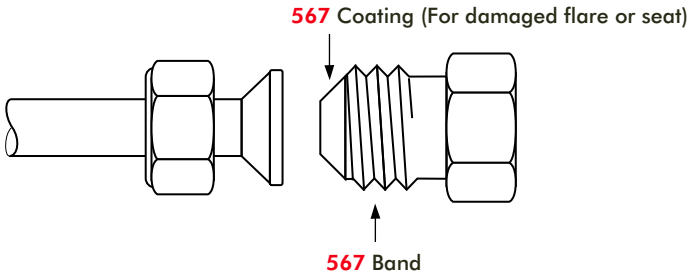
METAL COMPRESSION FITTINGS



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

   Note: Do not use on plastic fittings or tubing.

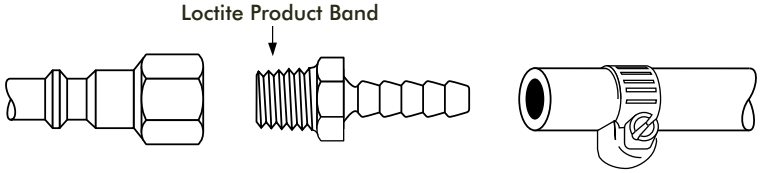
METAL FLARED/SWAGED FITTINGS



1. Disassemble and if necessary, spray all components with Loctite® 7649 Primer (N). Allow to dry.
2. Apply a thin coating of PST® Pipe Sealant 567 to fitting face.
3. Apply a band of PST® Pipe Sealant 567 to male threads.
4. Assemble parts snugly.

THREADSEALING

HOSE ENDS - AIR & HYDRAULIC



1. If necessary, spray adapter threads with Loctite® Primer (Refer to Technical Data). Allow to dry.
2. Insert barbed hose stem into hose I.D. with slight twisting motion.
3. Install appropriate hose clamp.
4. Apply a band of Loctite Product to male hose stem threads upon installation or adding accessory device. Tighten snugly.

Note: Loctite Product may attack synthetic rubber tubing.

THREAD SEALING QUICK SELECTOR (TAPERED THREADS)

Application	Product	Primer	Instant Seal	Max. Pressure	Max. Steam	Temp. Range
Stainless Steel and All Other Metal Fittings	**PST® Pipe Sealant 567**	(N)7649	3.4MPa 500 PSI	24 Hours 69MPa (10,000 PSI)	0.9MPa (130 PSI)	-55°C to +205°C
High Filtration/ Zero Contamination Systems	**Hydraulic/ Pneumatic Sealant 569**	(T)7471	10 Mins. 3.4MPa 500 PSI	24 Hours 69MPa (10,000 PSI)	N.A.	-55°C to +150°C
Potable Water Systems	**Universal Sealant 577**	(N)7649	10 Mins. 3.4MPa 500 PSI	24 Hours 69MPa (10,000 PSI)	N.A.	-55°C to +150°C
Potable Water Systems	**55 Sealing Cord**	–	Instant 69MPa (10,000 PSI)	Instant 69MPa (10,000 PSI)	N.A.	-55°C to +130°C

DO NOT USE THESE PRODUCTS ON OXYGEN OR STRONG OXIDIZERS.

FLUID COMPATIBILITY QUESTIONS?

1. Refer to Fluid Compatibility Chart – inside 567 brochure.
2. Contact your local Industrial Distributor.
3. Call Loctite Technical Information. See back cover for the Loctite Technical Information number in your area.

TECHNICAL DATA

PRODUCT	569 HYDRAULIC SEALANT	567 MASTER PIPE SEALANT	577 HIGH PRESSURE PIPE SEALANT	55
Size of Thread	up to 3/4"	up to 3"	up to 3"	up to 6"
Strength	Low	Low	Medium	Low
Breakaway/Prevail Torque (N.m) on MIO	4/2	1.7/NA	11/6	NA
Temperature Range (°C)	-55 to +150	-55 to +205	-55 to +150	-55 to +130
Cure Speed	Medium	Slow	Medium	Instant
Optional Primer	7471	7649	7649	NA
Colour/Format	Brown/Liquid	White/Gel	Yellow/Gel	White/Cord
Visocisty (c.P)	400	540,000	24,000	NA

IMPORTANT PRODUCTS ARE NOT TO BE USED ON OXYGEN SYSTEMS OR IN OXYGEN RICH ENVIRONMENTS. DO NOT USE WITH STRONG OXIDISERS (CHLORINE). Check compatibility chart for fluid and gas compatibility.

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	

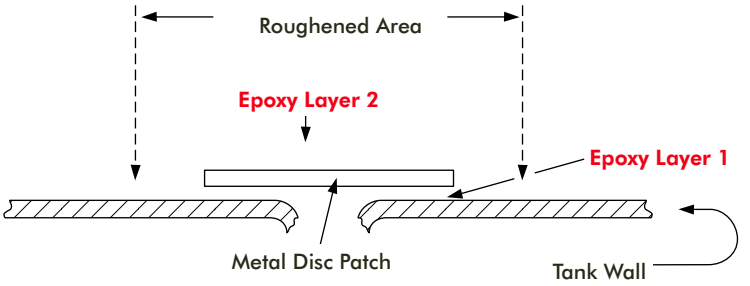
CHARACTERISTICS/ADVANTAGES OF ANAEROBIC THREAD SEALING

- 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® **5 Minute Epoxy** (A and B) as per directions.
6. Apply a thin layer of **5 Minute Epoxy** to roughened area.
7. Immediately position disc patch over hole.
8. Apply a cover layer of **Five Minute Epoxy** 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

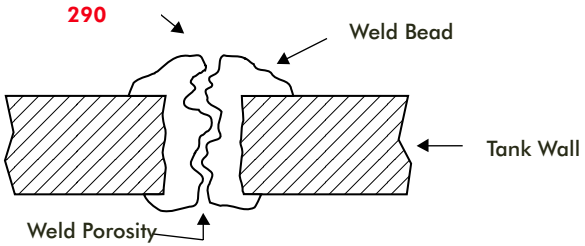
1. Drill termination holes to prevent further cracking.
2. Follow directions above. Modify as needed.

