

# PETRACARBON



 **BOLTITE**

## About PETRACARBON

**W**ith more than two decades of innovative bolt tightening and in-situ machining experiences, Petracarbon Pte Ltd (Singapore), an ISO9001-Certified company, established since 1982, is reflected in our tools and machines' craftsmanship and our ability to offer ultimate solutions to clients in the Oil and Gas, Petrochemical, Power Generation, Marine and Shipyard Industries. The many years of product design, development and application knowledge have preceded the introduction of Petracarbon products with **BOLTITE** as our product trademark.

Our **BOLTITE** products are designed with:

- high-level of focused quality
- innovations and technology
- adoptions of ASME, ANSI, ASTM & API Standards

to suit diverse applications in varied working environments throughout the Oil and Gas's pipeline industry world. Our products are constructed from high quality material which incorporate many unique features to ensure that they are simple, reliable, robust and safe.



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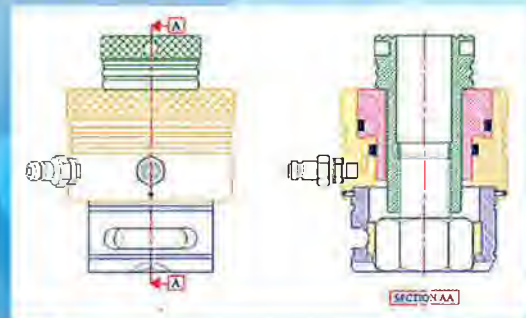
## Bolt Tensioner

- ✓ Cover full range of bolt sizes from 3/8" to 5 3/4"
- ✓ Up to work load of 500 Tonnage Force

### Technical Specification

MODEL	BOLT DIA		MAX LOAD		HYDRAULIC AREA		TOOL WEIGHT	
	in	mm	TONF	KN	in <sup>2</sup>	mm <sup>2</sup>	lb	kg
BT0	3/8"	M20 M22	14.4	143.5	1.48	954	2.9	1.3
BT1	1"	M24	28.6	284.96	2.95	1903	7.7	3.5
BT2	1" 1 1/8" 1 1/4" 1 1/2"	M24	46.0	458.3	4.74	3058	12.1	5.5
		M27						
		M30						
		M33 M36						
BT3	1" 1 1/8" 1 1/4" 1 1/2"	M33	67.0	667.8	6.90	4452	15.4	7.0
		M36						
		M39						
		M42						
BT4	1" 1 1/8" 1 1/4" 1 1/2" 2"	M39	101.1	1007.3	10.41	6716	22.1	10.0
		M42						
		M45						
		M48						
BT5	2" 2 1/4"	M52 M56	130.6	1301.2	13.45	8677	33.1	15.0
BT6	2 1/4" 2 1/2" 2 3/4"	M56	152.5	1514.5	15.71	10135	37.5	17.0
		M60						
		M64 M68						
BT7	2 3/4" 3"	M72 M76	210.5	2097.3	21.67	13980	57.3	26.0
		M76						
BT8	3" 3 1/4" 3 1/2"	M76	247.5	2466.0	25.49	16445	65.0	29.5
		M80						
		M85						
		M90						
BT9	3 3/4" 4"	M95 M100	331.0	3297.9	34.09	21991	86.0	38.0
		M100						
BT10	4 1/4" 4 1/2"	M105 M110 M115	389.9	3884.8	40.15	25935	108.0	49.0
		M110						
		M115						
BT11	4 1/4" 4 3/4"	M120 M125	400.5	3990.4	41.25	27120	119.1	54
		M125						
BT12	5" 5 1/4" 5 1/2" 5 3/4"	M125 M130 M140 M150	466.7	4650	48.05	31591	165.4	75
		M130						
		M140						
		M150						

- Accurate and Fast - Simultaneous multiple tensioning
- Reliable - Robust Cylinders
- Quality and Safe - Utilising high-strength alloy steel
- Quick and Easy - Incorporating two quick disconnects nipples
- Superior hydraulic seals for enhanced performance
- Wide tooling range for different bolt/stud sizes up to 500 TonF



### ANSI Flange Selection

	BT0	BT1	BT2	BT3	BT4	BT5	BT6	BT7	BT8
NPS (DN)	CLASS	150" (PN20)	300" (PN50)	600" (PN100)	900" (PN150)	1500" (PN250)	2500" (PN420)		
1/2 (15)		4 x 1/2" (M14)	4 x 1/2" (M14)	4 x 1/2" (M14)	4 x 1/2" (M20)	4 x 1/2" (M20)	4 x 1/2" (M20)		
3/4 (20)		4 x 1/2" (M14)	4 x 3/8" (M16)	4 x 3/8" (M16)	4 x 1/2" (M20)	4 x 1/2" (M20)	4 x 1/2" (M20)		
1 (25)		4 x 1/2" (M14)	4 x 3/8" (M16)	4 x 3/8" (M16)	4 x 1/2" (M20)	4 x 1/2" (M24)	4 x 1/2" (M24)		
1 1/2 (40)		4 x 1/2" (M14)	4 x 3/8" (M20)	4 x 3/8" (M20)	4 x 1" (M27)	4 x 1" (M27)	4 x 1 1/4" (M30)		
2 (50)		4 x 3/8" (M16)	8 x 3/8" (M16)	8 x 3/8" (M16)	8 x 1/2" (M24)	8 x 1/2" (M24)	8 x 1" (M27)		
3 (80)		4 x 3/8" (M16)	8 x 3/8" (M20)	8 x 3/8" (M20)	8 x 1/2" (M24)	8 x 1 1/4" (M30)	8 x 1 1/2" (M33)		
4 (100)		8 x 3/8" (M16)	8 x 3/4" (M20)	8 x 3/4" (M24)	8 x 1 1/2" (M30)	8 x 1 1/2" (M33)	8 x 1 1/2" (M39)		
6 (150)		8 x 3/8" (M20)	12 x 3/8" (M20)	12 x 1" (M27)	12 x 1 1/2" (M30)	12 x 1 1/2" (M36)	12 x 2" (M42)		
8 (200)		8 x 3/8" (M20)	12 x 3/8" (M24)	12 x 1 1/2" (M30)	12 x 1 1/2" (M36)	12 x 1 1/2" (M42)	12 x 2" (M52)		
10 (250)		12 x 3/8" (M24)	16 x 1" (M27)	16 x 1 1/4" (M33)	16 x 1 1/2" (M36)	12 x 1 1/2" (M48)	12 x 2 1/2" (M64)		
12 (300)		12 x 3/8" (M24)	16 x 1 1/4" (M30)	20 x 1 1/4" (M33)	20 x 1 1/2" (M36)	16 x 2" (M52)	12 x 2 1/2" (M70)		
14 (350)		12 x 1" (M27)	20 x 1 1/4" (M30)	20 x 1 1/2" (M36)	20 x 1 1/2" (M39)	16 x 2 1/2" (M56)			
16 (400)		16 x 1" (M27)	20 x 1 1/2" (M33)	20 x 1 1/2" (M39)	20 x 1 1/2" (M42)	16 x 2 1/2" (M56)			
18 (450)		16 x 1 1/4" (M30)	24 x 1 1/4" (M33)	20 x 1 1/2" (M39)	20 x 1 1/2" (M48)	16 x 2 1/2" (M56)			
20 (500)		20 x 1 1/4" (M30)	24 x 1 1/4" (M33)	24 x 1 1/2" (M42)	20 x 2" (M52)	16 x 3" (M76)			
24 (600)		20 x 1 1/2" (M33)	24 x 1 1/2" (M39)	24 x 1 1/2" (M48)	20 x 2 1/2" (M56)	16 x 3 1/2" (M90)			
26 (650)		24 x 1 1/4" (M39)	28 x 1 1/4" (M42)	24 x 1 1/2" (M48)	20 x 2 1/2" (M56)				
28 (700)		28 x 1 1/4" (M39)	28 x 1 1/2" (M42)	28 x 2" (M52)	20 x 3" (M76)				
30 (750)		28 x 1 1/2" (M33)	28 x 1 1/2" (M45)	28 x 2" (M52)	20 x 3" (M76)				
32 (800)		28 x 1 1/2" (M39)	28 x 1 1/2" (M48)	28 x 2 1/4" (M56)	20 x 3 1/2" (M85)				
34 (850)		32 x 1 1/2" (M39)	28 x 1 1/2" (M48)	28 x 2 1/4" (M56)	20 x 3 1/2" (M90)				
36 (900)		32 x 1 1/2" (M39)	32 x 2" (M52)	28 x 2 1/2" (M64)	20 x 3 1/2" (M90)				

