

TYPHOON+ MULTI-STAGE TENSIONERS

IMPROVES EASE OF USE



Latest technology
and innovation



Tighten to accurate
preload



Significant time and
labor savings



Improved
durability

TYPHOON+

TorqLite Typhoon+ tensioners have been developed to meet the technical and environmental demands of the wind energy market where high bolt load and restricted access applications are common challenges.

The robust design ensures reliability during the frequent and repeated use necessary on wind turbine projects, both onshore and offshore.

EASE OF USE

Improves the ease of use and removes the need for any manual input. Using a fast automatic spring return design with a single reaction allowing full return to zero stroke piston retraction.

IMPROVED SEAL TECHNOLOGY

Latest design eases seal changeouts and enhances general performance throughout high cycle usage.

SAFETY

Over-stroke prevention removes the possibility of over-stroking the pistons. Supplied with an over-stroke indicator. Internal fail-safe technology to keep the tensioner on the bolt in the event of puller bar failure.

HIGH LIFE CYCLE

High grade material puller bar to maximize cycle life and allowing long service intervals, you are not restricted by a fixed number of cycles.

LOW MAINTENANCE

Improved spring-loaded auto engagement gear driven nut rotating socket with a geared drive needs low maintenance making the Typhoon+ tensioner user friendly.

DURABILITY

Typhoon+ has a unique surface finish as standard which provides long lasting protection in harsh and hardworking environments.



OPTIONS



Port Guard Handle



Nipple/Coupling Configurations



Cycle Counter

Standard Typhoon+ tensioners held in stock to suit the technical requirements for leading OEM turbines including:

CLIPPER

VESTAS

NORDEX

GE

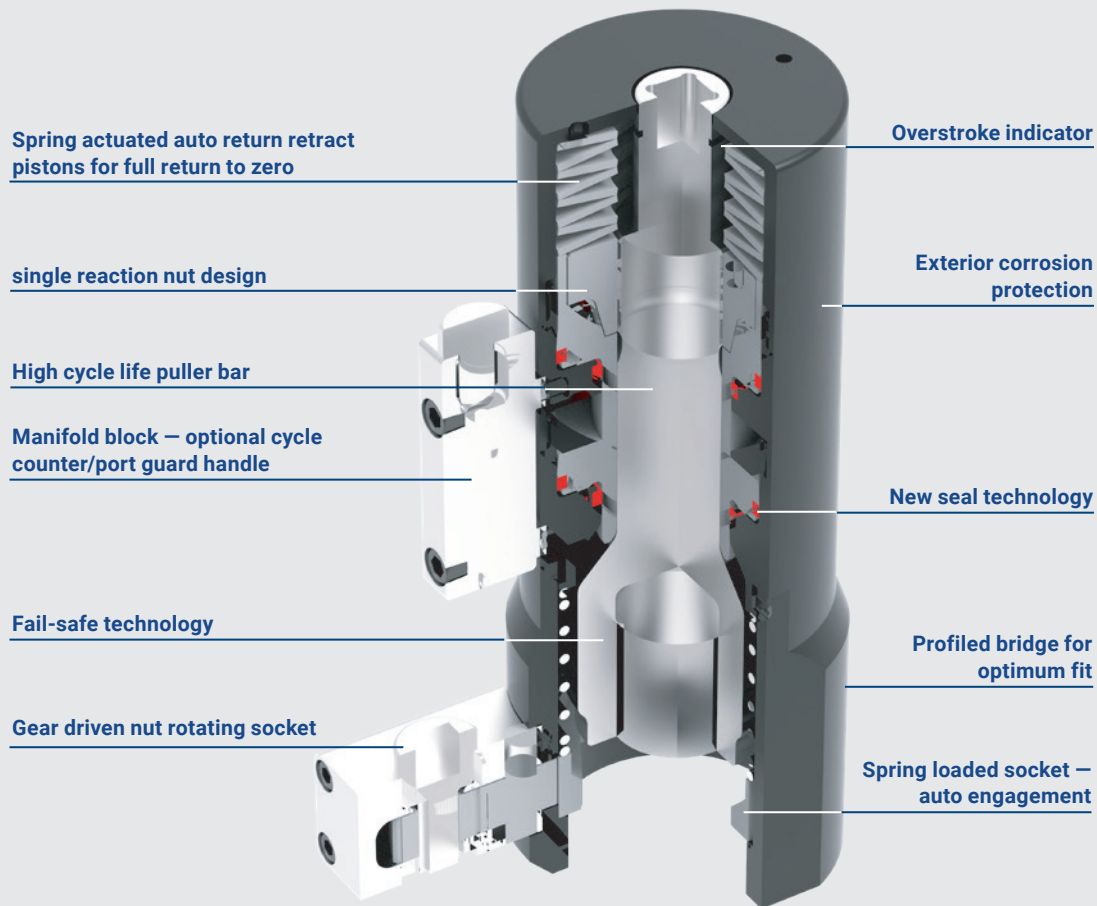
GOLDWIND

MHI

SIEMENS

RE POWER

SULZON



SPECIFICATIONS

| | |
|-----------------------------------|--|
| Tensioner Design | Multi-stage tensioner with automated spring return piston, spring loaded auto engagement gear driven nut rotating socket. |
| Maximum Operating Pressure | 1350bar (19580psi) |
| Stroke | 7mm-12mm (0.28" - 0.47") |
| Hydraulic Oil Type | ISO 32 or equivalent |
| Standards | EN ISO 898-1:1999 and ASTM A490M proof load standards for 10.9 bolts, in accordance with the requirements for wind turbine, structural and other high load, high integrity bolting applications. |
| Configuration | Typhoon+ is supplied with a single male quick connection on a swivel. |