SEALING PINHOLES

1. Follow directions above. No disc patch needed.

POROSITY SEALING

POROSITIES IN WELDS AND CASTINGS



1. **IMPORTANT!** TAKE PROPER SAFETY PRECAUTIONS WHEN 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 approx. 120°C.
5. Allow repair area to cool to approx. 50°C.
6. Brush or spray **290** on repair area.

   Note:
   - Not recommended for "blowholes"
   - Maximum porosity sealed = 0.1mm
7. Allow to cure for 30 minutes (for high pressure above 1000kPa, allow a minimum of 1 hour)
8. Clean with Loctite® ODC-Free Cleaner & Degreaser to remove excess sealant. Do not grind.
9. Paint as required.

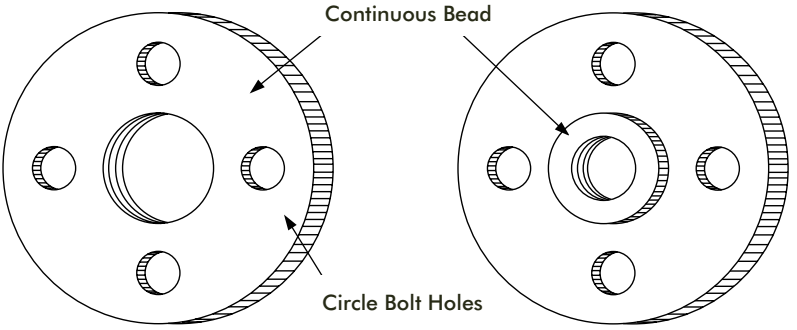
   Note: Casting repair uses same procedure.

SEALING NEW WELDS — PREVENTATIVE MAINTENANCE

1. Remove all slag and scale while hot.
2. Apply sealant when weld is 50°C and cooling down.
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® Primer (Refer Technical Data) on only one surface. Allow to dry.
4. Apply a continuous bead of SELECTED LOCTITE GASKETING PRODUCT to the other surface.

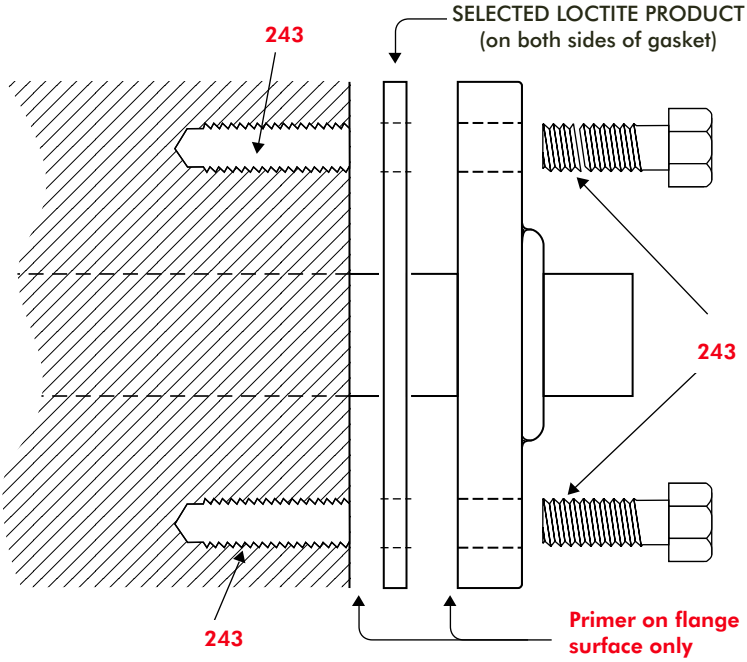
   Note: Circle all bolt holes with sealant, if appropriate.
5. Mate Parts. Assemble and tighten as required. **Note:** Immediate assembly not required; however avoid delays over 45 minutes.
6. Allow to cure:
   a. No pressure – immediate service
   b. Low pressure (up to 3.45MPa) – 30 to 45 minutes
   c. High pressure (3.45 to 17.2MPa) – 4 hours
   d. Extreme high pressure (17.2 to 34.45MPa) – 24 hours

LOCTITE® GASKETING QUICK SELECTOR

Use	Product	Gap Fill	Temp. Range
FLANGE SEALANT MASTER GASKET			
General	FLANGE SEALANT **518**	0.5mm	-55°C to +150°C
General	MASTER GASKET **515**	0.5mm	-55°C to +150°C
Hi-Temp	GASKET ELIMINATOR® **510**	0.25mm	-55°C to +200°C

GASKET DRESSING

SEALED FLANGES WITH GASKET



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® Primer (Refer Technical Data) on both flange faces. Allow to dry.
4. Smear SELECTED LOCTITE PRODUCT 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 **243** Threadlocker into hole and on threads. Tighten normally.
   - If through bolt assembly, apply **243** Threadlocker to bolt threads only.