NPS: Nominal Pipe Size (inches)  
DN: Diameter Nominal (mm)

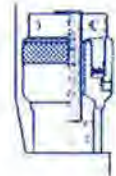
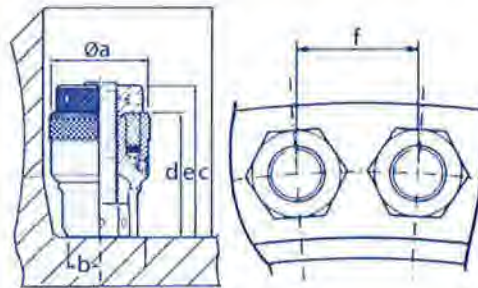
Tool operates up to maximum pressure of 21,750 psi / 1500 bar

- Compact and Ergonomical Design - For easy diver handling
- Reliable - Made of High-Grade alloy steel
- Non-Slip Surface - For good diver's grip
- Twin Hydraulic Connections - For simple quick hose assembly
- 30mm Long Piston Stroke
- Available with Split Nut or Solid Round Reaction Nut



## Sub-Sea Bolt Tensioner

- ✓ Cover full range of bolt sizes from 1" to 3½"
- ✓ Up to work load of 253 Tonnage Force



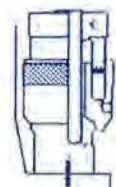
Bolt tensioner is assembled onto the Bolt.  
Note : An extra length of bolt is required above the hexagon nut.

### Technical Specification

MODEL		BOLT DIA		MAX LOAD		HYDRAULIC AREA		STROKE	TOOL WEIGHT	TOOL DIMENSIONS (mm)					
Imperial	Metric	in	mm	TONF	KN	in <sup>2</sup>	mm <sup>2</sup>	mm	kg	a	b	c	d	e	f
1MTST:1000	1MTST:0024	1"	24	24.58	245	2.53	1634	30	3.2	82	25	218	120	144	61
1MTST:1125	1MTST:0027	1 1/8"	27	24.58	245					82	25	218	120	144	64
2MTST:1250	2MTST:0033	1 1/4"	33	38	379.2	3.92	2532	30	4.8	100	28	240	131	159	75
2MTST:1375	2MTST:0036	1 3/8"	36	38	379.2					100	28	240	131	159	78
3MTST:1500	3MTST:0039	1 1/2"	39	55.4	552	5.71	3688	30	6.2	112	35	249	133	166	84
3MTST:1625	3MTST:0042	1 5/8"	42	55.4	552					112	35	249	133	166	87
4MTST:1750	4MTST:0045	1 3/4"	45	75.6	753	7.79	5027	30	8.5	128	41	271	140	178	95.5
4MTST:1875	4MTST:0048	1 7/8"	48	75.6	753					128	41	271	140	178	98
5MTST:2000	5MTST:0052	2"	52	108	1076	11.12	7174	30	12.2	148	48	296	152	198	121
5MTST:2250	5MTST:0056	2 1/4"	56	108	1076					148	48	296	152	198	116
6MTST:2500	6MTST:0064	2 1/2"	64	165	1644	17.0	10968	30	19.2	176	58	335	168	224	136
6MTST:2750	6MTST:0072	2 3/4"	72	165	1644					176	58	335	168	224	141
7MTST:3000	7MTST:0076	3"	76	253.4	2525	26.1	16870	30	29	216	53	373	192	260	162
7MTST:3500	7MTST:0090	3 1/2"	90	253.4	2525					216	53	373	192	260	173



Hydraulic pressure develops axial force which stretches the Bolt.  
\* Stroke indicator shows bolt tensioner approaching maximum stroke.



Hexagon nut is tightened against application face.  
Pressure released.  
Bolt tensioner removed.

Tool operates up to maximum pressure of 21,750 psi / 1500 bar

- **Quality and Tough** - Made of **High-Grade** lightweight corrosion-resistant alloy
- **Reliable** - Robust Ratchet and Cylinders
- **Durability** - Dual Independent 360 x 360 Swivels for individual hoses' movements
- **Quick and Easy** - Multi-Axis Swivels for complete quick change of hydraulic hoses connection
- **Simple, Light and Compact Design** - Only 3 mechanical moving parts
- **Safe** - Reaction Arm Release Button for protection within the reaction arm housing
- **Quick Reference** - Engraved with Torque-Pressure Chart



## Torque Wrench Square Drive Series TU

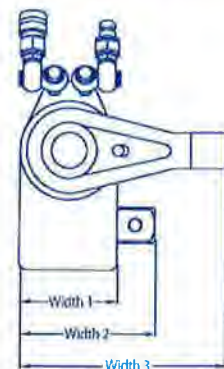
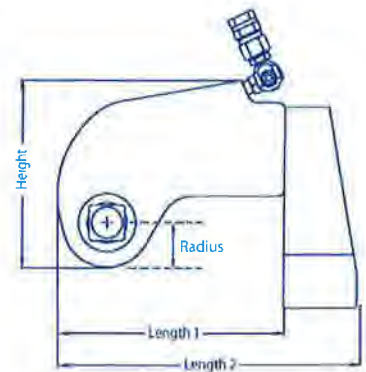
### Technical Specification

MODEL	TU-2	TU-3	TU-7	TU-11	TU-27	TU-60
Square Drive	$\frac{3}{4}$ "	1"	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "
Socket (A/F size)	$\frac{1}{2}$ " to 2 $\frac{3}{8}$ "	$\frac{1}{2}$ " to 4 $\frac{1}{2}$ "	1 $\frac{1}{8}$ " to 5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ " to 5 $\frac{3}{8}$ "	1 $\frac{1}{8}$ " to 9 $\frac{1}{4}$ "	1 $\frac{1}{8}$ " to 9 $\frac{1}{4}$ "
	13 to 60mm	12 to 115mm	32 to 130mm	32 to 130mm	43 to 225mm	43 to 225mm
Min. Torque (ftlb)	127	330	740	1,100	2,720	5,800
Max. Torque (ftlb)	1,270	3,330	7,400	11,010	27,200	58,000
Output Accuracy	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%
Repeatability	100%	100%	100%	100%	100%	100%
Duty Cycle	100%	100%	100%	100%	100%	100%
Tool Weight (kg)	1.77	4.08	8.62	13.15	31.75	58.96

