

▼ Shown from left to right: E291, E393, E494



- High-efficiency planetary gear sets achieve high output torque from low input torque
- Operator protected by anti-backlash device
- Torque multiplier accuracy $\pm 5\%$
- Reversible, tighten or loosen bolts
- Reaction bar or reaction plate style
- Angle-of-turn protractor standard on E300-Series models
- Reaction plate models offer increased versatility with reaction point locations
- E300 and E400-Series have replaceable shear drives, providing overload protection of internal power train
- One replacement shear drive is included with each E300 and E400-Series models.



◀ Enerpac Reaction Bar Torque Multiplier E393 used to manually torque bolts up to 4300 Nm.

Accurate, Efficient Torque Multiplication

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



Typical Torque Multiplier Applications

- Locomotives
- Power plants
- Pulp and paper mills
- Refineries
- Chemical plants
- Mining and construction
- Off-road equipment
- Shipyards
- Cranes.



Back-Up Spanners

To be used to stop the back nut from turning during make up or break out. Two hexagon sizes in one tool.

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▼ SELECTION CHART

Torque Multiplier Type	Nominal Torque Output		Model Number
	(Nm)	(Ft.lbs)	
Reaction Bar Multiplier	1020	750	E290PLUS
	1358	1000	E291
	1627	1200	E391
	2983	2200	E392
	4340	3200	E393
Reaction Plate Multiplier	2983	2200	E492
	4339	3200	E493
	6779	5000	E494
	10.846	8000	E495



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 repetitive bolting applications.

Use Reaction Bar Models:

- Where space is limited,
- Where multiple reaction points are available,
- when portability is desirable.

Use Reaction Plate Models:

- Above 4300 Nm output torque,
- On flanges and applications where neighbouring bolt or nut is available to react against
- When extreme reaction forces are generated.

E Series



Nominal Torque Output:

1020 - 10.846 Nm

Torque Ratio:

3:1 - 52:1

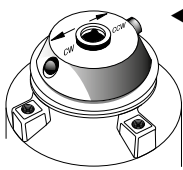
Output Ratio Accuracy:

± 5 %



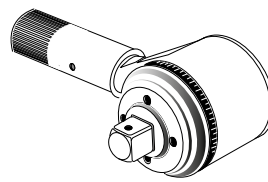
CAUTION!

Never use impact air tools for power driving torque multipliers. Torque multiplier drive train damage will occur.



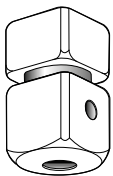
Selector Pawl

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



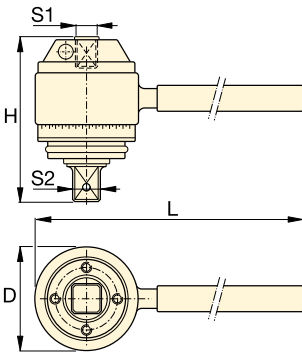
Angle-of-Turn Protractor

E391, E392 and E393 models include an angle-of-turn protractor (scale) to tighten fasteners using a "torque turn" method. Allows accurate measuring a specific number of degrees of rotation.

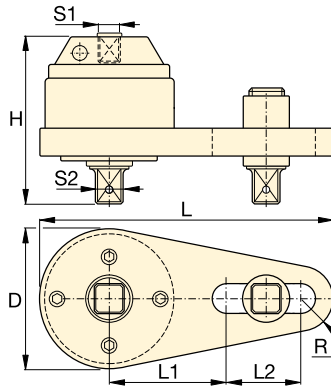


Shearable Square Drive

Provides overload protection on E300- and E400-series multiplier's power train by shearing when the rated capacity of the tool is exceeded. Internal shear pin prevents tool from falling off bolt.



Reaction Bar Type ¹⁾



Reaction Plate Type ¹⁾



Hydraulic Torque Wrenches

Enerpac offers a complete range of square drive and hexagon cassette torque wrenches.

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BSH-Series Sockets

Heavy-Duty Impact Sockets for power driven torquing equipment.

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Input Torque ²⁾	Torque Ratio	Input Female Square Drive	Output Male Square Drive		Over-load protection	Anti-Backlash	Dimensions (mm)						Model Number	
			S2 (inch)	Replaceable Shear Drive Model Nr.			D	H	L	L1	L2	R		
339 (Nm) / 250 (Ft.lbs)	3,3 : 1	1/2 (inch)	3/4 (inch)	–	No	No	71	83	217	–	–	–	1,8 (kg)	E290PLUS
452 (Nm) / 333 (Ft.lbs)	3,3 : 1	1/2 (inch)	3/4 (inch)	–	No	No	71	83	443	–	–	–	2,5 (kg)	E291
271 (Nm) / 200 (Ft.lbs)	6 : 1	1/2 (inch)	3/4 (inch)	E391SDK	Yes	No	100	102	497	–	–	–	4,1 (kg)	E391
220 (Nm) / 162 (Ft.lbs)	13,6 : 1	1/2 (inch)	1 (inch)	E392SDK	Yes	Yes	103	146	497	–	–	–	6,9 (kg)	E392
235 (Nm) / 173 (Ft.lbs)	18,5 : 1	1/2 (inch)	1 (inch)	E393SDK	Yes	Yes	103	165	497	–	–	–	8,3 (kg)	E393
219 (Nm) / 162 (Ft.lbs)	13,6 : 1	1/2 (inch)	1 (inch)	E392SDK	Yes	Yes	124	140	356	140	124	32	7,8 (kg)	E492
234 (Nm) / 173 (Ft.lbs)	18,5 : 1	1/2 (inch)	1 (inch)	E393SDK	Yes	Yes	124	163	356	140	124	32	8,9 (kg)	E493
256 (Nm) / 189 (Ft.lbs)	26,5 : 1	1/2 (inch)	1 1/2 (inch)	E494SDK	Yes	Yes	143	222	378	178	89	42	15,4 (kg)	E494
209 (Nm) / 154 (Ft.lbs)	52 : 1	1/2 (inch)	1 1/2 (inch)	E495SDK	Yes	Yes	148	273	387	178	89	48	22,8 (kg)	E495

¹⁾ E200 and E400-series do not have an Angle-of-Turn Protractor (scale).

²⁾ User must verify manual torque wrench accuracy prior to use to ensure accurate final output torque.

▼ PTW1000



Productivity

- High speed continuous rotation for constant torque output
- Low friction planetary gearbox design minimizes wear and extends uptime.

Safety

- Ergonomic, low vibration design reduces fatigue and the risk of vibration related injuries for the operator
- Low noise air motor provides quiet, consistent performance for indoor and outdoor applications.

Convenience

- Provided with standard reaction arm; wide assortment of custom arms and accessories are available
- Available with or without Filter-Regulator-Lubricator (FRL)
- Unique calibration certificate provided with each tool.



◀ The PTW1000 makes quick work of this flange maintenance job.

Continuous Rotation Controlled Torque



Calibration Certificate

All PTW-Series tools are CE declared and are shipped complete with a calibration certificate.



FRL120C, Filter-Regulator-Lubricator with air hose

All PTW-Series tools are shipped complete with standard reaction arm, and Filter-Regulator-Lubricator (FRL120C).



MCS-Series, Mobile Calibration System

To check torque accuracy, run calibration tests and create calibration certificates prior to the use of continuous rotation torque tools in various applications while on a job site.

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▼ PTW-Series Pneumatic Torque Wrenches are ideal for applications where speed and precision are critical, such as track maintenance.



Pneumatic Torque Wrenches



PTW-Series, Pneumatic Torque Wrenches

Enerpac PTW-Series Pneumatic Torque Wrenches are designed for applications that require speed and control.

The standard package includes a Torque Wrench with a calibration certificate, an FRL (Filter/Regulator/Lubricator), and a 3 m long, ½" inch (13 mm) diameter air hose, which connects the FRL to the wrench.

Once the air hoses are connected, the operator simply adjusts the air pressure on

the FRL to achieve the desired torque using the calibration certificate. After this, the tool is ready to go to work! *

The air source used with the PTW system must be regulated and/or limited to 8,3 bar, and must be capable of providing a volume of at least (85 m³/h) at 6,9 bar. A separate ½" inch hose (not included) must be used to connect the FRL to the air supply.

* See instruction manual for comprehensive instructions.

PTW Series

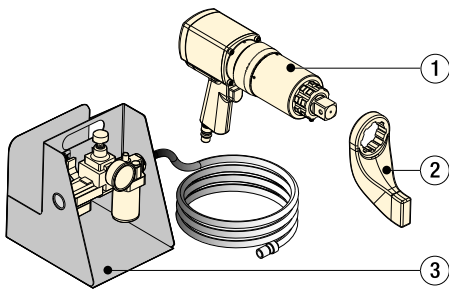


Nominal Torque Output:

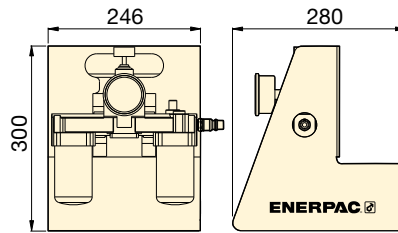
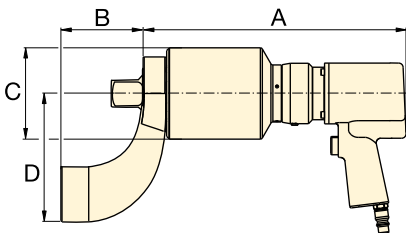
8135 Nm

Square Drive Range:

¾ - 1 - 1½ inch



- ① PTW Torque Wrench
- ② Standard Reaction Arm
- ③ FRL120C Filter-Regulator-Lubricator with 3 meters air hose



Accessories

Enerpac offers a full line of accessories including a range of reaction arms and drives.

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BSH-Series Sockets

Heavy-Duty Impact Sockets for power driven torquing equipment.

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Back-Up Spanners

Hands-free tool to be used to stop back nut from turning during make up or break out.

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▼ SELECTION CHART

All tools are shipped complete with standard reaction arm and FRL120C.

Minimum Torque		Nominal Torque		Square Drive (inch)	Model Number ¹⁾ (FRL120C included)	Speed (RPM)	Dimensions (mm)				Weight (kg) ²⁾
(Nm)	(Ft.lbs)	(Nm)	(Ft.lbs)				A	B	C	D	
407	300	1356	1000	¾	PTW1000-75C	12,6	272	83	72	130	7,9
407	300	1356	1000	1	PTW1000C	12,6	272	83	72	130	8,2
678	500	2712	2000	1	PTW2000C	8,0	286	83	79	133	8,8
1220	900	4067	3000	1	PTW3000C	3,1	343	83	95	133	10,4
1763	1300	8135	6000	1½	PTW6000C	2,5	366	114	127	178	17,7

¹⁾ To order without FRL120C, remove "C" suffix from model number (example: **PTW3000**).

²⁾ Weight does not include reaction arm. Reaction arm weight for PTW1000, PTW2000, PTW3000 is 1,3 kg and for PTW6000 is 3,5 kg.

Accessories for PTW-Series Torque Wrenches **ENERPAC**

▼ Shown: Accessories for PTW-Series Torque Wrenches



- Accessories for further extending the application range of pneumatic torque wrenches
- Extended drives increases tool fit in restricted access areas.



PTW-Accessories

Enerpac offers the following accessories to support a wide variety of applications in industries such as mining, power generation and oil & gas. For additional custom accessories not pictured here, please contact Enerpac.



Applications

PTW-Series Pneumatic Wrenches are designed for applications that require speed and control.

Mining

- Track maintenance
- Undercarriage maintenance
- Wheel maintenance
- Shovel maintenance

Power Generation

- Turbine bolts
- Tower segments
- Turbine casings

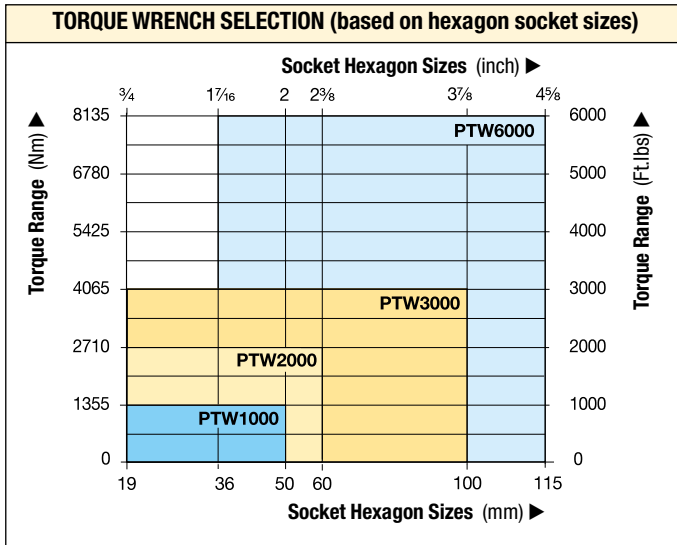
Oil & Gas

- Pipe flanges
- Valves
- Manway covers
- Pressure vessels

▼ PTW-Wrenches are ideal for applications where speed and precision are critical, such as track or wheel maintenance.



Accessories for PTW-Series Torque Wrenches



PTW Series

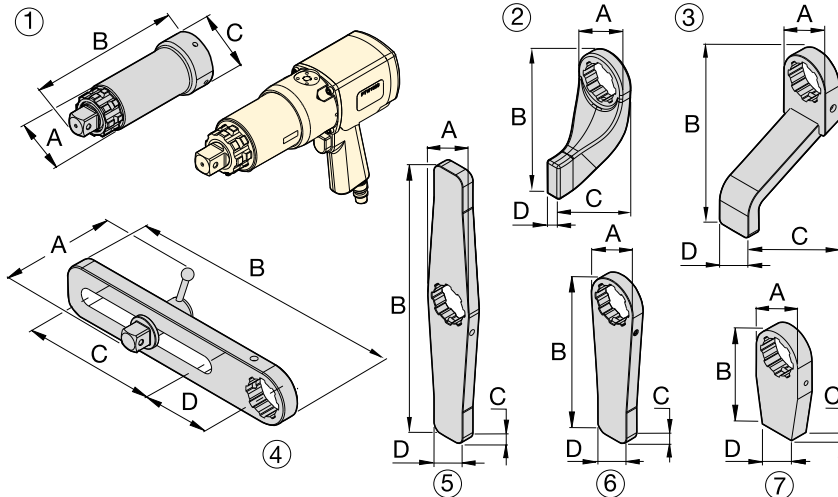


Nominal Torque Output:

8135 Nm

Square Drive Range:

3/4 - 1 - 1 1/2 inch



BSH-Series Sockets

Use Heavy-Duty Impact Sockets for power driven torquing equipment.

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BUS-Series, Back-Up Spanners

Hands-free tool to be used to stop back nut from turning during make up or break out.

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Optional Accessories

For use with PTW1000, 2000, 3000-models

Nr.	Description	Model Nr.	Application	Dimensions (mm)			
				A	B	C	D
1	Extended Drive, 6 inch (152 mm)	ED6TWS	Nose extension, primarily for truck wheel bolts	62	206	73	-
1	Extended Drive, 12 inch (305 mm)	ED12TWS	Nose extension, primarily for truck wheel bolts	62	384	73	-
1	Extended Drive, 18 inch (457 mm)	ED18TWS	Nose extension, primarily for truck wheel bolts	62	511	73	-
2	Standard Reaction Arm	RATWS	Standard arm included with PTW model	76	172	102	21
3	Extended Reaction Arm	ERATWS	Long plate for use with deep well sockets	73	150	202	51
4	Sliding Reaction Arm	SLRATWS	For widely spaced and uneven bolt centers	112	381	203	102
5	Double Straight Reaction Arm	DSATWS	Reduces time to reposition arm *	73	406	19	102
6	Straight Reaction Arm	SRATWS	Long plate for wide spaced reaction points	73	240	19	51
7	Blank Reaction Arm **	BLTWS	Weldable blank for custom applications **	72	151	25	51

For use with PTW6000-models

1	Extended Drive 6 inch (152 mm)	ED6TWL	Nose extension, primarily for truck wheel bolts	84	232	102	-
1	Extended Drive 12 inch (305 mm)	ED12TWL	Nose extension, primarily for truck wheel bolts	84	384	102	-
2	Standard Reaction Arm	RATWL	Standard arm included with PTW model	102	229	146	32
3	Extended Reaction Arm	ERATWL	Long plate for use with deep well sockets	102	254	184	64
4	Sliding Reaction Arm	SLRATWL	For widely spaced and uneven bolt centers	152	419	190	114
5	Double Straight Arm	DSATWL	Reduces time to reposition arm *	102	508	32	57
6	Straight Reaction Arm	SRATWL	Long plate for wide spaced reaction points	102	305	32	57
7	Blank Reaction Arm **	BLTWL	Weldable blank for custom applications **	102	152	32	57

* Time to reposition arm when repeatedly moving from tightening to loosening.

** WARNING: Blank reaction arms must be heat treated to HRc 38-42 prior to use.

▼ STTC2000 Safe T™ Torque Checker



Quick, simple and accurate mobile torque system safety testing device



Applications

All bolted joints from 144 Ft.lbs up to 16.100 Ft.lbs (195 - 21.800 Nm).

- All Enerpac torque wrenches up to the maximum capacity of the Torque Checker. Also for other brands that fit the envelope of the Torque Checker.
- Oil & Gas flanges,
- Tower Crane installation,
- Bigger machine installation/assembly,
- Wind Tower installation etc.

Industries:

- Oil & Gas, Petrochemical,
- Wind Power Generation,
- Marine,
- Manufacturing,
- Mining, Rail and more.

Safety & Accuracy

- Durable mobile testing device for Enerpac hydraulic torque wrench systems
- Delivering ultimate on site accuracy, testing the entire wrench, pump and hose system to be used on the job
- Consistent and repeatable $\pm 1\%$ accurate range.

Durability

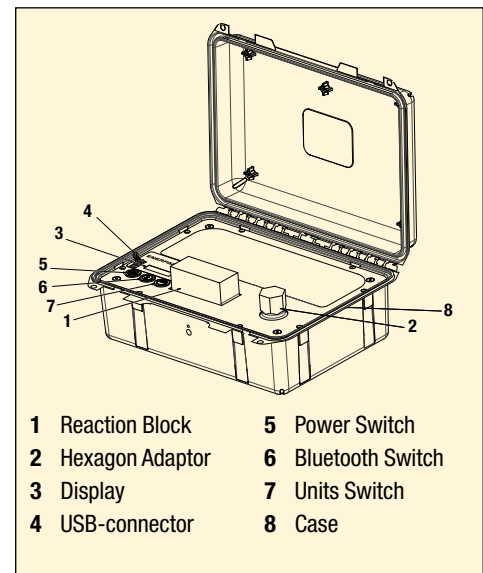
- Durable splash-proof keypad and display for those harsh working environments
- Impact-resistant composite carry case.

Simplicity

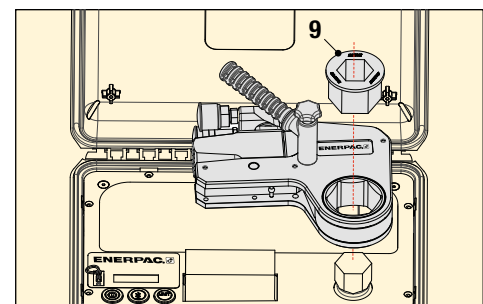
- Allows the user to validate & test the exact system (torque wrench, pump, hose, etc.) to give a digital read out in Ft.lbs or Nm
- Easy to operate: power up and start testing
- Transportable: all in one compact carry case, ideal for use on the road with its durable internal 3,6 V-2,2 Ah Lithium-ion battery.

