

# BOLTING SOLUTIONS



A complete range of  
hydraulic and mechanical  
tools for tough bolting  
applications.

**E**NERPAC offers a comprehensive range of hydraulic and mechanical bolting tools suited to a wide variety of markets and applications.

Hydraulic torque wrenches, manual torque multipliers, nut splitters, flange spreaders and alignment tools... Enerpac has the tools to complete your most difficult bolting jobs with the degree of safety and accuracy demanded in today's work environment.



# Table of Contents

Capacity	Tool Type and Functions	Series		Page
1400-25,140 Ft.lbs	Square Drive Hydraulic Torque Wrenches-Steel	S		2 ▶
2000-15,000 Ft.lbs	Low Profile Hydraulic Torque Wrenches-Steel	W		6 ▶
750-8000 Ft.lbs	Manual Torque Multipliers	E		10 ▶
5-90 tons	Hydraulic Nut Splitters	NC		12 ▶
5-10 tons	Pin-type Hydraulic Flange Spreaders	FS		13 ▶
8-14 tons	Step-type Industrial Spreaders	FSM FSH		14 ▶
0.3-5.5 tons	Flange Alignment Tools	ATM		15 ▶
<b>Torque Wrench Pumps</b>			<b>Selection Matrix</b>	<b>16 ▶</b>
Flow 20 in <sup>3</sup> /min.	Portable Electric Torque Wrench Pumps	PMU		17 ▶
Flow 60 in <sup>3</sup> /min.	Electric Torque Wrench Pumps	ZU4T		18 ▶
Flow 20 in <sup>3</sup> /min.	Compact Air Driven Torque Wrench Pumps	PTA		22 ▶
Flow 60 in <sup>3</sup> /min.	Air Driven Torque Wrench Pumps	ZA4T		24 ▶
	Pressure vs. Torque Charts Hex Bolt Sizes			28 ▶ 29 ▶

▼ From left to right: S3000, S6000, S1500



## Rigid Steel Professional Square Drive Solution



### S-Series, Square Drive Wrenches

This product range has been designed using state-of-the-art CAD techniques to bring you the most advanced square drive torque wrench on the market.

To ensure that the tools you buy meet our own exacting requirements, during the design process every prototype was put through finite element stress analysis, photo-elastic modeling, rigorous cyclic testing and strain gauging.

### Simplicity

- 360° click-on, multi-position reaction arm
- Push button square drive release for quickly reversing the square drive for tightening or loosening
- Fine tooth ratchet prevents tool “lock-on”
- Single 360° hydraulic swivel manifold, complete with screw lock couplings, increases wrench and hose maneuverability

### Design

- Compact, high-strength uni-body construction for a small operating radius
- Robust design with minimal parts enables easy on-site maintenance without special tools
- Lightweight, ergonomic design for easy handling and an easy fit, even in applications where access is limited
- Optimised strength-to-weight ratio
- Fast operation due to the large nut rotation per wrench cycle (35 degree rotation angle) and rapid return stroke.

### Reliability

- All wrenches are nickel-plated for excellent corrosion protection and improved durability in harsh environments.

### Accuracy

- Constant torque output provides high accuracy across the full stroke
- Uni-body construction ensures accuracy by reducing internal deflections.



### Special Design Service

Should you have an application where it is not possible to use the standard range of tools, then we invite you to draw on our extensive experience in providing tailor-made solutions to problems involving bolted joints.



### Optional Direct Allen Drives

Expanded versatility with a wide range of metric and imperial Allen drives for hexagon socket head cap screws.

Page: 4

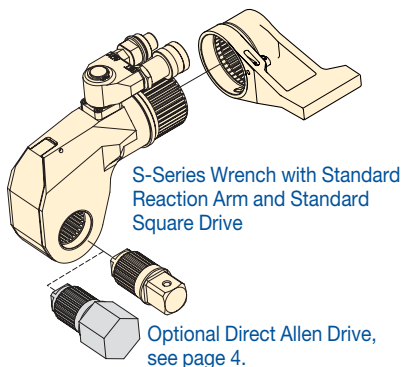


### Torque Wrench Hoses

Use Enerpac THQ-700 Series torque wrench hoses with S-Series torque wrenches to ensure the integrity of your hydraulic system.

19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>

# Double-Acting Square Drive Hydraulic Torque Wrenches



Use only Heavy Duty Impact Sockets for power driven torquing equipment, according to ISO2725 and ISO1174; DIN 3129 and DIN 3121 or ASME-B107.2/1995.

## S Series



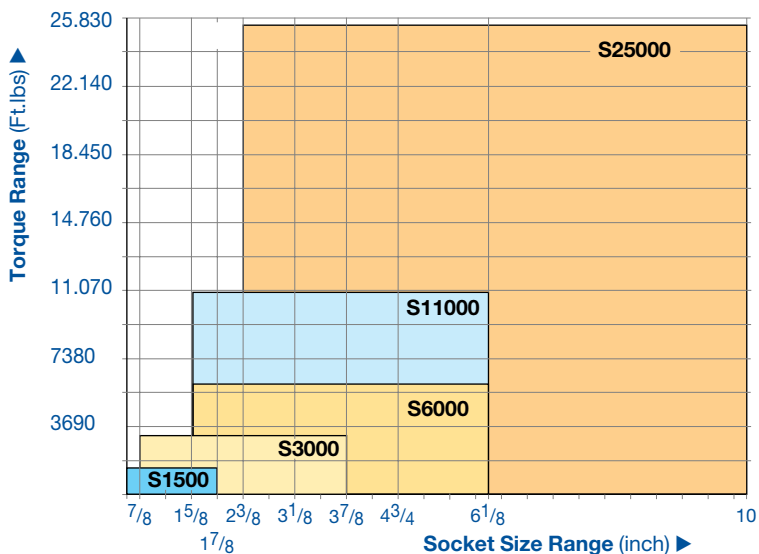
Maximum Torque at 10,000 psi:  
**25,150 Ft.lbs**

Square Drive Range:  
**3/4-2 1/2 inches**

Nose Radius:  
**.99-2.50 inches**

Maximum Operating Pressure:  
**10,000 psi**

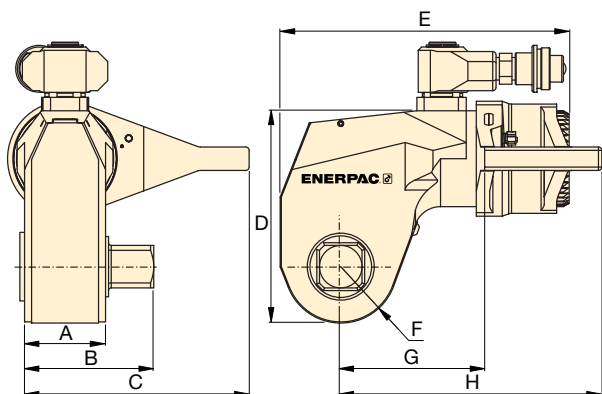
### TORQUE WRENCH SELECTION (based on socket size range)



### Torque Wrench and Pump Selection Matrix

For optimum speed and performance see the torque wrench and pump matrix.

Page: 16



The rigid steel design of S-Series torque wrenches guarantee durability, reliability and safety. These wrenches can be powered by the portable ZU4T-Series pumps.



Typical Socket Size Range		Square Drive		Maximum Torque <sup>1)</sup> at 10,000 psi	Torque Wrench Model No.	Dimensions (in)								Wt. (lbs)
		Size (in)	Model No. (included with wrench)			A	B	C	D	E	F	G	H	
5/8 - 1 7/8	15 - 50	3/4	SD15-012	1400	<b>S1500</b>	1.54	2.48	4.33	3.74	5.36	0.99	2.72	4.69	5.94
7/8 - 3 7/8	20 - 100	1	SD30-100	3200	<b>S3000</b>	1.89	3.03	5.28	4.96	6.78	1.30	3.55	6.27	11.00
1 5/8 - 6 1/4	41 - 155	1 1/2	SD60-108	6010	<b>S6000</b>	2.24	3.55	7.05	6.38	7.92	1.66	4.41	7.37	18.70
1 5/8 - 6 1/4	41 - 155	1 1/2	SD110-108	11,000	<b>S11000</b>	2.80	4.37	7.22	7.29	8.90	1.95	5.20	8.94	33.00
2 3/8 - 10	60 - 255	2 1/2	SD250-208	25,140	<b>S25000</b>	3.43	5.63	9.61	9.46	11.50	2.50	7.17	11.50	68.20

<sup>1)</sup> Determine maximum torque according to the bolt (nut) size and grade.



### Optional Allen Drives and Reaction Arm

The SRA-Series Reaction Arm for Allen drives must be used instead of standard reaction arm for square drives.

For  
**S**  
Series



Maximum Torque at 10,000 psi:  
**25.150 Ft.lbs.**

Hexagon Size Allen Drive:  
**1/2-2 1/4 inches**

### SELECTION CHART

TORQUE WRENCH	OPTIONAL ALLEN DRIVES, IMPERIAL				SHORT REACTION ARM FOR ALLEN DRIVES		
	Hexagon Size (in)	Maximum Torque <sup>1)</sup> (Ft.Lbs)	Model Number	Dim. B1 (in)	Model Number	Dimensions (in) C1 H1	
<b>S1500</b> (1400 Ft-lbs)	1/2	355	SDA15-008	2.6	<b>SRA15</b>	2.66	2.56
	5/8	690	SDA15-010	2.6			
	3/4	1195	SDA15-012	2.8			
	7/8	1400	SDA15-014	2.9			
	1	1400	SDA15-100	3.0			
<b>S3000</b> (3200 Ft-lbs)	5/8	690	SDA30-010	3.0	<b>SRA30</b>	3.15	2.91
	3/4	1195	SDA30-012	3.1			
	7/8	1895	SDA30-014	3.3			
	1	2824	SDA30-100	3.4			
	1 1/8	4023	SDA30-102	3.5			
	1 1/4	5517	SDA30-104	3.5			
	-	-	-	-			
<b>S6000</b> (6000 Ft-lbs)	5/8	690	SDA60-010	3.3	<b>SRA60</b>	3.60	3.50
	3/4	1195	SDA60-012	3.5			
	7/8	1895	SDA60-014	3.6			
	1	2824	SDA60-100	3.7			
	1 1/8	4023	SDA60-102	3.8			
	1 1/4	5517	SDA60-104	3.9			
	-	-	-	-			
<b>S11000</b> (11,000 Ft-lbs)	1 1/4	5517	SDA110-104	4.5	<b>SRA110</b>	5.02	4.17
	1 3/8	7341	SDA110-106	4.6			
	1 1/2	10	SDA110-108	4.6			
	1 5/8	11	SDA110-110	4.8			
	1 3/4	11	SDA110-112	4.9			
<b>S25000</b> (25,000 Ft-lbs)	1 1/2	10	SDA250-108	5.5	<b>SRA250</b>	6.24	5.31
	1 5/8	13	SDA250-110	5.7			
	1 3/4	16	SDA250-112	5.8			
	1 7/8	19	SDA250-114	5.9			
	2	23	SDA250-200	5.9			
	2 1/4	26	SDA250-204	6.0			
	-	-	-	-			
	-	-	-	-			
	-	-	-	-			
-	-	-	-				



### Nut Splitters

Remove rusted or corroded nuts easily with Enerpac Nut Splitters. Hexagon nut capacities up to 2.88 in.

Page: 12



### Torque Wrench and Pump Selection Matrix

For optimum speed and performance see the torque wrench and pump matrix.

Page: 16



### Hexagon Bolt and Nut Sizes

See the table for hexagon sizes of bolts, nuts and related thread diameters.

Page: 29

<sup>1)</sup> Determine maximum torque according to the bolt size and grade.

# SDA-Series, Allen Drives – Metric



## Optional Allen Drives and Reaction Arm

The SRA-Series Reaction Arm for Allen drives must be used instead of standard reaction arm for square drives.

