

TRIM LINE - Does not print

## AFTER A MAINTENANCE WORKSHOP

Your skilled tradesmen will have the knowledge and the cost savings tools to:

### SAVE TIME

- Reduce routine maintenance tasks
- Reduce standard repair time
- Reduce redundant repairs

### REDUCE ENERGY COSTS

- Air leak 1/16 in. @ 100 psi @ \$0.065 per kWh = \$842 lost per year
- Loose connector on 480 volt, 30 amp, 3 phase motor = 13% more energy needed to run

### IMPROVE SAFETY

- Improve safety by eliminating personal injury hazards

### REDUCE FLUID CONSUMPTION

- Hydraulic leak @ 1 drop/second @ \$5/gallon = \$2,025 lost per year
- Reduce cleanup and disposal costs

## TRAINED, MOTIVATED AND EQUIPPED PERSONNEL DRIVE COSTS DOWN!

AIR LEAK COST CALCULATOR			
LINE PRESSURE AT 100 psi			
DIAMETER OF OPENING (IN.)	CFM LOSS*	CUBIC FEET OF AIR LOSS/YEAR	COST PER YEAR
1/32	1.62	849,139	\$210
1/16	6.49	3,401,798	\$842
1/8	26	13,628,160	\$3,375
1/4	104	54,512,640	\$13,498
3/8	234	122,653,440	\$30,371
COST PER kWh		\$0.065	

\*CFM loss may vary based on the shape of the opening and assumes facility maintains air pressure 8,760 hours per year.

OIL LEAK COST CALCULATOR				
GALLONS LOST				
LEAKAGE RATE	PER DAY	PER MONTH	ANNUAL GALLONS LOST	ANNUAL COST TO PLANT
ONE DROP IN 10 SECONDS	0.112	3.36	40.3	\$201.50
ONE DROP IN 5 SECONDS	0.225	6.75	81	\$405.00
ONE DROP PER SECOND	1.125	33.75	405	\$2,025.00
THREE DROPS PER SECOND	3.75	112.5	1,350	\$6,750.00
STREAM BREAKS INTO DROPS	24	720	8,640	\$43,200.00
COST PER GALLON*		\$5.00		

\*Typical gallon costs range from \$1.00 to \$2.00. However, the costs associated with leaks need to be considered, such as: cleanup labor, absorbents, transaction, shipping, storage, recycling and disposal.

## THE RESULTS

THIS ENHANCED BEST PRACTICES PROCESS WAS DESIGNED – AND SUCCEEDS – BECAUSE OF ONE SIMPLE FACT: WHEN YOU CAN PREVENT A LEAK, CORRECT AN INEFFICIENCY OR AVOID DOWNTIME, MONEY IS SAVED.

## CHOOSE FROM ADDITIONAL HENKEL SERVICES

### PUMP REBUILD

- Let us show you how and where to use LOCTITE brand products to increase pump reliability and pump efficiency.

### INVENTORY CONSOLIDATION

- Let us conduct a shop chemical review to help you consolidate purchasing efforts. This will enable you to better manage the shop chemicals in the plant.

### APPLICATION ASSISTANCE

- Let our expert engineering staff assist you with specific product and maintenance applications.

### OPERATION STOP LEAK

- Let us identify air leaks in your plant. We'll provide you with the tools to eliminate the recurrence of these leaks to save you money.

LOCTITE®

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## Manufacturing Best Practices for Plant and Equipment Reliability



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# Reliability starts here...

...WITH YOUR SKILLED TRADESMEN AT THE BASE COMPONENT LEVEL DURING INSTALLATION, REPAIR, AND REBUILD OF ALL YOUR EQUIPMENT.

## World-Class Manufacturing

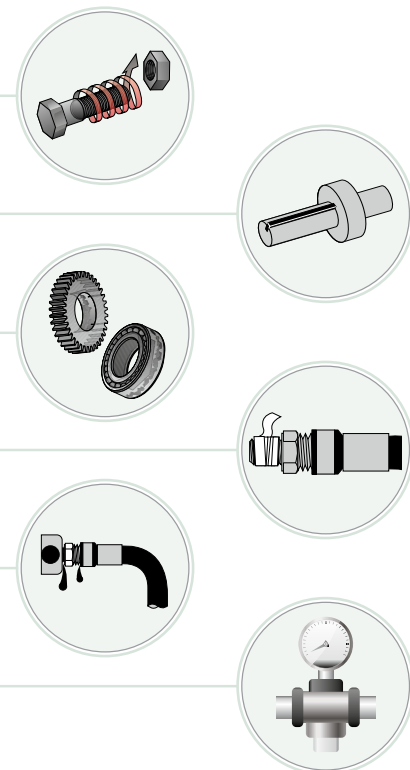
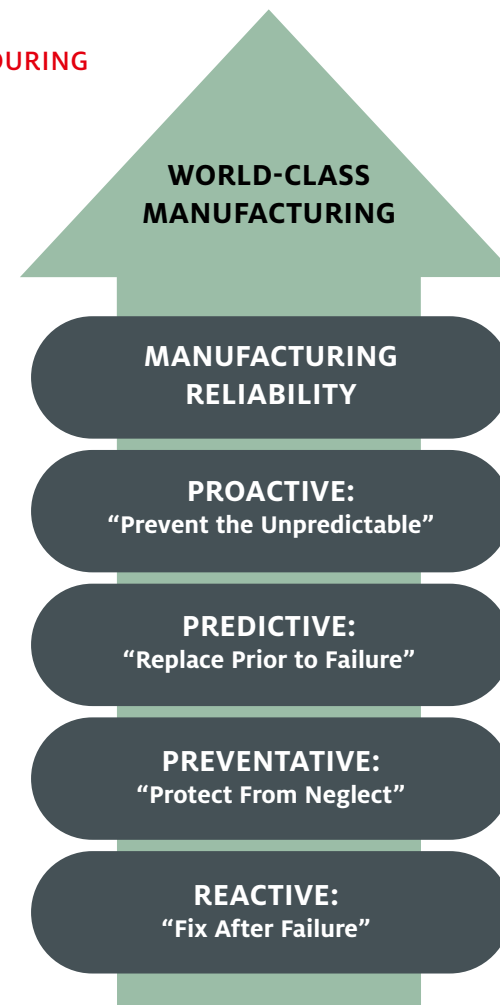
The first step toward equipment reliability is to initiate a process of Continuous Improvement by empowering your maintenance personnel with the application-driven, plant-tailored, product-specific information and skills they need to meet your company's needs on a daily basis.