Versatility

- Can test all Enerpac S, W, RSL, HMT and DSX-Series wrenches of both square drive and hexagon cassettes up to 16.100 Ft.lbs (21.800 Nm)
- Hexagon Reducers or Square Drive Sockets to be bought separately.



Hexagon Reducer (nr. 9) must be bought separately: see selection tables on next page. ▶



Safe T™ Torque Checker



Safe T™ Torque Checker

Mobile, compact safety device allows the end user to instantly validate the performance of the entire system to be used - not just the wrench only. Allows the user to test the system on-site and in situ.

The user can validate and test the exact torque system (wrench, pump, hose, etc) to give an accurate digital read out.

Safety

The user can verify if the torque system is safe to operate, functioning correctly and within the desired safety parameters.

Unique from Enerpac

No need to wait for annual calibration tests to be confident in the performance and safety of your equipment. The Safe T™ Torque Checker equipment can be validated in seconds, saving time and money.

Hexagon Reducers

The W-Series Hexagon Reducers from the tables below, can be used with all W, RLP and HLP-Series hexagon cassettes.

STTC Series



Max. Testing Output:

16.100 Ft.lbs (21.800 Nm)

Accuracy:

± 1%

Battery:

3,6 V-2,2 Ah Lithium-ion

For use with STTC2000		
Hexagon Size	Cassette Model Number	Hexagon Reducer to 1 1/16" (30 mm) Model Nr.
(inch) (mm)		
1 1/16	-	W2101X -
1 1/8	-	W2102X -
1 3/16	30	W2103X *
1 1/4	32	W2104X **
1 1/2	-	W2105X **
1 5/8	-	W2106X W2106R103D
1 7/8	36	W2107X W2107R103D
1 1/2	38	W2108X W2108R103
1 9/16	-	W2109X W2109R103
1 5/8	41	W2110X W2110R103
1 11/16	-	W2111X W2111R103
1 3/4	-	W2112X W2112R103
1 13/16	46	W2113X W2113R103
1 7/8	-	W2114X W2114R103
1 15/16	-	W2115X W2115R103
2	50	W2200X W2200R103
2 1/16	-	W2201X W2201R103
2 1/8	-	W2202X W2202R103
2 1/4	55	W2203X W2203R103
2 1/2	-	W2204X W2204R103
2 5/8	-	W2205X W2205R103
2 3/4	60	W2206X W2206R103

For use with STTC4000		
Hexagon Size	Cassette Model Number	Hexagon Reducer to 1 1/16" (36 mm) Model Nr.
(inch) (mm)		
1 5/16	-	W4105X -
1 3/8	-	W4106X -
1 7/16	36	W4107X *
1 1/2	-	W4108X **
1 9/16	-	W4109X **
1 5/8	41	W4110X W4110R107
1 11/16	-	W4111X W4111R107
1 3/4	-	W4112X W4112R107
1 13/16	46	W4113X W4113R107
1 7/8	-	W4114X W4114R107
1 15/16	-	W4115X W4115R107
2	50	W4200X W4200R107
2 1/16	-	W4201X W4201R107
2 1/8	-	W4202X W4202R107
2 1/4	55	W4203X W4203R107
2 1/2	-	W4204X W4204R107
2 5/8	-	W4205X W4205R107
2 3/4	60	W4206X W4206R107
2 7/8	-	W4207X W4207R107
2 15/16	-	W4208X W4208R107
2 3/4	70	W4212X W4212R107
2 13/16	-	W4213X W4213R107
2 7/8	-	W4214X W4214R107
2 15/16	75	W4215X W4215R107
3	-	W4300X W4300R107
3 1/16	-	W4301X W4301R107
3 1/8	80	W4302X W4302R107
3 1/4	-	W4303X W4303R107
3 1/2	-	W4304X W4304R107
3 5/8	-	W4305X W4305R107
3 3/4	-	W4306X W4306R107
-	85	W4085MX W4085MR107

For use with STTC8000		
Hexagon Size	Cassette Model Number	Hexagon Reducer to 2 inch (50 mm) Model Nr.
(inch) (mm)		
1 7/8	-	W8114X -
1 15/16	-	W8115X -
2	50	W8200X *
2 1/16	-	W8201X **
2 1/8	-	W8202X **
2 1/4	55	W8203X W8203R200
2 1/2	-	W8204X W8204R200
2 5/8	-	W8205X W8205R200
2 3/4	60	W8206X W8206R200D
2 7/8	-	W8207X W8207R200
2 15/16	-	W8208X W8208R200
2 3/4	65	W8209X W8209R200
2 5/8	-	W8210X W8210R200
2 11/16	-	W8211X W8211R200
2 3/4	70	W8212X W8212R200
2 13/16	-	W8213X W8213R200
2 7/8	-	W8214X W8214R200
2 15/16	75	W8215X W8215R200
3	-	W8300X W8300R200
3 1/16	-	W8301X W8301R200
3 1/8	80	W8302X W8302R200
3 1/4	-	W8303X W8303R200
3 1/2	-	W8304X W8304R200
3 5/8	-	W8305X W8305R200
-	85	W8085MX W8085MR200
3 3/8	-	W8306X W8306R200
3 7/16	-	W8307X W8307R200
3 1/2	-	W8308X W8308R200
-	90	W8090MX W8090MR200
3 9/16	-	W8309X W8309R200
3 5/8	-	W8310X W8310R200
3 11/16	-	W8311X W8311R200
3 3/4	95	W8312X W8312R200
3 13/16	-	W8313X W8313R200
3 7/8	-	W8314X W8314R200
3 15/16	100	W8315X W8315R200
4	-	W8400X W8400R200
4 1/16	-	W8401X W8401R200
4 1/8	105	W8402X W8402R200

For use with STTC15000		
Hexagon Size	Cassette Model Number	Hexagon Reducer to 2 5/8 inch Model Nr.
(inch) (mm)		
2 7/16	-	W15207X -
2 1/2	-	W15208X -
2 9/16	65	W15209X -
2 5/8	-	W15210X *
2 11/16	-	W15211X **
2 3/4	70	W15212X **
2 13/16	-	W15213X **
2 7/8	-	W15214X W15214R210
2 15/16	75	W15215X W15215R210
3	-	W15300X W15300R210
3 1/16	-	W15301X W15301R210
3 1/8	80	W15302X W15302R210
3 1/4	-	W15303X W15303R210
3 1/2	-	W15304X W15304R210
3 5/8	-	W15305X W15305R210
-	85	W15085MX W15085MR210
3 3/8	-	W15306X W15306R210
3 7/16	-	W15307X W15307R210
3 1/2	-	W15308X W15308R210
-	90	W15090MX W15090MR210
3 9/16	-	W15309X W15309R210
3 5/8	-	W15310X W15310R210
3 11/16	-	W15311X W15311R210
3 3/4	95	W15312X W15312R210
3 13/16	-	W15313X W15313R210
3 7/8	-	W15314X W15314R210
3 15/16	100	W15315X W15315R210
4	-	W15400X W15400R210
4 1/16	-	W15401X W15401R210
4 1/8	105	W15402X W15402R210
4 1/4	-	W15403X W15403R210
4 1/2	-	W15404X W15404R210
4 5/8	110	W15405X W15405R210
4 3/8	-	W15406X W15406R210
4 7/16	-	W15407X W15407R210
4 1/2	-	W15408X W15408R210
-	115	W15115MX W15115MR210
4 9/16	-	W15409X W15409R210
4 5/8	-	W15410X W15410R210



Hexagon Reducers:

Must be bought separately. Can be used with all W, RLP and HLP-Series

hexagon cassettes.

* Standard hexagon size of adaptor included with STTC-model

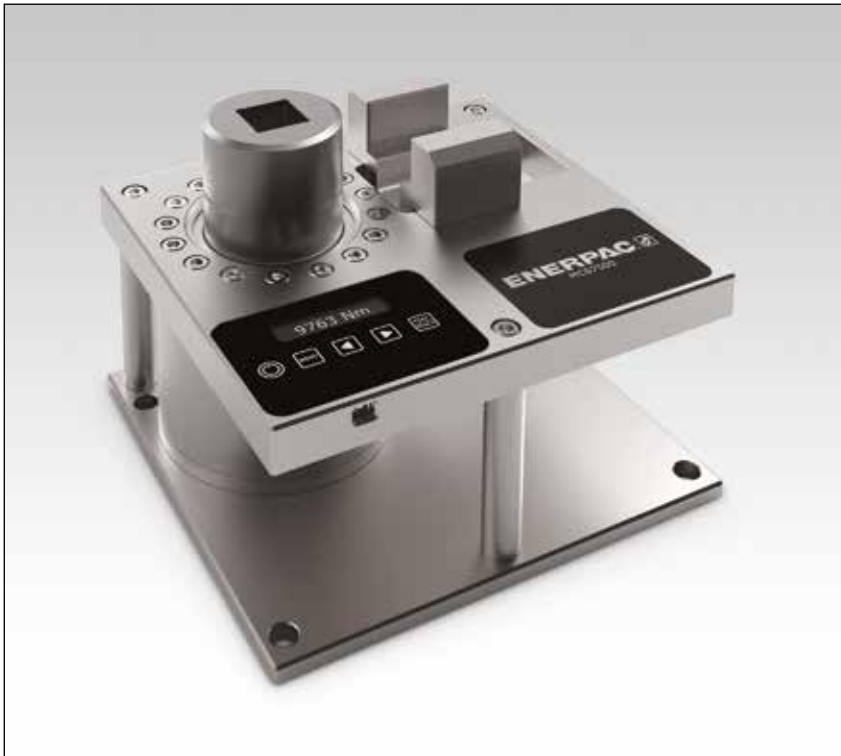
** Requires special reaction block.

Nominal Measurable Torque Output		Model Number ¹⁾	Hexagon Adaptor included		Carry Case Size L x B x H		Sockets to be used with Square Drive Wrenches ²⁾	Hexagon Cassette fits Adaptor. For other hexagon sizes, see table above with Hexagon Reducers sizes ²⁾		
(Ft.lbs)	(Nm)		(inch)	(mm)	(mm)			(kg)	W-Series	RSL-Series
2140	2900	STTC2000	1 3/16	30	414 x 328 x 328	6	BSH7530	W2103X	RLP1103	HLP1103
4383	5950	STTC4000	1 7/16	36	414 x 328 x 328	8	BSH1036	W4107X	RLP3107	HLP3107
8893	12.000	STTC8000	2	50	624 x 498 x 168	19	BSH1550	W8200X	RLP5200	HLP3200
16.100	21.800	STTC15000	2 5/8	-	624 x 498 x 168	26	BSH15263	W15210X	RLP8210	HLP7210

¹⁾ With 3,6 V-2,2 Ah Lithium-ion battery.

²⁾ Square drive sockets, hexagon cassettes and hexagon reducers must be bought separately.

▼ MCS7500C, Mobile Calibration System



MCS Series

Measurable Output Torque Range:
200 - 10.000 Nm

Measurable Output Torque Range:
148 - 7378 Ft.lbs

Female Square Drive:
1½ inch



Accuracy

The calibration system is a calibrated instrument qualified in a UKAS certified laboratory. The accuracy of the MCS7500C is calibrated to meet or exceed: 1% of FSD from 2% to 8% of torque range and 1% of reading from 8% to 100% of torque range.

Versatility

- Accurately measures torque output for continuous rotation tools and square drive hydraulic (*) torque wrenches from 200 - 10.000 Nm (148 - 7375 Ft.lbs)
- Adaptable design enables use with a large variety of Enerpac and competitive wrenches
- Internal Li-ion battery pack, external power via 5V DC USB power supply.

Performance

- Certificate Manager feature enables quick and easy creation of calibration certificates
- Tool database feature allows specific wrench data and calibration results to be recorded and saved for future use
- Each MCS comes with a standard ISO17025 calibration certificate.

Ease of Use

- Compact design in carrying facilitates easy transport, allowing calibration to be carried out in the shop, on jobsites, or even in a vehicle
- Integrated digital interface enables torque values to be displayed, saved, printed or transferred to a computer.



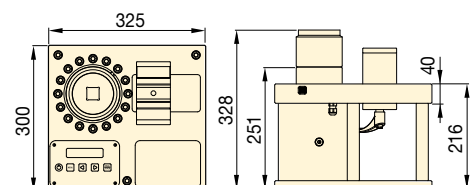
Female Reducer Set

The Female Reducer Set consists of two reducers: 1½ x 1 inch and 1½ x ¾ inch. To be ordered separately as **MCS7500RS**.



Additional Reaction Block and Adaptor

A heavy-duty adjustable reaction block in combination with one of the three adaptors is required to facilitate the use with S, RSQ and DSX-Series Square Drive Wrenches as well as most competitive hydraulic wrenches to maximum 10.000 Nm (7375 Ft.lbs). Drawings of additional reaction block and adaptor are available upon request.
































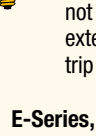
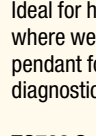

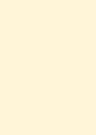

Minimum Measurable Torque Output		Nominal Measurable Torque Output		Female Square Drive	Model Number **	Description	(kg)
(Nm)	(Ft.lbs)	(Nm)	(Ft.lbs)				
200	148	10.000	7375	1½	MCS7500C	MCS with carrying case	40

* Additional Reaction Block and appropriate Adaptor is required with the use of S, RSQ and DSX-Series square drive hydraulic wrenches.

** Not suitable for use with impact tools or low profile torque wrenches.

Optimum Wrench-Torque Pump Combinations

For optimum speed and performance Enerpac recommends the following system set-up with wrench-pump-hose combinations. For other combinations, consult your Enerpac bolting expert or your authorized Enerpac distributor.

		ELECTRIC TORQUE PUMPS					AIR DRIVEN TORQUE PUMPS	
		Cordless XC-Series	E-Pulse® E-Series	TQ-Series	ZU4T-Series	ZE4T-Series ZE5T-Series	LAT-Series	ZA4T-Series
								
		Page: 274	Page: 276	Page: 278	Page: 280	Page: 284	Page: 286	Page: 288
Speed:								
Oil Flow at 700 bar:	0,25 l/min	0,52 l/min	0,5 l/min	1,0 l/min	0,8 - 1,6 l/min	0,4 l/min	1,0 l/min	1,0 l/min
Reservoir Capacity:	2,0 litres	3,0 litres	4,0 litres	4,6 - 6,8 litres	4,6 - 39 litres	3,0 litres	4,6 - 6,8 litres	4,6 - 6,8 litres
Duty Cycle:	Intermittent	Heavy-Duty	Standard	Heavy-Duty	Heavy-Duty	Standard	Heavy-Duty	Heavy-Duty
Weight:								
Work:	Field	Field/Factory	Field/Factory	Field	Factory	Field	Field	Field
 220	S1500PX	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	S3000PX							
 228	S6000PX	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	S11000PX							
 242	S25000PX	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	W2000PX							
 254	W4000PX	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	W8000PX							
 258	W15000PX	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	W22000PX							
 274	W35000PX	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	RSL1500							
 280	RSL3000	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	RSL5000							
 286	RSL8000	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	RSL11000							
 292	RSL19000	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	RSL28000							
 298	DSX1500	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	DSX3000							
 304	DSX5000	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	DSX11000							
310	DSX25000	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal	Optimal
	HMT1500							
316	HMT3500	Acceptable	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal
	HMT7500							
322	HMT13000	-	Acceptable	Acceptable	Optimal	Optimal	Acceptable	Optimal



XC-Series, Portable Cordless Pumps
Ideal for bolting applications at sites that do not have access to power or where having extension cords or air hoses could cause trip hazards.

E-Series, E-Pulse Portable Torque Pumps
Ideal for high volume fastening applications where weight is critical. Feature an interactive pendant for operation, programming and diagnostics.

TQ700 Series Electric Torque Pumps
Designed for both portability and production, to deliver superior bolting speed.

ZU4T-Series, Electric Torque Pumps
Works well with long extension cords or generator driven electrical power supplies. Available in **Pro** and **Classic** formats.
ZU4T Pro Pumps have an LCD feature to display torque or pressure, selectable torque wrench, and self-diagnostics.
ZU4T Classic Pumps feature an analogue gauge and a basic electrical package to deliver durable, safe and efficient hydraulic power.

ZE-T Series Electric Torque Pumps
Features LCD to display torque or pressure values, and self-diagnostics. With induction motor, making the ZE-Series the coolest and quietest pumps in their class.

LAT-Series, Lightweight Torque Air Pumps
Combines compact design and high productivity for bolting applications in areas hard to access with larger air powered pumps.

ZA4T-Series Air Driven Torque Pumps
This air driven pump is best suited to power medium to large size torque wrenches.

THQ-Series, Torque Wrench Hoses
Use Enerpac THQ-Series twin hoses with all torque wrenches to ensure the integrity of your hydraulic system (see page 257).

▼ XC1502TE



- Ideal for maintenance bolting applications requiring portability and convenience
- Interactive pendant provides visual and vibration feedback of pump operation
- Superior run-time with 5Ah, 28V battery
- 6 metres detachable pendant control
- 100 mm glycerine-filled gauge for easy viewing
- Bladder reservoir allows pump to be used in any position
- High-strength fiberglass reinforced composite housing provides superior durability in demanding job site environments
- Integrated handle and carrying strap for portability.

Portable Battery Pump for Torque Applications



28-Volt Battery

The **XC28V5** 5 Amps battery with Lithium-Ion technology for maximum battery performance.



Battery Charger

1-hour quick charger.

115V battery charger

XC115VC

230V battery charger

XC230VC



Roll Cage

Roll cage accessory option for both XC-TW and XC pump. Please order model number **XCRCTK**.



Torque Wrenches

The following torque wrenches are ideal for use with the XC-Series Cordless Torque Wrench Pumps:

S	W	RSL	DSX	HMT
S1500PX	W2000PX	RSL1500	DSX1500	HMT1500
S3000PX	W4000PX	RSL3000	DSX3000	HMT3500
		RSL5000		HMT7500

Larger torque wrenches will work with the cordless pump, battery run time and application speed will be impacted.

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XC-Series, Cordless Torque Wrench Pumps



Battery-Powered Torque Wrench Pumps

The XC-Series Cordless Torque Wrench pump is ideal for applications in the PowerGen, Oil & Gas and MRO markets. This portable pump is perfect for remote locations, sites that do not have access to power or where trip hazards are a concern.

The interactive pendant allows the user to set and clear pressure and operate in manual or auto-cycle mode. The pump has an easily accessible user adjustable valve for precise pressure control.