6. Tighten as per standard practice.

FLANGE SEALING

TECHNICAL DATA

PRODUCT	510 GASKET ELIMINATOR	515 MASTER GASKET	518 MASTER GASKET
Flange Type	Rigid	Rigid	Rigid Alloy
Temperature	-55 to +200	-55 to +150	-55 to +150
Gap Fill (mm)	up to 0.25	up to 0.5	up to 0.5
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	

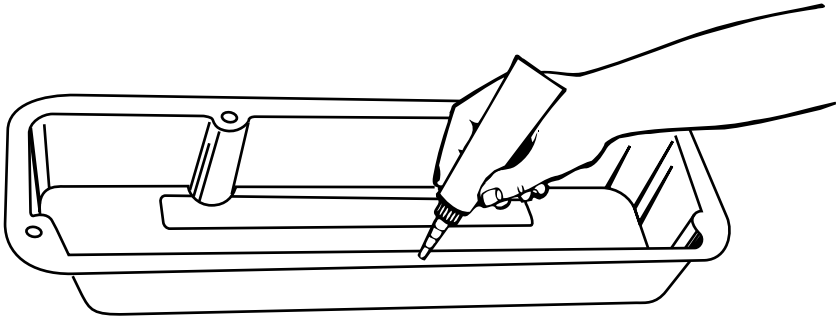
CHARCTERISTICS/ADVANTAGES OF GASKETING

- 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 GASKETING

STAMPED OR SHEET METAL FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite® CHISEL® Gasket Remover.
2. Clean both flanges with Loctite® ODC-Free Cleaner & Degreaser.
3. Apply a continuous bead of the selected Loctite® MAXX SILICONE 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.
6. Cure times will vary with temperature, humidity, and gap. Typical full cure time is 24 hours.

FORM-IN-PLACE GASKETING

MAXX SERIES SILICONES

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
Temperature[1]	-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.	24hrs.	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.

Note: Silicones used at extreme high temperatures can seal but lose various properties.

REASONS TO USE MAXX SERIES SILICONES INSTEAD OF STANDARD RTV SILICONES

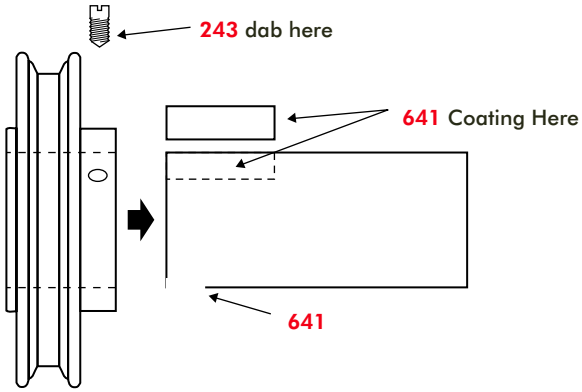
- LOCTITE® MAXX SERIES SILICONES WILL NOT CORRODE STEEL OR ALUMINIUM. Standard RTV acetoxy silicones (vinegar smell) should not be used to seal closed systems (gear boxes, electrical boxes, etc.). Acetic acid will corrode internal parts (bearings, contacts, etc.).
- LOCTITE® MAXX SERIES SILICONES ARE 8 TIMES MORE OIL RESISTANT THAN STANDARD RTV SILICONES. Standard RTV silicones should not be used to seal "Hot Oil" systems (oil pan, etc.). They swell and lose sealing ability.

REASONS TO USE LOCTITE ANAEROBIC GASKETING PRODUCTS (510, 515 OR 518) INSTEAD OF STANDARD RTV SILICONES

- LOCTITE® ANAEROBIC GASKETING PRODUCTS ARE RESISTANT TO GASOLINE AND FUEL OILS. Silicones should not be used to seal fuel systems. They swell and lose sealing ability.
- LOCTITE® ANAEROBIC GASKETING PRODUCTS RESIST "BLOW-OUT". Silicones are not recommended for high pressure applications.

STRENGTHEN KEYED ASSEMBLIES

KEYED ASSEMBLIES - STANDARD DUTY



ASSEMBLY

1. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray all parts (I.D. and O.D.) with Loctite® Primer (Refer Technical Data).
3. Apply Loctite® **641** coating into keyway and on key.
4. Apply dab(s) of **641** onto shaft opposite keyway or evenly spaced around shaft. Avoid touching bottle tip to metal.
5. Assemble parts. Wipe off excess.
6. Apply **243** dab to set screw.
7. Tighten set screw.
8. Allow 5-10 minutes cure time prior to service.

Note:

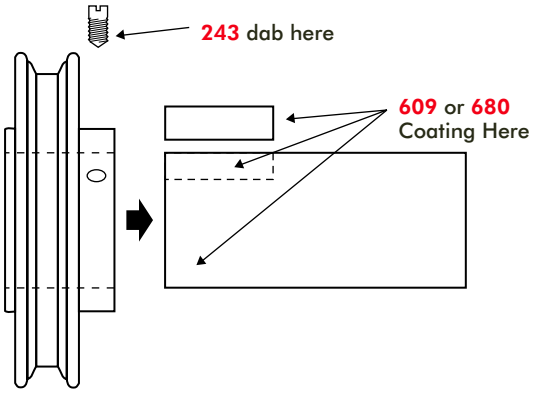
- LOCTITE **641** is NOT recommended for radial gaps exceeding 0.2mm on shaft or keyway.
- See BADLY WALLOWED KEYWAY for procedure page 23.

DISASSEMBLY

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

STRENGTHEN KEYED ASSEMBLIES

KEYED ASSEMBLIES-HEAVY DUTY



ASSEMBLY

1. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
2. Apply a **609** or **680** coating around shaft, into keyway, and on key. Avoid touching bottle tip to metal.
3. Assemble parts. Wipe off excess.
4. Apply a **243** dab to screw.
5. Tighten set screw.
6. Allow 30 minutes cure time prior to service.

