

What the  
**PROS**  
use.



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(985) 785-3075

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11050 W LITTLE YORK BLDG. | HOUSTON, TX 77041  
(713) 983-7171

## Patented tools that **WORK.**

Torq/Lite® has been designing and manufacturing hydraulic torque wrenches in the U.S.A. since 1981. Every day our tools are depended on worldwide and our standards demand that they be accurate and durable. Not only do we offer the most complete line of hydraulic torque wrenches, but each tool is function tested and calibrated prior to shipment for optimum efficiency and value.

Being an ISO 9001 Registered company, we are committed to product quality and customer service. As a vertically integrated manufacturing organization, we maintain complete control of the quality of our product from design to assembly. In addition to Torq/Lite, our sister company, Francis Torque Service, was the first ISO Registered bolting service company.

When engineering or maintaining critical machinery, and the stakes are high, we know how important it is to work accurately. That's why Torq/Lite is devoted to providing you with the best and most precise hydraulic torque wrenches on the market. We offer precision torque tools designed for a variety of fastening applications and hydraulic power consoles that make even the most heavy duty jobs smooth and efficient.





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## SU-XL SERIES

SQUARE DRIVE RATCHET WRENCH

A time-tested and proven tool design, square drive ratchets offer a cost efficient option to handle a wide range of bolting make-up and break-out needs. The SU-XL Series ratchet employs a patented design, which increases accuracy and reduces the number of moving parts. A TL T-6 XL Series body encloses the drive train assembly, allowing no pinch points and lighter weight. Our standard SU-XL Series tool capacities range from 100 to 60,000 foot pounds of torque using a 10,000 p.s.i. hydraulic pump.



### SQUARE DRIVE

For use with all standard size square drive impact sockets. Shifts from make-up to break-out without disassembly.

### TL T-6

XL series bodies made of durable, high-strength, lightweight aircraft alloy.

### UNIBODY

Eliminates "Pinch Points." Reduces side loading. Totally enclosed drive train assembly, allowing nothing in or out of the tool.

### SLOTTED PISTON ROD

Maintains 90° relationship between piston rod and nut. Increases accuracy. Reduces number of moving parts.

### ANTI-REVERSE PAWL

Holds rotational wind-up to maintain required torque.

### PAWL RELEASE

Anti-reverse pawl release mechanism allows manual release of tool if "binding" occurs.

### 360° SWIVELS (PATENTED)

Allow hose movement without hose binding. Nickel-plated steel with fewer moving parts – a great improvement to competitors' designs.

### REACTION MEMBER

48x48 reaction member made of TL T-6 for all SU-XL series models 11,000 ft./lbs. or lower.

### COATED

All exposed parts coated to resist corrosion and galling.

### LIGHT/ERGONOMIC

Reduces operator fatigue.

### CALIBRATED

Every tool is tested and calibrated to +/- 0.03 accuracy and +/- 0.01 repeatability traceable to N.I.S.T.

### WARRANTY

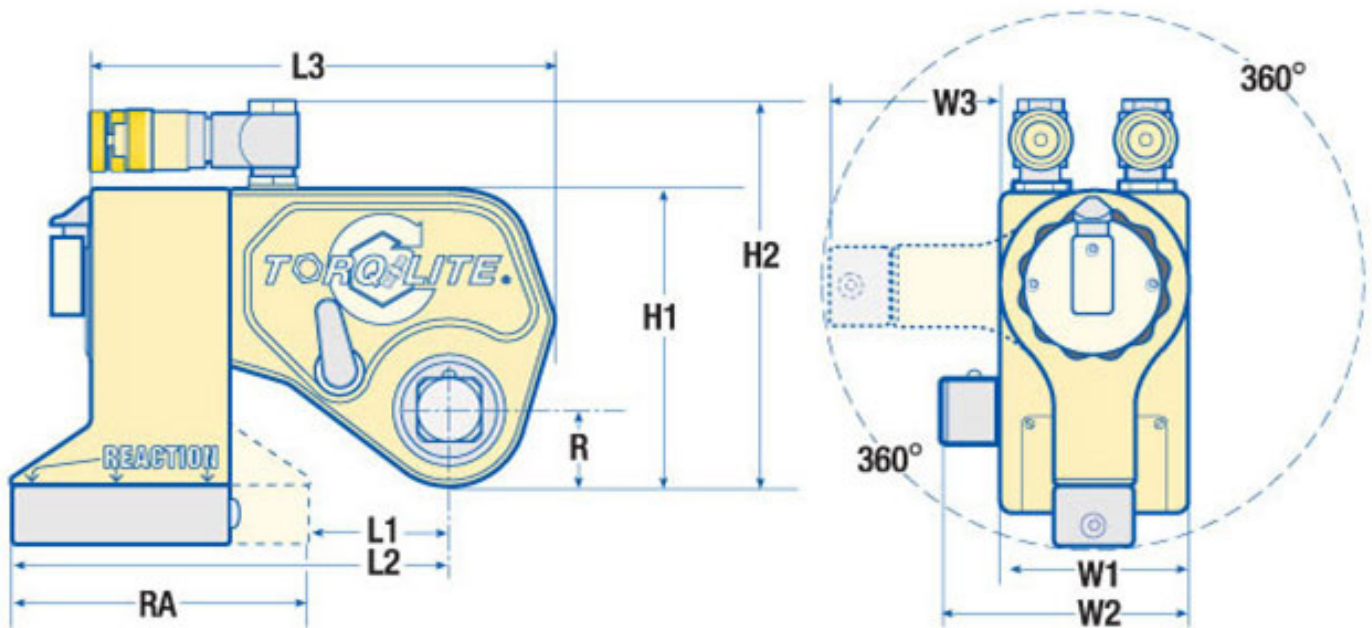
SU-XL Series wrenches come with a 3-year, 2-Tier warranty. That is the best standard warranty on the market today. We stand behind our wrenches like no other.

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# SU-XL SERIES

SQUARE DRIVE RATCHET WRENCH

IMPERIAL



SU-XL SERIES	SQUARE DRIVE	MIN./MAX. FT. LBS. @10,000 PSI	MIN./MAX. NM @700 BAR	WEIGHT*	REACTION AREA	L1	L2	L3	RADIUS	H1	H2	W1	W2	W3
SU-1XL	3/4"/19mm	143/1,382	194/1,874	7.00 lbs.	3.685"	1.567"	5.252"	5.680"	1.200"	4.100"	5.725"	1.980"	2.730"	2.200"
SU-3XL	1"/25mm	262/2,921	355/3,960	14.00 lbs.	5.335"	1.865"	7.200"	7.720"	1.260"	4.990"	6.615"	2.775"	3.600"	3.172"
SU-6XL	1 1/2"/38mm	564/5,110	765/6,928	21.00 lbs.	5.460"	2.150"	7.610"	8.080"	1.725"	6.180"	7.800"	3.140"	4.475"	3.501"
SU-8XL	1 1/2"/38mm	848/8,545	1,150/11,585	31.00 lbs.	6.500"	2.040"	6.880"	8.950"	1.800"	6.770"	8.420"	3.900"	5.350"	4.800"
SU-11XL	1 1/2"/38mm	1,038/10,793	1,407/14,633	36.00 lbs.	6.500"	2.245"	8.745"	9.300"	2.062"	7.664"	9.290"	3.900"	5.350"	4.982"
SU-20XL	2 1/2"/64mm	1,753/17,934	2,377/24,315	75.00 lbs.	7.525"	3.460"	10.375"	11.770"	3.000"	9.490"	11.115"	4.950"	7.450"	5.557"
SU-30XL	2 1/2"/64mm	2,638/25,804	3,577/34,986	91.00 lbs.	7.525"	3.460"	10.875"	11.890"	3.125"	10.375"	12.000"	5.875"	8.375"	5.555"
SU-45XL	2 1/2"/64mm	4,400/46,631	5,966/63,223	150.00 lbs.	7.425"	7.337"	12.537"	13.312"	3.275"	11.225"	12.600"	5.750"	8.250"	5.500"
SU-60XL	2 1/2"/64mm	5,113/54,905	6,932/74,441	296.00 lbs.	8.781"	5.887"	14.668"	16.000"	3.750"	14.000"	15.600"	7.250"	9.750"	5.750"

\*Weight includes reaction member and square drive.

**THIS TOOL IS APPROVED FOR EXPLOSIVE ENVIRONMENTS.**



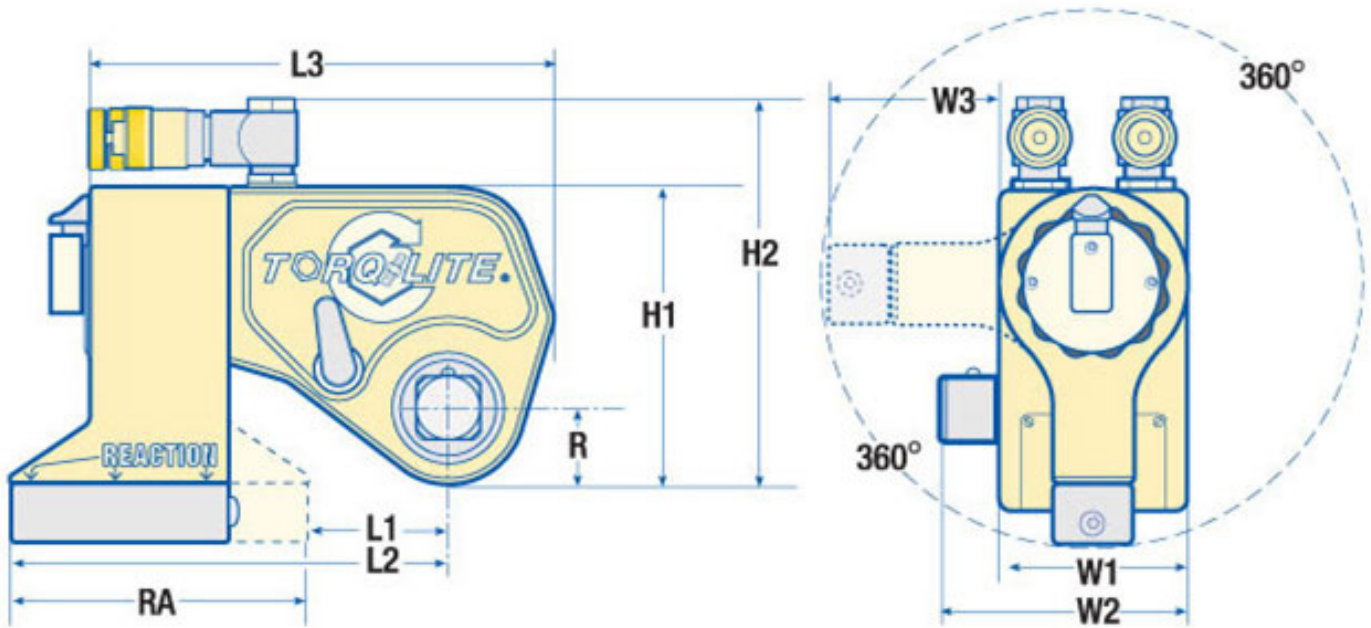
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# SU-XL SERIES

SQUARE DRIVE RATCHET WRENCH

METRIC



SU-XL SERIES	SQUARE DRIVE	MIN./MAX. NM @700 BAR	MIN./MAX. FT. LBS. @10,000 PSI	WEIGHT*	REACTION AREA	L1	L2	L3	RADIUS	H1	H2	W1	W2	W3
SU-1XL	3/4"/19mm	194/1,874	143/1,382	3.18 kg	94mm	40mm	133mm	151mm	30mm	104mm	145mm	50mm	69mm	56mm
SU-3XL	1"/25mm	355/3,960	262/2,921	6.35 kg	136mm	47mm	183mm	202mm	32mm	124mm	166mm	70mm	91mm	81mm
SU-6XL	1 1/2"/38mm	765/6,928	564/5,110	9.53 kg	139mm	55mm	193mm	214mm	44mm	151mm	199mm	76mm	114mm	89mm
SU-8XL	1 1/2"/38mm	1,150/11,585	848/8,545	14.06 kg	165mm	52mm	175mm	227mm	46mm	172mm	214mm	99mm	136mm	122mm
SU-11XL	1 1/2"/38mm	1,407/14,633	1,038/10,793	16.33 kg	127mm	57mm	222mm	239mm	52mm	187mm	232mm	99mm	136mm	127mm
SU-20XL	2 1/2"/64mm	2,377/24,315	1,753/17,934	34.02 kg	191mm	88mm	264mm	295mm	76mm	233mm	274mm	126mm	189mm	141mm
SU-30XL	2 1/2"/64mm	3,577/34,986	2,638/25,804	41.28 kg	191mm	88mm	276mm	298mm	79mm	248mm	289mm	149mm	213mm	141mm
SU-45XL	2 1/2"/64mm	5,966/63,223	4,400/46,631	68.04 kg	189mm	186mm	318mm	338mm	83mm	285mm	320mm	146mm	210mm	140mm
SU-60XL	2 1/2"/64mm	6,932/74,441	5,113/54,905	134.26 kg	223mm	150mm	373mm	406mm	95mm	356mm	396mm	184mm	248mm	146mm

\*Weight includes reaction member and square drive.

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## IU-XL SERIES

INLINE RATCHET WRENCH



Inline ratcheting wrenches require minimum clearance while applying torque on the same plane as the nut, providing a marked improvement over square drive socket wrenches. Our patented design breakthrough reduced the overall dimensions of the inline ratcheting head, allowing it to fit almost every application. Our IU-XL Series capacities range from 100 to 50,000 foot pounds of torque using a 10,000 p.s.i hydraulic pump. “Extra light, dependable, and fits where others can not.”

### INLINE DRIVE

Standard fractional head sizes from 3/4" to 7/4" and 19mm to 185mm nuts across the flats. Special sizes available.

### PRECISION MACHINED

Increases accuracy, durability and repeatability.

### UNIBODY

Eliminates “Pinch Points.”

### 360° SWIVELS (PATENTED)

Allow hose movement without hose binding. Nickel-plated steel with fewer moving parts – a great improvement to competitors’ designs.

### SLOTTED PISTON ROD

Maintains 90° relationship between piston rod and nut. Increases accuracy. Reduces number of moving parts.

### CYLINDER

Made of TL T-6 durable, high-strength, lightweight aircraft alloy with the same sturdy, dependable and accurate design as the steel cylinder.

### FAST HEAD EXCHANGE

Spring retaining clip allows for quick and simple changing of various head sizes.

### REACTION PAD

Reacts on the same plane as the nut.

### MULTI-AXIS PORTING SYSTEM

The IU-XL Series tools are the first and only system that allows the swivels to be manually relocated from the top of the tool to the back of the tool using only hand tools.

### DRIVE PIN DESIGN (PATENTED)

Reduces overall dimensions of hex head including a thinner “nose” radius. Fits more applications, including all 57 A.P.I flanges.

### COATED

All exposed parts coated to resist corrosion and galling.

### LIGHT/ERGONOMIC

Reduces operator fatigue.

### CALIBRATED

Every tool is tested and calibrated to +/- 0.03 accuracy and +/- 0.01 repeatability traceable to N.I.S.T.

### WARRANTY

IU-XL Series wrenches come with a 3-year, 2-Tier warranty. That is the best standard warranty on the market today. We stand behind our wrenches like no other.