Torque Wrench Model	Nut A/F (mm)	Stud (mm)	Pressure (bar)	Torque (Nm)	Fasteners torqued
S3000X	60	38	330	2035	32
W2000X	60	38	350	1356	52

XC Series

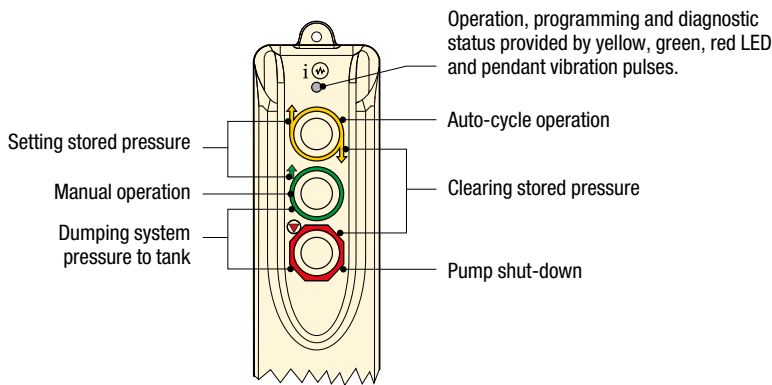


Reservoir Capacity:
2,0 litres

Flow at Rated Pressure:
0,25 l/min

Motor Size:
0,37 kW

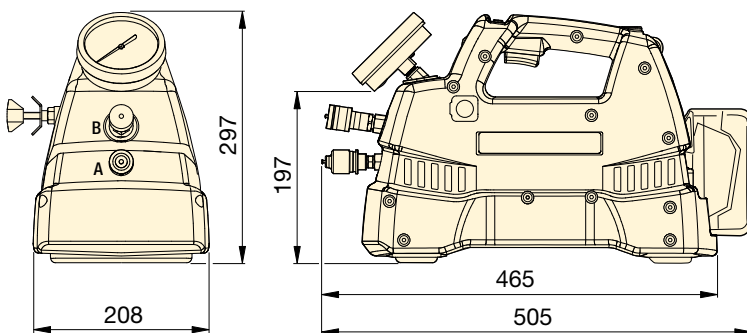
Maximum Operating Pressure:
700 bar



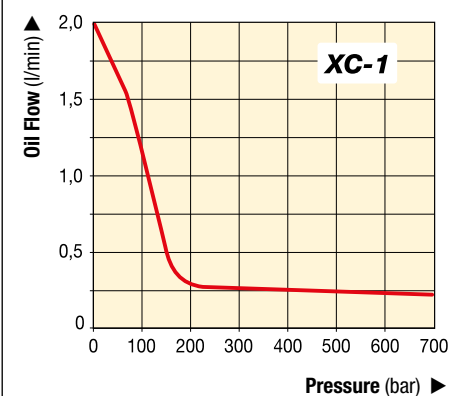
Torque Wrench Hoses

Use Enerpac 700 bar THQ-Series torque wrench hoses with torque wrenches and pumps. See page 257.

2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T



OIL FLOW vs. PRESSURE



SELECTION CHART

Description	Useable Oil Capacity (litres)	Model Number	Output Flow Rate (l/min)			Included with pump	Weight (kg) ¹⁾
			No Load	140 bar	700 bar		
Cordless Pump Kit	2,0	XC1502TB	2,05	0,49	0,25	2 batteries and 115V charger	12
Cordless Pump Kit	2,0	XC1502TE	2,05	0,49	0,25	2 batteries and 230V charger	12
Cordless Pump	2,0	XC1502T	2,05	0,49	0,25	No batteries or charger	12

¹⁾ Weight includes oil, without battery. Battery weight 1,1 kg.

▼ EP3504TE, E-Pulse Torque Wrench Pump



Performance

- Two-stage pump with high by-pass pressure: 1,0 l/min at 200 bar, 0,52 l/min at 700 bar
- Smart controls enable motor to maintain constant power across the pressure range
- 24VDC power regulator minimizes effects of poor power supply
- Six-piston block design provides even flow for smooth operation.

Durability

- Durable aluminium housing
- Integrated heat exchanger minimizes heat buildup
- High-efficiency permanent magnet, direct drive motor enables continuous use and long service life
- Built-in thermal protection
- IP Rating: IP54 on the pump, IP67 on the pendant.

Convenience

- Integrated calibrated pressure gauge
- Interactive pendant with smart controls
- Pendant and cord management system
- Intelligent Auto-Cycle enables press and release actuation to cycle torque wrench until final torque is achieved
- User can set pressure and operate in manual or auto-cycle mode
- Convenient oil fill port, oil level indicator and automatic breather.

Productivity through innovation



Bolting Integrity Software

A comprehensive on-line software solutions for Bolted Joint Integrity. The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application Data Sheet and Joint Completion Report. Custom Joint information can also be entered.

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Torque Wrenches

The following torque wrenches are ideal for use with the E-Pulse Torque Wrench Pumps:

S	W	RSL	DSX	HMT
S1500PX	W2000PX	RSL1500	DSX1500	HMT1500
S3000PX	W4000PX	RSL3000	DSX3000	HMT3500
		RSL5000	DSX5000	HMT7500

Larger torque wrenches will work with the pump, but application speed will be impacted.

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Torque Wrench Hoses

Use Enerpac 700 bar THQ-Series torque wrench hoses with torque wrenches and pumps. See page 257.

2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

E-Pulse®, Electric Torque Wrench Pumps



E-Pulse Torque Wrench Pumps

The Enerpac E-Pulse Electric Torque Wrench Pump, through its innovative design, is ideal for high volume fastening applications where weight is a critical factor. Smart controls enable the motor to maintain constant power providing higher flow than traditional pumps.

The durable aluminum housing, integrated heat exchanger and highly efficient permanent magnet motor minimize heat buildup in the toughest environments. The interactive pendant provides the operator a number of usage options for optimal efficiency. The E-Pulse Torque Wrench Pump is the pinnacle of bolting equipment.

E Series



Reservoir Capacity:

3,0 litres

Flow at Rated Pressure:

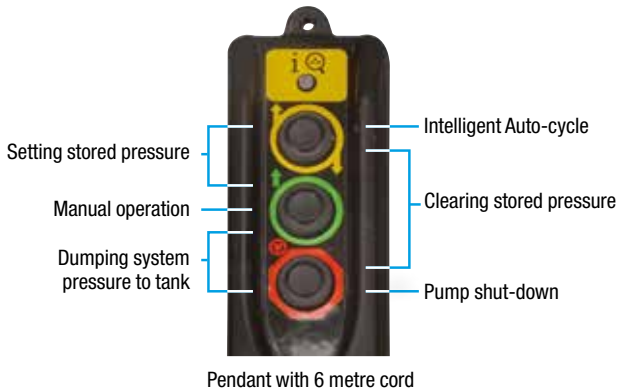
0,52 l/min

Motor Size:

0,63 kW

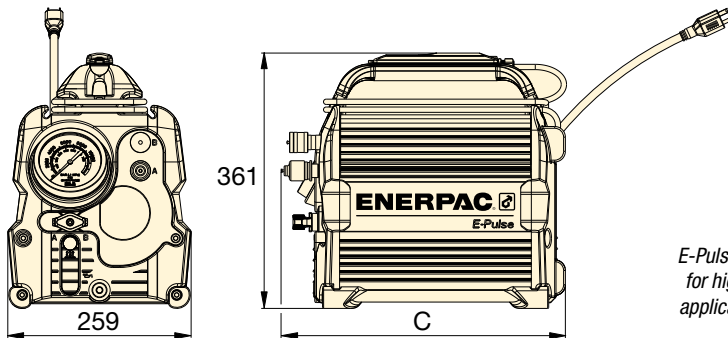
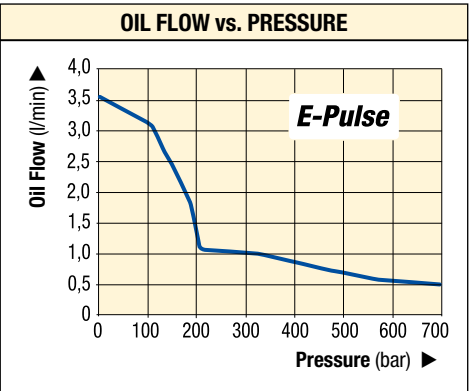
Maximum Operating Pressure:

700 bar



Interactive Torque Wrench Pendant

- User can set pressure and operate in manual or auto-cycle mode
- Intelligent Auto-Cycle enables press and release actuation to cycle torque wrench until final torque is achieved.



E-Pulse torque pump used for high volume fastening applications where weight is a critical factor. ▶



SELECTION CHART

Number of Wrenches pump can operate	Useable Oil Capacity (litres)	Model Number	Output Flow Rate (l/min)				Motor Voltage (VAC)	Current Draw (Amps)	Plug Type	Sound Level (dBA)	Dimension C (mm)	Weight (kg) ¹⁾
			1 bar	175 bar	350 bar	700 bar						
1	3,0	EP3504TB	3,61	2,13	0,95	0,52	100-120	12	NEMA 5-15	70-85	401	20,4
		EP3504TI	3,61	2,13	0,95	0,52	200-250	7	NEMA 6-15	70-85	401	20,4
		EP3504TE	3,61	2,13	0,95	0,52	200-250	7	Schuko CEE 7/7	70-85	401	20,4
2	3,0	EP3504TB-M *	3,61	2,13	0,95	0,52	100-120	12	NEMA 5-15	70-85	429	21,7
		EP3504TI-M *	3,61	2,13	0,95	0,52	200-250	7	NEMA 6-15	70-85	429	21,7
		EP3504TE-M *	3,61	2,13	0,95	0,52	200-250	7	Schuko CEE 7/7	70-85	429	21,7

* Pump model with multi-port manifold.

¹⁾ with oil

▼ TQ700E



- Optimized flow technology – three stage pump maximizes productivity of the pump and tool while minimizing heat build-up and down time
- Heat exchanger is standard included
- A quiet (<85 dBA), lightweight pump with a compact footprint – easy to move around and through the work site
- Durable roll cage with an ergonomically sized handle and shielded gauge – a pump that is easy to put into position and safe from on site operational hazards
- Maintenance made simple with a brushless motor designed for continuous usage
- Straightforward operation with a simple pressure set and convenient to use 6 m pendant control – immediate productivity for crews operating the pump
- IP55 Rating for Superior Dust and Water Protection
- Transparent gauge overlays in Nm and Ft.lbs for all Enerpac torque wrenches provide a quick torque reference.



The TQ700E and the W-Series wrenches are a productive combination in wind applications.

Lightweight Torque Wrench Pumps



Four Port Manifold

The TQ700 offers an optional four wrench manifold as an accessory factory installed. (Add suffix "M" at the end of the model number.

For example: **TQ700EM**).



Torque Wrench Hoses

Use Enerpac 700 bar THQ-Series torque wrench hoses with torque wrenches and pumps.

See page 257.

2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T



Hydraulic Torque Wrenches

Enerpac offers a complete range of square drive and hexagon cassette torque wrenches.

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Overlay Kit with Gauge

Available separately for use with TQ-Series: **GT4015Q** includes gauge and torque overlays for all Enerpac torque wrenches.

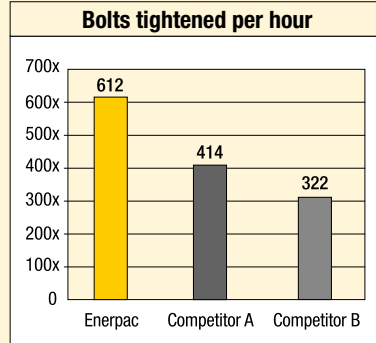


TQ700 Applications

The TQ-Series pumps are ideal for powering hydraulic wrenches for the Power Generation and Wind Markets.

Bolting speed is more complex than how much flow per minute the pump produces. The key is optimising the flow rate across the entire bolting cycle. With more oil flowing at the right time and at the right volume, you achieve the optimized flow for a hydraulic bolting system.

The result of this optimized flow is more bolts tightened faster and a more productive work team.



Internal laboratory testing based on standard torquing procedure on a pipe flange with 14, 1 1/2" bolts.

TQ Series



Reservoir Capacity:
4,0 litres

Flow at Rated Pressure:
0,5 l/min

Motor Size:
0,75 kW

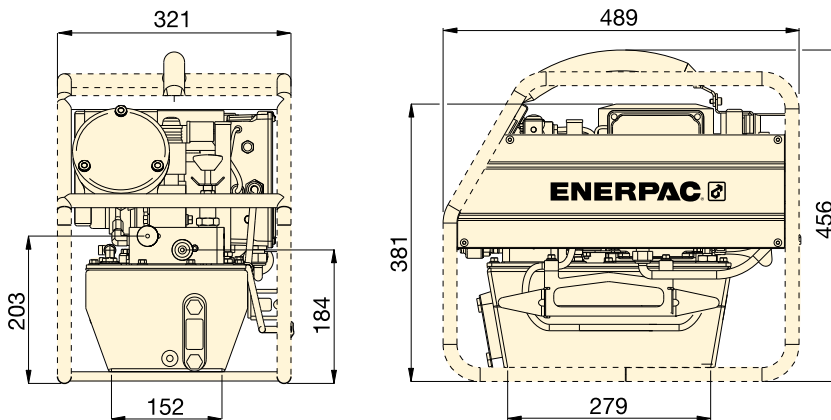
Maximum Operating Pressure:
700 bar



Torque Pump Selection Matrix

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

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For Use with Torque Wrenches	Pressure Rating (bar)	Model Number ¹⁾	Useable Oil Capacity (litres)	Motor Size (kW)	Motor Electrical Specifications (Volt - Ph - Hz)	Sound Level (dBA)	Weight (kg)
All Series	700	TQ700B	4,0	0,75	115 - 1 - 50/60	82 - 85	31
	700	TQ700E ²⁾	4,0	0,75	230 - 1 - 50	82 - 85	30
	700	TQ700I ³⁾	4,0	0,75	230 - 1 - 60	82 - 85	30

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

²⁾ TQ700E with European plug and CE EMC directive compliant.

³⁾ TQ700I with NEMA 6-15 plug.

▼ The TQ700E and the W-Series wrenches are a productive combination.



▼ ZU4204TE-Q (Pro), ZU4204BE-Q (Classic)



Z Tough, Dependable Innovative CLASS



Classic Electrical

Basic electrical package includes mechanical contactor, ON/OFF toggle switch, pendant with electro-mechanical push buttons, 24V transformer timer and operator accessible circuit breaker.

- 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 1,25 kW universal electric motor provides high power-to-weight ratio and excellent low-voltage operating characteristics
- High-strength, molded composite shroud protects motor and electrical components, while providing an ergonomic, non-conductive handle for easy transport
- Low-voltage pendant provides additional safety for the operator.

Pro Series pump only

- LCD readout provides pressure display and a number of diagnostic and readout capabilities never before offered on a portable electric pump
- AutoCycle 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).



Pro-Series

Back-lit LCD and Pressure Transducer featuring Auto-Cycle Technology.

- Torque wrench model is selectable
- "Auto cycle" setting easily programmable.
- 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 pump.

ZU4T-Series, Torque Pumps



Z-Class – A Pump For Every Application

Patented Z-Class pump technology provides high bypass pressures for increased productivity – important in applications using long hose runs and high pressure-drop circuits, like heavy lifting or certain double-acting tools.

Enerpac ZU4T-Series pumps are built to power small to large torque wrenches. Choosing the right ZU4T-Series torque wrench pump for your application is easy.

Classic Electric Torque Wrench Pump

- The Classic has traditional electro-mechanical components (transformers, relays and switches) in place of solid-state electronics. The Classic delivers durable, safe and efficient hydraulic power.

Pro Series Electric Torque Wrench Pump

- Digital (LCD) display features a built-in hour meter, pressure display and shows self-diagnostic, cycle-count and low voltage warning information. These premium features are not available on any other pump – anywhere!
- 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).

ZU4T-Series, Torque Pump
Ordering Guide

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ZU4T Series



Reservoir Capacity:

4,6 - 6,8 litres

Flow at Rated Pressure:

1,0 l/min

Motor Size:

1,25 kW

Maximum Operating Pressure:

700 bar



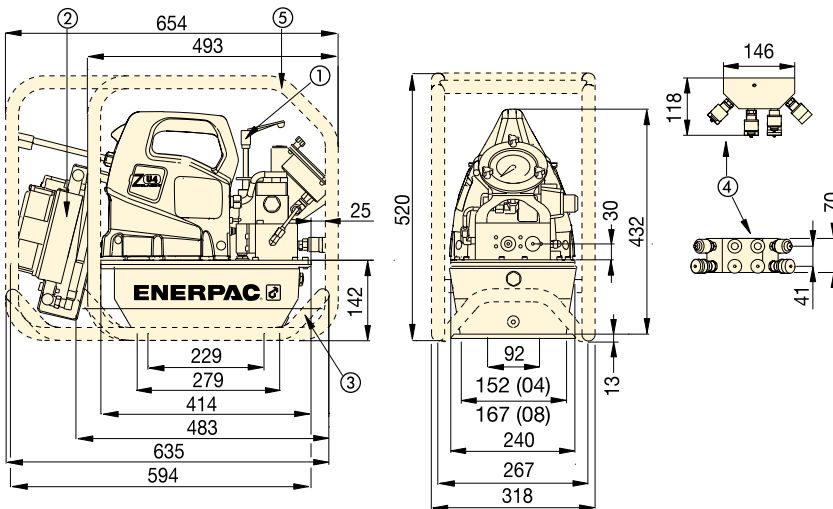
Bolting Integrity Software

Enerpac Bolting Integrity Software Solutions play a key role in implementing and managing an Integrity Program for bolted connections.

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application Data Sheet and Joint Completion Report.

Custom Joint information can also be entered.

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- ① User adjustable relief valve
- ② Heat Exchanger (optional)
- ③ Skidbar (optional)
- ④ 4-wrench manifold (optional)
- ⑤ Roll cage (optional)

ZU4T-Series Torque Pumps

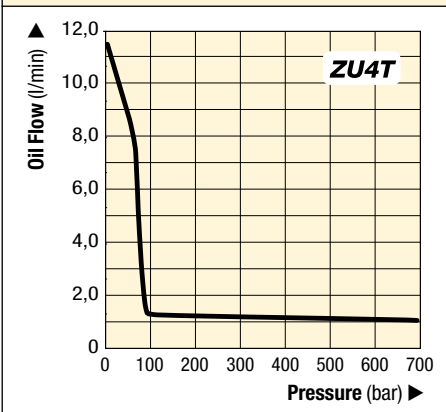
ZU4T-Series Performance Chart									
Motor Size (kW)	Output Flow Rate (l/min)				Motor Electrical Specification (Volt - Phase - Hz)	Sound Level (dBA)	Relief Valve Adjustment Range (bar)		
	7 bar	50 bar	350 bar	700 bar					
1,25	11,5	8,8	1,2	1,0	115 - 1 - 50/60 208-240 - 1 - 50/60	85-90	124-700		



Overlay Kit with Gauge

Available separately for use with ZU4T-Series Classic: **GT4015Q** includes gauge and torque overlays for all Enerpac torque wrenches.

OIL FLOW VERSUS PRESSURE





4-Wrench Manifold

- For simultaneous operation of multiple torque wrenches.

Accessory Kit * Model Nr.	Can be used on ZU4T-Series torque pumps
ZTM-Q *	for 700 bar torque wrenches

* 4-Wrench Manifold adds 2,7 kg to pump weight.



Skid Bar

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

Accessory Kit Model Nr.	Can be used on ZU4T-Series torque pumps
SBZ-4	4,6 and 6,8 litres reservoir ¹⁾
SBZ-4L	4,6 and 6,8 litres reservoir ²⁾

¹⁾ Without heat exchanger 2,2 kg.

²⁾ With heat exchanger 3,2 kg.



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 * Model Nr.	Can be used on ZU4T-Series torque pumps
ZHE-U115	115 V pumps
ZHE-U230	230 V pumps

* Heat Exchanger adds 4,1 kg to pump weight.



Roll Cage

- Protects pump
- Provides greater pump stability.

