



bolting & thermal  
**PRODUCTS**



built

for service

## Field Tested Durability

Everyday Bolttech Mannings' equipment is used by our internal field services team on some of the world's toughest applications within refinery turnarounds, power station outages, steel mills and pipeline compressor stations to name a few. Exposed to the elements, challenged by tight space constraints, strict accuracy and demanding requirements, our tooling performs 24 hours per day, 365 days a year.

## Engineered Solutions

A full staff of engineers with over 70 combined years of engineering experience oversees the design and development of our entire tooling fleet. Equipped with state-of-the-art CAD 3D modeling software, Finite Element Analysis Software and extensive field research we have the tools and knowledge to design solutions for any challenge.

## In-house Manufacturing

Bolttech Mannings operates a state-of-the-art manufacturing facility outside of Pittsburgh, Pennsylvania. With over 20 CNC Automated Machine Centers, Wire EDM, and plating capabilities along with a full assembly work center, we are well equipped to respond to your tooling needs. Schedule a visit today!

## Certified Quality

Our Quality Management Systems, which include ISO 9001 certification, drive our production team to provide exceptional products. With rigorous tolerance standards we utilize best-in-class inspection systems such as FARO™ technology to inspect our products. No tool exits our facility without cycle testing and calibration as a standard process. Rest assure that your tool purchases are field ready upon arrival. We back that up with our 12-month warranty on parts & labor.

What was born out of necessity for durable and safe equipment has grown into a full portfolio of industrial tooling products designed by engineers and end-users under the strictest quality requirements in state-of-the-art manufacturing facilities. Bolttech Mannings' tools – Built for Service.

# our history



**1979**

Bolttech was founded near Pittsburgh, PA pioneering industrial bolting services



**1991**

Bolttech becomes OEM of hydraulic bolting tools



**2000**

Bolttech begins expansion across North America



**2009**

Bolttech Mannings is acquired by Grey Mt. Partners



**2013**

Bolttech Mannings acquires Red Flame Industries

**1989**

Mannings USA was founded near Newark, NJ revolutionizing induction bolt heating



**1995**

Mannings USA develops technology for generator ring removal and heat treating of turbine rotors



**2008**

Bolttech acquires Mannings USA to become Bolttech Mannings Inc.



**2012**

Bolttech Mannings acquires Bone Frontier Co.

*Bone Frontier Induction*

**2014**

Bolttech Mannings acquires AM Inspection

*AM INSPECTION LTD.*  
YOUR ASSET. OUR TESTING SPECIALTY.

Founded near Pittsburgh, PA in 1979, Bolttech Mannings helped pioneer the industrial bolting services industry. Serving customers in the oil and gas refining, chemical processing, power and pipeline industries, Bolttech Mannings grew by earning a reputation for solving problems with innovative solutions. By 1991, unable to find tools capable of meeting the durability and safety requirements that our own technicians needed, we started to manufacture hydraulic

torque and tensioning systems to be used in our service fleet. Customers recognizing the superior quality of our tools demanded we make them available to them. Thirty-five years and thousands of service and research hours later we have grown into a fully integrated service and products company with state-of-the-art manufacturing facilities, a full-time staff of engineers and a culture with a passion for solving problems.

## bolting



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BOLTTECHMANNINGS.COM  
REDFLAMEINDUSTRIES.COM



# bolting



## Cyclone Magnum Pneumatic Torque Wrench

The future of pneumatic torquing is here. The Cyclone Magnum features an optional digital torque readout, purpose built motor, industry-leading gear durability and numerous ergonomic features. The Cyclone Magnum is the new leader in torque accuracy (+/-5%), durability and comfort.

### High Precision Air Motor

Performance tested on a dynamometer to verify optimum speed, power and torque

### Robust Gear Box Design

To minimize gear tooth stress and maximize durability

### Removable Drive — Hex Inserts

Accessories available as an added option

### Reaction Bar

Custom options available upon request

### Toggle Trigger Feature

For quick forward/reverse direction control

### Thru-Handle Exhaust

To safely direct exhaust away from user

### Digital Display Screen

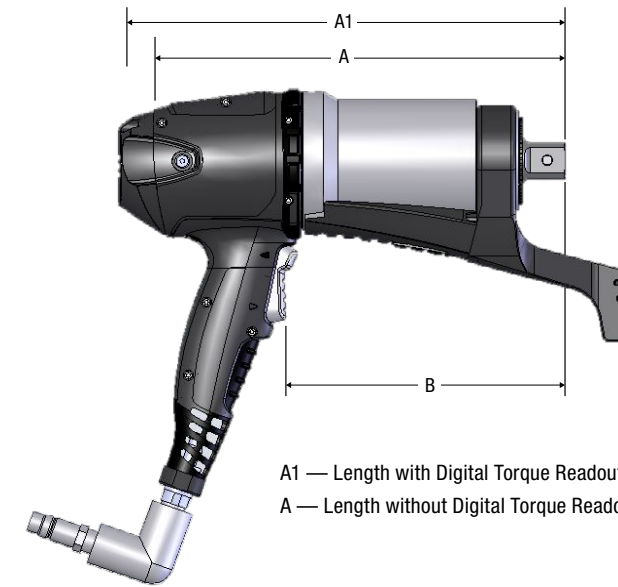
Available as an added option for quick torque and pressure readings



### Multi-Axis Hose Swivel

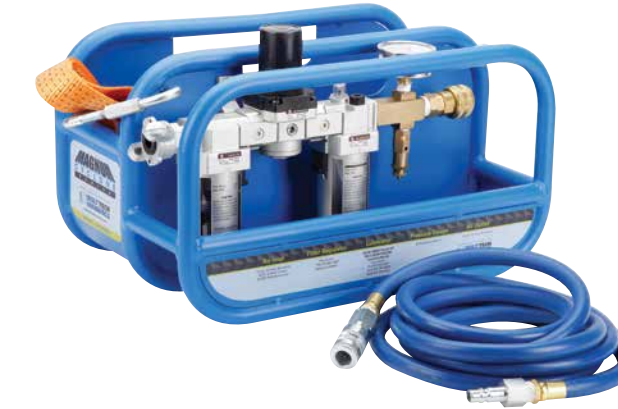
For added ease of use and to prevent hose kinking

## Cyclone Magnum Pneumatic Torque Wrench



A1 — Length with Digital Torque Readout  
A — Length without Digital Torque Readout  
B — Length of handle

Start torquing efficiently today!  
Reduce your project downtime!



US PATENT NO. D638,682S  
CANADIAN PATENT NO. 139501  
EUROPEAN REGISTERED DESIGN NO. 001834300-0001  
REGISTERED DESIGN NO. 001834300-0002  
CHINA AND TAIWAN PATENT PENDING

## Specifications

Model	Square Drive Size (in)	Torque Range		Dimension A1		Dimension A		Dimension B		Ring Diameter		Weight	
		(ft-lbs)	(Nm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
AT400	3/4	44-400	60-540	9.85	250.3	9.7	247.2	5.4	136.3	2.25	57.2	10.2	4.6
AT800	3/4	88-800	120-1100	9.85	250.1	9.7	247.1	5.1	129.8	2.97	75.3	11.9	5.4
AT1800	1	200-1800	275-2450	12.12	307.9	11.7	297.5	7.5	191.3	3.42	86.9	17.7	8.0
AT3000	1	333-3000	450-4070	13.00	330.0	12.8	326.9	8.6	220.2	3.80	96.5	22.8	10.3

## Removable Drives for Low-Cost Maintenance

Hex Size	AT400	AT800	AT1800	AT3000
5/8"	AT400-HX1	AT800-HX1		
3/4"	AT400-HX2	AT800-HX2	AT1800-HX2	AT3000-HX2
7/8"			AT1800-HX3	AT3000-HX3
1"		AT1800-HX4	AT3000-HX4	
1-1/4"				AT3000-HX5
14 mm	AT400-HX7	AT800-HX7		
17 mm	AT400-HX8	AT800-HX8		
19 mm	AT400-HX9	AT800-HX9	AT1800-HX9	AT3000-HX9
22 mm			AT1800-HX10	AT3000-HX10

**Note:** Use of hex drives may require special reaction bars.

## LW Series Lightweight Aluminum Square Drive Hydraulic Wrench

The LW square drive hydraulic wrench is the most efficient and heavily used tool in any turnaround trailer. Used for disassembly and reassembly, the LW offers unparalleled performance and durability for getting the job completed on time and with an accurate torque control of +/-5%.

### Trigger Style Reaction Bar with Spline Adjustment

Proper reaction point setting increases torque accuracy. Quickly adjust the reaction bar to the precise reaction point

### High-Strength Steel Reaction Surface

Increases tool durability, and ensures a rigid reaction surface

### Compact/Lightweight

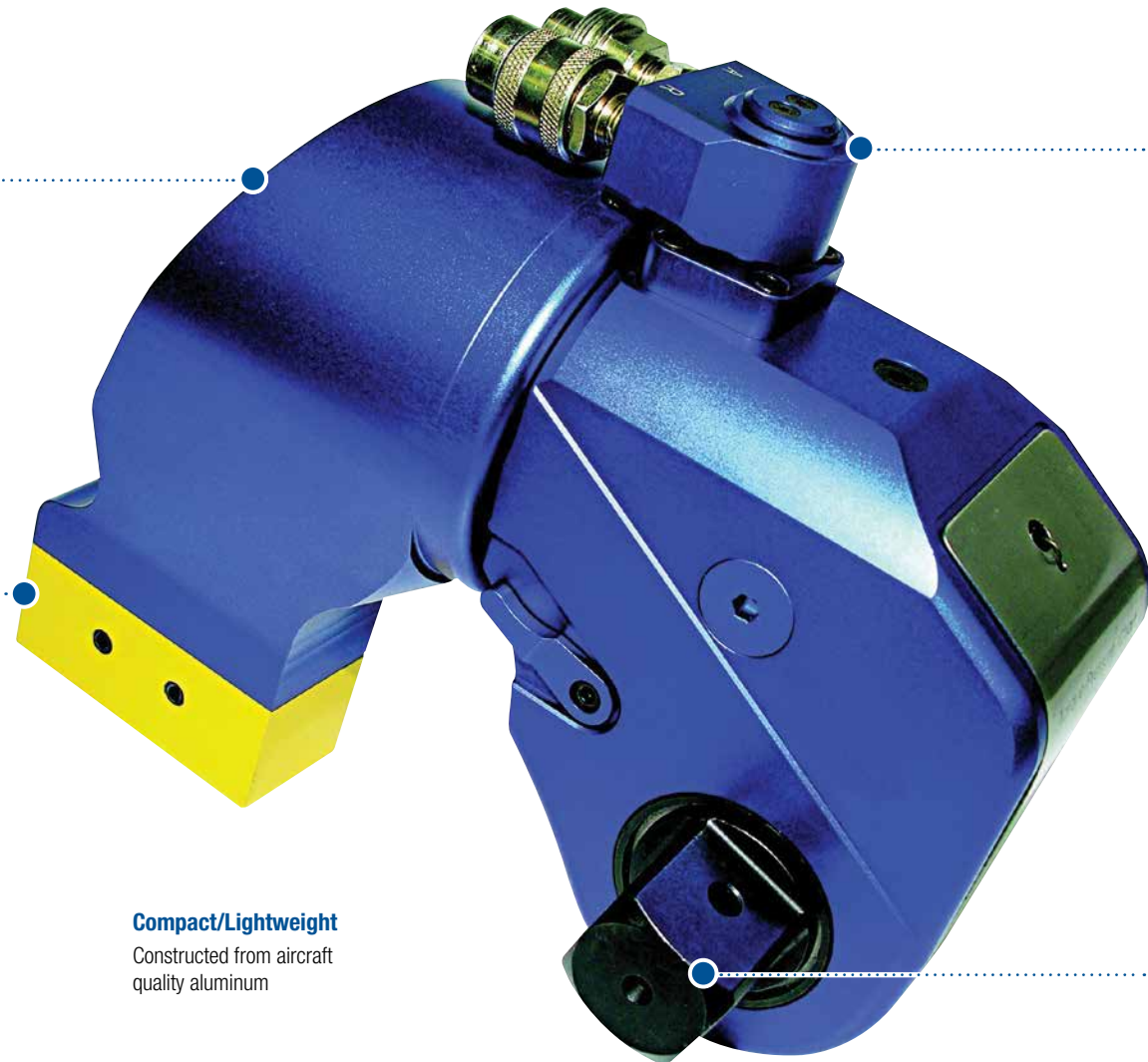
Constructed from aircraft quality aluminum