For  
**S**  
Series



Maximum Torque at 10,000 psi:

**25,150 Ft.lbs.**

Hexagon Size Allen Drive:

**14-85 mm**

### ▼ SELECTION CHART

TORQUE WRENCH	OPTIONAL ALLEN DRIVES, METRIC				SHORT REACTION ARM FOR ALLEN DRIVES		
	Hexagon Size (mm)	Maximum Torque <sup>1)</sup> (Ft.lbs)	Model Number	Dim. B1 (in)	Model Number	Dimensions (in) C1 H1	
<b>S1500</b> (1400 Ft-lbs)	14	475	SDA15-14	2.60	<b>SRA15</b>	2.66	2.56
	17	850	SDA15-17	2.68			
	19	1184	SDA15-19	2.76			
	22	1399	SDA15-22	2.87			
	24	1399	SDA15-24	2.91			
<b>S3000</b> (3200 Ft-lbs)	17	850	SDA30-17	3.03	<b>SRA30</b>	3.15	2.91
	19	1184	SDA30-19	3.11			
	22	1833	SDA30-22	3.23			
	24	2384	SDA30-24	3.31			
	27	3198	SDA30-27	3.35			
	30	3198	SDA30-30	3.43			
	32	3198	SDA30-32	3.46			
<b>S6000</b> (6000 Ft-lbs)	17	850	SDA60-17	3.39	<b>SRA60</b>	3.60	3.50
	19	1184	SDA60-19	3.46			
	22	1833	SDA60-22	3.58			
	24	2384	SDA60-24	3.66			
	27	3393	SDA60-27	3.70			
	30	4652	SDA60-30	3.78			
	32	5647	SDA60-32	3.82			
<b>S11000</b> (11,000 Ft-lbs)	30	4652	SDA110-30	4.41	<b>SRA110</b>	5.02	4.17
	32	5647	SDA110-32	4.49			
	36	8035	SDA110-36	4.61			
	41	10,993	SDA110-41	4.76			
	46	10,993	SDA110-46	5.00			
<b>S25000</b> (25,000 Ft-lbs)	36	8035	SDA250-36	5.51	<b>SRA250</b>	6.24	5.31
	41	11873	SDA250-41	5.67			
	46	16765	SDA250-46	5.83			
	50	21,480	SDA250-50	5.94			
	55	25,135	SDA250-55	6.06			
	60	25,135	SDA250-60	6.22			
	65	25,135	SDA250-65	6.34			
	70	25,135	SDA250-70	6.46			
	75	25,135	SDA250-75	6.61			
	85	25,135	SDA250-85	6.89			



### Select the Right Torque

Choose your Enerpac Torque Wrench using the untightening rule of thumb: Loosening torque equals about 150% of tightening torque.

Page: 28



### Flange Spreaders

Friction-free, smooth and parallel wedge movement with unique interlock wedge design. Eliminates flange damage and risk of spreading arm failure.

Page: 14



### ATM-Series Alignment Tools

Rectifies twist and rotational misalignment without additional stress in pipelines.

Page: 15

<sup>1)</sup> Determine maximum torque according to the bolt size and grade.

▼ Shown: Drive units with interchangeable cassettes



## Rigid Steel Design

## The *Professional* Low Profile Solution



### W-Series, Low Profile Torque Wrenches

This product range has been designed using state-of-the-art CAD techniques to bring you the most advanced low profile torque wrench on the market. Safety, quality, toughness and reliability are built in.

During the design process every prototype was put through finite element stress analysis, photo-elastic modelling, rigorous cyclic testing and strain gauging.



### Special Design Service

Should you have an application where it is not possible to use the standard range of tools, then we invite you to draw on our extensive experience in providing tailor-made solutions to problems involving bolted joints.



### Torque Wrench Hoses

Use Enerpac THQ-700 Series hoses with W-Series torque wrenches to ensure the integrity of your hydraulic system.

19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>

### Simplicity

- No tools are needed for changing the hexagon cassettes
- Innovative, pinless wrench construction incorporates quick release cylinder and automatic crank engagement
- Single 360° hydraulic swivel manifold complete with screw lock couplings increases wrench and hose maneuverability

### Design

- Cylinders and low profile cassettes have been engineered to give ultra slim, compact low clearance tooling with a small nose radius
- Robust design with minimal parts enables easy on-site maintenance without special tools
- Nut sizes covered range from 1<sup>1</sup>/<sub>4</sub> - 4<sup>5</sup>/<sub>8</sub> inch (30 - 115 mm)
- Optimized strength-to-weight ratio
- Fast operation due to the large nut rotation per wrench cycle (30 degree rotation angle) and rapid return stroke

### Reliability

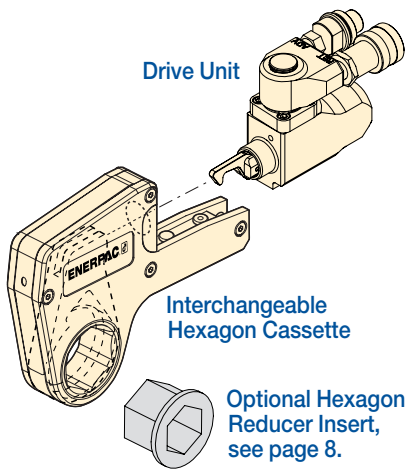
- All wrenches are nickel-plated for excellent corrosion protection and improved durability in harsh environments
- All wrenches are fitted with bronze bushings to ensure the ratchet will never seize in the sideplates, thus eliminating costly repairs

### Accuracy

- Constant torque output provides high accuracy across the full stroke
- In-line reaction foot ensures accuracy by reducing internal deflections.



# Double-Acting Hydraulic Hexagon Torque Wrenches



## Hexagon Cassettes and Reducer Inserts

Maximum versatility with the full range of interchangeable hexagon cassettes and hexagon reducing inserts is available in metric and inch sizes.

Page: 8

## W Series



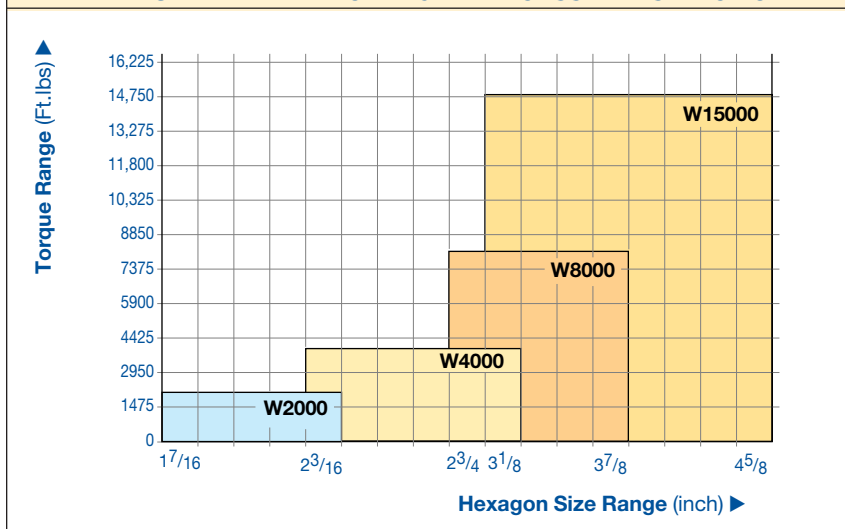
Maximum Torque at 10,000 psi:  
**15,000 Ft.lbs**

Hexagon Range:  
**1<sup>1</sup>/<sub>4</sub> - 4<sup>5</sup>/<sub>8</sub> inches**

Nose Radius:  
**1.22-3.44 inches**

Maximum Operating Pressure:  
**10,000 psi**

### DRIVE UNIT AND INTERCHANGEABLE CASSETTE SELECTION

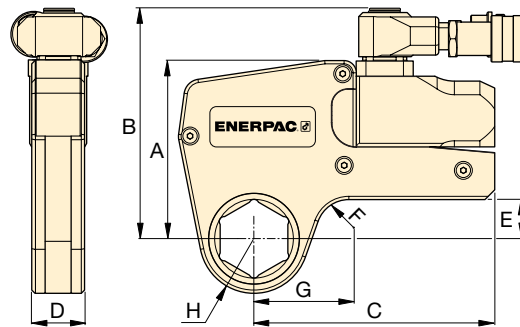


### Torque Wrench Pump Selection Matrix




For optimum speed and performance see the torque wrench and pump matrix.

Page: 16

▼ These rigid steel wrenches with low profile interchangeable hexagon cassettes guarantee durability and maximum versatility in bolting applications.

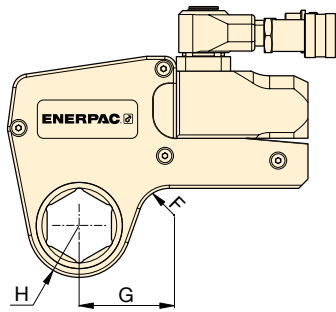


### ▼ SELECTION CHART

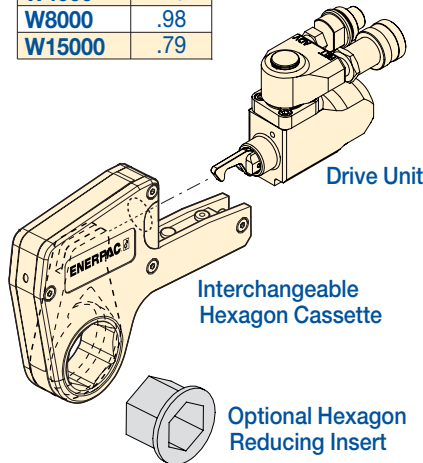
Hexagon Range *		Maximum Torque at 10,000 psi (Ft.lbs)	Drive Unit Model Number	Minimum Torque (Ft.lbs)	Dimensions (in)						Weight Drive unit without hexagon cassette (lbs)
(in)	(mm)				A	B	C	D	E	F	
											
1 <sup>7</sup> / <sub>16</sub> - 2 <sup>3</sup> / <sub>8</sub>	36 - 55	2000	W2000	200	4.29	5.55	5.83	1.26	.94	.79	3.09
1 <sup>5</sup> / <sub>8</sub> - 3 <sup>1</sup> / <sub>8</sub>	55 - 80	4000	W4000	400	5.35	6.57	7.01	1.61	1.29	.79	4.41
2 <sup>3</sup> / <sub>16</sub> - 3 <sup>7</sup> / <sub>8</sub>	70 - 95	8000	W8000	800	6.77	8.07	8.19	2.07	1.65	.98	6.61
2 <sup>9</sup> / <sub>16</sub> - 5	80 - 115	15,000	W15000	1500	8.15	9.45	9.96	6.30	1.97	.79	11.02

\* With in-line reaction foot.

