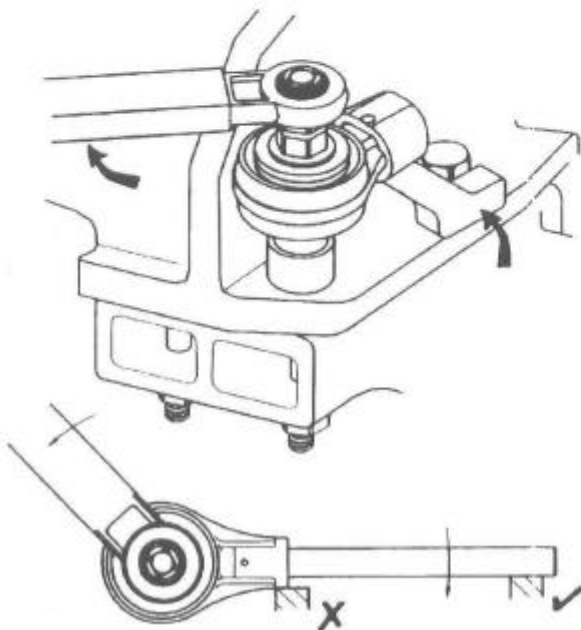


INSTRUCTION FOR THE NORBAR HIGHWAYMAN 5:1 TORQUE MULTIPLIERS

Maximum output Torque:
Model 17220, 1300 N.m 960 lbf.ft.
Model 17221, 2700 N.m. 2000 lbf.ft.

1. The Highwayman is a precision tool which multiplies by five times the torque applied to the input drive.



2. To rotate a nut:

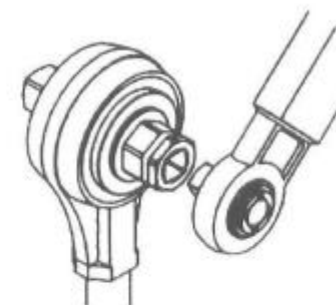
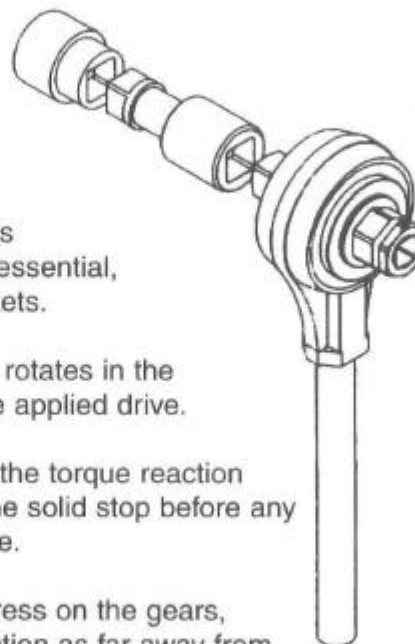
(a) Select correct socket with a $\frac{3}{4}$ " (model 17220) or 1" (model 17221) drive: it is recommended, but not essential, to use power drive sockets.

(b) In use the tool body rotates in the opposite direction to the applied drive.

It is necessary to allow the torque reaction arm to rest against some solid stop before any useful work can be done.

(c) To prevent undue stress on the gears, always take torque reaction as far away from the drive square as circumstances permit.

(d) Up to a 9" long (250mm) extension driver may be used providing output torque does not exceed 750lbf.ft (1000 N.m) and reaction forces are taken near the end of the reaction bar see diagram.



3. Driving tool

(a) A $\frac{1}{2}$ " ratchet level or a 32mm A/F socket is suitable for model 17220, $\frac{3}{4}$ " or 36mm A/F socket for 17221. For torque control and even bolt loading a torque wrench is required.

Set torque wrench to one-fifth of the desired torque on the nut. Do not exceed maximum input torque: 260 N.m (190 lbf.ft) for model 17220, and 540 N.m (400 lbf.ft) for model 17221.

DO NOT USE THE MULTIPLIER WITH IMPACT OR IMPULSE WRENCHES.