LOCTITE®

Maintenance Expert Guide

Solutions for all bonding, sealing, cleaning and lubricating tasks

Henkel Excellence is our Passion

Solutions for Maintenance Experts

At Henkel, we understand the challenges you face in maintaining and repairing industrial equipment. To make sure your operations run smoothly, you need the right people – and the right tools.

Loctite® offers maintenance experts solutions for all bonding, sealing, cleaning and lubricating tasks. Whatever your task is – you make it work with Loctite®.

Making the right choice

This Maintenance Expert Guide has been developed to make your product selection quick, easy and right the first time. It covers the most relevant products you need in your everyday maintenance work.

- **Search by product category or by task**
- **Get useful application hints in the "How to apply" sections**

To discover our full product portfolio visit **www.loctite.co.uk** or contact your Henkel Engineer.

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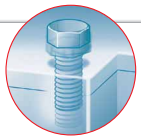

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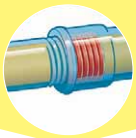

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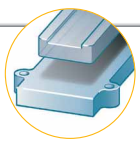

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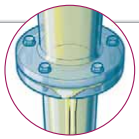

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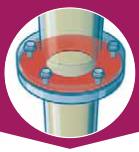

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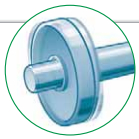

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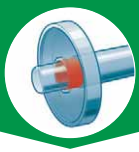

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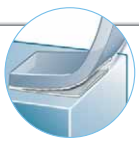

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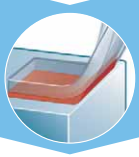

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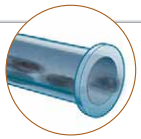

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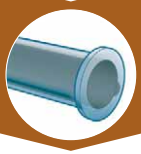

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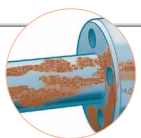

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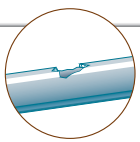

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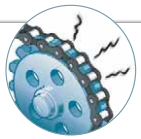

Prevent seizing and corrosion of moving parts

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Equipment

Product Approvals

Within certain industries product approvals are required and have to be considered for product selection. Some of the most important approvals are:

- **WRAS** – Potable water approval, United Kingdom
- **KTW** – Potable water approval, Germany
- **DVGW** – Gas approval, Germany
- **NSF** – Food and potable water approvals, United States
- **VDI 6022** – Anti-fungus approval, Germany

Available approvals are listed for each product on the respective pages. For further details please visit **www.loctite.co.uk** or contact your Henkel Technical Service Team.

Loctite® Maintenance Heroes

Loose threads, leaking pipes – many repair tasks occur unexpectedly. Be prepared – with our Loctite® Maintenance Heroes; products every maintenance expert should have at hand.

Loctite® 243

- Medium strength threadlocker
- Oil tolerant

Loctite® 55

- Thread sealing cord
- Alllows reliable re-adjustments

Loctite® SI 5980

- Ready-to-use flange sealant
- Oil resistant

Loctite® 3090

- Gap filling instant adhesive
- Bonds variety of substrates

Loctite® 401

- General purpose instant adhesive
- Excellent adhesion on multiple substrates

Loctite® 3463

- Steel-filled kneadable stick
- Ideal for emergency sealing of tanks and pipes

Loctite® 7063

- Parts cleaner
- Degrease and clean surfaces prior to bonding

Loctite® 8201

- Multi-purpose oil
  Moisture dispersant

Loctite® 8150

- Aluminium anti-seize
- Protect against seizing and corrosion

Health & Safety Products

Henkel's Health & Safety products improve your safety at work while ensuring exceptional performance.

Anaerobic products

- White MSDS*
- No hazard symbols, risk or safety phrases
- Proven performance

Instant adhesives

- No Health & Safety related risk phrases in the MSDS
- Classified as non-irritant
- Low odour, low bloom
- Improved product performance

*No entries in section 2, 3, 15 & 16 of Material Safety Data Sheet acc. to (EC) No. 1907/2006 – ISO 11014-1.

Gasketing products

- No hazard symbols
- Low odour

Water and glycol resistance

Oil resistance

High temperature resistance

Heavy-duty maintenance cleaners

- No or limited hazardous substances
- Low toxicity to water organisms and biodegradable surfactants
- Low volatile organic substances (VOC)

Fountain cleaning	**Bonderite C-MC 1030**
Floor cleaning	**Bonderite C-MC NEXO SOL**
High pressure cleaning	**Bonderite C-MC N DB**
Spray cleaning	**Bonderite C-MC 352**
Hand cleaning	**Bonderite C-MC 50120**

Threadlocking Adhesives

What strength do you require?

Low

Solution

Loctite® 222

Easy Disassembly

Size of thread (up to)	M36
Service temperature range (°C)	-55 to +150°C
Approvals	P1 NSF
Comments	• Use when low disassembly torque is required • Slow curing – longer adjustment time

Technology Benefits

- Resist vibration loosening
- Threads are completely sealed eliminating fretting corrosion
- Clean and easy to apply
- Replace mechanical threadlocking devices – lower costs and inventory

Medium		High
Loctite® 243	**Loctite® 248 Stick**	**Loctite® 270**
The Allrounder	Non Dripping	Permanent Locking
		
M36	M50	M20
-55 to +180°C	-55 to +150°C	-55 to +180°C
P1 NSF	–	P1 NSF
• General purpose • Good performance even on plated and stainless steel fasteners • Oil tolerant	• Easy-to-use stick • For overhead applications	• For permanent locking if regular removal for maintenance is not required

Threadlocking Adhesives

How to apply Loctite® 222, 243, 248, 270

1. Preparation

Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

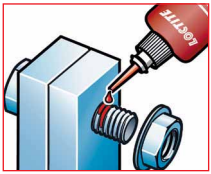
Activation

If cure speed is too slow due to passive metals (stainless steal, aluminum and plated metals) or low temperature (below 5°C), use activator Loctite® 7240 or Loctite® 7649 (see cure speed vs. activator graph in the TDS).

2. Application

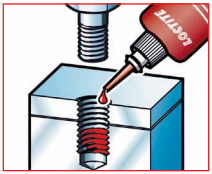
A Loctite® 222, 243, 270

Apply liquid threadlocker to the engagement area.



