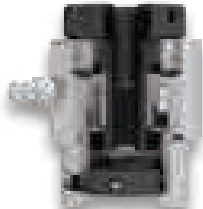


TENSIONERS

HIGH PERFORMANCE TENSIONERS

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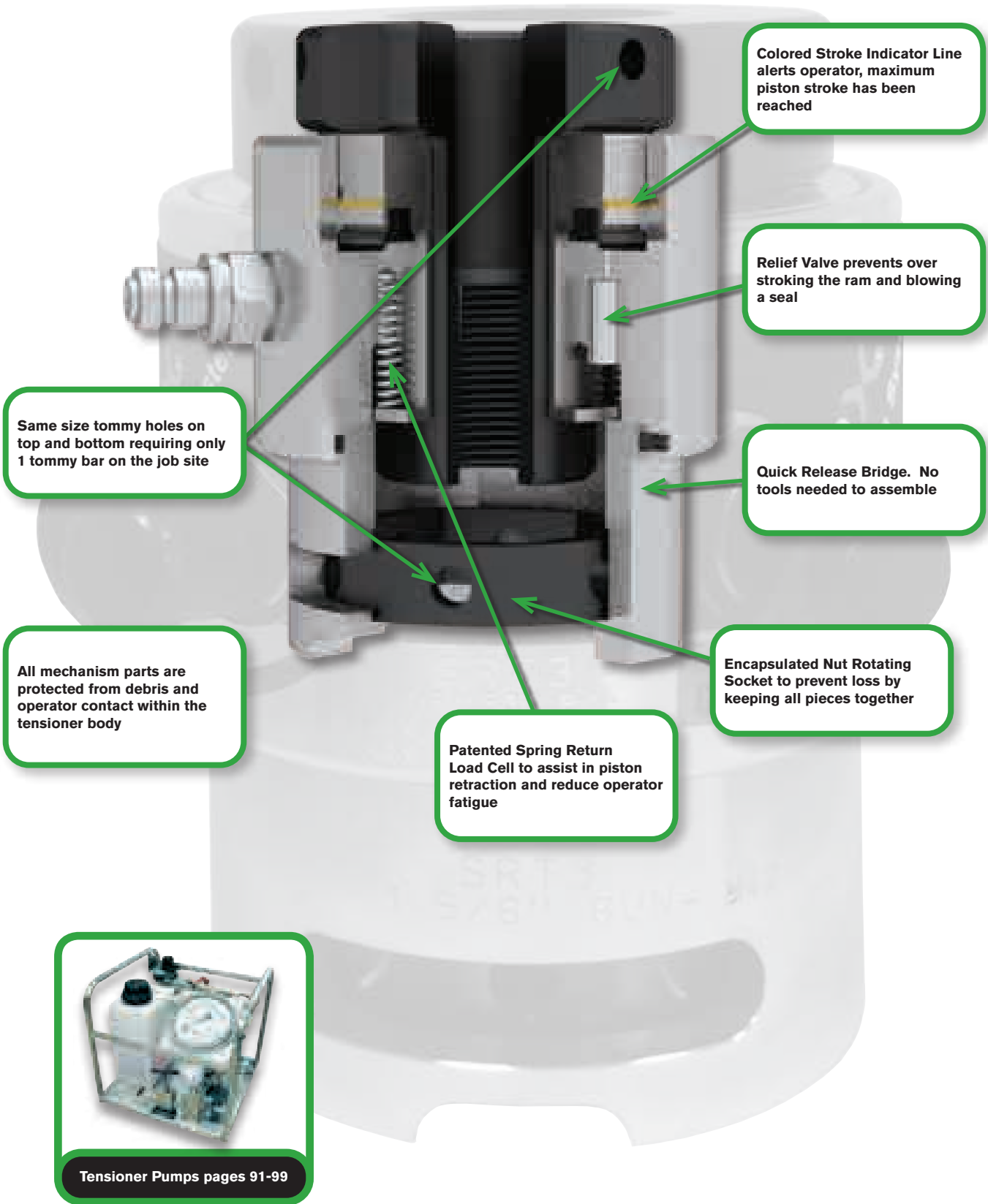


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Subsea Tensioners



Note: Certain tensioners may require minimum order quantity - consult factory for details.

SRT ADVANTAGES



Colored Stroke Indicator Line alerts operator, maximum piston stroke has been reached

Relief Valve prevents over stroking the ram and blowing a seal

Same size tommy holes on top and bottom requiring only 1 tommy bar on the job site

Quick Release Bridge. No tools needed to assemble

All mechanism parts are protected from debris and operator contact within the tensioner body

Encapsulated Nut Rotating Socket to prevent loss by keeping all pieces together

Patented Spring Return Load Cell to assist in piston retraction and reduce operator fatigue



Tensioner Pumps pages 91-99

SRT SPRING RETURN BOLT TENSIONER

The Spring Return design dramatically increases productivity and safety on the job site when compared to older technology manual return tensioners.

