SECTION 7 TO ASSEMBLE HUB UNIT

Note :- Prior to assembly lightly oil all gears and oil seal faces, also pack all taper bearings with grease (Shell Retinax LX or equivalent) using a bearing packer or manually kneading grease between rollers, race and cage before setting and rotated whilst being set.

7.1 Assemble brake disc (62) and hub (6) together then secure with setscrews (63), tightening to 222 / 246lbs.ft. (301 / 334Nm.).
7.2 Fit inner and outer hub bearing cups (8 & 4) into their bores in hub (6).
7.3 With hub (6), outer end face down on bench, place inner hub bearing cone (8A) onto its cup (8) in hub.
7.5 Using a suitable fitting tool, knock hub oil seal (9), spring large o/dia. first into position in hub bore.
7.6 Carefully heat up pole wheel (10) to hand hot (120° C max.) then push into position on hub (6).
7.7 allow pole wheel to cool.
7.8 Apply clean grease (Shell Retinax LX or equivalent) to oil seal inner rubber lips then carefully offer hub assembly to axle stub (59), then, with hub unit supported by a sling or an assistant, fit outer hub bearing cone (4A) into its cup (4).
7.9 Fit hub bearing washer (64) .
7.10 Fit hub bearing nut pinch bolt (3) and pinch bolt nut (1) to hub nut.
7.11 Using tool E698 tighten hub nut onto swivel to a torque of 80lbs.ft.(110Nm) whilst rotating the hub.

SECTION 8 HUB AND A.B.S. SETTING

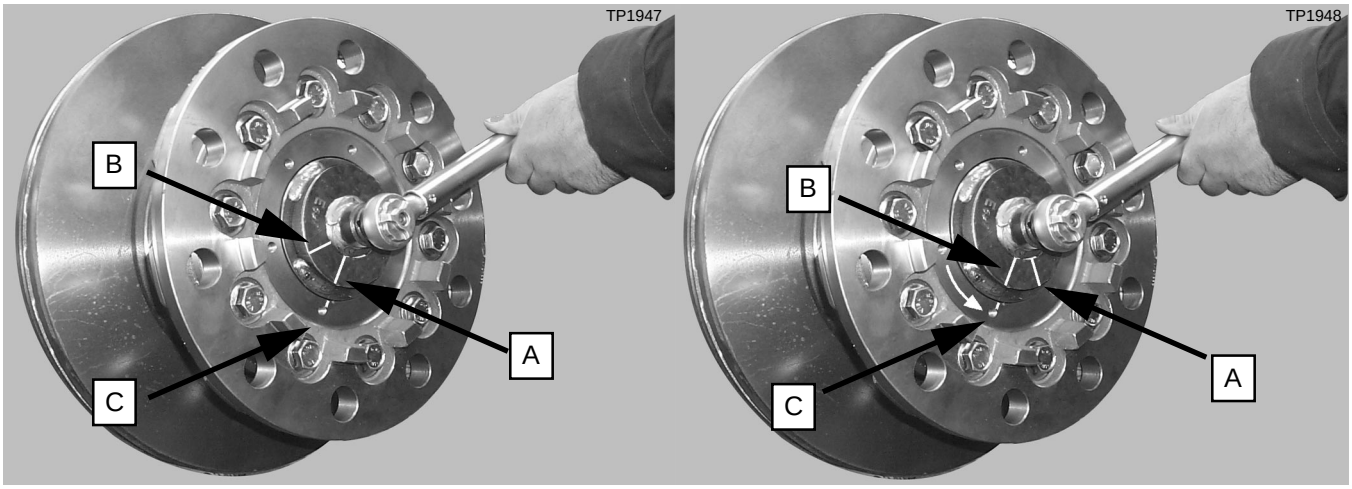
8.1 Rotate hub and using a hide faced hammer, knock hub backwards and forwards along axle arm to 'Shock Load' and thus settle hub bearings in position.

Note :- it is very important to rotate and shock load the hub because :-

a) Rotation serves to ensure that bearing rollers settle into running in their correct tracks.
b) 'Shock Load' is to ensure that bearings are seated correctly up to their abutment shoulders.

8.2 Using tool E698 re-tighten hub nut onto swivel to a torque of 80lbs.ft.(110Nm).
8.3 Using the markings on tool E698 for reference and without moving the hub; Mark a line 'C' on hub. In line with line 'A' on tool E698 (see below)
8.4 Back off hub bearing nut (2) until Line 'B' on tool E698 lines up with line 'C' on hub.(This serves to set the required 50° angle to obtain correct endfloat)
8.5 Tighten hub bearing pinch bolt nut (1) to 26 / 32lbs.ft. (35 / 43Nm.).
8.6 Assemble sensor and sensor bush together (31 & 30) then push into position in swivel (59) until in firm contact with pole wheel (10).
8.7 Spin hub a minimum of one complete revolution to set pole wheel (10) to sensor (31) running clearance.

Note :- Clearance between pole wheel (10) and sensor (31) is automatic as wheel hub is rotated.



Checking hub bearing 'End Float'
Fig. No.8.

8.8 Check A.B.S. sensor performance as follows :-

Before commencement of this check It is important that the number of teeth be checked and found to be the correct, on both LH and RH hubs.

a) Insert the probes from a volt-meter into the two plugs in the sensor connector.
b) set the voltmeter to read mili-volts AC.
c) Rotate the hub in any direction at a constant speed of 60Hz (7Kph).
To determine this speed use the following calculation ;

$$RPM = \frac{60Hz}{z} \times 60 \text{ secs}$$

where z = the number of teeth on the pole wheel.

Note :- The reading may not be steady due to the possibility of pole wheel run out and the inconsistent speed of the wheel.

d) The maximum reading (Vmax) must not be more than 80% greater than the minimum reading (Vmin). ie.

$$\frac{Vmax}{Vmin} \leq 1.8$$

If the following is true then it is likely that there is excessive pole wheel runout. The pole wheel installation will therefore need to be inspected and remounted or replaced.

$$\frac{Vmax}{Vmin} > 1.8$$

e) The minimum reading must be greater than the voltage threshold (Vt) ie.

$$Vmin. > Vt$$

$$Vt. = 60mV$$

If this is not the case, then the sendsor gap is too large or there may be excessive pole wheel runout. The pole wheel will therefore need to be inspected and remounted or replaced.

f) If sections d) and e) are satisfied, then the installation can be considered as satisfactory.

Note :- The above test procedure is as recommended by A.B.S. manufacturers.