Note:

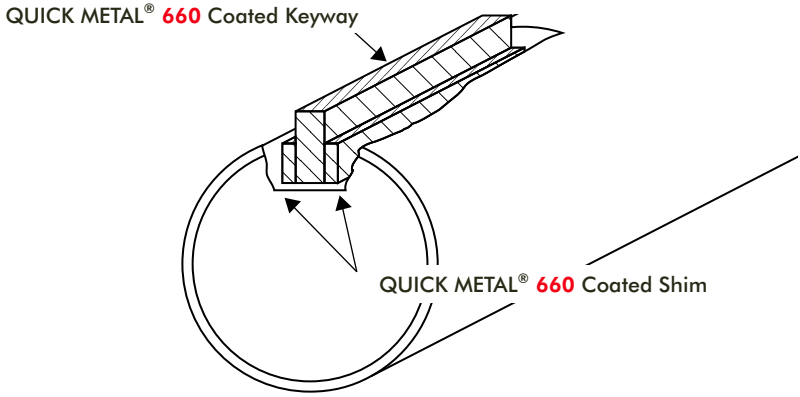
- If gap exceeds 0.1mm, use Loctite® **7471** Primer (T) on appropriate area (shaft or keyway).
- LOCTITE **609** and **680** are NOT recommended for radial gaps exceeding 0.2mm on shaft or keyway.
- See BADLY WALLOWED KEYWAY for procedure page 23.

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

REPAIR BADLY WALLOWED KEYWAY



1. Determine the gap width on each side of key.
2. Select and trim appropriate shim stock.
3. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
4. If necessary, spray all parts with Loctite® 7471 Primer (T). Allow to dry.
5. Apply a Loctite® QUICK METAL® 660 coating into keyway
6. Install shims.
7. Assemble as required using QUICK METAL® 660.
8. Allow 30-60 minute cure time.

Note:

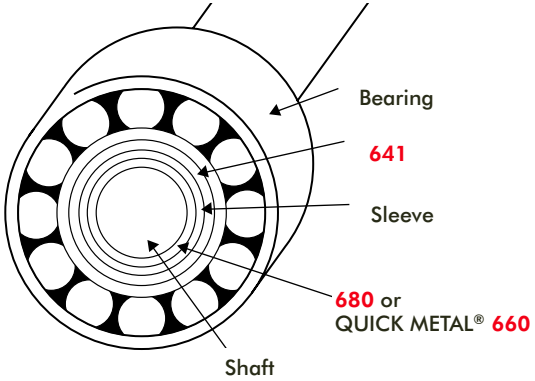
- Minimise gap, by using shim stock.
- QUICK METAL® 660 is NOT recommended for lateral gaps exceeding 0.5mm.
- Higher strengths are obtained by NOT using 7471 Primer (T) with small (0.05mm - 0.1mm) gap, and allowing longer cure (4-24 hours).

EMERGENCY REPAIR ONLY!

Due to the nature of the damage, this should be considered a temporary repair until the unit can be replaced.

SHAFT MOUNTED COMPONENTS

REPAIR 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. Spray all parts with Primer (Refer Technical Data). Allow to dry.
6. Apply a Loctite® **680** or Loctite® QUICK METAL® 660 coating around the shaft. Avoid touching bottle tip to metal.
7. Install sleeve.
8. Apply a coating of Loctite® **641** to sleeve O.D.
9. Install component as required onto sleeved shaft.
10. Allow 30-60 minute cure time.

Note:

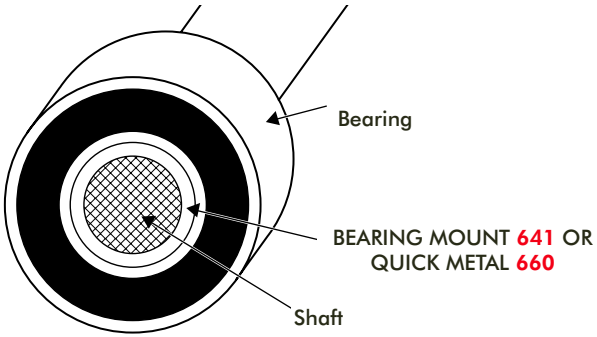
- Minimize gap fill using shim stock or sleeve material.
- QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.
- Higher strengths are obtained by NOT using Primer with small radial (0.05mm - 0.1mm) gap, and allowing longer cure (4-24 hours).

EMERGENCY REPAIR ONLY!

Due to the nature of the damage, this should be considered a temporary repair until the unit can be replaced.

SHAFT MOUNTED COMPONENTS

SLIP FIT — LIGHT 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® Primer (Refer Technical Data).
4. Apply Loctite® **641** dabs around shaft at engagement area.
5. Assemble parts. Do not rotate.
6. Wipe off excess.
7. Allow ten minutes cure time prior to service.

WORN SHAFT

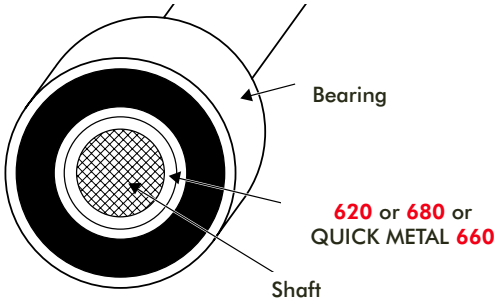
Follow directions above except:

1. Determine radial gap.
2. If radial gap exceeds 0.1mm, Loctite® Primer must be used.
3. Take steps to maintain concentricity with large gaps.
4. Larger gaps require longer cure times (30-60 minutes).
5. Loctite® QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.
6. See procedure for BADLY WORN SHAFT page 24.