- Piston overstroke prevention
- Piston stroke indication
- Compatible with MRT Tensioner range
- Unique quick release bridge adaptation
- Piston/cylinder misalignment compensation
- Bolt coverage from 3/4" to 4" (20 - 115 mm) with just 8 tools
- Designed to fit BS1560/ANSI B16.5/API flanges
- Fully enclosed load cell design eliminates entry of debris into piston retraction mechanism
- Piston over-stroke eliminator to prevent over stroking and blowing a seal
- Twin hydraulic couplings for multiple tool connections
- Requires stud to protrude above nut by 1 x bolt diameter
- Application specific tooling available. Contact factory for details.
- 10 mm piston stroke

Max tool pressure: 1,500 bar (21,750 psi)

Bolt protrusion above nut: 1 x bolt diameter (minimum)

BOLT TENSIONER SPRING RETURN - SRT

Bolt coverage from 3/4" to 4"
(20 - 115 mm) with just 8 tools



BOLT TENSIONER SPRING RETURN - SRT

Bolt coverage from 3/4" to 4"
(20 - 115 mm) with just 8 tools



Piston stroke: 10mm

Max tool pressure: 1,500 bar (21,750 psi)

Bolt protrusion above nut: minimum 1 x bolt diameter

Specifications and Dimensional Data

(Tool Reference)	Stud Diameter				Tool Load		Hydraulic Area		Approx. Wt.		Minimum Bolt Protrusion Above Nut				
	Load Cell Order No.	Imperial	Adaptor Kit Order No.	Metric	Adaptor Kit Order No.	Lbf	kN	in ²	mm ²	lb	kg	Imp bolts		met bolts	
												in	mm	in	mm
(SRT0) SRTAS000001	3/4"	SRTAS000002	M20	SRTAS000006	35,971	160	1.654	1,067	3.1	1.4	0.75	19	0.79	20	
	7/8"	SRTAS000004	M22	SRTAS000008							0.87	22	0.87	22	
(SRT1) SRTAS010001	1"	SRTAS010003	M24	SRTAS010007	62,950	280	2.894	1,867	6	2.7	0.98	25	0.94	24	
	-	-	M27	SRTAS010009							-	-	1.06	27	
	1-1/8"	SRTAS010005	-	-							1.14	29	-	-	
(SRT2) SRTAS020001	1"	SRTAS020003	M24	SRTAS020011	101,169	450	4.652	3,001	9	4.1	0.98	25	0.94	24	
	-	-	M27	SRTAS020013							-	-	1.06	27	
	1-1/8"	SRTAS020005	M30	SRTAS020014							1.14	29	1.18	30	
	1-1/4"	SRTAS020007	M33	SRTAS020015							1.26	32	1.30	33	
	1-3/8"	SRTAS020009	M36	SRTAS020016							1.38	35	1.42	36	
(SRT3) SRTAS030001	1-1/4"	SRTAS030003	M33	SRTAS030011	148,381	660	6.822	4,401	11.9	5.4	1.26	32	1.30	33	
	1-3/8"	SRTAS030005	M36	SRTAS030012							1.38	35	1.42	36	
	1-1/2"	SRTAS030007	M39	SRTAS030013							1.5	38	1.54	39	
	1-5/8"	SRTAS030009	M42	SRTAS030014							1.61	41	1.65	42	
(SRT4) SRTAS040001	1-1/2"	SRTAS040004	M39	SRTAS040014	224,820	1000	10.335	6,668	18.5	8.4	1.5	38	1.54	39	
	1-5/8"	SRTAS040006	M42	SRTAS040015							1.61	41	1.65	42	
	1-3/4"	SRTAS040008	M45	SRTAS040016							1.73	44	1.77	45	
	1-7/8"	SRTAS040010	M48	SRTAS040017							1.89	48	1.89	48	
	2"	SRTAS040012	-	-							2.01	51	-	-	
(SRT5) SRTAS050001	2"	SRTAS050004	M52	SRTAS050012	337,230	1500	15.504	10,003	30.4	13.8	2.01	51	2.05	52	
	2-1/4"	SRTAS050006	M56	SRTAS050013							2.24	57	2.20	56	
	-	-	M60	SRTAS050015							-	-	2.36	60	
	2-1/2"	SRTAS050008	M64	SRTAS050016							2.52	64	2.52	64	
	-	-	M68	SRTAS050018							-	-	2.68	68	
	-	-	M70	SRTAS050020							-	-	2.76	70	
(SRT6) SRTAS060001	2-3/4"	SRTAS050010	-	-	562,050	2500	25.84	16,671	50.7	23	2.76	70	2.83	72	
	2-3/4"	SRTAS060004	M72	SRTAS060014							2.99	76	2.99	76	
	3"	SRTAS060006	M76	SRTAS060016							-	-	3.15	80	
	3-1/4"	SRTAS060008	M85	SRTAS060020							3.27	83	3.35	85	
	3-1/2"	SRTAS060010	M90	SRTAS060022							3.50	89	3.54	90	
(SRT7) SRTAS070001	3-1/2"	SRTAS070004	M90	SRTAS070010	719,424	3200	33.076	21,339	70.5	32	3.50	89	3.54	90	
	-	-	M95	SRTAS070012							-	-	3.74	95	
	3-3/4"	SRTAS070006	M100	SRTAS070014							3.74	95	3.94	100	
	4"	SRTAS070008	-	-							4.02	102	-	-	
(SRT8) SRTAS080001	4"	SRTAS080004	M105	SRTAS080010	921,762	4100	42.377	27,340	99.2	45	4.02	102	4.13	105	
	-	-	M110	SRTAS080012							-	-	4.33	110	
	4-1/4"	SRTAS080006	M115	SRTAS080014							4.25	108	4.53	115	
	4-1/2"	SRTAS080008	-	-							4.49	114	-	-	