Through hole:

Assemble bolt first and then apply threadlocker. Apply nut and tighten to correct torque



Blind hole:

Apply into lower third of blind hole.

Post assembly:

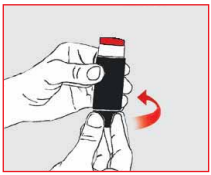
Assemble nut and bolt, dispense product at the edge of nut and bolt.

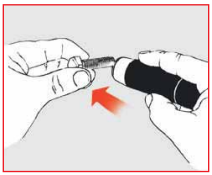
Equipment

Recommended dispensing equipment: IDH 608966 or IDH 88631 (see chapter **Equipment**).

B Loctite® 248

Apply threadlocker to the engagement area.



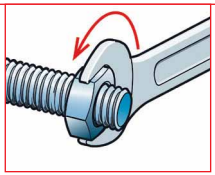


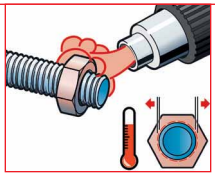
- Twist stick to the amount required
- Apply sufficient product around the thread of the bolt

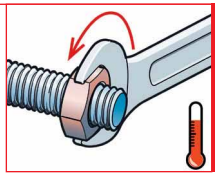
3. Assembly

- Assemble and tighten
- If several bolts are being assembled, torque them down to the correct value within the fixture time of the product or use a slow curing product

4. Disassembly







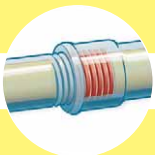
- Disassemble with standard hand tools
- If not possible, apply localised heat to approximately 250°C, disassemble while hot
- For corroded or seized parts use Loctite® 8040 Freeze & Release

For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Thread Sealants

Are the threads / pipes metal or plastic?

Metal, plastic or a combination of both



Solution

Loctite® 55

Thread Sealing Cord

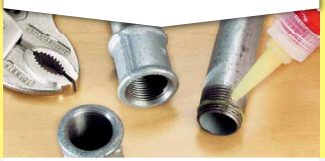
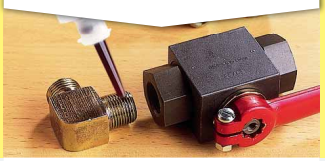
Max. pipe size (inch)	4"
Service temperature range (°C)	-55 to +149°C
Approvals	DVGW, KTW, WRAS
Comments	• Immediate full pressure sealing • Allows reliable re-adjustments

Technology Benefits

- Prevent leakage of gases and liquids
- Resist vibration and shock loads
- Clean and easy to apply
- Replace all tapes and hemp & paste

Metal

Are the threads coarse or fine?

Coarse	Fine
Loctite® 577	**Loctite® 542**
The Allrounder	Fine Threads
	
3"	3/4"
-55 to +150°C	-55 to +150°C
P1 NSF, DVGW	DVGW
• General purpose • For overhead applications • Slow curing	• For fine threads in hydraulic, pneumatic and general fittings • Fast curing

How to apply Loctite® 577, 542

1. Preparation

Cleaning

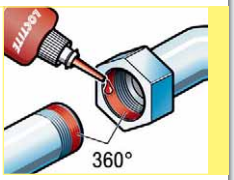
It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Activation

If cure speed is too slow due to passive metals or low temperature (below 5°C), use activator Loctite® 7240 or Loctite® 7649 (see cure speed vs. activator graph in TDS).

2. Application

- Apply a 360° bead to the leading male thread, leaving the first thread free
- For bigger threads, apply both on male and female thread



Equipment

Recommended dispensing equipment: IDH 608966 or IDH 88631 (see chapter **Equipment**).

3. Assembly

Assemble fittings using wrench tightening in accordance to manufacturers' recommendations.

4. Disassembly

- Disassemble with standard hand tools. If not possible, apply localised heat to approximately 250°C, disassemble while hot
- For corroded or seized parts use Loctite® 8040 Freeze & Release

How to apply Loctite® 55

1. Preparation

Cleaning

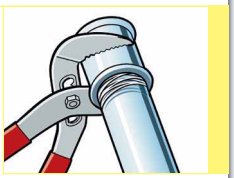
Clean threads if necessary and roughen smooth threads.

2. Application

- Wind the cord onto the pipe thread in the same direction as the thread, starting from the end of the pipe
- For recommended number of wraps see label, apply in a criss-cross manner.
- Cut off the cord with the integrated cutting tool at the top of the tube

3. Assembly

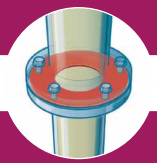
- Assemble using accepted trade practices
- Adjustment of 45° is possible after tightening



For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Gasketing Products

Is your flange rigid or flexible?



Solution

Rigid

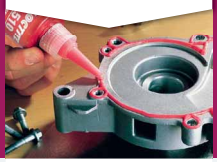
Loctite® 5188

The Allrounder

Substrate to be sealed	Metal
Max. gap (mm)	0.25mm
Service temperature range (°C)	-55 to +150°C
Approvals	–
Comments	• General purpose • Excellent chemical resistance • Oil tolerant

Technology Benefits

- Prevent leakage and failure by filling all voids
- No need for re-torquing
- One product fits all shapes – low costs and inventory

		Flexible	
	Loctite® 510	**Loctite® SI 5980**	**Loctite® SI 5990**
	High Temperature	The Allrounder	High Temperature
			
	Metal	Metal, plastic or both	Metal, plastic or both
	0.25mm	1mm	1mm
	-55 to +200°C	-55 to +200°C	-55 to + 350°C
	P1 NSF	–	–
	• For high temperature applications	• General purpose • Oil resistant • Easy dispensing • Leading in Health & Safety	• For high temperature applications • Easy dispensing • Leading in Health & Safety

How to apply Loctite® 5188, 510, SI 5980, SI 5990

1. Preparation

Cleaning

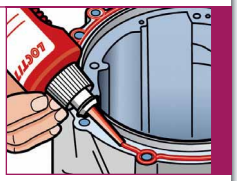
- Apply Loctite® 7200 on old gasketing adhesive and use a wood or plastic scraper to remove residues. Remove burrs
- It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive

Activation

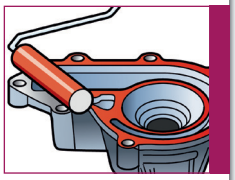
- If cure speed of Loctite® 5188 and Loctite® 510 is too slow due to passive metals or low temperature (below 5°C), use activator Loctite® 7240 or Loctite® 7649 (see cure speed vs. activator graph in the TDS)
- Loctite® SI 5980 and Loctite® SI 5990 do not need an activator

2. Application

- Apply as a continuous closed bead onto one flange surface. Place the bead close to the inner rim of the flange and encircle all holes. Small scratches can be filled by the adhesive



- Loctite® 510 and Loctite® 5188 can also be applied by roller onto large flanges



Equipment

Recommended dispensing equipment: IDH 363544 or IDH 142240 (see chapter **Equipment**).