### 360-Degree Swivel

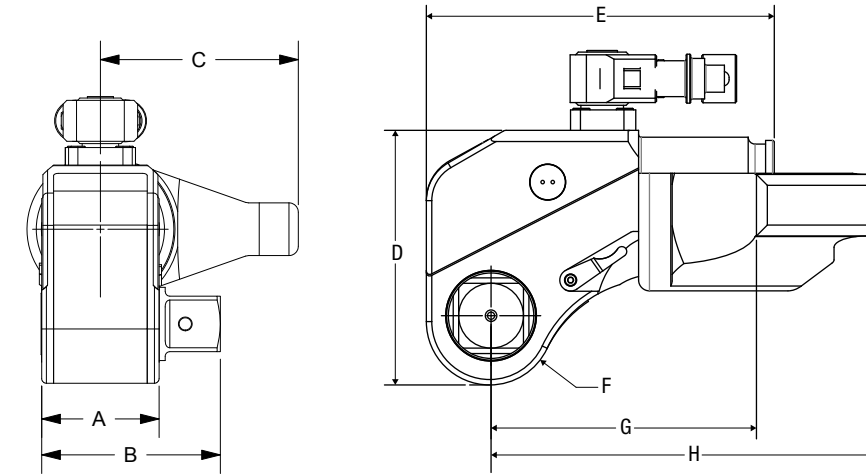
Easily adjust twin lines to avoid work interference

### Quick Release Drives

Efficiently change from assembly to disassembly using the quick release design. Hex drives are also available



## LW Series Lightweight Aluminum Square Drive Hydraulic Wrench



**DURABILITY...**  
Bolttech Mannings original square drive has been in service since 1991.

## Specifications

Maximum Operating Pressure 10,000 psi (700 bar)																					
Item Number	Drive Size (in)	Max Torque		Dimension A		Dimension B		Dimension C		Dimension D		Dimension E		Dimension F		Dimension G		Dimension H		Weight with Reaction Bar	
		(ft-lbs)	(Nm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
LW1	3/4	1282	1738.161	1.99	50.5	2.86	72.6	3.63	92.2	3.81	96.8	5.74	145.8	1.03	26.2	3.37	85.6	6.89	175.0	5.5	2.5
LW3	1	3250	4406.415	2.70	68.6	3.77	95.8	4.90	124.5	5.04	128.0	7.07	179.6	1.35	34.3	4.48	114.0	9.09	230.9	11	5.0
LW5	1-1/2	5552	7527.513	3.18	80.8	4.88	124.0	5.56	141.2	5.92	150.4	8.36	212.3	1.55	39.4	5.44	138.2	10.74	272.8	17	7.8
LW8	1-1/2	7500	10168.65	3.57	90.7	5.32	135.1	6.55	166.4	6.63	168.4	8.81	223.8	1.87	47.5	6.07	154.2	11.63	295.4	24	10.9
LW10	1-1/2	11000	14914.02	3.97	100.8	5.64	143.3	7.07	179.6	7.23	183.6	9.74	247.4	2.02	51.3	6.11	155.2	12.60	320.0	33	15.0
LW20	2-1/2	19050	25828.371	4.76	120.9	7.27	184.7	8.46	214.9	8.73	221.7	12.21	310.1	2.34	59.4	7.38	187.5	15.22	386.6	58	26.3
LW25	2-1/2	24500	33217.59	5.44	138.2	7.94	201.7	9.05	229.9	9.81	249.2	12.82	325.6	2.62	66.5	7.90	200.7	15.92	404.4	77	34.9
LW35	2-1/2	34400	46640.208	6.07	154.2	8.58	217.9	9.67	245.6	11.2	284.4	14.79	375.7	3.06	77.7	9.57	243.1	18.48	469.4	110	49.9

## TL Series Low Clearance / Direct Fit Hydraulic Wrench

Designed to fit where no other tool will go. The Torque Link low clearance torque wrench is the best solution for tightening in a constrained space environment. The TL eliminates side loading issues through in-line reaction and offers a controlled torque accuracy of +/-3%. The integrated cylinder eliminates the need to match cylinders to links and ensures that every TL in your fleet is operationally ready to perform.

### 360-Degree Swivel

Easily adjust twin lines to avoid work interference

### Lightweight

Highest torque/weight ratio in the industry

### Durability

Ultra high-strength materials for unsurpassed durability, reliability and performance

### Small Nose Radius

Ensures strong fit in the tightest of spots



### Integrated Cylinder

Improves torque accuracy and repeatability and ensures operational readiness

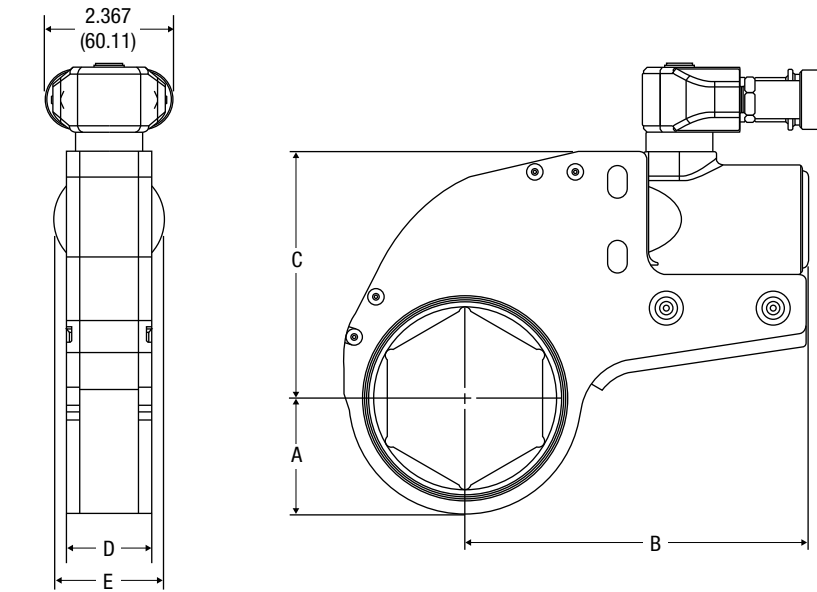
### Optional High-Strength Steel Reaction Surface

Increases tool durability and ensures a rigid reaction surface

### Large Range of Sizes

Standard hex sizes up to 6-1/8. Custom hex sizes and torque ranges available

## TL Series Low Clearance / Direct Fit Hydraulic Wrench



Custom torque wrench solutions available upon request.

## Specifications

Item Number with Swivel and Aluminum Reaction Surface	Item Number with Swivel and Steel Reaction Surface	Hexagon Size	Max Torque		Dimension A		Dimension B		Dimension C		Dimension D		Dimension E		Weight with Swivel and Aluminum Reaction Surface Weight	
			(ft-lbs)	(Nm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
TL210625	TL210625-S	1-1/16"	1336	1812	0.960	24.4	4.769	121.1	2.834	72.0	1.280	32.5	1.563	39.7	5.0	2.3
TL227MM	TL227MM-S	27 mm														
TL21250	TL21250-S	1-1/4"	1336	1812	1.070	27.2	4.775	121.3	2.807	71.3	1.264	32.1	1.563	39.7	5.1	2.3
TL230MM	TL230MM-S	30 mm														
TL214375	TL214375-S	1-7/16"														
TL234MM	TL234MM-S	34 mm	1451	1968	1.170	29.8	5.002	127.1	3.000	76.2	1.264	32.1	1.563	39.7	5.1	2.3
TL236MM	TL236MM-S	36 mm														
TL21625	TL21625-S	1-5/8"	1499	2033	1.290	32.8	5.002	127.1	3.097	78.7	1.264	32.1	1.563	39.7	5.2	2.3
TL241MM	TL241MM-S	41 mm														
TL218125	TL218125-S	1-13/16"	1543	2092	1.390	35.3	5.079	129.0	3.162	80.3	1.264	32.1	1.563	39.7	5.2	2.4
TL246MM	TL246MM-S	46 mm														
TL22000	TL22000-S	2"	1579	2141	1.470	37.3	5.073	128.9	3.223	81.9	1.264	32.1	1.563	39.7	5.3	2.4
TL250MM	TL250MM-S	50 mm														
TL221875	TL221875-S	2-3/16"	1640	2224	1.569	39.9	5.074	128.9	3.279	83.3	1.264	32.1	1.563	39.7	5.5	2.5
TL255MM	TL255MM-S	55 mm														
TL22375	TL22375-S	2-3/8"														
TL258MM	TL258MM-S	58 mm	1576	2137	1.700	43.2	5.221	132.6	3.479	88.4	1.264	32.1	1.563	39.7	5.7	2.6
TL260MM	TL260MM-S	60 mm														

Continued on the next page.





## BT Delta Series Hydraulic Tensioners

Hydraulic stud tensioners deliver fast, safe, accurate and direct axial load to a threaded fastener without the inaccuracy of torquing due to friction.

### Overstroke Indicator

Piston overstroke indicator to ensure safe operation

### Load Cell

Designed to maximize load and minimize OD to ensure a proper fit

### Quick Connect Fittings

### Durable Seals

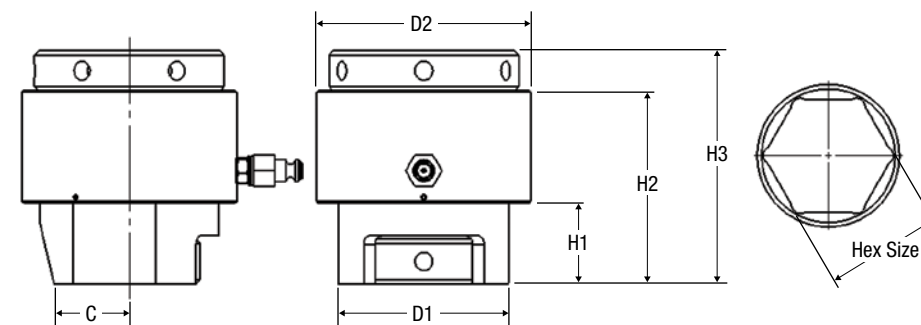
Patented high-pressure/low-friction seals are designed to outlast the competition

### Quality Materials

Made with high-strength, corrosion-resistance coated steel



## BT Delta Series Hydraulic Tensioners



### Sub sea tensioners also available

- 100% water-based (no hydraulic oil)
- Quick-release reaction nut simplifies and saves the diver crucial time to engage the bolt
- Dual hydraulic ports
- Lift strap



## Specifications

Item Number	Standard Size		Hex Size		Ram Area		Maximum Load		Stroke		Dimension H1		Dimension H2		Dimension H3		Dimension D1		Dimension D2		Dimension C		Weight	
	Stud Diameter	Thread Pitch	(in)	(mm)	(sq in)	(sq mm)	(lb)	(kN)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
BT075	3/4"	8 TPI	1.250	32	1.276	823	27,753	123.45	0.25	6.4	1.06	27.0	3.30	84.0	3.80	96.0	2.12	54.0	2.40	61.0	1.01	26.0	3.4	1.5
BTM20	M20	2.5	1.181	30																				
BT100	1"	8 TPI	1.625	41																				
BTM24	M24	3	1.417	36	2.945	1900	64,054	284.93	0.35	9.0	1.23	31.0	4.20	107.0	5.20	132.0	2.66	67.0	3.50	89.0	0.96	24.0	9.7	4.4
BT113	1-1/8"	8 TPI	1.813	46																				
BT125	1-1/4"	8 TPI	2.000	51	3.24	2090	70,470	313.47	0.35	9.0	1.51	38.0	4.475	114.0	5.48	139.0	3.26	83.0	3.88	98.0	1.36	35.0	11.4	5.2
BTM30	M30	3.5	1.811	46																				
BT138	1-3/8"	8 TPI	2.188	56	4.91	3168	106,793	475.04	0.50	12.7	1.48	37.0	4.45	113.0	5.45	138.0	3.61	92.0	4.38	111.0	1.54	39.0	14.6	6.6
BT150	1-1/2"	8 TPI	2.375	60																				
BTM36	M36	4	2.165	55	6.075	3919	132,131	587.75	0.50	12.7	1.75	44.0	5.00	127.0	6.13	156.0	4.14	105.0	4.75	121.0	1.73	44.0	20.5	9.3
BT163	1-5/8"	8 TPI	2.563	65																				
BT175	1-3/4"	8 TPI	2.750	70																				
BTM42	M42	4.5	2.559	65	8.504	5486	184,962	822.75	0.50	12.7	2.00	51.0	5.25	133.0	6.38	162.0	4.56	116.0	5.38	137.0	1.95	50.0	26.2	11.9
BT188	1-7/8"	8 TPI	2.938	75																				
BT200	2"	8 TPI	3.125	79	11.33	7310	246,428	1096.17	0.50	12.7	2.25	57.0	5.39	137.0	6.50	165.0	4.77	121.0	6.00	152.0	2.10	53.0	30.9	14.0
BTM48	M48	4	2.953	75																				
BT225	2-1/4"	8 TPI	3.500	89																				
BTM56	M56	5.5	3.346	85	13.24	8542	287,970	1280.95	0.50	12.7	2.75	70.0	5.89	149.0	7.14	181.0	5.86	149.0	7.00	178.0	2.65	67.0	44.8	20.3
BT250	2-1/2"	8 TPI	3.875	98																				
BTM64	M64	6	3.740	95																				
BT275	2-3/4"	8 TPI	4.250	108	23.45	15129	510,038	2268.76	0.50	12.7	2.88	73.0	6.26	159.0	7.76	197.0	6.90	175.0	8.00	203.0	2.74	70.0	64.2	29.1
BT300	3"	8 TPI	4.625	117	25.51	16458	554,843	2468.06	0.50	12.7	3.23	82.0	6.63	168.0	8.08	205.0	7.06	179.0	8.50	216.0	2.99	76.0	71.7	32.5
BTM72	M72	6	4.134	105																				
BT325	3-1/4"	8 TPI	5.000	127																				
BTM80	M80	6	4.528	115	27.49	17735	597,908	2659.63	0.50	12.7	3.96	101.0	7.36	187.0	8.86	225.0	8.34	212.0	9.50	241.0	3.47	88.0	93.6	42.4
BT350	3-1/2"	8 TPI	5.375	137																				
BTM90	M90	6	5.118	130																				
BT375	3-3/4"	8 TPI	5.750	146	37.69	24316	819,758	3646.47	0.50	12.7	4.11	104.0	7.51	191.0	8.39	213.0	8.75	222.0	11.00	279.0	3.63	92.0	109.0	49.4
BT400	4"	8 TPI	6.125	156	42.73	27568	929,378	4134.08	0.50	12.7	4.30	109.0	7.70	196.0	8.58	218.0	9.08	231.0	11.70	297.0	3.98	101.0	121.4	55.1
BTM100	M100	6	5.709	145																				