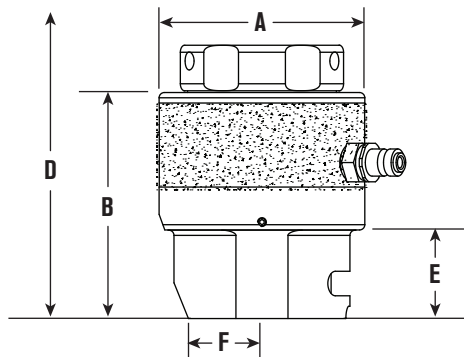
Weight excludes puller sleeve

Need to order load cell and adaptor kit to have complete tensioner

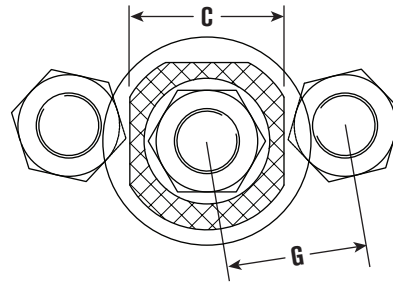
To convert to long tons, divide lbf by 2240. To convert to short tons, divide lbf by 2000.

All bolt diameters ≤ 1" are UNC and all diameters > 1" are 8UN. All metric threads are Metric Coarse.

Specifications and Dimensional Data



* Toggle Bar data, see page 37



'D' includes an allowance for tool removal after bolt tightening with 10 mm tool stroke

	A		B		C		D				E		F		G				Stud Diameter		(Tool Reference) Load Cell Order No.
	in	mm	in	mm	in	mm	Imp bolts		met bolts		in	mm	in	mm	Imp bolts		met bolts		Imperial	Metric	
2.6	66	3.7	93	2.5	63	5.4	136	5.6	142	1.4	36	1	25	2	50.8	2	49.8	3/4"	M20	(SRT0)	
		3.7	93	2.5	63	5.6	142	5.7	144	1.4	36	1	25	2.1	53.6	2	51	7/8"	M22	SRTAS000001	
3.4	87	4.6	117	2.7	68	6.9	175	6.9	175	1.5	38	1.1	28	2.3	58.8	2.2	56.5	1"	M24	(SRT1)	
		4.6	117	2.7	68	-	-	7	178	1.5	38	1.1	28	-	-	2.3	58.7	-	M27	SRTAS010001	
		4.7	120	2.8	72	7.1	181	-	-	1.6	41	1.2	31	2.7	68.3	-	44.5	1-1/8"	-	-	-
4.1	103	4.6	117	3	75	6.9	175	6.9	175	1.5	38	1.2	30	2.6	65.2	2.5	64.5	1"	M24	(SRT2) SRTAS020001	
		4.6	117	3	75	-	-	7	178	1.5	38	1.2	30	-	-	2.6	66	-	M27		
		4.7	120	3.1	80	7.1	181	7.2	184	1.6	41	1.2	30	2.7	67.6	2.7	67.6	1-1/8"	M30		
		4.8	123	3.3	84	7.4	188	7.5	190	1.7	44	1.4	35	2.8	72.3	2.8	71.9	1-1/4"	M33		
4.7	118	4.8	123	3.5	88	7.5	190	7.6	192	1.7	44	1.4	35	3	75.9	3	76.5	1-1/4"	M33	(SRT3) SRTAS030001	
		5	126	3.8	96	7.8	197	7.8	198	1.9	47	1.5	38	3.2	81.1	3.2	80.8	1-3/8"	M36		
		5.1	130	3.8	96	8	203	8	204	2	51	1.7	42	3.3	83.8	3.3	83.6	1-1/2"	M39		
		5.2	133	4.1	105	8.2	209	8.3	211	2.1	54	1.6	41	3.6	91	3.6	91	1-5/8"	M42		
5.5	140.5	5.2	132	4.4	112	8.3	211	8.3	212	2	51	1.7	42	3.6	91.8	3.6	91.6	1-1/2"	M39	(SRT4) SRTAS040001	
