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## STS - IMPERIAL TOPSIDE STUD BOLT TENSIONERS



Capacities from 234 to 2649 kN

Working pressure 1500 Bar

Single acting design

The STS stud bolt tensioner range is designed for topside operation in a wide variety of applications including pipeline flanges, heat exchangers, pressure vessels, compressor covers, boiler feed pumps, anchor bolts and many others. The range comprises of 23 imperial and 29 metric models, all suitable for working pressures up to 1500 Bar. Imperial models cover all standard bolt sizes from ¾" to 4", metric versions (detailed on page 93) are available for bolt sizes from M16 to M100. Each of the hydraulic cylinders can be used with a variety of interchangeable nut rotating sockets and threaded pullers, available as individual parts or as convenient conversion kits (see pages 94 and 95 for more specific details). This will ensure that the maximum number of bolt diameters can be accommodated using the minimum number of cylinders. All Hi-Force hydraulic stud bolt tensioners are designed and manufactured to include a wear coated piston, maximum piston stroke indicator, self-energising high pressure seals, dual quick connect couplings for easy multiple tensioner connection and a user friendly operation and maintenance procedure. Additional or spare bridges, threaded pullers and nut rotating sockets can be supplied as and when required. Suitable manual and air driven hydraulic pumps, high pressure hoses and couplings for use with Hi-Force stud bolt tensioners are detailed on pages 97 & 98.

For further details and dimensional drawings, please see facing page.

Model number	Stud bolt Threads		Capacity		Effective area cm <sup>2</sup>	Stroke mm	Weight kg
	thread size	per inch	kN	Tonnes			
STS1-075	¾"	10	234	23.9	15.6	10	1.7
STS1-087	7/8"	9	234	23.9	15.6	10	1.7
STS1-100	1"	8	234	23.9	15.6	10	1.7
STS1-112	1 1/8"	8	234	23.9	15.6	10	1.7
STS2-125	1 1/4"	8	457	46.6	30.5	15	3.5
STS2-137	1 3/8"	8	457	46.6	30.5	15	3.5
STS2-150	1 1/2"	8	457	46.6	30.5	15	3.5
STS3-162	1 5/8"	8	822	83.8	54.8	15	6.1
STS3-175	1 3/4"	8	822	83.8	54.8	15	6.1
STS3-187	1 7/8"	8	822	83.8	54.8	15	6.1
STS3-200	2"	8	822	83.8	54.8	15	6.1
STS4-187	1 7/8"	8	1264	128.9	84.3	15	10.6
STS4-200	2"	8	1264	128.9	84.3	15	10.6
STS4-225	2 1/4"	8	1264	128.9	84.3	15	10.6
STS4-250	2 1/2"	8	1264	128.9	84.3	15	10.6
STS5-250	2 1/2"	8	1833	186.9	122.2	15	16.0
STS5-275	2 3/4"	8	1833	186.9	122.2	15	16.0
STS5-300	3"	8	1833	186.9	122.2	15	16.0
STS6-300	3"	8	2649	270.0	176.6	15	23.5
STS6-325	3 1/4"	8	2649	270.0	176.6	15	23.5
STS6-350	3 1/2"	8	2649	270.0	176.6	15	23.5
STS6-375	3 3/4"	8	2649	270.0	176.6	15	23.5
STS6-400	4"	8	2649	270.0	176.6	15	23.5

Dimensions in mm					
A	B	C min	D	E	F
74	28	74	90	45	51
74	28	74	90	45	54
74	30	80	98	45	61
74	30	80	98	45	64
102	39	103	128	54	74
102	39	103	128	54	77
102	39	103	128	54	80
133	47	115	150	56	92
133	47	115	150	56	93
133	47	115	150	56	97
133	50	117	155	56	104
163	50	119	149	57	104
163	62	119	149	57	106
163	62	135	165	57	121
163	62	135	165	57	127
193	73	145	187	60	134
193	73	145	187	60	140
193	73	145	187	60	147
233	84	178	216	64	161
233	84	178	216	64	167
233	84	178	216	64	172
233	105	205	257	64	191
233	105	205	257	64	196

