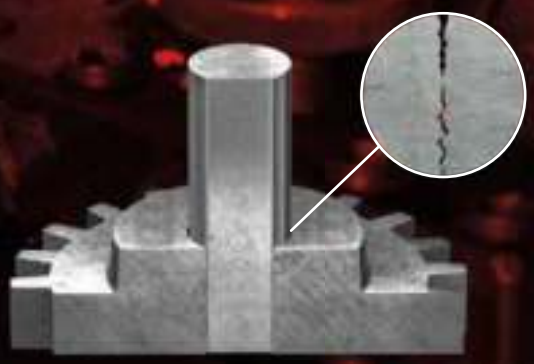
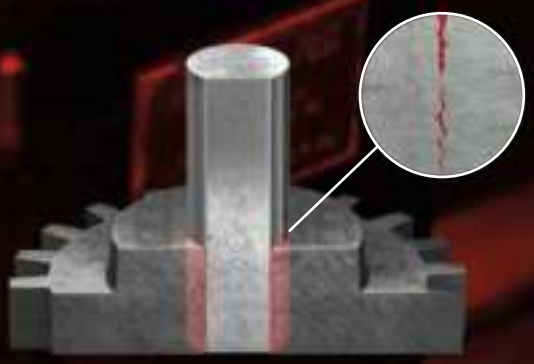
RETAINING COMPOUNDS

LOCTITE retaining compounds secure components.

For strong reliable assemblies.





PROBLEM

Without retaining compounds:
Mechanical fitting methods leave gaps between fitted parts which cause cylindrical assembly failure.

SOLUTION

With retaining compounds:
Gaps are unitised to provide higher torsional loads and prevent fretting corrosion.

High loads
High strength products

Retaining compounds secure bearings, keyways and cylindrical parts into housings or onto shafts, forming strong assemblies. LOCTITE retaining compounds offer an effective and economical method to eliminate challenges like loosening, corrosion, backlash and wearing by unitising the assembly and providing uniform stress distribution. LOCTITE retaining compounds enable higher load transmission with existing design and geometry. Equal performance and lighter construction can be achieved with lower interference. At the same time component stress of interference fits can be reduced, which might lead to failure, particularly when combined with operational stresses.

How to choose a retaining compound.

GAP SIZE

UP TO 0.15 MM

Typically, lower viscosity retaining compounds are used for gaps up to 0.15 mm. These are typically tight fitting interference fits like those found in press & shrink fits.

0.15 TO 0.25 MM

For gaps above 0.15 mm retaining compounds with higher viscosities that allow for better gap fill are used. These include bonded slip fits.

0.25 TO 0.5 MM

For assemblies with large gaps that are badly worn, special paste-like retaining compounds should be used.

TEMPERATURE RESISTANCE

Most LOCTITE retaining compounds are able to withstand temperatures of -55 to +150 °C. However, certain chemistries are available that withstand temperatures up to +180 to +230 °C for assemblies which see higher service temperatures.

STRENGTH

A high-strength retaining compound is recommended for applications that do not need to be disassembled or require extremely high torsional loads. If parts need to be taken apart for maintenance, a lower strength product should be used to aid in disassembly.

BEST SELLER

LOCTITE 638

General Purpose, Slip Fit

LOCTITE 638 is recommended for slip fit parts with larger gaps. Excellent performance for dynamic, axial and radial loads. Tolerates minor surface contaminants and cures on inactive metals without an activator.

Approvals:

- P1 NSF Reg. No. 123010
- DVGW (EN 751-1): NG-5146AR0619
- WRAS (BS 6920): 0511518

Gap:
Up to 0.25 mm

Temperature Resistance:
180 °C

Strength:
29 N/mm²

BEST SELLER

LOCTITE 660

Badly Worn Assemblies*

LOCTITE 660 is designed for repairing worn coaxial parts without remachining. Enables re-use of worn bearing seats, keys, splines or tapers, or for retaining shims. Use with activator LOCTITE SF 7649

Approvals:

- P1 NSF Reg. Nr.: 123704

* In combination with activator

Gap:
Up to 0.5 mm

Temperature Resistance:
150 °C

Strength:
17.2 N/mm²

Find the right product for your application

GAP SIZE

Up to 0.15 mm

LOCTITE 603
LOCTITE 641
LOCTITE 648
LOCTITE 6300**

0.15 to 0.25 mm

LOCTITE 620
LOCTITE 638

0.25 to 0.5 mm

LOCTITE 660

Degrease, clean and dry surfaces prior to applying the retaining compound – use LOCTITE SF 7063.

If the retaining compound is applied below +5 °C, pre-treatment with LOCTITE SF 7240 or LOCTITE SF 7649 is advised. Use in conjunction with existing designs to increase their strength.

For shrink fit assemblies, please contact your local Sales Engineer.

** Optimised Health & Safety products focusing on people safety. Enhancing safety in production, application and end-use.

*Fixture time measured at room temperature on steel joints

Gap Size up to 0.15 mm

LOCTITE 603
General Purpose

Temperature resistance: 150 °C

Strength: 22.5 N/mm²

Fixture time: 8 min*.

LOCTITE 641
Medium Strength

Temperature resistance: 150 °C

Strength: 6.5 N/mm²

Fixture time: 25 min*.

LOCTITE 648
High Strength

Temperature resistance: 180 °C

Strength: 31 N/mm²

Fixture time: 3 min*.

LOCTITE 6300
Health & Safety**

Temperature resistance: 180 °C

Strength: 15 N/mm²

Fixture time: 10 min.

SEE THE FULL PORTFOLIO OF RETAINING COMPOUNDS AT:

www.henkel-adhesives.co.uk

Gap Size 0.15 to 0.25 mm

LOCTITE 620
High Temperature

Temperature resistance: 230 °C***

Strength: 17.2 N/mm²

Fixture time: 60 min*.

LOCTITE 638
General Purpose

Temperature resistance: 180 °C

Strength: 29 N/mm²

Fixture time: 4 min*.

Gap Size 0.25 to 0.5 mm

LOCTITE 660
Badly Worn Assemblies
Use with LOCTITE SF 7240
or LOCTITE SF 7649

Temperature resistance: 150 °C

Strength: 17.2 N/mm²

Fixture time: 15 min*.

*** After 30 min. heat cure at 180 °C

Surface Preparation

LOCTITE SF 7063
Cleaner

A solvent-based, general purpose parts cleaner formulated for metals. The product is able to remove most oils, greases, lubrication fluids, metal cuttings and dries residue-free.

LOCTITE SF 7649
Activator

Designed to promote the curing speed of LOCTITE anaerobic adhesives and sealants without any significant loss of joint strength. Especially recommended for applications with passive metals or inert surfaces and with large bond gaps.

Equipment

Pressure / Time System

LOCTITE 97152
Dual Channel Controller
IDH 1275665

It is a versatile multi-functional controller for actuating 1 – 2 dispensing valves as well as appropriate peripheral equipment such as reservoir, advancing slide, rotorspray and on-line flow monitor.

LOCTITE 97113
Stationary Applicator valve
IDH 88644

LOCTITE 97113 / 97114 are designed for pressure-time applications with anaerobic and light cure adhesives up to viscosities of 15.000 mPa•s for the 97113 or higher viscosities for the 97114.

Volumetric System

LOCTITE EQ RC15
Pump Controller
IDH 1880232

It provides all control required for both the 97611 and 97621 Compact Rotor Pumps. This controls all the dispensing parameters such as pump speed, volume dispense, reservoir pressure and rotorspray control.

LOCTITE 97611
Compact Rotor Pump 4.0
IDH 1196160

It is a precision volumetric dispenser for highly accurate dispense applications and is suitable for anaerobic, light cure and acrylic adhesives with flow rates from 500 to 6.000 µl/min.

LOCTITE 97108
2 l Reservoir
IDH 135555

It accommodates LOCTITE bottles and is equipped with a pneumatic connection and an electrical interface for setup with all LOCTITE controllers. It suits adhesive bottle sizes 250 ml, 500 g, 1 l, 2 l and 2 kg.

LOCTITE 97115
Rotorspray
IDH 135557

It is used to apply anaerobic adhesives to the interior cylindrical surfaces of work pieces. The rotorspray enables high speed rotation for large and small rotor disks.

The 2 l Reservoir and Rotorspray can be used with either the Pressure / Time System or the Volumetric System.

Please refer to page 130 for additional equipment / information.

RETAINING COMPOUNDS

Product	Pack Size	Colour	Features	Brookfield Viscosity (mPa•s)	Thixotropic (Yes / No)	Compressive Shear Strength, Steel to Steel (N/mm^2)	Fixture Time at room temperature on steel joints(min.)	Temperature Range (°C)
GAP SIZE UP TO 0.15 MM								
LOCTITE 603	10 ml,50 ml, 250 ml	Green	Oil tolerant for press fit, low viscosity	125	No	22.5	8	-55 to +150
LOCTITE 641	10 ml, 50 ml, 250 ml	Yellow	Medium strength for disassembly	600	No	6.5	25	-55 to +150
LOCTITE 648	50 ml, 250 ml	Green	High strength, temperature resistance, can be applied to slightly oily surfaces	500	No	31	3	-55 to +180
LOCTITE 6300	50 ml, 250 ml	Green	High strength with enhanced health & safety	350	No	15	10	-55 to +180
GAP SIZE 0.15 TO 0.25 MM								
LOCTITE 620	250 ml	Green	Slow fixture, high strength, temperature resistance	8,000	No	17.2	60	-55 to +230*
LOCTITE 638	10 ml, 50 ml, 250 ml	Green	High strength, high temperature resistance for slip-fitted parts, can be applied to slightly oily surfaces	2,500	No	29	4	-55 to +180
GAP SIZE 0.25 TO 0.5 MM								
LOCTITE 660	50 ml	Silver	High strength, large gap fill for repair	250,000	Yes	17,2	15	-55 to +150

* After 30 min. heat cure at 180 °C

A 5 day repair reduced to 8 hours

"We not only minimised our plant downtime on this repair, we also reduced the likelihood of future repairs and downtime."

A loose, spinning bearing had damaged a large fan shaft at a cement manufacturer. Hardfacing and machining the shaft would have taken five days of downtime, and it could have led to future weakening and damage from distortion and fretting corrosion. The solution: **LOCTITE 638** Retaining Compound. It fills voids, prevents fretting corrosion and evenly distributes high load stress.

A LOCTITE Engineering Solutions Expert provided training on this new repair method, and in just 8 hours, maintenance personnel, removed the main bearing then cleaned the bearing and the shaft. **LOCTITE 638** was applied to the shaft, then the bearing was slipped to the correct position and the fan was up and running.

BENEFITS

LOCTITE 638 Retaining Compound:

- Allows maintenance personnel to make efficient, in-plant repairs
- Reduces downtime
- Prevents future damage and maintains long-term repair viability