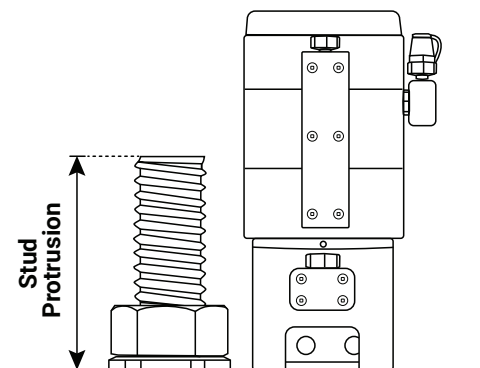
TECHNICAL AND DIMENSIONAL TABLE

| Bolt diameter | | Typhoon+ Part Number | Max. load | | Tool outside diameter | | Tool height | | Stroke | | Approx. tool weight | | Min/Max stud protrusion, from application face | |
|---------------|------|-------------------------|-----------|---------|-----------------------|------|-------------|-------|--------|------|---------------------|-------|---|----------|
| mm | inch | | kN | Lbf | mm | inch | mm | inch | mm | inch | kg | lbs | Min (mm) | Max (mm) |
| M24 | 1 | TTMP-M024-21-00 | 288 | 64,742 | 60 | 2.36 | 181.5 | 7.15 | 7 | 0.28 | 5 | 11 | 50 | 61 |
| M27 | 11/8 | TTMP-M027-21-00 | 375 | 84,300 | 66 | 2.6 | 193.5 | 7.62 | 7 | 0.28 | 5.4 | 12 | 57 | 68 |
| M30 | 11/8 | TTMP-M030-21-00 | 465 | 104,600 | 72 | 2.83 | 207 | 8.15 | 8 | 0.31 | 6.5 | 14.3 | 62 | 72 |
| M33 | 11/4 | TTMP-M033-21-00 | 574 | 129,000 | 78 | 3.07 | 221 | 8.7 | 8 | 0.31 | 7 | 15 | 68 | 83 |
| M36 | 13/8 | TTMP-M036-21-00 | 670 | 150,621 | 82.5 | 3.25 | 232 | 9.13 | 10 | 0.39 | 9 | 19.8 | 62 | 72 |
| M39 | 11/2 | TTMP-M039-21-00 | 804 | 180,746 | 92 | 3.62 | 277 | 10.9 | 10 | 0.39 | 13 | 28.66 | 80 | 115 |
| M42 | 15/8 | TTMP-M042-21-00 | 925 | 207,948 | 98 | 3.86 | 264 | 10.39 | 10 | 0.39 | 13 | 28.66 | 86 | 96 |
| M45 | 13/4 | TTMP-M045-21-00 | 1082 | 243,234 | 105 | 4.13 | 281.5 | 10.91 | 10 | 0.39 | 15 | 33 | 92 | 108 |
| M48 | 17/8 | TTMP-M048-21-00 | 1224 | 275,166 | 111 | 4.37 | 293 | 11.53 | 10 | 0.39 | 18 | 40 | 98 | 115 |
| M52 | 2 | TTMP-M052-21-00 | 1452 | 326,410 | 120 | 4.72 | 327 | 12.8 | 10 | 0.39 | 24 | 53 | 110 | 125 |
| M56 | 21/4 | TTMP-M056-21-00 | 1675 | 376,540 | 128 | 5.04 | 330 | 12.99 | 10 | 0.39 | 26 | 57 | 114 | 129 |
| M60 | N/A | TTMP-M060-21-00 | 2011 | 452,090 | 137 | 5.39 | 349.5 | 13.76 | 12 | 0.47 | 34 | 75 | 123 | 140 |
| M64 | 21/2 | TTMP-M064-21-00 | 2244 | 494,560 | 126 | 5.83 | 376 | 14.23 | 12 | 0.47 | 40 | 88 | 124 | 141 |

Thread pitch for metric bolt sizes metric coarse.

Thread pitch for imperial bolt sizes UNC up to 1 inch and UN8 for 1-1/8 inch upwards.

- The table is for reference only – see general arrangement drawing for information, such as size, bridge diameter and profiling.
- To add cycle counter add CC to the part number and for port guard handle add HND to the part number eg. TTMP-M024-21-00-CC-HND – this would include both options. TTMP-M024-21-00-CC – this would only add cycle counter.
- Designs are preliminary and subject to change.
- Imperial sizes are non-standard and are manufactured to order.
- Non standard versions are available for OEM specific applications.



Manufacturing, R&D, and Operations

Address: 8 Dufresne Loop Luling, LA 70070
Tel: 985-785-3075
Email: info@torqlite.com
www.torqlite.com

Sales Headquarters

Address: 5335 Brystone Dr. Houston, TX 77041
Tel: 713-983-7171
Email: sales@torqlite.com
www.torqlite.com

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