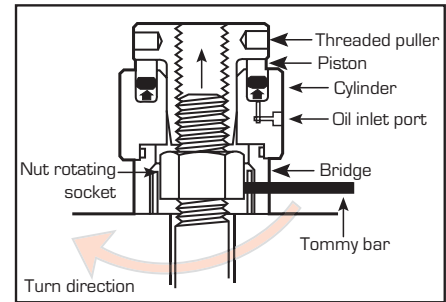
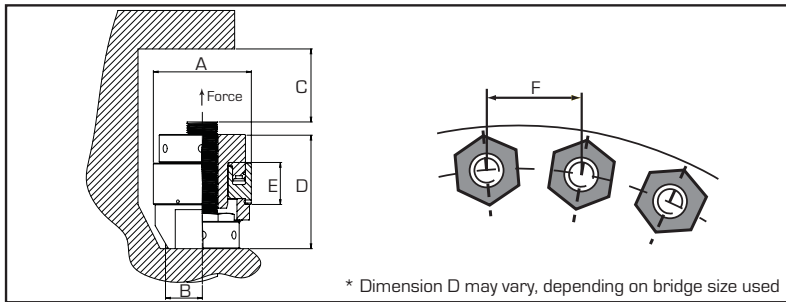
Note: Weight is for load cell and bridge only. Total weight of complete assembly depends on size of puller and nut rotating socket selected.



## STS - METRIC TOPSIDE STUD BOLT TENSIONERS



- >> Wear plated piston
- >> Maximum piston stroke indicator
- >> Suitable for single or multi-tensioning applications
- >> Specially designed tensioners available on request
- >> Available in imperial (page 92) and metric versions
- >> User friendly operating and maintenance procedure
- >> Choice of manually operated or air powered pumps available (see page 97)



Model number	Stud bolt		Capacity		Effective		Weight kg
	thread size	Thread pitch	kN	Tonnes	area cm <sup>2</sup>	Stroke mm	
STS1-M16	M16	2	234	23.9	15.6	10	1.7
STS1-M18	M18	2.5	234	23.9	15.6	10	1.7
STS1-M20	M20	2.5	234	23.9	15.6	10	1.7
STS1-M22	M22	2.5	234	23.9	15.6	10	1.7
STS1-M24	M24	3	234	23.9	15.6	10	1.7
STS1-M27	M27	3	234	23.9	15.6	10	1.7
STS2-M30	M30	3.5	457	46.6	30.5	15	3.5
STS2-M33	M33	3.5	457	46.6	30.5	15	3.5
STS2-M36	M36	4	457	46.6	30.5	15	3.5
STS2-M39	M39	4	457	46.6	30.5	15	3.5
STS3-M42	M42	4.5	822	83.8	54.8	15	6.1
STS3-M45	M45	4.5	822	83.8	54.8	15	6.1
STS3-M48	M48	5	822	83.8	54.8	15	6.1
STS3-M52	M52	5	822	83.8	54.8	15	6.1
STS4-M48	M48	5	1264	128.9	84.3	15	10.6
STS4-M52	M52	5	1264	128.9	84.3	15	10.6
STS4-M56	M56	5.5	1264	128.9	84.3	15	10.6
STS4-M60	M60	5.5	1264	128.9	84.3	15	10.6
STS4-M64	M64	6	1264	128.9	84.3	15	10.6
STS5-M64	M64	6	1833	186.9	122.2	15	16.0
STS5-M68	M68	6	1833	186.9	122.2	15	16.0
STS5-M72	M72	6	1833	186.9	122.2	15	16.0
STS5-M76	M76	6	1833	186.9	122.2	15	16.0
STS6-M76	M76	6	2649	270.0	176.6	15	23.5
STS6-M80	M80	6	2649	270.0	176.6	15	23.5
STS6-M85	M85	6	2649	270.0	176.6	15	23.5
STS6-M90	M90	6	2649	270.0	176.6	15	23.5
STS6-M95	M95	6	2649	270.0	176.6	15	23.5
STS6-M100	M100	6	2649	270.0	176.6	15	23.5

