

TSR+ AUTO RETURN TENSIONERS

FASTEST AUTO RETURN TENSIONER ON THE MARKET



Latest technology
and innovation



Fully interchangeable
with TSR



Significant time
and labour savings

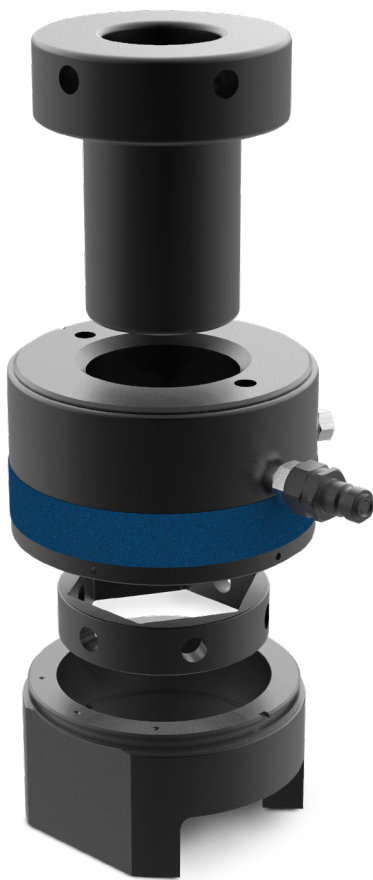


Improved
durability

TSR+ FEATURES

FASTEST AUTO RETURN TENSIONER ON THE MARKET

The all new TSR+ auto return tensioner range has been designed to ensure fast, simple, safe and reliable operation. With a focus on productivity and a reduction in downtime we have implemented state-of-the-art materials and technology resulting in significant time saving during operation.



Interchangeable

TSR+ load cells have exactly the same overall dimensions and hydraulic specification as the existing TSR load cells. This ensures interchangeability and ease of customer upgrades to the new range.

Durable

Operational performance does not degrade during the life of the tool. Extensive in-house tests at full stroke and full pressure have shown that it far out performs current TSR load cells.

Increased Safety

TSR+ Load cells have a relief valve to prevent accidental overstroke of the tool. This safety mechanism prevents seal blow outs and the users exposure to ejected oil.

Premium Surface Treatment

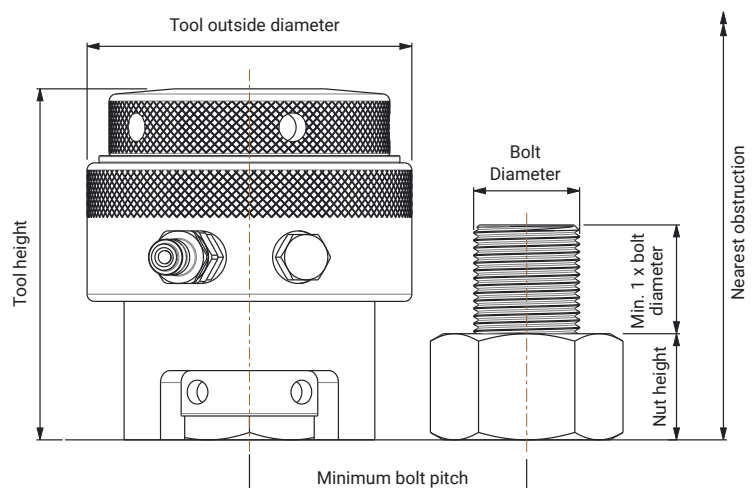
All load cells have Boltight's unique surface finish which provides a long lasting finish against harsh environments.

Improved seal technology

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

Options

- Twin port hydraulic connections
- Oversized threads
- Gear drive nut rotation
- Swivel connectors
- Special designs



TECHNICAL & DIMENSIONAL SPECIFICATION

Tensioner Design Single acting cylinder, auto return

Maximum Operating Pressure 1500bar (21750psi)

Stroke 10mm (0.39") except TSR+ 0 – 8mm (0.315")