3. Assembly

Assemble flanges and tighten bolts as soon as possible.

4. Disassembly

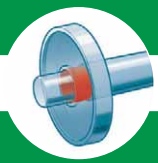
- Disassemble bolts with standard hand tools
- Use jacking-screws, cast-on bosses or recesses to lift flanges apart
- For corroded or seized parts, use Loctite® 8040 Freeze & Release

For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Retaining Compounds

How large is the gap?

< 0.1 mm



Solution

Loctite® 603

Ideal for Bearings

Handling strength after (min.)[1]	8 min.
Service temperature range (°C)	-55 to +150°C
Approvals	P1 NSF, WRAS
Comments	• For use on close fitting cylindrical parts • High oil tolerance

[1] At room temperature (20°C) on steel joints.

Technology Benefits

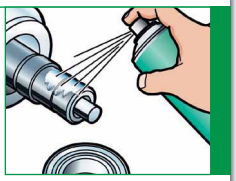
- Fill all voids to prevent loosening, corrosion and fretting
- Suitable for high loads even with existing design
- 100 % contact – even stress distribution across the joint

0.1 to 0.25 mm	0.25 to 0.5 mm
Loctite® 638	**Loctite® 660**
The Allrounder	Gap Filling
	
4 min.	15 min.
-55 to +150°C	-55 to +150°C
P1 NSF, WRAS	P1 NSF
• High Strength • Fast curing	• For repair of worn out seats, keys, splines, bearings or tapers without remachining • To be used with activator Loctite® 7240

How to apply Loctite® 603, 638, 660

1. Preparation

Cleaning



- Use Loctite® 7200 for easier removal of residues in case of old retaining adhesive
- It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive
- For gaps larger than 0.5mm or worn out shafts, bearing seats or keyways, use Loctite® metal-filled compounds (see chapter **Metal-filled Compounds**)

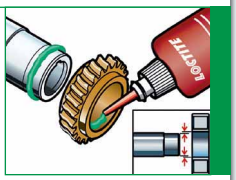
Activation

If cure speed is too slow due to passive metals or low temperature (below 5°C), use activator Loctite® 7240 or Loctite® 7649 (see cure speed vs. activator graph in the TDS).

2. Application

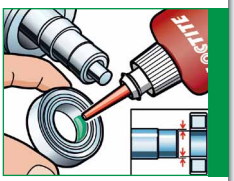
A For slip fitted assemblies: Loctite® 603, 638, 660

Apply adhesive around the leading edge of the male component and the inside of the female component and use a rotating motion during assembly to ensure good coverage.



B For press fitted assemblies: Loctite® 603

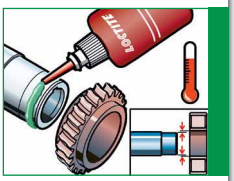
Apply adhesive thoroughly to both bond surfaces and assemble at high press on rates.



C For shrink fitted assemblies:

Apply the adhesive onto the shaft, heat the collar to create sufficient clearance for free assembly.

For product selection contact your Henkel Technical Service Team.

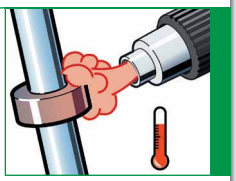


Equipment

Recommended dispensing equipment: IDH 608966 or IDH 88631 (see chapter **Equipment**).

3. Disassembly

- Apply localised heat to approximately 250°C, dissasemble while hot
- For corroded or seized parts, use Loctite® 8040 Freeze & Release



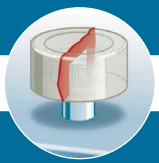
For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Instant Adhesives

Do you need a non-drip / non-run product?

No

Gaps < 0.15 mm



Solution

Loctite® 401

The Allrounder

Fixture time (sec.)	3 – 10 sec.
Service temperature range (°C)	-40 to +120°C
Approvals	P1 NSF
Comments	• General purpose • Low viscosity

Technology Benefits

- Excellent adhesion on multiple substrates especially plastics and rubbers
- Very fast fixturing of parts
- Small parts bonding
- High temperature resistance

Yes

Gaps < 0.15 mm	Gaps ≤ 5 mm
Loctite® 454	**Loctite® 3090**
Gel	Gap Filling
	
5 – 10 sec.	90 – 150 sec.
-40 to +120°C	-40 to +80°C
P1 NSF	–
• High viscosity gel • For overhead applications	• Multi-purpose • Highly gap filling (5mm) • Professional repairs

How to apply Loctite® 401, 454, 3090

1. Preparation

Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Priming

To improve adhesion on difficult to bond plastic surfaces, apply Loctite® 7239 or Loctite® 770 to the bond area by brushing or dipping. Avoid applying excess primer. Allow the primer to dry.

Activation

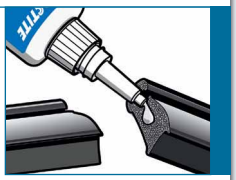
If cure speed is too slow, use appropriate activator Loctite® 7458 or Loctite® 7455 (see cure speed vs. activator graph in the TDS). Apply activator to one bond surface by spray, brush or dipping (not to primed surfaces). Allow the activator to dry.

Mixing

Mixing with static mixer (Loctite® 3090):
Before mounting the static mixer onto the cartridge, push out a small amount of product to equalise pistons. Mount static mixer and push some mixed product out. The static mixer will then dispense correctly mixed product.

2. Application

Apply adhesive by drop or bead to one of the bond surfaces (not to activated surfaces).



