

COMANCHE GEAR



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EXPLANATION – EFFECTIVE LENGTH LANDING GEAR RETRACTION LOADS

LET'S TAKE A LOOK AT THE TABLES IN SECTIONS 6-58 SCSM & 7-49 TCSM "CHECKING LANDING GEAR RETRACTION LOAD". THE CHARTS' PURPOSE IS TO ACCOMMODATE FOR VARIOUS TORQUE WRENCHES. THE **MAXIMUM-ALLOWED "RETRACTION LOAD"** IS WHAT WE ARE LOOKING FOR; THAT'S THE COMBINED RESISTANCE OF EVERYTHING INVOLVED FROM GRAVITY TO POOR LUBRICATION. THE **RED "A"** HAS BEEN ADDED TO ASSOCIATE WITH THE SNAP-ON® "TORQUE COMPUTER" ILLUSTRATIONS FOUND ON THE FOLLOWING PAGES. **185 FT-LBS MAXIMUM** IS THE VALUE PIPER IS TRYING TO CONVEY.

THE QUESTION AROSE; WITH A LONGER "ARM" SHOULDN'T THE REQUIRED FORCE BE LESSENED? IT SEEMS INCONGRUENT SO I STUDIED THE APPARENT MISTAKE A BIT AND INITIALLY CAME UP WITH A WRONG ANSWER; INCONSISTENT VALUES. LATER IT DAWNED ON ME; THOSE RESULTS FOLLOW. TAKE A LOOK AT THE "FT-LBS" RESULTS ON PAGE 3; THOSE VALUES ARE CONSISTENT @ **185 FT-LBS**, WHICH MAKES SENSE.

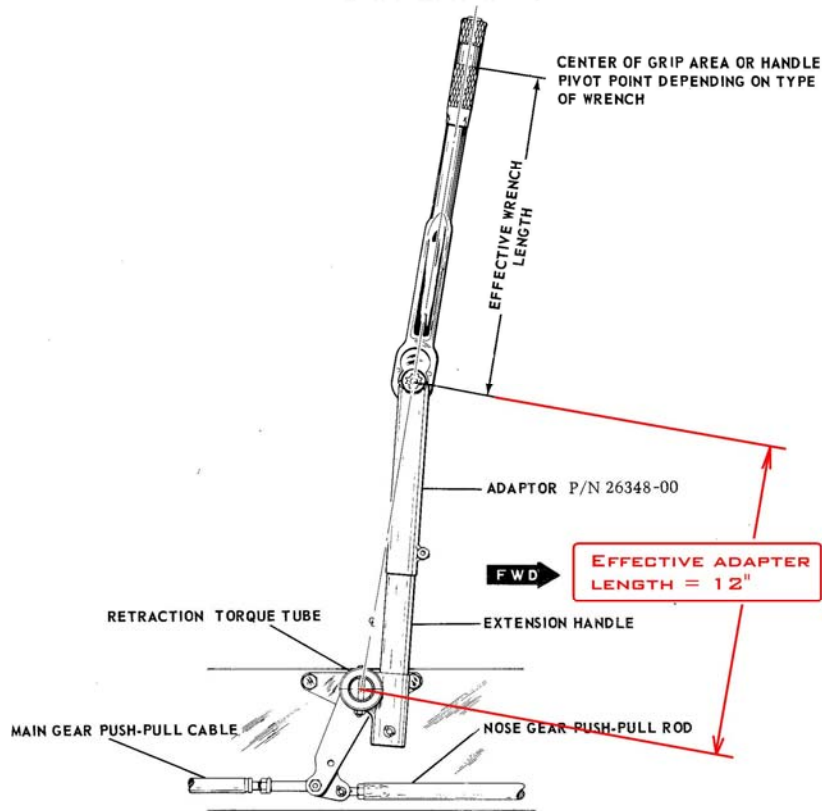
MOVING ON TO THE PRACTICAL. FIELDING MANY QUESTIONS REGARDING THE LANDING GEAR GIVES ME THE ADVANTAGE OF GATHERING INFORMATION. I HAVE FOUND THAT EVEN WITH AN AIRPLANE PASSING THIS RETRACTION TEST, THE COMMON COMPLAINT IS FAILURE TO FULLY RETRACT WITHOUT POPPING THE 30-AMP GEAR MOTOR CB; EVEN WITH GOOD MAINTENANCE. THE SOLUTION FORTUNATELY IS SIMPLE AND AVAILABLE, INSTALLING WEBCO'S PMA PUSH-PULL LANDING GEAR CABLES. THE PROBLEM THEN JUST GOES AWAY. A SMALL POINT TO REMEMBER, PIPER CHANGED THE GEAR MOTOR CIRCUIT BREAKER FROM 25 AMPS TO 30 AMPS IN THE SINGLES; SEE SL-356 DATED MARCH 31, 1961.

SO DO WE WANT TO DO BATTLE OVER THE CHART AND ITS NUMBERS OR BY-PASS THIS STICKING POINT AND JUST REPLACE A NON-SERVICED ITEM SINCE NEW WITH A BETTER PRODUCT, THE CABLES? I'M FOR THE NEW CABLES.