Dimensions in mm					
A	B	C	D	E	F
74	28	74	90	45	47
74	28	74	90	45	49
74	28	74	90	45	51
74	30	80	98	45	56
74	30	80	98	45	59
74	30	80	98	45	61
102	39	103	128	54	71
102	39	103	128	54	74
102	39	103	128	54	77
102	39	103	128	54	80
133	47	115	150	56	91
133	47	115	150	56	94
133	47	115	150	56	97
133	50	117	155	56	105
163	50	119	149	57	105
163	50	119	149	57	108
163	62	135	165	57	120
163	62	135	165	57	124
163	62	135	165	57	126
193	73	145	187	60	134
193	73	145	187	60	136
193	73	145	187	60	139
193	73	145	187	60	142
233	84	178	216	64	158
233	84	178	216	64	160
233	84	178	216	64	162
233	84	178	216	64	170
233	105	205	257	64	184
233	105	205	257	64	190

Note: Weight is for load cell and bridge only. Total weight of complete assembly depends on size of puller and nut rotating socket selected.



## STS-CK - CONVERSION KITS FOR IMPERIAL STUD BOLT TENSIONERS

The modular design of Hi-Force STS series topside hydraulic stud bolt tensioners enables the user to adapt an existing STS tensioner assembly to another thread size, within the tensioner range, by purchasing a simple conversion kit. Comprising of a threaded puller and compatible nut rotating socket, Hi-Force STS-CK conversion kits offer the user even greater versatility at an economical cost.



**Important note:** Tensioner models STS1, STS3, STS4 & STS6 are available with two different bridge sizes, hence always check that the correct bridge is available on your existing STS tensioner prior to ordering a conversion kit. Bridges are available as individual components if required, see table below.

### Bridge identification table :

Tensioner model	Bridge number	Compatible stud bolt size			Tensioner model	Bridge number	Compatible stud bolt size		
STS1 series	<b>STS1-B1</b>	3/4"	7/8"		STS4 series	<b>STS4-B1</b>	1 7/8"	2"	
	<b>STS1-B2</b>	1"	1 1/8"			<b>STS4-B2</b>	2"	2 1/4"	2 1/2"
STS2 series	<b>STS2-B1</b>	1 1/4"	1 3/8"	1 1/2"	STS5 series	<b>STS5-B1</b>	2 1/2"	2 3/4"	3"
STS3 series	<b>STS3-B1</b>	1 5/8"	1 3/4"	1 7/8"	STS6 series	<b>STS6-B1</b>	3"	3 1/4"	3 1/2"
	<b>STS3-B2</b>	1 3/4"	1 7/8"	2"		<b>STS6-B3</b>	3 3/4"	4"	



**Note:** Imperial models STS3-175, STS3-187 & STS4-200 and metric models (facing page) STS3-M45, STS3-M48 & STS4-M52 are all supplied with the smaller size bridge (B1), so that fitment in confined spaces is assured. Should these models be required to be supplied with the larger size bridge (B2), please add suffix 'B2' to the model number of the tensioner, e.g. STS3-175B2.