Equipment

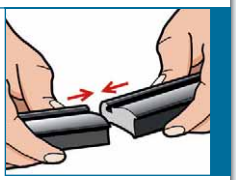
Recommended dispensing equipment: (see chapter **Equipment**)

- For precise dispensing of small amounts of adhesive use dispensing needles
- Spare static mixers for Loctite® 3090: IDH 1453183

3. Assembly

Assemble the parts immediately. The parts should be accurately located as the short fixture time leaves little opportunity for adjustment. Bond should be held or clamped until the adhesive has fixtured.

Hint:
If necessary excess product can be cured by activator Loctite® 7458 or Loctite® 7455. Spray or drop activator onto excess product.

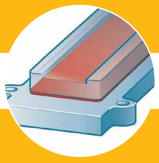


For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Structural Bonding – Acrylics and

What is your focus?

General bonding



Solution

Teroson PU 6700

The Allrounder

Technology	2K-PU
Fixture time (min.)	30 min.
Shear strength (GBMS N/mm²)	>12N/mm²
Service temperature range (°C)	-40 to +80°C
Comments	• General purpose • Suitable for painted surfaces • Gap filling • Slightly flexible

Technology Benefits

- Rigid to slightly flexible structural bonding
- High strength
- Good chemical resistance
- Excellent adhesion on multiple substrates

Polyurethanes

Difficult to bond plastics	Cosmetic appearance
Loctite® 3038	**Loctite® V5004**
Polyolefin Bonder	Clear Bondline
	
2K-Acrylic	2K-Acrylic
> 40 min.	3 min.
13 (PBT)	21N/mm²
-50 to +100°C	-50 to +80°C
• Very good adhesion to difficult to bond plastics like PE, PP	• Fast curing • High strength • Clear bondline

How to apply Teroson PU 6700, Loctite® 3038, V5004

1. Preparation

Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Priming

To improve adhesion of Teroson PU 6700 on difficult to bond plastics apply Teroson RB 150 to the bond area. Avoid applying excess primer. Allow the primer to dry.

Mixing

With static mixer:
Before mounting the static mixer onto the cartridge, push out a small amount of product to equalise pistons. Mount static mixer and push some mixed product out until a uniform colour is reached, the static mixer will then dispence correctly mixed product.

2. Application

Apply product directly after mixing to the bonding area.

Hint:
After use, leave the static mixer in place and use it as a cap.

Equipment

Recommended dispensing equipment: (see chapter **Equipment**)

	Dispensing equipment	Mixers / nozzles
Teroson PU 6700	• IDH 267452	• IDH 1487440
Loctite® 3038	• IDH 1034026	• IDH 1034575
Loctite® V5004	• IDH 267452	• IDH 1467955

3. Assembly

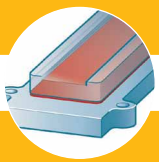
- Parts should be assembled immediately
- Prevent the assembled parts from moving during cure
- The joint should be allowed to be develop full strength before subjecting to service loads

For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Structural Bonding – Epoxies

What is your focus?

High technical performance



Solution

Loctite® 9492

High Temperature

Colour	White
Fixture time (min.)	75 min.
Shear strength (GBMS N/mm²)	20N/mm²
Service temperature range (°C)	-55 to +180°C
Comments	• High temperature resistance • High chemical resistance

Technology Benefits

- Rigid structural bonding
- Very high strength
- Very good chemical resistance
- Excellent adhesion on multiple substrates

General bonding

Loctite® 3430	Loctite® Double Bubble
The Allrounder	Easy to Use
	
Ultra clear	Clear
15 min.	5 min.
22N/mm²	9N/mm²
-55 to +100°C	-55 to +100°C
• Five-minute epoxy • Water resistance • Clear Bondline	• For small and quick repairs • Fast curing • Handy Sachet

How to apply Loctite® 9492, 3430, Double Bubble

1. Preparation

Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Mixing

- **Hand mixing (Loctite® 3430, Double Bubble):** Mix A and B components according to the specified mixing ratio. Thorougly mix the two components before use

- **With static mixer (Loctite® 9492):** Before mounting the static mixer onto the cartridge, push out a small amount of product to equalise pistons. Mount static mixer and push some mixed product out until a uniform colour is reached, the static mixer will then dispense correctly mixed product

2. Application

Apply product directly after mixing to the bonding area.

Hint:
After use, leave the static mixer in place and use it as a cap.

Equipment

- Recommended dispensing equipment for Loctite® 9492 (see chapter **Equipment**): IDH 267452
- Spare static mixers: IDH 1487440

3. Assembly

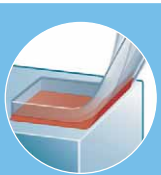
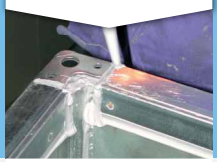
- Parts should be assembled immediately
- Prevent the assembled parts from moving during cure
- The joint should be allowed to develop full strength before subjecting to any service load

Hint:
Excess uncured product can be wiped away with Loctite® 7063.

Flexible Sealing and Bonding

What is your focus?

Elastic sealing

Solution	Teroson MS 930 known as Terostat MS 930	Loctite® 5366
	The Allrounder	Transparent
		
Technology	1K-SMP	1K-Silicone
Skin formation time (min.)	18 min.	5 min.
Service temperature range (°C)	-40 to +80°C	-50 to +250°C
Approvals	BSS 7239	–
Comments	• General purpose	• Transparent • Very high temperature resistance

Technology Benefits

- Withstand impact shock, vibration and bending
- Good weathering resistance
- Wide temperature range
- Excellent adhesion on multiple substrates

Elastic bonding		Seam Sealing
Teroson MS 9399 known as Terostat MS 9399	**Loctite® SI 5616**	**Teroson MS 9320 SF** known as Terostat 9320 SF
The Allrounder	Fast Curing	Sprayable Sealant
		
2K-SMP	2K-Silicone	1K-SMP
35 min.	–	12 min.
-40 to +100°C	-50 to +180°C	-40 to +100°C
ASTM E 662/E 162 VDI 6022	–	–
• General purpose • Fast curing	• Very fast curing • High temperature resistance	• Fast curing • No cracks, no rust penetration

How to apply Teroson MS 930, Loctite® 5366, Teroson MS 9399, Loctite® SI 5616, Teroson MS 9320 SF

1. Preparation

Cleaning

It is recommended to use Teroson 450 to degrease and clean surfaces prior to applying the adhesive. It also improves adhesion on difficult to bond materials.