Hydraulic Oil Type ISO 32 or equivalent

| Tool No. | Bolt diameter | | Hydraulic area | Max. load | | Tool outside diameter | | Tool height | | Distance to nearest obstruction | | Total tool weight | | Load cell weight | |
|----------|---------------|-------|----------------|-----------------|---------|-----------------------|------|-------------|------|---------------------------------|-------|-------------------|-------|------------------|------|
| | mm | inch | | mm ² | kN | Lbf | mm | inch | mm | inch | mm | inch | kg | lbs | kg |
| TSR+ 0* | M20 | 3/4 | 1,070 | 160 | 35,970 | 66 | 2.60 | 93 | 3.66 | 142 | 5.59 | 1.4 | 3.1 | 1 | 2.2 |
| | M22 | 7/8 | | | | | | 93 | 3.66 | 144 | 5.67 | | | | |
| TSR+ 1 | M24 | 1 | 1,870 | 280 | 62,950 | 87 | 3.43 | 117 | 4.61 | 175 | 6.89 | 4.0 | 8.8 | 2.4 | 5.3 |
| | M27 | 1 1/8 | | | | | | 117 | 4.61 | 178 | 7.01 | | | | |
| | — | — | | | | | | 120 | 4.72 | 178 | 7.01 | | | | |
| TSR+ 2 | M24 | 1 | 3,000 | 450 | 101,160 | 103 | 4.06 | 117 | 4.61 | 175 | 6.89 | 5.8 | 12.8 | 3.3 | 7.3 |
| | M27 | 1 1/8 | | | | | | 117 | 4.61 | 178 | 7.01 | | | | |
| | M30 | 1 1/4 | | | | | | 120 | 4.72 | 184 | 7.24 | | | | |
| | M33 | 1 3/8 | | | | | | 123 | 4.84 | 190 | 7.48 | | | | |
| | M36 | — | | | | | | 126 | 4.96 | 196 | 7.72 | | | | |
| TSR+ 3 | M33 | 1 1/4 | 4,400 | 660 | 148,370 | 118 | 4.65 | 123 | 4.84 | 192 | 7.56 | 7.7 | 17 | 4.2 | 9.3 |
| | M36 | 1 3/8 | | | | | | 126 | 4.96 | 198 | 7.80 | | | | |
| | M39 | 1 1/2 | | | | | | 130 | 5.12 | 204 | 8.03 | | | | |
| | M42 | 1 5/8 | | | | | | 133 | 5.24 | 211 | 8.31 | | | | |
| TSR+ 4 | M39 | 1 1/2 | 6,670 | 1,000 | 224,810 | 141 | 5.55 | 132 | 5.20 | 212 | 8.35 | 12.0 | 26.5 | 6.1 | 13.4 |
| | M42 | 1 5/8 | | | | | | 135 | 5.31 | 218 | 8.58 | | | | |
| | M45 | 1 3/4 | | | | | | 139 | 5.47 | 225 | 8.86 | | | | |
| | M48 | 1 7/8 | | | | | | 142 | 5.59 | 231 | 9.09 | | | | |
| | — | 2 | | | | | | 145 | 5.71 | 231 | 9.09 | | | | |
| TSR+ 5 | M52 | 2 | 10,000 | 1,500 | 337,210 | 176 | 6.93 | 148 | 5.83 | 248 | 9.76 | 19.4 | 42.8 | 9.5 | 21.0 |
| | M56 | 2 1/4 | | | | | | 154 | 6.06 | 258 | 10.16 | | | | |
| | M60 | 2 1/2 | | | | | | 161 | 6.34 | 262 | 10.31 | | | | |
| | M64 | 2 3/4 | | | | | | 161 | 6.34 | 273 | 10.75 | | | | |
| | M68 | — | | | | | | 167 | 6.57 | 283 | 11.14 | | | | |
| TSR+ 6 | M72 | 2 3/4 | 16,670 | 2,500 | 562,020 | 219 | 8.62 | 167 | 6.57 | 297 | 11.69 | 34.5 | 76.0 | 14.7 | 32.4 |
| | M76 | 3 | | | | | | 171 | 6.73 | 308 | 12.13 | | | | |
| | M80 | 3 1/4 | | | | | | 180 | 7.09 | 312 | 12.28 | | | | |
| | M85 | 3 1/2 | | | | | | 180 | 7.09 | 323 | 12.72 | | | | |
| | M90 | — | | | | | | 186 | 7.32 | 334 | 13.15 | | | | |
| TSR+ 7 | M90 | 3 1/2 | 21,340 | 3,200 | 719,390 | 252 | 9.92 | 186 | 7.32 | 341 | 13.43 | 47.0 | 103.6 | 19.4 | 42.8 |
| | M95 | 3 3/4 | | | | | | 186 | 7.32 | 346 | 13.62 | | | | |
| | M100 | 4 | | | | | | 192 | 7.56 | 356 | 14.02 | | | | |
| | — | — | | | | | | 199 | 7.83 | 356 | 14.02 | | | | |

