

NOVEMBER 1970



No. 285

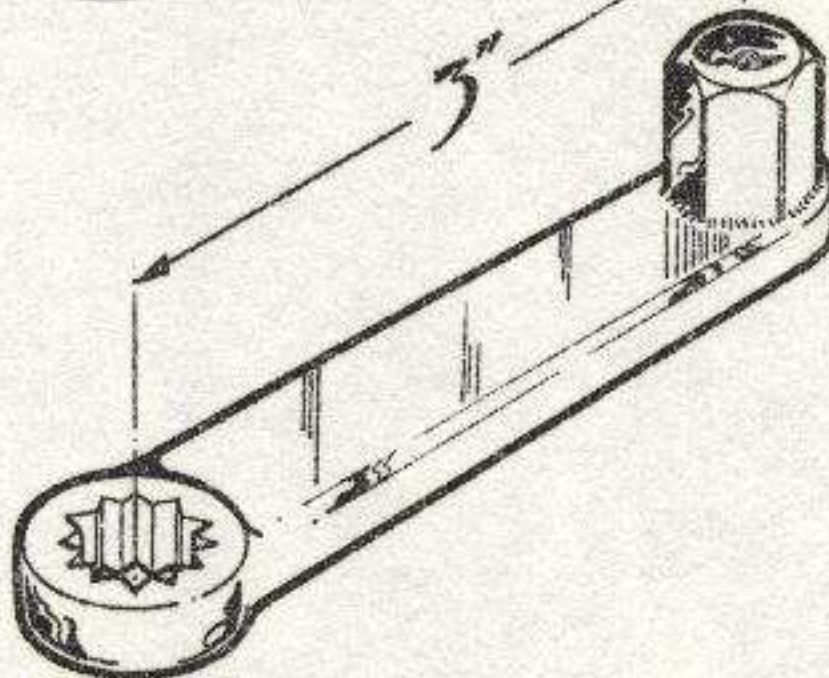
SERVICE SHEET

All Models

TORQUE WRENCH SETTINGS

All B.S.A. Workshop Manuals give details of torque wrench settings in section 'J' and recent publications have a paragraph explaining how to calculate the torque to apply when using an extension. The example given is inaccurate and should be corrected to conform with the following:-

The torque figures listed cannot always be applied directly for reasons of accessibility. For example, the cylinder barrel nuts and the four outer cylinder head nuts on A Group machines. To facilitate torquing of these nuts, one has to make up an extension wrench which will fit the nut at one end and the torque wrench at the other. For example, a spanner can be cut and a piece of hexagon bar, or a nut, brazed or welded in position to give 3" between centres as illustrated.



When an extension of this type is used, the mechanical advantage is increased and it is therefore necessary to calculate this advantage to avoid over tightening and the consequences thereof.

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A torque wrench graduated in lbs/ft of leverage is equal to 12" of leverage (not necessarily the actual length) and will be referred to as the "original length".

How to calculate:-

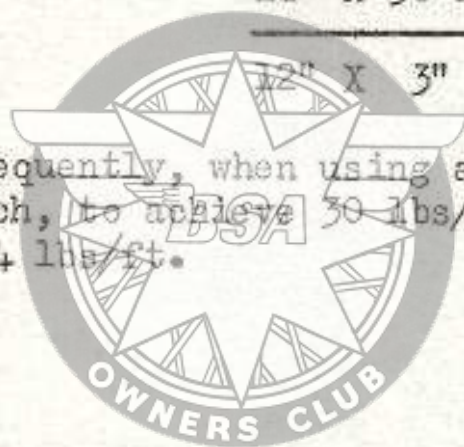
Original length 12" X required torque load, say 30 lbs/ft

Original length 12" + additional leverage, say 3"

The above represents:-

$$\frac{12" \times 30 \text{ lbs/ft}}{12" + 3"} = \frac{360}{15} = 24 \text{ lbs/ft}$$

Consequently, when using a 3" extension with a lbs/ft torque wrench, to achieve 30 lbs/ft torque, one would set the wrench to 24 lbs/ft.



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