Thermal Transfer *	Max. Pressure	Max. Oil Flow	Voltage
(Btu/h)	(bar)	(l/min)	(VDC)
900	20,7	26,5	12

* At 1,9 l/min at 21 °C ambient temperature. Do not exceed maximum oil flow and pressure ratings. Heat exchanger is not suitable for water-glycol or high water-based fluids.

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



Accessory Kit Model Nr.	Can be used on ZU4T-Series torque pumps
ZRC-04	4,6 and 6,8 litres reservoir ¹⁾
ZRC-04H	4,6 and 6,8 litres reservoir ²⁾

¹⁾ Without heat exchanger 4,3 kg.

²⁾ With heat exchanger 4,3 kg.



Torque Wrench Hoses

Use Enerpac THQ-Series twin safety hoses to connect your torque wrench to the pump. See page 257.

For 700 bar	Model Nr.
2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

ZU4T-Series, Torque Pump Ordering Guide

▼ Select a pump from the model matrix at the bottom of the page.

The functionality of the pump can be determined by the model number. Utilize the guide below to select the best pump for the application.

Z	U	4	2	08	T	E	-	Q	H	M
1 Product Type	2 Motor Type	3 Flow Group	4 Valve Type	5 Reservoir Size	6 Valve Operation	7 Voltage	8 Must be Q	8 Factory Installed Accessories		

1 Product Type

Z = Pump series

2 Motor Type

U = Universal electric motor

3 Flow Group

4 = 1,0 l/min @ 700 bar

4 Valve Type

2 = Torque wrench valve

5 Reservoir Size

04 = 4,6 litres

08 = 6,8 litres

6 Valve Operation

T = **Pro Series pump** with solenoid valve and pendant, LCD Electric and pressure transducer

B = **Classic pump** with solenoid valve and pendant.

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 accessories

H = Heat exchanger

K = Skid bar

M = 4-wrench manifold

R = Roll cage

ZU4T Series



Reservoir Capacity:

4,6 - 6,8 litres

Flow at Rated Pressure:

1,0 l/min

Motor Size:

1,25 kW

Maximum Operating Pressure:

700 bar



Torque Pump Selection Matrix

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

Page: 273

▼ ZU4T-SERIES CLASSIC TORQUE PUMP MODELS

ZU4T Classic ¹⁾ Model Numbers 230 VAC, 1 ph ²⁾	Reservoir Capacity (litres)	Factory Installed Accessories					Weight (kg)
		Heat Exchanger	Roll Cage	Skid Bar	4-Wrench Manifold	Roll Cage	
ZU4204BE-Q (B, I)	4,6						33
ZU4208BE-Q (B, I)	6,8						35
ZU4204BE-QH (B, I)	4,6	●					40
ZU4208BE-QH (B, I)	6,8	●					39
ZU4204BE-QR (B)	4,6		●				37
ZU4208BE-QR (B)	6,8		●				39
ZU4204BE-QHR (B)	4,6	●	●				41
ZU4208BE-QHR (B, I)	6,8	●	●				44
ZU4208BE-QHK (B, I)	6,8	●		●			42
ZU4208BE-QHM (B, I)	6,8	●			●		42
ZU4208BE-QMR (B)	6,8		●		●		42
ZU4208BE-QHMR (B, I)	6,8	●	●		●		46

▼ ZU4T-SERIES PRO TORQUE PUMP MODELS

ZU4T Pro Model Numbers 230 VAC, 1 ph ³⁾	Reservoir Capacity (litres)	Factory Installed Accessories					Weight (kg)
		Heat Exchanger	Roll Cage	Skid Bar	4-Wrench Manifold	Roll Cage	
ZU4204TE-Q (B, I)	4,6						31
ZU4208TE-Q (B, I)	6,8						34
ZU4204TE-QH (B, I)	4,6	●					35
ZU4208TE-QH (B, I)	6,8	●					38
ZU4204TE-QR (B)	4,6		●				35
ZU4208TE-QR (B)	6,8		●				38
ZU4204TE-QHR (B)	4,6	●	●				40
ZU4208TE-QHR (B, I)	6,8	●	●				42
ZU4208TE-QHK (B, I)	6,8	●		●			41
ZU4208TE-QHM (B, I)	6,8	●			●		41
ZU4208TE-QMR (B)	6,8		●		●		41
ZU4208TE-QHMR (B, I)	6,8	●	●		●		45

¹⁾ Classic Electric Pump has traditional electro-mechanical components (transformers, relays, switches) in place of solid-state electronics.

²⁾ "B" indicates pump is 115V, 1-phase, 50/60 Hz. Model number example: **ZU4204BB-QHR**.

"I" indicates pump is 208-240V, 1-phase, 50/60 Hz with NEMA 6-15 plug. Model number example: **ZU4208BI-QHR**.

³⁾ "B" indicates pump is 115V, 1-phase, 50/60 Hz. Model number example: **ZU4204TB-QHR**.

"I" indicates pump is 208-240V, 1-phase, 50/60 Hz with NEMA 6-15 plug. Model number example: **ZU4204TI-QHR**.

▼ ZE4204TE-QHR



- **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)**
- **LCD readout provides pressure and torque display and a number of diagnostic and readout capabilities never before offered on a portable electric pump**
- **Totally enclosed, fan-cooled industrial electric motors supply extended life and stand up to harsh industrial environments**
- **High-strength, molded electrical enclosure protects electronics, power supplies and LCD readout from harsh environments.**



◀ *The ZE4T-Series torque wrench pumps are perfectly matched for this W2000X wrench.*

Z Tough, Dependable Innovative CLASS



Pro-Series

Back-lit LCD and Pressure Transducer featuring Auto-Cycle Technology.

- Torque wrench model is selectable
- "Auto cycle" setting easily programmable.
- 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.



Bolting Integrity Software

Enerpac Bolting Integrity Software Solutions play a key role in

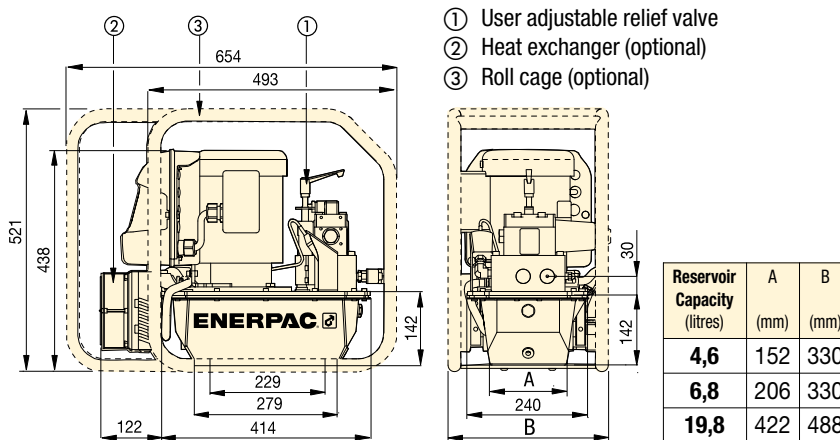
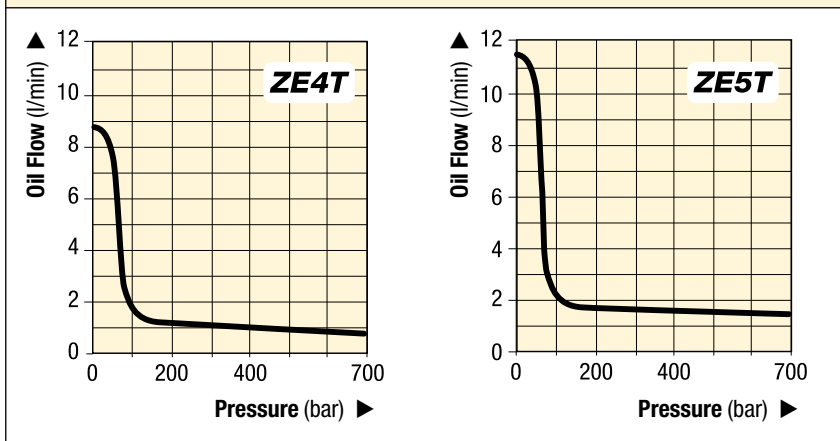
implementing and managing an Integrity Program for bolted connections.

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application Data Sheet and Joint Completion Report.

Custom Joint information can also be entered.

Electric Torque Pumps

ZE4T AND ZE5T-SERIES OIL FLOW VERSUS PRESSURE



ZE4T and ZE5T-Series

▼ PERFORMANCE CHART

Pump Series	Output Flow Rate at 50 Hz (l/min)				Motor Size (kW)	Relief Valve Adjustment Range (bar)	Sound Level (dBA)
	7 bar	50 bar	350 bar	700 bar			
ZE4T	8,8	8,1	0,9	0,8	1,1	70 - 700	75
ZE5T	11,8	11,2	1,7	1,6	2,2	70 - 700	75

For Use With Wrenches	Model Number ¹⁾	Reservoir Capacity (litres)	Factory Installed Accessories			Weight (kg)
			Heat Exchanger	Roll Cage	4-Wrench Manifold	
All Series	ZE4204TE-QR (B)	4,6		●		54
	ZE4204TE-QHR (B)	4,6	●	●		59
	ZE4208TE-QHR (B)	6,8	●	●		61
	ZE4208TE-QHMR (B)	6,8	●	●	●	64
All Series	ZE5204TW-QHR (G, J)	4,6	●	●		64
	ZE5208TW-QHR (G, J)	6,8	●	●		67
	ZE5208TW-QHMR (G, J)	6,8	●	●	●	70
	ZE5220TW-QHR (G, J)	19,8	●	●		88

¹⁾ "B" suffix model numbers shown are 115 VAC, 1-phase, 50/60 Hz. Model number order example: **ZE4204TB-QR**.
 "E" indicates pump available in 208-240 VAC, 1 phase, 50/60 Hz with European plug and CE EMC compliant.
 "J" indicates pump available in 460-480 VAC, 3-phase, 50/60 Hz. Model number order example: **ZE5208TJ-QHR**.
 "G" indicates pump available in 208-240 VAC, 3-phase, 50/60 Hz. Model number order example: **ZE5208TG-QHR**.
 "W" indicates pump available in 380-415 VAC, 3-phase, 50/60 Hz. Model number order example: **ZE5208TW-QHR**.

ZE4T ZE5T Series



Reservoir Capacity:

4,6 - 19,8 litres

Flow at Rated Pressure:

0,82 - 1,64 l/min

Motor Size:

1,1 - 2,2 kW

Maximum Operating Pressure:

700 bar



Torque Wrench Pump Selection Matrix

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

Page: 273



Accessories

Descriptions can be found in the ZU4T-Series pump section.

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Torque Wrench Hoses

Use Enerpac 700 bar THQ-Series torque wrench hoses with torque wrenches and pumps.

2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

▼ LA2504TX-QR, Air-Driven Hydraulic Torque Pump

Ex IIC T4 Gc
IIIC T135°C Dc



Improved Operator Efficiency and Ergonomics

- Easy to lift, transport and maneuver
- Hand carry where no crane, hoist or elevator is available
- One person transport up ladders and stairs
- Ideal for use on narrow or constrained scaffolding, catwalks, pipe racks and lifts.

High Productivity

- Proven 3 piston design provides leading fastening and breakout speed to stay on time and under budget
- ATEX certified to meet worksite compliance requirements.

Reduce Equipment Downtime

- Roll cage with reinforcement to support and protect FRL
- Rugged 1/2" NPTF air supply connection with integrated roll cage support
- Key components are easy to access and service.

Standard Features

- 4,5 m pendant cord for mobility around work site
- 100 mm calibrated gauge with certificate, scale in bar and psi
- Roll cage and Filter-Regulator-Lubricator (FRL).

Lightweight and Compact



Torque Pump Selection Matrix

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

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Torque Wrench Hoses

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

For 700 bar	Model Nr.
2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

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ATEX Certified

The LAT-Series air-driven pumps are tested and certified according to the ATEX Directive 2014/34/EU.

The explosion protection is for Equipment Group II, Equipment Category 2 (Hazardous Area Zone 1), in Gas and/or Dust atmospheres.

Each LAT-Series air-driven pump contains the following markings:

Ex IIC T4 Gc and Ex IIIC T135°C Dc

Ex IIC T4 Gc
IIIC T135°C Dc



Air-Driven Hydraulic Torque Pump



LAT-Series Air-Driven Torque Pump

The Enerpac LAT Air-Driven Torque Pump combines compact design and high productivity for bolting applications in areas hard to access with larger air powered pumps.

Whether on an offshore platform, refinery or mine anywhere in the world, the pump is built for the toughest worksite environments.

Featuring a proven Enerpac piston design, reinforced FRL support and air supply connection, the LAT-pump will provide years of reliable service with fastening and breakout speeds to keep you on schedule and under budget.

LAT Series



Reservoir Capacity:

3,0 litres

Flow at Rated Pressure:

0,4 l/min

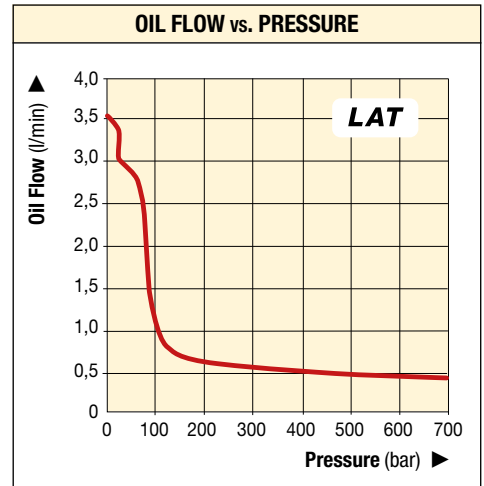
Maximum Operating Pressure:

700 bar

▼ Rugged 1/2" NPTF air supply connection with integrated roll cage support.



▼ Roll cage design supports and protects Filter-Regulator-Lubricator (FRL).



▼ Proven 3 piston design provides leading speed.



▼ Skid Rail accessory DD8365920K bolts to bottom of reservoir to prevent wear from rough surfaces.



▼ LAT-Series, the portable and compact torque pump.



Usable Oil Capacity (litres)	Model Number *	Output Flow Rate (l/min)			Valve Type	Air Pressure Range (bar)	Air Consumption (l/min)	Sound Level (dBA)	Dimensions (mm)			Weight (kg)
		No Load	350 bar	700 bar					Length	Width	Height	
1,9	LA2504TX-QR	3,5	0,6	0,4	4-way, 2-pos.	4,5 - 6,9	1389	87 - 90	435	250	375	18,0

* Enerpac Spin-On couplers are included. Pump hydraulic port thread size is 1/4"-18 NPTF.

▼ ZA4204TX-QR



Ex II 2 GD ck T4
DEKRA 0602

ZA4208TX-QRU105 Complete Set with Pump, Hose THQ706T and Roll Cage:

- Fine air pressure adjustment for very accurate torque control
- High bypass pressure (180 bar) for faster torque cycles
- Improved wrench performance at low pressure

Standard ZA4T-pump models:

- Two-speed operation and 100 bar by-pass pressure reduces cycle time for improved productivity
- Glycerin filled pressure gauge with transparent overlays in Nm and Ft.lbs for Enerpac torque wrenches provide a quick torque reference
- Standard Regulator-Filter-Lubricator with removable bowls and auto drain
- Heat exchanger warms exhaust air to prevent freezing and cools the oil
- Ergonomic pendant allows remote operation up to 6 m.



◀ Most hydraulic torque wrenches can be powered by the Enerpac ZA4T-Series torque pumps.

Z Tough, Dependable Innovative CLASS



Gauge with Overlay Kit

Gauge Overlay Kits are available separately for use with ZA4T-Series pumps:

GT4015Q includes gauge and overlays for all Enerpac all S, W, RSL, DSX and HMT-Series torque wrenches.



Torque Pump Selection Matrix

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

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Torque Wrench Hoses

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

For 700 bar	Model Nr.
2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

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PowaPak™ Air Torque Pump

ZA4208TX-QR0P Pump with Stainless Steel Roll Cage and Certified Lifting Eye.

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Air Driven Torque Pumps



ZA4T-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.

All ZA4T-Series pump models meet CE, CSA and TÜV safety requirements. For further application assistance contact your local Enerpac office.

ATEX 95 Certified

The ZA4T-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 ZA4T-Series pumps are marked with: **Ex II 2 GD ck T4**.



ZA4T Series



Reservoir Capacity:

4,6 - 6,8 litres

Flow at Rated Pressure:

1,0 l/min

Air Consumption:

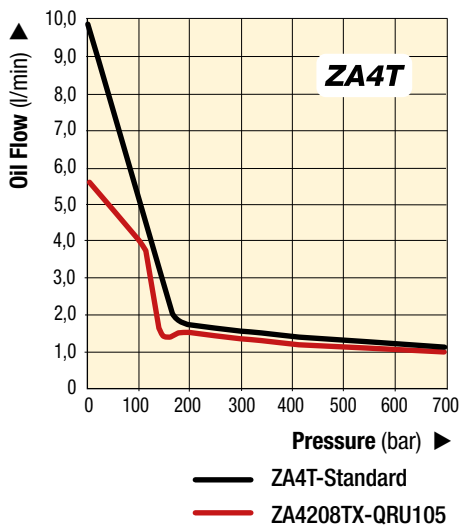
600 - 2840 l/min

Maximum Operating Pressure:

700 bar

OIL FLOW VERSUS PRESSURE

6,9 bar dynamic air pressure at 2840 l/min



Accessory Options

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

- K** = Skid bar
- M** = 4-wrench manifold
- R** = Roll cage.

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▼ ZA4208TX-QRU105 for improved wrench performance and torque control at low pressure.



COMMON PUMP MODELS

For Use With Torque Wrenches	Maximum Operating Pressure (bar)	Model Number	Reservoir Capacity (litres)	Weight (kg)
all S, W, RSL, DSX and HMT-Series	700	ZA4208TX-QRU105 *	6,8	45
	700	ZA4204TX-Q	4,6	42
	700	ZA4208TX-Q	6,8	47
	700	ZA4204TX-QR **	4,6	46
	700	ZA4208TX-QR **	6,8	51

* Standard with roll cage, with THQ706T hose and fine air pressure adjustment for very accurate torque control. Pump weight 45 kg, complete set including hose weight 58 kg.

** With Roll Cage.



Skid Bar

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

Accessory Kit * Model Nr.	Can be used on ZA4T-Series torque pumps
SBZ-4	Reservoir 04 and 08

* Add suffix **K** for factory installation. Weight skid bar 2,2 kg.
Ordering Example: ZA4208TX-QK



4-Wrench Manifold

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

Accessory Kit * Model Nr.	Can be used on ZA4T-Series torque pumps
ZTM-Q	for 700 bar torque wrenches

* Add suffix **M** for factory installation. This option cannot be installed onto the ZA4208TX-QRU105 pump, as the valve manifold is different. Weight manifold 4,5 kg.
Ordering Example: ZA4208TX-QM



Roll Cage

- Protects pump
- Provides greater pump stability.

Accessory Kit * Model Nr.	Can be used on ZA4T-Series torque pumps
ZRC-04	Reservoir 04 and 08

* Add suffix **R** for factory installation. Roll cage weight 3,4 kg.
Ordering Example: ZA4208TX-QR



Torque Wrench Couplers

For Enerpac torque wrench couplers see our "System Components" section in this catalogue.

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PowaPak™ Air Torque Pump

ZA4208TX-QR0P Pump with Stainless Steel Roll Cage and Certified Lifting Eye.