Note: Loctite® QUICK METAL® **660** is very fast fixturing (30 seconds or less) with Loctite® **7471** Primer (T).

SHAFT MOUNTED COMPONENTS

SLIP FIT — 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. Do NOT use Loctite® Primer.
4. Apply a Loctite® **680** coating around shaft and engagement area. Avoid touching bottle tip to metal.
5. Assemble parts with rotating motion.
6. Wipe off excess.
7. Allow 2 hours minimum cure time prior to service.

WORN SHAFT

Follow directions above except:

1. Determine radial gap.
2. If radial gap exceeds 0.1mm, Loctite® Primer must be used.
3. Take steps to maintain concentricity with large gaps.
4. Larger gaps require longer cure times (30-60 minutes).
5. QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.
6. See procedure for BADLY WORN SHAFT page 24.

MAXIMUM TEMPERATURE (200°C continuous)

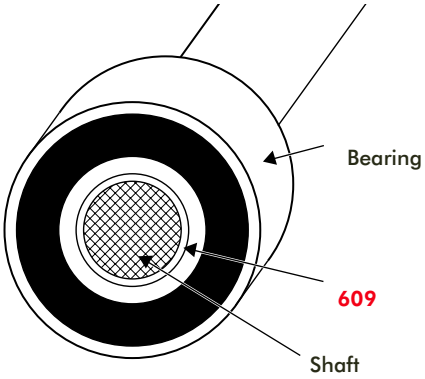
1. Same as above, except use Loctite® **620** with Loctite® Primer.

DISASSEMBLY

1. Pull as usual.
2. If necessary, apply localized heat (230°C for 5 minutes). Pull while hot.

SHAFT MOUNTED COMPONENTS

PRESS FIT



STANDARD

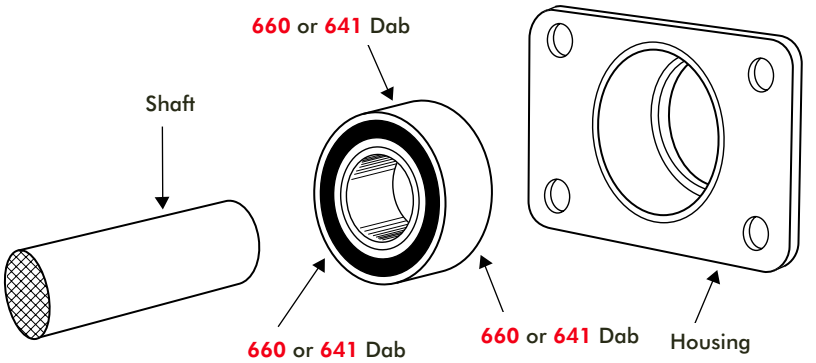
1. Clean shaft O.D. and Component I.D with ODC-Free Cleaner.
   Do NOT use Primer.
2. Apply a bead of Loctite® **609** to circumference of shaft and bearing at leading edge of insertion or leading area of engagement. Avoid touching bottle tip to metal.
   Note:
   - Retaining compound will always be squeezed to the outside when applied to shaft.
   - Do NOT use with Loctite® Anti-Seize or similar product.
3. Press on as usual. Wipe off excess.
4. No cure time required.
   Note: **609** 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.

HOUSED COMPONENTS

SLIP FIT — LIGHT DUTY



ORIGINAL

1. Select component to fit shaft.
2. Machine to reduce component O.D. or increase housing I.D. to permit approximate 0.05mm - 0.1mm diametral slip fit.
3. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser and spray with Loctite® Primer (Refer to Technical Data).
4. Apply several Loctite® **641** dabs to component O.D. Avoid touching bottle tip to metal.
5. Install component. Do not rotate.
6. Wipe off excess.
7. Allow five minutes cure time prior to service.

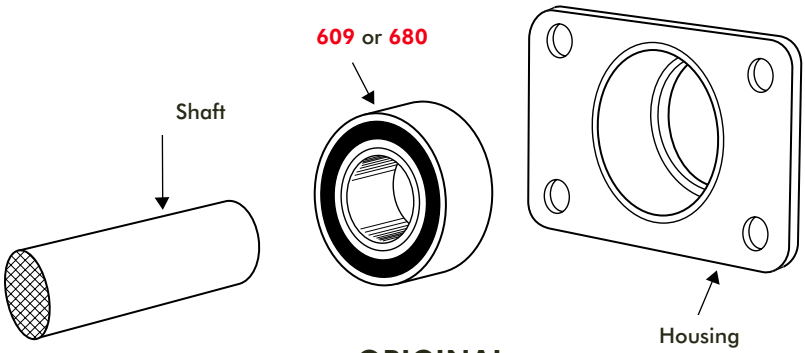
WORN

Procedures identical to original slip fit, except:

1. Determine the maximum radial gap.
2. If the maximum gap exceeds 0.1mm, use QUICK METAL **660** and **7471** Primer (T).
3. Take steps to maintain concentricity on large gaps.
4. Large gaps require longer cure times (30-60 minutes).
5. QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.