Modular Components

Item Number	Pullers			Sockets		Bridges Part Number	Tommy Bar Part Number	Dia (in)	Load Cell Part Number
	Part Number	Stud Diameter (in)	Thread Pitch	Part Number	Hex Size				
BT075	BT075-01	3/4	8 UN	BT075-05	1-1/4"	BT075-04	10-800-2000	0.375	BT075-06
	BT075-01-A	3/4	10 UN						
	BT075-01-M20	M20	2.5						
BT100	BT100-01	1	8 UN	BT100-05	1-5/8"	BT100-04	10-800-2000	0.375	BT100-06
	BT100-01-088	7/8	8 UN						
	BT100-01-088-A	7/8	9 UN						
	BT100-01-M24	M24	3						
BT113	BT113-01	1-1/8	8 UN	BT113-05	1-13/16"	BT113-04	10-800-2000	0.375	BT113-06
	BT113-01-100	1	8 UN						
	BT113-01-M24	M24	3						
	BT113-01-M27	M27	3						
BT125	BT125-01	1-1/4	8 UN	BT125-05	2"	BT125-04	10-800-2000	0.375	BT125-06
	BT125-01-113	1-1/8	8 UN						
	BT125-01-M27	M27	3						
	BT125-01-M30	M30	3.5						
BT138	BT138-01	1-3/8	8 UN	BT138-05	2-3/16"	BT138-04	10-800-3000	0.500	BT138-06
	BT138-01-125	1-1/4	8 UN						
	BT138-01-M30	M30	3.5						
	BT138-01-M33	M33	3.5						
	BT138-01-M36	M36	4						
BT150	BT150-01	1-1/2	8 UN	BT150-05	2-3/8"	BT150-04	10-800-3000	0.500	BT150-06
	BT150-01-A	1-1/2	6 UN						
	BT163-01	1-5/8	8 UN						
	BT163-01-M36	M36	4						
	BT163-01-M39	M39	3						
BT163	BT163-01-M42	M42	4.5	BT163-05	2-9/16"	BT163-04	10-800-3000	0.500	BT163-06
	BT150-01	1-1/2	8 UN						
	BT150-01-A	1-1/2	6 UN						
	BT163-01-M36	M36	4						
	BT163-01-M39	M39	3						
BT175	BT163-01-M42	M42	4.5	BT163-05	2-9/16"	BT175-04	10-800-3000	0.500	BT175-06
	BT175-01	1-3/4	8 UN						
	BT188-01	1-7/8	8 UN						
	BT188-01-M48	M48	5						
BT188	BT188-01-M45	M45	4.5	BT188-05	2-15/16"	BT188-04	10-800-3000	0.500	BT188-06
	BT188-01-M42	M42	4.5						
	BT188-01	1-7/8	8 UN						
	BT188-01-175	1-3/4	8 UN						
	BT188-01-M48	M48	5						

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Modular Components (continued)

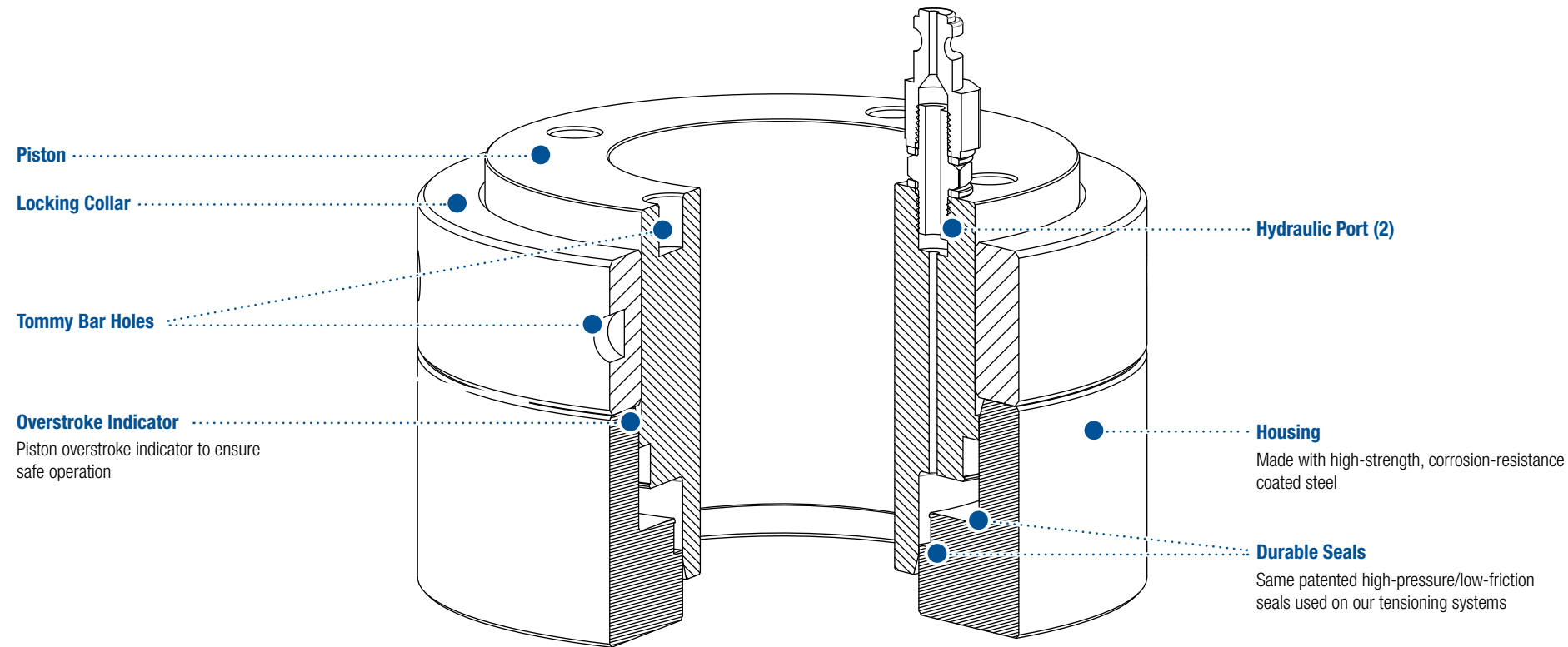
Item Number	Pullers			Sockets		Bridges Part Number	Tommy Bar Part Number	Dia (in)	Load Cell Part Number
	Part Number	Stud Diameter (in)	Thread Pitch	Part Number	Hex Size				
BT200	BT200-01	2	8 UN	BT200-05	3-1/8"	BT200-04	10-800-3000	0.500	BT200-06
	BT200-01-188	1-7/8	8 UN						
	BT200-01-M48	M48	5						
	BT200-01-M52	M52	5						
BT225	BT225-01	2-1/4	8 UN	BT225-05	3-1/2"	BT225-04	10-800-4000	0.625	BT225-06
	BT250-01	2-1/2	8 UN						
	BT250-01-M64	M64	6						
	BT250-01-M56	M56	5.5						
	BT250-01-M60	M60	5.5						
BT250	BT250-01	2-1/2	8 UN	BT250-05	3-7/8"	BT250-04	10-800-4000	0.625	BT250-06
	BT225-01	2-1/4	8 UN						
	BT250-01-M64	M64	6						
	BT250-01-M56	M56	5.5						
BT275	BT250-01-M60	M60	5.5	BT250-05	3-7/8"	BT275-04	10-800-4000	0.625	BT275-06
	BT275-01	2-3/4	8 UN						
	BT275-01-250	2-1/2	8 UN						
	BT275-01-M72	M72	6						
	BT275-01-M68	M68	6						
BT300	BT275-01-M64	M64	6	BT275-05	4-1/4"	BT300-04	10-800-4000	0.625	BT300-06
	BT300-01	3	8 UN						
	BT300-01-275	2-3/4	8 UN						
BT325	BT300-01-M72	M72	6	BT300-05	4-5/8"	BT325-04	10-800-4000	0.625	BT325-06
	BT325-01	3-1/4	8 UN						
	BT325-01-300	3	8 UN						
	BT325-01-M72	M72	6						
	BT325-01-M76	M76	6						
BT350	BT325-01-M80	M80	6	BT325-05	110 mm	BT350-04	10-800-4000	0.625	BT350-06
	BT350-01	3-1/2	8 UN						
	BT350-01-325	3-1/4	8 UN						
	BT350-01-M90	M90	6						
	BT350-01-M85	M85	6						
BT375	BT350-01-M80	M80	6	BT350-05	115 mm	BT375-04	10-800-4000	0.625	BT375-06
	BT375-01	3-3/4	8 UN						
	BT375-01-M90	M90	6						
BT400	BT375-01-M95	M95	6	BT375-05	135 mm	BT400-04	10-800-4000	0.625	BT400-06
	BT400-01	4	8 UN						
	BT400-01-M100	M100	6	BT400-05	145 mm				

## Hydraulic Nuts

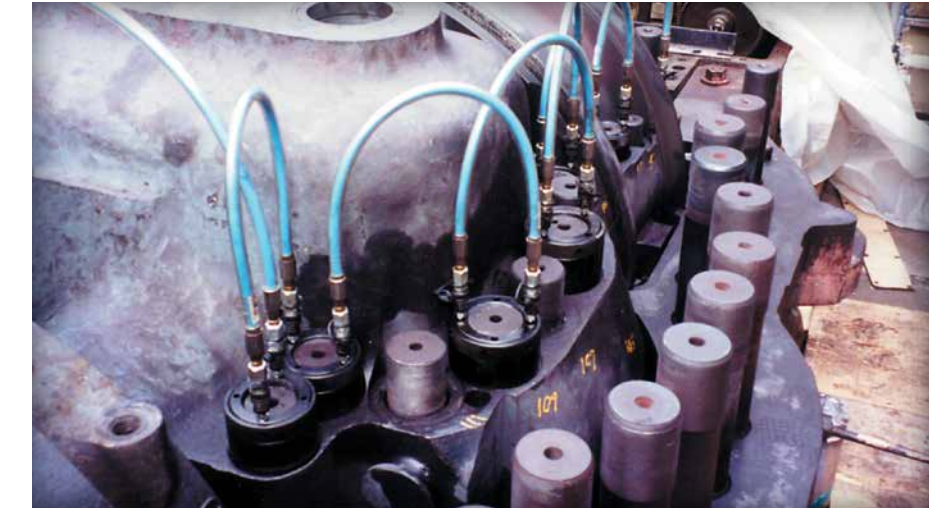
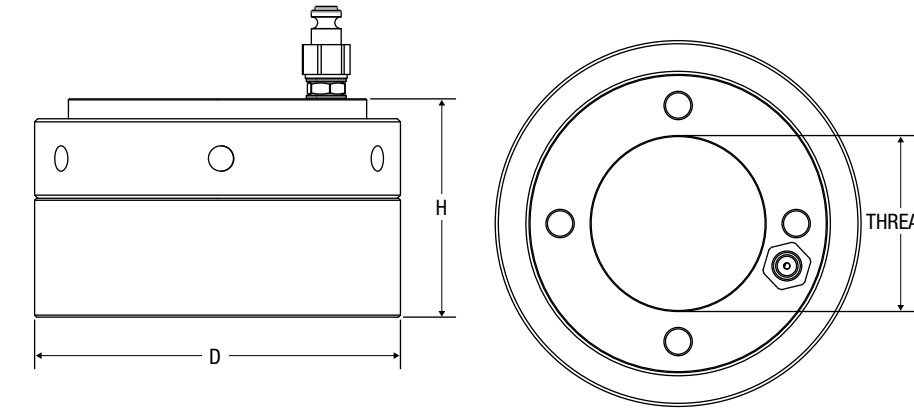
Hydraulic nuts offer a fast alternative to conventional nut fasteners that improve preload accuracy and speed up the time needed for joint disassembly and reassembly.