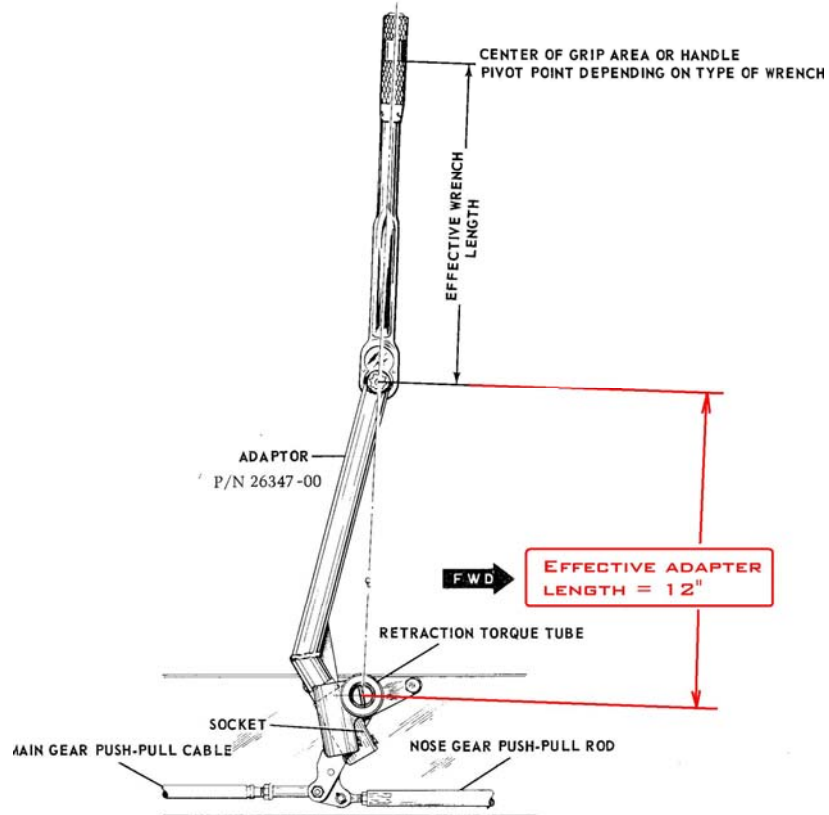
AND THANKS FOR ENDURING ANOTHER DISCOURSE FROM ME,

TABLE VI-I. TORQUE FOR EFFECTIVE WRENCH LENGTH	
EFFECTIVE WRENCH LENGTH (INCHES) A	DIAL READING (FOOT POUNDS)
18	111
16	106
14	100
12	93
10	84

ALIGN TORQUE WRENCH WITH CENTER
LINE OF RETRACTION TORQUE TUBE



ALIGN TORQUE WRENCH WITH CENTER
LINE OF RETRACTION TORQUE TUBE



**EFFECTIVE WRENCH
LENGTH FROM CHART = 18"**



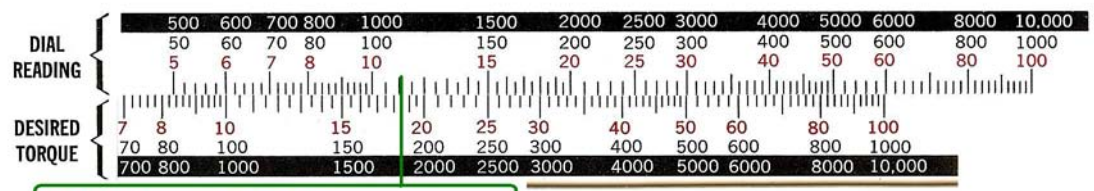
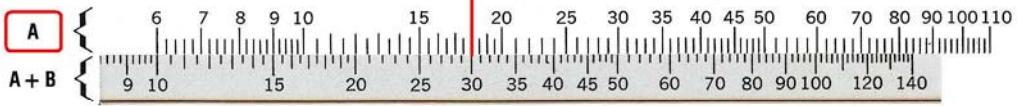
TORQUE COMPUTER

(for use when adaptor or extension is added)



DIRECTIONS:

1. See reverse side for dimension "A".
2. Move slide until total of "A" + "B" is under "A".
3. Locate desired torque on bottom scale. New DIAL READING is directly above (use same color figures on both scales).



**MAXIMUM TORQUE
VALUE FROM CHART = 111**

185 FT-LBS

SS-306G

**EFFECTIVE WRENCH
LENGTH FROM CHART = 10"**



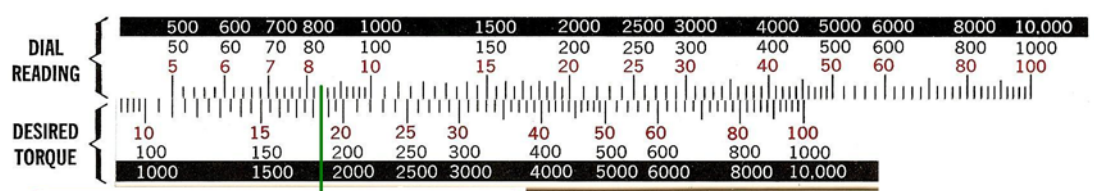
TORQUE COMPUTER

(for use when adaptor or extension is added)



DIRECTIONS:

1. See reverse side for dimension "A".
2. Move slide until total of "A" + "B" is under "A".
3. Locate desired torque on bottom scale. New DIAL READING is directly above (use same color figures on both scales).



**MAXIMUM TORQUE
VALUE FROM CHART = 84**

185 FT-LBS

SS-306G

THESE ILLUSTRATIONS ABOVE ARE ACTUAL RESULTS USING PIPER'S CHART FROM THE FIRST PAGE OF THIS DISCUSSION.