HOUSED COMPONENTS

SLIP FIT — HEAVY DUTY



ORIGINAL

1. Select component to fit shaft.
2. Machine to reduce component O.D. or housing I.D. to permit approximate 0.05mm - 0.1mm diametral slip fit.
3. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
4. Do NOT use Primer.
5. Apply Loctite® **609** or **680** coating to component O.D.
6. Install component with twisting motion.
7. Wipe off excess.
8. Allow 2 hours cure time prior to service.

WORN

Procedures are identical to original slip fit, except:

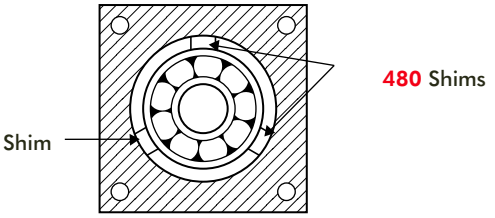
1. Determine the maximum radial gap.
2. If the maximum radial gap exceeds 0.1mm, use QUICK METAL **660** and Loctite® **7471** Primer (T).
3. Take steps to maintain concentricity on large gaps.
4. Large gaps require longer cure times (30-60 minutes).
5. QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.

DISASSEMBLY

1. Pull as usual.
2. If necessary, apply localized heat (230° C for five minutes).
3. Pull while hot.

HOUSED COMPONENTS

RETAINING (LARGE GAPS)

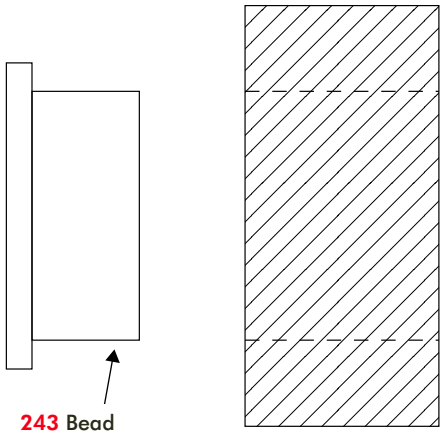


EXCESSIVE / EVEN WEAR

1. Clean parts with ODC-Free Cleaner.
2. Position the component in bore.
3. Select three equilateral mounting points.
4. Determine the radial gap at those points.
5. Select appropriate shim stock.
6. Cut three pieces approx. 3mm wide to fit bore depth.
7. Bond the shims to bore at mounting points using Loctite® **480**.
8. Assemble per instructions page 29.

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® **7471** Primer (T).
3. Apply a bead of Loctite® **243** Threadlocker to the leading edge of metallic seal O.D. Avoid touching bottle tip to metal.

   Note: Virtually any Loctite® Threadlocking product will work here. Low strength liquid is recommended due to normal gap and strength requirement.
4. Install as usual.
5. Wipe off excess.
6. Allow to cure 30 minutes prior to service.

Note:

• Loctite® **243** Threadlocker 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

QUICK SELECTOR

Application	Product	Primer
Shaft Mount – Press fit	Retaining Compound 609	NONE
Shaft Mount – Slip Fit		
Small Gap (0.05mm Radial max.)	Retaining Compound 609	(T)7471
Larger Gap (0.5mm Radial max.)	QUICK METAL® 660	(T)7471
Maximum Strength (0.2mm Radial max.)	Retaining Compound 680	(T)7471
Maximum Temperature (200°C) (0.2mm Radial max.)	Retaining Compound 620	(T)7471 or N 7649
Housing Mount – Press Fit		
Maximum Strength	Retaining Compound 609	NONE
Medium Strength	Bearing Mount 641	NONE
Housing Mount – Slip Fit		
Maximum Strength	Retaining Compound 680	(T)7471
High Strength	Retaining Compound 609	(T)7471
Medium Strength	Bearing Mount 641	(N)7649

Note:

- Softer metals (Aluminium, Bronze, etc.) provide lower shear strengths than ferrous components.
- Excessive gap reduces shear strengths.
- Ideal surface finish — 0.8 to 3.2 microns (50 to 80 rms) .

Refer to Technical Data Sheets for more information.

TECHNICAL DATA

PRODUCT	641 BEARING MOUNT	609 MEDIUM/HIGH STRENGTH	620 HIGH TEMPERATURE	660 QUICK METAL	680 VERY HIGH STRENGTH
Strength	Low	Medium/High	HIgh	High	Very High
Shear Strength (N/mm)	7 to 16	16 to 30	17 to 37	15 to 30	Nominal 28
Temperature Range (°C)	-55 to +150	-55 to +150	-55 to 230	-55 to +150	-55 to +150
Gap Fill (mm)	up to 0.2	up to 0.2	up to 0.25	up to 0.5	up to 0.2
Cure Speed	Fast	Fast	Medium	Slow	Fast
Optional Primer	7649	7471	7471 or 7649	7471	7471
Colour	Yellow	Green	Green	Silver	Green
Viscosity (c.P.)	525 Liquid	125 Liquid	1800 Liquid	250,000 Paste	1,250 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 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	

CHARCTERISTICS/ADVANTAGES OF RETAINING COMPOUND

- Retaining compound flows into all voids between mating parts, retaining and sealing.
- Can double press fit strengths (steel to steel).
- Slip fits can exceed heavy press/shrink strength (steel to steel).
- Slip fits (Steel:Aluminium:Bronze) can equal press fit strength.
- Unitised assemblies are stronger and resist micro movement/key wallow.
- High strength retained assemblies can be dissassembled with heat (approx. 230°C to 300°C)

IMPORTANT NOTE: Do not use anaerobic retaining compounds on most thermoplastics (ABS, PVC, etc). Softening and/or stress cracking may occur. Anaerobic retaining compounds can be used with 7471 or 7649 Primer on nylon and thermoset plastics.