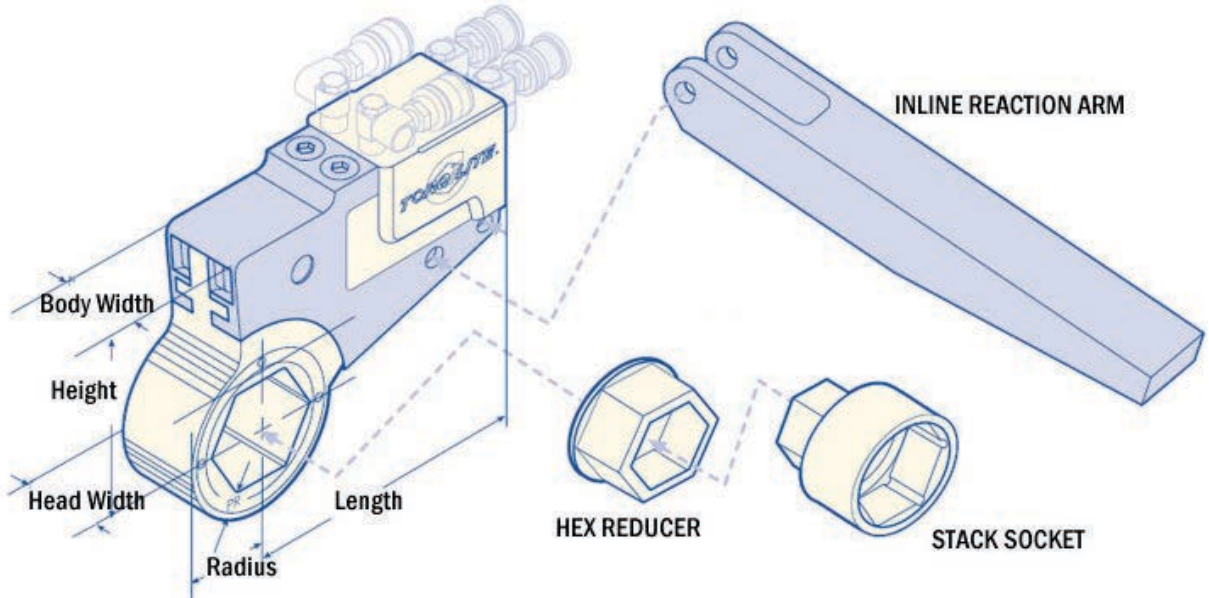
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# IU-XL SERIES

## INLINE RATCHET WRENCH

IMPERIAL



IU-XL SERIES	MIN./MAX. FT. LBS. @ 10,000 PSI	MIN./MAX. NM @ 700 BAR	LENGTH	HEIGHT	BODY WIDTH	HEAD WIDTH	RANGE	WEIGHT WITH HEAD
IU-1XL	117/1,294	159/1,754	6.250"	4.000"	1.100"	.950"	3/4" - 2"	7.25 lbs.
IU-3XL	294/3,074	399/4,168	7.000"	5.750"	1.450"	1.075" or 1.200"	1 1/4" - 2-15/16"	9.25 lbs.
IU-7XL	667/6,899	904/9,354	9.250"	6.250"	1.500"	1.500"	2" - 3 7/8"	14.00 lbs.
IU-10XL	990/9,900	1,342/13,423	9.750"	8.000"	1.950"	1.950"	2 3/8" - 4 1/4"	24.50 lbs.
IU-17XL	1,513/15,951	2,051/21,627	11.250"	9.250"	1.950"	2.450"	2 3/4" - 5 3/8"	42.00 lbs.
IU-25XL	2,260/23,620	3,064/32,024	11.250"	9.250"	2.900"	2.950"	3 1/2" - 5 3/4"	57.00 lbs.
IU-50XL	3,475/44,785	4,711/60,720	15.375"	10.500"	2.900"	2.950"	4 5/8" - 7 1/4"	85.00 lbs.

IU-1XL HEADS		
ATF	RADIUS	P/R
3/4"	1.07"	0.41"
1-1/16"	1.18"	0.34"
1-1/4"	1.29"	0.34"
1-7/16"	1.40"	0.34"
1-5/8"	1.51"	0.34"
1-13/16"	1.61"	0.34"
2"	1.72"	0.34"

IU-3XL HEADS		
ATF	RADIUS	P/R
1-1/4"	1.38"	0.35"
1-7/16"	1.46"	0.35"
1-5/8"	1.57"	0.35"
1-13/16"	1.70"	0.40"
1-7/8"	1.79"	0.46"
2"	1.79"	0.46"
2-3/16"	1.90"	0.40"
2-3/8"	1.97"	0.40"
2-9/16"	2.12"	0.46"
2-3/4"	2.24"	0.46"
2-15/16"	2.36"	0.46"

IU-7XL HEADS		
ATF	RADIUS	P/R
2"	1.80"	0.47"
2-3/16"	1.88"	0.47"
2-3/8"	2.02"	0.47"
2-9/16"	2.15"	0.47"
2-3/4"	2.40"	0.55"
2-5/16"	2.55"	0.50"
3-1/8"	2.62"	0.55"
3-1/2"	2.85"	0.63"
3-7/8"	3.04"	0.60"

IU-10XL HEADS		
ATF	RADIUS	P/R
2-3/8"	2.02"	0.45"
2-9/16"	2.15"	0.47"
2-3/4"	2.40"	0.55"
2-15/16"	2.55"	0.50"
3-1/8"	2.62"	0.55"
3-1/2"	2.85"	0.85"
3-7/8"	3.07"	0.85"
4-1/4"	3.26"	0.85"

IU-17XL HEADS		
ATF	RADIUS	P/R
2-3/4"	2.50"	0.90"
2-15/16"	2.62"	0.90"
3-1/8"	2.70"	0.90"
3-1/2"	2.90"	0.90"
3-7/8"	3.18"	0.95"
4-1/4"	3.35"	0.96"
4-5/8"	3.58"	0.96"
5"	3.90"	1.00"
5-3/8"	4.10"	1.00"

IU-25XL HEADS		
ATF	RADIUS	P/R
3-1/2"	2.90"	0.87"
3-7/8"	3.18"	0.95"
4-1/4"	3.35"	0.90"
4-5/8"	3.58"	0.90"
5"	3.85"	0.96"
5-3/8"	4.10"	1.00"
5-3/4"	4.32"	1.02"

IU-50XL HEADS		
ATF	RADIUS	P/R
4-5/8"	3.92"	1.25"
5"	4.13"	1.25"
5-3/8"	4.35"	1.25"
5-3/4"	4.57"	1.25"
6-1/8"	4.78"	1.25"
6-1/2"	5.00"	1.25"
6-7/8"	5.22"	1.25"
7-1/4"	5.43"	1.25"

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## POWER CONSOLES

HYDRAULIC PUMPS



These pumps have been continually upgraded over the last 40 years and even some of the originals are still in service. Equipped with a 1 $\frac{1}{8}$  hp, single-phase universal motor, they have a noise level of 90-95 dB(A). Offer an incredible weight-to-performance ratio for any of our electric/hydraulic pumps, and are CSA rated for intermittent duty.

- TWO-SPEED HIGH PERFORMANCE PUMP
- EXTERNAL ADJUSTABLE PRESSURE REGULATOR
- RETRACT SIDE INTERNAL RELIEF VALVE
- USE FOR DOUBLE OR SINGLE ACTING TOOLS
- HAND REMOTE CONTROL WITH 30-FOOT CORD

CONSOLE MODEL	SOURCE	POWER REQ.	OIL DELIVERY	OIL RESERVOIR	USABLE OIL	OVERALL WIDTH	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT WITH OIL
TL-SEHC	Electric 1-1/8 HP	115V, 110V, 220V	704 in. <sup>3</sup> @ 100 psi 56 in. <sup>3</sup> @ 10,000 psi	2.5 gallons	525 in. <sup>3</sup>	17.14 in.	9.5 in.	18.12 in.	75 lbs.

ELECTRIC MOTOR  
1-1/8 HP, 12,000 rpm  
115V, 25 amps  
110V/50Hz, 25 amps  
220V/50Hz, 13 amps

### TL-SAHC PUMP

- USE WHERE AIR IS THE PREFERRED SOURCE OF POWER
- EXTERNAL ADJUSTABLE PRESSURE REGULATOR
- RETRACT SIDE INTERNAL RELIEF VALVE
- USE FOR DOUBLE OR SINGLE ACTING TOOLS
- PNEUMATIC REMOTE CONTROL WITH 30-FOOT CORD
- POWERFUL 3 HP MOTOR STARTS UNDER LOAD



CONSOLE MODEL	SOURCE	OIL DELIVERY	OIL RESERVOIR	USABLE OIL	OVERALL WIDTH	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT WITH OIL
TL-SAHC	Pneumatic 3 HP	465 in. <sup>3</sup> @ 100 psi 55 in. <sup>3</sup> @ 10,000 psi	2.5 gallons	590 in. <sup>3</sup>	16.55 in.	9.5 in.	19.83 in.	65 lbs.

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# POWER CONSOLES

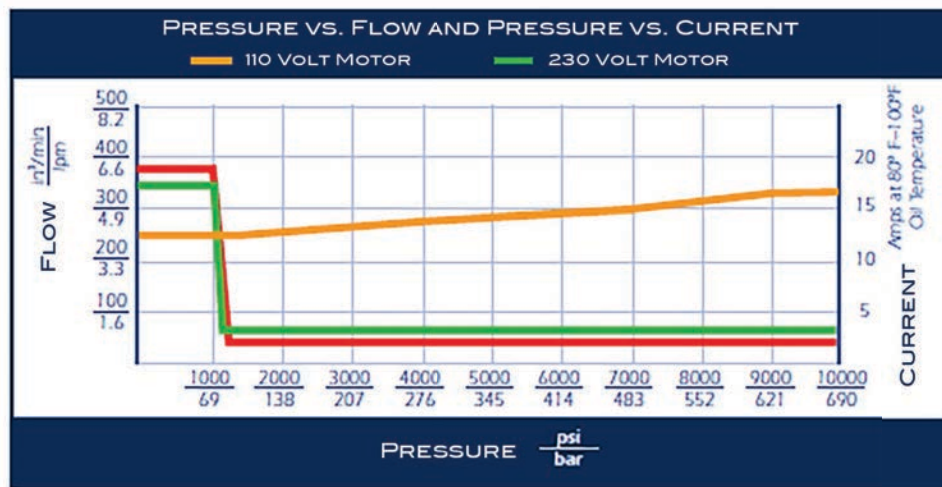
TL-TP PUMP



Hydraulic power unit engineered to continuously and reliably operate a variety of hydraulically powered torque wrenches operating up to 700 bar / 10,150 psi.

This compact design utilizes a finned housing with integral fan that eliminates the need for an external cooler. Directly mounted pressure and directional control valves eliminate additional plumbing and potential leak points while keeping the unit compact.

Pendant control for manual advance and automatic retract operation.



MODEL NUMBER	MOTOR VOLTAGE	ELECTRICITY	POWER	MAXIMUM NAMEPLATE CURRENT	MAXIMUM ADVANCE PRESSURE	PRESSURE @ 15 AMP MOTOR CURRENT	RETRACT PRESSURE
TL-TP (110)	110/120V	60Hz One phase	1.5 KW 2 HP	20.5 A	700 bar 10,150 psi	475-500 bar 6,890-7,250 psi	120 bar 1,740 psi
TL-TP (230)	230V	50Hz One phase	1.5 KW 2 HP	10.5 A	700 bar 10,150 psi	n/a n/a	120 bar 1,740 psi

MODEL NUMBER	ADVANCE FLOW RATE 0-100 BAR / 0-1,500 PSI	ADVANCE FLOW RATE 100-700 BAR / 1,500-10,150 PSI	RESERVOIR CAPACITY	USABLE OIL	NOISE LEVEL @ 300 BAR	UNIT WEIGHT WITH OIL	CONTROL PENDANT LENGTH
TL-TP (110)	6.31 lpm 386 in. <sup>3</sup> /min.	0.91 lpm 52 in. <sup>3</sup> /min.	3.7 liter 1.0 gallon	1.7 liter 0.5 gallon	68-70 dB	34 kg 75 lbs.	6 meters 20 feet
TL-TP (230)	5.60 lpm 340 in. <sup>3</sup> /min.	1.10 lpm 67 in. <sup>3</sup> /min.	3.7 liter 1.0 gallon	1.7 liter 0.5 gallon	68-70 dB	34 kg 75 lbs.	6 meters 20 feet



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## JN SERIES

HYDRAULIC WRENCH



Our patented JN Series hydraulic wrench is designed specifically for fast, safe and accurate tightening or loosening of Top Drive Packing Nuts and Gas Compressor Piston Rod Crosshead Jam Nuts. However, with use of one of our innovative, in-house specialty adapters/inserts, the wrench can be used to turn any nut that faces the problem of having a shaft, rod or tube running through its center. The Torq/Lite JN Series hydraulic wrench features a patented “split-head” design, enabling the tool to fit over the wash pipe or piston rod and around your packing nut or jam nut. Our standard JN Series wrench capacity ranges from 100 to 32,000 foot pounds of torque using a standard bi-directional 10,000 p.s.i. hydraulic pump.

### PATENTED “SPLIT-HEAD” DESIGN

The “split-head” itself, or through use of a special made adapter/insert, can fit any size or type of Top Drive Packing Nut, OEM Jam Nut, hex or any other configuration. This eliminates the need for expensive after-market nuts while also giving you never before seen accuracy, speed and safety.

### FAST

The patented “split-head” design can be placed around the wash pipe, piston rod or any other type of shaft, rod, pipe or tube and on the nut or adapter/insert in less than one minute. Accurate tightening or loosening of the jam nut is easily achieved in just a few seconds.

### SAFE

The JN Series hydraulic wrench eliminates unsafe hammer wrenches, hydraulic jacks or cranes, and other unsafe equipment currently being used to turn these nuts.

### ACCURATE

This fast hydraulic wrench, designed specifically to deal with Top Drive Packing Nuts and Crosshead Jam Nuts, provides accuracy to +/- 0.03 with the use of a standard bi-directional 10,000 p.s.i. hydraulic pump.

### FUNCTIONAL

The JN Series hydraulic wrench will work equally well in either Top Drive wash pipe assemblies or compressor cross-head access ports. It will work right-side up, upside-down, sideways, etc. for both loosening and tightening.

### REACTION PAD

Reacts against either the Top Drive bonnet window opening or the compressor crosshead structure.

### COATED

All exposed parts to resist corrosion and galling.

### 360° SWIVEL FITTINGS (PATENTED)

Allow hose movement without hose binding. Nickel-plated steel with fewer moving parts.

### LIGHT/ERGONOMIC

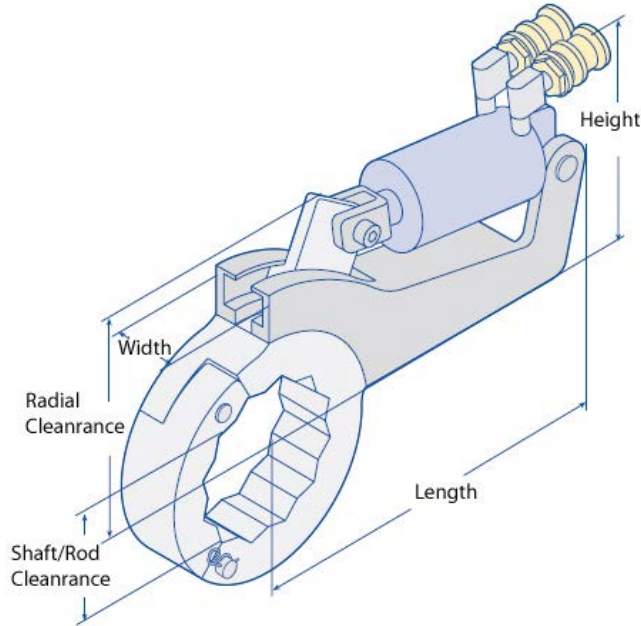
Reduces operator fatigue. Tool can also be used with an overhead spring balancer, which allows you to set the tool weight as light as one pound.

### CALIBRATED

Every tool is tested and calibrated to +/- 0.03 accuracy and +/- 0.01 repeatability traceable to N.I.S.T.