		5.3	135	4.5	114	8.5	217	8.6	218	2.1	54	1.8	45	3.8	95.6	3.8	95.5	1-5/8"	M42		
		5.5	139	4.6	118	8.8	223	8.9	225	2.2	57	2	52	3.9	100	3.9	100	1-3/4"	M45		
		5.6	142	4.5	114	9.1	230	9.1	231	2.4	60	2	51	4	101.1	4	101.3	1-7/8"	M48		
6.9	175.5	5.7	145	4.7	120	9.3	236	-	-	2.5	63	2	52	4.2	106.8	-	-	2"	-	(SRT5) SRTAS050001	
		5.8	148	4.7	120	9.7	246	9.8	248	2.5	63	2	52	4.5	114	4.5	115	2"	M52		
		6.1	154	5.4	138	10.2	259	10.2	258	2.8	70	2.3	58	4.8	121.3	4.7	119.1	2-1/4"	M56		
		6.3	161	5.4	138	-	-	10.3	262	2.8	70	2.3	58	-	-	4.8	122	-	M60		
		6.3	161	6	153	10.7	272	10.7	273	3	76	2.5	63	5.3	134.3	5.2	132.3	2-1/2"	M64		
		6.3	161	6	153	-	-	11.1	283	3	76	2.5	63	-	-	5.3	135	-	M68		
8.6	219	6.3	161	6	153	-	-	11.3	287	3	76	2.5	63	-	-	5.3	135.2	-	M70	(SRT6) SRTAS060001	
		6.6	167	6.1	156	11.2	284	11.1	283	3.2	81	2.8	70	5.6	141.3	-	-	2-3/4"	-		
		6.6	167	6.2	157	11.6	294	11.7	297	3.2	82	2.8	72	5.7	145.4	5.8	146.5	2-3/4"	M72		
		6.9	174	7.2	182	12.1	307	12.1	308	3.5	89	3.1	80	6.3	159.8	6.1	155.5	3"	M76		
		6.9	174	7.2	182	-	-	12.3	312	3.5	89	3.1	80	-	-	6.2	158.4	-	M80		
9.9	252	7.1	180	7.5	190	12.6	320	12.7	323	3.7	95	3.3	84	6.7	169	6.5	165	3-1/4"	M85	(SRT7) SRTAS070001	
		7.3	186	8.1	205	13.1	332	13.1	334	4	101	3.5	88	7.2	182	7	178.6	3-1/2"	M90		
		7.3	186	7.9	200	13.3	339	13.4	341	4	101	3.5	88	7.1	179.8	6.9	176.1	3-1/2"	M90		
		7.3	186	7.9	200	-	-	13.6	346	4	101	3.5	88	-	-	7	178.9	-	M95		
11.1	282	7.6	192	7.9	200	13.9	352	14	356	4.2	107	3.7	94	7.3	185.3	7.3	184.7	3-3/4"	M100	(SRT8) SRTAS080001	
		7.8	199	8.3	210	14.3	364	-	-	4.5	114	4.5	114	7.3	186	-	-	4"	-		
		7.8	199	8.3	210	14.7	374	14.9	378	4.5	114	4.5	114	7.7	196	7.7	195	4"	M105		
		7.8	199	8.3	210	-	-	15.1	383	4.5	114	4.5	114	-	-	7.8	197	-	M110		
8.3	212	8.1	205	8.8	224	15.2	387	15.5	394	4.7	120	4.5	114	8.2	208	8.2	208	4-1/4"	M115	(SRT8) SRTAS080001	
		8.3	212	9.1	232	15.7	400	-	-	5	127	4.6	117	8.6	218	-	-	4-1/2"	-		