Mixing

With static mixer (Loctite® SI 5616, Teroson MS 9399):
Before mounting the static mixer onto the cartridge, push out a small amount of product to equalise pistons. Mount static mixer and push some mixed product out until a uniform colour is reached, then the static mixer will then dispence correctly mixed product.

Hint:
If you see crumbles on the bead surface the product is already partly cured and the final properties will not be reached.

2. Application

- Apply product with suitable dispensing equipment
- Where full surface bonding is necessary please use 2 component products

- For large area bonding applications where both substrates are non water vapour transmitting, do not cover complete bonding area with product

Hints:

- Application on plastics such as PMMA or PC may cause stress cracking of the plastic; suitability for these materials should be tested prior to use
- After use, leave the static mixer in place and use it as a cap

Equipment

- Recommended dispensing equipment: (see chapter **Equipment**)

	Dispensing equipment	Mixer / nozzle
Teroson MS 930	• IDH 142240	• IDH 581582
Loctite® 5366	• IDH 142240	• IDH 1118785
Teroson MS 9399	• IDH 150035	• IDH 1487440
Loctite® SI 5616	• IDH 142240	• IDH 874905
Teroson MS 9320 SF	• IDH 142241 (for spraying) • IDH 142240 (for standard bead)	• IDH 547882 (for spraying) • IDH 581582 (for standard bead)

Metal-filled Compounds

What type of repair?

Emergency repair

Solution

Loctite® 3463

Metal Magic Steel™ Stick

Fixture time at 20 °C (min.)	10°C
Compressive strength (N/mm²)	83N/mm²
Service temperature range (°C)	-30 to +120°C
Comments	• Steel-filled kneadable stick • For emergency repair of tanks, pipes and castings

Technology Benefits

- Repair and rebuild worn metal parts
- No need to heat or weld
- Can be drilled, tapped or machined after cure

Shaft repair

General rebuilding of metal parts

Loctite® 3478	Loctite® 3471	Loctite® 3475
High Compressive Strength	Steel Rebuilding	Aluminium Rebuilding
		
360°C	180°C	180°C
125N/mm²	70N/mm²	70N/mm²
-30 to +120°C	-20 to +120°C	-20 to +120°C
• Rebuild worn steel shafts and bearings • High compressive strength	• Repair worn steel parts • Non-sagging putty	• Repair worn aluminium parts • Non-sagging putty

Metal-filled Compounds

How to apply Loctite® 3463

1. Preparation

- Thoroughly clean and abrade surfaces. Finally clean with Loctite® 7063
- Cut required product quantity and then remove plastic film. Twist and knead until material is smooth and colour is consistent

2. Application

Firmly apply to bond area and form to desired shape. For smooth finish wipe over with a wet cloth.

How to apply Loctite® 3478

1. Preparation

Machine damaged area of shaft and reduce by minimum 3mm compared to nominal diameter.

Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Mixing

Stir each component separately. Mix A and B components according to the specified mixing ratio by volume or weight. Thorougly mix for up to two minutes until an even mix is achieved.

2. Application

- Turn shaft and apply a thin layer of Loctite® 3478. Then build up product layer, until there is an excess compared to the nominal shaft diameter
- After full cure, machine repair area and reduce to nominal diameter

How to apply Loctite® 3471, 3475

1. Preparation

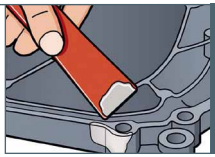
Cleaning

It is recommended to use Loctite® 7063 to degrease and clean surfaces prior to applying the adhesive.

Mixing

Stir each component separately. Mix A and B components according to the specified mixing ratio by volume or weight. Thorougly mix for up to two minutes until an even mix is achieved.

2. Application



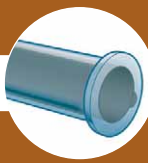
- Apply the product to the working area with the spatula provided
- Prevent the repaired parts from moving during cure
- Full cure is achieved at room temperature after 72 hours; heating the part to 40°C will reduce the time span to 24 hours
- Due to heat generation during the curing process larger quantities tend to cure more rapidly

For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Protective Coatings and Compounds

Particle size of abrasive material?

Coarse particles



Solution

Loctite® 7218

Trowelable Ceramic

Mix ratio by volume / weight (A:B)	2:1 / 100:50
Recommended layer thickness (mm)	6mm
Service temperature range (°C)	-30 to +120°C
Approvals	–
Comments	• High wear resistance • High build

When choosing the right Loctite® Protective Coating or Compound key factors such as particle size, temperature resistance and chemical / corrosion resistance need to be considered. Please contact your Henkel Technical Engineer for consultancy.

Technology Benefits

- Restore worn surfaces
- Protect parts against abrasion, erosion, chemical attack and corrosion
- Extend part life and increase part efficiency
- Save cost by avoiding part replacement and reducing spare part inventories

Fine particles

Loctite® 7255	Loctite® 7117
Sprayable Ceramic	Brushable Ceramic
	
2:1 / 100:50	3.34:1 / 100:16
0.5mm	0.5mm
-30 to +95°C	-30 to +95°C
WRAS	–
• General purpose • Ultra-smooth	• General purpose • High gloss, low friction

How to apply Loctite® 7218, 7255, 7117

1. Preparation

Cleaning

- Thoroughly clean and abrade surfaces, if possible grit blast. Finally clean with Loctite® 7063. If necessary rebuild badly worn surfaces using trowelable metal-filled compounds
- For temporary corrosion protection for up to 48 hours apply Loctite® 7515 after surface preparation

Mixing

- If supplied in ready-to-use packages mix the entire contents of resin and hardener
- If smaller amounts are required, mix A and B components according to the specified mixing ratio by volume or weight (for mixing ratios refer to technical product data sheet or product label)
- Thorougly mix for up to two minutes until an even mix is achieved

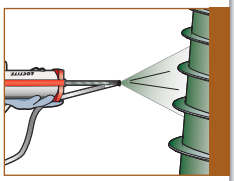
2. Application

- Apply fully mixed product to prepared surface by brush, trowel or spray
- Consider working and cure time (see selection table on previous pages)
- For Loctite® 7255 and Loctite® 7117 apply minimum 2 layers to achieve a total layer thickness

