

STAINLESS STEEL TORQUE GUIDE

WHAT IS TORQUE?

TORQUE IS A TWISTING FORCE. TORQUE IS APPLIED TO YOUR WATCH STEM WHEN YOU WIND YOUR WATCH. YOU APPLY TORQUE TO UNSCREW THE TOP OF A MASON JAR. TORQUE CAUSES ROTATION OF A SHAFT, OR IT WILL SET UP A TWIST IN A STATIONARY SHAFT. IT IS GENERALLY EXPRESSED IN FOOT POUNDS OR IN INCH POUNDS.

HOW IS TORQUE DETERMINED?

A WRENCH ON A SHAFT -- OR A STRING WRAPPED AROUND A WHEEL OR PULLEY -- WILL GIVE AN ACCURATE TORQUE READING. USE A SCALE TO DETERMINE THE POUNDS OF PULL AND A RULE TO MEASURE THE RADIUS. COMPUTE THE INCH OR FOOT POUNDS OR FORCE BY USING THE FOLLOWING FORMULA: $T=R \times S$ WHERE R=RADIUS OR LENGTH OF LEVER, S=POUNDS PULL ON SCALE.

IF A SHAFT CONNECTED TO A 2 FT. LEVER OR ARM REQUIRES 2 LBS. OF FORCE TO CAUSE IT TO ROTATE, THE TORQUE WOULD BE 4 FT. LBS.

PROPERLY FASTENED THREADED PRODUCTS ACHIEVE THEIR HOLDING POWER FROM THE TENSION (OR TORQUE) THAT IS DERIVED FROM THE MATING OF THE EXTERNAL AND INTERNAL THREADS SUBJECT TO THE ELASTIC LIMIT OF THE MATERIAL.

WHAT TORQUE TO APPLY IS A GENERALLY ASKED QUESTION, BUT THE ANSWER DEPENDS ON THE VARIABLES OF MATERIAL, THREADS' CLASS OF FIT, METHOD OF THREAD MANUFACTURE, AND THREAD LUBRICATION -- IF ANY.

THE FOLLOWING TABLES ARE OFFERED AS **SUGGESTED** MAXIMUM TORQUING VALUES, AND SHOULD BE USED ONLY AS A GUIDE. ACTUAL TESTS WERE CONDUCTED ON DRY, OR NEAR DRY, PRODUCTS WIPED CLEAN OF CHIPS AND FOREIGN MATTER.

18-8 STAINLESS
Coarse Thread

SIZE	TORQUE
10/24 (.1875)	22.8 in. lbs.
1/4-20 (.250)	75.2 in. lbs.
5/16-18 (.3125)	132.0 in. lbs.
3/8-16 (.375)	236.0 in. lbs.
7/16-14 (.4375)	376.0 in. lbs.
1/2-13 (.500)	517.0 in. lbs.
9/16-12 (.5625)	682.0 in. lbs.
5/8-11 (.625)	1,110.0 in. lbs.
3/4-10 (.750)	1,530.0 in. lbs.
7/8-9 (.875)	2,328.0 in. lbs.
1-8 (1.000)	3,440.0 in. lbs.

Fine Thread

SIZE	TORQUE
10/32 (.1875)	31.7 in. lbs.
1/4-28 (.250)	94.0 in. lbs.
5/16-24 (.3125)	142.0 in. lbs.
3/8-24 (.375)	259.0 in. lbs.
7/16-20 (.4375)	400.0 in. lbs.
1/2-20 (.500)	541.0 in. lbs.
9/16-18 (.5625)	752.0 in. lbs.
5/8-18 (.625)	1,244.0 in. lbs.
3/4-16 (.750)	1,490.0 in. lbs.
7/8-14 (.875)	2,318.0 in. lbs.
1-14 (1.000)	3,110.0 in. lbs.