### TOOL DIMENSIONS (inch)

MODEL	TU-2	TU-3	TU-7	TU-11	TU-27	TU-60
Height	4.20	5.30	6.99	7.79	10.19	11.50
Length 1	4.68	6.10	8.00	9.21	12.29	15.38
Length 2	6.20	8.10	10.74	12.21	16.29	20.40
Radius	0.98	1.30	1.70	1.95	2.43	2.90
Width 1	2.00	2.62	3.61	3.93	5.26	6.58
Width 2	2.79	3.68	5.06	5.43	7.73	8.89
Width 3	4.42	5.81	7.98	8.72	11.63	14.29

Tool operates up to maximum pressure of 10,000 psi / 700 bar

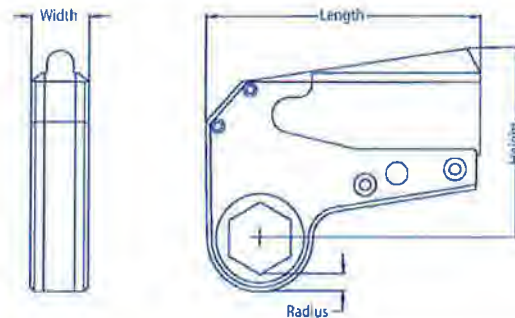




- **Flat and Compact** - Tight nose radius allows ease of finding any tool room
- **Quality and Tough** - Made of High-Grade lightweight corrosion-resistant alloy
- **Reliable** - Robust Ratchet Link and Cylinders
- **Durability** - Dual Independent 360 x 360 Swivels for individual hoses' movements
- **Quick and Easy** - Quick connect, no-drip, safety couplers for quick connection
- **Simple, Light and Compact Design**
- **Safe** - In-Line Reaction Pad ensures torsion-free reaction



## Torque Wrench Low Profile Series TX



### Technical Specification

MODEL	TX-2	TX-4	TX-8	TX-16	TX-32
Tool Hex (A/F size)	$\frac{3}{8}$ " to 2 $\frac{3}{8}$ "	1" to 3 $\frac{1}{8}$ "	1 $\frac{7}{8}$ " to 4"	2 $\frac{5}{8}$ " to 4 $\frac{5}{8}$ "	3 $\frac{1}{8}$ " to 6 $\frac{1}{8}$ "
	19 to 60mm	25 to 80mm	50 to 105mm	65 to 115mm	80 to 155mm
Min. Torque (ftlb)	192	395	830	1,560	3,220
Max. Torque (ftlb)	1,928	3,950	8,630	16,600	35,650
Output Accuracy	+/-3%	+/-3%	+/-3%	+/-3%	+/-3%
Repeatability	100%	100%	100%	100%	100%
Duty Cycle	100%	100%	100%	100%	100%
Cylinder Weight (kg)	1.59	2.72	5.31	7.26	11.79
Link Weight (kg)	1.09 to 1.59	2.45 to 3.45	5.40 to 6.58	9.52 to 12.70	13.15 to 17.91

### TOOL DIMENSIONS (Inch)

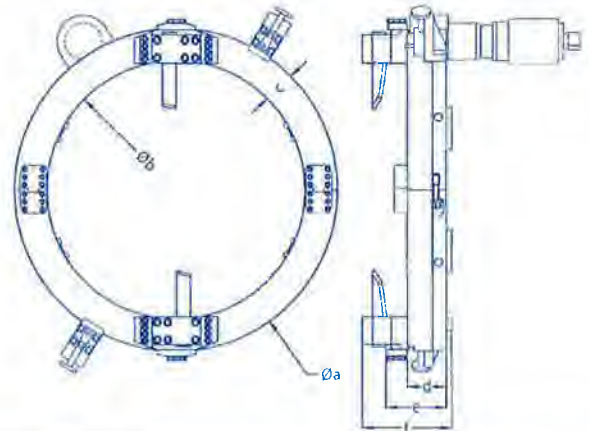
MODEL	TX-2	TX-4	TX-8	TX-16	TX-32
Length	5.67	7.80	9.80	12.93	15.30
Height	4.00	5.60	7.00	7.58	10.90
Width	1.25	1.63	2.05	2.50	3.24
Radius	0.36	0.46	0.54	0.65	0.93

Tool operates up to maximum pressure of 10,000 psi / 700 bar



- **Low Profile Split-Frame Design** - Minimum operating clearance needed
- **Robust and Durable** - Designed for heavy-duty applications
- **Quality and Safe** - Non-flameable, suitable under any hazardous conditions
- **Reliable** - Unique bearing system improves machine life
- **Quick and Easy** - Fast setup and operation with minimum time and effort
- **Cutting capability** - Severing (parting off), beveling, facing and boring
- **Cutting ranges from 2" to 44" OD**

## **BOLTITE** Cold Pipe Cutter



### Technical Specification

MODEL	CUTTING RANGE		TOOL DIMENSIONS (mm)						Weight kg
	inch	mm	a	b	c	d	e	f	
Boltite Ext 2.4	2" to 4"	50 mm – 102 mm	245	127	59	71	109	163	15
Boltite Ext 4.6	4" to 6"	102 mm – 152 mm	298	180	59	71	109	163	22
Boltite Ext 8.12	8" to 12"	203 mm – 305 mm	454	336	59	71	109	163	35
Boltite Ext 14.18	14" to 18"	356 mm – 457 mm	590	472	59	71	109	163	48
Boltite Ext 18.24	18" to 24"	457 mm – 610 mm	760	630	65	79	117	171	81
Boltite Ext 26.32	26" to 32"	660 mm – 812 mm	940	826	65	79	117	171	92
Boltite Ext 30.36	30" to 36"	762 mm – 914 mm	1065	935	65	79	117	217	112
Boltite Ext 26.32 MD	26" to 32"	660 mm – 812 mm	980	830	75	97	135	217	108
Boltite Ext 30.36 HD	30" to 36"	762 mm – 914 mm	1143	935	104	127	165	254	340
Boltite Ext 38.44 HD	38" to 44"	965 mm – 1118 mm	1404	1196	104	127	165	254	355

Cutter Travel: 60mm / Tool operated by 3.5hp air-motor (90cfm) or 10hp hydraulic motor





**ID-Mount**



**OD-Mount**

- **Powerful - High-Torque performance**
- **Achieving ANSI B16.5 Standard - For Surface finishing and flatness tolerances**
- **Quick and Easy - Fast setup and operation**
- **Cut and face angles, grooves, chamfers, RTJ, len ring seals and weld prep**
- **Facing ranges up to 126" (3200mm)**