See pages 8-9 for dimensions H and G.



dimension	F (in)
W2000	.79
W4000	.79
W8000	.98
W15000	.79



## W Series










Maximum Torque at 10,000 psi:  
**15,000 Ft.lbs**

Hexagon Range:  
**1 1/4-4 5/8 inches**

Maximum Operating Pressure:  
**10,000 psi**

### SELECTION CHART

Drive Unit Model No.	HEXAGON CASSETTES – INCHES										
	Hexagon Size	Nose Radius H	Model Number	G	Wt.	Hexagon Reducer Size (in)	Hexagon Reducer Insert Model No.	Hexagon Reducer Size (in)	Hexagon Reducer Insert Model No.	Hexagon Reducer Size (in)	Hexagon Reducer Insert Model No.
 <b>W2000</b> (2000 Ft.lbs)	1 7/16	1.21	<b>W2107</b>	2.11	4.19	–	–	–	–	–	–
	1 1/2	1.32	<b>W2108</b>	2.29	4.41	–	–	–	–	–	–
	1 5/8	1.32	<b>W2110</b>	2.29	4.41	1 5/8 - 1 7/16	<b>W2110R107</b>	1 5/8 - 1 1/4	<b>W2110R104</b>	–	–
	1 13/16	1.47	<b>W2113</b>	2.38	4.41	1 13/16 - 1 5/8	<b>W2113R110</b>	1 13/16 - 1 7/16	<b>W2113R107</b>	1 13/16 - 1 1/4	<b>W2113R104</b>
	2	1.54	<b>W2200</b>	2.48	4.41	2 - 1 13/16	<b>W2200R113</b>	2 - 1 5/8	<b>W2200R110</b>	2 - 1 7/16	<b>W2200R107</b>
	2 3/16	1.65	<b>W2203</b>	2.70	4.63	2 3/16 - 2	<b>W2203R200</b>	2 3/16 - 1 13/16	<b>W2203R113</b>	2 3/16 - 1 5/8	<b>W2203R110</b>
	2 3/8	1.75	<b>W2206</b>	2.55	4.85	2 3/8 - 2 3/16	<b>W2206R203</b>	2 3/8 - 2	<b>W2206R200</b>	2 3/8 - 1 13/16	<b>W2206R113</b>
	–	–	–	–	–	–	–	–	–	–	–
 <b>W4000</b> (4000 Ft.lbs)	2 3/16	1.73	<b>W4203</b>	2.84	8.38	2 3/16 - 2	<b>W4203R200</b>	2 3/16 - 1 13/16	<b>W4203R113</b>	2 3/16 - 1 5/8	<b>W4203R110</b>
	2 3/8	1.83	<b>W4206</b>	2.78	8.60	2 3/8 - 2 3/16	<b>W4206R203</b>	2 3/8 - 2	<b>W4206R200</b>	2 3/8 - 1 13/16	<b>W4206R113</b>
	2 1/2	1.95	<b>W4208</b>	3.00	8.60	2 1/2 - 2 3/16	<b>W4208R203</b>	2 1/2 - 2	<b>W4208R200</b>	2 1/2 - 1 13/16	<b>W4208R113</b>
	2 9/16	1.95	<b>W4209</b>	3.00	8.60	2 9/16 - 2 3/8	<b>W4209R206</b>	2 9/16 - 2 3/16	<b>W4209R203</b>	2 9/16 - 2	<b>W4209R200</b>
	2 3/4	2.07	<b>W4212</b>	3.08	8.82	2 3/4 - 2 9/16	<b>W4212R209</b>	2 3/4 - 2 3/8	<b>W4212R206</b>	2 3/4 - 2 3/16	<b>W4212R203</b>
	2 15/16	2.18	<b>W4215</b>	3.21	9.03	2 15/16 - 2 3/4	<b>W4215R212</b>	2 15/16 - 2 9/16	<b>W4215R209</b>	2 15/16 - 2 3/8	<b>W4215R206</b>
	3 1/8	2.30	<b>W4302</b>	3.29	9.26	3 1/8 - 2 15/16	<b>W4302R215</b>	3 1/8 - 2 3/4	<b>W4302R212</b>	3 1/8 - 2 9/16	<b>W4302R209</b>
	–	–	–	–	–	–	–	–	–	–	–
 <b>W8000</b> (8000 Ft.lbs)	2 9/16	2.20	<b>W8209</b>	3.34	17.20	2 9/16 - 2 3/8	<b>W8209R206</b>	2 9/16 - 2 3/16	<b>W8209R203</b>	2 9/16 - 2	<b>W8209R200</b>
	2 3/4	2.20	<b>W8212</b>	3.34	17.20	2 3/4 - 2 9/16	<b>W8212R209</b>	2 3/4 - 2 3/8	<b>W8212R206</b>	2 3/4 - 2 3/16	<b>W8212R203</b>
	2 15/16	2.28	<b>W8215</b>	3.35	17.20	2 15/16 - 2 3/4	<b>W8215R212</b>	2 15/16 - 2 9/16	<b>W8215R209</b>	2 15/16 - 2 3/8	<b>W8215R206</b>
	3 1/8	2.38	<b>W8302</b>	3.52	17.42	3 1/8 - 2 15/16	<b>W8302R215</b>	3 1/8 - 2 3/4	<b>W8302R212</b>	3 1/8 - 2 9/16	<b>W8302R209</b>
	3 1/2	2.60	<b>W8308</b>	3.63	17.86	3 1/2 - 3 1/8	<b>W8308R302</b>	3 1/2 - 2 15/16	<b>W8308R215</b>	3 1/2 - 2 3/4	<b>W8308R212</b>
	3 3/4	2.91	<b>W8312</b>	4.05	19.18	3 3/4 - 3 1/2	<b>W8312R308</b>	3 3/4 - 3 1/8	<b>W8312R302</b>	3 3/4 - 2 15/16	<b>W8312R215</b>
	3 7/8	2.91	<b>W8314</b>	4.05	19.40	3 7/8 - 3 1/2	<b>W8314R308</b>	3 7/8 - 3 1/8	<b>W8314R302</b>	3 7/8 - 2 15/16	<b>W8314R215</b>
	–	–	–	–	–	–	–	–	–	–	–
 <b>W15000</b> (15,000 Ft.lbs)	3 1/8	2.54	<b>W15302</b>	3.66	30.20	3 1/8 - 2 15/16	<b>W15302R215</b>	3 1/8 - 2 3/4	<b>W15302R212</b>	3 1/8 - 2 9/16	<b>W15302R209</b>
	3 1/2	2.74	<b>W15308</b>	3.80	30.86	3 1/2 - 3 1/8	<b>W15308R302</b>	3 1/2 - 2 15/16	<b>W15308R215</b>	3 1/2 - 2 3/4	<b>W15308R212</b>
	3 3/4	2.95	<b>W15312</b>	4.00	31.97	3 3/4 - 3 1/2	<b>W15312R308</b>	3 3/4 - 3 1/8	<b>W15312R302</b>	3 3/4 - 2 15/16	<b>W15312R215</b>
	3 7/8	2.95	<b>W15314</b>	4.00	31.97	3 7/8 - 3 1/2	<b>W15314R308</b>	3 7/8 - 3 1/8	<b>W15314R302</b>	3 7/8 - 2 15/16	<b>W15314R215</b>
	4 1/8	3.17	<b>W15402</b>	4.06	32.41	4 1/8 - 3 7/8	<b>W15402R314</b>	4 1/8 - 3 3/4	<b>W15402R312</b>	4 1/8 - 3 1/2	<b>W15402R308</b>
	4 1/4	3.17	<b>W15404</b>	4.06	32.41	4 1/4 - 3 7/8	<b>W15404R314</b>	4 1/4 - 3 1/2	<b>W15404R308</b>	4 1/4 - 3 1/8	<b>W15404R302</b>
	4 5/8	3.44	<b>W15410I</b>	4.52	33.73	4 5/8 - 4 1/4	<b>W15410R404</b>	4 5/8 - 3 7/8	<b>W15410R314</b>	4 5/8 - 3 1/2	<b>W15410R308</b>
	–	–	–	–	–	–	–	–	–	–	–

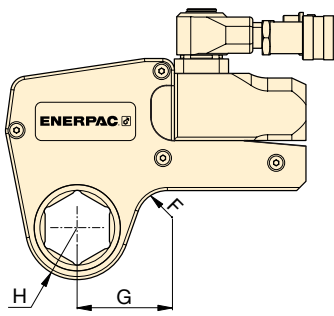
1) Additional Reducer Insert is hexagon size 2 15/16 - 2 3/16 inch, Model No. **W4215R203**, fits in **W4215** hexagon cassette.

2) Additional Reducer Insert is hexagon size 2 15/16 - 2 3/16 inch, Model No. **W8215R203**, fits in **W8215** hexagon cassette.

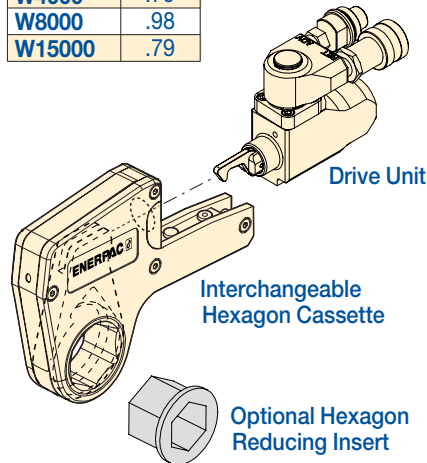
3) Additional Reducer Insert is hexagon size 3 3/4 - 2 3/4 inch, Model No. **W8312R212**, fits in **W8312** hexagon cassette.

See the table of hexagon bolt and nut sizes and related thread diameters on page 228.

# Metric Hexagon Cassettes and Reducer Inserts



dimension	F (in)
W2000	.79
W4000	.79
W8000	.98
W15000	.79



## W Series



Maximum Torque at 700 bar:  
**15,000 Ft.lbs.**

Hexagon Range:  
**30-115 mm**

Maximum Operating Pressure:  
**10,000 psi**

### SELECTION CHART

Drive Unit Model No.	HEXAGON CASSETTES - METRIC					Hexagon Reducer Size (mm)		Hexagon Reducer Insert Model Number		Hexagon Reducer Size (mm)		Hexagon Reducer Insert Model Number	
	Hexagon Size (mm)	Nose Radius H (in)	Model Number	G (in)	Wt. (lbs)	Hexagon Reducer Size (mm)	Hexagon Reducer Insert Model Number	Hexagon Reducer Size (mm)	Hexagon Reducer Insert Model Number	Hexagon Reducer Size (mm)	Hexagon Reducer Insert Model Number		
W2000 (2000 Ft.lbs)	36	1.21	W2107	2.11	4.19	-	-	-	-	-	-		
	38	1.32	W2108	2.29	4.41	-	-	-	-	-	-		
	41	1.32	W2110	2.29	4.41	41/36	W2110R107	41/32	W2110R104	41/30	W2110R030M		
	46	1.47	W2113	2.38	4.41	46/41	W2113R110	46/36	W2113R107	46/32	W2113R104		
	50	1.54	W2200	2.48	4.41	50/46	W2200R113	50/41	W2200R110	50/36	W2200R107		
	55	1.65	W2203	2.70	4.63	55/50	W2203R200	55/46	W2203R113	55/41	W2203R110		
	60	1.75	W2206	2.55	4.85	60/55	W2206R203	60/50	W2206R200	60/46	W2206R113		
	-	-	-	-	-	-	-	-	-	-	-	-	
W4000 (4000 Ft.lbs)	55	1.73	W4203	2.84	8.38	55/50	W4203R200	55/46	W4203R113	55/41	W4203R110		
	60	1.83	W4206	2.78	8.60	60/55	W4206R203	60/50	W4206R200	60/46	W4206R113		
	63	1.95	W4208	3.00	8.60	63/55	W4208R203	63/50	W4208R200	63/46	W4208R113		
	65	1.95	W4209	3.00	8.60	65/60	W4209R206	65/55	W4209R203	65/50	W4209R200		
	70	2.07	W4212	3.08	8.82	70/65	W4212R209	70/60	W4212R206	70/55	W4212R203		
	75	2.18	W4215	3.21	9.04	75/70	W4215R212	75/65	W4215R209	75/60	W4215R206		
	80	2.30	W4302	3.29	9.26	80/75	W4302R215	80/70	W4302R212	80/65	W4302R209		
	-	-	-	-	-	-	-	-	-	-	-	-	
W8000 (8000 Ft.lbs)	65	2.20	W8209	3.34	7.20	65/60	W8209R206	65/55	W8209R203	65/50	W8209R200		
	70	2.20	W8212	3.34	17.20	70/65	W8212R209	70/60	W8212R206	70/55	W8212R203		
	75	2.28	W8215	3.35	17.20	75/70	W8215R212	75/65	W8215R209	75/60	W8215R206		
	80	2.38	W8302	3.52	17.42	80/75	W8302R215	80/70	W8302R212	80/65	W8302R209		
	85	2.60	W8085M	3.63	17.86	85/80	W8085R080M	85/75	W8085R075M	85/70	W8085R070M		
	90	2.91	W8090M	4.05	19.18	90/85	W8090R085M	90/80	W8090R080M	90/75	W8090R075M		
	95	2.91	W8312	4.05	19.40	95/90	W8312R090M	95/85	W8312R085M	95/80	W8312R302		
	-	-	-	-	-	-	-	-	-	-	-	-	
W15000 (15,000 Ft.lbs)	80	2.54	W15302	3.66	30.20	80/75	W15302R215	80/70	W15302R212	80/65	W15302R209		
	85	2.74	W15085M	3.80	30.86	85/80	W15085R080M	85/75	W15085R075M	85/70	W15085R070M		
	90	2.95	W15090M	4.01	31.75	90/85	W15090R085M	90/80	W15090R080M	90/75	W15090R075M		
	95	2.95	W15312	4.01	31.97	95/90	W15312R090M	95/85	W15312R085M	95/80	W15312R302		
	105	3.17	W15402	4.06	32.41	105/100	W15402R100M	105/95	W15402R312	105/90	W15402R090M		
	110	3.44	W15405	4.52	33.07	110/105	W15110R105M	110/100	W15110R100M	110/95	W15110R095M		
	115	3.44	W15115M	4.52	33.73	115/110	W15115R110M	115/105	W15115R105M	115/100	W15115R100M		
	-	-	-	-	-	-	-	-	-	-	-	-	

1) Additional Reducer Insert is hexagon size 75/55 mm, Model No. W4215R203, fits in W4215 hexagon cassette.