### Tops-On / Tops-Off Turbine Closure System

For the power generation industry, our specially designed locking collar for hydraulic nuts is utilized to maintain loads on the inner shell while the outer shell is installed for alignment checks or other maintenance procedures. Each Hydraulic Turbine Casing Closure System is configured to your particular outage requirements and can accommodate virtually every turbine configuration.



## Hydraulic Nuts



Tops-On / Tops-Off Turbine Closure System

### Hydraulic Nut Specifications

Item Number	Size (in)	Thread Size (in)	Load		O.D.		Height	
			(lb)	(kN)	(in)	(mm)	(in)	(mm)
HTN2500	2-1/2	2-1/2 — 8 UN	80,074	356.2	3.875	98.4	3.500	88.9
HTN3000	3	3 — 8 UN	96,089	427.4	4.625	117.5	3.875	98.4
HTN3500	3-1/2	3-1/2 — 8 UN	128,919	573.5	5.375	136.5	4.625	117.5
HTN4000	4	4 — 8 UN	166,553	740.9	6.000	152.4	5.125	130.2
HTN4500	4-1/2	4-1/2 — 8 UN	213,797	951.0	6.875	174.6	4.500	114.3
HTN5000	5	5 — 8 UN	261,574	1163.5	7.625	193.7	4.750	120.6
HTN5500	5-1/2	5-1/2 — 8 UN	345,919	1538.7	8.375	212.7	5.500	139.7
HTN6000	6	6 — 8 UN	384,354	1709.7	9.250	234.9	6.000	152.4

## Destroyer Nut Splitter

The DANS & QD Nut Splitters offer a fast and efficient method of getting rid of those galled, stripped or stubborn nuts. The DANS is the most compact high-pressure design on the market.

### Nut Splitter Selection Chart

Nut Size (in)	Nut Splitter Item Number	Chisel Item Number
7/8	QD4NS	QD4NS-3
15/16	QD4NS	QD4NS-3
1-1/16	QD4NS	QD4NS-3-1.063
1-1/4	QD8NS	QD8NS-3
1-7/16	QD8NS	QD8NS-3-1.4375
	QD14NS	QD14NS-3
1-5/8	QD14NS	QD14NS-3-1.625
1-13/16	QD30NS	QD30NS-3
2	DANS2000	DANS2000-5
	QD30NS	QD30NS-3
2-3/16	DANS2375	DANS2375-5
	QD30NS	QD30NS-3
2-3/8	DANS2375	DANS2375-5
	QD30NS	QD30NS-3
2-9/16	DANS2563	DANS3125-5
2-3/4	DANS2750	DANS2750-5
2-15/16	DANS3125	DANS3125-5
3-1/8	DANS3125	DANS3125-5
3-1/2	DANS3875	DANS3875-5
3-7/8	DANS3875	DANS3875-5
4-1/4	DANS4625	DANS4625-5
4-5/8	DANS4625	DANS4625-5
5	DANS5000	DANS5000-5
5-3/8	DANS5375	DANS5375-5
5-3/4	DANS5750	DANS5750-5
6-1/8	DANS6125	DANS6125-5

#### Double Acting

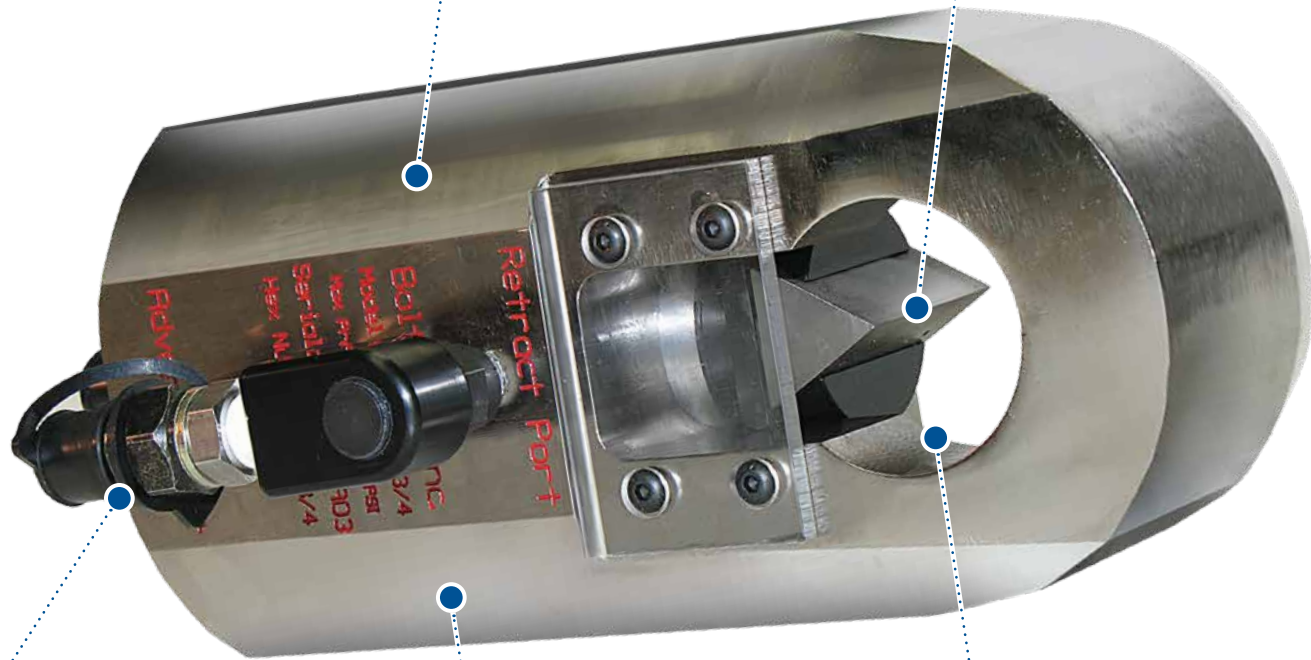
Advance and retract the nut splitter hydraulically. This design reduces the length of the tool >7 inches over traditional nut splitters that rely on spring retraction

#### Corrosion-Resistant Finish

Durable electroless nickel coating

#### Three-Sided, Quick Change Chisel

Rotate the chisel three times to extend the number of fractures before replacing. Change the chisel in seconds. Constructed from high-strength heat treated steel



#### Multi-Axis Swivel

Reduces interference and offers options when faced with space restrictions

#### High-Pressure Design

The force delivered through operating pressure of 21,750 psi guarantees the fracture of all B7 or B16 nuts

#### High Hex Range

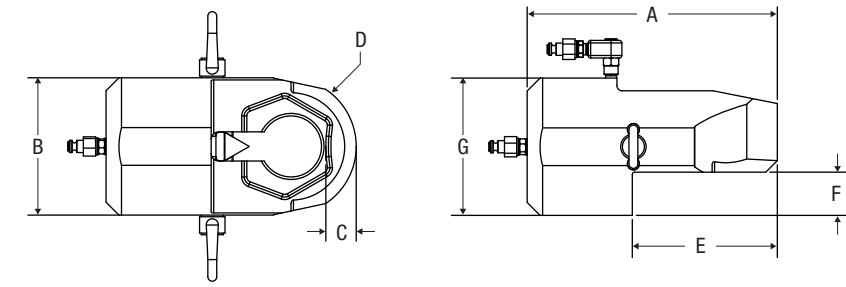
Splits nuts up to 6-1/8" hex, with dedicated sizing to ensure the tool fits any application

## Destroyer Nut Splitter

### (DANS) Series — 21,750 psi Double Acting

STATE-OF-THE-ART SUPER LIGHTWEIGHT DOUBLE ACTING NUT SPLITTER

- Powered by TP30K-DA air pump
- Split nuts up to 6-1/8" hex
- Three-sided quick-change ULTRA chisel
- Fits ANSI B16.5 and API 6A flanges
- The most compact design available

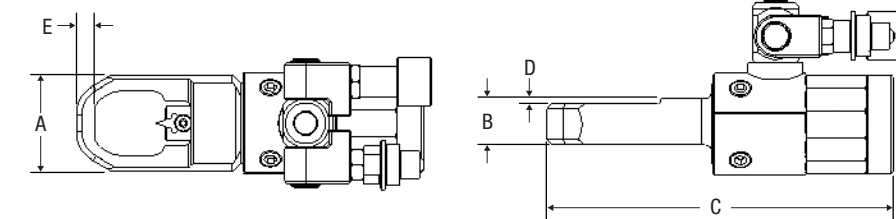


#### Maximum Operating Pressure 21,750 psi (1,500 bar)

Item Number	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E		Dimension F		Dimension G		Weight	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
DANS2000	8.042	204.3	3.750	95.3	0.625	15.9	1.750	44.5	4.065	103.3	1.095	27.8	3.750	95.3	20.0	9.1
DANS2375	9.195	233.6	4.250	108.0	0.895	22.7	1.750	44.5	4.813	122.3	1.250	31.8	4.250	108.0	27.7	12.6
DANS2563	9.252	235.0	4.475	113.7	0.750	19.1	2.238	56.9	4.691	119.2	1.288	32.7	4.475	113.7	33.2	15.1
DANS2750	9.707	246.6	4.650	118.1	0.879	22.3	2.325	59.1	4.963	126.1	1.320	33.5	4.700	119.4	37.6	17.0
DANS3125	10.360	263.1	5.063	128.6	1.072	27.2	2.750	69.9	5.628	143.0	1.469	37.3	5.063	128.6	43.3	19.6
DANS3875	12.298	312.4	6.750	171.5	1.367	34.7	3.375	85.7	7.130	181.1	2.125	54.0	6.750	171.5	80.0	36.3
DANS4625	13.923	353.6	7.500	190.5	1.570	39.9	3.750	95.3	8.500	215.9	1.774	45.1	7.121	180.9	120.0	54.4
DANS5000	15.652	397.6	8.000	203.2	1.622	41.2	3.759	95.5	8.891	225.8	2.438	61.9	8.125	206.4	144.0	65.3
DANS5375	16.890	429.0	8.875	225.4	1.978	50.2	4.250	108.0	9.530	242.1	2.469	62.7	8.875	225.4	200.0	90.7
DANS5750	17.339	440.4	9.000	228.6	2.050	52.1	4.750	120.7	9.978	253.4	2.532	64.3	9.000	228.6	205.0	93.0
DANS6125	19.159	486.6	9.750	247.6	2.264	57.5	4.875	123.8	11.078	281.4	2.781	70.6	9.750	247.7	266.0	120.7

### QD Series — 10,000 psi Double Acting

- Powered by QD Hydralinks cylinder
- Quick-change chisel design
- Fits ANSI B16.5 and API 6A flanges
- Large range on nut sizes
- Multi-axis swivel for hydraulic lines
- The most compact design available



Item Number	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E		Weight	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lb)	(kg)
QD4NSCMLPT	2.21	56.1	1.08	27.4	7.92	201.0	0.13	3.2	0.41	10.4	6.51	3.0
QD8NSCMLPT	2.97	75.4	1.63	41.3	10.52	267.2	0.19	4.8	0.54	13.7	13.70	6.2
QD14NSCMLPT	3.25	82.6	1.80	45.7	11.25	285.8	0.24	6.1	0.60	15.2	18.87	8.6
QD30NSCMLPT	4.56	115.9	2.70	68.6	15.43	391.8	0.24	6.1	0.85	21.6	44.28	20.1

## Hydraulic Pumps

Bolttech Mannings pumps are designed and engineered specifically for the most rigorous conditions and to work seamlessly with the full range of BMI tools.

### Electric Powered Torquing



**BTE39-10K**  
Light Duty, Low Amp Draw



**BTE2-10K**  
Medium Duty, Industry Workhorse



**BTE45-10K**  
Heavy Duty, High Speed Applications

### Air Powered Torquing



**BTA2-10K**  
Medium Duty, Industry Workhorse

4-Port manifold is now standard on all BTE2 & BTA2 Torque Wrench Pumps -allowing the use of up to four tools simultaneously!