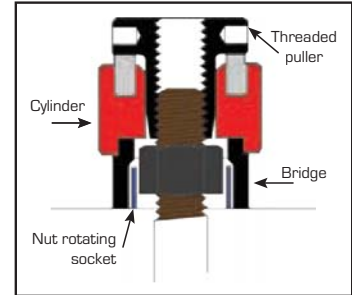
### Conversion kit selection table :

From Tensioner	To convert tensioner model in left hand column to another size within it's applicable range, select from the below table of conversion kits				
	3/4" bolt size	7/8" bolt size	1" bolt size	1 1/8" bolt size	
STS1-075	not applicable	<b>STS1-CK087</b>	<b>STS1-CK100</b>	<b>STS1-CK112</b>	
STS1-087	<b>STS1-CK075</b>	not applicable	<b>STS1-CK100</b>	<b>STS1-CK112</b>	
STS1-100	<b>STS1-CK075</b>	<b>STS1-CK087</b>	not applicable	<b>STS1-CK112</b>	
STS1-112	<b>STS1-CK075</b>	<b>STS1-CK087</b>	<b>STS1-CK100</b>	not applicable	
	1 1/4" bolt size	1 3/8" bolt size	1 1/2" bolt size		
STS2-125	not applicable	<b>STS2-CK137</b>	<b>STS2-CK150</b>		
STS2-137	<b>STS2-CK125</b>	not applicable	<b>STS2-CK150</b>		
STS2-150	<b>STS2-CK125</b>	<b>STS2-CK137</b>	not applicable		
	1 5/8" bolt size	1 3/4" bolt size	1 7/8" bolt size	2" bolt size	
STS3-162	not applicable	<b>STS3-CK175</b>	<b>STS3-CK187</b>	<b>STS3-CK200</b>	
STS3-175	<b>STS3-CK162</b>	not applicable	<b>STS3-CK187</b>	<b>STS3-CK200</b>	
STS3-187	<b>STS3-CK162</b>	<b>STS3-CK175</b>	not applicable	<b>STS3-CK200</b>	
STS3-200	<b>STS3-CK162</b>	<b>STS3-CK175</b>	<b>STS3-CK187</b>	not applicable	
	1 7/8" bolt size	2" bolt size	2 1/4" bolt size	2 1/2" bolt size	
STS4-187	not applicable	<b>STS4-CK200</b>	<b>STS4-CK225</b>	<b>STS4-CK250</b>	
STS4-200	<b>STS4-CK187</b>	not applicable	<b>STS4-CK225</b>	<b>STS4-CK250</b>	
STS4-225	<b>STS4-CK187</b>	<b>STS4-CK200</b>	not applicable	<b>STS4-CK250</b>	
STS4-250	<b>STS4-CK187</b>	<b>STS4-CK200</b>	<b>STS4-CK225</b>	not applicable	
	2 1/2" bolt size	2 3/4" bolt size	3" bolt size		
STS5-250	not applicable	<b>STS5-CK275</b>	<b>STS5-CK300</b>		
STS5-275	<b>STS5-CK250</b>	not applicable	<b>STS5-CK300</b>		
STS5-300	<b>STS5-CK250</b>	<b>STS5-CK275</b>	not applicable		
	3" bolt size	3 1/4" bolt size	3 1/2" bolt size	3 3/4" bolt size	4" bolt size
STS6-300	not applicable	<b>STS6-CK325</b>	<b>STS6-CK350</b>	<b>STS6-CK375</b>	<b>STS6-CK400</b>
STS6-325	<b>STS6-CK300</b>	not applicable	<b>STS6-CK350</b>	<b>STS6-CK375</b>	<b>STS6-CK400</b>
STS6-350	<b>STS6-CK300</b>	<b>STS6-CK325</b>	not applicable	<b>STS6-CK375</b>	<b>STS6-CK400</b>
STS6-375	<b>STS6-CK300</b>	<b>STS6-CK325</b>	<b>STS6-CK350</b>	not applicable	<b>STS6-CK400</b>
STS6-400	<b>STS6-CK300</b>	<b>STS6-CK325</b>	<b>STS6-CK350</b>	<b>STS6-CK375</b>	not applicable

## STS-CK - CONVERSION KITS FOR METRIC STUD BOLT TENSIONERS

Similar to the imperial thread conversion kits (page 94), the Hi-Force metric topside hydraulic stud bolt tensioners are also modular design and can be adapted to another thread size, within the tensioner range, by purchasing a simple conversion kit. Comprising of a threaded puller and nut rotating socket, Hi-Force STS-CK conversion kits offer the user even greater versatility at an economical cost.

