

## **INSTRUCTIONS FOR INSPECTING LIFTING NUTS FOR THREAD WEAR IN DUFF NORTON AIR MOTOR JACK MODELS 126RX, 144RX, 528RX, 536RX, 524RX, 228R, AND 326R**

At the heart of every Duff Norton air motor jack is the power thread mechanism—comprised of an externally threaded lifting screw and an internally threaded lifting nut. As the threads of the lifting nut make sliding contact with the lifting screw, they begin to wear. If the jack is operated long enough the thread will wear to the point where it no longer has the thickness required to support the jack load. When this happens, the lifting nut will shear at the lifting screw thread outside diameter, and the jack member will collapse—bringing the load it was supporting crashing down on the cribbing or blocking which should be used in any jacking operation.

For this reason it is important to inspect the lifting nut in your Duff Norton air motor jacks for wear at regular intervals—after every 100 full extend and retract cycles under full rated load when the jack is operated with recommended lubrication in a clean environment. Of course, the inspection interval should be modified up or down based on the stroke, load, lubrication and environment conditions existing during actual use.

The Duff Norton “Operating, Inspection and Maintenance Instructions” manual covers inspection of lifting nut threads for wear in great detail. The procedure it describes is suitable for use mainly by trained mechanics in authorized jack repair centers.

Duff Norton Air Motor Jack Co. has developed an inspection procedure which is more readily used by authorized jack repair centers. The procedure requires that the lifting member be removed from the jack. The lifting nut threads are then checked by measuring them with a specially designed gage made from flat

sheet metal. The gage has teeth that enter the thread spaces and indicate whether the threads are worn beyond the allowable limit. A set of four gages (part # X4829) for the various air motor jack models is available.

Instructions for using the new gages for inspecting air motor jack lifting nuts for thread wear are presented below. These instructions involve only the inspection of lifting nuts for thread wear. It is important that other aspects of air jack operation, inspection and maintenance as presented in the maintenance manual be understood and followed for the continued safe operation of jacks.

Duff Norton Air Motor Jack Co. has also developed a video to show the inspection procedure.

Extra gage sets, gage use instructions, maintenance manuals and the how-to video are available from Duff Norton Air Motor Jack Co. at:

Duff Norton Air Motor Jack Co.  
2111 4<sup>th</sup> Ave. N.  
Billings, MT 59101  
Phone: 406-252-4294  
Fax: 406-252-4812

To disassemble the lifting member from the jack, to inspect the lifting nut for power thread wear, to replace worn out lifting nuts in lifting members, to reassemble the lifting member into the jack and to test the reassembled jack, refer to the exploded illustration appropriate to the jack model and proceed per the instructions below.

### **I. LIFTING MEMBER DISASSEMBLY FROM THE JACK**

#### **A. JACK MODELS 126RX, 144RX, 528RX, 536RX, AND 524RX**

1. Disconnect the air supply from the jack and position the jack upright.
2. Remove the bolts (Item 87 for 126RX, 144RX, & 524RX; Item 89 for 528RX & 536RX), the lockwashers (Item 88 for 126RX, 144RX, & 524RX; Item 90 for 528RX & 536RX), and the handle bracket assembly (Items 81-86 & 89 for 126RX, 144RX, & 524RX; Items 83-88 & 91 for 528RX & 536RX) from the jack.
3. Remove the screws (Item 90 for 126RX & 144RX; Item 92 for 528RX & 536RX;

Item 97 for 524RX), the lockwashers (Item 91 for 126RX & 144RX; Item 93 for 528RX & 536RX; Item 98 for 524RX), and the throttle lever guard (Item 92 for 126RX & 144RX; Item 94 for 528RX & 536RX; Item 99 for 524RX) from the jack.

4. Loosen the check nut (Item 98 for 126RX & 144RX; Item 100 for 528RX & 536RX; Item 91 for 524RX) on the control rod (Item 99 for 126RX & 144RX; Item 101 for 528RX & 536RX; Item 90 for 524RX).

5. Remove the check nut (Item 76 for 126RX & 144RX; Item 78 for 528RX, 536RX & 524RX)