Toggle Bar	10mm x 200mm	SRT/MRT (up to 1-7/8" - M48)	INTTB000010
	14mm x 200mm	SRT/MRT (2" - M52 and above)	INTTB000014

BOLT TENSIONER MANUAL RETURN - MRT

Bolt coverage from 1" to 3-1/2"
(24 - 100mm) with just 6 tools



MRT MANUAL RETURN BOLT TENSIONER

Our economy range of bolt tensioners offer low-cost tensioning solutions.

Incorporating our unique quick-release bridge adaptation, a range of adapter kits provide maximum flexibility.

- Piston stroke limit indication
- Piston/cylinder misalignment compensation
- Bolt coverage from 1" to 3-1/2" with just 6 tools
- Designed to fit BS1560/ANSI B16.5/API flanges
- Unique quick-release bridge adaption
- Application specific tooling available. Contact factory for details.

Note: Certain tensioners may require minimum order quantity - consult factory for details.

Specifications and Dimensional Data

(Tool Reference)	Stud Diameter				Tool Load		Hydraulic Area		Approx. Wt.		Minimum Bolt Protrusion Above Nut				
	Load Cell Order No.	Imperial	Adaptor Kit Order No.	Metric	Adaptor Kit Order No.	Lbf	kN	in ²	mm ²	lb	kg	Imp bolts		met bolts	
												in	mm	in	mm
(MRT1) MRTAS010001	1"	MRTAS010002	M24	MRTAS010004	62,900	280	2.894	1,867	6.6	3	0.98	25	0.94	24	
	-	-	M27	MRTAS010005							-	-	1.06	27	
	1-1/8"	MRTAS010003	-	-							1.14	29	-	-	
(MRT2) MRTAS020001	1"	MRTAS020002	M24	MRTAS020006	101,100	450	4.652	3,001	9.9	4.5	0.98	25	0.94	24	
	-	-	M27	MRTAS020007							-	-	1.06	27	
	1-1/8"	MRTAS020003	M30	MRTAS020008							1.14	29	1.18	30	
	1-1/4"	MRTAS020004	M33	MRTAS020009							1.26	32	1.30	33	
	1-3/8"	MRTAS020005	M36	MRTAS020010							1.38	35	1.42	36	
(MRT3) MRTAS030001	1-1/4"	MRTAS030002	M33	MRTAS030006	148,300	660	6.822	4,401	12.98	5.9	1.26	32	1.30	33	
	1-3/8"	MRTAS030003	M36	MRTAS030007							1.38	35	1.42	36	
	1-1/2"	MRTAS030004	M39	MRTAS030008							1.50	38	1.54	39	
	1-5/8"	MRTAS030005	M42	MRTAS030009							1.61	41	1.65	42	
	1-1/4"	MRTAS040003	M39	MRTAS040008							1.26	32	1.54	39	
(MRT4) MRTAS040001	1-5/8"	MRTAS040004	M42	MRTAS040009	224,700	1,000	10.335	6,668	18.7	8.5	1.61	41	1.65	42	
	1-3/4"	MRTAS040005	M45	MRTAS040010							1.73	44	1.77	45	
	1-7/8"	MRTAS040006	M48	MRTAS040011							1.89	48	1.89	48	
	2"	MRTAS040007	-	-							2.01	51	-	-	
	2"	MRTAS050003	M52	MRTAS050007							2.01	51	2.05	52	
(MRT5) MRTAS050001	2-1/4"	MRTAS050004	M56	MRTAS050008	337,200	1,500	15.505	10,003	30.8	14	2.24	57	2.20	56	
	-	-	M60	MRTAS050009							-	-	2.36	60	
	2-1/2"	MRTAS050005	M64	MRTAS050010							2.52	64	2.52	64	
	-	-	M68	MRTAS050011							-	-	2.68	68	
	-	-	M70	MRTAS050012							-	-	2.76	70	
	2-3/4"	MRTAS050006	-	-							2.76	70	-	-	
	2-3/4"	MRTAS060003	M72	MRTAS060007							2.01	51	2.83	72	
(MRT6) MRTAS060001	3"	MRTAS060004	M76	MRTAS060008	562,000	2,500	25.84	16,671	50.6	23	2.99	76	2.99	76	
	-	-	M80	MRTAS060009							-	-	3.15	80	
	3-1/4"	MRTAS060005	M85	MRTAS060010							3.27	83	3.35	85	
	3-1/2"	MRTAS060006	M90	MRTAS060011							3.50	89	3.54	90	
	3-1/2"	MRTAS070003	M90	MRTAS070006							3.50	89	3.54	90	
(MRT7) MRTAS070001	-	-	M95	MRTAS070007	719,300	3,200	33	21,339	70.4	32	-	-	3.74	95	
	3-3/4"	MRTAS070004	M100	MRTAS070008							3.74	95	3.94	100	
	4"	MRTAS070005	-	-							4.02	102	-	-	
	-	-	-	-							-	-	-	-	

To convert to long tons, divide lbf by 2240. To convert to short tons, divide lbf by 2000.

Specifications and Dimensional Data

Piston stroke: 15mm (excluding MRT1 - 10mm)

Max tool pressure: 1,500 bar (21,750 psi)

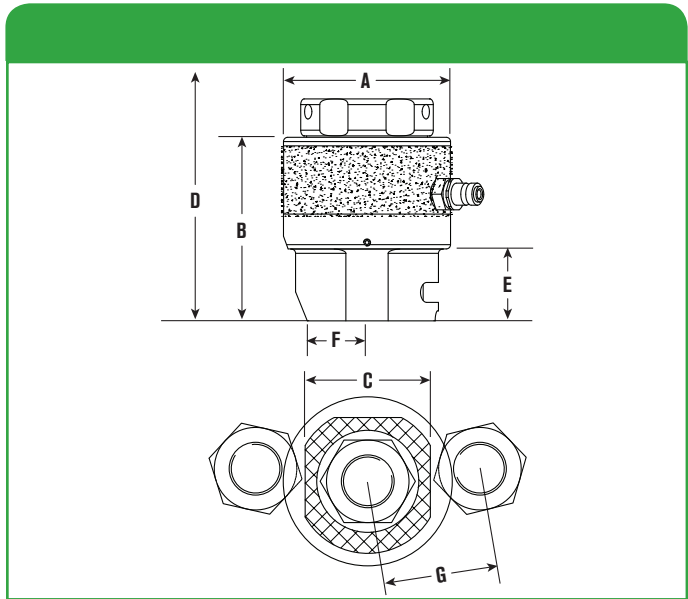
Bolt protrusion above nut: 1 x bolt diameter

'D' includes an allowance for tool removal after bolt tightening with 15mm tool stroke

Weight excludes puller sleeve

To make a complete MRT Tensioner, choose an Adapter Kit and a Load Cell.

Semi-compatible with SRT tensioners. Only compatible with SRT Bridges; NOT puller sleeves. SRT Puller Sleeves cannot be used with MRT Load Cell.