**Important note:** Tensioner models STS1, STS3, STS4 & STS6 are available with two different bridge sizes, hence always check that the correct bridge is available on your existing STS tensioner prior to ordering a conversion kit. Bridges are available as individual components if required, see table below.



### Bridge identification table :

Tensioner model	Bridge number	Compatible stud bolt size			Tensioner model	Bridge number	Compatible stud bolt size				
STS1 series	<b>STS1-B1</b>	M16	M18	M20	STS4 series	<b>STS4-B1</b>	M48	M52			
	<b>STS1-B2</b>	M22	M24	M27		<b>STS4-B2</b>	M52	M56	M60	M64	
STS2 series	<b>STS2-B1</b>	M30	M33	M36	M39	STS5 series	<b>STS5-B1</b>	M64	M68	M72	M76
STS3 series	<b>STS3-B1</b>	M42	M45	M48	STS6 series	<b>STS6-B1</b>	M76	M80	M85	M90	
	<b>STS3-B2</b>	M45	M48	M52		<b>STS6-B3</b>	M95	M100			

### Conversion kit selection table :

From Tensioner	To convert tensioner model in left hand column to another size within it's applicable range, select from the below table of conversion kits					
	M16 bolt size	M18 bolt size	M20 bolt size	M22 bolt size	M24 bolt size	M27 bolt size
STS1-M16	not applicable	<b>STS1-CKM18</b>	<b>STS1-CKM20</b>	<b>STS1-CKM22</b>	<b>STS1-CKM24</b>	<b>STS1-CKM27</b>
STS1-M18	<b>STS1-CKM16</b>	not applicable	<b>STS1-CKM20</b>	<b>STS1-CKM22</b>	<b>STS1-CKM24</b>	<b>STS1-CKM27</b>
STS1-M20	<b>STS1-CKM16</b>	<b>STS1-CKM18</b>	not applicable	<b>STS1-CKM22</b>	<b>STS1-CKM24</b>	<b>STS1-CKM27</b>
STS1-M22	<b>STS1-CKM16</b>	<b>STS1-CKM18</b>	<b>STS1-CKM20</b>	not applicable	<b>STS1-CKM24</b>	<b>STS1-CKM27</b>
STS1-M24	<b>STS1-CKM16</b>	<b>STS1-CKM18</b>	<b>STS1-CKM20</b>	<b>STS1-CKM22</b>	not applicable	<b>STS1-CKM27</b>
STS1-M27	<b>STS1-CKM16</b>	<b>STS1-CKM18</b>	<b>STS1-CKM20</b>	<b>STS1-CKM22</b>	<b>STS1-CKM24</b>	not applicable
	M30 bolt size	M33 bolt size	M36 bolt size	M39 bolt size		
STS2-M30	not applicable	<b>STS2-CKM33</b>	<b>STS2-CKM36</b>	<b>STS2-CKM39</b>		
STS2-M33	<b>STS2-CKM30</b>	not applicable	<b>STS2-CKM36</b>	<b>STS2-CKM39</b>		
STS2-M36	<b>STS2-CKM30</b>	<b>STS2-CKM33</b>	not applicable	<b>STS2-CKM39</b>		
