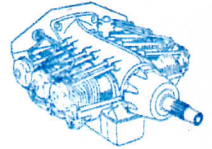


# LYCOMING



## SERVICE BULLETIN

LYCOMING DIVISION - THE AVIATION CORPORATION, WILLIAMSPORT, PA., U. S. A.

DATE: October 1, 1945

SERVICE BULLETIN NO. 125

Supersedes SERVICE BULLETINS NO. 109 & 21

Subject: Revised Tightening Torque Limits

### General Instructions.

The following recommendations for tightening nuts and capscrews apply to all Lycoming engines. The general recommendations should be followed except where specific recommendations are made for a particular nut or capscrew. There are certain places on the engine such as rocker box covers where it is undesirable because of soft gaskets or other conditions to give definite values for tightening torque. Under such conditions it is necessary for the mechanic to exercise some judgment to avoid overtightening or undertightening nuts or capscrews.

Where nuts or capscrews are not locked by cotter pins or similar devices, it is possible for the mechanic to tighten the nut or capscrew to the desired tension; therefore, no tolerance is given on such nuts or capscrews.

### 1. General Recommendations.

10-32 nuts and capscrews	30 In. Lbs.
1/4" nuts and capscrews	75 In. Lbs.
5/16" nuts and capscrews	150 In. Lbs.
3/8" nuts and capscrews	300 In. Lbs.
7/16" nuts and capscrews	400 In. Lbs.
1/2" nuts and capscrews	550 In. Lbs.

### 2. Specific Recommendations.

All series of Lycoming engines	
Thrust nut	
All model O-435 and R-680 engines	375 Ft. Lbs.
Propeller retaining nut	
All model O-435 and R-680 engines	450-500 Ft. Lbs.
Cylinder base and crankcase attaching nuts 1/2"	550 In. Lbs.
Cylinder base and crankcase attaching nuts 3/8"	300 In. Lbs.
Spark Plugs 18mm	300-360 In. Lbs.
Crankcase attaching nuts 1/4"	75 In. Lbs.
Camshaft Gear attaching screws 5/16"	150 In. Lbs.
Magneto mounting nuts	100 In. Lbs.
Link pin clip screws	75 In. Lbs.

3. A tolerance is allowed on the following nuts because of the nature of the locking device:

	<u>Min.</u>	<u>Desired</u>	<u>Max.</u>
Connecting rod bolts 3/8"	275 In/lbs.	300 In/lbs.	325 In.Lbs.
Cam idler gear nut	75 In/lbs.	85 In.Lbs.	100 In.Lbs.
Crankpin oil seal nut	50 In.Lbs.	65 In.Lbs.	75 In.Lbs.
Valve rocker pin nut	75 In.Lbs.	100 In.Lbs.	175 In.Lbs.
Distributor shaft nut	75 In.Lbs.	100 In.Lbs.	175 In.Lbs.
Crankshaft clamp bolt - Elongation	.005"	.006"	.007"

4. Correct use of torque indicating wrench.

In using a torque wrench, it is well to bear in mind that an erroneous reading can be obtained by cocking the wrench handle in relation to the socket. Therefore, regardless of the angle of the socket or drive always be sure the torque wrench drive is in line with the socket drive. Also, never jerk or use a series of jerks but make a steady pull and hold a pressure for a few seconds on wrench after reaching desired torque reading. Torque wrenches should be frequently calibrated by means of a standard weight and a measured lever arm.