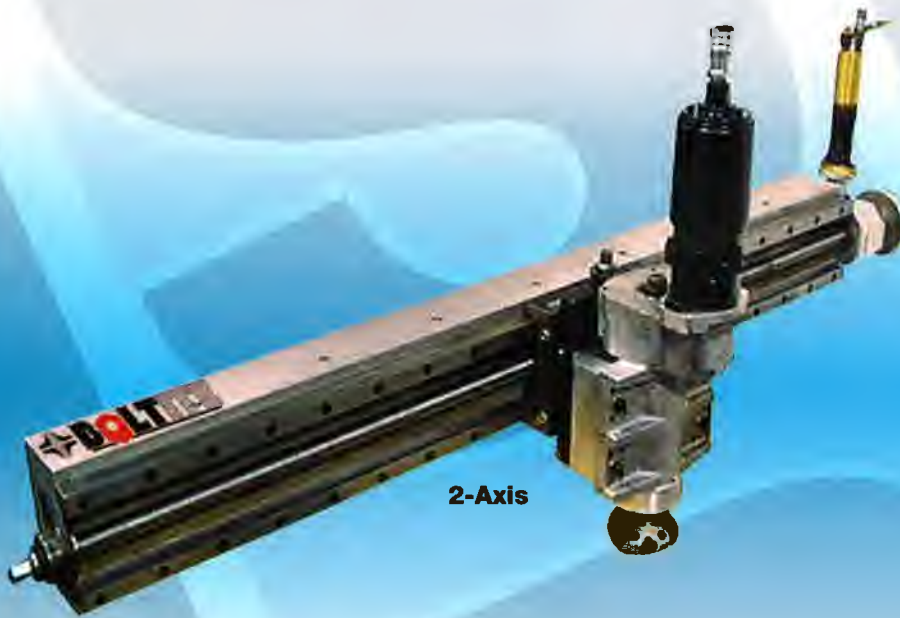


## Flange Facing Machine

### Technical Specification

MODEL	MACHINING RANGE	MOUNT	SPEED RPM	POWER Hp	AIR FLOW cfm	OVERALL DIMENSION (mm)	FEED RATE (mm) 1mm pitch	WEIGHT kg
J250i	2" ~ 10" 50 ~ 250mm	Internal	42	0.9	42	460 x 480	0.06 ~ 0.24	15
J300e	0" ~ 12" 0 ~ 305mm	External	33	0.9	42	420 x 200	0.18 ~ 0.72	44
J500i	2" ~ 20" 50 ~ 508mm	Internal	42	0.9	42	460 x 310	0.06 ~ 0.24	15
J600e	0" ~ 24" 0 ~ 610mm	External	33	3.5	96	860 x 130	0.2 ~ 0.80	200
J900i	6" ~ 34" 150 ~ 864mm	Internal	33	1.55	48	780 x 420	0.1 ~ 0.81	40
J1200i	12" ~ 47" 300 ~ 1200mm	Internal	22	3.5	95	1600 x 430	0.1 ~ 0.81	100
J2000i	24" ~ 78" 600 ~ 2000mm	Internal	20	1.5 x 2	96	3070 x 900	0.15 ~ 0.81	200
J3200i	45" ~ 126" 1143 ~ 3200mm	Internal	7	3.5 x 2	96	3530 x 1435	0.15 ~ 0.81	900

Tool operates by air, and can also be hydraulic-driven



2-Axis

- Rigid - Extra heavy-duty bed providing precision milling within tight tolerances
- Powerful Axis Drive - Heavy-duty air feed motors
- Powerful and Rugged - Longitudinal power feed
- Versatile - Mill in nearly any positions
- Robust - Cast aluminium back stand
- X-Axis Travel up to 51" (1300mm)



3-Axis



## 2-Axis/3-Axis Milling Machine

### Technical Specification

MODEL SMR 1500		
Maximum Stroke	1300mm	51"
Maximum Cutter Diameter	250mm	10"
Maximum Spindle Down Feed	100mm	4"
Spindle (RPM)	Min: 50	Max: 640
Power (Pneumatic-Driven)	3.5 Hp	2.61 kW
Power (Hydraulic-Driven)	5.0 Hp	3.73 kW
Power - Pneumatic-Feed @ 90psi (6bar)	1.5 Hp	1.11 kW
Flow - Hydraulic-Feed @ 1000psi (70bar)	50 litre/min	13 gal/min
Air Flow Input Supply Required	98 cfm	2.42 m <sup>3</sup> /m
Hand Feed Rate	10 mm/rev	0.394"/rev
Auto Feed Rate (Std Motor Supply)	0 – 83 mm/min	0 – 3.25"/m
Weight	285 lb	130 kg

MODEL SMRY 1500		
Maximum Stroke X (Main Bed)	1300mm	51"
Maximum Stroke Y (Cross Bed)	305mm	12"
Maximum Cutter Diameter	250mm	10"
Maximum Spindle Down Feed	150mm	6"
Spindle (RPM)	Min: 50	Max: 640
Power (Pneumatic-Driven)	3.5 Hp	2.61 kW
Power (Hydraulic-Driven)	5.0 Hp	3.73 kW
Power - Pneumatic-Feed @ 90psi (6bar)	1.5 Hp	1.11 kW
Flow - Hydraulic-Feed @ 1000psi (70bar)	50 litre/min	13 gal/min
Air Flow Input Supply Required	98 cfm	2.42 m <sup>3</sup> /m
Hand Feed Rate	10 mm/rev	0.394"/rev
Auto Feed Rate (Std Motor Supply)	0 – 83 mm/min	0 – 3.25"/m
Weight	331 lb	151 kg

Tool operates by air or hydraulic



- **Quick and Easy Setup** - Modular components make setup quick and easy.
- **Powerful** - Produces high torque at the bar using specially-designed rotational drive.
- **Versatile** - Highly customizable to meet a variety of needs with available in electric, hydraulic, or pneumatic motor configurations.
- **Compact** - Extremely portable & compact for ease of use in tight & cramped work spaces.
- **Flexible & High Quality Design** - Through-bar design allows the rotational drive and feed unit to be mounted anywhere along the bar.



## Line Boring Machine

### Technical Specification

MODEL LB2250	in	mm
Boring Diameter	1½" to 24"	38 to 610mm
Boring Bar Ø (Standard)	2 ¼"	57.2mm
(Optional)	1 ¾"	44.5mm
(Optional)	1 ¼"	31.8mm
Boring Stroke	12", 24" or 36"	305,610 or 915mm
Boring Stroke (Maximum)	36"	915mm
Torque @ Bar (Hydraulic)	420 ft.lb	566 Nm
Feed Rate per Revolution	0" to 0.019"/rev	0 to 0.48mm/rev
Power (Hydraulic-motor)	3.0 Hp	2.2 kW
	Up to 148 free speed bar RPM	
Power (Pneumatic-motor)	3.0 Hp	2.2 kW
	Up to 120 free speed bar RPM	
Power (Electric-motor)	2.3 Hp	1.7 kW
	Up to 112 free speed bar RPM	
Rotational Drive Ratio	4-in-1 Gear Ratio Reduction	
Mounting Type	Single Arm, Double Arm or Universal	
Set-Up Cones	2 ¾" to 12"	70mm to 305mm
Weight (Typical)	444 lb	202 kg



Machine operates by Hydraulic, Pneumatic or Electric motor

- Designed for 1500bar (21,750psi) hydraulic bolt tensioning tools
- Highly efficient system built to handle toughest condition