### Air Powered Tensioning / Nut Splitting



**TP30K-HN**



**TP30K-SSN & TP30K-DAN**

### Electric Powered Tensioning



**TP30K-E2-110**

### Hand Pump



**16P80-1**

## Hydraulic Pumps

### Electric Powered Torquing

Item Number	Power	Amps	Fluid	Max Pressure		Max flow		Fluid Capacity		Dimensions (Height x Width x Depth)		Weight-Filled		Special Features
				(psi)	(bar)	(cu. in./min)	(L/sec)	(Gal)	(L)	(in)	(mm)	(lb)	(kg)	
BTE39-10K	110/115 VAC	14.5	Oil	10,000	690	225	0.061	0.5	1.89	23.7 x 10.8 x 1 3/8	600 x 274 x 350	47	21.3	
BTE2-10K-4P*	110/115 VAC	25	Oil	10,000	689	704	0.1923	2.5	9.4	18.1 x 17.1 x 9.5	460 x 434 x 241	62	28	
BTE45-10K*	110/115 VAC	17	Oil	10,000	690	575	0.157	1.5	6.75	26.6 x 14 x 17.7	675 x 356 x 450	98	37.6	4-Port, Dual Cooling, Speeds up to 2x as fast

\*Four-tool manifold allows use of up to four tools simultaneously

### Air Powered Torquing

Item Number	Power	Fluid	Max Pressure		Max flow		Fluid Capacity		Dimensions (Height x Width x Depth)		Weight-Filled		Special Features
			(psi)	(bar)	(cu. in./min)	(L/sec)	(Gal)	(L)	(in)	(mm)	(lb)	(kg)	
BTA2-10K*	Air	Oil	10,000	690	465	0.127	2.5	9.4	19.83 x 16.55 x 9.5	504 x 420 x 241	74	44.4	3HP Air Motor, 50 cfm at 80 psi

\*Four-tool manifold allows use of up to four tools simultaneously

### Air Powered Tensioning / Nut Splitting

Item Number	Power	Fluid	Max Pressure		Max flow		Fluid Capacity		Dimensions (Height x Width x Depth)		Weight-Filled	
			(psi)	(bar)	(cu. in./min)	(L/sec)	(Gal)	(L)	(in)	(mm)	(lb)	(kg)
TP30K-HN	Air	Oil	30,000	2068	17	0.0048	2.0	7.6	19.5 x 12.5 x 11.5	495 x 318 x 292	46	20.9
TP30K-SSN (Sub Sea Tensioning)	Air	Water	30,000	2068	85	0.0232	3.0	11.4	19.5 x 12.5 x 11.5	495 x 318 x 292	46	20.9
TP30K-DAN (Nut Splitting)	Air	Oil	30,000	2068	85 (ADV)	0.0232 (ADV)	2.0	7.6	20.3 x 16.0 x 16.0	514 x 406 x 406	74	33.6
					135 (RET)	0.0368 (RET)						

### Electric Powered Tensioning

Item Number	Power	Amps	Fluid	Max Pressure		Max flow		Fluid Capacity		Dimensions (Height x Width x Depth)		Weight-Filled	
				(psi)	(bar)	(cu. in./min)	(L/sec)	(Gal)	(L)	(in)	(mm)	(lb)	(kg)
TP30K-E2-110	100/115 VAC	11	Oil	21,750	1500	168	0.046	1.0	3.8	16.3 x 7.8 x 14.1	414 x 198 x 358	53.5	24.3

### Hand Pump

Item Number	Power	Fluid	Max Pressure		Max flow		Fluid Capacity		Dimensions (Height x Width x Depth)		Weight-Filled	
			(psi)	(bar)	(cu. in./min)	(L/sec)	(Gal)	(L)	(in)	(mm)	(lb)	(kg)
16P80-1 <sup>a</sup>	Mechanical	Oil	23,206	1600	N/A	N/A	0.6	2.3	11.0 x 4.8 x 27.0	279 x 120 x 686	20	9.0

<sup>a</sup>Hose not included.

## Cyclone Valve Exercise Tool

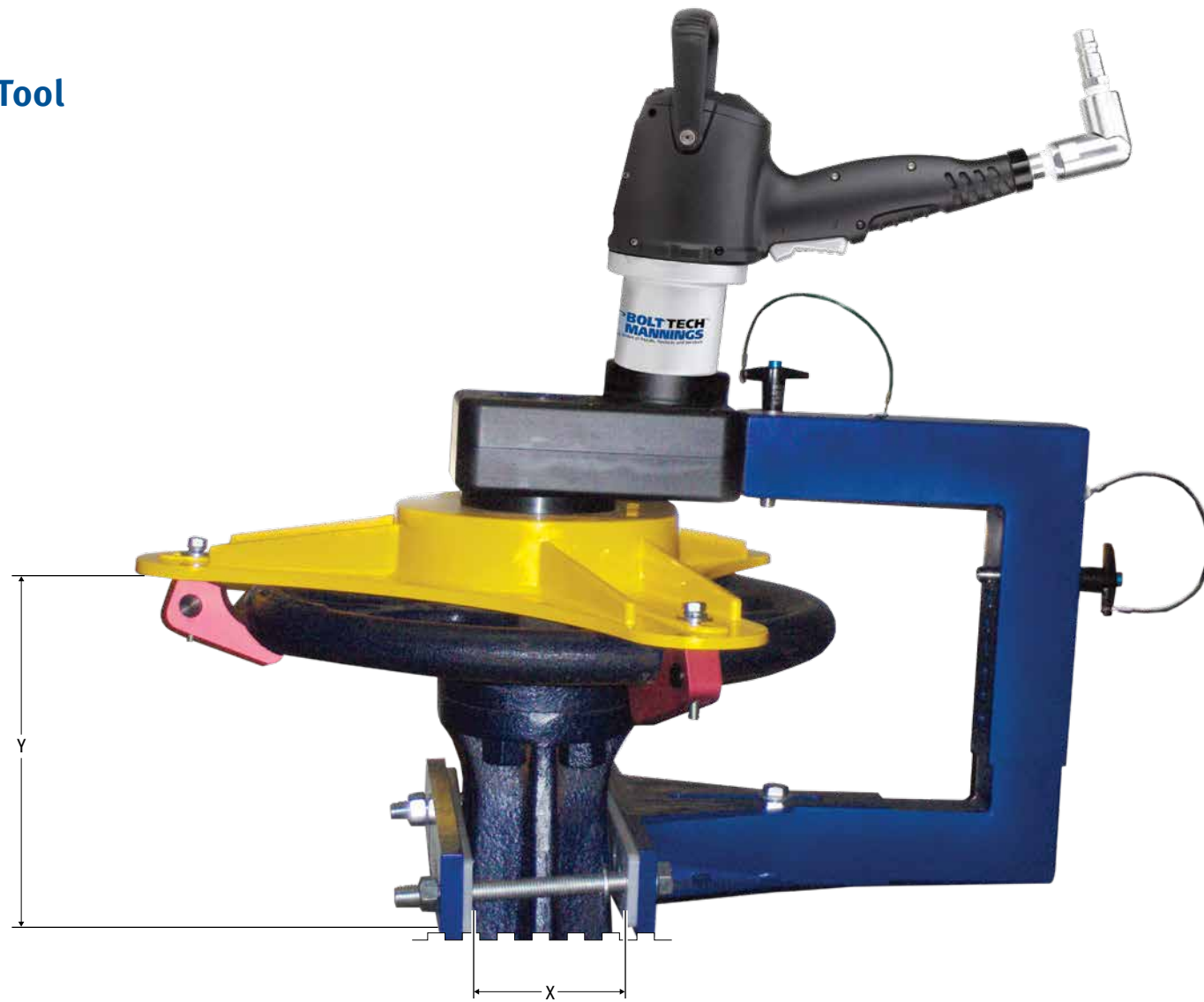
### Features and Benefits

The Cyclone VET valve exercising tool was created to provide safe operation of manual valves by eliminating the need for valve wrenches and “cheater” bars. The versatile, lightweight and portable design can be used on various valve sizes and models.

- Designed for routine valve cycling and maintenance
- Quick installation and operation
- Shortens cycle times and increases operator safety
- Safely operates valves ranging from:
  - 8" to 48" diameter valves
  - Pressure classes up to 1,500 lbs
  - Hand wheel size range 12" to 48"



Compact and Mobile



### Specifications

Item Number	Compatible AT Model	Hand Wheel Diameter Range (in)	“X” Horizontal Adjustment Range (in)	“Y” Vertical Adjustment Range (in)
CYCLONE-2X24	AT800	11 – 24	2.4 – 11.125	8.625 – 13.125
CYCLONE-48	AT1800	19 – 48	5 – 16	11 – 18.5

## Monster Grip NXT Stud Removal Tool

Bolttech Mannings’ Monster Grip Tools removed twenty 2-1/2” corroded studs in five hours versus the 100-hour estimate using the old drilling method.

### Features and Benefits

- Patented gripping system results in minimal force loss
- Engineered design directs all the gripping force to the center of the stud, eliminating “side-loading” problems
- 20x faster bolt removal saves labor costs



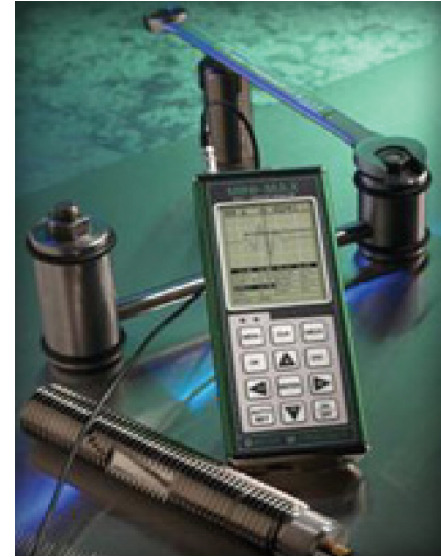
### Specifications

Stud Diameter (in)	Remover Model Number	Installer Model Number	SQ Drive Size (in)
7/8	MGR875	MGI875	1
1	MGR1000	MGI1000	1
1-1/8	MGR1125	MGI1125	1
1-1/4	MGR1250	MGI1250	1
1-3/8	MGR1375	MGI1375	1-1/2
1-1/2	MGR1500	MGI1500	1-1/2
1-5/8	MGR1625	MGI1625	1-1/2
1-3/4	MGR1750	MGI1750	1-1/2
1-7/8	MGR1875	MGI1875	1-1/2
2	MGR2000	MGI2000	2-1/2
2-1/4	MGR2250	MGI2250	2-1/2
2-1/2	MGR2500	MGI2500	2-1/2
2-3/4	MGR2750	MGI2750	2-1/2
3	MGR3000	MGI3000	3-1/2
3-1/4	MGR3250	MGI3250	3-1/2
3-1/2	MGR3500	MGI3500	3-1/2
3-3/4	MGR3750	MGI3750	3-1/2
4	MGR4000	MGI4000	3-1/2
4-1/2	MGR4500	MGI4500	3-1/2
4-7/8	MGR4875	MGI4875	3-1/2
5	MGR5000	MGI5000	3-1/2
6	MGR6000	MGI6000	3-1/2



## Bolttech Mannings Mini-Max Ultrasonic Bolt Measurement and Monitoring System

ULTRASONICALLY MEASURES THE ACTUAL ELONGATION PRODUCED BY TIGHTENING A THREADED FASTENER



The first cost-effective ultrasonic solution available on the market that effectively monitors your bolts during periodic shutdowns over the service life of the fastener.

- **VISUALLY** compare the unloaded to the loaded waveform
- **MEASUREMENT QUANTITIES**—Time (nanoseconds), elongation, load, stress and % strain
- **DISPLAY OPTIONS**—RF, rectified, large digits with limits bar
- **DISPLAY RESOLUTION**—1/8-inch VGA 240 x 160 pixels
- **STORES** 8,000 readings and waveforms in multiple groups
- **BUILT-IN** linear regression or vector for optimizing load measurements
- **AUTO SET** feature automatically optimizes detection and adjusts display
- **HI/LO ALARM** tolerance limits work in conjunction with the data port and external pump shut-off device

### Specifications

Item Number	Description	Dimensions (Height x Width x Depth)		Weight		Operating Temperature	
		(in)	(mm)	(lb)	(kg)	(°F)	(°C)
UT1T	Includes temperature sensor with 6' cable	6.25 x 2.5 x 1.24	158.8 x 63.5 x 31.5	13.5	6.1	14° – 140°	-10° – 60°

A FULL LIST OF  
**transducers**  
 and  
**accessories**  
 IS AVAILABLE UPON REQUEST.



## Flange Spreader Wedges

The Equalizer™ SWi Innovative Range of Flange Spreading Wedges have been developed to assist in the spreading of all flange joint types with a minimum access gap of 6.0 mm (0.25 in). The tools can be used during pipework construction, commissioning or routine maintenance.

The SWi Innovative Range of Flange Spreaders have fewer moving parts and no finger pinch points. The tools have been developed to increase the spreading distance on each step while gaining easier access between any remaining stud-bolts within the flange joint. The tools provide a much higher spreading force to the existing SW flange spreading tools. The SWi tools are supplied with a swivel handle, safety lanyard and stepped block attachment as standard.



### Mechanical Flange Spreader



#### SWi12/14TM

The SWi12/14TM is mechanically operated and capable of exerting a 14 T (140 kN) spreading force.