Hints:

- Pre-coating the surface by rubbing the mixed polymer composite into the substrate helps the repair material to fill all crevices, creating a superior bond between the composite and substrate
- Smooth out the uncured product with a warm trowel to achieve a glossy finish
- Use products with different colours when applying more than one coat. When the first coat begins to wear the second coat will show through, providing an accurate indicator of wear

Special recommendations for sprayable products (Loctite® 7255):



- Best coating results are obtained by applying the product specific layer thickness. This is especially important for spray applications on vertical surfaces. For best results in corners and edges, it is recommended to smooth angles to a radius of 3mm
- When using Loctite® 7255 it is recommended to heat the product prior to application to ensure easy spraying and a smoother surface

Equipment

- Recommended dispensing equipment for Loctite® 7255: IDH 1175530 (see chapter **Equipment**)

For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Cleaners – Heavy-duty Maintenance

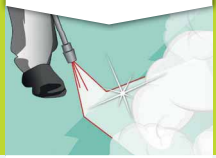
Which type of heavy-duty maintenance cleaner is required?

Solution

Floor cleaner

Bonderite C-MC 80
known as Loctite® 7861

Heavy-duty Floor Cleaner



Application concentration (g/l)	50 to 200g/l
Application temperature range (°C)	+15 to +100°C
Comments	• For concrete floors • Solvent-free

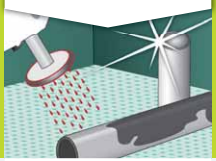
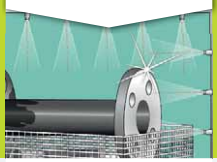
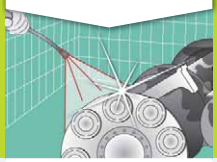
For application of heavy-duty maintenance cleaners please refer to the Technical Data Sheet and instructions for use of your cleaning equipment.

Technology Benefits

- High quality water-based alkaline, acidic and neutral cleaners
- Clean parts and assemblies in all types of industry
- For metals, plastics, concrete, stone, ceramics, glass, painted surfaces etc.

Cleaners

Parts cleaner

Bonderite C-MC 1030 known as Loctite® 7013	**Bonderite C-MC 352** known as Loctite® 7014	**Bonderite C-MC 3000** known as P3 Grato 3000
Fountain Cleaner	Spray Cleaner	High Pressure Cleaner
		
Ready-to-use	20 to 60g/l	20 to 200g/l
Room temperature	+50 to +75°C	+10 to +50°C
• For all kinds of cleaning • Solvent-free • Biodegradable	• For dirt, oil and grease • For spray cleaning equipment • Solvent-free	• For dirt, oil and grease • Provide temporary rust protection • Solvent-free • Biodegradable

Cleaners – Parts and Hands Cleaners

What do you want to clean?

Solution

Hands

Loctite® 7850

Hand Cleaner

Base	Natural extracts
Comments	• Biodegradable • Use with or without water

Technology Benefits

- For various cleaning demands in the workshop
- One cleaner suitable for surface preparation prior to bonding

Parts

Loctite® 7063	Loctite® 7200	Loctite® 7840
Prior to Bonding	Gasket Remover	General Cleaner
		
Solvent	Solvent	Water
• For use prior to bonding and sealing applications • Leaves no residue	• Removes old gaskets • Minimal scraping	• Biodegradable • Can be diluted with water

How to apply Loctite® 7850

Application

- Rub into dry hands until dirt or grease is dissolved
- Wipe hands dry or rinse with water
- Repeat procedure if necessary

How to apply Loctite® 7063

Application

- Treat surfaces to be cleaned by generously spraying with Loctite® 7063
- Wipe surface when still wet with a clean paper towel
- Repeat if necessary until contamination is removed
- Allow solvent to evaporate until surface is completely dry

Note:
Loctite® 7063 can cause stress cracks on sensitive substrates.

How to apply Loctite® 7200

Application

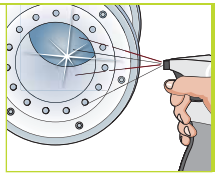
- Before applying protect painted surfaces as Loctite® 7200 may attack the paint
- Spray a heavy coat onto flange or surface. Wait 10 to 15 minutes for the gasket to soften (for silicone gaskets 30 min.)
- Remove gasket with soft scraper and wipe flange clean
- Repeat procedure if necessary
- Wear protective gloves and glasses

How to apply Loctite® 7840

Application

- Dilute Loctite® 7840 with water
- Soak or spray parts and wipe or rinse clean

Hint:
Effectiveness can be enhanced by diluting with warm water



For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Lubricants

What part movements / loads are you dealing with?

Slow movements / high loads

Solution

Loctite® 8150

Aluminium Anti-seize

Base	Aluminium, graphite
Viscosity	–
Service temperature range (°C)	-30 to +900°C
Comments	• Protect threaded connections • Prevent seizing and corrosion

Technology Benefits

- Protect against corrosion, friction and wear withstanding extreme pressure
- General lubrication

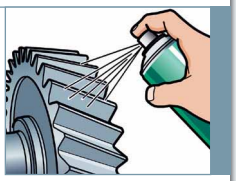
Medium speed / medium loads	Fast movements / small loads	
Loctite® 8105	**Loctite® 8191**	**Loctite® 8201**
Multi-purpose Grease	Dry Film Lubricant	Multi-purpose Oil
		
Mineral oil	MoS_2	Mineral oil
–	11 s (cup 4)	17.5 cSt (+50°C)
-20 to +150°C	-40 to +340°C	-20 to +120°C
• Odourless • Neutral appearance	• Fast-drying • Enhance the performance of oils and greases	• Free assemblies • Lubricate metal • Clean parts • Displace moisture • Prevent corrosion

How to apply Loctite® 8150, 8105, 8191, 8201

1. Preparation

Cleaning

- It is recommended to use Loctite® 7063 to degrease and clean surfaces
- Surfaces should be free from scale, oxides and lubricant residues



2. Application

Shake well before use.

