TECHNICAL INFORMATION

DOCUMENT	**Bolt Tension Chart**
MACHINE/ GROUP	**All**
DOCUMENT AUTHOR	**Gavin Cunningham**
DOCUMENT No.	**MTU10206**
DATE	**12.08.2025**

Background

Bolted joint reliability is greatly affected by variances in lubricant, washer hardness and torque applied.

Use the chart and notes provided in this document as a guide to achieve consistent results.

Workshop
1 Hahesy Circuit
Roseworthy SA 5371

Accounts
admin@mtunderground.com
Ph: 08 8524 8300 Opt 4

Technical Support
gav@mtunderground.com
Ph: 0407 389 689

Parts
parts@mtunderground.com
Ph: 0407 059 610

Maintenance Technique Bolt Torque Specification Chart (M12–M30)

Important Notes – Consider that a Dry or Lubricated washer and thread create a large variance in the torque required to achieve the correct amount of bolt tension (stretch), as does the type of washer used.

Lubricated values assume light machine oil, anti-seize or Loctite is applied to the bolt thread. Lubricant is applied to the washer or bolt head contact surface

Bolt Size	Thread Pitch	Grade	ISO Dry Torque (Nm)	ISO Lubricated Torque (Nm)	MT internal spec (lube or Loctite)
M12	1.75 mm	8.8	81	60	80
		10.9	114	85	110
		12.9	132	98	120
M14	2.00 mm	8.8	128	95	120
		10.9	182	135	180
		12.9	217	160	200
M16	2.00 mm	8.8	197	145	200
		10.9	275	205	220
		12.9	325	240	310
M20	2.50 mm	8.8	385	290	360
		10.9	540	405	500
		12.9	640	480	600
M22	2.50 mm	8.8	520	390	500
		10.9	720	540	680
		12.9	860	645	800
M24	3.00 mm	8.8	675	505	620
		10.9	950	710	850
		12.9	1120	840	1000
M30	3.50 mm	8.8	1340	1000	1300
		10.9	1900	1420	1450
		12.9	2240	1680	2000

General Notes

1. Lubricated Torque assumes ~25–30% reduction in frictional loss (varies with lubricant).
2. Nordloc – adding a Nordloc washer significantly reduces the torque applied and stretch achieved, using the Dry spec with Nordloc will achieve a more consistent result.
3. Washer type – hardened washers yield best results in reducing bolt head friction while tensioning.
4. A combination of hard and Nordloc washers is not recommended.
5. Note that all torque values are for ISO coarse threads unless otherwise specified.
6. Always verify against manufacturer specs for critical applications or where preload is vital.
7. Torque is affected by friction, surface condition, washer use, lubricant and temperature.
8. Use calibrated tensioning tools for higher accuracy in critical joints.