2) Additional Reducer Insert is hexagon size 75/55 mm, Model No. W8215R203, fits in W8215 hexagon cassette.

3) Additional Reducer Insert is hexagon size 95/75 mm, Model No. W8312R215, fits in W8312 hexagon cassette.

4) Additional Reducer Insert is hexagon size 95/75 mm, Model No. W15312R215, fits in W15312 hexagon cassette.

▼ Shown: 290PLUS, E291, E393, E494



## Accurate, Efficient Torque Multiplication

When accurate make-up or break-out of stubborn fasteners requires high torque

- High-efficiency planetary gear sets achieve high output torque from low input torque
- Operator protected by anti-backlash device
- Accurate torque  $\pm 5\%$
- Reversible, tighten or loosen bolts
- Reaction bar or reaction plate style
- Angle-of-turn protractor standard on E391, E392, E393
- Reaction plate models offer increased versatility with reaction point locations
- 300 and 400 series have replaceable shear drives, providing overload protection of internal power train



### Typical Torque Multiplier Applications

- Locomotives
- Power plants
- Pulp and paper mills
- Refineries
- Chemical plants
- Mines
- Off-road equipment
- Shipyards
- Cranes



Allow 2x tightening torque to break out bolts.

Rusted, corroded nuts and bolts may require two times the original torque to break loose.



◀ Enerpac E393 Torque Multiplier used to manually torque bolts up to 3,200 ft. lbs.



### CAUTION:

Impact type air tools should never be used with torque multipliers. Torque multiplier damage could result.

# Manual Torque Multipliers



## Manual Torque Multipliers

Enerpac manual torque multipliers provide efficient torque multiplication in wide clearance applications and when external power sources are not available. Manual torque multipliers are used in most industrial, construction, and equipment maintenance applications.

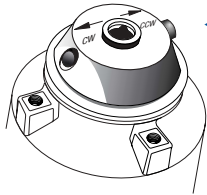
Hydraulic torque wrenches are better suited for tight tolerance, flange and repetitious bolting applications.

## E Series

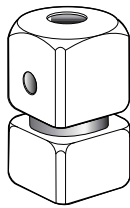


Maximum Output Torque:  
**750-8000 Ft-lbs.**

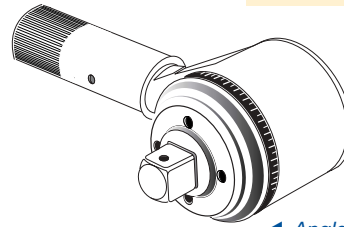
Torque Ratio:  
**3.3:1-52:1**



◀ **Selector Pawl**  
Models with anti-backlash protection have directional selector pawls. Set the pawl for clockwise or counter-clockwise rotation.

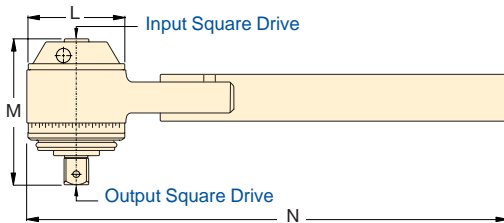


◀ **Shearable Square Drive**  
Provides Overload Protection on 300- and 400-series multiplier's power train by shearing at 103-110% of rated capacity. Internal shear pin prevents tool from falling off bolt.

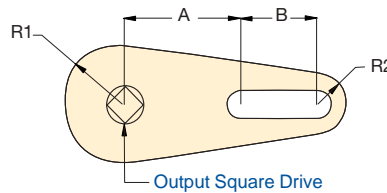


◀ **Angle-of-Turn Protractor**  
Certain models (E391, E392, E393) include an angle-of-turn protractor to tighten fasteners using a "torque turn" method.

### Reaction Bar



### Reaction Plate



Reaction Plate Dimensions				
Model	A (in)	B (in)	R1 (in)	R2 (in)
E492	5.50	4.88	2.44	1.25
E493	5.50	4.88	2.44	1.25
E494	7.00	3.50	2.75	1.63
E495	7.00	3.50	2.84	1.88

### ▼ Reaction Bar Torque Multipliers

Output Capacity (Ft-lbs)	Model Number	Input Capacity (Ft-lbs)	Torque Ratio	Input Square Drive (in)	Output Square Drive (in)	Overload Protection	Anti-Backlash	Head Diameter L (in)	Height M (in)	Length N (in)	Accuracy	Weight (lbs)
750	E290PLUS	227	3.3:1	1/2	3/4	No	No	2.80	3.30	8.60	± 5%	4.0
1000	E291	303	3.3:1	1/2	3/4	No	No	2.80	3.30	17.40	± 5%	5.5
1200	E391	200	6:1	1/2	3/4	Yes	No	3.94	4.00	19.60	± 5%	9.1
2200	E392	162	13.6:1	1/2	1	Yes	Yes	4.06	5.75	19.60	± 5%	15.2
3200	E393	173	18.5:1	1/2	1	Yes	Yes	4.06	6.50	19.60	± 5%	18.3

### ▼ Reaction Plate Torque Multipliers

Output Capacity (Ft-lbs)	Model Number	Input Capacity (Ft-lbs)	Torque Ratio	Input Square Drive (in)	Output Square Drive (in)	Overload Protection	Anti-Backlash	Head Diameter L (in)	Height M (in)	Length N (in)	Accuracy	Weight (lbs)
2200	E492	162	13.6:1	1/2	1	Yes	Yes	4.88	5.50	14.00	± 5%	17.2
3200	E493	173	18.5:1	1/2	1	Yes	Yes	4.88	6.41	14.00	± 5%	19.5
5000	E494	189	26.5:1	1/2	1 1/2	Yes	Yes	5.62	8.75	14.90	± 5%	34.0
8000	E495	154	52:1	1/2	1 1/2	Yes	Yes	5.81	10.75	15.20	± 5%	50.3

▼ Shown from left to right: NC-3241, NC-1319, NC-1924



## NC Series



Capacity:  
**5-90 tons**

Hexagon Nut Range:  
**0.5-2.88 inches**

Maximum Operating Pressure:  
**10,000 psi**



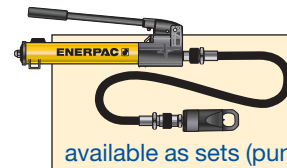
### Enerpac Nut Splitters

Nut Splitters include a spare chisel, a spare set screw and the wrench used to secure the chisel. A CR-400 coupler is standard.

- Compact and ergonomic design, easy to use
- Unique angled head allows flush access
- Single-acting, spring return cylinder
- Heavy-duty chisels can be reground
- Applications include servicing trucks, piping industry, tank cleaning, petrochemical, steel construction and mining



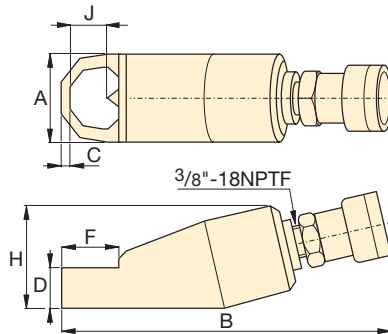
◀ Easily removing rusty nuts during railroad construction is just one of many application examples for the Enerpac Nut Splitter.



### Nutsplitter Sets

Hydraulic Nutsplitters are available as sets (pump, tool and hose).

Set Model Number	Splitter Model Number	Pump Model Number
STN-1924H	NC-1924	P-392
STN-2432H	NC-2432	P-392
STN-3241H	NC-3241	P-392



Hexagon Nut Range (in)	Bolt Range (in)	Capacity (ton)	Oil Capacity (in <sup>3</sup> )	Model Number	Dimensions (in)							Weight (lbs)	Replacement Chisel Model Number
					A	B	C	D	F	H	J		
.50-.75	.31-.50	5	.92	NC-1319	1.57	7.87	.24	.75	1.10	1.89	.83	1.8	NCB-1319
.75-.94	.50-.63	10	1.22	NC-1924	2.17	8.94	.32	.98	1.50	2.80	1.00	4.4	NCB-1924
.94-1.13	.63-.88	15	3.66	NC-2432	2.60	10.24	.39	1.22	1.93	2.99	1.30	6.6	NCB-2432
1.13-1.56	.88-1.13	20	4.88	NC-3241	2.95	11.26	.59	1.38	2.60	3.50	1.69	9.7	NCB-3241
1.56-2.00	1.13-1.38	35	9.46	NC-4150	3.78	12.80	.83	1.77	2.87	4.29	2.13	18.0	NCB-4150
2.00-2.25	1.38-1.50	50	14.64	NC-5060	4.17	14.41	1.06	2.13	3.63	4.96	2.38	26.0	NCB-5060
2.38-2.88	1.50-1.88	90	30.00	NC-6075	6.14	14.43	1.06	2.95	4.33	7.09	3.07	75.1	NCB-6075

Ordering Notes: Maximum allowable hardness to split is HRC-44.  
Not to be used on square nuts.

# Pin Type Hydraulic Flange Spreaders

▼ Shown: FS-56



- Lightweight, ergonomic design for ease of use
- Adjustable jaw widths from 2.75" to 8.50" for a wide range of applications
- Single-acting, spring return RC Series cylinders for fast trouble-free operation

## FS Series

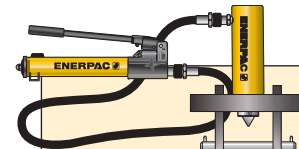


Capacity:

**5-10 tons**

Maximum Operating Pressure:

**10,000 psi**



### Flange Spreader Sets

Both Hydraulic

Flange Spreaders are available as sets (includes gauge, adaptor and hose).

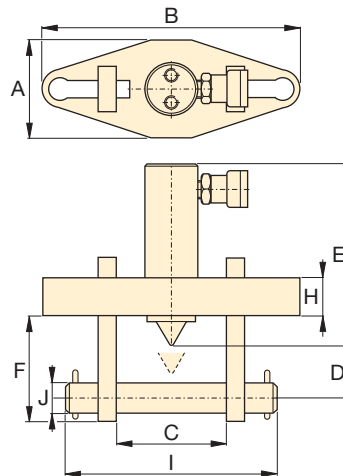
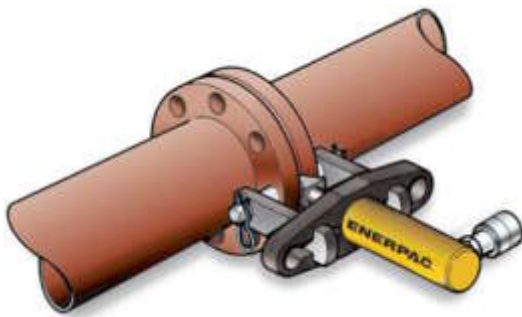
Set Model Number	Spreader Model Number	Pump Model Number
STF-56H	FS-56	P-142
STF-109H	FS-109	P-392
STF-109A	FS-109	PATG-1102N



### Wedge Spreaders

Friction-free, smooth and parallel wedge movement with unique interlock wedge design. Eliminates flange damage and risk of spreading arm failure.

