Special Tensioning Tools designed on request.

Tentec®
www.tentec.net

Aero Model: WTB

Fully aware of the difficulties associated with wind turbine blade tensioning, the new Tentec Aero WTB is a purpose designed range of hydraulic bolt tensioning tools to suit most wind turbine bolting applications. All WTB Tensioning tools have the capacity to achieve the specified proof load requirements as detailed in EN ISO 898-1:1999 and ASTM A490M for grade 10.9 Bolts. These feature packed tensioners have been designed with rapid tensioning in mind and offer a safe, reliable and consistent method to simultaneously tension many bolts.

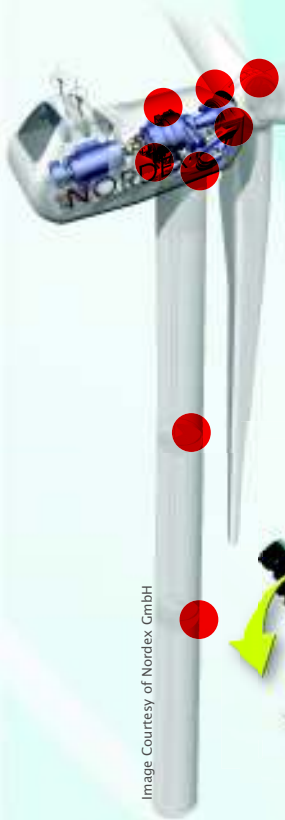

Image Courtesy of Nordex GmbH

Main Wind Turbine bolted applications

- Rear Main Bearing
- Nacelle Frame
- Nacelle/Yaw Bearing
- Blade to Bearing
- Bearing to Hub
- Front Main Bearing
- Intermediate Tower Bolting

360° degree swivel action ensures that the hoses are positioned where you want them.

Swivel movement ensures versatility and operator comfort

Due to the very limited space available in many blade bolt compartments and to help where many tensioners are connected together every Aero WTB tensioner has the option of a 360° swivel connection. This 360° swivel operation allows the hydraulic hoses to be positioned in the best possible position to allow open access to the tensioning tools.

Geared Nut Rundown, allows for rapid seating of hexagon nut.

Geared Nut Run-Down

The inclusion of a gear nut run-down mechanism offers a very rapid and consistent way of seating the hexagon nuts during the tensioning procedure. A common 1/2" square drive hand torque wrench can be used to rapidly seat the nuts to the required 30Nm (Max) torque.

Tentec Limited

Quality

Tentec are an innovative designer of special purpose bolt tensioning equipment with a high level of focus on quality. The company have accreditation to:-

BS-EN-ISO 9001 BS-EN-ISO 14001 BS-EN-ISO 18001

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- **Quick Delivery Local Stock**
- **On-Site Support**
- **On-Site Training**
- **Technical Assistance**
- **Easy On-Site Tool Maintenance**

“Snap-Down” Nut Drive.

Again to increase speed all Aero WTB tensioners are fitted with a spring loaded device that automatically engages the tensioner drive socket with the hexagon nut. The operation is completely transparent to the operator and no time is wasted aligning the tensioner with the nut.

High Life Puller

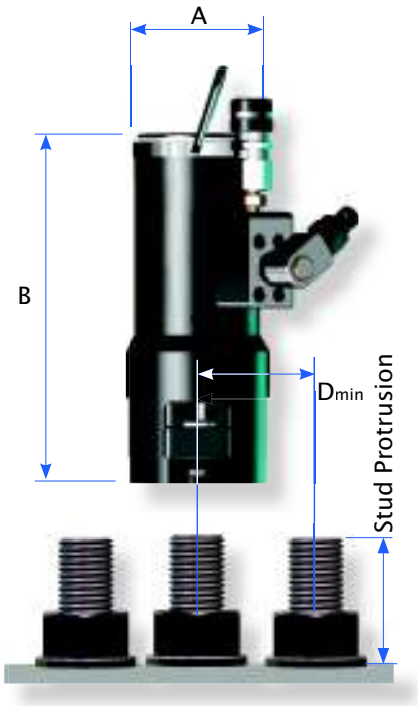
At the heart of all Aero WTB tensioners is the Puller. Manufactured from high grade aerospace material and carefully designed to give the maximum possible life.
All Aero WTB tensioners have a device that ensures the tool fails safely in the unlikely event of a puller failure.

Specially Designed Tools

Tentec have many years experience of designing bespoke special Bolt Tensioning Tools for instances where standard tools are not suitable. Contact Tentec for more information

Optional Cycle Counter

For maintenance scheduling purposes all Aero WTB Tools offer an optional mechanical pressure cycle counter. See at a glance exactly how many pressurisations the tool has performed.



Automatic Tensioner Reset

Again to increase speed all Aero WTB tensioners are fitted with a spring mechanism that automatically resets the tensioner once the pressure has been released to zero. The tensioner is then automatically ready to tension the next bolt, no operator intervention is required.

‘Best Fit’

Aero WTB Tensioners are profile cut at the base to ensure they fit onto as many applications as possible. The interchangeable profile cut spacer at the base of the tool gives the tensioner the flexibility to be used on many different applications.

Technical Specification - WTB

Maximum Working Pressure = 1350bar

Ident	Bolt Diameter Metric	Stud Protrusion (mm) Min	Stud Protrusion (mm) Max	Max Stroke mm	Maximum Load kN	Maximum Load lbs	Hydraulic Pressure Area mm2	Hydraulic Pressure Area In2	Dia A mm	Height B mm	D mm	Weight kg
WTB30	M30	59	69	8	465.38	104622	3447.21	5.343	72	205	64	6.16
WTB33	M33	64	73	10	575.80	129444	4265.09	6.611	79	217.5	71	7.24
WTB36	M36	71	81	10	678.26	152478	5024.05	7.787	84.5	229.5	77	8.75
WTB39	M39	76	86	10	810.58	182225	6004.20	9.307	92	263	83	11.12
WTB42	M42	83	93	10	929.67	208999	6886.37	10.674	97	262.5	95	12.75

Technical Specification - Low Height

Maximum Working Pressure = 1350bar

Ident	Bolt Diameter Metric	Stud Protrusion (mm) Min	Stud Protrusion (mm) Max	Max Stroke mm	Maximum Load kN	Maximum Load lbs	Hydraulic Pressure Area mm2	Hydraulic Pressure Area In2	Dia A mm	Height B mm	D mm	Weight kg
WTBLH36	M36	71	91	10	678.14	152452	5023.4	7.79	123	167.5		9.97
WTBLH42	M42	83	103	10	930.15	209106	6889.96	10.68	142.5	181.3		13.94