STS2-M39	<b>STS2-CKM30</b>	<b>STS2-CKM33</b>	<b>STS2-CKM36</b>	not applicable		
	M42 bolt size	M45 bolt size	M48 bolt size	M52 bolt size		
STS3-M42	not applicable	<b>STS3-CKM45</b>	<b>STS3-CKM48</b>	<b>STS3-CKM52</b>		
STS3-M45	<b>STS3-CKM42</b>	not applicable	<b>STS3-CKM48</b>	<b>STS3-CKM52</b>		
STS3-M48	<b>STS3-CKM42</b>	<b>STS3-CKM45</b>	not applicable	<b>STS3-CKM52</b>		
STS3-M52	<b>STS3-CKM42</b>	<b>STS3-CKM45</b>	<b>STS3-CKM48</b>	not applicable		
	M48 bolt size	M52 bolt size	M56 bolt size	M60 bolt size	M64 bolt size	
STS4-M48	not applicable	<b>STS4-CKM52</b>	<b>STS4-CKM56</b>	<b>STS4-CKM60</b>	<b>STS4-CKM64</b>	
STS4-M52	<b>STS4-CKM48</b>	not applicable	<b>STS4-CKM56</b>	<b>STS4-CKM60</b>	<b>STS4-CKM64</b>	
STS4-M56	<b>STS4-CKM48</b>	<b>STS4-CKM52</b>	not applicable	<b>STS4-CKM60</b>	<b>STS4-CKM64</b>	
STS4-M60	<b>STS4-CKM48</b>	<b>STS4-CKM52</b>	<b>STS4-CKM56</b>	not applicable	<b>STS4-CKM64</b>	
STS4-M64	<b>STS4-CKM48</b>	<b>STS4-CKM52</b>	<b>STS4-CKM56</b>	<b>STS4-CKM60</b>	not applicable	
	M64 bolt size	M68 bolt size	M72 bolt size	M76 bolt size		
STS5-M64	not applicable	<b>STS5-CKM68</b>	<b>STS5-CKM72</b>	<b>STS5-CKM76</b>		
STS5-M68	<b>STS5-CKM64</b>	not applicable	<b>STS5-CKM72</b>	<b>STS5-CKM76</b>		
STS5-M72	<b>STS5-CKM64</b>	<b>STS5-CKM68</b>	not applicable	<b>STS5-CKM76</b>		
STS5-M76	<b>STS5-CKM64</b>	<b>STS5-CKM68</b>	<b>STS5-CKM72</b>	not applicable		
	M76 bolt size	M80 bolt size	M85 bolt size	M90 bolt size	M95 bolt size	M100 bolt size
STS6-M76	not applicable	<b>STS6-CKM80</b>	<b>STS6-CKM85</b>	<b>STS6-CKM90</b>	<b>STS6-CKM95</b>	<b>STS6-CKM100</b>
STS6-M80	<b>STS6-CKM76</b>	not applicable	<b>STS6-CKM85</b>	<b>STS6-CKM90</b>	<b>STS6-CKM95</b>	<b>STS6-CKM100</b>
STS6-M85	<b>STS6-CKM76</b>	<b>STS6-CKM80</b>	not applicable	<b>STS6-CKM90</b>	<b>STS6-CKM95</b>	<b>STS6-CKM100</b>
STS6-M90	<b>STS6-CKM76</b>	<b>STS6-CKM80</b>	<b>STS6-CKM85</b>	not applicable	<b>STS6-CKM95</b>	<b>STS6-CKM100</b>
STS6-M95	<b>STS6-CKM76</b>	<b>STS6-CKM80</b>	<b>STS6-CKM85</b>	<b>STS6-CKM90</b>	not applicable	<b>STS6-CKM100</b>
STS6-M100	<b>STS6-CKM76</b>	<b>STS6-CKM80</b>	<b>STS6-CKM85</b>	<b>STS6-CKM90</b>	<b>STS6-CKM95</b>	not applicable