Page: 14



### Flange Spreader Matching Chart

ASA Rating (psi)	Pipe Size (in)	
	FS-56	FS-109
150	5-20	22-42
300	2.50-14	16-28
400	2.50-12	14-24
500	2.50-10	12-20
900	.50-6	8-16
1500	.50-3.50	4-8
2500	.50-2.50	3-4

Maximum Flange Thickness (in)	Stud Size (in)	Standard Wedge (in)	Capacity (tons)	Stroke (in)	Oil Capacity (in <sup>3</sup> )	Model Number	Dimensions (in)										Weight (lbs)
							A	B	C		D	E	F	H	I	J	
									Min.	Max.							
2 x 2.25	.75-1.13	.13-1.13	5	1.50	1.50	FS-56	3.00	8.25	2.75	6.10	1.28	7.71	3.45	1.00	8.10	.75	26
2 x 3.63	1.25-1.63	.13-1.13	10	2.13	4.80	FS-109	4.25	11.00	4.10	8.50	1.98	6.00	4.50	1.50	10.75	1.25	40

▼ Shown: FSH-14 and FSM-8 with safety blocks SB1



## FSM/FSH Series

Tip Clearance / Maximum Spread\*:

**0.24/3.16 inches**

Maximum Spread Force:

**8-14 tons**

Maximum Operating Pressure:

**10,000 psi (FSH-14)**

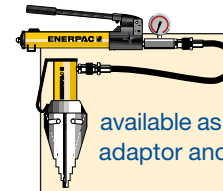
- **Integrated wedge concept:** friction-free, smooth, parallel wedge movement eliminates flange damage and spreading arm failure
- **Unique interlocking wedge design:** no first step bending and risk of slipping out of joint
- **Requires very small access gap of only .24 in. (6 mm)**
- **Stepped spreader arm design:** each step can spread under full load
- **Few moving parts means durability and low maintenance**
- **Safety block SB-1 and ratchet spanner SW-22 included with FSM-8**
- **Safety block and Enerpac RC-102 cylinder included with FSH-14**



### Stepped Blocks FSB-1

Use this pair of stepped blocks to increase wedge opening up to 3.16 in.

(81 mm). Fits both FSH-14 and FSM-8.

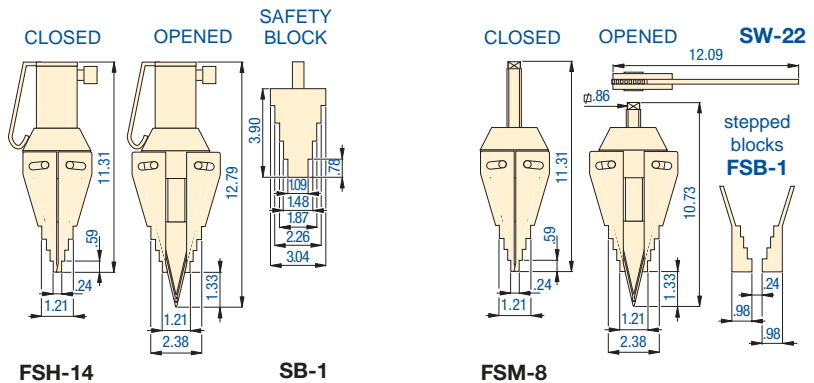


### Flange Spreader Sets

Hydraulic FSH-14 is available as a set (pump, tool, gauge, adaptor and hose).

Set Model Number	Set Includes:	
STF-14H	FSH-14	GA-2
	P-392	GP-10S
	HC-7206	-

▼ Two FSH-14 spreaders used simultaneously with Enerpac handpump, hoses and AM-21 split-flow manifold.



Max. Spreading Force (ton)	Model Number	Tip Clearance (in)	Max. Spread* (in)	Type	Oil Capacity (in <sup>3</sup> )	Weight (lbs)
8	FSM-8	.24	3.16	Mechanical	-	14.3
14	FSH-14	.24	3.16	Hydraulic	4.76	15.7

\*Using stepped blocks FSB-1



# Flange Alignment Tools

▼ From left to right: **ATM-3, ATM-1, ATM-5**



- Rectifies twist and rotational misalignment without additional stress in pipe lines
- For most commonly used ANSI, API, BS and DIN flanges
- No slings, hooks, or lifting gear. Extremely safe, high precision
- ATM-1 supplied with three bushings for different bolt hole sizes. Can be used in reversed position
- ATM-3 fits on the following flanges:
  - Ring Type Joints: flange wall thickness minimum 1.17" and maximum 3.90"
  - Gasket Type Joints: flange wall thickness minimum 0.48" and maximum 4.49"
- ATM-5 Fits when flange joint is:
  - between 3.75 - 9 inches apart and
  - bolt hole size 1.25 inches or greater
- Can be installed and used in any position and any location
- Stays stable in position under full load

## ATM Series

Bolt Hole Range:  
**1<sup>1</sup>/<sub>16</sub>-2<sup>1</sup>/<sub>8</sub> inches**

Flange Wall Thickness:  
**1<sup>1</sup>/<sub>16</sub>-8 inches**

Maximum Force:  
**0.3-5 tons**



### Adjustable Reach-on ATM-3

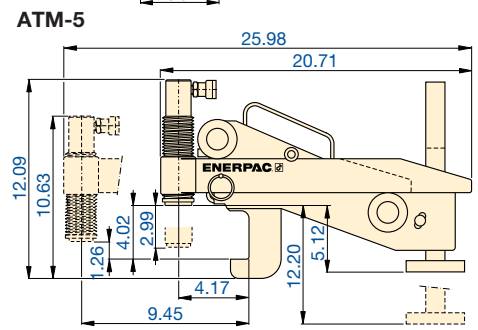
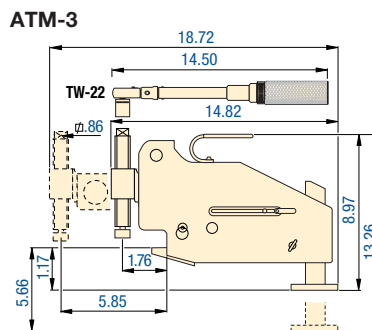
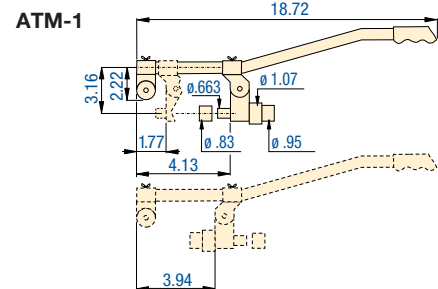
The highly adjustable reach of the wing, the reversible hook and manual torque wrench **TW-22** allow precise alignment.



### ATM-5 Including Hydraulics

Including 10,000 psi hydraulics: RC-53 single-acting cylinder, P-142 two-speed hand pump and 6 ft. long safety hose (HC-7206C).

All dimensions shown in inches.



▼ The Enerpac ATM-3 used to align a large ANSI flange.




Maximum Lifting Force (ton)	Model Number	Bolt Hole Range		Flange Wall Thickness		Wt. (lbs)
		(in)	(mm)	(in)	(mm)	
0.3	ATM-1	1 <sup>1</sup> / <sub>16</sub> - 1 <sup>1</sup> / <sub>8</sub>	17 - 27,2	1 <sup>1</sup> / <sub>16</sub> - 2	17 - 50	4.4
3.3	ATM-3	1 - 2 <sup>1</sup> / <sub>8</sub>	25 - 54	1 <sup>3</sup> / <sub>16</sub> - 4 <sup>1</sup> / <sub>2</sub>	30 - 115	21.4
5.5	ATM-5 *	≥ 1 <sup>1</sup> / <sub>4</sub>	≥ 31,5	3 <sup>1</sup> / <sub>8</sub> - 8	80-203	35.7

\* At 10,000 psi maximum operating pressure. ATM-5 weight including hydraulic cylinder. Total set weight 62 lbs.



## Optimum Torque Wrench and Pump Combinations

For optimum speed and performance Enerpac recommends the following system set-up with wrench-pump-hose combinations.

	ELECTRIC PUMPS				AIR DRIVEN PUMPS		TWIN HOSES
	PMU-Series		ZU4T-Series*		PTA-Series	ZA4T-Series*	THQ-Series THC-Series
							
	Page: 17		Page: 18		Page: 22	Page: 24	
<b>10,000 psi Torque Wrenches</b>	Flow at rated pressure: 20 in <sup>3</sup> /min 115V, 1 ph	Flow at rated pressure: 20 in <sup>3</sup> /min 230V, 1 ph	Flow at rated pressure: 60 in <sup>3</sup> /min 115V, 1 ph	Flow at rated pressure: 60 in <sup>3</sup> /min 230V, 1 ph	Flow at rated pressure: 20 in <sup>3</sup> /min	Flow at rated pressure: 60 in <sup>3</sup> /min	
<b>Model No.</b>							
 2	S1500 S3000	PMU-10427-Q PMU-10422-Q	-	-	PTA-1404-Q	-	THQ-706T (19.5 ft) THQ-712T (39.0 ft)
	S6000 S11000 S25000	-	ZU4208TB-Q	ZU4208TE-Q ZU4208TI-Q	-	ZA4204TX-Q	
 6	W2000 W4000	PMU-10427-Q PMU-10422-Q			PTA-1404-Q	-	THQ-706T (19.5 ft) THQ-712T (39.0 ft)
	W8000 W15000	-	ZU4208TB-Q	ZU4208TE-Q ZU4208TI-Q	-	ZA4204TX-Q	

\* ZU4T and ZA4T are available in other configurations not listed in this chart.

### 1/4" Torque Wrench Spin-on Couplers

For use with 10,000 psi S- and W-series torque wrenches, THQ-series hoses and torque wrench pumps with suffix "Q".



Model Numbers		
Complete Set	Female Half	Male Half
T-630	TR-630	TH-630



### IMPORTANT!

Always make sure that the torque scale on the pump matches the torque wrench size for accurate torque settings.



### Call Enerpac!

For other combinations, consult your Enerpac bolting expert or your authorized Enerpac distributor.

# Portable Electric Torque Wrench Pumps

▼ Shown: **PMU-10427**



## PMU Series



Reservoir Capacity:

**0.5 gal.**

Flow at 10,000 psi:

**20 in<sup>3</sup>/min.**

Motor Size:

**0.5 hp**

Maximum Operating Pressure:

**10,000 psi**

- Powerful two-speed pump is lightweight and easy to carry
- Standard heat exchanger package keeps pump cool under extreme use
- Glycerin filled gauge with scales reading in psi and bar
- Transparent overlays in Ft.lbs and Nm for all Enerpac torque wrenches provide a quick torque reference
- Universal motor for a high power-to-weight ratio; generates full pressure on as little as 50% of the rated line voltage
- Adjustable pressure relief valve for accurate torque adjustments and precise repeatability



### Pump Ratings

-Q suffix pumps are for 10,000 psi torque wrenches, and include spin-on couplers.



### Twin Torque Wrench Hoses

Use Enerpac THQ-700 series twin hoses with 10,000 psi pumps.

19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>

## ▼ PERFORMANCE CHART

For Use With Torque Wrenches		Maximum Pressure Rating (psi)		Oil Flow Rate (in <sup>3</sup> /min)		Model Number	Useable Oil Capacity (gal)	Electric Motor	Dimensions L x W x H (in)	Weight (lbs)
		1 <sup>st</sup> stage	2 <sup>nd</sup> stage	1 <sup>st</sup> stage	2 <sup>nd</sup> stage					
S1500	W2000	700	10,000	200	20	<b>PMU-10427-Q</b>	.50	115V- 1 ph -50/60Hz	17 x 11 x 15	53
S3000	W4000	700	10,000	200	20	<b>PMU-10422-Q</b>	.50	230V- 1 ph -50/60Hz	17 x 11 x 15	53

▼ ZU4204TE-HK (shown with optional heat exchanger and skidbar)



- Features Z-Class high-efficiency pump design; higher oil flow and bypass pressure, cooler running and requires 18% less current draw than comparable pumps
- Powerful 1.7 hp universal electric motor provides high power-to-weight ratio and excellent low-voltage operating characteristics
- High-strength, molded composite shroud protects motor and electronics, while providing an ergonomic, non-conductive handle for easy transport
- Low-voltage pendant provides additional safety for the operator (remote control units)
- LCD readout provides pressure display and a number of diagnostic and readout capabilities never before offered on a portable electric pump
- Auto cycle feature provides continuous cycle operation of the torque wrench as long as the advance button is pressed. (Pump can be used with or without auto cycle feature).