	A		B		C		D				E		F		G				Stud Diameter		(Tool Reference) Load Cell Order No.
	in	mm	in	mm	in	mm	Imp bolts		met bolts		in	mm	in	mm	Imp bolts		met bolts		Imperial	Metric	
3.35	85	3.8	97	2.7	68	6.6	166.8	6.1	155.4	1.5	38	1.1	28	2.3	59	2.2	56	1"	M24	(MRT1) MRTAS010001	
		3.8	97	2.7	68	-	-	6.2	158.4	1.5	38	1.1	28	-	-	2.3	59	-	M27		
		3.9	100	3	76	6.8	173.2	-	-	1.6	41	1.2	31	2.6	66	-	44	1-1/8"	-		
4.25	108	4	102.5	3	75	7.2	181.8	7.1	180.4	1.5	38	1.2	30	2.7	68	2.6	67	1"	M24	(MRT2) MRTAS020001	
		4	102.5	3	75	-	-	7.2	183.4	1.5	38	1.2	30	-	-	2.7	69	-	M27		
		4.2	105.5	3.1	80	7.4	188.2	7.5	189.6	1.6	41	1.2	30	2.7	69	2.8	70	1-1/8"	M30		
		4.3	108.5	3.3	84	7.7	194.5	7.7	195.8	1.7	44	1.4	35	2.8	72	2.8	72	1-1/4"	M33		
4.9	147.5	4.4	111.5	3.5	89	7.9	200.9	7.9	201.9	1.9	47	1.5	38	3.1	78	3	77	1-3/8"	M36	(MRT3) MRTAS030001	
		4.3	108.5	3.5	88	7.7	196.5	7.8	197.8	1.7	44	1.4	35	3.1	79	3.1	80	1-1/4"	M33		
		4.4	111.5	3.8	96	8	203	8	204	1.9	47	1.5	38	3.2	81	3.2	81	1-3/8"	M36		
		4.5	115	3.8	96	8.2	209.2	8.3	210.1	2	50.5	1.7	42	3.3	84	3.3	84	1-1/2"	M39		
5.8	147.5	4.6	118	4.1	105	8.5	215.6	8.5	216.3	2.1	53.5	1.6	41	3.6	91	3.6	91	1-5/8"	M42	(MRT4) MRTAS040001	
		4.6	116	4.4	112	8.5	215.2	8.5	216.1	2	50.5	1.7	42	3.7	94	3.7	94	1-1/4"	M39		
		4.7	119	4.5	114	8.7	222	8.7	222	2.1	53.5	1.8	45	3.8	96	3.8	96	1-5/8"	M42		
		4.8	122.5	4.6	118	9	227.9	9	228.5	2.2	57	2	52	3.9	100	3.9	100	1-3/4"	M45		
		4.9	125.5	4.5	114	9.2	234.3	9.2	234.6	2.4	60	2	51	4	101	4	101	1-7/8"	M48		
7.1	180.5	5.1	128.5	4.7	120	9.5	241	-	-	2.5	63	2	52	4.2	107	-	-	2"	-	(MRT5) MRTAS050001	
		5.2	132	4.7	120	9.9	250.6	9.9	251.8	2.5	63	2	52	4.6	117	4.6	117	2"	M52		
		5.5	138.5	5.4	138	10.4	263.3	10.3	262.2	2.7	69.5	2.3	58	4.8	121	4.7	119	2-1/4"	M56		
		5.5	138.5	5.4	138	-	-	10.5	266	2.7	69.5	2.3	58	-	-	4.8	122	-	M60		
		5.7	145	6	153	10.9	276	10.9	276.5	3	76	2.5	63	5.3	134	5.2	132	2-1/2"	M64		
		5.7	145	6	153	-	-	11	280.5	3	76	2.5	63	-	-	5.3	135	-	M68		
		5.7	145	6	153	-	-	11.1	282.5	3	76	2.5	63	-	-	5.3	135	-	M70		
8.9	227	5.9	150	6.1	156	11.4	289	-	-	3.2	81	2.8	70	5.6	141	-	-	2-3/4"	-	(MRT6) MRTAS060001	
		5.9	151	6.2	157	11.8	298.7	11.8	300.9	3.2	82	2.8	72	5.9	149	5.9	151	2-3/4"	M72		
		6.2	158	7.2	182	12.3	311.4	12.3	311.2	3.5	89	3.1	80	6.3	160	6.1	156	3"	M76		
		6.2	158	7.2	182	-	-	12.4	315.2	3.5	89	3.1	80	-	-	6.2	158	-	M80		
		6.5	164	7.5	190	12.8	324.1	12.9	326.6	3.7	95	3.3	84	6.7	169	6.5	165	3-1/4"	M85		
10	252	6.7	170	8.1	205	13.3	336.8	13.3	337.9	4	101	3.5	88	7.2	182	7	179	3-1/2"	M90	(MRT7) MRTAS070001	
		6.8	173	7.9	200	13.6	346	13.7	347	4	101	3.5	88	7.1	180	6.9	176	3-1/2"	M90		
		0	6.8	173	7.9	200	-	-	13.9	351.9	101	3.5	88	-	-	7	179	-	M95		
		0	7	179	7.9	200	14.1	358.5	14.3	363.3	107	3.7	94	7.3	185	7.3	185	3-3/4"	M100		
		0	7.3	186	8.3	210	14.6	371.2	-	-	114	4.5	114	7.5	190	-	-	4"	-		

For smaller or larger sizes, see SRT product pages.

Toggle Bar	10mm x 200mm	SRT/MRT (up to 1-7/8" - M48)	INTTB000010
	14mm x 200mm	SRT/MRT (2" - M52 and above)	INTTB000014

WIND TENSIONERS

WD/WS

1500 bar
G 1/4"
FF



WDD

WSS & WSL



WSD



Tensioner Pumps pages 91-99

WIND TENSIONERS

Our tensioners have quality designed in with standard features that enhance durability and efficiency to get the job done faster and safer:

Quality Means Lower Life-Cycle Costs:

- Achieves 90% proof load requirement for ISO 898 Grade 10.9 bolts
- Fully enclosed load cell eliminates debris in piston retraction mechanism
- Auto-Engaging Geared Nut Rotator
- Self-energizing, long life seals

Enhanced Usability:

- Piston stroke limit indication
- High pressure swivel coupling (swivel is optional on WSS & WSL)
- 1,350 bar (19,580 psi maximum operating pressure)
- Automatic piston retraction mechanism

Designed with Safety in Mind:

- Overstroke prevention for safe operation
- Anti-slip grip surface
- Tool lifting-strap as standard

Note: Certain tensioners may require minimum order quantity - consult factory for details.