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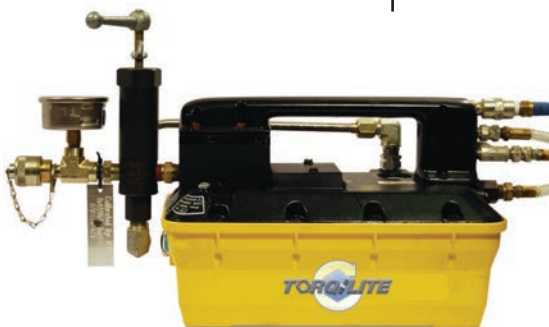
## JN SERIES HYDRAULIC WRENCH



JN SERIES	MAX FT. LBS. @ 10,000 PSI	LENGTH	HEIGHT	WIDTH	RADIAL CLEARANCE	"SPLIT HEAD" RANGE	WEIGHT WITH HEAD
JN-4	3,650	13.044"	7.014"	1.950"	5.000"	2" - 4 <sup>5</sup> / <sub>8</sub> "	28 lbs.
JN-10	8,400	10.659"	7.014"	1.950"	5.000"	3 <sup>3</sup> / <sub>8</sub> " - 4 <sup>5</sup> / <sub>8</sub> "	28 lbs.
JN-20	20,100	14.056"	9.117"	1.950"	7.372"	4 <sup>5</sup> / <sub>8</sub> " - 6"	40 lbs.
JN-30	32,000	16.000"	10.446"	1.950"	8.825"	6" - 8 <sup>1</sup> / <sub>4</sub> "	57 lbs.
JN-40	38,396	19.126"	12.500"	2.950"	10.070"	4 <sup>5</sup> / <sub>8</sub> " - 10"	105 lbs.

**THIS TOOL IS APPROVED FOR EXPLOSIVE ENVIRONMENTS.**

## JNAHC-10 TURBO AIR/HYDRAULIC PUMP



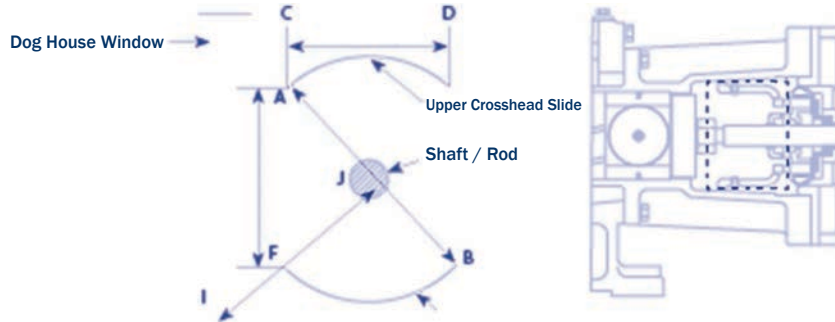
RESERVOIR CAPACITY	150 cubic inches
FLOW RATED PRESSURE	8 cubic inches/minute
AIR PRESSURE RANGE	40 - 100 psi
AIR CONSUMPTION	12 scfm
MAXIMUM OPERATING PRESSURE	10,000 psi
BUTTON PENDANT	Controls hydraulic advance/extend and air retract/return



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# JN SERIES WORKSHEET



### COMPANY INFORMATION

Order Number \_\_\_\_\_ Date \_\_\_\_\_  
 Contact Name \_\_\_\_\_ Title \_\_\_\_\_ Phone \_\_\_\_\_  
 Company \_\_\_\_\_ Fax \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

### COMPRESSOR INFORMATION

Compressor Manufacturer/Brand \_\_\_\_\_  
 Compressor Model/Series \_\_\_\_\_

### JAM NUT INFORMATION

Jam Nut Manufacturer \_\_\_\_\_  
 Jam Nut Part Number \_\_\_\_\_  
 Thread Opening \_\_\_\_\_  
 Thread Count per Inch \_\_\_\_\_  
 Description Shape & Size (O.D.) of Nut \_\_\_\_\_  
 Max. Make-up Torque (ft./lbs.) \_\_\_\_\_

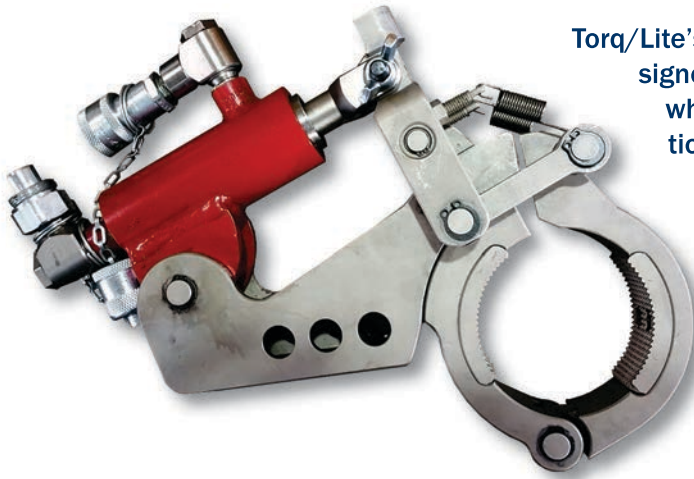
### DIMENSION INFORMATION

Shaft/Rod Diameter \_\_\_\_\_  
 Dimensions A-B \_\_\_\_\_ C-D \_\_\_\_\_ E-F \_\_\_\_\_  
 Doghouse (Access Window) Dimensions \_\_\_\_\_  
 Inside Doghouse Dimensions G-H \_\_\_\_\_  
 I-J \_\_\_\_\_  
 Tracking Number of Shipment \_\_\_\_\_ Date Shipped \_\_\_\_\_

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## HU SERIES

HAMMER UNION CONNECTION TOOL



Torq/Lite's patent-pending HU Series clamping wrench is designed specifically to work on Hammer Union connections while eliminating the need for the hammer the connection is named for. Outdated methods require pounding on a hammer to turn these connections, while the HU Series takes the hammer out of the hands of the operators and provides them with a much safer way to get the job done. With two different models, the HU Series wrenches are capable of fitting all registered Hammer Union sizes. The easy-to-latch head makes installation and set-up very simple, and the spring-loaded action provides nearly completely hands-free operation.

### SAFE

The safety increases exponentially when you remove a hammer from a situation and add a tool that does not require a dangerous swinging motion to operate.

### HANDS-FREE OPERATION

Once the tool is applied to the Hammer Union connection, the operator does not need to use his hands to hold the tool in place. Additionally, the tool has an optional handle that can be attached, so that if the operator so chooses, he can hold the tool safely.

### ADJUSTABLE REACTION ARM

The adjustable reaction arm allows the HU Series to fit all registered Hammer Union connections with only two different tool models.

### SPRING HEAD

The head features the same patented open-gate design as Torq/Lite's JN Series wrenches, but has a spring-latch feature that makes applying and removing the tool very simple.

### INTERCHANGEABLE JAWS

The HU Series uses jaws inside the head to clamp to the application and turn it as it advances. These jaws are interchangeable and different sizes can be applied to the same head, allowing a user much more range from one tool, and resulting in cost savings over time.

### NON-DESTRUCTIVE

Throughout their lifespan, the Hammer Union lugs can take a lot of beatings - literally. The HU Series reduces the impact on those lugs, saving replacement time and costs.

### CONTROLLED LOAD

Since the operator is not striking a hammer, the load is able to be applied to the connection in a stable, constant, and controlled manner.

### REDUCES OPERATOR FATIGUE

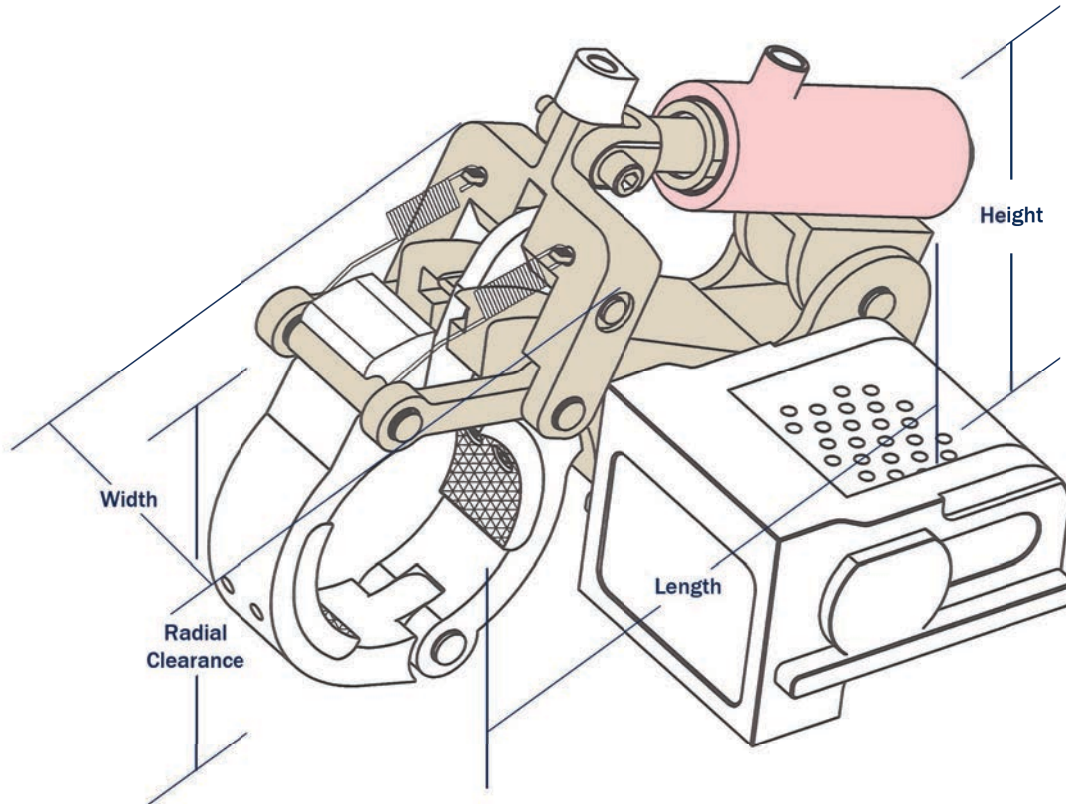
Swinging at a hammer is not only dangerous, it is exhausting. The HU Series saves the shoulders of the operators, keeping them safe, and making them more productive.



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## HU SERIES HAMMER UNION CONNECTION TOOL



HU SERIES		LENGTH	HEIGHT	WIDTH	RADIAL CLEARANCE	"SPLIT HEAD" RANGE	WEIGHT WITH HEAD
HU-3	A	9 <sup>7</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>4</sub> "	1.950"	1.835"	1 <sup>3</sup> / <sub>4</sub> " - 2 <sup>3</sup> / <sub>16</sub> "	16 lbs.
	B	9 <sup>7</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>4</sub> "	1.950"	2.375"	2 <sup>3</sup> / <sub>16</sub> " - 3 <sup>1</sup> / <sub>4</sub> "	16 lbs.
	C	9 <sup>7</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>4</sub> "	1.950"	2.828"	3 <sup>1</sup> / <sub>4</sub> " - 3 <sup>3</sup> / <sub>4</sub> "	16 lbs.
HU-5	D	11 <sup>1</sup> / <sub>4</sub> "	8"	1.950"	R 2 <sup>9</sup> / <sub>16</sub> "	2 <sup>1</sup> / <sub>2</sub> " - 4 <sup>3</sup> / <sub>8</sub> "	17.5 lbs.
	E	11 <sup>1</sup> / <sub>4</sub> "	8"	1.950"	R 3 <sup>1</sup> / <sub>8</sub> "	4 <sup>3</sup> / <sub>8</sub> " - 5 <sup>1</sup> / <sub>4</sub> "	17.5 lbs.

**THIS TOOL IS APPROVED FOR EXPLOSIVE ENVIRONMENTS.**

\*The HU Series wrench will work with any standard torque wrench pump, eliminating the need to purchase a special unit to operate it.

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## RISER TOOLS

HYDRAULIC RISER WRENCHES



Our patented RT Series riser tool is a hydraulic speed/torque wrench combination, designed for use during make-up or break-out of any sub-sea riser bolted flange. With the push of a hand-held button, the RT Series riser tool spins the nut down at high speed and then automatically completes the torque to a preset limit via the ratcheting mechanism when making up. When breaking out the tool does the exact opposite, using the ratcheting operation to break the nut loose and then spinning it out at high speed.

### HIGH SPEED

Single bolt make-up or break-out in seconds. Reduces operating time and saves money.

### EXTREME TORQUE

Torque capacity to 38,000 ft./lbs.

### HANDS-FREE

A hand-held remote push button allows for safe hands-free tool operation.

### 2½" SQUARE DRIVE

Use with multiple standard-size square drive impact sockets or in-house modified specialty sockets. Easily converts from make-up to break-out allowing effective use of the tools for either application.

### NICKEL-COATED

Resists corrosion.

### REACTION BAR

We offer both inline and drop-down reaction, as well as Load King reaction bars.

### ERGONOMIC

Using the tools with our overhead spring balancers can reduce the weight to as low as one pound. This significantly reduces operator fatigue.

### CALIBRATED

Every tool is tested and calibrated to +/- 3% accuracy, traceable to N.I.S.T., and Torq/Lite calibrates all of their tools for free for the life of the tool.

### COMPLETE PACKAGE

Available with overhead balancers, dual control console, sockets, and aluminum storage containers.



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## RISER TOOLS

HYDRAULIC RISER WRENCHES



The RT-Series Riser Tool package consists of riser tools, overhead balancers, dual control console, sockets, and aluminum oil bath storage containers. The RT-Series riser tools are the simplest, fastest, and safest method to make up or break out any flange-bolted marine subsea riser.

### DUAL CONTROL CONSOLE

Custom built aluminum conversion console, utilizes rig hydraulics up to 3,000 p.s.i. and provides continuous volume of hydraulic fluid required to independently operate two riser tools simultaneously.

### ALUMINUM OIL BATH STORAGE

Divided and compartmentalized for storage and submerging of riser tools with self-standing lockable lids.

### OVERHEAD BALANCERS

Virtually eliminates the weight of riser tool which reduces operator fatigue and increases efficiency of operation.

### SOCKETS - 2½" SQUARE DRIVE

We stock all standard size sockets and can modify sockets in-house to fit your particular application.

### RT-SERIES RISER TOOLS

RT-16: Torque capacity to 16,234 ft. lbs.

RT-24: Torque capacity to 25,453 ft. lbs.

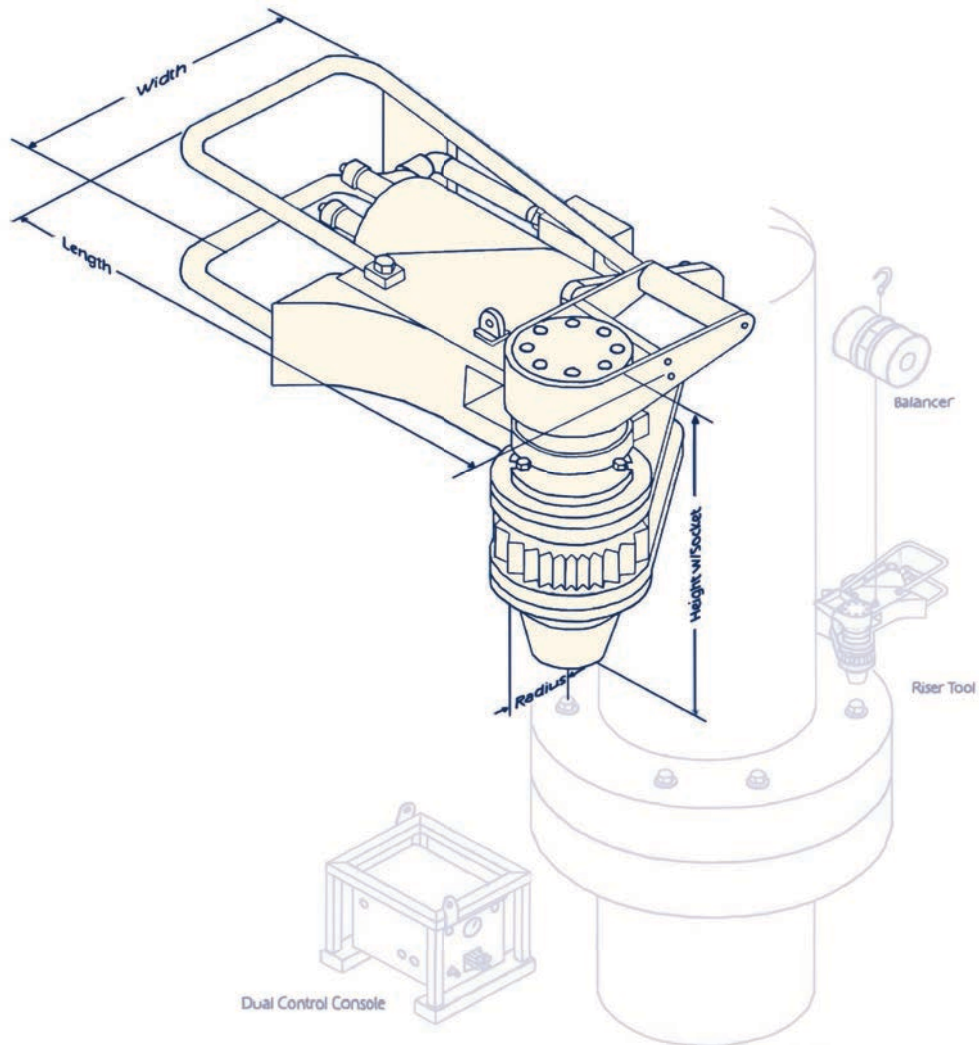
RT-40: Torque capacity to 38,000 ft. lbs.