#### The kit includes:

- SWi12/14TM mechanical flange spreader wedgehead
- 12/14TM mechanical cylinder
- 150 ft-lb (230 Nm) torque wrench with 22 mm socket
- Set of safety blocks
- Pair of stepped blocks
- Lanyard
- Hex key
- Carrying case
- Gross kit weight 13 kg (28.6 lb)

### Hydraulic Flange Spreader



#### SWi20/25TE

The SWi20/25TE is hydraulically operated by a separate hand pump and is capable of exerting a 24 T (240 kN) spreading force.

#### Available kits

Mini	Standard	Maxi	Item / Description
1	1	2	SWi20/25TE Flange Spreader Wedgeheads
1	1	2	10,000 psi (700 bar) Hydraulic Cylinders
—	1	2	10,000 psi (700 bar) Hydraulic Hoses, 2 m (78.75 in) with 90-degree elbow
—	1	1	10,000 psi (700 bar) HP550D Sealed Hand Pump with Gauge
1	1	2	Safety Blocks
—	1	2	Pairs of Stepped Blocks
1	1	2	Hex Keys
1	1	2	Lanyards
1	1	1	Carrying Case
25.6	45.7	72.8	Total Weight (lb)

## Flange Alignment Tools

The Equalizer™ range of patented Flange Alignment tools can be used to align or re-align flange joints during pipework construction, commissioning or routine maintenance.

The tool is attached to the flange joint where misalignment is at its greatest, and then simply push and pull the flanges into correct alignment.



### Mechanical Fixed Flange & Rotational Alignment Tool



#### FA4TM — Flange Aligning Force 4 Ton

Fixed Flange & Rotational Alignment tool is for use on medium diameter, medium pressure flanges.

#### The kit includes:

- 1 x FA4TM flange alignment tool
- 1 x 50 ft-lb (67.8 Nm) torque wrench with 22 mm socket
- 1 x ratchet strap
- 1 x instruction manual
- 1 x reinforced plastic case
- Gross kit weight 29 lb

### Hydraulic Fixed Flange & Rotational Alignment Tool



#### FA9TE — Flange Aligning Force 9 Ton

Designed for high-pressure flanges, the FA9TE hydraulic flange alignment tool offers a simple, precise solution to linear or rotational misalignment on large diameter flanges. A great tool to align large diameter flanges.

#### The kit includes:

- 1 x FA9TE flange alignment tool
- 1 x 10,000 psi (700 bar) hydraulic cylinder
- 1 x 10,000 psi (700 bar) hydraulic hose, 2 m (78.75 in)
- 1 x 10,000 psi (700 bar) HP350S sealed hand pump with gauge
- 1 x ratchet strap
- 1 x instruction manual
- 1 x reinforced plastic case
- Gross kit weight 58.5 lb





### Hands-Free Back Up Wrenches by Lokrite

The Lokrite hands-free back up wrenches are the perfect complement for all of your bolting projects. Held in place by embedded magnets, the Lokrite wrenches promote safety and enhance the speed of your project. Eliminate the unnecessary risk of pinch point injuries caused by the use of slugging wrenches. Hands-free back up wrenches by Lokrite are the safest, fastest and lightest solution on the market. Their interlocking system can be used in almost any configuration and are great for areas requiring non-spark torque applications. We have systems to fit all ANSI and API common flanges. Custom sizes are also available.



The new standard in back up wrenches... Eliminates pinch point injuries!

### Standard Backup

Item Number	Stud (in)	Nut Size (in)	Tool Thickness (in)
LR-1-1/4	3/4	1-1/4	1
LR-1-7/16	7/8	1-7/16	1
LR-1-5/8	1	1-5/8	1
LR-1-13/16	1-1/8	1-13/16	1
LR-2	1-1/4	2	1
LR-2-3/16	1-3/8	2-3/16	1
LR-2-3/8	1-1/2	2-3/8	1
LR-2-9/16	1-5/8	2-9/16	1
LR-2-3/4	1-3/4	2-3/4	1
LR-2-15/16	1-7/8	2-15/16	1
LR-3-1/8	2	3-1/8	1
LR-3-1/2	2-1/4	3-1/2	1
LR-3-7/8	2-1/2	3-7/8	1
LR-4-1/4	2-3/4	4-1/4	2
LR-4-5/8	3	4-5/8	2
LR-5	3-1/4	5	2
LR-5-3/8	3-1/2	5-3/8	2
LR-5-3/4	3-3/4	5-3/4	2
LR-6-1/8	4	6-1/8	2

### Open End With Safety Cleat




Item Number	Stud (in)	Nut Size (in)	Tool Thickness (in)
LROE-1-1/4	3/4	1-1/4	1
LROE-1-7/16	7/8	1-7/16	1
LROE-1-5/8	1	1-5/8	1
LROE-1-13/16	1-1/8	1-13/16	1
LROE-2	1-1/4	2	1
LROE-2-3/16	1-3/8	2-3/16	1
LROE-2-3/8	1-1/2	2-3/8	1
LROE-2-9/16	1-5/8	2-9/16	1
LROE-2-3/4	1-3/4	2-3/4	1
LROE-2-15/16	1-7/8	2-15/16	1
LROE-3-1/8	2	3-1/8	1
LROE-3-1/2	2-1/4	3-1/2	1
LROE-3-7/8	2-1/2	3-7/8	1
LROE-4-1/4	2-3/4	4-1/4	2
LROE-4-5/8	3	4-5/8	2
LROE-5	3-1/4	5	2
LROE-5-3/8	3-1/2	5-3/8	2
LROE-5-3/4	3-3/4	5-3/4	2
LROE-6-1/8	4	6-1/8	2

Safety lanyards and tension bolt clips available upon request



## Bolting Accessories

### Hoses

Item Number	Application	Description	Filled with	Working Pressure		Length		End Fittings	
				psi	bar	(ft)	(m)	End 1	End 2
HYTW20N	Torquing with Hydraulic Wrench	Twin Line, Connects Hydraulic Pump to Hydraulic Wrench	Oil	10,000	689	20	6.1	SW04N	SW06N
WH-BLUE	Torquing with Hydraulic Wrench	Whip Hose with 1/4" NPT Male Ends	Oil	10,000	689	1.625	0.5		
CU4	Torquing with Pneumatic Wrench	Connects Control Unit to Pneumatic Tool	Air	200	14	20	6.1	CU5	CU6
FL3-B	Tensioning	High-Pressure Link Hose with Coupling-nipple-nipple connector	Oil	21,750	1,800	3	0.9		
FL3N	Tensioning	High-Pressure Link Hose	Oil	21,750	1,800	3	0.9		
FL15N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	15	4.6		
FL20N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	20	6.1		
FL100N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	100	30.5		
FL300N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	300	91.4		
FL400N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	400	121.9		
FL600N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	600	182.9		
FL1000N	Tensioning / Nut Splitting	High-Pressure Feed Hose (Connects Pump to Tool)	Oil	21,750	1,800	1000	304.8		
FL3-SSN	Sub Sea Tensioning	High-Pressure Interconnect Hose	Water	21,750	1,800	3	0.9		
FL20-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	20	6.1		
FL100-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	100	30.5		
FL300-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	300	91.4		
FL400-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	400	121.9		
FL600-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	600	182.9		
FL1000-SSN	Sub Sea Tensioning	High-Pressure Feed Hose (Connects Pump to Tool)	Water	21,750	1,800	1000	304.8		



### LW Seal Kits

Part Number	Description
LW1-SWIVEL-SEAL	LW1 swivel seal kit
LW-SWIVEL-SEAL	LW3-LW35 swivel seal kit
LW1-SEAL-KIT	LW1 seal kit
LW3-SEAL-KIT	LW3 seal kit
LW5-SEAL-KIT	LW5 seal kit
LW8-SEAL-KIT	LW8 seal kit
LW10-SEAL-KIT	LW10 seal kit
LW20-SEAL-KIT	LW20 seal kit
LW25-SEAL-KIT	LW25 seal kit
LW35-SEAL-KIT	LW35 seal kit

### TL Seal Kits

Part Number	Description
TL2_SEAL_KIT	TL2 cylinder seal kit
TL4_SEAL_KIT	TL4 cylinder seal kit
TL8_SEAL_KIT	TL8 cylinder seal kit
TL14_SEAL_KIT	TL14 cylinder seal kit
TL20_SEAL_KIT	TL20 cylinder seal kit
TL30_SEAL_KIT	TL30 cylinder seal kit
TL_SWIVEL_SEAL	Complete swivel seal kit (old style)
SWS-1-SK	New style swivel seal kit
SWS-1S	TL swivel assembly for 2, 4 and 8
SWS-1L	TL swivel assembly for 14, 20 and 30

















### Nut Splitter Seal Kits

Part Number	Description
QD2_SEAL_KIT	QD2 Cylinder Seal Kit
QD4_SEAL_KIT	QD4 Cylinder Seal Kit
QD8_SEAL_KIT	QD8 Cylinder Seal Kit
QD14_SEAL_KIT	QD14 Cylinder Seal Kit
QD20_SEAL_KIT	QD20 Cylinder Seal Kit
QD30_SEAL_KIT	QD30 Cylinder Seal Kit
DANSSK2000	DANS 2000 Seal Kit
DANSSK2375	DANS 2375 Seal Kit
DANSSK2563	DANS 2563 Seal Kit
DANSSK2750	DANS 2750 Seal Kit
DANSSK3125	DANS 3125 Seal Kit
DANSSK3875	DANS 3875 Seal Kit
DANSSK4625	DANS 4625 Seal Kit
DANSSK5000	DANS 5000 Seal Kit
DANSSK5375	DANS 5375 Seal Kit
DANSSK5750	DANS 5750 Seal Kit
DANSSK6125	DANS 6125 Seal Kit

### BT Delta Series Hydraulic Tensioners Seal Kits

Part Number	Description
BTSK075	3/4" Stud Tensioner Seal Kit
BTSK100	1" Stud Tensioner Seal Kit
BTSK113	1-1/8" Stud Tensioner Seal Kit
BTSK125	1-1/4" Stud Tensioner Seal Kit
BTSK150	1-1/2" Stud Tensioner Seal Kit
BTSK163	1-5/8" Stud Tensioner Seal Kit
BTSK175	1-3/4" Stud Tensioner Seal Kit
BTSK188	1-7/8" Stud Tensioner Seal Kit
BTSK200	2" Stud Tensioner Seal Kit
BTSK225	2-1/4" Stud Tensioner Seal Kit
BTSK250	2-1/2" Stud Tensioner Seal Kit
BTSK275	2-3/4" Stud Tensioner Seal Kit
BTSK300	3" Stud Tensioner Seal Kit
BTSK325	3-1/4" Stud Tensioner Seal Kit
BTSK350	3-1/2" Stud Tensioner Seal Kit
BTSK375	3-3/4" Stud Tensioner Seal Kit
BTSK400	4" Stud Tensioner Seal Kit

### Fittings

Item Number	Application	Description	Working Pressure		
			psi	bar	
SW04N	Torquing with Hydraulic Wrench	Male Quick Disconnect with Female 1/4" NPT Thread	10000	689	
SW05N	Torquing with Hydraulic Wrench	Female Quick Disconnect with Male 1/4" NPT Thread	10,000	689	
SW06N	Torquing with Hydraulic Wrench	Male Quick Disconnect with Male 1/4" NPT Thread	10,000	689	
1/4-FFSN	Torquing with Hydraulic Wrench	1/4 x 1/4 NPT Adaptor	10,000	689	
10-116-1202N	Tensioning / Sub Sea Tensioning / Nut Splitting	Quick Connect Coupling with Female 1/4 BSPP Thread	0	1800	
10-116-6202N	Tensioning / Sub Sea Tensioning / Nut Splitting	Quick Connect Nipple with Female 1/4 BSPP Thread	21,750	1800	
19-950-1622N	Tensioning / Nut Splitting	1/4" BSPP x 1/4" BSPP Adaptor	21,750	1800	
1/4BSPDOWTYN	Tensioning / Nut Splitting	1/4" BSP Dowty Seal	21,750	1800	
C09-125-1680	Tensioning	1/4" BSPP x 1/4" BSPP Adaptor with External Cone	21,750	1800	
BSP-ADPT-O-RING	Sub Sea Tensioning	1/4" x 1/4" BSP Adaptor with O-Ring Seal	21,750	1800	
9558K711	Sub Sea Tensioning	O-Ring Seal for BSP-ADPT-O-RING	21,750	1800	
CU5	Torquing with Pneumatic Tools	Female Quick Disconnect	90	6	
CU6	Torquing with Pneumatic Tools	Male Quick Disconnect	90	6	
CU3	Torquing with Pneumatic Tools	Chicago / King Fitting	90	6	
MFS-01	Torquing with Pneumatic Tools	3/8" Pneumatic Swivel	90	6	
AM28	Torquing with Pneumatic Tools	Male Disconnect Nipple	90	6	
CU10	Torquing with Pneumatic Tools	Regulator Female Quick Disconnect	90	6	
199501682	Tensioning	Tee Block	21,750	1800	
19-950-1601N	Tensioning	1/4" BSPP X 1/4" BSPP 120 Degree External Cone Adapter	21,750	2000	



# thermal



## Induction Systems

Through years of research and development, Bolttech Mannings has made induction heating an integral part of an outage. Bolttech Mannings induction equipment has proven itself reliable, dependable and safe. This system is highly portable, simple to operate and robust in construction — everything needed to provide excellent results.