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Torque Wrench Hoses

Use Enerpac twin safety hoses to connect your torque wrench to the pump. See page 257.

For 700 bar	Model Nr.
2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

Ordering Matrix and Specifications

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

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

1 Product Type

Z = Pump series

2 Motor Type

A = Air motor

3 Flow Group

4 = 1,0 l/min @ 700 bar

4 Valve Type

2 = Torque Wrench Valve

5 Reservoir Size

04 = 4,6 litres

08 = 6,8 litres

6 Valve Operation

T = Air operated valve with pendant

7 Voltage

X = Not applicable

8 Options

Q = 700 bar couplers for use with Enerpac or other torque wrenches

K = Skid bar

M = 4-wrench manifold

R = Roll cage

ZA4T Series



Reservoir Capacity:

4,6 - 6,8 litres

Flow at Rated Pressure:

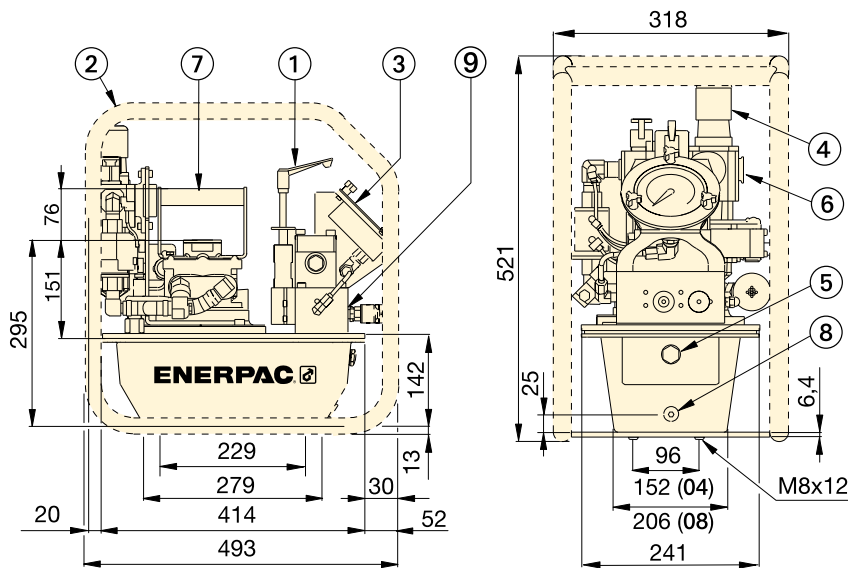
1,0 l/min

Air Consumption:

600 - 2840 l/min

Maximum Operating Pressure:

700 bar



- ① User adjustable relief valve
- ② Roll 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
- ⑨ 1/4"-18 NPTF Oil outlet



How to order your ZA4T-Series torque pump

Model No. ZA4208TX-QMR

700 bar pump for use with Enerpac S-, W-, RSL, DSX and HMT-Series and other 700 bar torque wrenches, 6,8 litres reservoir, 4-wrench manifold, and roll cage.



Torque Pump Selection Matrix

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

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ZA4T-Series Performance

Pump Model	Output Flow Rate (l/min)				By-pass pressure (bar)	Dynamic Air Pressure Range (bar)	Air Consumption (l/min)	Sound Level (dBA)	Relief Valve Adjustment Range (bar)
	7 bar	50 bar	350 bar	700 bar					
ZA4208TX-QRU105	5,7	4,5	1,4	1,0	180	7,0	600 - 2840	85-90	124 - 700
ZA4T Standard	9,8	8,2	1,4	1,0	100	4,0 - 6,9	600 - 2840	85-90	124 - 700

▼ ZA4208TX-QR0P



New ZA4T with Stainless Steel Roll Cage and Certified Lifting Eye



Torque Pump Selection Matrix

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

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- Stainless-Steel Roll Cage resists corrosion
- Certified Lifting Eye for transporting pump between levels
- Two-speed operation and high by-pass pressure reduces cycle time for improved productivity
- Integrated heat exchanger warms exhaust air to prevent freezing and cools the oil
- Fine hydraulic pressure adjustment for accurate torque control
- Improved wrench speed at low hydraulic pressure due to the expanded 1st stage bypass setting
- Pendant allows operation up to 6 metres (20 ft)
- Filter-Regulator-Lubricator with removable bowls and auto drain is standard
- Calibrated, glycerine filled gauge with display in bar and psi
- ATEX-tested and certified.



Torque Wrench Hoses

Use Enerpac THQ700-Series hoses with torque wrenches to ensure the integrity of your hydraulic system.

For 700 bar	Model Nr.
2 m long, 2 hoses	THQ702T
6 m long, 2 hoses	THQ706T
12 m long, 2 hoses	THQ712T

▼ Certified lifting eye.



PowaPak™ Air Torque Pump



PowaPak™ Air Torque Pump

The ZA4208TX-QROP was developed for the high demands of the oil and gas, chemical processing, rental and other industrial markets.

The stainless-steel roll cage resists corrosion and surface damage reducing the maintenance required to prepare the pump for the next job.

The certified lifting eye enables the pump to be transported between levels with a lifting hook avoiding time consuming strapping.

ATEX-Certified

The ZA4T air-driven torque pump is tested and certified according to the ATEX Directive 2014/34/EU.

The explosion protection is for Equipment Group II, Equipment Category 2 (Hazardous Area Zone 1), in Gas and /or Dust atmospheres.

Each pump contains the following markings:

Ex IIC T4 Gc

Ex IIIC T135°C Dc



ZA4T Series



Reservoir Capacity:

6,8 litres

Flow at Rated Pressure:

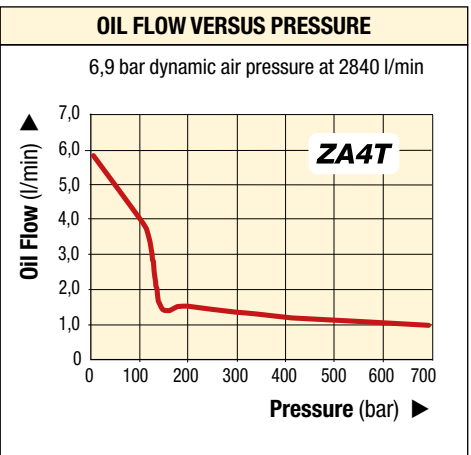
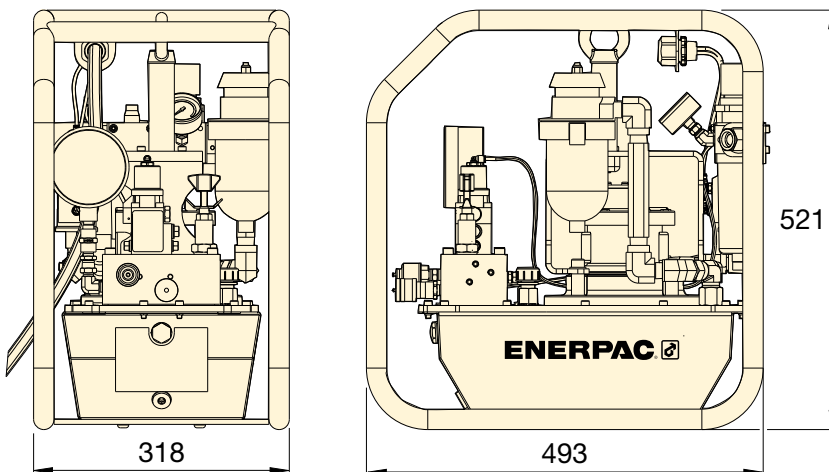
1,0 l/min

Air Consumption:

600 - 2840 l/min

Maximum Operating Pressure:

700 bar



Bolting Integrity Software

Enerpac Bolting Integrity Software Solutions play a key role in implementing and managing an Integrity Program for bolted connections. The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application Data Sheet and Joint Completion Report. Custom Joint information can also be entered.

Maximum Operating Pressure (bar)	Model Number	Reservoir Capacity (litres)	Output Flow Rate (l/min)			Dynamic Air Pressure Range (bar)	Air Consumption (l/min)	Weight (kg)
			7 bar	350 bar	700 bar			
700	ZA4208TX-QROP	6,8	5,7	1,3	1,0	4,1-6,9	600-2840	52

▼ HM10 Hydramax® Topside Tensioner



- Fifteen load cells from ¾" to 4" / M20 to M100
- Twin ports for quick connection of multiple tools
- High bolt load capacity at max. 1500 bar (21.750 psi)
- Long stroke capability of 15 mm (9/16 inch) with over stroke elimination
- HM01 to HM05: mechanical over-stroke prevention, no spring assist; HM06 to HM15: relief valve for over-stroke prevention, spring assist
- Quick release bridge
- Stroke indicator
- Captive socket – eliminates falling object risk
- Interchangeable adaptor kits available
- Anti-slip grip for more secure handling
- HM-Series HydraMax® Tensioners comply to following: Machine Directive 2006/42/EC, ASME B30.1, EN-ISO 4413:2010 and EN-ISO 12100:2010.



◀ Enerpac HM-Series HydraMax® tensioners have been designed to generate high bolt loads associated with compact flanges, while providing versatility for maximum bolt coverage,

High Bolt Load Capacities, Superior Performance



HydraMax® Topside Tensioners

The HM-Series tensioners have been designed to fit all standard flanges, including ANSI, API and Compact flanges based on Norsok L005 and generates 30% more load capacity than traditional tensioners.



Tensioning Pumps, Hoses and Couplers

High pressure pumps, hoses and fittings matched for use with the Enerpac Bolt Tensioners.

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Ultra-high Pressure

This tool operates at ultra-high pressure, use only the specified fittings and hoses designed for these pressures.

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How to Order HydraMax® Tensioners

To provide maximum flexibility Load Cells are ordered separately from Adaptor and Bridge Kits.

Example, to order a complete tensioner for a M24 x 3 threaded bolt order:

1 x Load Cell with tommy bar: **HM03-LC**

1 x Adaptor and Bridge Kit: **HM03BPM-NRS02430**



Bolting Integrity Software

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application data sheet and Joint completion report. Custom Joint information can also be entered.

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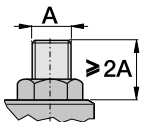
HydraMax® Topside Tensioners



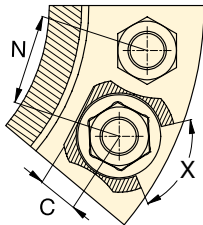
Thread and Pitch Sizes

Contact Enerpac for different thread or pitch sizes.

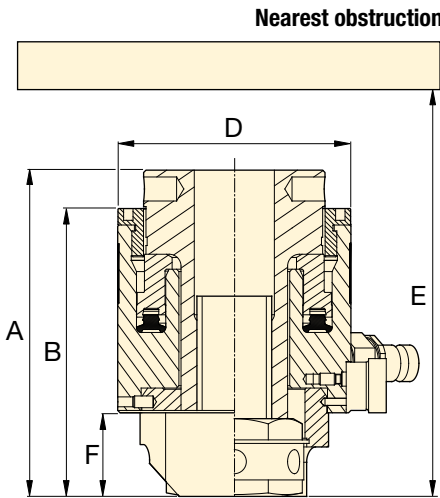
Alternative size adaptor kits can be supplied upon request.



Minimum Stud Protrusion



X = Minimum socket rotation 60°



HM Series



Bolt Range:

M20 - M39, 3/4" - 1 1/2"

Maximum Load Capacity:

134 - 624 kN

Stroke:

10 - 15 mm *

Maximum Operating Pressure:

1500 bar

* Stroke HM01 models 10 mm

Strokes all other HM-models 15 mm.

Load Cell Model Number *	Thread Size	Adaptor and Bridge Kit Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Dimensions (mm)							Load Cell Weight (kg)	Adaptor and Bridge Kit Weight (kg)
					A	B	C	D	E min.	F	N min.		
HM01-LC	M20 x 2,5	HM01BPM-NRS02025	894	134,0	112	96	15	61	208	28	51	1,6	0,6
	3/4" - 10UN	HM01BP-NRS0750U10	894	134,0	112	96	15	61	208	28	51	1,6	0,6
HM02-LC	M20 x 2,5	HM02BPM-NRS02025	1240	186,0	119	103	15	69	227	28	53	1,8	0,9
	M22 x 2,5	HM02BPM-NRS02225	1240	186,0	119	103	18	69	225	28	54	1,8	0,9
	3/4" - 10UN	HM02BP-NRS0750U10	1240	186,0	119	103	15	69	227	28	52	1,8	0,9
	7/8" - 9UN	HM02BP-NRS0875U09	1240	186,0	119	103	18	69	225	28	56	1,8	0,8
HM03-LC	M20 x 2,5	HM03BPM-NRS02025	1628	244,1	120	105	15	77	230	28	57	2,2	1,1
	M22 x 2,5	HM03BPM-NRS02225	1628	244,1	120	105	18	77	228	28	58	2,2	1,1
	M24 x 3	HM03BPM-NRS02430	1628	244,1	120	110	20	77	232	33	59	2,2	1,1
	3/4" - 10UN	HM03BP-NRS0750U10	1628	244,1	120	105	15	77	230	28	56	2,2	1,1
	7/8" - 9UN	HM03BP-NRS0875U09	1628	244,1	120	105	18	77	228	28	58	2,2	1,1
	1" - 8UN	HM03BP-NRS1000U08	1628	244,1	125	110	20	77	232	33	60	2,2	1,1
HM04-LC	M22 x 2,5	HM04BPM-NRS02225	2159	323,8	128	112	18	90	250	28	62	2,7	1,6
	M24 x 3	HM04BPM-NRS02430	2159	323,8	129	117	20	90	255	33	63	2,7	1,6
	M27 x 3	HM04BPM-NRS02730	2159	323,8	134	117	20	90	256	34	65	2,7	1,7
	M30 x 3,5	HM04BPM-NRS03035	2159	323,8	137	120	23	90	257	36	66	2,7	1,7
	7/8" - 9UN	HM04BP-NRS0875U09	2159	323,8	129	112	18	90	250	28	62	2,7	1,6
	1" - 8UN	HM04BP-NRS1000U08	2159	323,8	134	117	20	90	255	33	64	2,7	1,7
	1 1/8" - 8UN	HM04BP-NRS1125U08	2159	323,8	137	120	23	90	257	36	65	2,7	1,7
HM05-LC	M24 x 3	HM05BPM-NRS02430	2752	412,7	131	119	20	99	263	33	68	3,3	1,9
	M27 x 3	HM05BPM-NRS02730	2752	412,7	136	119	20	99	263	34	69	3,3	2,0
	M30 x 3,5	HM05BPM-NRS03035	2752	412,7	139	122	23	99	261	36	71	3,3	2,0
	M33 x 3,5	HM05BPM-NRS03335	2752	412,7	142	125	27	99	262	39	72	3,3	2,1
	1" - 8UN	HM05BP-NRS1000U08	2752	412,7	136	119	20	99	263	33	68	3,3	2,1
	1 1/8" - 8UN	HM05BP-NRS1125U08	2752	412,7	139	122	23	99	261	36	70	3,3	2,1
	1 1/4" - 8UN	HM05BP-NRS1250U08	2752	412,7	142	125	27	99	262	39	71	3,3	2,1
HM06-LC	M30 x 3,5	HM06BPM-NRS03035	4162	624,1	143	125	23	118	266	36	80	4,5	2,8
	M33 x 3,5	HM06BPM-NRS03335	4162	624,1	146	128	27	118	269	39	82	4,5	2,9
	M36 x 4	HM06BPM-NRS03640	4162	624,1	149	131	32	118	273	42	83	4,5	3,0
	M39 x 4	HM06BPM-NRS03940	4162	624,1	152	134	33	118	277	45	85	4,5	3,1
	1 1/8" - 8UN	HM06BP-NRS1125U08	4162	624,1	143	125	23	118	266	36	79	4,5	2,8
	1 1/4" - 8UN	HM06BP-NRS1250U08	4162	624,1	146	128	27	118	269	39	81	4,5	2,9
	1 3/8" - 8UN	HM06BP-NRS1375U08	4162	624,1	149	131	32	118	273	32	82	4,5	3,0
	1 1/2" - 8UN	HM06BP-NRS1500U08	4162	624,1	152	134	33	118	277	45	84	4,5	3,1

* Tommy Bar is included with Load Cell.



Thread and Pitch Sizes

Contact Enerpac for different thread or pitch sizes. Alternative size adaptor kits can be supplied upon request.

HM Series



Bolt Range:

M33 - M52, 1¼ - 2"

Maximum Load Capacity:

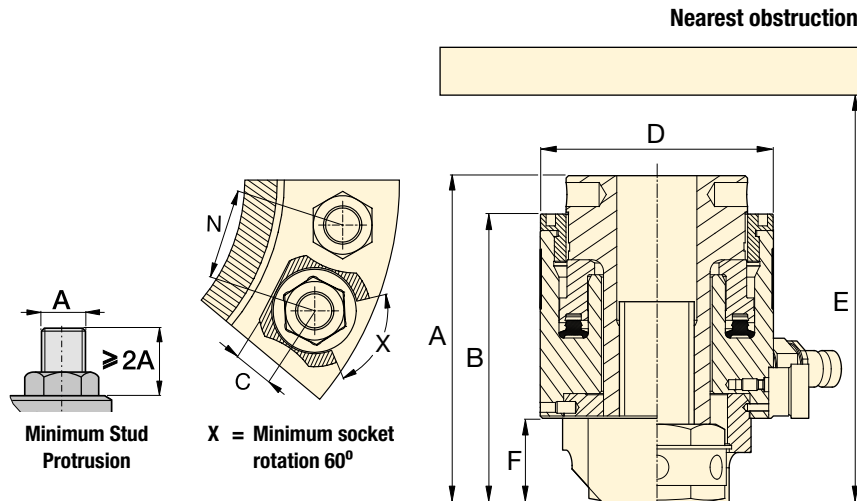
746 - 1179 kN

Stroke:

15 mm

Maximum Operating Pressure:

