



TECHNICAL & SAFETY DATA INFORMATION BACK-UP WRENCH

The Back-Up Wrench is a user-friendly device meant to simplify the make-up or tightening of flanges and other bolting members.

It is not however recommended for the loosening or breakout of flanges due to the fact that a one-piece knocker wrench will suffice since it will come loose anyway once the nut has been freed.

SAFETY DATA FOR BACK-UP WRENCHES

The Back-Up Wrenches are available in four different groups:

<u>AVAILABLE</u>	<u>SIZES</u>	<u>THICKNESS</u>	<u>MAXIMUM TORQUE</u>
GROUP 1	1-7/16" THRU 2-3/8"	3/4"	1400 FT. LBS.
GROUP 2	2-9/16" THRU 3-1/8"	1"	3200 FT. LBS.
GROUP 3	3-1/2" THRU 4-5/8"	1-1/2"	10800 FT. LBS.
GROUP 4	5" THRU 6-1/8"	2-1/2"	50000 FT. LBS.

Note the following: All Back-Up Wrenches have a 20% safety factor which adds a little more torque for each size listed.

CORROLATION BETWEEN TORQUE VALUE AND BACK-UP TORQUE VALUES

The value of a torque nut does not necessarily transmit to the bottom nut being held by the Back-Up Wrench.

Studies show that the bottom torque value is normally 10% - 20% of the torque being applied on the nut.

Therefore, one can assume that if 3000 ft.lbs. is being applied on top, the bottom nut sees roughly 500-600 ft.lbs. However, if a lock nut or other locking element is used, the bottom torque value will increase closer to a 1:1 ratio, especially if threads are galled.

For loosening however, the torque value on the bottom nut is unknown due to the fact that it is unknown how heat corroded or otherwise damaged the threads are. Therefore, it is better to assume almost a 1:1 ratio when loosening with the Back-Up Wrench

As stated prior, we do not recommend the Back-Up Wrench for loosening.

If you require more strength in the Back-Up Wrench, we can make a special thicker wrench for your particular application.

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