**Reduce downtime and save on outage costs by using the Bolttech Mannings Induction System.**

### Complete Solid-State System

No external controls or transformers needed

### User-Friendly Controls

### Most Versatile Equipment on the Market

Thermal expansion, bolt & nut heating, stress relieving with one machine



### Built for Travel

Can be put on a truck, lifted with a crane, or rolled onto a turbine deck

### Water-Cooled System

No open flames and no exposed heating elements

## Induction Machine Specifications

Item Number	Machine Size	Frequency	Model	Applications				Repair Kit	Length x Width x Height		Approx. Weight	
				Thermal Expansion	Bolt Heating	Nut Heating	Stress Relieving		(in)	(mm)	(lb)	(kg)
SMN75040D-01	200 kW	3–10 kHz	S8	X				SMN76636-01	54 x 28.5 x 45	1376 x 723 x 1143	1,000	453
SMN75030D-01	100 kW	3–10 kHz	S9	X	X	X	X	SMN76635F-01	52.5 x 22.5 x 45	1334 x 572 x 1143	850	387
SMN77005D-01	100 kW	8–25 kHz	S11		X	X		SMN77007-01	52.5 x 22.5 x 45	1334 x 572 x 1143	850	387
SMN77008D-01	50 kW	8–25 kHz	S12		X	X		SMN77010-01	35 x 19 x 34	889 x 482 x 863	850	387
SMN78051D-01	50 kW Dual Wand	10 kHz	DW50		X			SMN78055-01	52 x 23 x 44	1320 x 584 x 1118	872	395

## Induction Systems

## Chiller Systems

Bolttech Mannings chiller systems have been designed to seamlessly integrate with our induction systems providing a closed loop cooling system. This ensures better performance and increased reliability, and eliminates the risk associated with inconsistent plant water pressure and temperature.

### 100 Amp External Disconnect Switch

Efficient electrical hook-up

### Programmable Thermostat

Allows accurate temperature control



### Totally Self-Contained and Built for Travel

Can be put on a truck, lifted with a crane or rolled onto a turbine deck

### PSI Readout

## Chiller System Specifications

Item Number	Description	Voltage	Reservoir Capacity	Length x Width x Height		Dry weight	
				(in)	(mm)	(lb)	(kg)
SMN75002-01	15-Ton Chiller System (FG)*	460/3/60 & 380/3/50	70 gallons	58.00 x 42.00 x 91.00	1473.2 x 1066.8 x 2311.4	1600	726.4
SMN75001-01	10-Ton Chiller System (FG)*	460/3/60 & 380/3/50	31 gallons	50.00 x 35.50 x 66.25	1270.0 x 901.7 x 1682.8	950	431.3

\*Includes a phase monitor

## Induction Accessories

### Bolt Heating Inductors

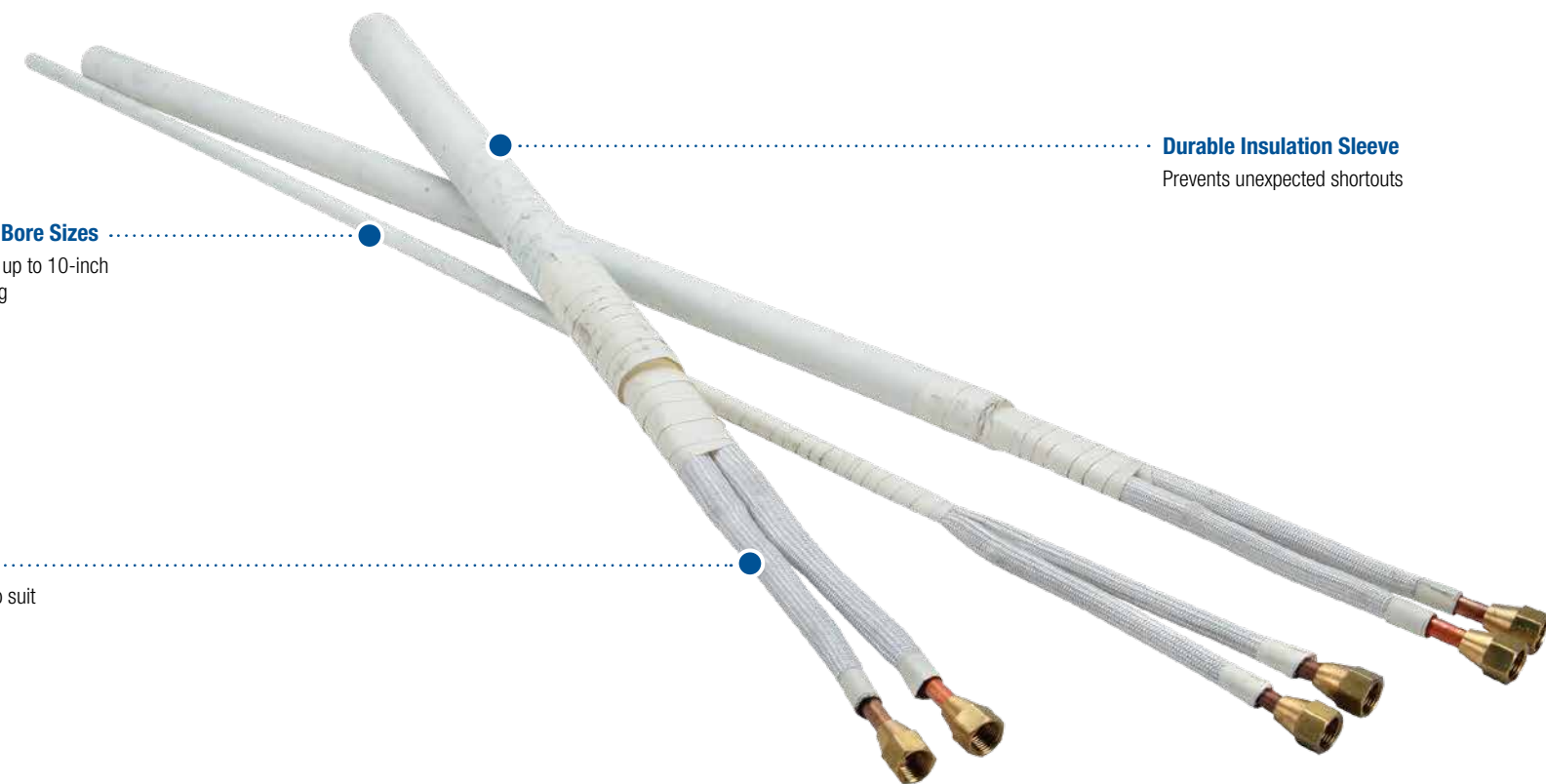
Bolttech Mannings bolt heating inductors are specifically designed to fit the broadest applications in the industry. Proprietary design improves durability, resulting in the lowest cost of ownership on the market.

#### Custom Lengths and Bore Sizes

Available for special jobs up to 10-inch diameter and 25 feet long

#### Flexible

Bend up to 90° on site to suit all applications



#### Durable Insulation Sleeve

Prevents unexpected shortouts

## Induction Accessories

### Bolt Heating Inductor Specifications

Item Number	Heat Length (in)	Bore Diameter Fitting Size — Ranges in Inches (mm)
SMN77205_1-1	12	Extra-small — 0.475 – 0.600 (12 – 15)
SMN77205_2-1	24	
SMN77205_3-1	36	
SMN77210_1-1	12	Small — 0.610 – 0.720 (16 – 18.5)
SMN77210_2-1	24	
SMN77210_3-1	36	
SMN77210_4-1	48	
SMN77215_1-1	12	Euro 18 — 0.720 – 0.820 (18.5 – 21)
SMN77215_2-1	24	
SMN77215_3-1	36	
SMN77215_4-1	48	
SMN77220_1-1	12	Medium — 0.760 – 0.840 (19.5 – 22)
SMN77220_2-1	24	
SMN77220_3-1	36	
SMN77220_4-1	48	
SMN77225_1-1	12	21 mm — 0.840 – 0.955 (21.5 – 23.5)
SMN77225_1_2-1	12 (2 turn)	
SMN77225_2-1	24	
SMN77225_2_2-1	24 (2 turn)	
SMN77225_3-1	36	
SMN77225_3_2-1	36 (2 turn)	
SMN77225_4-1	48	
SMN77225_4_2-1	48 (2 turn)	
SMN77227_1-1	12	Inch — 0.955 – 1.065 (24.5 – 27.5)
SMN77227_1_2-1	12 (2 turn)	
SMN77227_2-1	24	
SMN77227_2_2-1	24 (2 turn)	
SMN77227_3-1	36	Large — 1.075 – 1.175 (27.5 – 31.5)
SMN77227_3_2-1	36 (2 turn)	
SMN77227_4-1	48	
SMN77227_4_2-1	48 (2 turn)	
SMN77230_1-1	12	Large — 1.075 – 1.175 (27.5 – 31.5)
SMN77230_1_2-1	12 (2 turn)	
SMN77230_2-1	24	
SMN77230_2_2-1	24 (2 turn)	
SMN77230_3-1	36	Large — 1.075 – 1.175 (27.5 – 31.5)
SMN77230_3_2-1	36 (2 turn)	
SMN77230_4-1	48	
SMN77230_4_2-1	48 (2 turn)	

Item Number	Heat Length (in)	Bore Diameter Fitting Size — Ranges in Inches (mm)
SMN77235_1-1	12	31 mm — 1.230 – 1.330 (31.5 – 34.5)
SMN77235_1_2-1	12 (2 turn)	
SMN77235_1_3-1	12 (3 turn)	
SMN77235_2-1	24	
SMN77235_2_2-1	24 (2 turn)	
SMN77235_2_3-1	24 (3 turn)	
SMN77235_3-1	36	
SMN77235_3_2-1	36 (2 turn)	
SMN77235_3_3-1	36 (3 turn)	34 mm — 1.350 – 1.450 (34.5 – 37)
SMN77235_4-1	48	
SMN77235_4_2-1	48 (2 turn)	
SMN77235_4_3-1	48 (3 turn)	
SMN77236_1-1	12	
SMN77236_1_2-1	12 (2 turn)	
SMN77236_1_3-1	12 (3 turn)	
SMN77236_2-1	24	
SMN77236_2_2-1	24 (2 turn)	Extra Large — 1.450 – 1.550 (37 – 40.5)
SMN77236_2_3-1	24 (3 turn)	
SMN77236_3-1	36	
SMN77236_3_2-1	36 (2 turn)	
SMN77236_3_3-1	36 (3 turn)	
SMN77236_4-1	48	
SMN77236_4_2-1	48 (2 turn)	
SMN77236_4_3-1	48 (3 turn)	
SMN77240_1-1	12	Extra Large — 1.450 – 1.550 (37 – 40.5)
SMN77240_1_2-1	12 (2 turn)	
SMN77240_1_3-1	12 (3 turn)	
SMN77240_2-1	24	
SMN77240_2_2-1	24 (2 turn)	
SMN77240_2_3-1	24 (3 turn)	
SMN77240_3-1	36	
SMN77240_3_2-1	36 (2 turn)	
SMN77240_3_3-1	36 (3 turn)	61 mm — 2.410 – 2.510 (61 – 64.5)
SMN77240_4-1	48	
SMN77240_4_2-1	48 (2 turn)	
SMN77240_4_3-1	48 (3 turn)	
SMN77245_1-1	12	
SMN77245_1_2-1	12 (2 turn)	
SMN77245_1_3-1	12 (3 turn)	
SMN77245_2-1	24	
SMN77245_2_2-1	24 (2 turn)	
SMN77245_2_3-1	24 (3 turn)	
SMN77245_3-1	36	61 mm — 2.410 – 2.510 (61 – 64.5)
SMN77245_3_2-1	36 (2 turn)	
SMN77245_3_3-1	36 (3 turn)	

### Induction Machine Repair Kits

Item Number	Description
SMN76636-01	S8 200 kW Repair Kit
SMN76635F-01	S9 100 kW Repair Kit
SMN77007-01	S11 100 kW Repair Kit
SMN77010-01	S12 50 kW Repair Kit
SMN78055-01	Dual Wand 50 kW Repair Kit

### Accessory Packages

Item Number	Description	Accessory Included	Accessory Description
SMN75101-01	S9, S11 and S12 100 kW Bolt Heating Accessory Package	SMN76629-01	25 ft Coax cable from machine to inductor (Quantity:1)
		75339	50 ft Long 3/4 inch water hoses (Quantity:4)
		WAND-PACKAGE	Bolt Heating Inductors (Quantity:12)
		SMN75103-01	S9, S11 and S12 Tool Box with Fittings
		SMN76626-01	Coax Support Bar (Quantity:1)
NUTHEATKIT	S9, S11 and S12 Nut Heating Kit	Material for 5 Inductors Coils (Copper Coils)	

### Individual Accessories

Item Number	Description
SMN76629-01	25 ft Coax cable from machine to inductor
SMN75103-01	S9, S11 and S12 Tool Box with Fittings
SMN75104-01	Remote Start/Stop Pendant 35 ft
SMN76642-01	World Power 112 kVA Step Up/Down Transformer
SMN76641-01	World Power 225 kVA Step Up/Down Transformer (Used with S8)

### Retaining Ring Removal Accessories

Item Number	Description
SMN75321-01	Set Single Power to Water Block
SMN75331-01	Single Water Splitter Block
SMN75060-01	Accessory Tool Box for 200 kW
SMN75342-01	4-Way Water Supply Manifold
75339	50 ft Water Hose with Quick Disconnect

### Superflex & Water Cooled Coils

Item Number	Description
SMN75311-01	Single 5/16
SMN75312-01	Dual 5/16
SMN75316-01	Superflex Heater Hose

## Power Sources for On-Site Heat Treating

### Heat Treating Equipment

Bolttech Mannings' heat treating equipment has proven itself to be reliable on projects demanding heat uniformity, accurate control, dependability and safety. Bolttech Mannings' equipment is economical to use, simple to operate, robust in construction, designed for manual and programmable use, and easily capable of heavy on-site work loads.

