

## SERIES: HTDF Delta Series Tensioners

**1500 bar pressure  
15mm stroke**



**Delta** series bolt tensioners are versatile and reliable hydraulic tensioners suitable for all bolting applications.

Optimised for top-side applications they are higher maximum load rated than standard topside bolt tensioners. Generating a maximum 90% bolt stress on B7 bolts they are perfect for tightening COMPACT/SPO/NORSOK flanges as well as all standard ANSI, ASME and API flanges.

The tools feature a compact direct threaded tensioner load cell and integrated bridge and socket. This one-piece construction is perfect for easy handling and avoiding dropping separate components.

### PROCESS IMPROVEMENT

#### Optional swivel connections

Hydraulic allow for assembly of the tools into applications with tight restriction on vertical clearance. The tools are available with single or twin standard or swivel connections to suit the particular application or customer operating preference.



### SAFE AND RELIABLE

- CE marked
- Over-stroke protection
- Max stroke indicator
- Pressure Test Certification
- Full colour operating and safety manual
- Long life performance

### LATEST TECHNOLOGY

- Latest seal technology
- High cycle life
- Optimised load to weight ratio
- Integrated system with TensionPro pumps and hoses
- Optional swivel or twin connections
- Special bridge designs for tight clearance
- Special design available for any thread size, load and diameter requirements

### PAL PURE AXIAL LOADING

The TensionPro Tensioner method allows bolts to loaded with an accurate force that is directly proportional to the pressure applied to the tool.

**NO FRICTION** bolt tightening for an accurate and repeatable bolt tightening method.

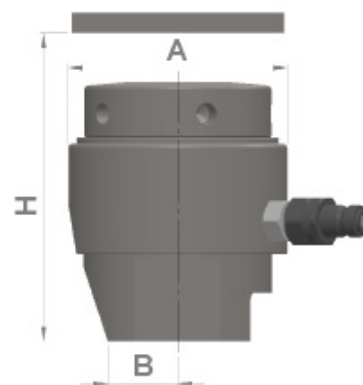
The tensioner load or force is easily calculated:

$$F = (P \times A) / 10,000$$

Tensioner Force	F [kN]
Tool Pressure Area	A [mm <sup>2</sup> ]
Pressure	P [kN]

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Tool No	Bolt Thread Size		Maximum Tensioner Load		Pressure	Tool OD	Height Clear	Bridge Clear	Weight
	T		F		HPA	A	H	B	W
	inch	Metric	klbf	kN	mm <sup>2</sup>	mm	mm	mm	kg
D1	3/4	M20	30.1	134	891	56	158	15	1.5
D2	7/8	M22	42.7	190	1268	63	167	18	2
D3	1	M24	54.9	244	1628	72	180	24	2.5
D4	1-1/8	M27	72.6	323	2154	83	191	25	3.4
		M30							
D5	1-1/4	M33	92.6	412	2747	92	199	27	4.3
D6	1-3/8	M36	115.3	512	3419	101	207	31	5.3
D7	1-1/2	M39	140	623	4153	111	222	35	6
D8	1-5/8	M42	167.5	745	4966	119	229	37	8
D9	1-3/4	M45	199	878	5901	128	242	39	10.5
D10	1-7/8	M48	229.8	1022	6817	138	247	42	12
D11	2	M52	264.8	1178	7856	146	260	44	14.5
D12	2-1/4	M56	341.5	1519	10117	166	282	50	20
		M60							
D13	2-1/2	M64	428.2	1904	12702	186	300	55	26.5
D14	2-3/4	M68	474.6	2111	14084	198	320	62	33
		M72							
D15	3	M76	570.8	2539	16912	214	330	68	40
D16	3-1/4	M80	676.9	3006	20056	235	362	70	48
		M85							
D17	3-1/2	M90	789.5	3512	23423	250	370	78	61
D18	3-3/4	M95	912.2	4058	27051	266	394	80	70
D19	4	M100	1044.9	4648	30984	286	411	88	78