

## Aero Model: WTB

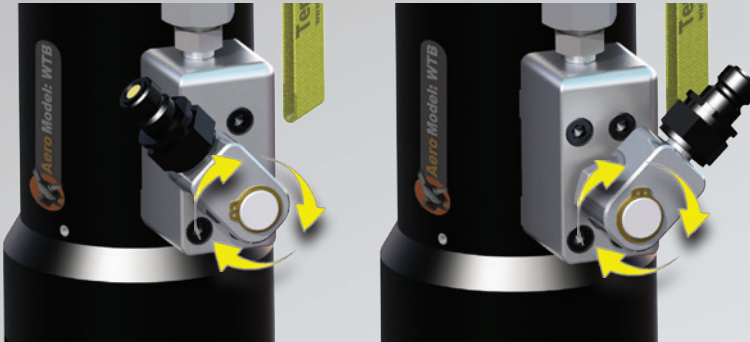
Fully aware of the difficulties associated with wind turbine blade tensioning, the new Tentec Aero WTB is a purpose designed range of hydraulic bolt tensioning tools to suit most wind turbine bolting applications. All WTB Tensioning tools have the capacity to achieve the specified proof load requirements 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.

### Main Wind Turbine bolted applications

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



Image Courtesy of Nordex GmbH

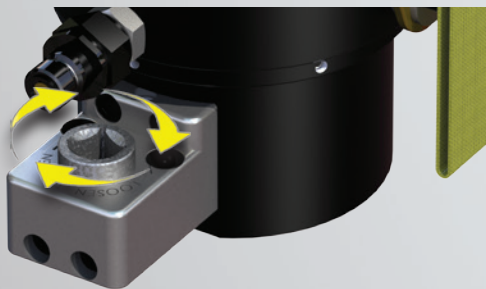


### Swivel movement ensures versatility.

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.



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



### 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.



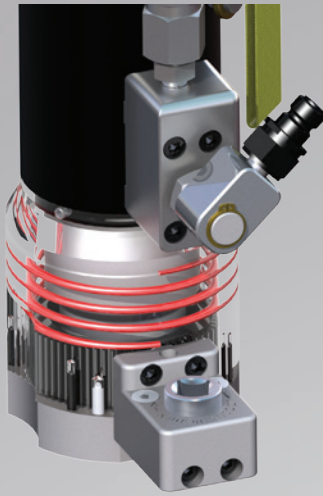
Geared Nut Run-Down, allows for rapid seating of hexagon nut.

Tentec products are subject to continual development and we reserve the right to make changes in the specification and design of products without prior notice.



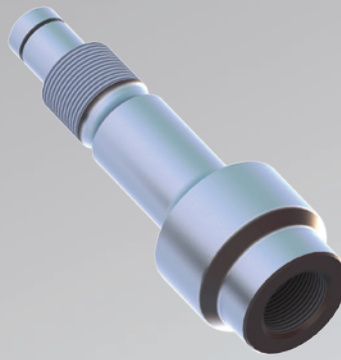
## Tentec Limited

Plymouth House, Guns Lane  
West Bromwich, West Midlands  
United Kingdom. B70 9HS  
Internet: www.tentec.net  
email: sales@tentec.net  
Telephone: +44(0)121 524 1990  
Telefax: +44(0)121 525 1999



### “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.

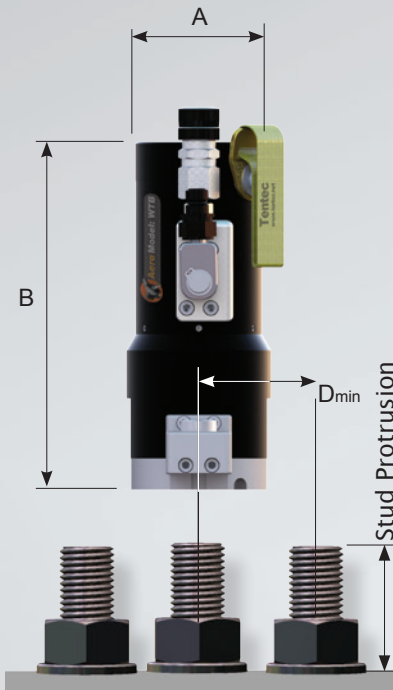
- Quick Delivery, Local Stock
- On-Site Support
- On-Site Training
- Technical Assistance
- Easy On-Site Tool Maintenance

### 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

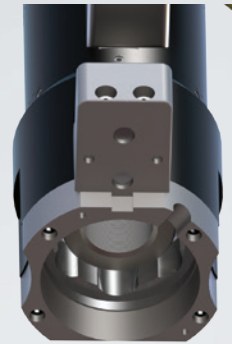
### Optional Cycle Counter

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	Stud Protrusion (mm)		Max Stroke	Maximum Load		Hydraulic Pressure Area		Dia A	Height B	D	Weight
		Min	Max		mm	kN	lbs	mm <sup>2</sup>				
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
WTB45	M45	88	98	10	1079.48	242682	7996.12	12.394	105	275.5	94.5	15.86
WTB48	M48	94	104	10	1221.57	274620	9048.67	14.025	111	286.5	100.5	17.84
WTB56	M56	110	120	10	1686.19	379070	12490.29	19.359	132	314	115	26.5
WTB64	M64	124	134	10	2221.00	499300	16461.30	25.515	150	352	124	35

### Technical Specification - WTB Low Height

Ident	Bolt Diameter	Stud Protrusion (mm)		Max Stroke	Maximum Load		Hydraulic Pressure Area		Dia A	Height B	D	Weight
		Min	Max		mm	kN	lbs	mm <sup>2</sup>				
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