A Loctite® 8150

- Apply a thin layer by brushing evenly over the whole surface
- Do not dilute

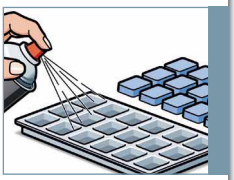
B Loctite® 8105

- Check compatibility with other grease residues
- Apply to clean parts by brush, spatula or grease gun

Hint:
Product may be suitable for use in automatic application systems.

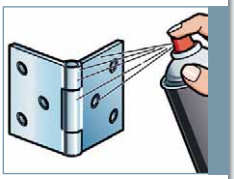
C Loctite® 8191

- Product should be sprayed on cleaned parts from a distance of about 20cm to give a uniform coating
- Let parts dry for 15 to 30 minutes at ambient temperature



D Loctite® 8021

- Choose between jet and spray (based on application needs)
- Spray consistently onto parts to give a uniform film



For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Surface Treatment and Rust

What kind of treatment do you require?

Solution

Rust treatment

Loctite® 7500

Rust Converter

Colour	Matt black
Service temperature range (°C)	–
Comments	• Convert rust into a stable base • Cured product acts as primer ready for painting

Technology Benefits

- Solutions for all types of surface treatments or preparations

Prevention Products

Corrosion protection	Protection of welding equipment	Tamper proofing
Loctite® 7800	**Loctite® SF 7900**	**Loctite® 7414**
Zinc Spray	Ceramic Shield	Movement Detector
		
Grey	White	Blue
-50 to +550°C	–	-35 to +145°C
• Excellent cathodic corrosion protection on ferrous metal • Restore protection to galvanised parts	• Prevent adhesion of welding spatter • Long-term protection of welding equipment • Silicone-free	• Visually detect movement of parts • For outdoor applications

Surface Treatment and Rust

How to apply Loctite® 7500

1. Preparation

Use a wire brush to remove flaky rust and loose scale. It is recommended to use Loctite® 7063 to remove oil, grease and dirt. Shake well before use.

2. Application

Brush or sponge on liberally. Apply two coats (recoat time: 60 to 120 minutes). Uneven colour indicates need for additional coats. Allow minimum 24 hours to dry before painting.

Hint:
Do not apply in direct sunlight or on wet surfaces.

How to apply Loctite® 7800

1. Preparation

Remove rust, old coats of paint etc. from surface. Gritblast surface if possible. It is recommended to use Loctite® 7063 to finally remove oil, grease and dust. Shake well before use.

2. Application

- Spray on to clean parts from 20 to 30cm to give a uniform film
- The coating becomes dry to touch after 30 to 60 minutes. Allow 24 hours to dry completely

Prevention Products

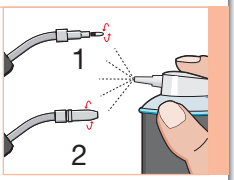
How to apply Loctite® SF 7900 Ceramic Shield

1. Preparation

Clean contact tip and shroud from adhering spatter. For best results, use a new contact tip and shroud. Shake well before use.

2. Application

- Place the contact tip on the welding torch and apply from a distance of 10 – 15cm. Fit the shroud to the welding torch and coat the exterior and interior. Let the coating dry for several seconds
- After the application invert the can and spray for several seconds to prevent clogging of the nozzle



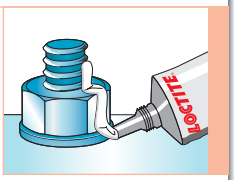
How to apply Loctite® 7414

1. Preparation

It is recommended to use Loctite® 7063 to degrease, clean and dry surfaces.

2. Application

Squeeze the tube to extrude the paste and form a narrow bead across the parts. Let product dry for 60 seconds.



For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Emergency Repair Products

What is your application?

	O-Ring replacement	Free corroded parts	Detect pipe leaks
Solution	**Loctite® O-RING KIT**	**Loctite® 8040**	**Loctite® 7100**
	O-Ring Kit	Freeze & Release	Leak Detector
			
Service temperature range (°C)	–	–	+10 to +50°C
Comments	• Contains rubber cords, Loctite® 406 and tools to create customised O-rings • Allows 'o' rings to be made in situ reducing the degree of dismantling required	• Shock freezing (-40°C) • Releases rusted, corroded and seized components • Wicks directly into the rust by capillary action	• Produce bubbles at leakages • For all gases and gas mixtures except for oxygen • Non-toxic / non-flammable

Seal pipe leaks		Taping	
Loctite® 3463	**Loctite® 5070**	**Loctite® 5075**	**Teroson Tape FIX & REPAIR**
Metal Magic Steel™ Stick	Pipe Repair Kit	Insulating and Sealing Wrap	High Strength Tape
			
-30 to +120°C	–	-54 to +260°C	up to +70°C
• Steel-filled kneadable stick • For emergency repair of tanks, pipes and castings	• Easy-to-use repair kit for temporary repair of weak areas on pipes	• Insulating and Sealing Wrap • Withstand extreme conditions • Water tight seal	• Fabric reinforced tape • Easy to tear by hand • Repair, reinforce, fix, seal and protect

Emergency Repair Products

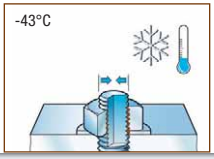
How to apply Loctite® 8040

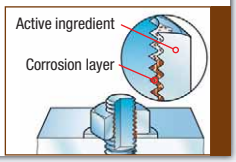
1. Preparation

Remove loose dirt and rust. Shake well before use.

2. Application

- Spray onto parts from a distance of 10 – 15cm for 5 to 10 seconds
- After 1 to 2 minutes disassemble parts. If necessary repeat procedure





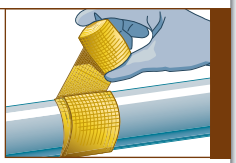
How to apply Loctite® 5070

1. Preparation

- Turn off pressure in pipe system
- Thoroughly clean and abrade surfaces. Finally clean with Loctite® 7063

2. Application

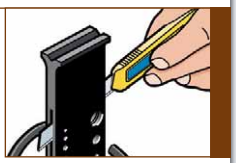
- Mix required amount of Loctite® 3463 (details see chapter **Metal-filled Compounds**). Firmly press product into the crack, hole or void
- Activate tape by soaking into water at room temperature for 20 seconds. Wrap tape tightly around repair, building up at least 4 layers



How to use Loctite® O-Ring KIT

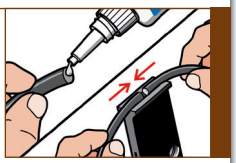
1. Preparation

- Clean cutting blade using Loctite® 7063
- Cut the required approximate length of cord. Use the O-Ring cutting fixture to cut at both ends to achieve clean bonding surfaces at required length



2. Application

- Apply a small drop of Loctite® 406 to one end of the O-Ring
- Immediately join the two ends using the V-groove on the end of the cutting fixture. Hold in place for 30 seconds, then O-Ring is ready for service



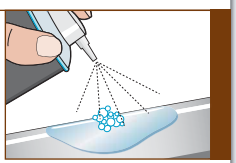
How to apply Loctite® 7100

1. Preparation

Shake well before use.