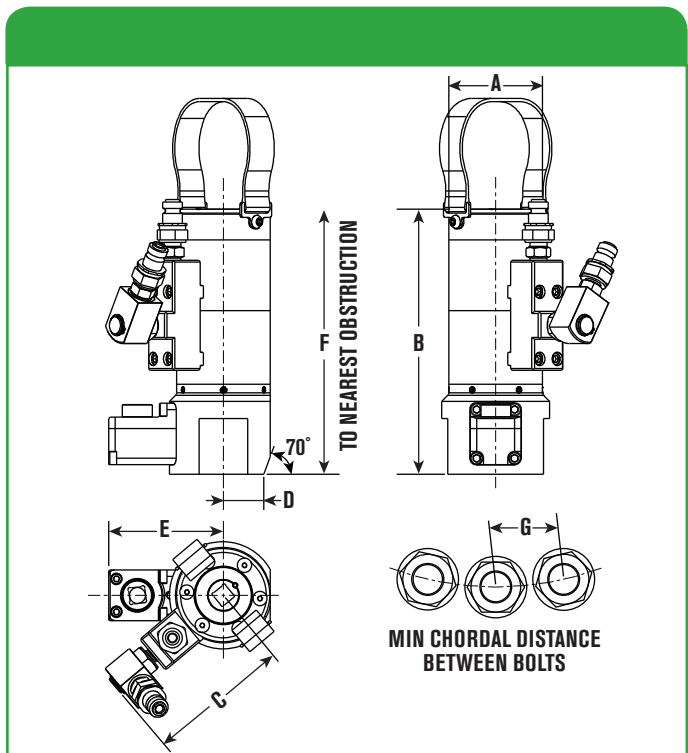
WIND TENSIONERS UP TOWER - WDD



Specifications and Dimensional Data

WDD UP TOWER WIND TENSIONERS

- Robust Gearbox Drive
- Auto-Engaging Geared Nut Rotator
- Small diameter, high load 2-Stage hydraulic load cell
- Fast application using 1/2" drive
- Cycle counter optional (Add "A" to end of part number)
- Max Pressure: 1,350 bar (19,580 psi)
- Twin coupling optional (Add "TC" to end of part number)



Tool Ref	A mm	B mm	C mm	D mm	E mm	F mm	G mm
WDD1-M30	74	210	112	37	91	290	64
WDD2-M33	79	214	115	39.5	93	298	70
WDD3-M36	85	239	117	42.5	96	332	76
WDD4-M39	92	249	121	46	99	348	79
WDD5-M42	98	255	124	49	102	360	90

Ordering Information

Order No.	Metric	Required Thread Protrusion mm	Stroke mm	Max Load kN	Hyd Area sq. mm	Wt kg
WDD1-M30	M30	63 - 70	7	467	3458	6.70
WDD2-M33	M33	67 - 74	7	569	4215	7.60
WDD3-M36	M36	71 - 80	10	671	4970	9.25
WDD4-M39	M39	72 - 86	10	801	5931	11.10
WDD5-M42	M42	80 - 92	10	926	6856	12.60

For twin hydraulic couplings (for multiple tool connection) add "TC" after part number. For cycle counter option, add "A" after code (eg. WDD1-M30A, WDD1-M30TCA)

WIND TENSIONERS COMPACT TOWER - WSD

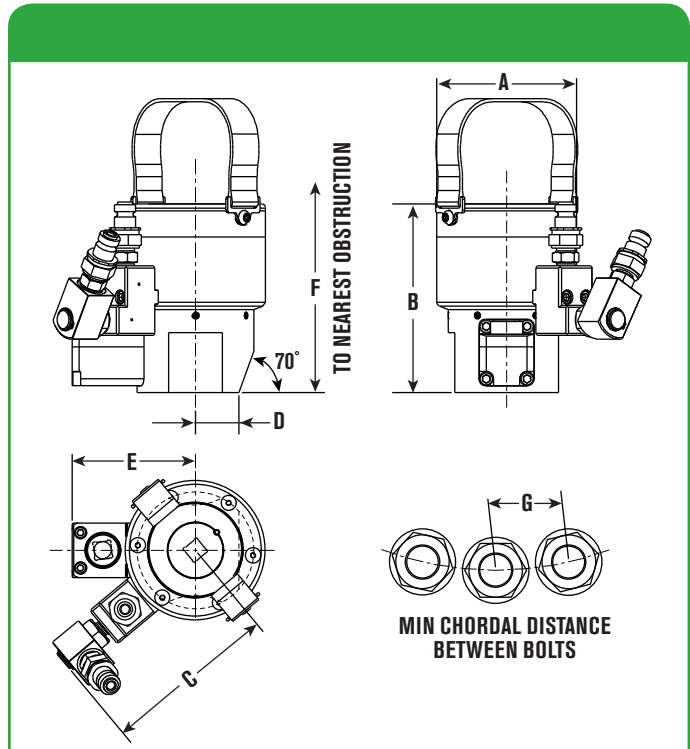


Specifications and Dimensional Data

WSD COMPACT TOWER WIND TENSIONERS

- Robust Gearbox Drive
- Auto-Engaging Geared Nut Rotator
- Low height hydraulic load cell
- Fast application using 1/2" drive
- Cycle counter optional (Add "A" to end of part number)
- Maximum operating pressure 1350 bar (19,580 psi)
- Twin coupling optional (Add "TC" to end of part number)

Note: Certain tensioners may require minimum order quantity - consult factory for details.