GUIDE TO SUCCESSFUL BONDING

I. JOB EVALUATION — Answer These Questions.

- A. What materials are to be bonded? What kind of rubber, plastic, etc.? Porous? Slick? Rough?
- B. What kind of service? Operating temperature? Impact? Moisture or water exposure?
- C. What kind of stresses? Avoid peel or cleavage!
- D. Is gap filling or bridging needed? How much?
- E. What cure speed or "return to service" time is needed?

II. ADHESIVE SELECTION (See page 36.)

III. SURFACE PREPARATION

1. Part must be clean. No oil. No grease. No residue.
2. Remove paint from bond area for maximum strength.
3. Roughen smooth surfaces with emery cloth.
4. Treat selected "hard to bond" materials as directed:
   a. Polyethylene, etc. – Use Loctite® Prism® Primer **770** and adhesive **401** or **406**.
   b. PTFE – Use appropriate etching agent.
5. Clean parts with ODC-Free Cleaner.

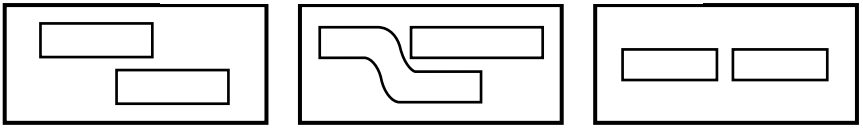
IV. APPLICATION TECHNIQUES/TIPS

- A. Read and follow adhesive package instructions.
- B. Use the minimum amount of adhesive to one part only. Apply activator (if required) to other part.
- C. Avoid "jiggling" mated parts. Apply clamp pressure if possible.
- D. Allow maximum cure time possible. See technical data for recommended cure times.

V. QUESTIONS? Call Loctite Technical Information. See back cover for the Loctite Technical Information number in your area.

PROPER JOINT DESIGN

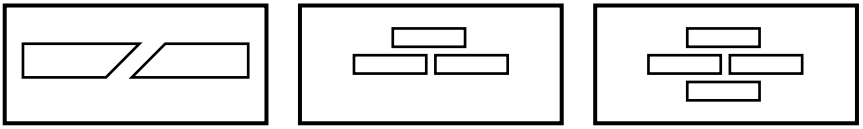
TYPES OF JOINTS



LAP/OVERLAP
GOOD

JOGGLE LAP
GOOD

BUTT
FAIR/POOR

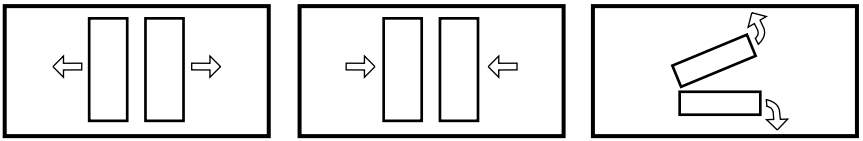


SCARF
FAIR

SINGLE STRAP
GOOD

DOUBLE STRAP
BEST

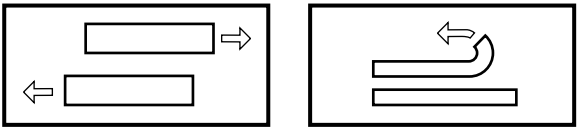
TYPES OF STRESSES



TENSILE
FAIR

COMPRESSIVE
GOOD

CLEAVAGE
POOR



SHEAR
GOOD

PEEL
POOR

DESIGN GUIDELINES

1. Maximize shear/minimize peel and cleavage.
2. Maximize compression/minimize tensile.
3. Joint width more important than overlap.

BONDING

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

OPTIMUM USE OF 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 and water soluble surfaces and chlorides must be removed to allow Loctite® Extend® to react with rust.

Loose rust, mill scale and oil paint should be removed preferably by power wirebrushing, followed by rinsing with water to remove powder and solubles. Manual wirebrushing, chipping, scraping and particularly rotopeening can also be used. Ideal surfaces will show light rust as well as bare metal surfaces.

RUST CONVERSION TIME AND APPEARANCE:

Two coats of Loctite® Extend® are recommended.

On lightly rusted steel (that has been wirebrushed), the first coat will start to develop a violet color within 60 seconds. This will become satin to flat black in appearance. The second coat should dry to a satin black appearance.

On heavily rusted steel (that has been wirebrushed), the first coat should develop a purple-black color within seconds. The second coat should dry to a black color with gloss varying from flat to satin. The second coat should be applied within 15-30 minutes of the first coat.
Note: May cause staining of surrounding painted finishes.

APPLICATION CONDITIONS:

Loctite® Extend® may be applied when surface and air is between +10°C minimum and 32°C maximum. 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. Extend® 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® EXTEND® TO SURFACES IN DIRECT SUNLIGHT.

APPLICATION EQUIPMENT METHODS:

Loctite® Extend® 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 then roll back. Do not pour unused material back into the original container. NEVER add solvents to Loctite® Extend®. 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® Extend® may require thinning up to 10% with water for proper spraying.

CLEANING

ODC – FREE CLEANER

Loctite® ODC – Free Cleaner & Degreaser® is a non-aqueous, hybrocarbon-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.

HAND CLEANING

For fast, effective hand cleaning without skin-irritating petroleum solvents, use YUK OFF ORANGE® Natural Citrus Hand Cleaner. YUK OFF ORANGE® Hand Cleaner removes grease, grime, paint, oil and ink and contains aloe and lanolin to keep hands from cracking and drying out. It's even biodegradable.

MAKING O-RINGS

Cut rubber cord stock to length in fixture supplied in Loctite O-Ring Splicing Kit.