**Air-Driven**



**Electric-Driven**



## Air/Electric-Driven Hydraulic Bolt Tensioner Pump

### Technical Specification

	Air-Driven BT Pump	Electric-Driven BT Pump
<b>Model</b>	<b>Petron A Pump-1</b>	<b>Petron E Pump-1</b>
Description	Air-Driven Bolt Tensioning Pump	Electric-Driven Bolt Tensioning Pump
Drive Specification	AZ-2-323 (Pump)	Single-Phase AC Motor
Input Requirement	6bar / 50cfm (Air-input)	220Vac, 1 phase, 4 pole, 2 HP
	0.375 inch (Hydraulic Piston Ø)	1.5 KW Power
	0.1105 inch <sup>2</sup> (Hydraulic Piston Area)	9.64 ~ 8.43 Amp Current
Output Capacity	Volume per stroke ~ 0.276 inch <sup>3</sup> (4.52 cc)	Speed ~ 1400 rpm
Max Flow rate	59 inch <sup>3</sup> /min	2.4 litre/min
Tank Capacity	10 litres (2.6 gallon)	10 litres (2.6 gallon)
Weight with oil	40 kg	40 kg
Ambient Operational Temperature	-20°C to +50°C	-20°C to +50°C
Sound Emission	<66 dB (A)	<66 dB (A)
Max Operating Pressure	21,750 psi (1500 bar)	21,750 psi (1500 bar)
Length	450 mm	410 mm
Width	450 mm	310 mm
Height	480 mm	620 mm
Interface Connections	9/16 - 18UNF (Hydraulic Port Size)	5 m (Remote control cable length)
	1/2" NPT (Air Supply Inlet Size)	5 m (Electric supply cable length)
Oil level/temperature gauge at tank	Yes	Yes
Pressure Gauge (Dia, 150 mm)	Precision +/- 1% FS accuracy (25,000 psi)	Precision +/- 1% FS accuracy (25,000 psi)
Pressure Gauge scale	Double (psi / bar)	Double (psi / bar)
Full Frame	Tubular Stainless Steel for max protection and easy transport	Tubular steel for max protection and easy transport



10 hp (Standard)



15 hp (Optional)



## Hydraulic Power Pack

### Technical Specification

#### 10Hp Hydraulic Power Pack

Model	10HP-PP
Description	10hp Hydraulic Power Pack
Motor Requirement	440V, 3 phase, 4 pole, 10 Hp
Motor Specification	3-Phase Induction Motor
Power (Watts)	7.5 kW
Current Requirement	14.1 - 15.5 Amp
Hydraulic Pressures Output	70 bar / 1000psi
Speed	1500 rpm
Max Flow rate	60 litres / min
Tank Capacity	150 litres
Weight with oil	200 kg
Ambient Operational Temperature	-20°C to +50°C
Sound Emission	<66 dB (A)
Length	85 cm
Width	85 cm
Height	147 cm
Remote Control cable length	10m
Electric supply cable length	10m
Oil level/temperature gauge at tank	Yes
Glycerin Gauge (Diameter 63 mm)	Yes
Pressure Gauge	Yes
Full Frame	Yes

- Designed to power heavy-duty hydraulic machines and tools
- 10 or 15 hp
- 1000 psi Hydraulic Pressure output





- Ideal for torque wrench applications
- Compact and lightweight
- Enhanced power control technologies
- Precision tuned components for dependability and modular assemblies
- Superior performance levels and reliability to get job done

## Air/Electric-Driven Hydraulic Torque Wrench Pump

- Air powered for use in hazardous environments.
- The 8 port configuration allows operation of up to 4 tools simultaneously.
- Rated for continuous duty.
- Auto dump relieves all pressure from hoses to added safety.
- Fast two speed design with higher crossover.

### Technical Specification

Model Number	Reservoir Capacity		Valve		Manifold	Motor Specifications	Flow Rate	Weight	
	Gal.	Litre	Control	Type				Kg	Ibs.
PAT4542	2.0	7.6	Solenoid	4 Way/ 3 pos.	8 Ports for 4 Tool Use	1.5 kw Rotary Air	700 inch <sup>3</sup> /min @ 0 psi 400 inch <sup>3</sup> /min @ 1,100 psi 50 inch <sup>3</sup> /min @ 10,000 psi	22.7	50
G5773T	2.5	9.5				4 HP @ Rotary Air	700 inch <sup>3</sup> /min @ 0 psi 575 inch <sup>3</sup> /min @ 1,100 psi 55 inch <sup>3</sup> /min @ 10,000 psi	38.6	85
G5273T	2.5	9.5				1.5 HP @ 230 VAC Single Phase	11.5 litres / min @ 0 bar 9.4 litres / min @ 75 bar 0.9 litres / min @ 700 bar	38.6	85
G3271T	1.0	3.8				1.125HP @ 230 VAC Single Phase	10.7 litres / min @ 0 bar 9.1 litres / min @ 75 bar 0.75 litres / min @ 700 bar	25.9	57

Air-driven pump operates at 10,000psi (700bar) on 100psi / 50cfm air inlet supply

Electric-driven pump operates at 10,000psi (700bar) on 115Vac or 230Vac @ 20Amp



- The Reliable Hydraulic Cylinders and Jacks of all applications
- Up to 610mm stroke
- Up to 1,000 tons



## Hydraulic Cylinders & Products

### Technical Specification

Model Series	Capacity (Tons)	Stroke (mm)	Stroke (inch)	Cylinder Type	Plunger Type	Applications
R	5 – 100	16 – 362	$\frac{5}{8}$ – 14 $\frac{1}{4}$	Single-Acting	Solid	General purpose spring-return for fast retraction
RAS	30 – 150	51 – 254	2 – 10			Light-weight for easy carrying and positioning
RAL	50 – 150	51 – 254	2 – 10			Light-weight load holding locknut with spring-return
RAC	30 – 60	76 – 322	3 – 6	Double-Acting	Center Hole	Light-weight Center-Hole - Spring-return
RACD	30 – 150	51 – 203	2 – 10		Light-weight Center-Hole	
RLS	10 – 100	25 – 51	1 – 2	Single-Acting	Solid	Low height - Spring-return
RFS	5 – 150	16 – 17	$\frac{5}{8}$ – $\frac{11}{16}$			Very low height - Spring-return
RP	2 – 5	127 – 140	5 – 5 $\frac{1}{2}$			Pull cylinder - Spring-return
RLR	30 – 1000	51 – 305	2 – 12			Jacking cylinders - Load-return
RLN	30 – 1000	51 – 305	2 – 12			Mechanical load holding/lock nut - Load-return
RC	12 – 100	8 – 156	$\frac{3}{8}$ – 6 $\frac{1}{8}$	Double-Acting	Center Hole	Hard-kor cylinders used for pulling applications, pre-stressing and post-tensioning
RCD	30 – 660	25 – 254	1 – 10		Solid	Double-acting controlled retraction/fast cycling
RDA	10 – 1000	51 – 610	2 – 24			



## Hydraulic Pumps & Accessories





The **RIGHT** and **RELIABLE** Tool for Flange Spreading and Alignment. Designed for Simple, Safe and Cost-Effective tool.