RT-60: Currently in development.

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# RISER TOOLS

HYDRAULIC RISER WRENCHES



RT SERIES	MAX FT. LBS. @ 3000 PSI	LENGTH	HEIGHT W/ SOCKET	WIDTH	RADIUS	SQUARE DRIVE	WEIGHT
RT-16	16,234	27½"	15"	16½"	3.10"	2½"	267 lbs.
RT-24	25,453	27½"	15"	16½"	3.10"	2½"	267 lbs.
RT-40	38,000	28"	17¾"	18½"	3.10"	2½"	358 lbs.

**THIS TOOL IS APPROVED FOR EXPLOSIVE ENVIRONMENTS.**

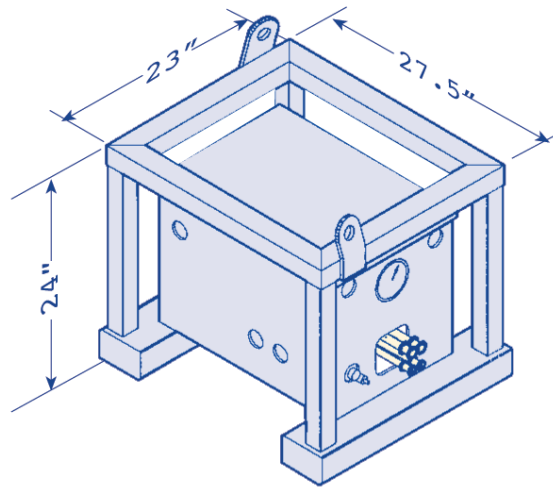


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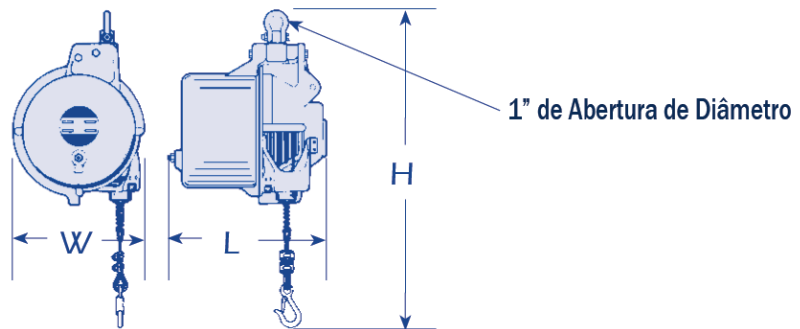
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## RISER TOOLS

DCC AND BALANCERS



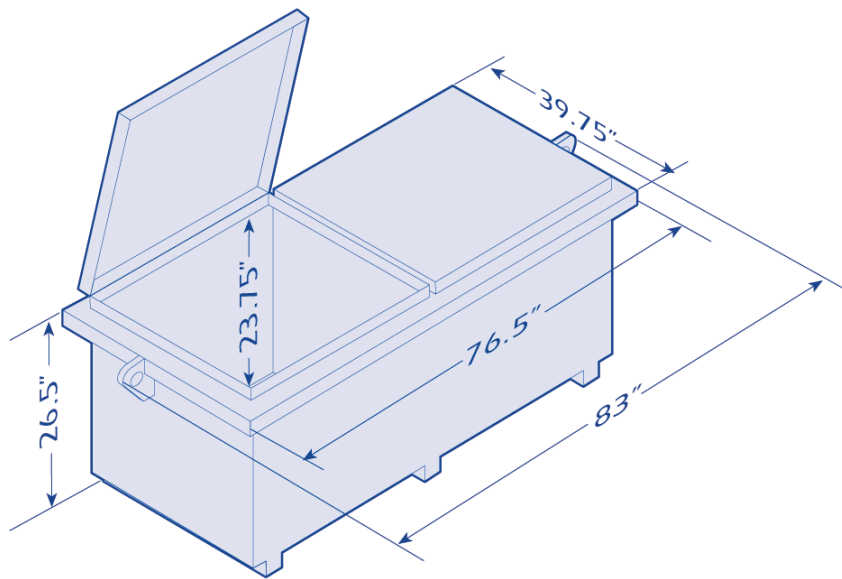
MODEL	MAX. OUTPUT	HYDRAULIC FLUID CAPACITY	AIR REQUIREMENT	CONTROL	HYDRAULIC HOSES	WEIGHT W/ HOSES	WIDTH	LENGTH	HEIGHT
DCC 16/24	3000 psi	10 GPM of Rig Hydraulics	90 psi 20 cfm	(2) Push Button	(4) 30 ft. x 3/8" 5000 psi WP	158 lbs.	23"	27.5"	24"
DCC 40	3000 psi	20 GPM of Rig Hydraulics	90 psi 20 cfm	(2) Push Button	(4) 30 ft. x 3/8" 5000 psi WP	206 lbs.	23"	27.5"	24"



MODEL	CABLE TRAVEL	LENGTH	WIDTH	HEIGHT	CAPACITY	WEIGHT TOTAL
16B125 / 24B125	5 ft.	8"	9.5"	16" min.	220-275 lbs.	39 lbs.
40B170	5 ft.	8"	11"	24"	308-375 lbs.	62 lbs.

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**RISER TOOLS**  
ALUMINUM STORAGE BOX



LENGTH	LENGTH W/ EYELIDS	WIDTH	HEIGHT W/ LID	INSIDE DEPTH	WEIGHT
76.5"	83"	39.75"	26.5"	23.75"	150 lbs.



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## ROBO-SPIDER™

HYDRAULIC BOLTING SYSTEM



Deepwater drilling demands a safer, faster, and more accurate bolt-tightening environment. The patented Robo-Spider's innovative and revolutionary design, which was developed with Cameron for the Load King series riser, delivers a flawless bolt-tightening performance that significantly reduces drilling costs in daily rig operations. The Robo-Spider is the first fully-automated hydraulic torquing system designed to torque an entire riser flange at once, taking the place of single riser tools that currently do one bolt at a time. The Robo-Spider was designed to meet deepwater drilling demands and exceed industry expectations.

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## ROBO-SPIDER™

HYDRAULIC BOLTING SYSTEM



The exclusive design behind the Robo-Spider is the individual bolt-tightening module. Each module operates as a stand-alone unit, and at the same time, all the modules work in tandem to tighten each bolt with accurate and balanced preload with every turn. The modules can be programmed to continue fluent bolt-tightening operation if another module is being serviced, while still allowing opportunity for a manual riser wrench, if necessary. The encasing design of the modules is compact, efficient, and explosion proof – safe features that deliver consistent and time-saving results where it's needed.

The Hydraulic Power Unit is the power behind the Robo-Spider. It is specifically designed to accommodate any drilling rig environment without requiring special electrical configurations. A unique feature of the HPU is the redundant hydraulic pump system that allows the Robo-Spider to continue riser operations if one pump fails.

### HPU SPECIFICATIONS

Weight: 8,000 lbs.

Dimensions: 68" deep x 51½" wide x 120" high

Electrical Requirements: (2) 480 volts, 60 Hz cycles, 3-phase, 100 amp circuits

Dual 100 HP electric motors, 1800 RPM, 3-phase, 480VAC, explosion proof

2 ea. Parker PD140R piston pumps, pressure compensated

System relief valves

Explosion proof Parker directional control valve for unloading function

2 ea. Noshock pressure transducers

5 HP electric motor operating a Parker 20 GPM pump for kidney loop through Thermal Transfer air/oil heat exchanger and filter for cooling and cleaning the oil

Return line filter

Custom reservoir and framing, tank 56" x 116" x 30", frame 10 ft. x 5 ft.

Level switch, thermal switch, sight glass, pressure gauges

Construction: tank and frame - painted carbon steel

Overall design meets explosion proof Class 1, Division 1

System to be used in offshore environment assembly and disassembly





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## ROBO-SPIDER™ CONTROL PANEL

A distinct safety feature of the Robo-Spider, the hands-free control panel, ensures safety for crew members and more efficient use of work time. With the Robo-Spider control panel, the riser running or pulling process can be performed completely hands-free at a safe distance from the actual flange. Portable and electronically programmed, the control panel is operated at a safe distance from the riser allowing crew members to remain protected from adverse weather conditions. Operation of the control panel is intuitive, simple, and does not require long hours of complicated training.



### CONTROL PANEL SPECIFICATIONS

Dimensions: 18" deep x 48" wide x 60" high

(Dimensions include the pressure gauge on the side of the panel).

### HMI TOUCH SCREEN

The Class I, DIV 2 HMI touch screen is mounted on the door of the control panel to create a familiar and user-friendly interface between the operator and the Robo-Spider. This touch screen replaces the standard buttons that were previously seen on the front of the control panel and provides a convenient location to perform all Robo-Spider functions. The touch screen is used to operate both the Hydraulic Power Console and the modules. The HPU can be turned ON, OFF, or put into "Manual" mode all from the convenience of the touch screen. Additionally, you are able to control all aspects of operation of the program - i.e., enter into "All Make" or "All Break" modes, the "Home" feature (which allows for all the modules to return to their resting positions), and make adjustments to the variables of each individual module.

### INFORMATION / JOURNALING FEATURE

The Information Screen allows the operator to input the specifics of each rig - i.e., the platform name, site location, operator name, wrench, flange type, and bolt type. The Journaling Feature saves and stores this information making it easy for the user to go back and reference who, what, and when the operation took place.

### ELECTRICAL IMPROVEMENTS

During the redesign process, approximately 40% of space was eliminated on the module, which accounts for the dramatic decrease in the size of the module. Many of the electrical components were able to be moved from the module to the control panel to centralize all electrical hardware into one box and simplify many aspects of the programming.

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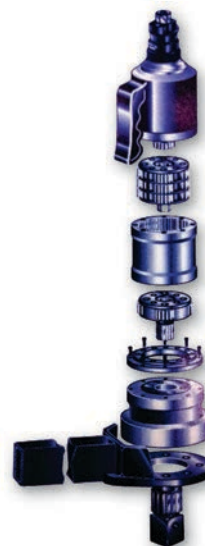
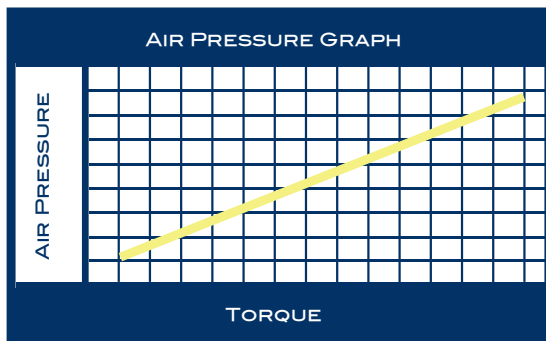
# PNEUMATIC SERIES

HYDRAULIC MULTIPLIERS



## WHAT IS A TORQ/LITE PNEUMATIC WRENCH?

A Torq/Lite pneumatic torque wrench consists of a robust air motor driving a multiplier with three or more stages of epicyclic gearing. Torque control is achieved by adjustment of the air pressure. An air pressure vs. torque graph is supplied with each tool and allows specific torque values to be set. For more critical applications, pneumatic wrenches can be fitted with a torque transducer and the precise torque output displayed. The tool can then be shut off at the desired torque either manually or automatically using suitable control circuitry.



## WHY USE TORQ/LITE PNEUMATIC WRENCHES?

Hand-operated torque multipliers are ideal for low volume or intermittent use or when there is no power source available. However, for production lines or whenever a large number of bolts is involved and speed is your main priority, a powered multiplier will save a considerable amount of time. Torq/Lite multiplier operation is quiet - less than 85 dB(A) with absolutely no impacting. These two factors make Torq/Lite multipliers comfortable for the operator to use, reducing fatigue and increasing safety. Torq/Lite multipliers provide accurate torque control: on a given joint they will stall repeatably to +/- 5%. Using electronic shut-off, this repeatability can be improved to +/- 2%.

### QUIET

Sound level does not exceed 85 dB(A) when tested in accordance with ISO 3744:1994.

### NON-IMPACTING

Means less damage to the tool, socket and bolted assembly.

### LOW OPERATOR FATIGUE

Result in increased safety and allows gradual and safe reaction location and gradual and safe reaction take up.

**POWERFUL**  
Models available up to 300,000 Nm (200,000 ft. /lbs.)

**REPEATABILITY**  
Of +/- 5% for accurate torque control.

**ADAPTABILITY**  
A wide range of attachments and accessories make pneumatic multipliers adaptable to many applications.



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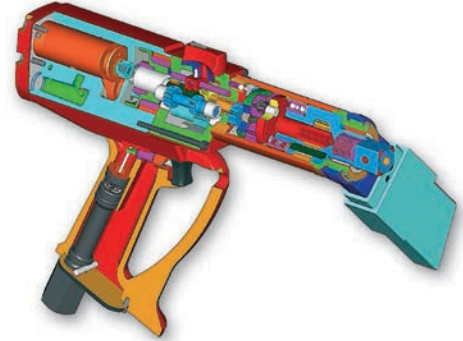
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## HIGH SPEED SERIES

HYDRAULIC MULTIPLIERS

### TORQ/LITE PNEUMATIC WRENCH APPLICATIONS?

The smooth and continuous torque output of our pneumatic torque wrenches make these tools suitable for a wide range of bolting and non-bolting applications.



#### BOLTING

Pneumatic torque wrenches are suitable for tightening and untightening bolts of up to six inches in diameter. The following is just a small selection of applications:

WHEEL NUTS ON TRUCKS, BUSES, AND LARGE MACHINERY

STRUCTURAL STEELWORK

HIGH-PRESSURE JOINTS SUCH AS PIPELINES, BOILER FEED PUMPS, AND PRESSURE VESSELS

ENGINE HEAD BOLTS

INJECTOR HEADS ON PLASTIC INJECTION MOLDING MACHINES

HEAT EXCHANGERS

HEAVY VEHICLE PRODUCTION SUCH AS CHASSIS AND SUSPENSION BOLTS

#### NON-BOLTING

Whenever a high continuous torque is needed, use pneumatic torque wrenches as the power source. Typical applications include:

BALL VALVE OPERATION

POWER WAGONS AND GANTRIES

BARRING (TURNING THE CRANKSHAFT) OF LARGE DIESEL ENGINES DURING BUILD

WELD TESTING BY APPLYING TEST TORQUES

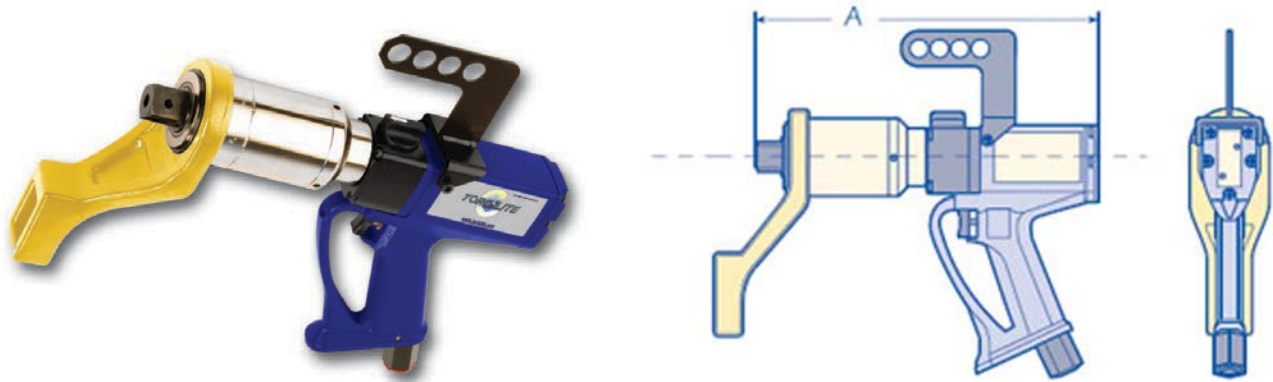
ROLLER ADJUSTMENT IN STEEL MILLS AND PAPER MILLS

VALVING OF GAS BOTTLES

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## HIGH SPEED SERIES

HYDRAULIC MULTIPLIERS



TLSM-370, TLSM-590, TLSM-738, TLSM-1000 AND TLSM-1475 MODELS

Our twin motor concept gives the benefit of high rundown speeds while adding very little to the size and weight of the tool.