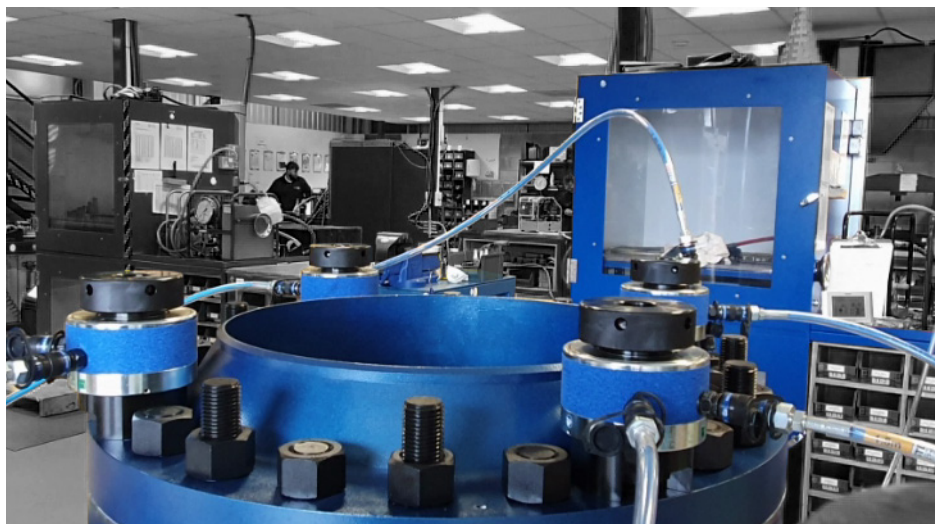
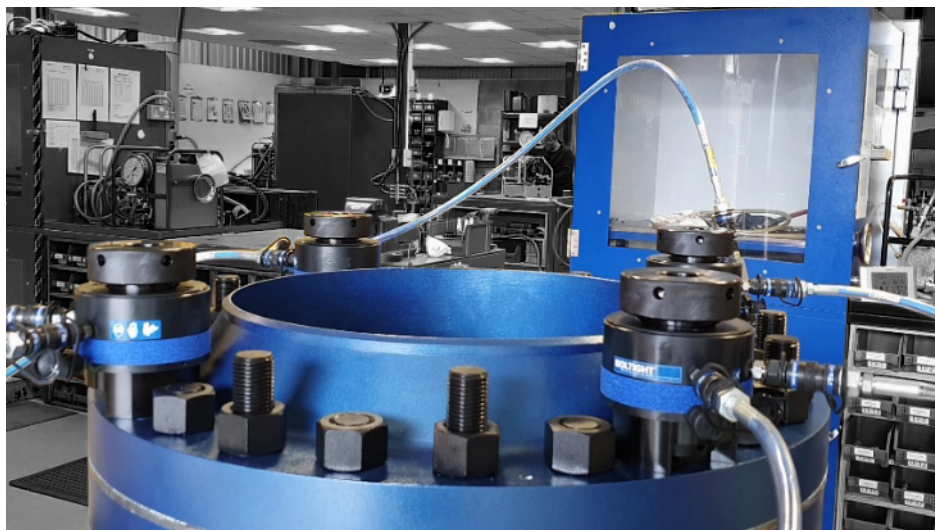
*TSR+ 0 is not an auto return tensioner.

Items in orange text are standard tools but are not held in stock. For price and delivery, please contact the sales department.

NEW TSR+ 4 vs. CURRENT TSR 4

Four TSR+ tools were used to demonstrate a typical application. Using a standard air driven pump the tools were activated to full stroke then depressurised and allowed to return.

THE NEW TSR+ 4 IS 4X FASTER THAN THE EXISTING TSR4 TOOL!



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