

Maintenance Guidelines for STANLEY Assembly Tools

SECTION 1 – General:

STANLEY assembly tools are designed for tightening threaded fasteners. Application variables such as torque level, free run time, joint type, operator practices and maintenance procedures can affect assembly tool durability. The following guidelines recommend maintenance intervals for specific tool types and components. Use the table at the bottom to adjust the intervals for actual torque level. Special assembly tools such as crowfoot and tubenut tools are used where space is limited. To fit into these spaces, typical robust design standards cannot apply, and these tools require more frequent maintenance than standard tools.

- ∞ **Recommendation: Perform a torque capability test and calibration (for tools with torque transducers) after all maintenance procedures – especially those that require tool disassembly.**
- ∞ **High Torque Tools: Preventative maintenance intervals for the 1st and 2nd gear stages shall be determined by the application duty cycle.**

| Interval | Recommended Preventive Maintenance |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monthly | Safety inspection: Inspect condition of all air hoses or power cables and connections, Inspect tool suspension components and torque reaction devices. Replace worn or damaged components. Replace worn or damaged safety labels. REFERENCE SECTION 5 Note: Failure to perform this inspection could result in unsafe and hazardous conditions being present |
| Yearly | Grease: Re-grease tool and all components featuring a grease specification. Tools not in use 12 months or more require re-grease prior to installation. |
| First 5,000 and 10,000 cycles | Crowfoot and Tubenut tools: Inspect tool using external transducer every 1000 cycles to ensure calibration is accurate. Recalibrate if required. |
| 25,000 cycles Or Weekly | Tubenut tools: Lubricate gear head 2-3 pumps (Ref. 2a) Note: Failure to perform this maintenance will result in damage to socket journals and mating housing surfaces causing undue expense and down time. Inspect housing, baseplate, socket, & socket bushings and replace any visibly worn components. |
| 75,000 cycles | Crowfoot tools: Lubricate gear head 2-3 pumps (Ref. 2a) Note: Failure to perform this maintenance could result in damage to socket journals and mating housing surfaces causing undue expense and down time. Inspect housing, baseplate, socket, & socket bushings and replace any visibly worn components. |
| 150,000 cycles | Angle heads: Lubricate angle head gears 2-3 pumps (Ref. 2a) Note: Failure to perform this maintenance could reduce gear life 20 to 50%. Inspect packing cap to ensure tight; inspect pin and ball retainer to ensure they are in good operating condition. |
| 250,000 cycles | Pneumatic tools: Disassemble motor; replace rotor blades and motor bearings. Inspect all valves and seals and replace any worn components. Ref 2c Inspect clutch and replace any worn components. Electric and Pneumatic tools: Disassemble output (angle head, crowfoot head, spindle support, LB3 and LB4 outputs, etc.), inspect for wear and replace bearings and any worn parts. Replace grease (Ref 2a) covering all tooth spaces. Or replenish Gear Oil (Ref 2b) |
| 500,000 cycles | Electric tools: Inspect switches, cables and connectors and replace any worn components. Electric and Pneumatic tools: Disassemble gear case and output (angle head, crowfoot head, spindle support, etc.), inspect for wear, replace bearings and any visibly worn parts, replace grease (Ref 2a) covering all tooth spaces, or replenish Gear Oil (Ref 2b) |

SECTION 2 – Lubricant Descriptions:

- Ref. 1: **Pneumatic tool motor lubricant** – Air tool oil (emulsifying grade)
 Ref. 2a: **Gear Lubricant** – Dow Corning MOLYCOTE® G-4700 EXTREME PRESSURE SYNTHETIC GREASE
 Ref. 2b: **Gear Lubricant** – #5 Planetary Gear case – output stage – 90 weight gear oil - fill to outflow port.
 Ref. 2c: **“O” Ring Lubricant** – “O” Ring Lube

SECTION 3 – Life Expectancy Factor

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| Life Expectancy Factor (LEF): For many components, operation above the rated torque can reduce the cycle to failure life. Operation below the rated torque can increase the cycle to failure life. Multiply MTBF rating by these factor for operation at other than rated torque | 120% of rated torque | 0.5 X |
| | 110% of rated torque | 0.7 X |
| | 90% of rated torque | 1.3 X |
| | 80% of rated torque | 2.0 X |
| | 70% of rated torque | 2.5 X |

- ∞ These are general guidelines - Individual tool models may have different LEF (Life Expectancy Factor) ratings depending upon the prevailing torque required by the application and the conditions described in SECTION 1.

SECTION 4 – MTBF (mean time between failures) Guidelines

| (MTBF) Guidelines for Estimating Spare Parts Use* | | | | | |
|---------------------------------------------------|------------------|--------------------------------------------------|------------------|----------------------------------------|------------------|
| Component | Cycles | Component | Cycles | Component | Cycles |
| Tubenut/Crow foot | 125,000 x LEF | Angle Heads Other Outputs Air Motor Blades | 250,000 x LEF | <i>Planetary</i> Gearing Air Motors | 500,000 x LEF |
| Cables | >1,000,000 | Transducers | >1,000,000 0 | Electric Motors | >1,000,000 |

- ∞ These are general guidelines - Individual tool models may have different MTBF (Mean Time Between Failures) ratings depending upon tool construction and the conditions described in SECTION 1

SECTION 5 – COMPONENT PART INSPECTION

| Component | Replace If: |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MLTC* | - Visible surface deformation (Brinnelling), surface scoring, nicks, cracks, or pitting |
| Seals O-Rings | - Flat surfaces on the seal cross section, notches, cuts, cracks, or pitting |
| Valves | - Visible surface deformation (Brinnelling) or surface scoring |
| Ball Bearings | - Rough or gritty feel when turned by hand - It is good mechanical repair practice to replace ball bearings whenever tool is serviced |
| Needle Bearings | - Surface scoring or heat discoloration on the mating journal - It is good mechanical repair practice to replace ball bearings whenever tool is serviced |
| DC Tool Cables | - The cables result in intermittent tool operation, or outer jacket is worn or cut exposing metallic wire shield |
| Air Hoses | - Still leaking air after checked for leaks and fittings tightened |
| Suspension Cables | - Cable is stranding (one or more strands have separated) |

*Mechanical Load Transmitting Components (MLTC) – Gears, Spindles, Shafts, Couplings, Clutches, Springs, Sockets