Apply Loctite Prism Adhesive 406 to end of cord diameter.

Press cord ends together for 30 seconds in groove of fixture. O-Ring is now ready to use.

MAKE THAT O-RING . . . THE RIGHT WAY

1. Clean razor blade.
2. Use "guillotine" cutter for best square end cuts.
3. Keep cut ends clean – no oily fingerprints.
4. Use one drop instant adhesive on one end only.
5. Use v-groove jig for proper ailgnment and hold for 30 seconds.
6. Use waterproofing solution to protect the joint.

IMPORTANT NOTES

1. Recommended for static-stationary O-Rings only.
2. Works best with nitrile rubber (Buna N) cord stock.
3. On silicone stock use Loctite® Primer 770 with Loctite® Adhesive 406.

ORDERING

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
THREADLOCKERS		
222 SMALL SCREW	10 ml bottle	22220
	50 ml bottle	22250
	250 ml bottle	22270
243 REMOVABLE	10 ml bottle	21320
	50 ml bottle	21321
	250 ml bottle	21322
262 PERMANENT	10 ml bottle	26220
	50 ml bottle	26250
	250 ml bottle	26270
277 LARGE STUD	50 ml bottle	27750
	250 ml bottle	27770
290 WICKING	10 ml bottle	29020
	50 ml bottle	29050
	250 ml bottle	29070
THREAD SEALANTS		
569 HYDRAULIC/PNEUMATIC SEALANT	50 ml bottle	56950
	250 ml tube	56970
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
	50m	37371
RETAINING COMPOUNDS		
609 GENERAL PURPOSE	10 ml bottle	30013
	50 ml bottle	30015
	250 ml bottle	30014
620 HIGH TEMPERATURE	50 ml bottle	62050
	250 ml bottle	62070
660 QUICK METAL® PRESS FIT REPAIR	6 ml tube	66010A
	50 ml tube	66040A
680 HIGH STRENGTH/HIGH VISCOSITY	50 ml bottle	68050
	250 ml bottle	68070
641 BEARING MOUNT	10ml bottle	21314
	50ml bottle	21315
	250ml bottle	21316

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
GASKETING		
510 GASKET ELIMINATOR® HIGH TEMPERATURE	50 ml tube 250 ml tube	25555A 25554
515 MASTER ELIMINATOR®	6 ml tube 50 ml tube 300 ml cartridge	51517 51531A 33530
518 FLANGE SEALANT®	6 ml tube 25 ml syringe 50 ml tube 300 ml cartridge	51817 51827 25583A 51845
5900 INSTANT GASKET (aerosol)	198g can	30507
5900 HEAVY BODIED BLACK SILICONE	390g cartridge	20166
5910 BLACK® MAXX RTV SILICONE GASKET MAKER	95g tube 390g cartridge	34250 20166
587 BLUE® MAXX RTV SILICONE GASKET MAKER	95g tube 370g cartridge	34848 34888
5920 COPPER® MAXX RTV SILICONE GASKET MAKER	85g tube	34249
5699 GREY® MAXX RTV SILICONE GASKET MAKER	95g tube 420g cartridge	34238 18581A
ADHESIVES		
330 MULTIBOND® NO-MIX Also (see Activator 7387)	300 ml cartridge	33064A
406	25ml bottle 100ml bottle 500ml bottle	40633-25 33533 33534
401	25ml bottle 100ml bottle 500ml bottle 3g tube	40124-25 33531 33532 16704A
454 PRISM® SURFACE INSENSITIVE GEL	3 gm tube 20 gm tube 200g tube	45404 45416A 45474
480 PRISM® TOUGHENED	25ml bottle 500g bottle	16819-25 16887
5 MINUTE EPOXY	29.5ml syringe Various Epoxies	20981

ORDERING

PRODUCT LISTING/ORDER INFO.

CATEGORY	SIZE	ITEM NO.
PRIMERS		
7471 PRIMER T (Acetone)	2L Can	24062
	125g	21356
7649 PRIMER N (Acetone)	2L Can	24063
	100ml	22410
770 PRISM® PRIMER (Heptane)	100ml bottle	29520
	1L Can	24377
7387 330 ACTIVATOR	100ml	24058
	1L	24059
7452 TAK PAC ACCELERATOR	20g aerosol	21520
	1L	24064
LUBRICANTS		
C5-A® COPPER ANTI-SEIZE	3.63Kg Can	51009
	453g brush top	51007
	aerosol	51003
NICKEL ANTI-SEIZE 771	28g Tube	28182A
	454g	77164
SILVER GRADE ANTI-SEIZE	250g tube	76741
	454g brush top	76764
	200g aerosol	76756
	5kg pail	76731
	10kg pail	76785
	236ml brush top	76732
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
GENERAL MAINTENANCE		
EXTEND® RUST TREATMENT	18.9L	75465
	946ml bottle	75430
	3.75L bottle	75448
FORM-A-THREAD® STRIPPED THREAD REPAIR	13.1 ml syringe	STR1
O-RING SPLICING KIT "Inch"	Kit	10361A
O-RING SPLICING KIT "Metric"	Kit	16224A
FIXMASTER METAL MAGIC STEEL STICK	113g	98853

TROUBLESHOOTING

1. What type 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 (c) fluid compatibility
   (b) excessive pressure too soon
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 (c) improper joint design
   (b) component materials (d) inadequate clamping/fixturing
9. If additional assistance is required, please call our HENKEL LOCTITE TECHNICAL INFORMATION LINE. See back cover for the Loctite Technical Information number in your area.

LIMITATION OF WARRANTY