

# SPIROL® TORQUE SPECIFICATIONS

Typical tightening torque values to achieve recommended **Clamping Loads** are based on the following formula:

$$T = K \times D \times P$$

Where:

**K** = torque-friction coefficient

**D** = nominal bolt diameter

**P** = bolt clamping load

**K<sub>Dry</sub>** = 0.2

**K<sub>Lube</sub>** = 0.15



Common Inch Bolts per SAE J429						
Threads	Grade 2 Torque		Grade 5 Torque		Grade 8 Torque	
	Dry	Lube	Dry	Lube	Dry	Lube
#4-40	5.6	4.2	8.5	6.4	12.1	9.1
#6-32	10.4	7.8	16.0	12.0	22.6	17.0
#8-32	18.9	14.1	29.4	22.0	41.3	31.0
#10-24	27.4	20.5	42.2	31.6	60.0	45.0
1/4-20	65.5	49.0	101.0	76.0	143.0	107.0
5/16-18	138.0	103.0	209.0	157.0	295.0	221.0
3/8-16	240.0	180.0	371.0	278.0	525.0	394.0

Common Inch Bolts per SAE J429						
Threads	Grade 2 Torque		Grade 5 Torque		Grade 8 Torque	
	Dry	Lube	Dry	Lube	Dry	Lube
#4-48	6.0	4.5	9.4	7.1	13.4	10.1
#6-40	11.3	8.5	17.8	13.4	25.1	18.8
#8-36	19.7	14.8	30.8	23.1	43.3	32.5
#10-32	31.4	23.5	48.5	36.3	68.5	51.5
1/4-28	75.0	56.5	116.0	87.0	163.0	122.0
5/16-24	150.0	113.0	230.0	172.0	326.0	244.0
3/8-24	270.0	202.0	420.0	315.0	593.0	444.0

Common Metric Bolts per ISO 898								
Threads	Class 5.8 Torque		Class 8.8 Torque		Class 10.9 Torque		Class 12.9 Torque	
	Dry	Lube	Dry	Lube	Dry	Lube	Dry	Lube
M3	0.9	0.6	1.3	1.0	1.9	1.4	2.2	1.6
M3.5	1.4	1.0	2.1	1.6	3.0	2.2	3.5	2.6
M4	2.0	1.5	3.1	2.3	4.4	3.3	5.1	3.8
M5	4.0	3.0	6.2	4.6	8.8	6.6	10.3	7.8
M6	6.9	5.2	10.4	7.8	15.1	11.3	17.6	13.2
M8 X 1	17.9	13.4	27.2	20.4	39.0	29.3	45.6	34.2
M8 X 1.25	16.6	12.5	25.4	19.1	36.5	27.4	42.6	31.9
M10 X 1	36.8	27.6	56.2	42.1	80.2	60.2	94.0	70.5
M10 X 1.25	35.0	26.3	53.2	39.9	76.2	57.2	89.2	66.9
M10 X 1.5	33.0	24.8	50.6	38.0	72.2	54.2	84.4	63.3
M12 X 1.25	63.1	47.3	96.2	72.2	137.5	103.1	160.8	120.6
M12 X 1.5	60.2	45.2	91.9	68.9	131.5	98.6	153.8	115.4
M12 X 1.75	57.6	43.2	88.1	66.1	126.0	94.5	147.4	110.5

Notes:

- Shaded inch sizes are not directly covered by SAE J429, but are calculated appropriately.
- Torque for inch threads are in•lbs.
- Torque for metric threads are N•m.
- Torque values shown are for clamp load.
- Actual loads developed by a specified torque value can vary by ±25%.

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