#### Pump Ratings

-Q suffix pumps are for 10,000 psi torque wrenches, and include spin-on couplers.



#### Back-lit LCD and Pressure Transducer

- Digital read-out and "Autocycle" setting
- Pump usage information, hour and cycle counts
- Low-voltage warning and recording
- Self-test and diagnostic capabilities
- Information can be displayed in English, French, German, Italian, Spanish and Portuguese
- Pressure transducer is more accurate and durable than analog gauges
- Easy-viewing variable rate display
- Display pressure in bar, MPa or psi.



◀ Any brand of hydraulic torque wrench can be powered by the portable ZU4T-Series torque wrench pump.

# ZU4T Torque Wrench Pumps



## ZU4T-Series Pump Applications

The ZU4T-Series pump is best suited to power medium to large size torque wrenches, wherever high speed, intermittent duty cycle is needed.

Patent-pending **Z-Class** technology provides high by-pass pressures for increased productivity. Its high power to weight ratio and compact design

make it ideal for torquing applications which require easy transport of the pump. It utilizes a universal motor which will work well on long extension cords or generator driven electrical power supplies.

For further application assistance contact your local Enerpac office.



## ZU4T Series

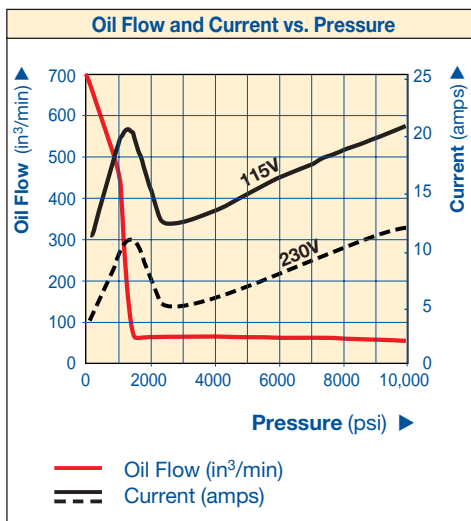


Reservoir Capacity:  
**1-2 gal.**

Flow at 10,000 psi:  
**60 in<sup>3</sup>/min.**

Motor Size:  
**1.7 hp**

Maximum Operating Pressure:  
**10,000 psi**



## Torque Wrench Pump Selection Matrix

For optimum speed and performance see the torque wrench pump and hose selection matrix.

Page: 16



## Accessory Options

Available by placing the following additional suffix at the model number end:

- H** = Heat Exchanger
- K** = Skidbar
- M** = 4-wrench manifold

## SELECTION CHART

For Use With Torque Wrenches		Maximum Operating Pressure (psi)	Model Number <sup>1)</sup>	Motor Voltage	Usable Oil Capacity (gal)	Weight with Oil (lbs)
S6000 S11000 S25000	W8000 W15000	10,000	ZU4204TB-Q	115 vac, 1-ph	1.0	70
		10,000	ZU4208TB-Q	115 vac, 1-ph	2.0	80
		10,000	ZU4204TE-Q <sup>2)</sup>	208-240 vac, 1-ph	1.0	70
		10,000	ZU4208TE-Q <sup>2)</sup>	208-240 vac, 1-ph	2.0	80
		10,000	ZU4204TI-Q <sup>3)</sup>	208-240 vac, 1-ph	1.0	70
		10,000	ZU4208TI-Q <sup>3)</sup>	208-240 vac, 1-ph	2.0	80

<sup>1)</sup> All models meet CE safety requirements and all CSA requirements.

<sup>2)</sup> European plug and CE EMC directive compliant

<sup>3)</sup> With NEMA 6-15 plug

# ZU4T Ordering Matrix and Specifications

▼ This is how a ZU4T-Series pump model number is built up:

**Z U 4 2 08 T E - Q H M**

1	2	3	4	5	6	7	8	8	8
Product Type	Motor Type	Flow Group	Valve Type	Reservoir Size	Valve Operation	Voltage	Must be E or Q	Options	Options

### 1 Product Type

**Z** = Pump Class

### 2 Prime Mover

**U** = Universal electric motor

### 3 Flow Group

**4** = 60 in<sup>3</sup>/min @ 10,000 psi

### 4 Valve Type

**2** = Torque wrench valve

### 5 Reservoir Size (useable capacity)

**04** = 1.0 gallon  
**08** = 2.0 gallons

### 6 Valve Operation

**T** = Solenoid valve with pendant, LCD Electric and pressure transducer.

### 7 Voltage

**B** = 115V, 1 ph, 50/60 Hz  
**E** = 208-240V, 1 ph, 50/60 Hz (with European plug CE RF compliant)  
**I** = 208-240V, 1 ph, 50/60 Hz (with NEMA 6-15 plug)

### 8 Factory installed features and options

**E** = 11,600 coupler for use with HXD-, SQD-Series or other wrenches  
**Q** = 10,000 coupler for use with S- and W-Series or other wrenches  
**H** = Heat exchanger  
**K** = Skidbar  
**M** = 4-wrench manifold.



How to order your ZU4T-Series torque wrench pump

### Ordering Example 1

#### Model No. ZU4208TB-QMHK

**10,000 psi** pump for use with Enerpac S- and W-Series and other 10,000 psi torque wrenches, 115V motor, 2 gallon reservoir, 4-wrench manifold, heat exchanger and skidbar.

Refer to the torque wrench pump selection matrix for optimum wrench, pump and hose combinations.

Page: 16



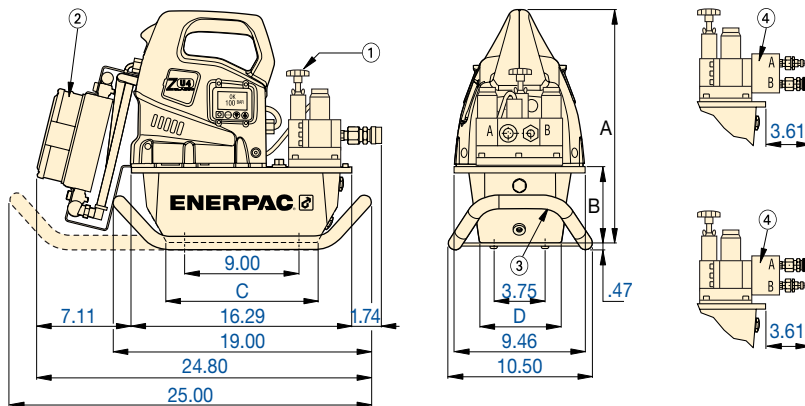
### Twin Torque Wrench Hoses

Use Enerpac THQ-700 series twin hoses with 10,000 psi pumps.

#### 10,000 psi

19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>

Dimensions shown in inches



### ZU4T-Series Torque Wrench Pumps

Reservoir Size (useable gallons)	A (in)	B (in)	C (in)	D (in)
1	17.0	5.6	11.0	6.0
2	19.5	8.0	11.3	6.6

- ① User adjustable relief valve.
- ② Heat Exchanger (optional).
- ③ Skidbar (optional).
- ④ 4-wrench manifold (optional).

▼ Most hydraulic torque wrenches can be powered by the Enerpac ZU4T-Series torque wrench pump.



ZU4T Performance							
Motor Size (hp)	Output Flow Rate (in <sup>3</sup> /min)				Motor Electrical Specification (volts-ph-Hz)	Sound Level (dBA)	Relief Valve Adjustment Range (psi)
	100 psi	700 psi	5,000 psi	10,000 psi			
1.7	700	535	76	60	115-1-50/60 230-1-50/60	85-90	1,800-10,000*

\* Pump type (-Q) shown.

# ZU4T Torque Wrench Pump Options



## Heat Exchanger

- Removes heat from the bypass oil to provide cooler operation
- Stabilizes oil viscosity, increasing oil life and reduces wear of pump and other hydraulic components

Accessory Kit No. *	Can be used on ZU4T-Series torque wrench pumps
<b>ZHE-U4</b>	1 and 2 gallon reservoir

\* Add suffix **H** to pump model number for factory installation. Heat Exchanger adds 9.1 lbs. to pump weight.

### Ordering Example :

Model No. ZU4208TE-H

Thermal Transfer *	Max. pressure	Max. oil flow	Voltage
Btu/h	(psi)	(gpm)	(VDC)
900	300	7.0	12

\* At 5 gpm at 70 °F ambient temperature.

Do not exceed maximum oil flow and pressure ratings. Heat exchanger is not suitable for water-glycol or high water-based fluids.



## Skidbar

- Provides greater pump stability on soft or uneven surfaces
- Provides easy two-handed lift

Accessory Kit No. *	Can be used on ZU4T-Series torque wrench pumps
<b>SBZ-4</b>	1 and 2 gallon <sup>1)</sup>
<b>SBZ-4L</b>	1 and 2 gallon <sup>2)</sup>

\* Add suffix **K** to pump model number for factory installation.

1) Without heat exchanger 4.9 lbs.

2) With heat exchanger 7.0 lbs.

### Ordering Example :

Model No. ZU4208TB-QK

## ZU4T Series



Reservoir Capacity:

**1 and 2 gal.**

Flow at 10,000 psi:

**60 in<sup>3</sup>/min.**

Motor Size:

**1.7 hp**

Maximum Operating Pressure:

**10,000 psi**



## 4-Wrench Manifold

- For simultaneous operation of multiple torque wrenches
- Can be factory installed or ordered separately

Accessory Kit No. *	Can be used on ZU4T-Series torque wrench pumps
<b>ZTM-U4Q</b>	for 10,000 psi torque wrenches

\* Add suffix **M** to pump model number for factory installation.

### Ordering Example :

Model No. ZU4208TB-QM

▼ Shown: PTA-1404



## Two-Stage Power in a Portable Design



### Pump Ratings

-Q suffix pumps are for 10,000 psi torque wrenches, and include spin-on couplers.

- Compact and portable
- Handle located directly over pump's center of gravity for greater ease in carrying
- High bypass (1800 psi) for faster torque cycles
- High power-to-weight ratio suits all Enerpac torque wrenches
- Glycerin filled pressure gauge with scales reading in psi/bar
- Transparent overlays in Ft.lbs and Nm for all Enerpac torque wrenches provide a quick torque reference
- Internal safety relief valve, factory preset
- 15 ft. air pendant assembly enables easy maneuvering at the job site
- Fitted with polarized safety lock-ring couplers



### Twin Torque Wrench Hoses

Use Enerpac THQ-700 series twin hoses with 10,000 psi pumps.

10,000 psi	
19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>



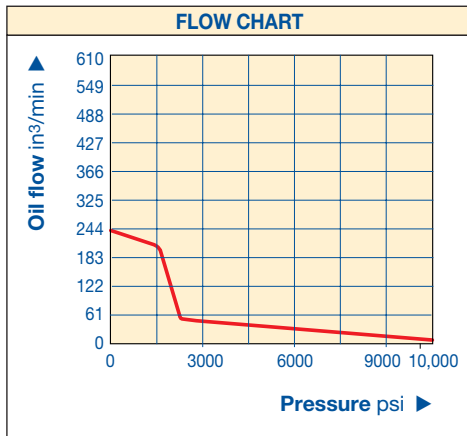
### Gauge Overlay Kit

Gauge overlay kits are also available separately.

**GT-4015** includes overlays for all SQD and HXD torque wrenches.  
**GT-4015-Q** includes overlays for all S- and W-Series torque wrenches.