#### Built-In Chino Recorder Available

Records temperature and various other industrial parameters on a 180 mm chart in 6, 12 or 24 channels

#### Structural Steel Outer Shell

Widely recognized as the most reliable and rugged equipment in the industry



#### P-256 Controller

Can run any or all of the six channels in a single profile mode (heat-soak-cool)

#### Individual Zone Controllers

Allows independent pre- and post-weld heat treat management

### Resistance Machine Specifications

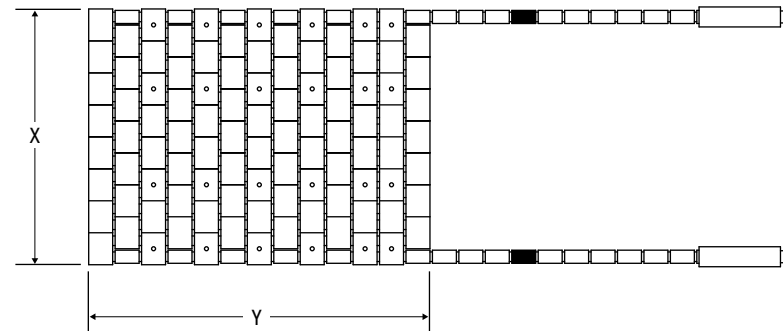
Item Number	kVA	Construction	Number of Zones	Chino Chart Recorder	Controls			Features		Dimensions (Width x Length x Height)		Approx. Weight	
					Programmable Controller	Temperature Controllers	Percent Timers	Wheels	Doors	(in)	(mm)	(lb)	(kg)
SMN12126-01	75	Painted Steel	6		X	X	X	X	X	26 x 24 x 50	660.4 x 609.6 x 1270.0	1000	455
SMN12127-01	75	Stainless Steel	6		X	X	X	X	X	26 x 24 x 50	660.4 x 609.6 x 1270.0	1000	455
SMN16126-01	75	Painted Steel	6	X	X	X	X	X	X	26 x 24 x 58	660.4 x 609.6 x 1473.2	1100	500
SMN16127-01	75	Stainless Steel	6	X	X	X	X	X	X	26 x 24 x 58	660.4 x 609.6 x 1473.2	1100	500

## Resistance Accessories

### Flexible Ceramic Pad Heater

- All heaters are made with our durable, field-proven, 45-amp heater wire
- All heaters have cold tails, 60-amp Camlock connectors, and a white tail bead to mark the junction
- Wattage and temperature
  - 60-volt heaters produce 2700 watts and will easily heat parts to an excess of 1900°F (1037°C)
  - 80-volt heaters produce 3600 watts and will easily heat parts to an excess of 1900°F (1037°C)
- All flexible heaters utilize 80/20 nickel chrome wire for maximum heater life

Custom sizes are available.



### Flexible Ceramic Pad Heater Specifications

Item Number	X		Y		Volt	kW
	in	mm	in	mm		
SMN30000-01	3	76	28.5	724	60	2.7
SMN30001-01	4	102	21	533	60	2.7
SMN30002-01	6	152	14.5	368	60	2.7
SMN30003-01	8	203	10.5	267	60	2.7
SMN30004-01	10	254	9	229	60	2.7
SMN30005-01	12	305	7.25	184	60	2.7
SMN30006-01	15	381	5.75	146	60	2.7
SMN30007-01	18	457	5	127	60	2.7
SMN30008-01	21	533	4	102	60	2.7
SMN30009-01	26	660	3.25	83	60	2.7
SMN30010-01	50	1270	1.75	44	60	2.7
SMN30011-01	50	1270	1.75	44	60	2.7
SMN30400-01	1	25	118	2997	80	3.6
SMN30500-01	3	76	39	991	80	3.6
SMN30501-01	4	102	29	737	80	3.6
SMN30502-01	6	152	19.75	501	80	3.6
SMN30503-01	8	203	14.5	368	80	3.6
SMN30504-01	10	254	12.25	311	80	3.6
SMN30505-01	12	305	9.75	248	80	3.6
SMN30506-01	15	381	8	203	80	3.6
SMN30507-01	18	457	6.5	165	80	3.6
SMN30508-01	21	535	5.75	145	80	3.6
SMN30509-01	36	915	3.25	85	80	3.6
SMN30510-01	70	1778	1.75	44	80	3.6
SMN30511-01	24	610	5	125	80	3.6
SMN30498-01	29	737	4	102	80	3.6
30499	2	51	60	1524	80	3.6

### High-Temperature Silica Cloth, Blanket and Ceramic Fiber

Item Number	Description
72012	Mansil (F) high-temp silica cloth, 2000F 0.023" thick x 36" wide x 50 yards / 600 - 1
72014	Superknit (knitted amorphous silica fiber) 1/2" thick x 2' wide x 25' roll (2 rolls per box)
72015	Manwool (amorphous silica fiber) 3/4" thick x 2' wide x 25' roll (1 roll 50 sq. ft.)
71002	Ceramic fiber insulation, 8 lb density: 25' x 2' x 1" thick (50 sq. ft. per box) 2,300°F
71010	Ceramic fiber insulation, 6 lb density: 25' x 2' x 1" thick (50 sq. ft. per box) 2,300°F
71011	Ceramic fiber insulation, 6 lb density: 25' x 2' x 2" thick (50 sq. ft. per box) 2,300°F
71012	Temp mat blanket (non-ceramic fiber), 9 lbs density: 1" thick x 60" wide x 45' tall
71014	Mineral board insulation, 8 lb density: 24" x 48" x 2" thick / 40 sq. ft. bundle
71016	Kaowool 7000 grade paper: 1/4" x 24" x 62-1/2" (1 roll 125 sq. ft.)

## Temperature Measuring / Instrumentation

### Temperature Chart Recorders

Bolttech Mannings stocks the highest quality in temperature recording instruments on the market today. Each unit is built for rugged dependability and lightweight portability. Thermocouple jack panels are built-in for ease of connections.

#### LCD Display

Bright, clear and easy to read

#### Full Multi-Range

Equipped with 10 DC voltage ranges, 36 thermocouple ranges and 12 resistance thermometer ranges

#### Certificate of Calibration

Included in accordance with Bolttech Mannings quality control program



#### Measuring Points

Records temperature in 6, 12 or 24 channels

#### Universal Power Supply

Working voltage range is 100 – 240 Vac, 50/60 Hz

### Temperature Recorders

Item Number	Description
SMN40564-01	6-Point Fully Digital KR2000 Recorder with case: rugged portable steel case with handles and feet, 4" screen; pre-wired with T/C jacks
SMN40576-01	12-Point Chino AH4000 "Hybrid" Recorder with case: rugged portable steel case with handles and feet, 7" screen; pre-wired with T/C jacks
SMN40577-01	24-Point Chino AH4000 "Hybrid" Recorder with case: rugged portable steel case with handles and feet, 7" screen; pre-wired with T/C jacks
SMN40567-01	12-Point Fully Digital KR2000 Recorder, 4" screen
SMN40568-01	24-Point Fully Digital KR3000 Recorder, 7" screen
SMN40578-01	48-Point Fully Digital KR3000 Recorder, 7" screen
SMN40569-01	12-Point "Hybrid" AH4000 Memory Recorder, 7" screen
SMN40570-01	24-Point "Hybrid" AH4000 Memory Recorder, 7" screen

### Temperature Recorder Accessories

Item Number	Description
42705	Chart Paper for AH/EH "Hybrid" Recorder: 0–2,000°F, 7" chart (180 mm), fan-fold chart — interchangeable with EH recorder (per ream)
42730	(6) Multi-Color Ribbon Set for Chino AH 3000 (Chart ref. No. 22026-01330)

## Thermocouple Welding Units (T.W.U.)

Tests by many authorities have shown that capacitance welding of thermocouples directly to the workpiece is the only way of ensuring accurate temperature measurement. During this method of attachment, the surface of the workpiece becomes the hot junction of the thermocouple, thus an accurate process reading of the workpiece temperature is obtained. Other methods of thermocouple attachment have been documented to produce errors of up to 125°F.

### Thermocouple Welding Unit

Item No. SMN43610-01



- High output
- Self-contained unit with adjustable carrying strap
- Completely equipped with pliers and ground magnet
- Rechargeable battery plus 110 volt plug and cord for recharging
- Rugged stainless steel case
- On-board battery charging system for mobility and ability to run on 110 volt primary power when the battery is discharged

### Mini Welder

Item No. 43640



- Ultra-small capacitive discharge welder
- Variable output; approximately 20–50 joules
- 3-1/2" × 1-1/2" × 6" at 26 ounces
- 4 AA batteries, rechargeable or disposable
- Auto / Manual / Off selector switch
- Automatic shut-off to conserve batteries
- "Wait," "Ready," and "Flat" (low battery) LEDs
- Needle-nose pliers and magnet
- Carrying case with tool pouch and belt loop for Mini Welder

### Pin/Stud Welder

Item No. PM 2000



- Portable with carry strap
- Capacitive discharge
- Can weld pin as heavy as 12 gauge
- Can weld wire pairs up to 14 gauge
- 110 Vac

### Pin/Stud Welder Accessories

Pins and Washers		
Item Number	Description	Unit of Measure
64510	1.5" insulation pins in washers	Each
64511	4.5" 12-gauge insulation pins, mild steel	Each
64512	6" 12-gauge insulation pins, mild steel	Each
64513	2" round washers	Each

**Cable**

**Cable Splitters**



Each cable splitter consists of one male 300-amp Camlock-style connector and 5-foot #6 AWG neoprene welding cable tails going to 60-amp female connectors for connection between the triple cable sets and the ceramic heaters. Splitters are sold individually; 12 are needed for a six-way resistance machine.

**Cable Splitter Specifications**

Item Number	Description
SMN51000-01	2-way splitter
SMN51010-01	3-way splitter
SMN51020-01	4-way splitter
SMN51030-01	5-way splitter
SMN51040-01	6-way splitter

**Note:** Custom lengths or configurations are available upon request.

**Triple-Cable Sets**

All triple-cable sets are made with Neoprene 600-volt insulation rated at 200°C and constructed of fine stranded highly flexible welding wire. Each cable set has two male 300-amp Camlocks and a male Type K thermocouple plug on one end and the corresponding females on the other end. Cables are available in 50-foot and 100-foot lengths in 2 AWG or 1/0 AWG. Thermocouple compensation lead is included and made with shielded wire. Custom lengths and configurations are available to suit your needs.

**Triple-Cable Set Specifications**

Description	Item Number
50-foot 2 AWG shielded TC wire	SMN54210-01
50-foot 1/0 AWG shielded TC wire	SMN54310-01
100-foot 2 AWG shielded TC wire	SMN54000-01
100-foot 1/0 AWG shielded TC wire	SMN54100-01



# customize

While standard tooling options address the basic needs of the market, custom tooling solutions are often required. Whether your application requires torque, tension, nut splitting, induction or resistance heating, our in-house engineering specialists have the experience, insight and resources to develop tooling solutions to suit your needs.



WE CARRY A FULL LINE OF  
**accessories**  
 FOR ALL OF YOUR  
**heat-treating needs**





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