### Learn how the latest LOCTITE® brand MRO product solutions can:

- Increase equipment reliability
- Reduce routine and redundant maintenance tasks
- Improve safety
- Reduce energy costs
- Reduce fluid consumption
- Reduce scrap
- Reduce inventory costs
- Increase productivity/uptime/OEE

## TYPICAL CHRONIC FAILURES THAT MACHINERY ADHESIVES CAN ADDRESS

FAILURE	RESULT
Fastener Loosening:	# 1 cause of chronic failures
Key Wallow:	Downtime and replacement parts
Spun Bearings:	Downtime and replacement parts
Tape Fouled Valves:	Downtime and system flush
Hydraulic Leaks:	Fluid loss, cleanup, disposal
Air Leaks:	\$192/year/leak (1/32 in. @ 100 psi)



## BEFORE THE TRAINING, A LOCTITE® MAINTENANCE PLANT SURVEY

Together with your key technicians, our Henkel Adhesives and Sealants Specialists can help identify redundant and unreliable repairs in your plant to customize training for your specific needs. A LOCTITE Maintenance Plant Survey involves a tour of key production or process areas, as well as maintenance repair or rebuild component shops, to identify and document any potential areas for improvement.



### A LOCTITE Maintenance Plant Survey includes:

- A thorough walk-through of your plant
- Identified cost savings opportunities
- Implementation of training that includes repair or rebuild improvements

## THE LOCTITE BEST PRACTICES MAINTENANCE WORKSHOP

### Hands-On Product and Reliability Training

This hands-on training program not only identifies problems in your plant, but also teaches the mechanical basics and failure fundamentals to help empower your people with the proper tools and skills required to make your total operations more efficient.



## LOCTITE MANUFACTURING RELIABILITY TRAINING OFFERS:

- 1.5 hours of hands-on equipment maintenance training
- Techniques to shift from a reactive operation towards a proactive world-class manufacturer
- Detailed modules that examine both mechanical basics and failure fundamentals
- Solutions to reduce redundant maintenance
- Principles and application of machinery adhesives
- Detailed documented cost savings that you sign off and approve



Visit us on the web for more information about maintenance workshops.

[www.henkelna.com/training](http://www.henkelna.com/training)

## ENHANCED SINGLE POINT TRAINING MODULES:

- Prevent Fastener Loosening, Rust and Leaks**
  - Strength/weakness of mechanical locking devices
  - Fastener selection and torque tension relationships
  - Sealing pre-assembled fasteners
  - Reduce or eliminate vibrational loosening
- Seal and Secure Tapered Threads**
  - Eliminate tape fouled valves
  - Reduce or eliminate air and hydraulic leaks
  - Limitations of thread tapes and pipe dopes
  - Dollarize how much leaks are costing you
- Prevent Cylindrical Parts Wear**
  - Types of cylindrical fits
  - Eliminate fretting corrosion
  - Reduce or eliminate spun bearings
  - Make keyed assemblies stronger and eliminate keyway wallow
- Gasket Repair and Replacement**
  - Reduce or eliminate gasket failure
  - Proper use/types of silicones
  - Form-in-place gasketing basics
  - Types of gaskets and limitations

## ADDITIONAL BEST PRACTICES TRAINING MODULES:

- Metal Rebuilding and Shaft Repair**
  - Epoxies to repair, rebuild and restore damaged parts
  - Proper techniques to quickly return equipment to service
  - Rebuild/repair shafts, pumps and components
- Anti-Slip Coatings**
  - Reduce slips and falls in the workplace
  - Designed to increase the coefficient of friction (COF)
  - Chemical resistance of products
- Wear Prevention and Rebuilding**
  - Techniques to restore worn surfaces and extend part life
  - Save cost by avoiding part replacement
  - Protects structural integrity of original substrates
- Bonding and Sealing**
  - High performance adhesives for fast, strong, consistent bonds
  - How structural bonding can help reduce costly mechanical fastening/welding
- Surface Protection and Rust Prevention**
  - Stabilize existing rust
  - Increase belt friction
  - Guard against corrosion
- Floor and Concrete Repair**
  - Expansion joint solutions
  - Techniques and products to repair concrete potholes and cracks
- Grouting**
  - Applications to bond to concrete, wood, metals, bricks and other common building materials
  - Self-leveling and non-shrinking options
  - Proper selection and applications for chemical and corrosion resistance
- Belt Repair**
  - Repair cuts/gouges on belts and worn edges on belting
  - Temporary repairs for belts to get back in service quickly
  - Permanent repairs for belts to extend lifespan
- Anti-Seize and Lubricants**
  - The purpose, composition and how they work
  - Protect mated metal parts against corrosion, wear and overheating
  - Reduce downtime and part breakage due to galling and seizure
  - Temperature differences