## Flange Spreader & Alignment Tool



### Flange Spreader (SW Series)

SW 9 TM	9 T	Mechanical
SW 15 TE	15.5 T	Hydraulic
SW 14.5 TI	14.5 T	Integral Hydraulic



### Flange Rotational Alignment Tool (FA Series)

HT 125 KM	150kg	Hand Tool
FA 3 TM	3.3 T	Mechanical
FA 6 TE	6 T	Hydraulic



### Zero-Gap Flange Spreader (ZG Series)

ZG 4 TM	3.7 T	Mechanical	Collets M16, M20
ZG 6 TM	6 T	Mechanical	Collets M24, M27
ZG 11 TM	11 T	Mechanical	Collets M30, M33, M36
ZG 13 TE	13 T	Hydraulic	Collets M39, M42, M45
ZG 18 TE	18 T	Hydraulic	Collets M60, M64, M70



### Precision Lifting Wedge & Hand Pump

VLW 18 TE	18 T	Hydraulic Vertical Straight-Lift
HP350S	1 Port	Hydraulic Sealed Hand Pump c/w Gauge & Adaptor
HP350D	2 Port	Hydraulic Sealed Hand Pump c/w Gauge & Adaptor





- 5 - 6 bar operating air pressure, Low CFM
- Compact, Quiet and Reliable
- Low Vibration, Low Noise
- Safe around gas and flammable materials
- Fast cutting speed up to 10,000 strokes per minute
- Built-in lubrication system automatically lubricates motor
- Safety STOP button for emergency air supply disconnection



**Atex Approved** 

## Air-Driven Reciprocating Saws



### PL905

- Handy, for high volume continuous usage up to 10,000 strokes/minute
- Cut pipe, metals & fibreglass, repair wooden pallets, etc..(up to 20mm)
- Uses any 12mm (1/2") width Bi-metal blades



### CL50 & CL75

- Rugged air saw for versatile and demanding applications
- Cut metal, timbers, glass fibre (Up to 15mm)
- CL50 uses 12mm (1/2") blade, CL75 uses 19mm (3/4") blades
- CL50 easily converted to become CL75 by changing nosepiece



### JSZ

- Best use in Oil, Petrochemical and Pipe Fabrication industries
- Cut steel sections and pipe up to 300mm (12")
- Come complete with pipe & profile clamp, and blade guide
- Dual-speed saw using 25mm (1") width Bi-Metal blades



### JP901

- Useful for repair and construction environments
- Cut fiberglass, light-gauge metal & fiberboard (thin material < 5mm)
- Uses 12mm (1/2") width Bi-metal blades

## Saw Blades & Oils

Blade Model	Width	Length (mm)	TPI	Saw Type
MJ300, MJ450	25mm (1") Width	305, 457	6, 8, 10, 14	JSZ
MB150, MB200, MB250, MB300	9mm (3/4") Width	152, 203, 254, 305	8, 10, 18, 24	CL75
HP300/18, HP300/24	12mm (1/2") Width	305	18, 24	CL50, PL905, JP901
MC220/24	12mm (1/2") Width	220	24	CL50, PL905, JP901
MYN150/18, MYT150/18	12mm (1/2") Notched	152	18	CL50, PL905, JP901



<b>GREEN Lubricant</b>	5 litre	25 litre	For tool's lubrication
<b>M.S. Cleaner</b>	1 litre	5 litre	For tool's cleaning
	50ml plastic dropper bottle (Pack of 10)		



✓ **EC Declaration of Conformity (COC)**

✓ **Letter of Origin**

✓ **MSDS Certificate**



## Consumables

### Hydraulic Tensioner Components



Topside BT Seal Kit



1/4" Dowty Seal



Subsea BT Seal Kit



1/4" BSPP Male Couplers  
(c/w female Thread)



1/4" BSPP Nipples  
(c/w one end CMS Cone)



Hydraulic Interconnecting Hose  
21,750psi 1m  
1/4" BSPP Couplers



Hydraulic Feed Hose  
21,750psi 3m, 5m  
1/4" BSPP Couplers

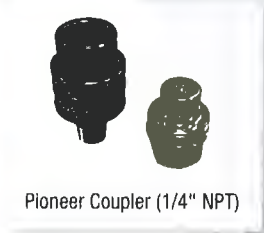


Hydraulic Down Reel Hose  
21,750psi, 100m

### Hydraulic Torque Wrench Components



TW, TU, TX Seal Kit



Pioneer Coupler (1/4" NPT)



Swivel Fittings (Male/Female)



Hydraulic Twin-line  
15ft 10,000 psi  
(c/w pioneer couplers)



### In-Situ Machining Components



Parting-Off Tool Cutter  
(High-Speed Steel)



Standard Bevel 37°  
Compound Bevel 37°/10°  
J-Prep Bevel (High-Speed Steel)



Driver Sprocket (size module 2)



Air-Motor (3.5Hp / 1.5Hp)



Hydraulic Motor (9Hp)



Motor Mounting Bracket



Carbide Insert Holder  
(Left/Right/Neutral)



HSS / Tungsten  
Carbide Inserts



2m Air-Supply Hose  
(both ends 1/2"  
Chicago couplings)



## ADOPTION OF STANDARDS

### ✓ **ASME / ANSI Standards**

- The American Society of Mechanical Engineers



The American Society of  
Mechanical Engineers



American Society for  
Testing and Materials

### ✓ **ASTM Standard**

- American Society for Testing and Materials

### ✓ **API Standards** - American Petroleum Institute



✓ **Energy Institute** - Guidelines for the management of the integrity of  
bolted joints for pressurized system.