# Compact Pneumatic Torque Wrench Pump



## PTA Series



Reservoir Capacity:

**1 gal.**

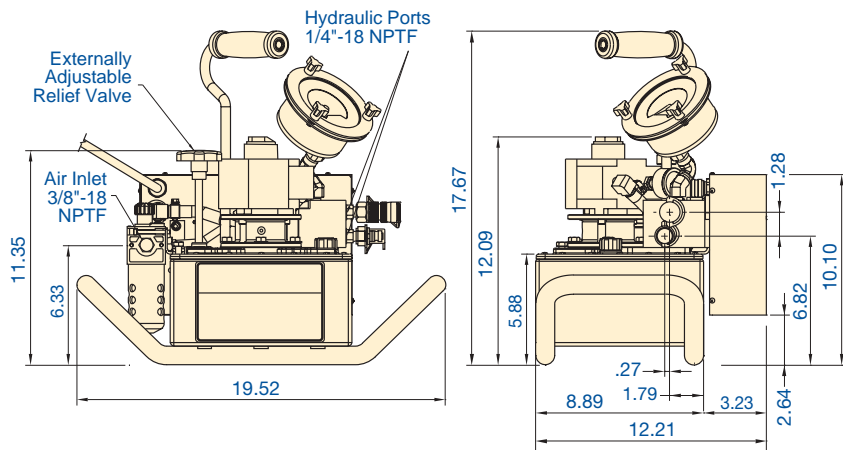
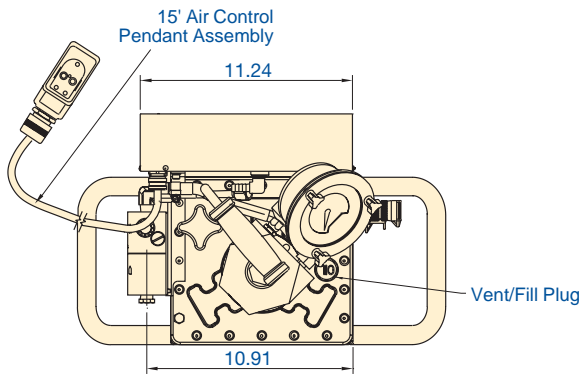
Flow at 10,000 psi:

**20 in³/min.**

Maximum Operating Pressure:

**10,000 psi**

Dimensions shown in inches.



### Torque Wrench Pump Selection Matrix

For optimum speed and performance see the torque wrench pump and hose selection matrix.

Page: 16

### ▼ PERFORMANCE CHART

For Use With Torque Wrenches		Pressure Rating (psi)	Model Number	Reservoir Capacity (gal)	Useable Oil Capacity (gal)	Pump Flow Rates (in³)		Air Consumption @ 100 psi (scfm)	Air Pressure Range (psi)	Weight with Oil (lbs)
						1 <sup>st</sup> stage	2 <sup>nd</sup> stage			
S1500	W2000	10,000	PTA-1404-Q	1.0	0.5	240	20	40	49-101	54
S3000	W4000									

# ZA4T Air Driven Torque Wrench Pumps

▼ Shown from left to right: **ZA4204TX-ER**, **ZA4204TX-Q**



- Features **Z-Class** high-efficiency pump design; higher oil flow and bypass pressure
- Two-speed operation and high by-pass pressure reduces cycle time for improved productivity
- Heat exchanger warms exhaust air to prevent freezing and cools the oil
- Ergonomic pendant allows remote operation up to 20 feet
- Glycerin filled pressure gauge with transparent overlays in Ft.lbs and Nm for Enerpac torque wrenches provide a quick torque reference
- Regulator-Filter-Lubricator with removeable bowls and auto drain is standard



### Pump Ratings

-Q suffix pumps are for 10,000 psi torque wrenches, and include spin-on couplers.



### Twin Torque Wrench Hoses

Use Enerpac THQ-700 series twin hoses with 10,000 psi pumps.

10,000 psi	
19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>

▼ *Most hydraulic torque wrenches can be powered by the Enerpac ZA4T-Series torque wrench pump.*



# ZA4T Specifications



## ZA4T-Series Pump Applications

The ZA4T-Series pump is best suited to power medium to large size torque wrenches.

Patent-pending **Z-Class** technology provides high by-pass pressures for increased productivity. Its high power to

weight ratio and compact design make it ideal for applications which require easy transport of the pump.

For further application assistance contact your local Enerpac office.

## ZA4T Series



Reservoir Capacity:

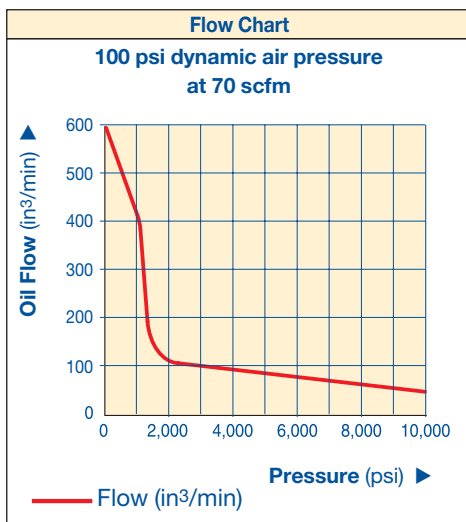
**1-2 gal.**

Flow at 10,000 psi:

**60 in<sup>3</sup>/min.**

Maximum Operating Pressure:

**10,000 psi**



## ATEX Certified

The ZA-series pumps are tested and certified according to the Equipment Directive 94 / 9 / EC "ATEX Directive". The explosion protection is for equipment group II, equipment category 2 (hazardous area zone 1), in gas and/or dust atmospheres. The ZA-series pumps are marked with: Ex II 2 GD ck T4



## Torque Wrench Pump Selection Matrix

For optimum speed and performance see the torque wrench, pump and hose selection matrix.

Page: 16

## SELECTION CHART

For Use With Torque Wrenches		Maximum Operating Pressure (psi)	Model Number <sup>1)</sup>	Usable Oil Capacity (gal)	Weight with Oil (lbs)
S6000 S11000 S25000	W8000 W15000	10,000	ZA4204TX-Q	1.0	92.8
		10,000	ZA4208TX-Q	2.0	103.1
		10,000	ZA4204TX-QR	1.0	100.3

1) All models meet CE safety requirements and all CSA requirements.



## Accessory Options

Available by placing the following additional suffix at the end of the model number:

- K** = Skidbar
- M** = 4-wrench manifold
- R** = Roll cage

▼ This is how a ZA4T-Series pump model number is built up:

<b>Z</b>	<b>A</b>	<b>4</b>	<b>2</b>	<b>08</b>	<b>T</b>	<b>X</b>	<b>-</b>	<b>Q</b>	<b>M</b>	<b>R</b>
1	2	3	4	5	6	7		8	8	8
Product Type	Motor Type	Flow Group	Valve Type	Reservoir Size	Valve Operation	Voltage		Must be E or Q	Options	Options

### 1 Product Type

**Z** = Pump Class

### 2 Motor Type

**A** = Air motor

### 3 Flow Group

**4** = 60 in<sup>3</sup>/min

### 4 Valve Type

**2** = Torque Wrench Valve

### 5 Reservoir Size (useable capacity)

**04** = 1.0 gallon

**08** = 2.0 gallons

### 6 Valve Operation

**T** = Air operated valve with pendant

### 7 Voltage

**X** = Not applicable

### 8 Factory installed features and options

**E** = 11,600 psi coupler for use with HXD- and SQD-Series wrenches

**Q** = 10,000 psi coupler for use with S- and W-Series or other wrenches

**K** = Skidbar

**M** = 4-wrench manifold

**R** = Roll cage



How to order your ZA4T-Series torque wrench pump

### Ordering Example 1

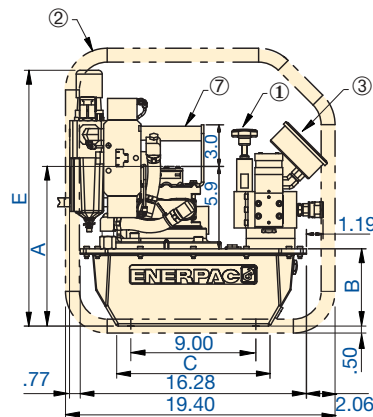
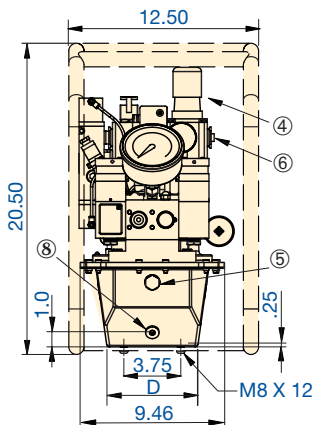
#### Model No. ZA4208TX-QMR

10,000 psi pump for use with Enerpac S- and W-Series and other 10,000 psi torque wrenches, 2 gallon reservoir, 4-wrench manifold, and roll cage.

Refer to the torque wrench pump selection matrix for optimum wrench, pump and hose combinations.

Page: 16

Dimensions shown in inches.



- ① User adjustable relief valve
- ② Roll bar cage (optional)
- ③ Gauge with overlays
- ④ Filter/lubricator/regulator
- ⑤ Oil level sight gauge
- ⑥ Air input 1/2" NPTF
- ⑦ Standard handle
- ⑧ Oil drain

### ZA4T-Series Torque Wrench Pumps

Reservoir Size (useable gallons)	A (in)	B (in)	C (in)	D (in)
1	11.5	5.6	11.0	6.0
2	13.9	8.0	11.3	6.6

ZA4T Performance							
Output Flow Rate (in <sup>3</sup> /min)				Dynamic Air Pressure Range (psi)	Air Consumption (scfm)	Sound Level at 100 psi Dynamic (dBA)	Relief Valve Adjustment Range (psi)
100 psi	700 psi	5,000 psi	10,000 psi				
600	500	80	60	60-100	20-100	80-95	1,400-10,000*

\* Pump type (-Q) shown.

# ZA4T Torque Wrench Pump Options



## Skidbar

- Provides greater pump stability on soft or uneven surfaces
- Provides two-handed lift

Accessory Kit No. *	Can be used on ZA4T-Series torque wrench pumps
SBZ-4	1 and 2 gallon reservoir

\* Add suffix **K** for factory installation. Skidbar weight 4.9 lbs.

Ordering Example :

Model No. ZA4208TX-QK



## 4-Wrench Manifold

- For simultaneous operation of multiple torque wrenches
- Can be factory installed or ordered separately

Accessory Kit No. *	Can be used on ZA4T-Series torque wrench pumps
ZTM-U4Q	for 10,000 psi torque wrenches

\* Add suffix **M** for factory installation.

Ordering Example :

Model No. ZA4208TX-QM

## ZA4T Series



Reservoir Capacity:

**1-2 gal.**

Flow at 10,000 psi:

**60 in<sup>3</sup>/min.**

Maximum Operating Pressure:

**10,000 psi**



## Gauge Overlay Kit

Gauge overlay kits are also available separately.

**GT-4015** includes overlays for all SQD and HXD torque wrenches. **GT-4015-Q** includes overlays for all S- and W-Series torque wrenches.



## Roll Bar Cage

- Protects pump
- Provides greater pump stability

Accessory Kit No. *	Can be used on ZA4T-Series torque wrench pumps
VRC-04	1 and 2 gallon reservoir

\* Add suffix **R** for factory installation. Roll bar cage weight 7.5 lbs.

Ordering Example :

Model No. ZA4208TX-QR



## Twin Torque Wrench Hoses

Use Enerpac THQ-700 series twin hoses with 10,000 psi pumps.