1500 bar



Load Cell Model Number *	Thread Size	Adaptor and Bridge Kit Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Dimensions (mm)							Load Cell Weight (kg)	Adaptor and Bridge Kit Weight (kg)
					A	B	C	D	E min.	F	N min.		
HM07-LC	M33 x 3,5	HM07BPM-NRS03335	4980	746,8	145	128	27	127	278	39	86	5,2	3,4
	M36 x 4	HM07BPM-NRS03640	4980	746,8	148	131	32	127	279	42	88	5,2	3,5
	M39 x 4	HM07BPM-NRS03940	4980	746,8	151	134	33	127	280	45	89	5,2	3,6
	M42 x 4,5	HM07BPM-NRS04245	4980	746,8	154	137	34	127	280	48	91	5,2	3,7
	1¼" - 8UN	HM07BP-NRS1250U08	4980	746,8	145	128	27	127	278	39	85	5,2	3,4
	1⅝" - 8UN	HM07BP-NRS1375U08	4980	746,8	148	131	32	127	279	42	87	5,2	3,5
	1½" - 8UN	HM07BP-NRS1500U08	4980	746,8	151	134	33	127	280	45	89	5,2	3,6
1⅞" - 8UN	HM07BP-NRS1625U08	4980	746,8	154	137	34	127	280	48	90	5,2	3,7	
HM08-LC	M36 x 4	HM08BPM-NRS03640	5869	880,1	149	133	32	137	283	42	93	6,3	3,9
	M39 x 4	HM08BPM-NRS03940	5869	880,1	152	136	33	137	284	45	94	6,3	4,0
	M42 x 4,5	HM08BPM-NRS04245	5869	880,1	155	139	34	137	284	48	96	6,3	4,1
	M45 x 4,5	HM08BPM-NRS04545	5869	880,1	158	142	39	137	285	51	97	6,3	4,4
	1⅝" - 8UN	HM08BP-NRS1375U08	5869	880,1	149	133	32	137	283	42	92	6,3	3,9
	1½" - 8UN	HM08BP-NRS1500U08	5869	880,1	152	136	33	137	284	45	94	6,3	4,0
	1⅞" - 8UN	HM08BP-NRS1625U08	5869	880,1	155	139	34	137	284	48	95	6,3	4,1
1¾" - 8UN	HM08BP-NRS1750U08	5869	880,1	158	142	39	137	285	51	97	6,3	4,4	
HM09-LC	M39 x 4	HM09BPM-NRS03940	6834	1024,9	152	136	33	145	278	45	98	6,5	5,0
	M42 x 4,5	HM09BPM-NRS04245	6834	1024,9	155	139	34	145	281	48	100	6,5	6,1
	M45 x 4,5	HM09BPM-NRS04545	6834	1024,9	158	142	39	145	285	51	101	6,5	5,1
	M48 x 5	HM09BPM-NRS04850	6834	1024,9	161	145	43	145	288	54	103	6,5	5,5
	1½" - 8UN	HM09BP-NRS1500U08	6834	1024,9	152	136	33	145	278	45	98	6,5	5,1
	1⅝" - 8UN	HM09BP-NRS1625U08	6834	1024,9	155	139	34	145	281	48	99	6,5	5,1
	1¾" - 8UN	HM09BP-NRS1750U08	6834	1024,9	158	142	39	145	285	51	101	6,5	5,0
1⅞" - 8UN	HM09BP-NRS1875U08	6834	1024,9	161	145	43	145	288	54	102	6,5	5,4	
HM10-LC	M42 x 4,5	HM10BPM-NRS04245	7868	1179,8	159	143	34	156	289	48	105	8,3	5,7
	M45 x 4,5	HM10BPM-NRS04545	7868	1179,8	162	146	39	156	293	51	107	8,3	5,7
	M48 x 5	HM10BPM-NRS04850	7868	1179,8	165	149	43	156	296	54	108	8,3	6,1
	M52 x 5	HM10BPM-NRS05250	7868	1179,8	169	153	44	156	301	58	110	8,3	6,3
	1⅝" - 8UN	HM10BP-NRS1625U08	7868	1179,8	159	143	34	156	289	48	105	8,3	5,7
	1¾" - 8UN	HM10BP-NRS1750U08	7868	1179,8	162	146	39	156	293	51	106	8,3	5,6
	1⅞" - 8UN	HM10BP-NRS1875U08	7868	1179,8	165	149	43	156	296	54	108	8,3	6,0
2" - 8UN	HM10BP-NRS2000U08	7868	1179,8	169	153	44	156	301	58	109	8,3	6,3	

* Load Cell with Tommy Bar.

HydraMax® Topside Tensioners

HM Series



Bolt Range:

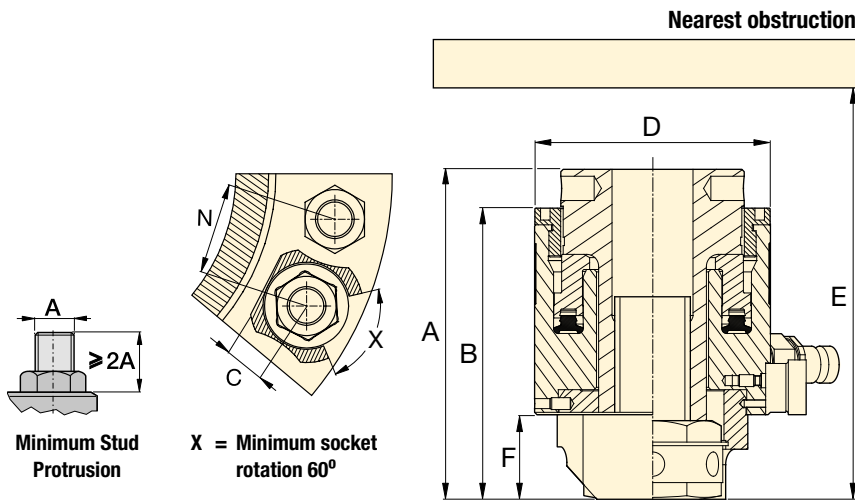
M45 - M100, 1 3/4" - 4"

Maximum Load Capacity at 1500 bar:

1522 - 4650 kN

Stroke:

15 mm



Load Cell Model Number *	Thread Size **	Adaptor and Bridge Kit Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Dimensions (mm)							Load Cell Weight (kg)	Adaptor and Bridge Kit Weight (kg)
					A	B	C	D	E min.	F	N min.		
HM11-LC	M45 x 4,5	HM11BPM-NRS04545	10152	1522,5	167	146	39	175	297	51	116	10,5	7,4
	M48 x 5	HM11BPM-NRS04850	10152	1522,5	170	149	43	175	301	54	118	10,5	7,9
	M52 x 5	HM11BPM-NRS05250	10152	1522,5	174	153	44	175	306	58	120	10,5	8,1
	M56 x 5,5	HM11BPM-NRS05655	10152	1522,5	182	161	50	175	318	66	122	10,5	9,1
	M60 x 5,5	HM11BPM-NRS06055	10152	1522,5	182	161	50	175	323	66	124	10,5	8,7
	1 3/8" - 8UN	HM11BP-NRS1750U08	10152	1522,5	167	146	39	175	297	51	116	10,5	7,5
	1 7/8" - 8UN	HM11BP-NRS1875U08	10152	1522,5	170	149	43	175	301	54	117	10,5	7,9
	2" - 8UN	HM11BP-NRS2000U08	10152	1522,5	174	153	44	175	306	58	119	10,5	8,1
2 1/4" - 8UN	HM11BP-NRS2250U08	10152	1522,5	182	161	50	175	318	66	122	10,5	8,8	
HM12-LC	M48 x 5	HM12BPM-NRS04850	12722	1907,7	170	149	43	194	301	54	127	13,3	9,7
	M52 x 5	HM12BPM-NRS05250	12722	1907,7	174	153	44	194	306	58	129	13,3	9,8
	M56 x 5,5	HM12BPM-NRS05655	12722	1907,7	182	161	50	194	318	66	131	13,3	10,7
	M60 x 5,5	HM12BPM-NRS06055	12722	1907,7	182	161	50	194	323	66	133	13,3	10,4
	M64 x 6	HM12BPM-NRS06460	12722	1907,7	186	165	56	194	320	70	135	13,3	11,1
	1 7/8" - 8UN	HM12BP-NRS1875U08	12722	1907,7	170	149	43	194	301	54	127	13,3	9,6
	2" - 8UN	HM12BP-NRS2000U08	12722	1907,7	174	153	44	194	306	58	128	13,3	9,8
	2 1/4" - 8UN	HM12BP-NRS2250U08	12722	1907,7	182	161	50	194	318	66	132	13,3	10,4
2 1/2" - 8UN	HM12BP-NRS2500U08	12722	1907,7	186	165	56	194	320	70	135	13,3	10,8	
HM13-LC	M64 x 6	HM13BPM-NRS06460	16964	2544,0	195	172	56	219	337	70	148	17,6	14,5
	M68 x 6	HM13BPM-NRS06860	16964	2544,0	195	180	63	219	350	78	150	17,6	16,5
	M72 x 6	HM13BPM-NRS07260	16964	2544,0	203	185	69	219	347	82	152	17,6	16,0
	M76 x 6	HM13BPM-NRS07660	16964	2544,0	207	185	69	219	352	82	154	17,6	16,3
	2 1/2" - 8UN	HM13BP-NRS2500U08	16964	2544,0	195	172	56	219	337	70	147	17,6	14,2
	2 3/4" - 8UN	HM13BP-NRS2750U08	16964	2544,0	203	180	63	219	350	78	150	17,6	15,8
3" - 8UN	HM13BP-NRS3000U08	16964	2544,0	207	185	69	219	352	82	161	17,6	15,8	
HM14-LC	M72 x 6	HM14BPM-NRS07260	23451	3516,7	203	185	69	259	351	82	172	25,8	20,8
	M76 x 6	HM14BPM-NRS07660	23451	3516,7	207	185	69	259	352	82	174	25,8	21,3
	M80 x 6	HM14BPM-NRS08060	23451	3516,7	207	193	70	259	367	91	176	25,8	21,2
	M85 x 6	HM14BPM-NRS08560	23451	3516,7	216	193	70	259	374	91	178	25,8	22,9
	M90 x 6	HM14BPM-NRS09060	23451	3516,7	221	198	79	259	389	96	181	25,8	23,3
	3" - 8UN	HM14BP-NRS3000U08	23451	3516,7	207	185	69	259	352	82	174	25,8	20,4
	3 1/4" - 8UN	HM14BP-NRS3250U08	23451	3516,7	216	193	70	259	374	91	177	25,8	22,7
3 1/2" - 8UN	HM14BP-NRS3500U08	23451	3516,7	221	198	79	259	389	96	184	25,8	23,9	
HM15-LC	M90 x 6	HM15BPM-NRS09060	31008	4650,0	221	199	79	296	389	96	199	32,5	30,0
	M95 x 6	HM15BPM-NRS09560	31008	4650,0	226	205	81	296	405	101	202	32,5	33,7
	M100 x 6	HM15BPM-NRS10060	31008	4650,0	232	211	90	296	421	107	204	32,5	35,1
	3 1/2" - 8UN	HM15BP-NRS3500U08	31008	4650,0	221	199	79	296	389	96	198	32,5	29,5
	3 3/4" - 8UN	HM15BP-NRS3750U08	31008	4650,0	226	205	81	296	405	101	202	32,5	32,8
	4" - 8UN	HM15BP-NRS4000U08	31008	4650,0	232	211	90	296	421	107	210	32,5	34,0

* Load Cell with Tommy Bar.

** Contact Enerpac for different thread or pitch sizes. Alternative size adaptor kits can be supplied upon request.

▼ Shown: GT-Series Topside Bolt Tensioners



- Seven load cells from M16 to M105 or from 5/8" to 4"
- Twin ports for quick connection of multiple tools
- Only one size of bridge per size of load cell
- Detachable and rotational bridge simplifies tool positioning
- Full bridge window – increased access to socket
- Captive socket – eliminates falling object risk
- Piston stroke indicator
- Black surface treatment protects against corrosion
- Anti-slip grip for more secure handling
- Universal and multi-use tool
- GT-Series Tensioners comply to Machine Directive 2006/42/CE, ASME B30.1, EN-ISO 4413:2010 and EN-ISO 12100:2010.

Accurate & Reliable Extreme Performance Bolt Tensioners



Tensioning Pumps, Hoses and Couplers

High pressure pumps, hoses and fittings matched for use with the Enerpac Bolt Tensioners.

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Bolting Integrity Software

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application data sheet and Joint completion report. Custom Joint information can also be entered.

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How to Order

To provide maximum flexibility Load Cell and Bridges are ordered separately from Adaptor Kits.

Example, to order a complete tensioner for a M36 x 4 threaded bolt order:

1 x Load Cell and Bridge: **GT2-LCB**

1 x Adaptor Kit: **GT2PM-NRS03640**

Load Cell * and Bridge Model Number	Thread Size	Adaptor Kit Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Dimensions (mm)							Load Cell and Bridge Weight (kg)	Adaptor Kit Weight (kg)
					A	B	C	D	E min.	F	N min.		
GT1-LCB	M16 x 2	GT1PM-NRS01620	1495,4	224,3	135	113	27	86	243	44	57	3,0	1,6
	M18 x 2,5	GT1PM-NRS01825	1495,4	224,3	135	113	27	86	243	44	58	3,0	1,5
	M20 x 2,5	GT1PM-NRS02025	1495,4	224,3	135	113	27	86	243	44	59	3,0	1,4
	M24 x 3	GT1PM-NRS02430	1495,4	224,3	135	113	27	86	243	44	61	3,0	1,3
	M27 x 3	GT1PM-NRS02730	1495,4	224,3	135	113	27	86	243	44	64	3,0	1,2
	M30 x 3,5	GT1PM-NRS03035	1495,4	224,3	135	113	27	86	243	44	66	3,0	1,0
	5/8" - 11UN	GT1P-NRS0625U11	1495,4	224,3	135	113	27	86	243	44	57	3,0	1,6
	3/4" - 10UN	GT1P-NRS0750U10	1495,4	224,3	135	113	27	86	243	44	59	3,0	1,4
	7/8" - 9UN	GT1P-NRS0875U09	1495,4	224,3	135	113	27	86	243	44	62	3,0	1,3
1" - 8UN	GT1P-NRS1000U08	1495,4	224,3	135	113	27	86	243	44	64	3,0	1,2	
1 1/8" - 8UN	GT1P-NRS1125U08	1495,4	224,3	135	113	27	86	243	44	66	3,0	1,0	
GT2-LCB	M30 x 3,5	GT2PM-NRS03035	2677,2	401,5	136	111	35	107	226	41	75	4,1	2,6
	M33 x 3,5	GT2PM-NRS03335	2677,2	401,5	136	111	35	107	226	41	76	4,1	2,4
	M36 x 4	GT2PM-NRS03640	2677,2	401,5	136	111	35	107	226	41	79	4,1	2,2
	M39 x 4	GT2PM-NRS03940	2677,2	401,5	136	111	35	107	226	41	82	4,1	1,9
	1 1/8" - 8UN	GT2P-NRS1125U08	2677,2	401,5	136	111	35	107	226	41	74	4,1	2,6
	1 1/4" - 8UN	GT2P-NRS1250U08	2677,2	401,5	136	111	35	107	226	41	76	4,1	2,4
	1 3/8" - 8UN	GT2P-NRS1375U08	2677,2	401,5	136	111	35	107	226	41	79	4,1	2,2
	1 1/2" - 8UN	GT2P-NRS1500U08	2677,2	401,5	136	111	35	107	226	41	82	4,1	2,0

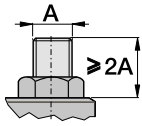
* Load Cell with tommy bar.

Topside Bolt Tensioners

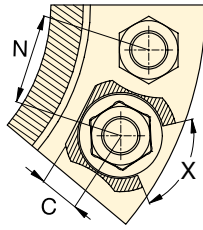


Thread and Pitch Sizes

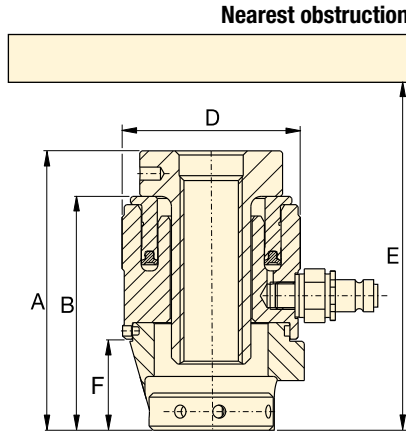
Contact Enerpac for different thread or pitch sizes. Alternative size adaptor kits can be supplied upon request.



Minimum Stud Protrusion



X = Minimum socket rotation 60°



GT Series



Bolt Range:

M16 - M105, 5/8" - 4"

Maximum Load Capacity at 1500 bar:

224 - 3958 kN

Stroke:

10 mm

Maximum Operating Pressure:

1500 bar

Load Cell * and Bridge Model Number	Thread Size	Adaptor Kit Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Dimensions (mm)							Load Cell and Bridge Weight (kg)	Adaptor Kit Weight (kg)
					A	B	C	D	E min.	F	N min.		
GT3-LCB	M39 x 4	GT3PM-NRS03940	5127,1	768,9	160	126	46	138	256	56	96	7,0	5,7
	M42 x 4,5	GT3PM-NRS04245	5127,1	768,9	160	126	46	138	256	56	98	7,0	5,4
	M45 x 4,5	GT3PM-NRS04545	5127,1	768,9	160	126	46	138	256	56	101	7,0	5,0
	M48 x 5	GT3PM-NRS04850	5127,1	768,9	160	126	46	138	256	56	104	7,0	4,7
	M52 x 5	GT3PM-NRS05250	5127,1	768,9	160	126	46	138	256	56	107	7,0	4,2
	1 1/2" - 8UN	GT3P-NRS1500U08	5127,1	768,9	160	126	46	138	256	56	95	7,0	5,7
	1 5/8" - 8UN	GT3P-NRS1625U08	5127,1	768,9	160	126	46	138	256	56	98	7,0	5,3
	1 3/4" - 8UN	GT3P-NRS1750U08	5127,1	768,9	160	126	46	138	256	56	101	7,0	5,0
1 7/8" - 8UN	GT3P-NRS1875U08	5127,1	768,9	160	126	46	138	256	56	104	7,0	4,6	
2" - 8UN	GT3P-NRS2000U08	5127,1	768,9	160	126	46	138	256	56	106	7,0	4,2	
GT4-LCB	M52 x 5	GT4PM-NRS05250	9782,1	1466,9	180	141	62	174	281	71	121	12,2	10,7
	M56 x 5,5	GT4PM-NRS05655	9782,1	1466,9	180	141	62	174	281	71	124	12,2	10,1
	M60 x 5,5	GT4PM-NRS06055	9782,1	1466,9	180	141	62	174	281	71	127	12,2	9,4
	M64 x 6	GT4PM-NRS06460	9782,1	1466,9	180	141	62	174	281	71	129	12,2	8,8
	M68 x 6	GT4PM-NRS06860	9782,1	1466,9	180	141	62	174	281	71	132	12,2	8,1
	2" - 8UN	GT4P-NRS2000U08	9782,1	1466,9	180	141	62	174	281	71	120	12,2	10,7
	2 1/4" - 8UN	GT4P-NRS2250U08	9782,1	1466,9	180	141	62	174	281	71	126	12,2	9,7
2 1/2" - 8UN	GT4P-NRS2500U08	9782,1	1466,9	180	141	62	174	281	71	132	12,2	8,5	
GT5-LCB	M68 x 6	GT5PM-NRS06860	15079,7	2261,4	202	157	78	210	302	86	148	18,7	17,3
	M72 x 6	GT5PM-NRS07260	15079,7	2261,4	202	157	78	210	302	86	149	18,7	16,4
	M76 x 6	GT5PM-NRS07660	15079,7	2261,4	202	157	78	210	302	86	152	18,7	15,5
	M80 x 6	GT5PM-NRS08060	15079,7	2261,4	202	157	78	210	302	86	155	18,7	14,6
	2 1/2" - 8UN	GT5P-NRS2500U08	15079,7	2261,4	202	157	78	210	302	86	148	18,7	17,8
	2 3/4" - 8UN	GT5P-NRS2750U08	15079,7	2261,4	202	157	78	210	302	86	153	18,7	16,3
	3" - 8UN	GT5P-NRS3000U08	15079,7	2261,4	202	157	78	210	302	86	158	18,7	14,8
3 1/4" - 8UN	GT5P-NRS3250U08	15079,7	2261,4	202	157	78	210	302	86	161	18,7	13,1	
GT6-LCB	M80 x 6	GT6PM-NRS08060	18972,1	2845,1	219	173	82	240	323	95	167	27,8	22,3
	M85 x 6	GT6PM-NRS08560	18972,1	2845,1	219	173	82	240	323	95	170	27,8	21,0
	M90 x 6	GT6PM-NRS09060	18972,1	2845,1	219	173	82	240	323	95	175	27,8	19,4
	M95 x 6	GT6PM-NRS09560	18972,1	2845,1	219	173	82	240	323	95	179	27,8	18,0
	3 1/4" - 8UN	GT6P-NRS3250U08	18972,1	2845,1	219	173	82	240	323	95	173	27,8	20,7
	3 1/2" - 8UN	GT6P-NRS3500U08	18972,1	2845,1	219	173	82	240	323	95	181	27,8	18,8
3 3/4" - 8UN	GT6P-NRS3750U08	18972,1	2845,1	219	173	82	240	323	95	188	27,8	16,8	
GT7-LCB	M100 x 6	GT7PM-NRS10060	26389,4	3958,4	243	182	89	277	332	110	196	38,2	28,5
	M105 x 6	GT7PM-NRS10560	26389,4	3958,4	243	182	89	277	332	110	199	38,2	27,3
	4" - 8UN	GT7P-NRS4000U08	26389,4	3958,4	243	182	89	277	332	110	204	38,2	27,3

* Load Cell with tommy bar.