MODEL NUMBER	DIRECTION OF OPERATION	SQUARE DRIVE	PART NUMBER	RANGE NM	RANGE FT. LBS.	FREE SPEED RPM	LENGTH A IN.	TOOL WEIGHT LBS.	REACTION WEIGHT LBS.
TLSM-370	Bi-directional	¾"	18100.B06	100-500	74-370	245	13.1	8.3	1.87
TLSM-590	Bi-directional	¾"	18101.B06	160-800	118-590	175	13.1	9.0	1.87
TLSM-738	Bi-directional	¾"	18102.B06	200-1,000	147-738	140	14.3	13.4	1.54
TLSM-1000	Bi-directional	1"	18103.B08	270-1,350	200-1,000	105	14.3	13.4	1.54
TLSM-1475	Bi-directional	1"	18104.B08	400-2,000	295-1,475	70	14.3	13.4	1.54

### FAST

Tool models have free speeds between 70 and 245 rpm.

### LIGHTWEIGHT

Tool models only weigh between 10 and 15.6 lbs.

### SPECIAL REACTION MEMBERS

Available for applications which a standard reaction arm just will not work.

### QUIET

Less than 85 dB(A) when under load.

### NON IMPACTING

Low vibration levels make these tools comfortable and safe to use.

### ¾ AND 1 INCH SQUARE DRIVE

This option is quickly and easily replaceable.

### LOCKING DIRECTION CONTROL

The bi-directional control knob is locked while the tool is running to prevent accidental damage to the gearbox.

### SOFT START TRIGGER

Control aids socket location and allows gradual and safe reaction location.

### SAFE OPERATION

Gearbox can rotate independently from handle so that reaction forces are not transmitted back to the operator.

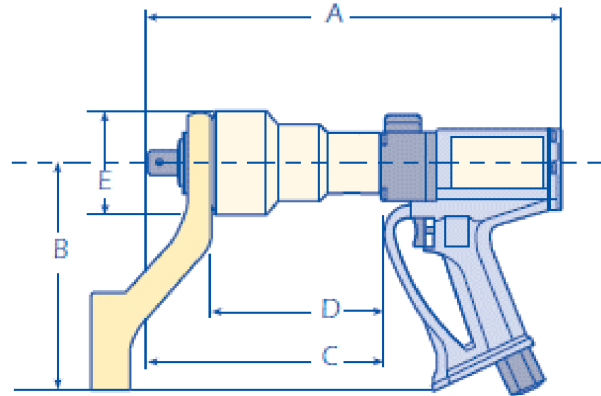


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## HIGH SPEED SERIES

HYDRAULIC MULTIPLIERS



TLSM-2000, TLSM-3000, TLSM-3300 AND TLSM-4500 MODELS

The latest extension to the Torq/Lite tool range brings a speed advantage via the twin motor handle to higher capacity models. Coupled with new gearbox designs, these innovative models deliver an ideal balance between robustness, speed and weight.

MODEL NUMBER	SQUARE DRIVE	PART NUMBER	RANGE NM	RANGE FT. LBS.	FREE SPEED RPM	A IN.	B IN.	C IN.	D IN.	E IN.	TOOL WEIGHT LBS.	REACTION WEIGHT LBS.
TLSM-2000	1"	18106.B08	540-2,700	400-2,000	57	15.2	7.0	9.5	8.0	3.6	18.7	2.97
TLSM-3000	1"	18119.B08	800-4,000	590-2,950	41	15.2	7.0	9.5	8.0	3.6	18.7	2.97
TLSM-3300	1½"	18108.B12	900-4,500	660-3,300	32	17.9	7.7	10.9	7.8	4.6	29.3	4.80
TLSM-4500	1½"	18109.B12	1,200-6,000	885-4,500	25	17.9	7.7	10.9	7.8	4.6	29.3	2.97

### FAST

Tool models have free speeds between 25 and 57 rpm.

### LIGHTWEIGHT

Tool models only weigh between 18.7 and 29.3 lbs.

### SPECIAL REACTION MEMBERS

Available for applications which a standard reaction arm just won't work.

### QUIET

Less than 85 dB(A) when under load.

### NON-IMPACTING

Low vibration levels make these tools comfortable and safe to use.

### SQUARE DRIVE

Quickly and easily replaceable.

### LOCKING DIRECTION CONTROL

The bi-directional control knob is locked while the tool is running to prevent accidental damage to the gearbox.

### SOFT START TRIGGER

Control aids socket location and allows gradual and safe reaction location.

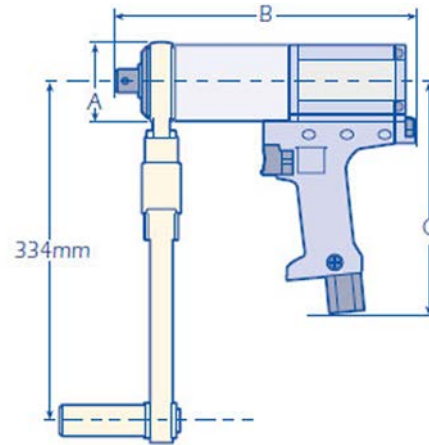
### SAFE OPERATION

Gearbox can rotate independently from handle so that reaction forces are not transmitted back to the operator.

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# SINGLE SPEED SERIES

HYDRAULIC MULTIPLIERS



## SINGLE SPEED MODELS

MODEL NUMBER	SQUARE DRIVE	PART NUMBER	RANGE NM	RANGE FT. LBS.	FREE SPEED RPM	A IN.	B IN.	C IN.	TOOL WEIGHT LBS.	REACTION WEIGHT LBS.
TL-370	3/4"	18023	90-500	66-370	35	2.8	11.8	8.7	14.1	3.7
TL-740	3/4"	18022	90-1,000	140-740	15	2.8	11.8	8.7	14.1	3.7
TL-740	1"	18026	90-1000	140-740	15	2.8	11.8	8.7	14.1	3.7
TL-1110	1"	18021	90-1,500	220-1,110	15	2.8	11.8	8.7	14.1	3.7
TL-1450	1"	18033	90-2,000	300-1,450	15	2.8	11.8	8.7	14.1	3.7
TL-3300	1 1/2"	18108.B12	900-4,500	660-3,300	32	4.6	17.9	7.7	29.3	4.8

**72 MILLIMETER GEARBOX**  
Diameter allows excellent access.

**POWERFUL**  
Up to 3,300 ft./lb. output.

**SWITCHABLE**  
Forward and reverse operation.

**QUIET**  
Less than 81 dB(A), and non-impacting for low operator fatigue.

**SOFT START TRIGGER**  
Control aids socket location and allows gradual and safe reaction location and gradual and safe reaction.

**SAFETY GEARBOX**  
Can rotate independently from handle. Torque reaction is never transmitted back to the operator. Low Pressure Operation - All torque can be achieved at less than 6 bar (90 psi).

**LOW PRESSURE OPERATION**  
All torques can be achieved at less than 6 bar (90 psi).

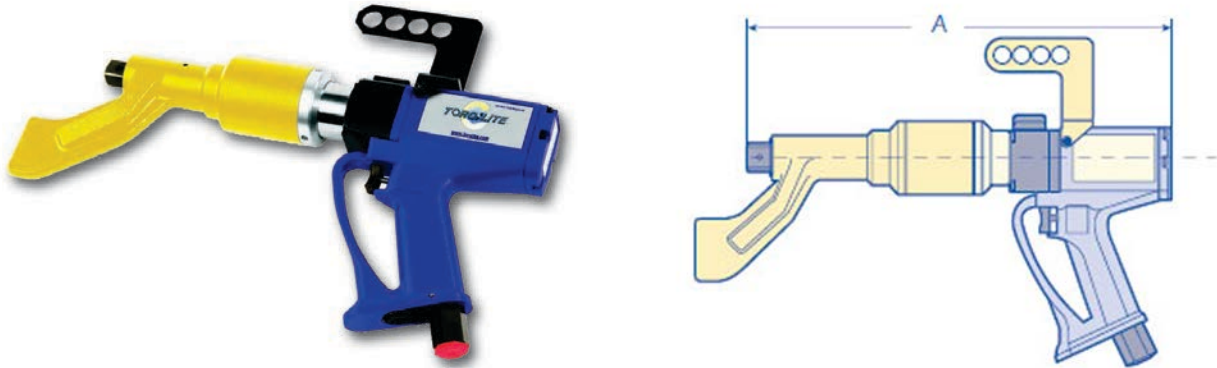


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## WHEEL NUT SERIES

HYDRAULIC MULTIPLIERS



WHEEL NUT MODEL

Torq/Lite's Wheel Nut Series tool was designed to meet the needs of the commercial vehicle wheel market. The integrated reaction foot is designed specifically to reach recessed wheel bolts and the 2.8 in diameter gearbox is selected to cope with the high frequency of use demanded by busy tire shops.

MODEL NUMBER	DIRECTION OF OPERATION	SQUARE DRIVE	PART NUMBER	RANGE NM	RANGE FT. LBS.	FREE SPEED RPM	LENGTH A IN.	TOOL WEIGHT LBS.	REACTION WEIGHT LBS.
TLWT-738	Bi-directional	¾"	18140.B06	200-1000	147-738	140	19.0	15.8	n/a
TLWT-1475	Bi-directional	1"	18141.B08	400-2000	295-1,475	70	19.9	16.9	n/a

### FAST

Tool models have free speeds of 70 and 140 rpm for rapid bolt rundown.

### LIGHTWEIGHT

Tool models only weigh between 15.8 and 16.9 lbs.

### EXTENDED REACTION BAR

Ideal for reaching recessed nuts.

### QUIET

Less than 85 dB(A) when under load.

### NON-IMPACTING

Low vibration levels make these tools comfortable and safe to use.

### SQUARE DRIVE

Quickly and easily replaceable.

### LOCKING DIRECTION CONTROL

On bi-directional tools, the direction control knob is locked while the tool is running to prevent accidental damage to the gearbox.

### SOFT START TRIGGER

Control aids socket location and allows gradual and safe reaction location.

### SAFE OPERATION

Gearbox can rotate independently from the handle so that reaction forces are not transmitted back to the operator.

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## EVO TORQUE®

ELECTRONIC TORQUE TOOL



The EvoTorque's motor technology and motor control software combine to produce the most accurate, user-friendly electronic torque tool ever. The EvoTorque utilizes three features to give unprecedented joint control.

The tool features a tried and tested gearbox that has proven itself for over a decade on other pneumatic tools, a handle that can be easily removed, and a thermal stability cooling fan to reduce operating downtime. The backlit LCD display is easily visible in all conditions, and the Key Lock feature prevents unauthorized storage. The EvoTorque requires low maintenance due to the brushless motor and the compatible reaction spline makes it a good fit for several applications.

Each tool will come with a calibration certificate for verification of accuracy and a Peli case for safe storage.

### ACCURACY

Each tool is calibrated in the factory to +/- 3%.

### CLEAR-GO/NO-GO JOINT COMPLETION FEATURE

Clear indication of successful joint application. Operator can confidently interpret the tool, making it safer to use.

### QUIET WITH LOW VIBRATION

Third-party verified sound power (Lwa) of 72.3 dB(A) and vibration level of 0.304 m/s<sup>2</sup>.

### MOTOR TECHNOLOGY AND MOTOR CONTROL SOFTWARE

The patent-pending technology and software give unprecedented joint control.

### TEMPERATURE-INDEPENDENT MOTOR

The motor will continue to deliver correct torque regardless of temperature changes unlike permanent magnet motors.

### ANGLE CONTROL

EvoTorque allows precise angle to be applied. Every tool is calibrated for angle and the results are included on the certificate of calibration.

### REGENERATING BRAKING TECHNOLOGY

Kinetic braking to avoid overshoot on hard joints.

### DIAL UNITS OF TORQUE MEASUREMENT

Torque can be set in Nm or ft./lbs.

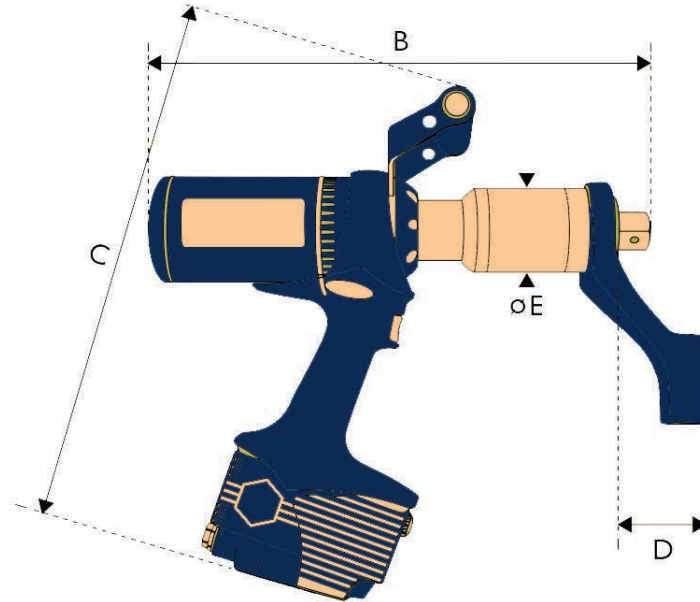


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# EVOTORQUE®

ELECTRONIC TORQUE TOOL



MODEL		ET-72-1000-110	ET-72-1000-230	ET-72-1350-110	ET-72-1350-230	ET-72-2000-110	ET-72-2000-230	ET-92-4000-110	ET-92-4000-230	ET-119-6000-10	ET-119-6000-230
Voltage		110	230	110	230	110	230	110	230	110	230
Part Number		18165.B06	18151.B06	18166.B06	18152.B06	18167.B08	18153.B08	18169.B06	18155.B08	18171.B12	18157.B12
Square Drive		3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"	1 1/2"	1 1/2"
Range	Nm	200-1000	200-1000	270-1350	270-1350	400-2000	400-2000	800-4000	800-4000	1200-6000	1200-6000
	ft./lbs.	147-738	147-738	200-1000	200-1000	295-1475	295-1475	590-2950	590-2950	885-4500	885-4500
Speed rpm		21	21	17	17	11	11	6	6	3.3	3.3
Tool Weight	kg	10.4	10.4	10.4	10.4	10.8	10.8	12.9	12.9	16.8	16.8
	lb.	22.9	22.9	22.9	22.9	23.8	23.8	28.4	28.4	37	37
Reaction Weight	kg	0.7	0.7	0.7	0.7	0.7	0.7	1.3	1.3	2.1	2.1
	lb.	1.5	1.5	1.5	1.5	1.5	1.5	2.9	2.9	4.6	4.6
B (mm)		390	390	390	390	425	425	450	450	480	480
C (mm)		435	435	435	435	435	435	435	435	435	435
D (mm)		75	75	75	75	75	75	98.5	98.5	127	127
E (ømm)		72	72	72	72	72	72	92	92	119	119
F (mm)		100	100	100	100	100	100	100	100	115	115
G (mm)		135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5

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# HYDRAULIC TENSIONERS

## INTRODUCTION TO TENSIONING

### SPEED

Hydraulic bolt tensioning provides a quick and easy method for tightening large diameter bolts to high and accurate preload. The illustration of the conventional bolt tensioner components also shows that the bolt being tensioned needs to be longer than conventional bolts by one diameter.