Tool Ref	A mm	B mm	C mm	D mm	E mm	F mm	G mm
WSD1-M30	103	138	127	32	91	211	68
WSD2-M33	112	140	132	35	93	218	74
WSD3-M36	122	149	136	37	96	233	82
WSD4-M39	133	153	142	42	99	238	88
WSD5-M42	140	157	146	45	102	250	93

Ordering Information

Order No.	Required Thread Protrusion	Stroke	Max Load	Hyd Area	Wt	
	mm					mm
WSD1-M30	M30	63 - 81	7	467	3458	6.60
WSD2-M33	M33	67 - 86	7	569	4215	7.60
WSD3-M36	M36	71 - 93	10	671	4970	8.80
WSD4-M39	M39	72 - 95	10	801	5931	11.20
WSD5-M42	M42	80 - 96	10	926	6856	12.20

For twin hydraulic couplings (for multiple tool connection) add "TC" after part number. For cycle counter option, add "A" after code (eg. WDD1-M30A, WDD1-M30TCA)

WSS & WSL FOUNDATION WIND TENSIONERS

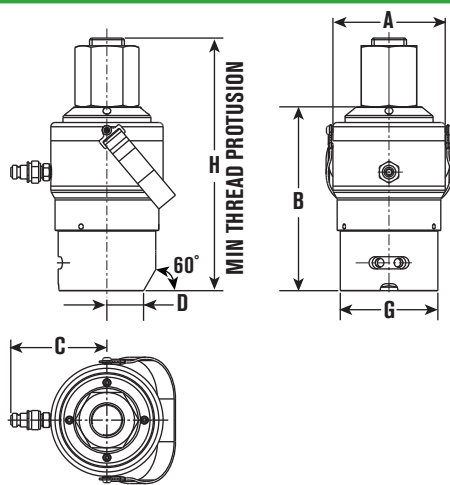
- Suitable for ISO Metric threaded and all-thread bars
- Geared or Manual Nut Rotator
- Long & short stroke models
- Maximum operating pressure 1350 bar (19,580 psi)
- Uses standard system 'nut' for reaction
- Contact factor for optional swivel coupling



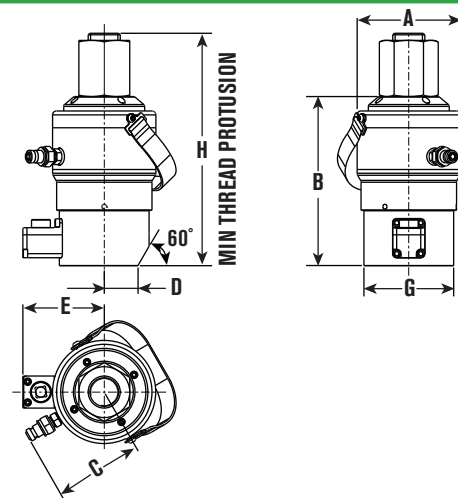
WIND TENSIONERS FOUNDATION - WSS & WSL

Specifications and Dimensional Data

Manual Nut Rotation Version



Gearbox Nut Rotation Version



Tool Ref	A mm	B mm	C mm	D mm	E mm	G mm	H mm
WSS1/WSS1-10	103	158	98	42	99	103	206
WSS1/WSS1-11	103	158	98	42	99	103	219
WSL1/WSL1-10	114	205	103	42	99	130	255
WSL1/WSL1-11	114	205	103	42	99	103	266
WSS2/WSS2-125	119	168	105	42	102	112	226
WSS2/WSS2-138	119	168	105	42	102	112	238
WSL2/WSL2-125	129	211	110	42	102	112	269
WSL2/WSL2-138	129	211	110	42	102	112	280

Ordering Information

Load Cell Order No.	Adaptor Kit** Order No.	Bar Size	Stroke mm	Max Load kN	Hyd Area sq mm	Wt kg
FOR GRADE 75 ksi ALL THREAD FOUNDATION BOLTS						
WSS1	WSS1-10	#10	10	470	3481	5.74
	WSS1-11	#11				5.85
WSL1	WSL1-10	#10	25	470	3481	9.00
	WSL1-11	#11				9.20
FOR GRADE 150 ksi ALL THREAD FOUNDATION BOLTS						
WSS2	WSS2-125	1-1/4"	10	760	5630	8.20
	WSS2-138	1-3/8"				8.30
WSL2	WSL2-125	1-1/4"	25	760	5630	12.30
	WSL2-138	1-3/8"				12.40

**For manual nut rotation Adaptor Kit add "M" after part number, for gearbox style nut rotation add "GB".

Note: For a complete tensioner, order load cell and adaptor kit.