▼ Aquajack® Tensioner EAJ2LC with Quick Fastening Nut



- Compact design
- Long piston stroke
- Misalignment compensation
- Quick, simple hose connection
- Visible piston stroke indication
- 'No spill' overstroke elimination
- Quick fastening or solid reaction nut.

▼ Guaranteed to save time and increase efficiency, Aquajack® tensioners improve diver safety, productivity and reduce diver fatigue.



The most cost effective solution to subsea bolt or stud tightening



Quick Fastening Nut Design

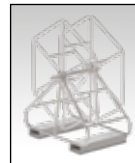
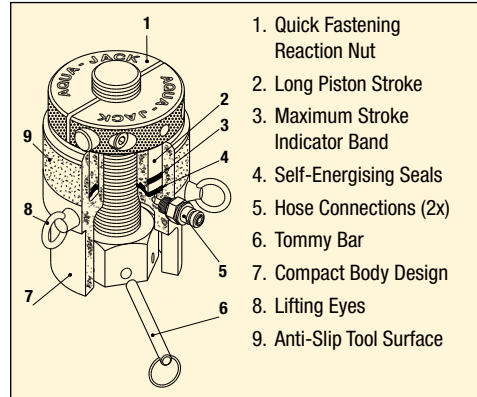
Easily positioned in poor visibility conditions, Aquajack® subsea tensioners feature a compact design and long piston stroke.

The unique Split Nut® design of these tools allows rapid application to long bolts and damaged threads, and rapid tool removal.



No Oil Spillage or Over-Stroking

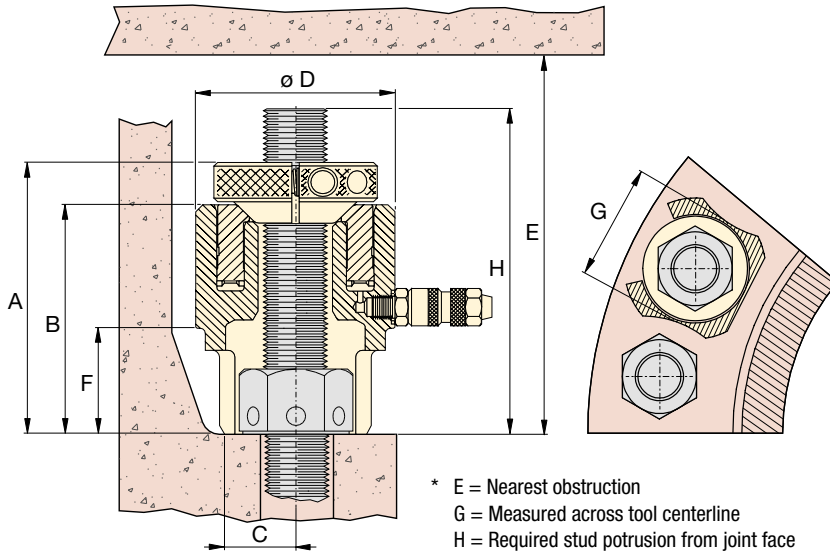
Innovative tool design ensures maximum tool strokes can be used without over stroking the piston or oil spillage. Guaranteed to save time and increase efficiency, Aquajack® subsea tensioners improve diver safety, productivity and reduce diver fatigue.



Hose Reels and Stand

Stainless steel stand with 1500 bar hoses from 30 upto 270 metres lengths. All hose reels are built up with multiple 30 metres length hoses.

Aquajack® Subsea Tensioners



EAJ Series



Bolt Range:

M20 - M90 | 3/4 - 3 1/2 inch

Maximum Load Capacity:

151,3 - 2320,9 kN

Maximum Operating Pressure:

1500 bar

Load Cell Model Number **	Thread Size	Quick Fastening Nut Model Number	Cylinder Effective Area (mm ²)	Maximum Load Capacity (kN)	Stroke (mm)	Dimensions (mm)								Tool Weight (kg)
						A	B	C	D	E*	F	G*	H*	
EAJ1LC	3/4" - 10 UN	EAJ1QFN0750U10	1008,7	151,3	20	114	91	19	66	217	35	53	119	1,5
	7/8" - 9 UN	EAJ1QFN0875U09												
	M20 x 2,5	EAJ1QFNM02025												
	M22 x 2,5	EAJ1QFNM02225												
EAJ2LC	1" - 8 UN	EAJ2QFN1000U08	1658,4	248,7	30	147	120	25	82	289	50	62	152	3,0
	M24 x 2,5	EAJ2QFNM02425												
	M27 x 3,0	EAJ2QFNM02730												
	1 1/8" - 8 UN	EAJ2QFN1125U08												
EAJ3LC	M30 x 3,5	EAJ2QFNM03035	2524,3	378,6	30	158	131	28	98	307	58	78	163	4,5
	1 1/4" 8 UN	EAJ3QFN1250U08												
	M33 x 3,5	EAJ3QFNM03335												
	1 3/8" - 8 UN	EAJ3QFN1375U08												
EAJ4LC	M36 x 3,5	EAJ3QFNM03635	3686,7	553,0	30	171	136	33	114	319	63	91	176	6,0
	1 1/2" - 8 UN	EAJ4QFN1500U08												
	M39 x 4,0	EAJ4QFNM03940												
	1 5/8" - 8 UN	EAJ4QFN1625U08												
EAJ5LC	M42 x 4,5	EAJ4QFNM04245	5908,7	886,3	30	184	146	40	139	342	70	114	189	9,0
	1 3/4" - 8 UN	EAJ5QFN1750U08												
	M45 x 4,5	EAJ5QFNM04545												
	1 7/8" - 8 UN	EAJ5QFN1875U08												
	M48 x 5,0	EAJ5QFNM04850												
EAJ6LC	2" - 8 UN	EAJ5QFN2000U08	8312,8	1246,9	30	201	161	49	164	367	82	138	206	13,0
	M52 x 5,0	EAJ5QFNM05250												
	M56 x 5,5	EAJ6QFNM05655												
	2 1/4" - 8 UN	EAJ6QFN2250U08												
	M60 x 5,5	EAJ6QFNM06055												
EAJ7LC	2 1/2" - 8 UN	EAJ6QFN2500U08	12.369,0	1855,4	30	230	178	75	192	400	95	154	235	19,0
	M64 x 6,0	EAJ6QFNM06460												
	M68 x 6,0	EAJ7QFNM06860												
	2 3/4" - 8 UN	EAJ7QFN2750U08												
EAJ8LC	M72 x 6,0	EAJ7QFNM07260	15.473,0	2320,9	30	247	193	68	216	412	109	182	252	24,5
	M76 x 6,0	EAJ7QFNM07660												
	3" - 8 UN	EAJ7QFN3000U08												
	M80 x 6,0	EAJ8QFNM08060												
	3 1/4" - 8 UN	EAJ8QFN3250U08												
M85 x 6,0	EAJ8QFNM08560													
M90 x 6,0	EAJ8QFNM09060													

** Tommy Bar included with Load Cell.

▼ PGT-Series Single Stage and Double Deck Tensioners



High Precision, Low Maintenance



Tensioning Pumps

Electric, pneumatic and manual high-pressure tensioning pumps are available for use with Enerpac hydraulic tensioners.



Hoses and Fittings

High-pressure hoses and fittings for use with Enerpac tensioning systems are available.

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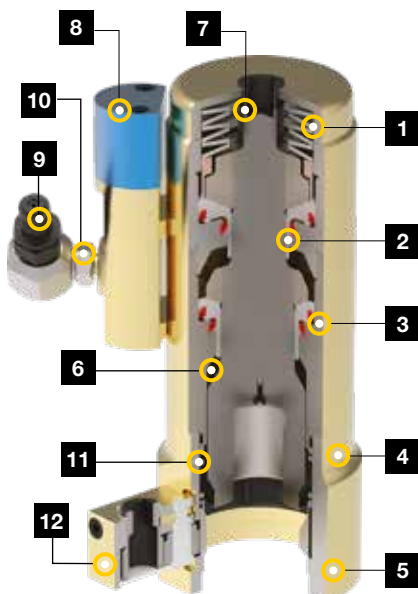
- PGT-Series Bolt Tensioners are designed for critical fastening applications in wind, steam and gas turbines
- A broad range of single stage and double deck tensioners provide high performance in tight spaces associated with Power Generation applications
- PGT-Series Bolt Tensioners are loaded with performance enhancing features such as Auto-Retract Pistons, Cycle Counters and a premium coating to offer the ultimate in efficiency, durability and ease of use.

Description	PGTS Single Stage	PGTD Double Deck
Auto-Retract Piston	✓	✓
Zinc Coating	✓	✓
Geared Nut-Run-down	✓	✓
Over-stroke Indicator	✓	✓
Over-stroke Preventer	✓	✓
Single Male Fitting	✓	✓
Swivel Manifold	+	+
Cycle Counter	-	+

✓ = Standard on tensioner

⊕ = Possible option

- = Option not available



1. **Auto-retract piston:** Simplifies use and improves speed of operation.
2. **Long-life puller:** For maximum durability.
3. **Long-life seals:** For maximum durability and extended service life intervals.
4. **Corrosion protection:** Zinc coating provides best-in-class corrosion resistance.
5. **Interchangeable bridge:** For optimal application fit.
6. **Over-stroke preventer:** Mechanically prevents over-stroke, extending cylinder life.
7. **Over-stroke indicator:** Extends cylinder life by helping to prevent over-stroking of cylinder.
8. **Optional counter:** Helps indicate when maintenance is due to maximize uptime.
9. **Quick-disconnect coupler:** For safe, simple hydraulic connection.
10. **Optional 360° swivel:** available for additional hose positioning flexibility.
11. **Spring-loaded nut engagement:** Keeps socket positioned on nut for faster and easier seating process.
12. **Gearbox:** for nut run down. Easy and quick nut run down back to the flange

▲ The model above illustrates a typical tool configuration.
Actual model configurations vary.

Power Generation Bolt Tensioners



Options

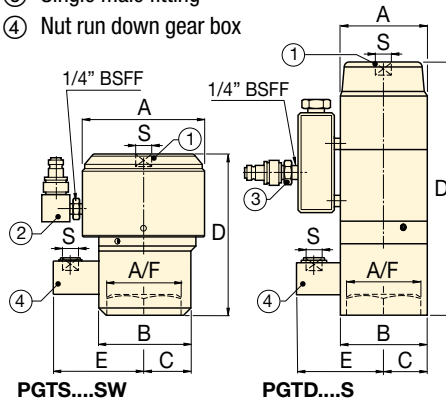
Fitting Type

SW = Swivel manifold with single male fitting
Example: **PGTS2436SW**

Cycle-Counter

C = Cycle Counter (not available on PGTS-models)
Example: **PGTD3655SWC**

- ① Puller bar square drive
- ② Swivel manifold with single male fitting
- ③ Single male fitting
- ④ Nut run down gear box



PGT Series



Bolt Range:

M20 - M72

Maximum Load Capacity:

203,7 - 2969,6 kN

Maximum Operating Pressure ¹⁾:

1350 - 1500 bar

¹⁾ Max. pressure varies, see specifications table for details.

Tensioner Type	Thread Diameter (mm)	Model Number with single male fitting	Nut Size A/F (mm)	Maximum Pressure (bar)	Hydraulic Pressure Area (mm ²)	Maximum Load Capacity (kN)	Stroke (mm)	Dimensions (mm)						Bolt Potrusion (mm)		
								A	B	C	D	E	S* (inch)		min.	max.
Single Stage	M20 x 2,5	PGTS2030S	30	1500	1358	203,7	7,0	64	64	32	81	78	3/8	2,0	44	55
	M24 x 3,0	PGTS2436S	36	1500	1947	292,1	7,0	77	77	31	98	81	3/8	2,9	49	62
	M27 x 3,0	PGTS2742S	42	1500	2646	396,9	8,0	92	75	34	129	83	3/8	4,8	60	70
	M30 x 3,5	PGTS3046S	46	1500	3204	480,7	8,0	99	85	38	134	88	3/8	5,8	68	73
	M33 x 3,5	PGTS3350S	50	1500	3960	594,0	8,0	106	90	40	142	90	3/8	6,8	75	100
	M36 x 4,0	PGTS3655S	55	1500	4467	670,1	9,0	111	90	56	128	95	1/2	6,4	71	95
	M39 x 4,0	PGTS3960S	60	1500	5561	834,1	10,0	123,5	104	46	160	96	3/8	9,8	89	115
	M42 x 4,5	PGTS4265S	65	1500	6259	938,8	10,0	134	115	67	177	99	1/2	9,5	79	115
	M45 x 4,5	PGTS4570S	70	1500	7505	1125,8	10,0	143	119	53	168	102	3/8	13,2	98	116
	M48 x 5,0	PGTS4875S	75	1500	8390	1258,4	10,0	152	125	56	158	106	3/8	13,3	103	119
	M52 x 5,0	PGTS5280S	80	1500	10.094	1514,1	10,0	165	134	59	171	108	3/8	17,9	106	118
	M56 x 5,5	PGTS5685S	85	1500	11.663	1749,5	10,0	177	142	62	170	112	3/8	20,4	116	128
	M60 x 5,5	PGTS6090S	90	1500	13.474	2021,2	10,0	190	152	66	186	115	3/8	24,8	123,5	137
	M64 x 6,0	PGTS6495S	95	1500	15.315	2297,3	10,0	200	159	69	207	118	1/2	30,7	137	150
M68 x 6,0	PGTS68100S	100	1500	17.493	2623,9	10,0	213,5	169	73	206	123	1/2	34,3	136	148	
M72 x 6,0	PGTS72105S	105	1500	19.797	2969,6	10,0	225	178	76	223	126	1/2	40,3	151	167	
Double Deck	M24 x 3,0	PGTD2436S	36	1350	2293	309,6	6,0	61,5	77	31	185	81	3/8	4,6	53	59,5
	M27 x 3,0	PGTD2742S	42	1350	2939	396,8	6,0	68	75	34	196	83,4	3/8	5,3	60	68
	M30 x 3,5	PGTD3046S	46	1350	3426	462,6	7,0	73	85	37	195	88	3/8	5,8	60	70
	M33 x 3,5	PGTD3350S	50	1350	4272	576,7	7,0	78	77	38,5	208	90	3/8	6,7	65	77
	M36 x 4,0	PGTD3655S	55	1350	4995	674,3	8,0	84	83	41	218	93	1/2	7,7	70	87
	M39 x 4,0	PGTD3960S	60	1350	6260	845,0	10,0	95	104	48	266	96	3/8	12,5	84	93
	M42 x 4,5	PGTD4265S	65	1350	6865	926,8	10,0	98	104	52	248,4	99	1/2	11,4	82	91
	M45 x 4,5	PGTD4570S	70	1350	8339	1125,8	10,0	108	119	53	294	104	3/8	17,7	97	107
	M48 x 5,0	PGTD4875S	75	1350	9430	1273,1	10,0	115	125	57,5	304	106	3/8	20,1	103	113
	M52 x 5,0	PGTD5280S	80	1350	11.288	1523,8	10,0	124	134	61	328	108	3/8	26,1	110	125,5
	M56 x 5,5	PGTD5685S	85	1350	12.942	1747,1	10,0	132	142	65	346	112	3/8	30,0	117	132,5
	M60 x 5,5	PGTD6090S	90	1350	15.032	2029,3	10,0	141	152	70,5	372	115	3/8	37,2	125	143
	M64 x 6,0	PGTD6495S	95	1350	17.123	2311,6	10,0	151	159	76	386	119	1/2	43,0	133	152,5
	M68 x 6,0	PGTD68100S	100	1350	19.514	2634,4	10,0	160	170	80	398	123	1/2	49,5	138	160
M72 x 6,0	PGTD72105S	105	1350	21.977	2966,9	10,0	171	177	88,5	429	126	1/2	60,1	146	171	

* Dimension S = Square Drive of Puller Bar and Gear Box.

▼ FTR-Series, Foundation Bolt Tensioners Round



- **FTR-Series Foundation Bolt Tensioners provide fast, accurate and easy tightening of external or internal-ring wind tower foundations**
- **Standard models are available for 75, 150 ksi and metric style Williams, Dyson and Macalloy® bar types**
- **Long-stroke options accelerate process with single-pull tensioning.**

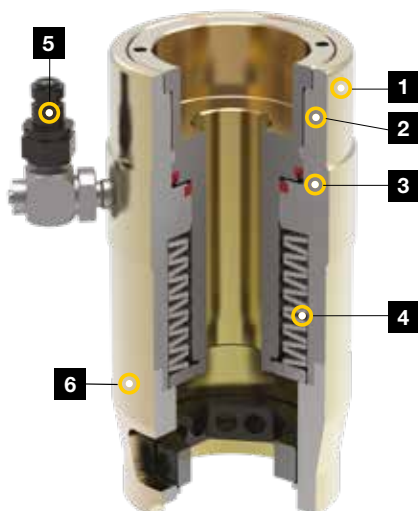
High Precision, Low Maintenance



FTR-Series Foundation Bolt Tensioners

FTR-Series Foundation Bolt Tensioners are designed specifically for tensioning wind tower foundation bolts. These tensioners provide the speed and precision required by this critical application. Potential thread fit problems are eliminated through the use of existing rebar hex nuts as a reaction point.

The FTR-Series includes long-stroke models, which provide greater speed and ease of use by enabling applications to be completed in a single pull.



1. **Corrosion protection:** Zinc coating provides best-in-class corrosion resistance.
2. **Over-stroke indicator:** Extends life by helping to prevent over-stroking of cylinder.
3. **Long-life seals:** For maximum durability and extended service life intervals.
4. **Auto-retract piston:** Simplifies use and improves speed of operation.
5. **Quick-disconnect coupler:** For safe, simple hydraulic connection. Optional 360° swivel available for additional hose positioning flexibility.
6. **Interchangeable bridge:** For optimal application fit.

▼ *FTR-Series Foundation Bolt Tensioner. Manual wrench (not included) required to apply up to 30 Nm of torque during installation of models that feature run down gears.*



Foundation Bolt Tensioners

▼ This is how a FTR-Series Foundation Bolt Tensioner model number is built up:



1 Product Type

FTR = Foundation Tensioner, Round

2 Bar Grade

75 = 75 ksi
150 = 150 ksi
 (or metric designation)

3 Bar Size Designation

Example
14 = No. 14 bar size

4 Maximum Stroke

Example:
20 = 20 mm max. stroke

5 Fitting Type

SW = Includes swivel manifold with single male fitting

6 Run Down Gear

G = Includes Nut Run Down Gear
 * available in select models

FTR Series



Maximum Load Capacity:

2736 kN

Maximum Operating Pressure ¹⁾:

1500 bar

¹⁾ Max. pressure varies, see specifications table for details.