10,000 psi	
19.5 feet long, 2 hoses	<b>THQ-706T</b>
39 feet long, 2 hoses	<b>THQ-712T</b>



# Pressure vs. Torque

The function of a hydraulic Torque Wrench, is to convert hydraulic pressure into torque. This chart is a “quick-reference” to help in determining what this conversion factor is. If you do not find your torque and pressure values in the chart, then the following conversion formulas can be used to find your theoretical torque value. The actual value may vary due to wrench condition and age.

$$T = P \times T_R$$

$$P = T / T_R$$

Where: T = target torque

P = pressure

T<sub>R</sub> = theoretical applied torque



▼ S-Series



▼ W-Series

Pressure vs. Torque – S-Series Torque Wrench Table

Pump Pressure	S1500 Torque Output	S3000 Torque Output	S6000 Torque Output	S11000 Torque Output	S25000 Torque Output
	(T <sub>R</sub> 0.140)	(T <sub>R</sub> 0.320)	(T <sub>R</sub> 0.601)	(T <sub>R</sub> 1.100)	(T <sub>R</sub> 2.515)
(psi)	(ft-lbs)	(ft-lbs)	(ft-lbs)	(ft-lbs)	(ft-lbs)
1000	140	320	601	1100	2515
1500	210	480	902	1650	3773
2000	280	640	1202	2200	5030
2500	350	800	1503	2750	6288
3000	420	960	1803	3300	7545
3500	490	1120	2104	3850	8803
4000	560	1280	2404	4400	10060
4500	630	1440	2705	4950	11318
5000	700	1600	3005	5500	12575
5500	770	1760	3306	6050	13833
6000	840	1920	3606	6600	15090
6500	910	2080	3907	7150	16348
7000	980	2240	4207	7700	17605
7500	1050	2400	4508	8250	18863
8000	1120	2560	4808	8800	20120
8500	1190	2720	5109	9350	21378
9000	1260	2880	5409	9900	22635
9500	1330	3040	5710	10450	23893
10000	1400	3200	6010	11000	25150

Pressure vs. Torque – W-Series Torque Wrench Table

Pump Pressure	W2000 Torque Output	W4000 Torque Output	W8000 Torque Output	W15000 Torque Output
	(T <sub>R</sub> 0.200)	(T <sub>R</sub> 0.400)	(T <sub>R</sub> 0.800)	(T <sub>R</sub> 1.500)
(psi)	(ft-lbs)	(ft-lbs)	(ft-lbs)	(ft-lbs)
1000	200	400	800	1500
1500	300	600	1200	2250
2000	400	800	1600	3000
2500	500	1000	2000	3750
3000	600	1200	2400	4500
3500	700	1400	2800	5250
4000	800	1600	3200	6000
4500	900	1800	3600	6750
5000	1000	2000	4000	7500
5500	1100	2200	4400	8250
6000	1200	2400	4800	9000
6500	1300	2600	5200	9750
7000	1400	2800	5600	10500
7500	1500	3000	6000	11250
8000	1600	3200	6400	12000
8500	1700	3400	6800	12750
9000	1800	3600	7200	13500
9500	1900	3800	7600	14250
10000	2000	4000	8000	15000



# Hexagon Bolt and Nut Sizes



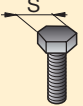
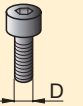
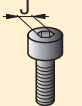
Determine the maximum torque according to the bolt (nut) size and grade. Always consult the manufacturer's instructions or engineering recommendations when making bolted connections.



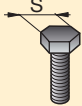
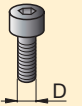
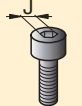
## IMPORTANT

The hexagon sizes shown in the tables below should be used as a guide only. Individual sizes should be checked before specifying any equipment.

### Metric Sizes

		
Hexagon Size S (mm)	Thread Size D (mm)	Hexagon Size J (mm)
17	M 10	8
19	M 12	10
22	M 14	12
24	M 16	14
27	M 18	14
30	M 20	17
32	M 22	17
36	M 24	19
41	M 27	19
46	M 30	22
50	M 33	24
55	M 36	27
60	M 39	27 (30)
65	M 42	32
70	M 45	-
75	M 48	36
80	M 52	36
85	M 56	41
90	M 60	46
95	M 64	46
100	M 68	50
105	M 72	55
110	M 76	60
115	M 80	65
120	M 85	70
130	M 90	70 (75)
135	M 95	-
145	M 100	85
150	M 105	-
155	M 110	-
165	M 115	-
170	M 120	-
180	M 125	-
185	M 130	-
200	M 140	-
210	M 150	-

### Imperial Sizes

		
Hexagon Size S (inch)	Thread Size D (inch)	Hexagon Size J (inch)
1 <sup>1</sup> / <sub>16</sub>	5/8	1/2
1/4	3/4	5/8
1 <sup>7</sup> / <sub>16</sub>	7/8	3/4
1 <sup>5</sup> / <sub>8</sub>	1	3/4
1 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	7/8
2	1 <sup>1</sup> / <sub>4</sub>	7/8
2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	1
2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1
2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>	-
2 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>
2 <sup>15</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>
3	2	1 <sup>1</sup> / <sub>2</sub>
3 <sup>1</sup> / <sub>8</sub>	2	1 <sup>5</sup> / <sub>8</sub>
3 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>
3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>
3 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>4</sub>
3 <sup>7</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>7</sup> / <sub>8</sub>
4 <sup>1</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	2
4 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	2
4 <sup>5</sup> / <sub>8</sub>	3	2 <sup>1</sup> / <sub>4</sub>
5	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>



Use only Heavy-duty Impact Sockets for power driven torquing equipment, according to ISO 2725 and ISO 1174; DIN 3129 and DIN 3121 or ASME-B107.2/1995.

# Bolting Solutions



**ENERPAC**

## The Industrial Tools Line

### Cylinders

- General Purpose
- Pancake
- Aluminum Lightweight
- Low Height
- Heavy Duty
- Hollow Plunger
- Industrial
- Pull
- Long Stroke
- Jacks
- Spread

### Pumps

- Manual
- Electric Driven
- Compressed Air Driven
- Petrol Driven

### System Components

- Hoses, Couplers, Oil
- Gauges, Adaptors
- Manifolds, Fittings

### Valves

- 3-and 4-Way Directional
- Pressure and Flow Control

### Presses

- Bench and Workshop
- Roll Frame Presses
- Arbor and C-Clamps

### Pullers

- Master Pullers Sets
- Multi Purpose Puller Sets
- Posi Lock® Pullers

### Tools

- Maintenance Sets
- Punches
- Machine Lifts
- Load Skates
- Cutters
- Pipe Benders

### Bolting Tools

- Nut Splitters
- Flange/Wedge Spreaders
- Flange Alignment Tools
- Torque Wrenches
- Hydraulic Wrench Pumps
- Twin Safety Hoses

### Integrated Hydraulic Solutions

- Stage Lift Systems
- Synchronous Lifting Systems
- Synchronous Hoisting Systems

## Enerpac Worldwide Locations

### Africa

ENERPAC Middle East FZE  
P.O. Box 18004  
Jebel Ali, Dubai  
United Arab Emirates  
Tel: +971 (0)4 8872686  
Fax: +971 (0)4 8872687

### Australia

Actuant Australia Ltd.  
Block V Unit 3  
Regents Park Estate  
391 Park Road  
Regents Park NSW 2143  
(P.O. Box 261) Australia  
Tel: +61 297 438 988  
Fax: +61 297 438 648

### Brazil

Power Packer do Brasil Ltda.  
Rua dos Inocentes, 587  
04764-050 - Sao Paulo (SP)  
Tel: +55 11 5687 2211  
Fax: +55 11 5686 5583  
**Toll Free in Brazil:**  
Tel: 0800 891 5770  
vendabrasil@enerpac.com

### Canada

Actuant Canada Corporation  
6615 Ordan Drive, Unit 14-15  
Mississauga, Ontario L5T 1X2  
Tel: +1 905 564 5749  
Fax: +1 905 564 0305  
**Toll Free:**  
Tel: +1 800 268 4987  
Fax: +1 800 461 2456  
**Technical Inquiries:**  
techservices@enerpac.com

### China

Actuant China Ltd.  
1F, 269 Fute N. Road  
Waigaoqiao Free Trade Zone  
Pudong New District  
Shanghai, 200 131 China  
Tel: +86 21 5866 9099  
Fax: +86 21 5866 7156

### Actuant China Ltd. (Beijing)

709B Diyang Building  
Xin No. 2  
Dong San Huan North Rd.  
Beijing City  
100028 China  
Tel: +86 10 845 36166  
Fax: +86 10 845 36220

### Central and Eastern Europe, Greece

ENERPAC B.V.  
Galvanistraat 115  
P.O. Box 8097  
6710 AB Ede  
The Netherlands  
Tel: +31 318 535 936  
Fax: +31 318 535 951

### France, Switzerland francophone

ENERPAC  
Une division de ACTUANT  
France S.A.  
B.P. 200, Parc d'Activités  
du Moulin de Massy  
F-91882 Massy CEDEX France  
Tel: +33 1 60 13 68 68  
Fax: +33 1 69 20 37 50

### Germany, Austria and Switzerland

ENERPAC GmbH  
P.O. Box 300113  
D-40401 Düsseldorf  
Germany  
Tel: +49 211 471 490  
Fax: +49 211 471 49 28

### India

ENERPAC Hydraulics  
(India) Pvt. Ltd.  
Office No. 9,10 & 11,  
Plot No. 56, Monarch Plaza,  
Sector 11, C.B.D. Belapur  
Navi Mumbai 400614,  
India  
Tel: +91 22 2756 6090  
Tel: +91 22 2756 6091  
Fax: +91 22 2756 6095

### Italy

ENERPAC S.p.A.  
Via Canova 4  
20094 Corsico (Milano)  
Tel: +39 02 4861 111  
Fax: +39 02 4860 1288

### Japan

Applied Power Japan Ltd.  
Besshochou 85-7  
Saitama-shi, Kita-ku,  
Saitama 331-0821  
Japan  
Tel: +81 48 662 4911  
Fax: +81 48 662 4955

### Middle East, Turkey and Caspian Sea

ENERPAC Middle East FZE  
P.O. Box 18004, Jebel Ali, Dubai  
United Arab Emirates  
Tel: +971 (0)4 8872686  
Fax: +971 (0)4 8872687

### Russia and CIS (excl. Caspian Sea Countries)

Actuant LLC  
Admiral Makarov Street 8  
125212 Moscow, Russia  
Tel: +7-495-9809091  
Fax: +7-495-9809092

### Singapore

Actuant Asia Pte. Ltd.  
25 Serangoon North Ave. 5  
#03-01 Keppel Digihub  
Singapore 554914  
Thomson Road, P.O. Box 114  
Singapore 915704  
Tel: +65 64 84 5108  
+65 64 84 3737  
Fax: +65 64 84 5669

### Toll Free:

Tel: +1800 363 7722  
**Technical Inquiries:**  
techsupport@enerpac.com.sg

### South Korea

Actuant Korea Ltd.  
3Ba 717,  
Shihwa Industrial Complex  
Jungwang-Dong, Shihung-Shi,  
Kyunggi-Do  
Republic of Korea 429-450  
Tel: +82 31 434 4506  
Fax: +82 31 434 4507

### Spain and Portugal

ENERPAC  
C/San José Artesano 8  
Pol. Ind.  
28108 Alcobendas  
(Madrid) Spain  
Tel: +34 91 661 11 25  
Fax: +34 91 661 47 89

### The Netherlands, Belgium, Luxembourg, Sweden, Denmark, Norway, Finland and Baltic States

ENERPAC B.V.  
Galvanistraat 115  
P.O. Box 8097,  
6710 AB Ede  
The Netherlands  
Tel: +31 318 535 911  
Fax: +31 318 525 613  
+31 318 535 848  
**Technical Inquiries Europe:**  
techsupport.europe@enerpac.com

### United Kingdom and Ireland

ENERPAC Ltd.,  
Bentley Road South  
Darlaston, West Midlands  
WS10 8LQ, United Kingdom  
Tel: +44 (0)121 50 50 787  
Fax: +44 (0)121 50 50 799

### USA, Latin America and Caribbean

ENERPAC  
P.O. Box 3241  
6100 N. Baker Road  
Milwaukee, WI 53209 USA  
Tel: +1 262 781 6600  
Fax: +1 262 783 9562  
**Inquiries/orders:**  
+1 800 558 0530  
**Technical Inquiries:**  
techservices@enerpac.com

020906

e-mail: [info@enerpac.com](mailto:info@enerpac.com)

Internet: [www.enerpac.com](http://www.enerpac.com)

Your Enerpac Distributor: