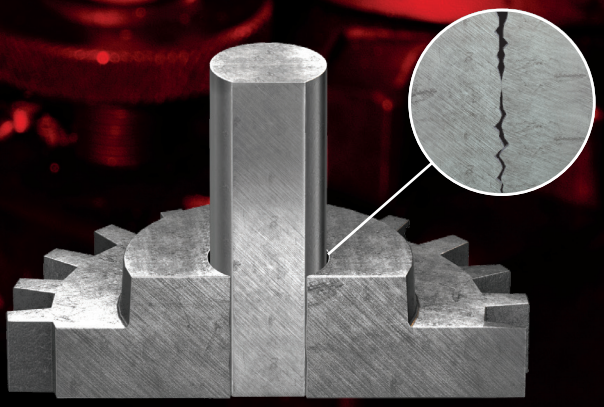
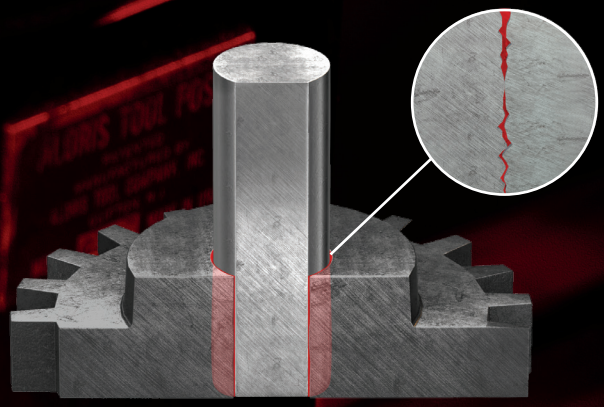
# RETAINING COMPOUNDS

# 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 unitized 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 unitizing the assembly and providing uniform stress distribution.


## How to choose a retaining compound.

### GAP SIZE

**UP TO 0.006 in.**
Typically, lower viscosity retaining compounds are used for gaps up to 0.006 in. These are typically tight fitting interference fits like those found in shrink fits.

**0.006 TO 0.010 in.**
For gaps above 0.006 in. retaining compounds with higher viscosities that allow for better gap fill are used. These include bonded slip fits.

**0.010 TO 0.020 in.**
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 300°-355°F. However, certain chemistries are available that withstand temperatures up to 450°F 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

# 638™ Adhesive

## High Strength, 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.

**Gap:** Up to .010 in.

**Temperature Resistance**: 355°F

**Strength:** 4,500 psi



BEST SELLER

# 660™ Adhesive

## 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.

**Gap:** Up to .020 in.

**Temperature Resistance**: 300°F

**Strength:** 3,335 psi

# Find the right product for your application

## GAP SIZE

### Gap Size Up To 0.006 in.

LOCTITE® 648™
LOCTITE® 641™
LOCTITE® 609™

### Gap Size 0.006 to 0.010 in.

LOCTITE® 638™
LOCTITE® 620™

### Gap Size 0.010 to 0.020 in.

LOCTITE® 660™

**SEE THE FULL PORTFOLIO OF RETAINING COMPOUNDS AT:**
retaining.loctite.us

## Gap Size up to 0.006 in.

RETAINING COMPOUNDS

### 609™
General Purpose

**Temperature Resistance:** 300°F
**Strength:** 2,300 psi

**Cure Speed:** 24 hours
**Fixture Time:** 10 minutes

### 641™
Medium Strength

**Temperature Resistance:** 300°F
**Strength:** 1,700 psi

**Cure Speed:** 24 hours
**Fixture Time:** 20 minutes

### 648™
High Strength

**Temperature Resistance:** 355°F
**Strength:** 3,900 psi

**Cure Speed:** 24 hours
**Fixture Time:** 3 minutes

## Gap Size - 0.006 to 0.010 in.

RETAINING COMPOUNDS

### 620™
High Temperature

**Temperature Resistance:** 450°F
**Strength:** 3,800 psi

**Cure Speed:** 24 hours
**Fixture Time:** 60 minutes

### 638™
General Purpose

**Temperature Resistance:** 355°F
**Strength:** 4,500 psi

**Cure Speed:** 24 hours
**Fixture Time:** 4 minutes

## Gap Size - 0.010 to 0.020 in.

RETAINING COMPOUNDS

### 660™
Badly Worn Assemblies

**Temperature Resistance:** 300°F
**Strength:** 3,335 psi

**Cure Speed:** 24 hours
**Fixture Time:** 15 minutes

# Equipment

RETAINING COMPOUNDS

## NEW LOCTITE® Pro Pump Handheld Dispenser

2564842

Our all-new easy to use, light-weight, durable applicator that allows for precision application of threadlockers, retaining compounds and thread sealants in 50/250 ml bottles.

## LOCTITE® Dual Channel Integrated Reservoir

1390321/ 1390322

This dispenser combines a dual channel dispense controller and reservoir. It provides two timing channels controlling two pneumatic outputs, such as dispense valves, advancing slides, or any other pneumatic device. Well suited for medium to high viscosity (>3,000 cP) adhesives.

### ADDITIONAL EQUIPMENT

**Bond-A-Matic® 3000 Dispenser**
982719/982722

**Pneumatic Handheld Applicator**
97112

**Stationary Applicator Valve**
97113/97114

## RETAINING COMPOUNDS

| Product | Item Number | Pack Size | Color | Feature | Viscosity [cP] | Thixotropic (yes/ no) | Compressive Shear Strength, Steel to Steel, psi [N/mm²] | Fixture Time [min] | Temperature Range |
|---|---|---|---|---|---|---|---|---|---|
| **GAP SIZE – UP TO 0.006 in.** | | | | | | | | | |
| 609™ | 135512 | 50 ml | Green | Press fit, low visocisty | 120 | No | 2,300 psi (15 N/mm²) | 10 | -65°F to 300°F (-54°C to 150°C) |
| | 135513 | 250 ml | | | | | | | |
| 641™ | 231121 | 50 ml | Yellow | Medium strength, if disassembly is required | 600 | No | 1,700 psi (12 N/mm²) | 20 | -65°F to 300°F (-54°C to 150°C) |
| 648™ | 1835920 | 50 ml | Green | High strength, high temperature resistance. Can be applied to slightly oily surfaces | 500 | No | 3,900 psi (27 N/mm²) | 3 | -65°F to 355°F (-54°C to 180°C) |
| | 1835918 | 250 ml | | | | | | | |
| **GAP SIZE – 0.006 TO 0.010 in.** | | | | | | | | | |
| 620™ | 135514 | 50 ml | Green | High strength, high temperature resistance | 8,000 | No | 3,800 psi (26 N/mm²) | 60 | -65°F to 450°F (-54°C to 230°C) |
| | 135515 | 250 ml | | | | | | | |
| 638™ | 1835936 | 50 ml | | High strength, high temperature resistance, Can be applied to slightly oily surfaces | 2,500 | No | 4,500 psi (31 N/mm²) | 4 | -65°F to 355°F (-54°C to 180°C) |
| | 1835925 | 250 ml | | | | | | | |
| **GAP SIZE – 0.010 TO 0.020 in.** | | | | | | | | | |
| 660™ | 135527 | 50 ml | Silver | High strength, gap fill for repair | 250,000 | Yes | 3,335 psi (23 N/mm²) | 15 | -65°F to 300°F (-54°C to 150°C) |

# A 5 Day Repair Reduced to 8 Hours


"We not only minimized 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 cleaned and removed the main bearing, applied **LOCTITE® 638™** to the shaft, slipped the bearing into the proper 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