### SIMPLE TO USE

After fitting the socket, the bridge straddles the nut, which is visible through the window. The hydraulic cylinder or the bolt tensioner fits over the bolt and nut and the puller screws on to the end of the bolt. When the tensioner is pressurized, the bolt is stretched and the nut is turned by hand to retain the extension of the bolt.

### ACCURATE BOLT LOAD

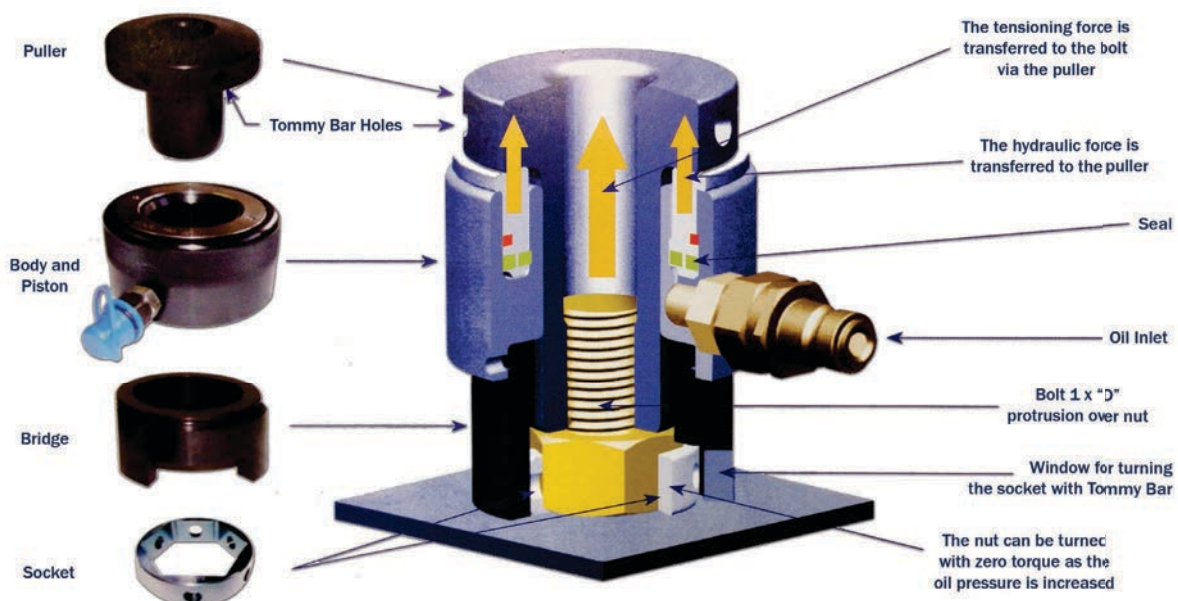
Tensioning is very accurate as it applies a precise axial force. The known pressure area of the tensioner when multiplied by the applied pressure, gives a precise force in the bolt. Therefore, when the geometry of the application and the required bolt load is known, then applied pressure can be calculated to achieve required bolt load.

### NO DAMAGED BOLTS. NO WASHERS.

Bolt tensioning requires the need to replace damaged bolts and for washers under the nuts.

### OPERATION

When tightening flanges, for example, on pipes and heat exchangers, bolt tensioners can be hydraulically linked together to tighten 100% or a lesser percentage of the bolts simultaneously. This provides even compression and improved performance of the gasketed joint. Flexible hoses with self-sealing quick connect couplings are used to link the bolt tensioning tools together. The system is pressurized using a hydraulic pump.





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# 1500 BAR SYSTEM

HYDRAULIC TENSIONERS



The Torq/Lite 1500 bar system combines high load capacity with lightweight tooling. Designed for long life operation, these tools are ideal for fast, accurate, and reliable bolt tensioning of standard flanges on many types of plants including oil, gas, petrochemical, offshore, etc. Engineered from high-strength steel alloys to provide unparalleled safety and tool life. They are available from 3/4" to 4" plus the full range of metric sizes, are extremely versatile with each hydraulic head capable of accommodating up to eight metric and imperial thread forms with the standard adaptor equipment also supplied, have been engineered to fit all of the most popular flange classes (including ANSI 16.5, API 605, MSS SP44, etc.), can easily be customized to suit a special application if required. Available on quick delivery, these tools are cost effective and easy to use.

SINGLE OR TWIN  
HYDRAULIC CONNECTIONS

AVAILABLE IN VARIOUS  
SURFACE FINISHES

PROVIDE 15MM STROKE - (12MM OR T21)

FEATURE LONG-LIFE  
COMPOSITE SEALS

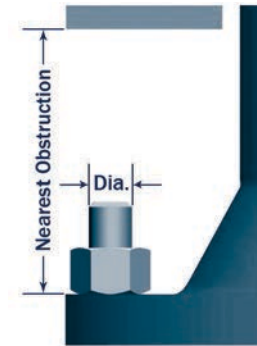
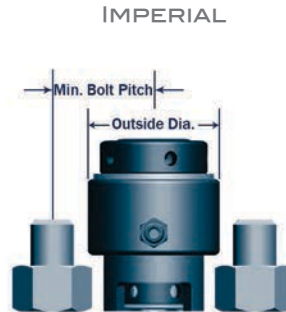
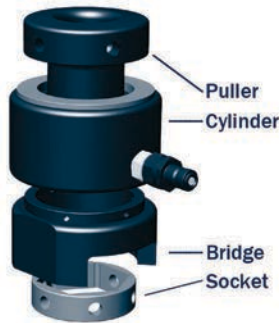
HIGHLY VISIBLE MAXIMUM  
STROKE INDICATOR

FITS STANDARD PIPE FLANGES  
ABOVE 4-INCH NB

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# 1500 BAR SYSTEM

## HYDRAULIC TENSIONERS



TOOL MODEL NUMBER	BOLT DIAMETER INCH	MINIMUM BOLT PITCH MM	STROKE MM	HYDRAULIC AREA MM <sup>2</sup>	MAXIMUM LOAD KN	TOOL OUTSIDE DIAMETER	NEAREST OBSTRUCTION	WEIGHT WITH ATTACHMENTS
TL-21	3/4	53	12	1,555	233	73	145	2.3 kg
	7/8	53						2.2 kg
	1	62						2.2 kg
	1 1/8	62						2.1 kg
TL-22	1 1/4	73	15	2,884	433	108	175	5.5 kg
	1 3/8	81						5.4 kg
	1 1/2	83						5.7 kg
TL-23	1 5/8	93	15	5,271	791	136	200	9.5 kg
	1 3/4	96						9.2 kg
	1 7/8	101						10.0 kg
	2	104						9.7 kg
TL-24	2 1/4	123	15	8,445	1,267	172	230	16.2 kg
	2 1/2	129						16.4 kg
TL-25	2 3/4	150	15	12,197	1,830	200	255	25.6 kg
	3	154						24.8 kg
TL-26	3 1/4	176	15	16,682	2,502	235	288	35.9 kg
	3 1/2	185						36.3 kg
TL-27	3 3/4	191	15	17,530	2,629	245	320	42.3 kg
	4	197						40.3 kg
TL-29	1 7/8	112	15	6,983	6,983	156	230	13.5 kg
	2	115						13.3 kg
	2 1/4	120						13.0 kg

NOTES

1. Maximum load is generated at the maximum operating pressure of 1500 bar.
2. Unless specified inch size tooling will be threaded UNC up to 1 inch and UN8 for 1-1/8 inch upwards.
3. Equivalent metric sizes are also available. Specify diameter and thread pitch when ordering.
4. This range of tooling has been designed to suit most standard flanges used in the oil and gas industry.
5. Each tool comprises one Hydraulic Cylinder, Bridge, Puller and Socket.
6. Extra Bridges Pullers and Sockets can be purchased to adapt the Hydraulic Cylinder to fit other bolt sizes.
7. All tools are assembled, filled with oil, pressure tested and a test certificate issued prior to despatch.
8. Each tool is marked with the maximum operating pressure, load and stroke. All tools are CE marked.
9. Any number of tools can be connected together for simultaneous operation.
10. Pullers can be machined with other thread forms - specify when ordering.
11. Larger bolt sizes are available. Send application details.
12. Tools are fitted with self sealing quick connectors.
13. Due to continuous product development dimensions may change without notice.

OPTIONS AVAILABLE

1. Twin Hydraulic Connectors
2. Other Thread Forms
3. Special Designs

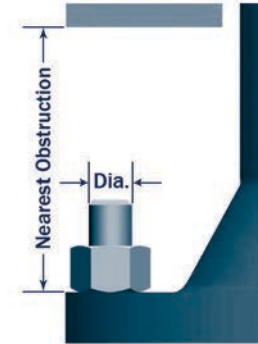
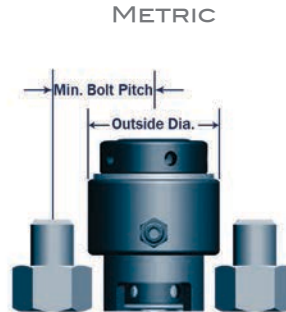
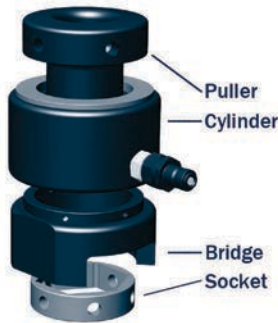


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# 1500 BAR SYSTEM

## HYDRAULIC TENSIONERS



TOOL MODEL NUMBER	BOLT DIAMETER METRIC	MINIMUM BOLT PITCH MM	STROKE MM	HYDRAULIC AREA MM <sup>2</sup>	MAXIMUM LOAD KN	TOOL OUTSIDE DIAMETER	NEAREST OBSTRUCTION
TL-21	M16	53	12	1,555	233	73	145
	M20	53					
	M22	53					
	M24	62					
TL-22	M27	62	15	2,884	433	108	175
	M30	73					
	M33	73					
	M36	81					
TL-23	M39	83	15	5,271	791	136	200
	M42	93					
	M45	96					
	M48	101					
TL-24	M52	104	15	8,445	1,267	172	230
	M56	123					
	M64	129					
TL-25	M64	129	15	12,197	1,830	200	255
	M72	150					
	M76	154					
TL-26	M76	154	15	16,682	2,502	235	288
	M80	176					
	M90	185					
TL-27	M90	185	15	17,530	2,629	245	320
	M95	191					
	M100	197					

### NOTES

1. Maximum load is generated at the maximum operating pressure of 1500 bar.
2. Unless specified inch size tooling will be threaded UNC up to 1 inch and UN8 for 1-1/8 inch upwards.
3. Equivalent metric sizes are also available. Specify diameter and thread pitch when ordering.
4. This range of tooling has been designed to suit most standard flanges used in the oil and gas industry.
5. Each tool comprises one Hydraulic Cylinder, Bridge, Puller and Socket.
6. Extra Bridges Pullers and Sockets can be purchased to adapt the Hydraulic Cylinder to fit other bolt sizes.
7. All tools are assembled, filled with oil, pressure tested and a test certificate issued prior to despatch.
8. Each tool is marked with the maximum operating pressure, load and stroke. All tools are CE marked.
9. Any number of tools can be connected together for simultaneous operation.
10. Pullers can be machined with other thread forms - specify when ordering.
11. Larger bolt sizes are available. Send application details.
12. Tools are fitted with self sealing quick connectors.
13. Due to continuous product development dimensions may change without notice.

### OPTIONS AVAILABLE

1. Twin Hydraulic Connectors
2. Other Thread Forms
3. Special Designs

FOR IMMEDIATE ASSISTANCE, PLEASE CALL (877) 777-4046

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## SUBSEA TOOLING

HYDRAULIC TENSIONERS

Torq/Lite standard sub sea tool range incorporates a combined body and bridge, lifting eye bolt, 1.18" (30 mm) piston stroke, 21,750 psi (1500 bar) operating pressure, twin hydraulic connections, a maximum piston stroke indicator and a split reaction nut. Lower cost solid reaction nuts are also available. These tools are fitted with composite material high pressure seals which clip into place and require no adjustment. All Torq/Lite tools are assembled, filled with oil, and pressure tested prior to shipping. They are also designed to conform to the European Pressure Equipment Directive and, where required, are CE marked. Torq/Lite tools are supplied with a comprehensive Health & Safety Operating and Maintenance Instruction Manual. Standard tools are fitted with two self-sealing quick connectors. This can be either two nipples or one coupling and one nipple. Customer should specify when ordering.



21,750 PSI (1500 BAR)

SINGLE OR TWIN HYDRAULIC  
CONNECTIONS

HIGH INITIAL BOLT STRESS

LONG-LIFE SNAP FIT SEALS

LONG 1.18 INCH (30MM) PISTON STROKE

NON-SLIP TOLL SURFACE  
FOR EASY HANDLING

MAXIMUM STROKE INDICATOR

ALL EQUIPMENT CE MARKED

EASY PISTON RETURN

ALL TOOLS SUPPLIED WITH DETAILED  
OPERATING MAINTENANCE  
AND SAFETY MANUALS

FITS ALL STANDARD PIPE  
FLANGE APPLICATIONS

NICKEL-PLATED

24-HOUR TECHNICAL SUPPORT



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## SUBSEA TOOLING

### HYDRAULIC TENSIONERS

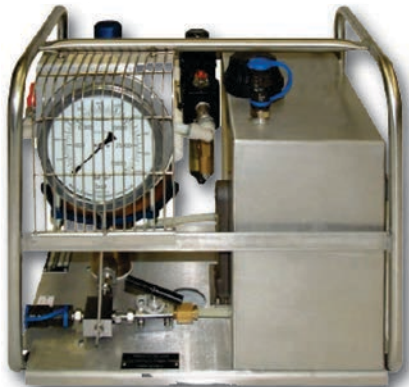
MODEL NUMBER	BOLT DIAMETER (INCH)	MINIMUM BOLT PITCH (MM)	MAX. LOAD (LBF)	MAX. LOAD KN	TOOL OUTSIDE DIAMETER (MM)	HEIGHT W/ SPLIT REACTION NUT (MM)	HEIGHT W/ SOLID REACTION NUT (MM)
TL-1	7/8	M24	81,128	361	90	171	156
	1	M27					
	1 1/8	M30					
	1 1/4	M33					
TL-2	1 3/8	M36	121,250	544	109	179	169
	1 1/2	M39					
TL-3	1 5/8	M42	182,480	812	130	198	188
	1 3/4	M45					
	1 7/8	M48					
TL-5	2	M52	348,330	1550	172	235	232
	2 1/4	M56					
	2 1/2	M64					
TL-5	2 3/4	M72	575,760	2,562	215	271	268
	3	M76					
	-	M80					
	3 1/4	M85					
	3 1/2	M90					

#### NOTES

1. Maximum working pressure of 1500 bar (21,750 psi)
2. Maximum Piston Stroke = 30 mm (1.81 inches)
3. Five tools cover standard pipe flange connections above 4 inch NB with bolting in the size range 1 inch to 3 1/2 inches.

OPTIONS AVAILABLE Solid or Quick Release Reaction Nuts. Extra sizes available upon request.

Torq/Lite stocks a wide range of pumps, hoses, and spare parts.



**TL-1507-15L-SS**  
21,750 psi (1500 bar) Air Driven Power Pack



**TL-1590 HOSE REEL**  
21,750 psi (1500 bar) Air Driven Power Pack

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# AIR DRIVEN POWER PACK

21,750 (1500 BAR) SYSTEM

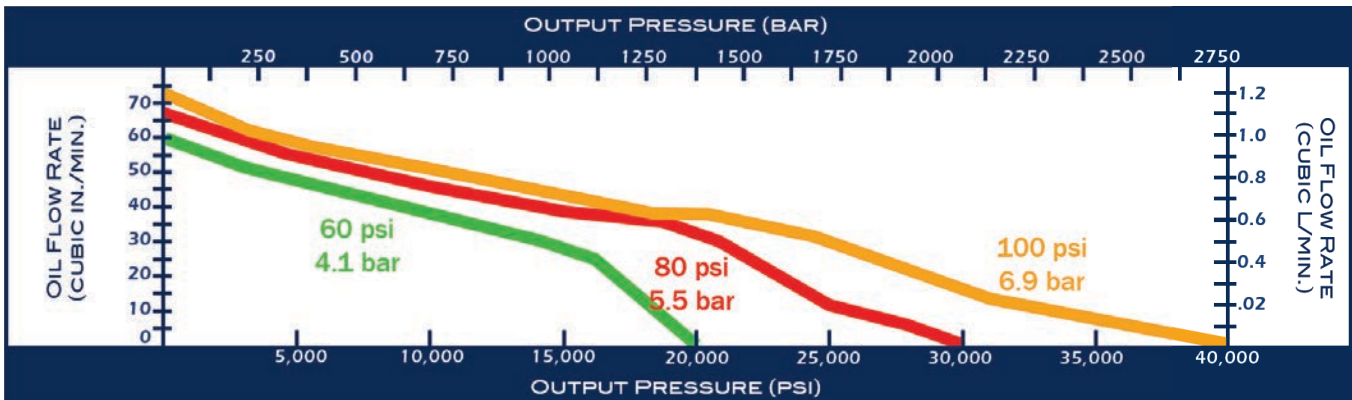
This higher oil delivery, air-driven hydraulic pump is mounted in a tubular stainless steel transportable frame. The pack is supplied complete with air inlet connector, air filter, air pressure regulator, air lubricator, air pressure gauge, air pressure limit valve, pump on/off control, oil reservoir, oil pressure release valve, oil pressure gauge, gauge guard, air/hydraulic pump and high pressure oil outlet through a self-sealing quick connect. TL-1507 is a higher oil flow rate pump designed for use with all Torq/Lite 1500 bar tooling where speed of operation is essential. Especially useful when using multiple large tools.



NOTES

1. Maximum working pressure of 1500 bar (21,750 psi)
2. Pumps for 14,500 psi to 36,250 psi (100 bar to 2500 bar) working pressures are available.
3. Custom built power packs with any number of outlets and to suit your existing tooling are available upon request.

SPECIFICATIONS	
Consumption of Free Air	56 standard cubic feet per minute (1600 litres per minute)
Air Pressure Required	60 - 100 psi (4 - 7 bar)
Dimensions	22" (560mm) long x 16.5" (420mm) wide x 17.7" (450mm) high
Weight	68 lbs. (31 kg)
Oil Reservoir	4 gallons (15 litres) ISO 10 hydraulic oil
Frame and Tank	Stainless Steel
Pressure Gauge	Dual Scale 0 - 30,000 psi (0 - 2000 bar)
Working Pressure	21,750 psi (1500 bar)



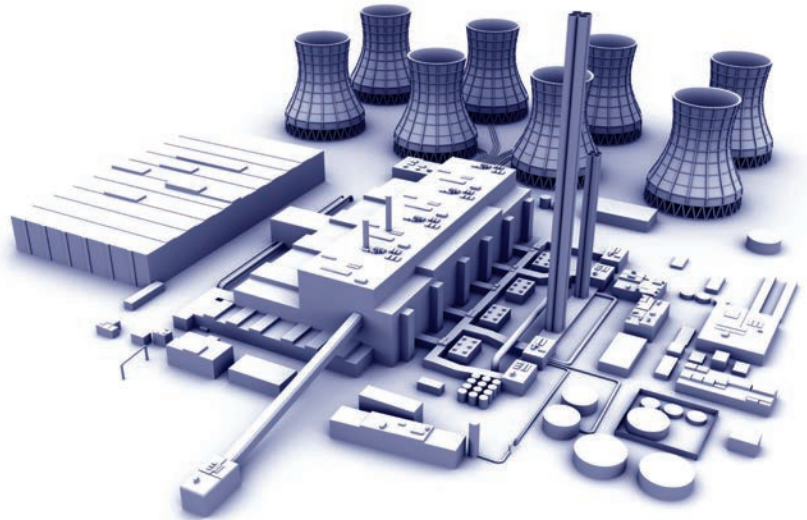


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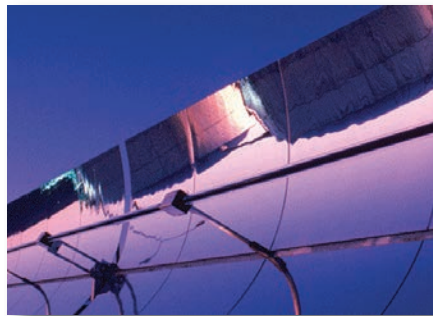
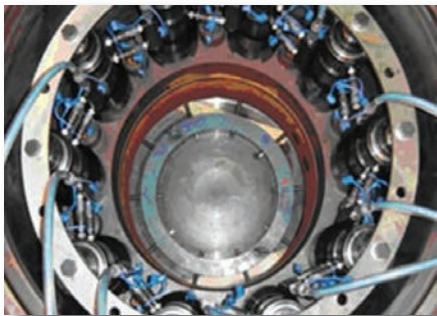
## WIND INDUSTRY

HYDRAULIC TENSIONERS



Torq/Lite carries a complete line of hydraulic stud tensioners for all industries and applications. Included in the tensioner information are specialty tensioners that we carry for the wind industry including two tensioner options for foundation bolts. When Torq/Lite® tensioners are used in conjunction with our light, ergonomic and dependable tensioner pumps and pump accessories you get one of the most economic, accurate and easily portable tensioning systems currently on the market. Also, see our tensioner application sheet to be filled in by you, the customer. If you can provide Torq/Lite with the requested information about you specific tensioning application, we can then supply you with the best option to quickly and safely address your job for the best value.

We look forward to servicing all of your tensioning needs and showing you the Torq/Lite difference.



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## WIND INDUSTRY

HYDRAULIC TENSIONERS

### TL/LTTS - MO42-02-00



60mm hex nut rotator, pressure advance, spring return, single port, 21,750 psi (1500 bar) maximum operating pressure, single-stage design, ratchet-style tensioner engagement, ratchet style nut rotator, positive stop to prevent over stroking, steel construction, minimal outside diameter to fit into close clearance application when blade is installed on the rotor.

MAXIMUM PRESSURE	HYDRAULIC PRESSURE AREA	MAXIMUM LOAD	MAXIMUM STROKE	APPROXIMATE WEIGHT
1500 bar	2,714 mm <sup>2</sup>	407,000 N	10 mm	6.0 kg
21,750 psi	4.21 in. <sup>2</sup>	91,507 lbf.	.394 in.	13.2 lb.

### ECONOMY FOUNDATION TENSIONER

Interchangeable Foundation Stud Tensioner designed for Williams or Dyson wind tower foundation studs. Economy design offers ease of use by utilizing an existing foundation stud hex nut. Includes a common load cell and interchangeable tensioner base. Pressure advance, spring return, single port, 21,750 psi (1500 bar) maximum operating pressure, single-stage design, and ratchet-style nut rotator. Includes a positive stop to prevent over stroking.



MAXIMUM PRESSURE	HYDRAULIC PRESSURE AREA	MAXIMUM LOAD	MAXIMUM STROKE	APPROXIMATE WEIGHT
1500 bar	4,357 mm <sup>2</sup>	407,000 N	10 mm	6.0 kg
21,750 psi	6.75 in. <sup>2</sup>	147,507 lbf.	.394 in.	13.2 lb.



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## WIND INDUSTRY

HYDRAULIC TENSIONERS



### M36 X 4.0 BLADE BOLT INSTALLATION TENSIONER

Interchangeable Foundation Stud Tensioner designed for Williams or Dyson wind tower foundation studs. Economy design offers ease of use by utilizing an existing foundation stud hex nut. Includes a common load cell and interchangeable tensioner base. Pressure advance, spring return, single port, 21,750 psi (1500 bar) maximum operating pressure, single stage design, and ratchet-style nut rotator. Includes a positive stop to prevent over stroking.

MAXIMUM PRESSURE	HYDRAULIC PRESSURE AREA	MAXIMUM LOAD	MAXIMUM STROKE	APPROXIMATE WEIGHT
1500 bar	4,467 mm <sup>2</sup>	670,000 N	8 mm	-
21,750 psi	6.92 in. <sup>2</sup>	150,000 lbf.	.315 in.	-

### M36 X 4.0 GEARBOX INSPECTION TENSIONER

60mm hex nut rotator, pressure advance, spring return, single port, 21,750 psi (1500 bar) maximum operating pressure, single-stage design, ratchet style tensioner engagement, ratchet-style nut rotator, positive stop to prevent over stroking, steel construction, minimal outside diameter to fit into close clearance application when blade is installed on the rotor.



MAXIMUM PRESSURE	HYDRAULIC PRESSURE AREA	MAXIMUM LOAD	MAXIMUM STROKE	APPROXIMATE WEIGHT
1500 bar	-	927,800 N	10 mm	12.0 kg
21,750 psi	-	208,600 lbf.	.394 in.	26.5 lb.

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# WIND INDUSTRY

HYDRAULIC TENSIONERS



## M42 X 4.0 GEARBOX TENSIONER

60mm hex nut rotator, pressure advance, spring return, single port, 21,750 psi (1500 bar) maximum operating pressure, single-stage design, ratchet-style tensioner engagement, ratchet-style nut rotator, positive stop to prevent over stroking, steel construction, minimal outside diameter to fit into close-clearance application when blade is installed on the rotor.

MAXIMUM PRESSURE	HYDRAULIC PRESSURE AREA	MAXIMUM LOAD	MAXIMUM STROKE	APPROXIMATE WEIGHT
1500 bar	-	927,800 N	10 mm	12.0 kg
21,750 psi	-	208,600 lbf.	.394 in.	26.5 lb.

## TL-TP 30000-4 POWER CONSOLE

The TLTP 30000-4 is compact and lightweight, good for shipbuilding, civil engineering and heavy industry. There are automatic low and high pressure two-stage pumps, giving very high performance. Pressure gauge and pressure switch are standard accessories, and a 4.5 liter reservoir pumps as standard. Also available with two-liter or seven-liter reservoir type pumps.



Compact and Lightweight - good for shipbuilding, civil engineering, and heavy industry

Automatic low and high pressure two-stage pumps giving very high performance

Pressure Gauge and pressure switch standard accessories

4.5-liter reservoir pumps as standard - also available with 2-liter or 7-liter reservoir pumps

ELECTRIC MOTOR (50/60 HZ) GEARED COMMUNICATOR				HYDRAULIC PUMP				RESERVOIR CAPACITY	USUABLE OIL	WEIGHT (KG)
INSULATION TYPE	VOLTAGE (PHASE)	RATED OUTPUT	MINUTES @ 100V AC	MAX. WORKING PRESSURE (MPA)		OUTPUT (LITERS/MIN.)				
				1ST STAGE	2ND STAGE	1ST STAGE	2ND STAGE			
Class E Open Type	100, 200, 300 (single)	0.45 kW	10	3.0	200	3.0	0.1	2.0	1.8	15
								4.5	4.0	18
								7.0	6.0	21

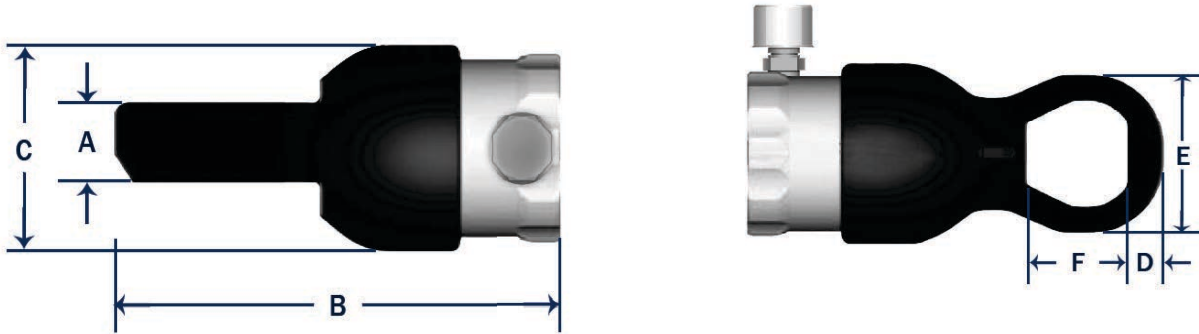


8 DUFRESNE LOOP LULING, LA 70070  
(985) 785-3075

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## NUT SPLITTERS

HYDRAULIC SPLITTERS



Quick and easy removal of seized and corroded nuts with our compact hydraulic power unit. Each model is sold complete with hydraulic cylinder, housing, chisel, set of allen keys, spacer set and is packaged in a rugged steel tool box.

WIDE RANGE IN BOLT SIZES  
7/16" - 4 1/4"

DISPOSABLE CHISEL  
Triple Edge.

LOW MAINTENANCE

MODEL NUMBER	STUD DIAMETER IN. / (MM)	NUT ATF IN. (MM)	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)	E IN. (MM)	F IN. (MM)	WEIGHT LB. (KG)
AS 105	7/16 - 7/8 (11 - 22)	5/8 - 1-7/16 (16 - 36)	1.5 (38.1)	11 (279.4)	3.969 (101.6)	.421 (9.5)	2.592 (85.75)	3.609 (104.39)	20 (9)
AS 200	7/8 - 1 1/4 (22 - 32)	1-7/16 - 2 (36 - 51)	1.525 (38.1)	11.75 (298.4)	4 (106.6)	.625 (12.7)	3.374 (85.75)	4.281 (108.7)	21 (9.5)
AS 204	1 1/4 - 1 1/2 (32 - 38)	1-13/16 - 2 3/8 (46 - 60)	2 (50.8)	16 (406.4)	6 (152.4)	.595 (14.3)	4 (101.6)	4.875 (123.8)	61 (27.7)
AS 210	1 3/8 - 1 3/4 (35 - 45)	2 1/4 - 2 3/4 (57 - 70)	2.25 (57.1)	16 (406.4)	6 (152.4)	.672 (17.5)	4.5 (114.3)	5.625 (142.88)	62 (28.2)
AS 308	1 3/4 - 2 1/4 (45 - 57)	2 3/4 - 3 1/2 (70 - 90)	3 (77.8)	17.75 (450.8)	7.125 (184.2)	.875 (19)	5.75 (146)	6.375 (161.92)	95 (43.2)
AS 314	2 - 2 1/2 (50 - 64)	3 1/8 - 3 7/8 (79 - 98)	3.125 (79.4)	18 (457.2)	7.125 (184.2)	.875 (19)	6.25 (158.75)	6.064 (154)	100 (45.4)
AS 404	2 1/2 - 2 3/4 (64 - 70)	3 3/4 - 4 1/4 (95 - 108)	3.75 (95.3)	22.75 (577.9)	9.875 (250.8)	1.125 (28.6)	7.5 (190.5)	7.21 (183.13)	205 (93.2)
AS 500	3 - 3 1/4 (76 - 83)	4 1/2 - 5 (114 - 127)	4.125 (104.8)	23 (584.2)	9.875 (250.8)	1.125 (28.6)	9 (228.6)	7.235 (183.7)	210 (95.4)
AS 506	3 1/4 - 3 1/2 (83 - 89)	4 7/8 - 5 3/8 (124 - 136)	4.125 (104.8)	23.5 (596.9)	9.875 (250.8)	1.125 (28.6)	9.375 (238.13)	7.539 (191.4)	215 (97.7)
AS 608	3 3/4 - 4 1/4 (95 - 108)	5 3/4 - 6 1/2 (146 - 165)	5 (127)	24 (610)	12.5 (317.5)	1.406 (28.6)	11.72 (297.6)	3.609 (104.39)	387 (175.5)

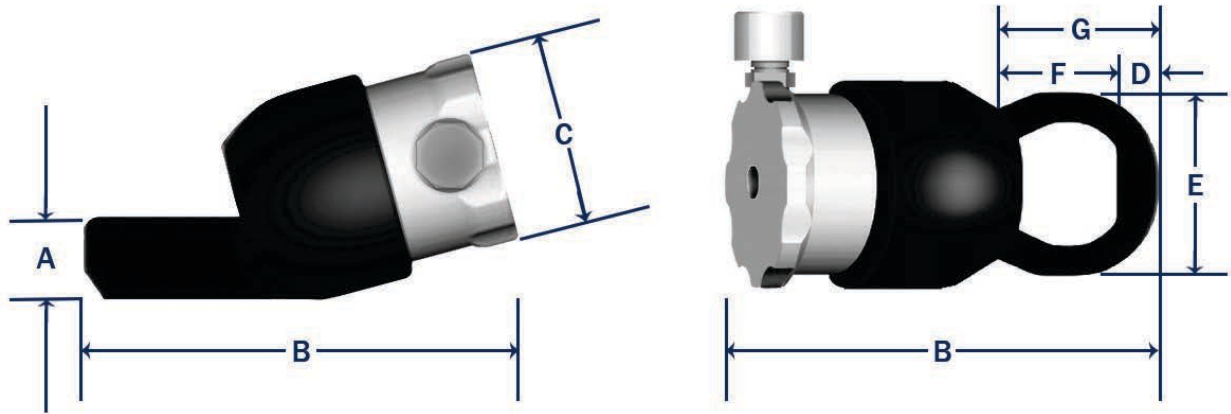
NOTES

Power supply includes the TL-SEHC and TL-SAHC hydraulic pumps, and the TL-150F hand pump.

11050 W LITTLE YORK BLDG. | HOUSTON, TX 77041  
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# NUT SPLITTERS

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7/16" - 4 1/4"

DISPOSABLE CHISEL  
Triple Edge.

LOW MAINTENANCE

MODEL NUMBER	STUD DIAMETER IN. / (MM)	NUT ATF IN. (MM)	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)	E IN. (MM)	F IN. (MM)	G IN. (MM)	WEIGHT LB. (KG)
AS 100	7/16 - 5/8 (11 - 16)	1/2 - 1 (13 - 24)	.687 (17.5)	7.45 (189.2)	2.75 (69.85)	.25 (6)	2.592 (65.84)	3.609 (91.67)	5.132 (130.32)	7 (3.2)
AS 105AH	7/16 - 7/8 (11 - 22)	5/8 - 1-7/16 (16 - 36)	1.5 (38.1)	10.87 (276.1)	4 (106.6)	.375 (9.5)	2.75 (69.85)	3.415 (86.74)	7.438 (188.9)	20 (9)
AS 200AH	7/8 - 1 1/4 (22 - 32)	1-7/16 - 2 (36 - 51)	1.5 (38.1)	11.44 (290.5)	4 (106.6)	.5 (12.7)	3.624 (92)	4 (106.6)	8 (203.2)	21 (9.5)
AS 204AH	1 1/4 - 1 1/2 (32 - 38)	1-13/16 - 2 3/8 (46 - 60)	2.25 (57.1)	16.13 (409.7)	6 (152.4)	.562 (14.3)	4.25 (107.95)	5.825 (147.95)	11.49 (291.85)	61 (27.7)
AS 210AH	1 3/8 - 1 3/4 (35 - 45)	2 1/4 - 2 3/4 (70 - 90)	2.25 (57.1)	16.51 (419.35)	6 (152.4)	.687 (17.5)	5 (127)	5.975 (151.76)	11.875 (301.63)	62 (28.2)
AS 308AH	1 3/4 - 2 1/4 (45 - 57)	2 3/4 - 3 1/2 (70 - 89)	3.062 (77.8)	19.64 (498.8)	7.25 (184.2)	.75 (19)	6.25 (158.75)	6.232 (158.3)	13.25 (336.55)	95 (43.2)
AS 314AH	2 - 2 1/2 (95 - 108)	3 1/8 - 3 3/8 (79 - 98)	3.125 (79.4)	20.14 (511.5)	7.25 (184.2)	.875 (22.2)	6.75 (171.45)	7.58 (195.5)	13.75 (349.25)	100 (45.4)

NOTES

Power supply includes the TL-SEHC and TL-SAHC hydraulic pumps, and the TL-150F hand pump.



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## ECHOMETER

BOLT LOAD MEASUREMENT

The Echometer ultrasonically measures the elongation, stress, and load in fasteners, quickly and accurately, and displays the result on an easy to read screen. The measurement is achieved by determining the change in the transit time of any ultrasonic shock wave along the length of the fastener as the fastener is tightened. The unit works with all bolt-tightening systems and is used to monitor the fastener during the tightening process to ensure accurate initial loading. The retained load in the fastener can then be monitored at any time. Echometer minimizes the requirement for extensive operator training. With built in data recording and reporting through a RS232 interface, the Echometer is quick and easy to use and offers a reliable solution to the most difficult bolting problem.



QUICK AND SIMPLE TO OPERATE

COMPACT AND DURABLE FOR  
PROVEN RELIABILITY

MINIMAL OPERATOR TRAINING REQUIRED

PROVIDES ELONGATION, LOAD STRESS,  
AND STRAIN MEASUREMENTS

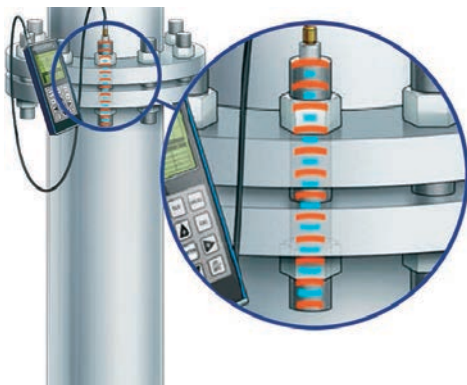
ACCURATE AND RELIABLE

DESIGNED TO COMPLEMENT TORQ/LITE  
BOLT TENSIONING EQUIPMENT

EASY MEASURE DURING TIGHTENING  
AND MONITORING DURING  
PLANT OPERATION

COST EFFECTIVE

SIMPLE DATA RECORDING  
AND REPORTING



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## ECHOMETER

BOLT LOAD MEASUREMENT

### SPECIFICATIONS

<b>Size</b>		<b>Pressure Gauge</b>	Dual Scale 0 - 30,000 psi (0 - 2000 bar)
<b>Width</b>	2.5 inches (63.5 mm)	<b>Working Pressure</b>	21,750 psi (1500 bar)
<b>Height</b>	6.5 inches (165 mm)	<b>Operating Temperature</b>	14 °F to 140 °F (-10 °C to 60 °C)
<b>Depth</b>	1.25 inches (31.5 mm)	<b>Case</b>	Extruded aluminum body with nickel-plated aluminum end caps (gasket sealed)
<b>Weight</b>	0.9 lbs. (0.4 kg) (with batteries)	<b>Data Output</b>	Bi-directional RS232 serial port, Windows PC interface software.
<b>Keyboard</b>	Membrane switch pad with 12 tactile keys.		

### ULTRASONIC SPECIFICATION MEASUREMENT

<b>Models</b>	Pulse-Echo (Standard) Pulse-Echo with Gate (fine adjust)	<b>Power Source</b>	Three 1.5V alkaline or 1.2V NiCad AA cells. Typically operates for 150 hours on alkaline and 100 hours on NiCad. Auto power off if idle for 5 minutes. Battery status icon.
<b>Pulsar</b>	Square wave pulsar with adjustable pulse width (spike, thin & wide)		
<b>Receiver</b>	Manual or Auto set gain control with 400DB range.		

### TRANSDUCER

<b>Transducer Types</b>	Single-element - 1 to 10 MHz & 1/8" (3.175 mm) to 1" (25.4 mm) diameters Locking quick disconnect '00' LEMO connectors Standard 10' cable	Custom transducers and cable lengths available upon request Temperature probe for automatic temperature compensation
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### MEASURING

<b>Range</b>	From 1 inch to 96 inches (25.4 mm to 2,435 mm) length bolt	<b>Display</b>	A-scan: Rectified +/- (half wave view) or RF (full wave form view)
<b>Time</b>	Nanoseconds	<b>Limits Bar</b> (alarm units)	Set Hi & Lo alarm units for displaying an acceptable tolerance range. Repeatability bar graph - bar graph indicates stability of measurements.
<b>Elongation</b>	Change the length (inches/mm)		
<b>Load</b>	Force load applied (lbs. kip or kilo newtons)	<b>Data Logger</b> (internal)	Total 8,000 readings, multiple bolt groups, stores both waveform views, nanoseconds, elongation, load, stress, and strain for each reading.
<b>Stress</b>	Force per unit area stress (psi or MPa)		
<b>Strain</b>	Percentage strain applied		
<b>Resolution</b>	+/- 0.00001 inch (+/- 0.0001 mm)	<b>Alarm Limits</b>	Set Hi & Lo tolerances with audible beeper, viewable scan bar, and visual LEDs.
<b>Velocity Range</b>	0.0492 to 0.3937 in./ms (1250 - 9999 meters/sec) Fixed, single, and two port zero calibration options Select bolt material from preset custom list		

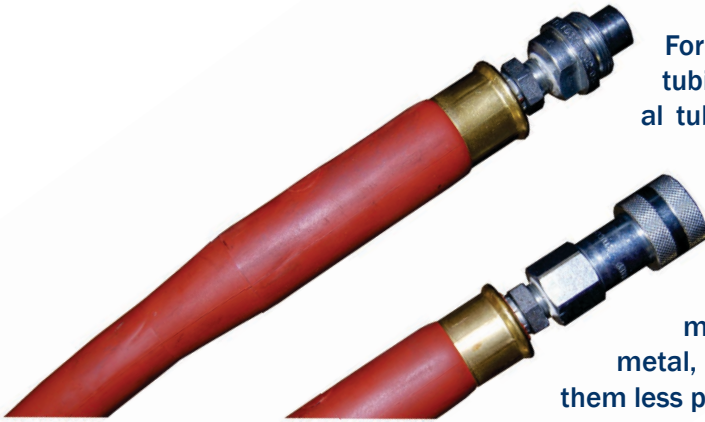


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## HOSES

VERY HIGH PRESSURE



For decades, Synflex® thermoplastic hose and tubing has been replacing rubber hose or metal tubing designs. Synflex hose and tubing offers customers a number of benefits, including flexibility, durability, abrasion resistance, lightweight materials, superior chemical resistance, variety of colors, high pressure capability and extended product performance. The Kevlar reinforcement, rather than metal, gives the hoses a better bend radius, making them less prone to kink and puncture. The four-part crimp makes these hoses highly durable and very lightweight.

COMPACT SIZE

LOW ELONGATION

DESIGNED FOR PERMANENT HIGH PRESSURE FITTINGS WITH HOSE GUARDS

LIGHTWEIGHT

PERFORATED POLYURETHANE COVER

SPIRALED HIGH TENSILE ARAMID FIBER REINFORCEMENT

NYLON-LINED CORE TUBE

HOSE SERIES	DASH SIZE RANGE	RECOMMENDED PRESSURE RANGE PSI	TEMPERATURE RANGE °F	TEMPERATURE RANGE °C	KEY FEATURES & APPLICATIONS
3V10	-3 to -6	8,000-10,000	-40 to 150	-40 to 66	High Pressure Performance, Hydraulic Jacks

PART NUMBER	NOMINAL O.D. IN. / MM	MAXIMUM O.D. IN. / MM	MINIMUM BEND RADIUS IN. / MM	MAXIMUM WORKING PRESSURE PSI / BAR	MAXIMUM BURST PRESSURE PSI / BAR	WEIGHT LB. / KG 100 FT. / 100M	AVAILABLE LENGTHS
3V10-04003	¼ / 6.4	.595 / 15.1	2½ / 64	10,000 / 919	40,000 / 2,758	10.6 / 15.8	250 ft.

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## HOSES

### TECHNICAL DATA

#### MINIMUM BEND RADIUS

Tight bends that exceed the hose minimum bend radius should be avoided. Spring guards or stress relief sleeves may be required to protect against exceeding prescribed minimum bend radii.

#### TORSIONAL FLEXING

When equipment parts exhibit relative motion, hose connections should be located so hoses bend rather than twist.

#### FITTING CONNECTIONS

Attach only the fittings specified for each hose design and do not mix components that are produced by different manufacturers. Proper fitting and selection is very important to eliminate twists and kinks in installed assemblies when connecting fittings to port connections. Swivel fittings are designed to allow for the hex rotation during tightening and bent tube or elbow fittings can eliminate kinks.

#### TORQUE WRENCH APPLICATION

Use torque values where specified when tightening fitting connections to prevent leakage and damage.

#### FINAL CHECK OUT

After components are assembled, purge entrapped air and pressurize system to maximum operating pressure. Inspect for leaks and proper function. Perform electrical conductivity tests on designs serving as static electricity discharge paths. It is important that designers and users consider hose and hose assemblies as having a finite life. Therefore, maintenance and replacement is usually necessary at certain intervals.

#### MAINTENANCE INTERVAL

Frequency of maintenance inspection should be determined by the system designer and user based on the severity of the application, previous service life and risk potential.

#### LEAKAGE

Turn off equipment and bleed down pressures prior to inspection to minimize risk to personnel. Inspect the full length of the hose and fitting connections for leaks.

#### DAMAGE

Inspect hose for cuts, abrasion, cracks, blisters, kinked or crushed areas, heat degradation, or cover looseness at the port or hose connection. Inspect hose guards for damage using the steps that apply to the hose and fittings.

#### ELECTRICAL CONTINUITY

In applications requiring the hose assembly to conduct static electricity to a ground connection, test hose assemblies using a megohmmeter in accordance with recommended procedures described on the permanently attached tag.

#### REPLACEMENT

Hose and/or assembly replacement should be considered at specific intervals under normal conditions. If leakage, loss of conductivity (when required), fitting separation, and/or signs of damage are detected, the hose assembly should be replaced immediately.

#### HOSE ROUTING

Under pressure, a hose may change in length. Always provide some slack in the hose to allow for this shortening or elongation.





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1979

Dale Francis was one of the first to begin using hydraulic torque wrenches on industrial bolting applications.



1981

Founded Francis Services, Inc.



1988

Introduced a revolutionary inline ratcheting tool for industrial bolting needs and won the OTC Mechanical Engineering Award in 1986 for this design.



Developed and acquired several working patents on various Torq/Lite wrench designs.

1996



1997

Launched the first high-speed, high-output subsea Riser Tool wrench which was also patented in 2002.

1999

Won the Woelfel Distinguished Innovation Award for the Riser Tool at the Offshore Technology Conference.

2001

Established the world's first patented open-gate hydraulic torque wrench. The JN Series provides creative and safe solutions for difficult bolting situations.

2003

Introduced the XL (Extra Lite) line for the inline and square drive wrenches to provide maximum strength and capacity with a lighter weight frame.

2005

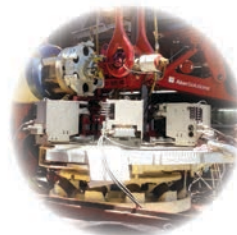
Debuted the 2nd generation of the XL Series tools.



2008

Pioneered the Robo-Spider™, the world's first and only fully-automated torquing system.

Continued to develop and acquire even more patents, at least one in each of the last four decades, showcasing Torq/Lite's constant innovation throughout the years.



2014

Installed the first Robo-Spider on the Sevan Louisiana offshore drilling rig in the Gulf of Mexico.

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## TORQ/LITE E.U.

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Safe  
Quality **PRODUCTS.**

What the  
**PROS**  
use.