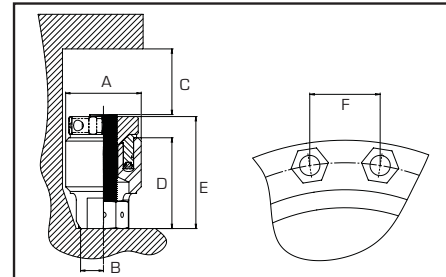


## STU - SUB-SEA STUD BOLT TENSIONERS



Hi-Force STU series sub-sea stud bolt tensioners are designed and manufactured to suit the demanding requirements of divers operating in harsh sub-sea environments. With an easy to use two part construction, a quick release and fit threaded puller fitted as standard and an extra long stroke length, to reduce re-setting operations, Hi-Force STU sub-sea tensioners offer a consistent, reliable and cost effective method of tensioning sub-sea bolted joints.

- >> Working pressure 1500 Bar
- >> Easy to use two part construction
- >> Dual hose connection for easy hook up
- >> Available for imperial and metric stud bolts
- >> Extra long piston stroke to reduce re-setting time
- >> Single acting design with failsafe stroke limiting device
- >> Corrosion protected for operation in sub-sea environments



Model number	Stud bolt thread size	Capacity kN	Capacity Tonnes	Effective area cm <sup>2</sup>	Stroke mm	Weight kg
<b>IMPERIAL SUB-SEA TENSIONERS</b>						
STU1-100	1" - 8UN	256.04	26.10	17.07	30	3.2
STU1-112	1 1/8" - 8UN	256.04	26.10	17.07	30	3.2
STU2-125	1 1/4" - 8UN	430.36	43.87	28.69	30	4.8
STU2-137	1 3/8" - 8UN	430.36	43.87	28.69	30	4.8
STU3-150	1 1/2" - 8UN	533.39	56.41	36.89	30	6.2
STU3-162	1 5/8" - 8UN	533.39	56.41	36.89	30	6.2
STU4-175	1 3/4" - 8UN	756.30	77.09	50.42	30	8.5
STU4-187	1 7/8" - 8UN	756.30	77.09	50.42	30	8.5
STU5-200	2" - 8UN	1168.19	119.08	77.88	30	12.2
STU5-225	2 1/4" - 8UN	1168.19	119.08	77.88	30	12.2
STU6-250	2 1/2" - 8UN	1649.12	168.11	109.94	30	19.2
STU6-275	2 3/4" - 8UN	1649.12	168.11	109.94	30	19.2
STU7-300	3" - 8UN	2483.44	253.15	165.56	30	29.0
STU7-325	3 1/4" - 8UN	2483.44	253.15	165.56	30	29.0
STU7-350	3 1/2" - 8UN	2483.44	253.15	165.56	30	29.0
<b>METRIC SUB-SEA TENSIONERS</b>						
STU1-24	M24 x 2	256.04	26.10	17.07	30	3.2
STU1-27	M27 x 3	256.04	26.10	17.07	30	3.2
STU2-30	M30 x 3.5	430.36	43.87	28.69	30	4.8
STU2-33	M33 x 3.5	430.36	43.87	28.69	30	4.8
STU2-36	M36 x 4	430.36	43.87	28.69	30	4.8
STU3-39	M39 x 4	533.39	56.41	36.89	30	6.2
STU3-42	M42 x 4.5	533.39	56.41	36.89	30	6.2
STU4-45	M45 x 4.5	756.30	77.09	50.42	30	8.5
STU4-48	M48 x 5	756.30	77.09	50.42	30	8.5
STU5-52	M52 x 5	1168.19	119.08	77.88	30	12.2
STU5-56	M56 x 5.5	1168.19	119.08	77.88	30	12.2
STU6-64	M64 x 6	1649.12	168.11	109.94	30	19.2
STU6-72	M72 x 6	1649.12	168.11	109.94	30	19.2
STU7-76	M76 x 6	2483.44	253.15	165.56	30	29.0
STU7-80	M80 x 6	2483.44	253.15	165.56	30	29.0
STU7-85	M85 x 6	2483.44	253.15	165.56	30	29.0
STU7-90	M90 x 6	2483.44	253.15	165.56	30	29.0