International  
Organization for  
Standardization

### ✓ **ISO 9001:2008** ~ Quality Management System

- International Organization for Standardization



### ✓ **The Health and Safety Executive**

- The Risk Assessment Guideline

### ✓ **OHSAS 18001**

- Occupational Health and Safety management system



## Conversion Tables and Formulas

<b>PRESSURE</b>			
From	To	Multiply by	Example
PSI	bar (Bar)	0.069	10 PSI x 0.069 = 0.69 bar
bar	PSI	14.504	10 bar x 14.504 = 145 PSI
bar	Kg/cm <sup>2</sup>	1.020	10 bar x 1.020 = 10.2 Kg/cm <sup>2</sup>
kPa(Kilopascal)	PSI	0.145	10 kPa x 0.145 = 1.45 PSI
MPa(Megapascal)	Bar	10	10 MPa x 10 = 100 bar
MPa	Kg/cm <sup>2</sup>	10.197	10 MPa x 10.197 = 101.97 Kg/cm <sup>2</sup>
MPa	PSI	145.0	10 MPa x 145.0 = 1450 PSI
Kg/cm <sup>2</sup>	PSI	14.223	10 Kg/cm <sup>2</sup> x 14.223 = 142.2 PSI
<b>FORCE</b>			
From	To	Multiply by	Example
N (Newton)	Kgf	0.1020	10 N x 0.1020 = 1.02 Kgf
N	lbf	0.2248	10 N x 0.2248 = 2.25 lbf
Kgf	lbf	2.2046	10 Kgf x 2.2046 = 22.046 lbf
Tonf (metric)	Kgf	1000	10 Tonf x 1000 = 10000 Kgf
<b>TORQUE</b>			
From	To	Multiply by	Example
Nm (Newton metre)	Kgf.m	0.1020	10 Nm x 0.1020 = 1.02 Kgf
Nm	lbf.ft	0.7376	10 Nm x 0.7376 = 7.38 lbf.ft
Tonf.m (metric)	lbf.ft	7230	10 Tonf.m x 7230 = 72300 lbf.ft
<b>MASS</b>			
From	To	Multiply by	Example
lb (pound)	Kg	0.4536	10 lb x 0.4536 = 4.536 Kg
Kg (kilogram)	lb	2.205	10 kg x 2.205 = 22.05 lb
Ton(metric)	Kg	1000	10 Ton x 1000 = 10000 Kg
Ton	lb	2204.6	10 Ton x 2204.6 = 22400 lb
Ton	kN	9.964	10 Ton x 9.964 = 90.64kN
<b>FLOW</b>			
From	To	Multiply by	Example
cm <sup>3</sup> /min	litre/min	0.001	100 cm <sup>3</sup> /min x 0.001 = 0.1 litre/min
cm <sup>3</sup> /min	gallon/min (US)	0.000264	1000 cm <sup>3</sup> /min x 0.000264 = 0.2564 gallon/min
cm <sup>3</sup> /min	in <sup>3</sup> /min	0.061	100 cm <sup>3</sup> /min x 0.061 = 6.1 in <sup>3</sup> /min
litre/second	litre/min	60	10 litre/sec x 60 = 600 litre/min
litre/min	gallon/min	0.26417	10 litre/min x 0.26417 = 2.6417 gallon/min
litre/min	GPM (Imperial)	0.22	10 litre/min x 0.22 = 2.2 GPM (Imperial)
ft <sup>3</sup> /min (CFM)	m <sup>3</sup> /min	1.699	10 ft <sup>3</sup> /min (CFM) x 1.699 = 16.99 m <sup>3</sup> /min
<b>VOLUME</b>			
From	To	Multiply by	Example
m <sup>3</sup>	litre	1000	10 m <sup>3</sup> x 1000 = 10 000 litre
m <sup>3</sup>	ft <sup>3</sup>	35.3	10 m <sup>3</sup> x 35.3 = 353 ft <sup>3</sup>
in <sup>3</sup>	cm <sup>3</sup>	16.387	10 in <sup>3</sup> x 16.387 = 163.87 cm <sup>3</sup>
litre	ft <sup>3</sup>	0.0353	100 litre x 0.0353 = 3.53 ft <sup>3</sup>
litre	gallon (US)	0.264	100 litre x 0.264 = 26.4 gallon (US)
litre	gallon (Imperial)	0.220	100 litre x 0.220 = 22.0 gallon (Imperial)
<b>LENGTH</b>			
From	To	Multiply by	Example
mm (millimetre)	inch	0.039	10 mm x 0.039 = 0.39 inch
m (metre)	ft	3.28083	10 m x 3.28083 = 32.8083 ft
ft (feet)	m	0.3048	10 feet x 0.3048 = 3.048 m
inch	mm	25.4	10 inch x 25.4 = 254 mm
<b>POWER</b>			
From	To	Multiply by	Example
Hp (horsepower)	kW (kiloWatt)	0.735	10 hp x 0.735 = 7.35 kW



## PRESSURE / TORQUE CONVERSION CHART

### BOLTITE TU SERIES

Pump Pressure		TU-2	TU-3	TU-7	TU-11	TU-27	TU-60
(psi)	(bar)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)
1,000	68	127	330	740	1,090	2,720	5,943
1,200	82	152	395	888	1,308	3,264	7,132
1,400	95	178	460	1,036	1,526	3,808	8,320
1,600	109	203	525	1,185	1,745	4,352	9,509
1,800	122	229	590	1,332	1,962	4,896	10,697
2,000	136	255	655	1,470	2,210	5,440	11,662
2,200	150	279	722	1,617	2,430	5,984	12,828
2,400	163	305	789	1,765	2,652	6,528	13,994
2,600	177	330	856	1,911	2,873	7,072	15,161
2,800	190	356	923	2,058	3,095	7,616	16,327
3,000	204	380	990	2,210	3,340	8,160	17,387
3,200	218	406	1,058	2,358	3,560	8,704	18,546
3,400	231	432	1,126	2,505	3,785	9,248	19,705
3,600	245	457	1,194	2,652	4,005	9,792	20,864
3,800	258	483	1,262	2,800	4,230	10,336	22,024
4,000	272	510	1,330	2,960	4,400	10,880	23,286
4,200	286	533	1,397	3,108	4,620	11,424	24,450
4,400	299	559	1,464	3,256	4,840	11,968	25,615
4,600	313	584	1,531	3,405	5,060	12,512	26,779
4,800	326	609	1,598	3,552	5,280	13,056	27,943
5,000	340	635	1,665	3,716	5,500	13,600	29,322
5,200	354	660	1,732	3,865	5,720	14,144	30,495
5,400	367	686	1,799	4,013	5,940	14,688	31,668
5,600	381	711	1,856	4,162	6,160	15,232	32,841
5,800	394	737	1,933	4,311	6,380	15,776	34,014
6,000	408	760	2,000	4,440	6,620	16,320	34,696
6,200	422	787	2,065	4,588	6,838	16,864	36,135
6,400	435	813	2,130	4,736	7,060	17,408	37,300
6,600	449	838	2,195	4,884	7,280	17,952	38,466
6,800	462	864	2,260	5,032	7,500	18,496	39,632
7,000	476	890	2,325	5,180	7,710	19,040	40,914
7,200	490	914	2,398	5,328	7,927	19,584	42,083
7,400	503	940	2,461	5,476	8,147	20,128	43,252
7,600	517	965	2,529	5,625	8,368	20,672	44,421
7,800	530	991	2,597	5,772	8,588	21,216	45,590
8,000	544	1,015	2,665	5,920	8,820	21,760	46,859
8,200	558	1,041	2,731	6,068	9,045	22,304	48,030
8,400	571	1,067	2,797	6,216	9,265	22,848	49,202
8,600	585	1,092	2,863	6,365	9,485	23,392	50,373
8,800	598	1,118	2,929	6,512	9,705	23,936	51,545
9,000	612	1,145	2,995	6,660	9,930	24,480	52,799
9,200	626	1,168	3,062	6,808	10,148	25,024	53,972
9,400	639	1,194	3,129	6,956	10,368	25,568	55,146
9,600	653	1,219	3,196	7,105	10,588	26,112	56,319
9,800	666	1,245	3,263	7,252	10,810	26,656	57,492
10,000	680	1,270	3,330	7,400	11,010	27,200	59,401

### BOLTITE TX SERIES

Pump Pressure		TX-2	TX-4	TX-8	TX-16	TX-32
(psi)	(bar)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)	Torque (lbf.ft)
1,000	68	192	395	830	1,560	3,700
1,200	82	230	475	1,001	1,870	4,440
1,400	95	269	555	1,173	2,180	5,180
1,600	109	307	630	1,344	2,495	5,920
1,800	122	346	710	1,516	2,805	6,660
2,000	136	385	790	1,688	3,120	7,400
2,200	150	422	870	1,865	3,430	8,140
2,400	163	461	950	2,042	3,740	8,880
2,600	177	500	1,025	2,219	4,050	9,620
2,800	190	537	1,105	2,396	4,365	10,360
3,000	204	578	1,185	2,574	4,675	11,100
3,200	218	614	1,265	2,775	4,990	11,840
3,400	231	653	1,345	2,976	5,300	12,580
3,600	245	691	1,420	3,177	5,610	13,320
3,800	258	730	1,500	3,378	5,925	14,060
4,000	272	771	1,580	3,580	6,235	14,800
4,200	286	806	1,660	3,735	6,550	15,540
4,400	299	845	1,740	3,891	6,860	16,280
4,600	313	883	1,815	4,046	7,170	17,020
4,800	326	922	1,895	4,202	7,485	17,760
5,000	340	964	1,975	4,358	7,795	18,500
5,200	354	998	2,055	4,538	8,105	19,240
5,400	367	1,037	2,135	4,718	8,420	19,980
5,600	381	1,075	2,210	4,898	8,730	20,720
5,800	394	1,114	2,290	5,078	9,045	21,460
6,000	408	1,156	2,370	5,258	9,355	22,200
6,200	422	1,190	2,450	5,410	9,665	22,940
6,400	435	1,229	2,530	5,562	9,975	23,680
6,600	449	1,267	2,605	5,715	10,290	24,420
6,800	462	1,305	2,685	5,867	10,600	25,160
7,000	476	1,349	2,765	6,020	10,915	25,900
7,200	490	1,382	2,845	6,186	11,225	26,640
7,400	503	1,421	2,925	6,352	11,535	27,380
7,600	517	1,460	3,000	6,519	11,850	28,120
7,800	530	1,497	3,080	6,685	12,160	28,860
8,000	544	1,542	3,160	6,852	12,475	29,600
8,200	558	1,574	3,240	7,023	12,785	30,340
8,400	571	1,613	3,320	7,195	13,095	31,080
8,600	585	1,651	3,395	7,366	13,405	31,820
8,800	598	1,690	3,475	7,538	13,720	32,560
9,000	612	1,735	3,555	7,710	14,030	33,300
9,200	626	1,766	3,635	7,894	14,345	34,040
9,400	639	1,805	3,710	8,078	14,655	34,780
9,600	653	1,843	3,790	8,262	14,965	35,520
9,800	666	1,882	3,870	8,446	15,280	36,260
10,000	680	1,928	3,950	8,630	15,595	37,000

To convert psi to bar, divide by 14.5  
 To convert lbf.ft to Nm, multiply by 1.356

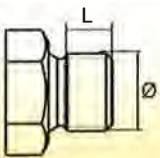
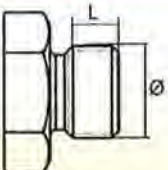
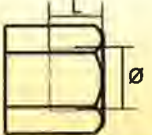
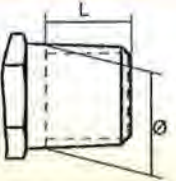


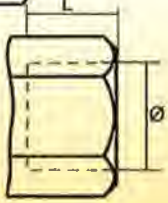
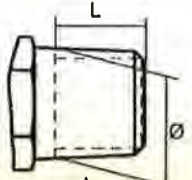

# Torque Data For use with Alloy Steel Stud Bolts

**Load in Pounds on A193.B7 Stud Bolts when Torque Loads are applied**

Nominal Diameter of Bolt (Inches)	Number of Threads (Per Inch)	Diameter at Root of Threads (Inches)	Area at Root of Thread Sq. Inch	Heavy Nut A/F (Inches)	Stress					
					30,000 psi		45,000 psi		60,000 psi	
					Torque lbf. ft	Load lbf	Torque lbf. ft	Load lbf	Torque lbf. ft	Load lbf
1/4	20	0.185	0.027	1/2	4	810	6	1215	8	1620
5/16	18	0.240	0.045	9/16	8	1350	12	2025	16	2700
3/8	16	0.294	0.068	1 1/16	12	2040	18	3060	24	4080
7/16	14	0.345	0.093	3/4	20	2790	30	4185	40	5580
1/2	13	0.400	0.126	7/8	30	3780	45	5670	60	7560
9/16	12	0.454	0.162	15/16	45	4860	68	7290	90	9720
5/8	11	0.507	0.202	1 1/16	60	6060	90	9090	120	12120
3/4	10	0.620	0.302	1 1/4	100	9060	150	13590	200	18120
7/8	9	0.731	0.419	1 7/16	160	12570	240	18855	320	25140
1	8	0.838	0.551	1 5/8	245	16530	368	24795	490	33060
1 1/8	8	0.963	0.728	1 13/16	355	21840	533	32760	710	43680
1 1/4	8	1.088	0.929	2	500	27870	750	41805	1000	55740
1 3/8	8	1.213	1.155	2 3/16	680	34650	1020	51975	1360	69300
1 1/2	8	1.338	1.405	2 3/8	800	42150	1200	63225	1600	84300
1 5/8	8	1.463	1.680	2 9/16	1100	50400	1650	75600	2200	100800
1 3/4	8	1.588	1.980	2 3/4	1500	59400	2250	89100	3000	118800
1 7/8	8	1.713	2.304	2 15/16	2000	69120	3000	103680	4000	138240
2	8	1.838	2.652	3 1/8	2200	79560	3300	119340	4400	159120
2 1/4	8	2.088	3.423	3 1/2	3180	102690	4770	154035	6360	205380
2 1/2	8	2.338	4.292	3 7/8	4400	128760	6600	193140	8800	257520
2 3/4	8	2.588	5.259	4 1/4	5920	157770	8880	236655	11840	315540
3	8	2.838	6.324	4 5/8	7720	189720	11580	284580	15440	379440
3 1/4	8	3.088	7.490	5	10000	224700	15000	337050	20000	449400
3 1/2	8	3.338	8.750	5 3/8	12500	262500	18750	393750	25000	525000
3 3/4	8	3.589	10.11	5 3/4	15400	303300	23150	454950	30900	606600

Above table is based on Heavy HEX Nut specification.  
 For Heavy Hex Nut specification, refer to ASMEI ANSI B18.2.2-1987.  
 Generally, standard FLEXITALLIC spiral wound gaskets will require bolting to be stressed to 30,000 psi for proper gasket seating.  
*Note: Torque values are based on well lubricated alloy steel bolting.*

## Connections and Thread Standards

		Connection	Ø mm	L mm
<b>UNF thread connection</b> Unified threads according to ISO 68, ANSI B1.1		Male thread		
		9/16" -18 UNF 3/4" -16 UNF	14.15 18.89	9.28 13.08
<b>Metric thread connection</b> Metric threads according to ISO 724		Male thread		
		M16x1.5 M22x1.5	15.85 21.85	8.81 15.7
		Female thread		
M16x1.5	14.5	9.0		
<b>BSPT thread connection</b> Conical pipe thread according to ISO 7/1		Male thread		
		R 1/4" R 3/8"	13.6 17.2	11.0 11.4
		Female thread		
		Rc 1/4" Rc 3/8"	11.0 14.5	11.0 11.4
<b>BSP thread connection</b> Cylindrical pipe thread according to ISO 228/1		Male thread		
		G 1/4" G 3/8"	13.0 16.5	12.0 12.0
		Female thread		
		G 1/8" G 1/4" G 3/8"	8.75 11.8 15.25	7.4 11.0 12.0
<b>NPT thread connection</b> National Pipe Thread American standard according to ANSI/ASME B1.20.1		Male thread		
		1/8" NPT 1/4" NPT 3/8" NPT	10.5 14.0 17.5	6.7 10.2 10.4
		Female thread		
		1/8" NPT 1/4" NPT 3/8" NPT	8.5 11.0 14.5	6.9 10.0 10.3

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Hydraulic Bolt Tensioner



Hydraulic Sub-Sea Bolt Tensioner



Hydraulic Torque Wrench (Square Drive)



Hydraulic Torque Wrench (Low Profile)



Clamshell Pipe-Cutter



Flange Facer



Milling Machine



Line Boring Machine



Hydraulic Bolt Tensioning Pump



Hydraulic Torque Wrench Pump



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