2. Application

- Spray product from 15 to 20cm onto suspect area
- A leak will be clearly visible, as the product will start foaming at the leaking area



For detailed information please refer to the Technical Datasheet or contact your Henkel Technical Service Team.

Equipment – Dispensers

Manual applicators

IDH number	For product	For pack size
 IDH 142240	• Loctite® 5188, 510, 5366, SI 5980, SI 5990, SI 5616 • Teroson MS 930, MS 9320 SF, PU 6700	• 300 ml • 310 ml • 250 ml (1:1) • 265 ml (2:1)
 IDH 150035	• Teroson MS 9399	• 50 ml (1:1)
 IDH 218312	• Loctite® 9492	• 400 ml (2:1)
 IDH 267452	• Loctite® 9492, V5004 • Teroson PU 6700	• 50 ml (1:1, 2:1)
 IDH 363544	• Loctite® 5188, 510, SI 5980, SI 5990	• 50 ml
 IDH 1034026	• Loctite® 3038	• 50 ml (10:1)

Peristaltic dispensers

IDH number	For product	For pack size
 IDH 608966	• Loctite® 222, 243, 270, 542, 603, 638	• 50 ml
 IDH 88631	• Loctite® 222, 243, 270, 542, 603, 638	• 250 ml

Pneumatic applicators

IDH number	For product	For pack size
 IDH 142241	• Teroson MS 9320 SF (for spraying)	• 310 ml
 IDH 1175530	• Loctite® 7255	• 900 ml

Equipment – Accessories

Mixers

IDH number	For product	For pack size
 IDH 780805	• Teroson PU 6700	• 250 ml (1:1)
 IDH 1034575	• Loctite® 3038	• 50 ml (10:1)
 IDH 1453183	• Loctite® 3090	• 10 ml (10:1)
 IDH 1467955	• Loctite® V5004	• 50 ml (1:1)
 IDH 1487439	• Loctite® 9492	• 400 ml (2:1)
 IDH 1487440	• Loctite® 9492 • Teroson PU 6700, MS 9399	• 50 ml (1:1; 2:1)
 IDH 874905	• Loctite® SI 5616	• 265 ml (2:1)

Nozzles

IDH number	For product	For pack size
 IDH 1395025	• Teroson MS 9320 SF (for spraying)	• 310 ml
 IDH 581582	• Teroson MS 930, MS 9320 SF	• 310 ml
 IDH 546017	• Loctite® 5366, SI 5980, SI 5990	• 310 ml

Needles

IDH number	For product	For pack size
 IDH 88661	• Loctite® 401	• 18 Gauge (= Green) ID 0.84 mm
 IDH 88662	• Loctite® 401	• 20 Gauge (= Pink) ID 0.61 mm

Maintenance Expert Training

High-quality products can be only as good as the people who use them. That is why we offer hands-on training on the use of our products in maintenance and repair environments.

Our trainers are familiar with the day-to-day problems you may encounter and will give you the tools and practical know-how for successful application of our products.

The training content is based on the product categories of this Maintenance Expert Guide and can be tailored to your needs.

Features

- Pre-plant survey
- Hands-on training
- Conducted on site
- Training materials supplied
- Review of common failure causes and prevention
- In-plant follow up

Your benefits

The training will provide you with knowledge and tools to do the following:

Increase Reliability
and avoid downtime of your industrial equipment and machinery with regular maintenance

Improve Safety
at work by increasing reliability of your machinery and by using non-hazardous products

Save Time
by using innovative technologies that reduce downtimes and increase service intervals

Reduce Costs
by repairing worn or damaged parts instead of replacing them

Contact your Henkel Engineer for more details and to arrange training for your maintenance and repair team.

Specific Maintenance Solutions

Industry expertise and equipment know-how

Years of experience has enabled us to build up knowledge of the typical maintenance and repair tasks in all major industries and industrial equipment.

Industry programs

Our industry programs cover the typical maintenance and repair challenges in your industry. Learn how your specific repair task was solved in a comparable situation.

Power Plants

Mining

Petrochemical

Marine

Railway

Water Utilities

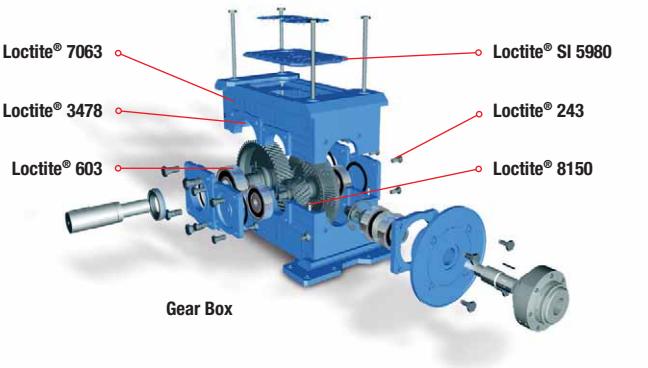
Device programs

Our device programs go even deeper into the specific maintenance and repair tasks of the industrial component. They include specific application solutions for any repair tasks and suitable product suggestions. We will bring the solution so you could concentrate on other matters.

Pump

Shaft

Centrifuge



Find more information on the programs on **www.loctite.co.uk/maintenance** and contact your Henkel Engineer for a workshop tailored to your needs.

LOCTITE®

Find the right product and discover additional features. **Check out our mobile Maintenance Expert Guide:**

m.loctite-repairs.co.uk

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The data contained herein are intended as reference only. Please contact Henkel Technical Support Group for assistance and recommendation on specifications for these products.