Dimensions in mm					
A	B	C	D	E	F
82	22	129	129	150	61
82	22	129	129	150	64
102	30	140	140	164	73
102	30	140	140	164	75
114	35	142	142	169	82
114	35	142	142	169	85
128	41	151	151	181	94
128	41	151	151	181	98
148	48	164	164	202	112
148	48	164	164	202	116
176	60	183	183	231	136
176	60	183	183	231	141
215	89	215	215	260	162
215	89	215	215	260	173
215	89	215	215	260	175
82	22	129	129	150	61
82	22	129	129	150	64
102	30	140	140	164	73
102	30	140	140	164	75
102	30	140	140	164	78
114	35	142	142	169	82
114	35	142	142	169	85
128	41	151	151	181	94
128	41	151	151	181	98
148	48	164	164	202	112
148	48	164	164	202	116
176	60	183	183	231	136
176	60	183	183	231	141
215	94	215	215	260	164
215	94	215	215	260	164
215	94	215	215	260	175
215	94	215	215	260	175



## AHP - AIR DRIVEN PUMP FOR BOLT TENSIONERS



Operates from standard 7 bar air supply

Air consumption 28 scfm (0.79 m<sup>3</sup>/minute)

Working pressure 1500 Bar

The Hi-Force AHP275BTU air driven hydraulic pump is compatible for use with Hi-Force STS and STU stud bolt tensioners. The pump unit is easy to operate and is supplied complete with a vibra-gauge and quick release outlet coupling. The complete system, including an inlet air filter & regulator unit is fitted in a robust stainless steel frame.

Model number	Working pressure bar	Usable oil capacity litres	Outlet coupler	Weight kg
<b>AHP275BTU</b>	1500	8	STFC4	22

Dimensions in mm		
Length	Width	Height
450	395	395

## XHP - MANUALLY OPERATED PUMP FOR BOLT TENSIONERS



Compact & lightweight design

Complete with pressure gauge

Working pressure 1500 Bar

Hi-Force XHP range of manually operated high pressure hydraulic pump is compatible for use with STS and STU stud bolt tensioners. Lightweight, compact and independent from any required power source, it is suited for all applications on-site requiring reliable hydraulic power. The pump is easy to operate and supplied complete with a pressure gauge and quick release outlet coupling.

Model number	Working pressure bar	Usable oil capacity litres	Displacement per stroke [cm <sup>3</sup> ]		Outlet coupler	Weight kg
			1 <sup>st</sup> stage	2 <sup>nd</sup> stage		
<b>XHP1500</b>	1500	0.7	12.5	0.75	STFC4	7.0

Dimensions in mm		
Length	Width	Height
610	170	180



Safety factor 3 : 1

Working pressure up to 1500 Bar

Hi-Force ultra-high pressure hoses are compatible for use with all Hi-Force bolt tensioning products up to a maximum of 1500 bar working pressure. Each hose is supplied complete with quick connect couplings on each end (male/female) and has a safety factor of 3:1 on maximum working pressure. Four standard lengths are available with special lengths available on request.

Spare couplings, nipples and sealing washers are also available (see below).

Model number	Maximum working pressure	Description
Ultra high pressure hoses		
<b>XHC1.5B</b>	1500 bar	Link hose complete with quick connect couplings, length 1.5 metres
<b>XHC3B</b>	1500 bar	Link hose complete with quick connect couplings, length 3.0 metres
<b>XHC5B</b>	1500 bar	Mainline hose complete with quick connect couplings, length 5.0 metres
<b>XHC10B</b>	1500 bar	Mainline hose complete with quick connect couplings, length 10.0 metres
Couplings, nipples and sealing washers		
<b>STFC4</b>	1500 bar	Female coupling
<b>STMC4</b>	1500 bar	Male coupling
<b>STN1P4</b>	1500 bar	¼" BSP nipple

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