Tensioning Pumps

Electric, pneumatic and manual high-pressure tensioning pumps are available for use with Enerpac hydraulic tensioners.

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Hoses and Fittings

High-pressure hoses and fittings for use with Enerpac tensioning systems are available.

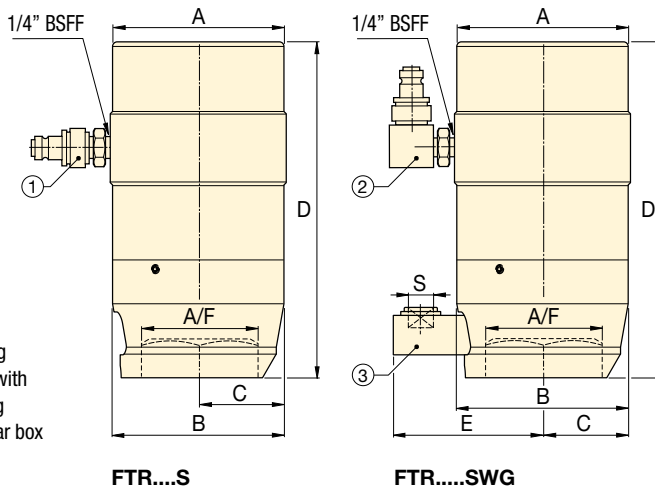
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Bolting Integrity Software

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application data sheet and Joint completion report. Custom Joint information can also be entered.

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- ① Single male fitting
- ② Swivel manifold with single male fitting
- ③ Nut run down gear box

▼ SPECIFICATION TABLE

Bar Grade	Bolt Diameter		Bar Size Designation	Model Number with single male fitting	Nut Size A/F	Max. Pressure	Hydraulic Pressure Area	Max. Load Capacity	Stroke	Dimensions (mm)					Minimum Bolt Potrusion	
	(mm)	(inch)								A	B	C	D	E		(kg)
75 ksi	35	1.38	#10	FTR751010S	51	1200	3134	376,1	10,0	99	88,5	44,3	163	–	5,8	200
	35	1.38	#10	FTR751025S	51	1200	3123	374,8	25,0	115	102	42	220	–	10,9	250
	38	1.50	#11	FTR751110S	57	1500	3134	470,1	10,0	99	98	38	178	–	5,5	220
	38	1.50	#11	FTR751125SG	57	1500	3123	468,5	25,0	115	102	51	226	96	11,5	260
	48	1.88	#14	FTR751420S	70	1170	6093	712,9	20,0	132	132	66	268	–	18,2	315
150 ksi	37	1.44	1.25	FTR15012510S	57	1170	5383	629,8	10,0	111	110	40	178	–	8,2	220
	40	1.56	1.37	FTR15013810S	64	1500	5383	807,5	10,0	111	110	38	178	–	8,1	225
	70	2.75	2.50	FTR15025025S	108	1500	18.238	2736,0	25,4	215	212	86	348	–	58,0	450
10.9	36	1.42	36	FTR1093610SG	60	1500	3820	573,0	10,0	102	99	40	176	95	8,6	195

Gear box square drive dimension S = 1/2 inch.

▼ FTE-Series, Foundation Bolt Tensioner Elliptical



- **FTE-Series Foundation Bolt Tensioners provide fast and accurate performance in difficult, narrow access foundation tensioning applications**
- **Standard models are available for 75, 150 ksi and metric style Williams, Dyson and Macalloy® bar types**
- **Ideal universal solution that fits both standard and narrow access applications.**

High Precision, Low Maintenance



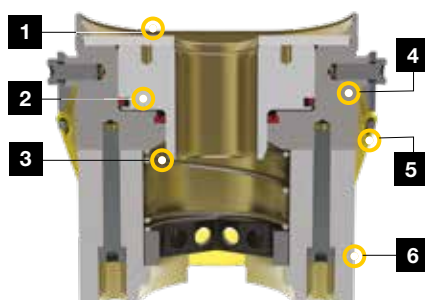
FTE-Series, Foundation Bolt Tensioners

Similar to Standard Foundation Tensioners, Elliptical tensioners were designed specifically for foundation fastening applications on wind towers, and utilize the existing hex nut as a reaction point in order to eliminate thread fit misalignment.

Unlike standard FTR-Series Tensioners, the FTE-Series Tensioners feature an elliptical geometry, which enables fit in narrow access foundation applications, without reducing load capabilities.

Operators may access the nut with a Tommy bar rather than employing the use of an offset rundown gear.

Elliptical tensioners are ideal for close clearance applications, or as a universal tool that will work in nearly any foundation application, whether standard or narrow access.



1. **Maximum stroke Indicator:** Extends life by helping to prevent over-stroking of cylinder.
2. **Long-life seals:** For maximum durability and extended service life intervals.
3. **Auto-retract piston:** Simplifies use and improves speed of operation.
4. **Elliptical form:** Provides access to close clearance applications.
5. **Corrosion protection:** Zinc coating provides best-in-class corrosion resistance.
6. **Quick-disconnect coupler:** (*not shown*) For safe, simple hydraulic connection. Optional 360° swivel available for additional hose positioning flexibility.

▼ *FTE-Series, Foundation Bolt Tensioner, designed to fit both standard and narrow access foundation applications.*



Foundation Bolt Tensioners, Elliptical

▼ This is how a FTE-Series Foundation Bolt Tensioner model number is built up:



1 Product Type

FTE = Foundation Tensioner, Elliptical

2 Bar Grade

75 = 75 ksi
150 = 150 ksi
 (or metric designation)

3 Bar Size Designation

Example
10 = No. 10 bar size

4 Fitting Type

SW = Includes swivel manifold with single male fitting

FTE Series



Maximum Load Capacity:

761,1 kN

Maximum Operating Pressure ¹⁾:

1500 bar

¹⁾ Max. pressure varies, see specifications table for details.



Tensioning Pumps

Electric, pneumatic and manual high-pressure tensioning pumps are available for use with Energpac hydraulic tensioners.

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Hoses and Fittings

High-pressure hoses and fittings for use with Energpac tensioning systems are available.

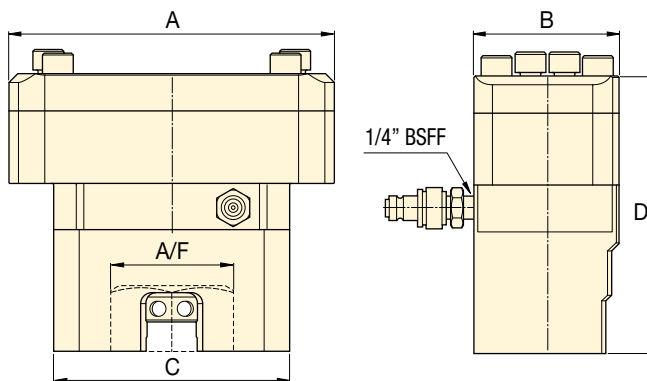
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Bolting Integrity Software

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application data sheet and Joint completion report. Custom Joint information can also be entered.

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▼ SPECIFICATION TABLE

Bar Grade	Bolt Diameter		Bar Size Designation	Model Number with single male fitting	Nut Size A/F	Max. Pressure	Hydraulic Pressure Area	Max. Load Capacity	Stroke	Dimensions (mm)				Minimum Bolt Potrusion	
	(mm)	(inch)								A	B	C	D		(kg)
75 ksi	35	1.38	#10	FTE7510S	51	1200	3108	373,0	10,0	170	82	142	147,5	8,3	200
	38	1.50	#11	FTE7511S	57	1500	3108	466,2	10,0	170	82	142	147,5	8,3	200
150 ksi	40	1.56	1.375	FTE150138S	64	1500	5074	761,1	10,0	222	99	161	203,4	18,5	230
	37	1.44	1.250	FTE150125S	57	1200	5074	608,9	10,0	222	99	161	203,4	18,9	240
8.8	36	1.42	36	FTE8836S	60	1500	3108	466,2	10,0	142	82	142	147,5	9,7	180

▼ HPT1500



HPT Series

Reservoir Capacity:

2,5 litres

Flow at Rated Pressure:

0,61 cm³/stroke

Maximum Operating Pressure:

1500 bar



Applications

The hand pump is ideally suited for use with hydraulic bolt tensioning tools and hydraulic nuts.

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- Lightweight and portable high-pressure hand pump
- Two-speed operation displaces a larger volume of oil per stroke, reducing cycle times for many testing applications
- Includes a pressure gauge and coupler for direct connection to Enerpac Bolt Tensioners
- Integrated relief valve set at 1500 bar.



Ultra-high pressure

This pump operates at ultra-high pressure, use only the specified fittings and hoses designed for these pressures.

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Bolt Tensioning Theory

See more on tensioning operation and procedures in our "Yellow Pages".

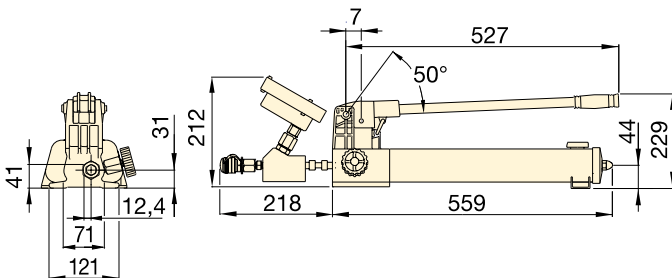
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Bolting Integrity Software

The software offers Tool selection, Bolt Load calculations and Tool pressure settings, as well as, a combined Application data sheet and Joint completion report. Custom Joint information can also be entered.

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1500 BAR ULTRA-HIGH PRESSURE PUMP

Pump Type	Useable Oil Capacity (litres)	Model Number	Pressure Rating (bar)		Oil Displacement per Stroke (cm ³)		High Pressure Oil Port with female coupler	(kg)
			1st stage	2nd stage	1st stage	2nd stage		
Two Speed	2,54	HPT1500	14	1500	16,22	0,61	1/4" BSPP + BR-150	9,0

Ultra-High Pressure Hoses & Couplers

- **Hose Reel and Stand:** Stainless steel stand with 1500 bar hoses from 30 upto 270 metres lengths
- All hose reels are built up with multiple 30 metres length hoses
- Wide offering of hoses and system components to complete your tensioning system
- Can be used for subsea fastening systems
- Hoses can be inter-connected in multi-tool set-ups using nipples, couplers, T-pieces and Y-Pipe assemblies.

HT, B Series



Hose Lengths:

1 - 30 metres

Hose Reel & Stand:

30 - 270 metres

Maximum Operating Pressure:

1500 bar

1500 BAR HOSE REEL & STANDS

Model Number		Stainless Steel Hose Reels with Stand (Hose with Female Half BR150 and Male Half BH150 couplers)
HT1500RS		Reel & Stand Assembly, No Fittings
HT1500HRS		Hose Reel & Stand, No Hose
HT1510HRS		Hose Reel & Stand, with 30 m hose
HT1520HRS		Hose Reel & Stand, with 60 m hose
HT1530HRS		Hose Reel & Stand, with 90 m hose
HT1540HRS		Hose Reel & Stand, with 120 m hose
HT1550HRS		Hose Reel & Stand, with 150 m hose
HT1560HRS		Hose Reel & Stand, with 180 m hose
HT1570HRS		Hose Reel & Stand, with 210 m hose
HT1590HRS		Hose Reel & Stand, with 270 m hose



▲ Inter-connected with HT-Series hoses Enerpac subsea tensioners apply uniform bolt load.

1500 BAR HOSES

Model Number		Hose End 1	Hose End 2	Length (m)
HT1503		1/4" BSPM 120° Cone	1/4" BSPM 120° Cone	1,0
HT1510		1/4" BSPM 120° Cone	1/4" BSPM 120° Cone	3,0
HT15100		1/4" BSPM 120° Cone	1/4" BSPM 120° Cone	30,0
HT1503HR *		BH150	BR150	1,0
HT1506HR *		BH150	BR150	1,8
HT1510HR *		BH150	BR150	3,0
HT1520HR *		BH150	BR150	6,1
HT15100HR *		BH150	BR150	30,0
HT1503RR *		BR150	BR150	1,0
HT1506RR *		BR150	BR150	1,8
HT1510RR *		BR150	BR150	3,0
HT1520RR *		BR150	BR150	6,1

* Includes dust caps.

H = Male Nipple (BH150); R = Female Coupling (BR150)

1500 BAR COUPLERS

Description (includes dust caps)		Complete Set	Female Half	Male Half
Quick Disconnect Coupler		B150	BR150	BH150
Quick Disconnect Coupler & Adaptor Kit		BW150AW	-	-
Quick Disconnect Blanking Coupler Set		B150B	BR150B	BH150B

1500 BAR T-PIECES

Model Number	shown HT15TPMMF	End 1	End 2	End 3
HT15TPMMF		1x BH150	1x BH150	1x BR150
HT15TPMMM		1x BH150	1x BH150	1x BH150

1500 BAR Y-PIPE ASSEMBLIES

Model Number	shown HT1506YTPMMF	End 1 Hose	End 2 Hose	End 3 T-Piece
HT1506YTPMMF		HT1506HR	HT1506HR	HT15TPMMF
HT1510YTPMMF		HT1510HR	HT1510HR	HT15TPMMF
HT1506YTPFMF		HT1506RR	HT1506RR	HT15TPMMM
HT1510YTPFMF		HT1510RR	HT1510RR	HT15TPMMM

Y-Pipe Assembly: 1+2 = adaptor; 3 = stainless steel T with 1/4" BSPM
4 = Male Nipple (BH150); 5 = Female Coupling (BR150); 6 = Hose

▼ ZUTP1500SE-H



- Solenoid-operated valve with 6 m pendant for remote control of valve and one-man operation
- Easily accessible manual override valve to release pressure if power is lost
- Safety relief valve limits output pressure
- Two-stage pump design provides high flow at low pressure for fast system fills and controlled flow at high pressure for accurate operation
- 1,25 kW heavy-duty universal motor provides the best performance-to-weight ratio
- Replaceable 10 micron reservoir breather and inline high pressure filter helps maintain oil cleanliness for optimum performance
- Panel-mounted 153 mm pressure gauge, with polycarbonate cover, is set into the protective metal shroud for improved visibility.

ZUTP Series

Reservoir Capacity:

4,0 litres

Flow at Rated Pressure:

0,33 l/min

Motor Size:

1,25 kW

Maximum Operating Pressure:

1500 bar



ZUTP-Tensioning Pumps

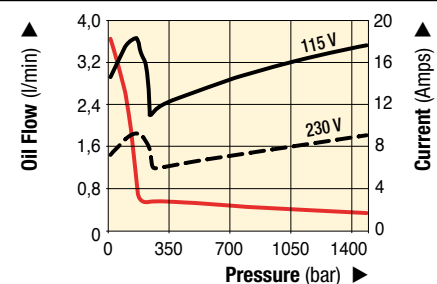
ZUTP-pumps achieve high pressure without the need for an intensifier.

This allows for low maintenance, resulting in less cost for the end-user.

ZUTP-S with Solenoid Valve

The ZUTP1500S with pendant-operated solenoid valve is ideal for multiple bolt tensioning applications as it allows for single-person operation. The operator can pressurize and depressurize the tensioner directly from the pendant.

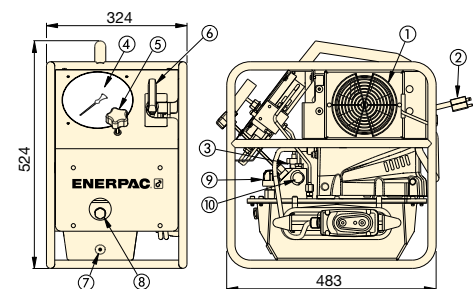
OIL FLOW VERSUS PRESSURE



1500 bar HIGH PRESSURE PUMP

Useable Oil Capacity (litres)	Valve Type	Model Number ¹⁾	Pressure Rating (bar)	Output Flow Rate (l/min)		1,25 kW Motor ⁵⁾ (VAC, 1-ph, 50 Hz)	Weight (kg)
				0 bar	1500 bar		
4,0	Solenoid	ZUTP1500SB	1500	3,80	0,33	115	29,5
		ZUTP1500SE ²⁾				230 ²⁾	
		ZUTP1500SI ³⁾				230 ³⁾	
4,0	Solenoid	ZUTP1500SB-H ⁴⁾	1500	3,80	0,33	115	34,0
		ZUTP1500SE-H ^{2) 4)}				230 ²⁾	
		ZUTP1500SI-H ^{3) 4)}				230 ³⁾	
4,0	Jog	ZUTP1500B	1500	3,80	0,33	115	29,5
		ZUTP1500E ²⁾				230 ²⁾	
		ZUTP1500I ³⁾				230 ³⁾	

¹⁾ All models meet CE safety requirements and all TÜV requirements.
²⁾ European plug and CE EMC directive compliant.
³⁾ With NEMA 6-15 plug. ⁴⁾ H = with heat exchanger.
⁵⁾ Sound level 89 dBA.



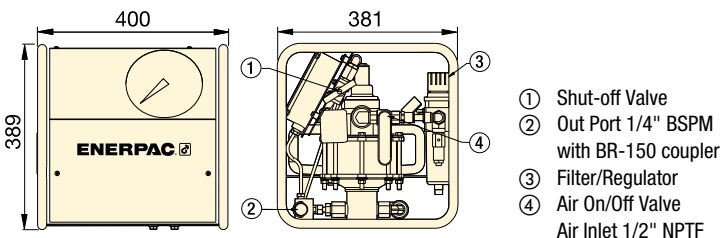
- ① Heat Exchanger (optional)
- ② Power Cord
- ③ Solenoid Dump Valve
- ④ Pressure Gauge
- ⑤ User Adjustable Relief Valve
- ⑥ Manual Release Valve
- ⑦ Oil Drain
- ⑧ Oil Level Sight Glass
- ⑨ Breather
- ⑩ Outlet Port with CEJN Coupler (116 Series)

Ultra-High Pressure Air Pump


▼ ATP1500



- General purpose, high pressure air driven two speed pump unit for products requiring up to 1500 bar hydraulic pressure
- Compact, lightweight, rugged steel frame for protection and easy handling
- Prelubricated pump element, does not require an airline lubricator
- Easily adjustable output pressure control
- Integrated and protected easy to read glycerin filled gauge
- Safety relief valve limits output pressure.



1500 bar HIGH PRESSURE AIR PUMP

Pump Type	Useable Oil Capacity (litres)	Pressure Rating (bar)	Model Number	Output Flow Rate at 0 bar (l/min)	Output Flow Rate at 1500 bar (l/min)	Air Pressure Range (bar)	Air Consumption (l/min)	Sound Level (dBA)	 (kg)
Two speed	3,8	1500	ATP1500	0,43	0,07	5,5 - 6,2	594	70	32

ATP Series

Reservoir Capacity:
3,8 litres

Flow at Rated Pressure:
0,07 l/min

Maximum Operating Pressure:
1500 bar



Ultra-high pressure

This pump operates at ultra-high pressure, use only the specified fittings and hoses designed for these pressures.

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Applications

The ATP-pump is ideally suited for use with hydraulic bolt tensioning tools and hydraulic nuts.



ATEX Certified

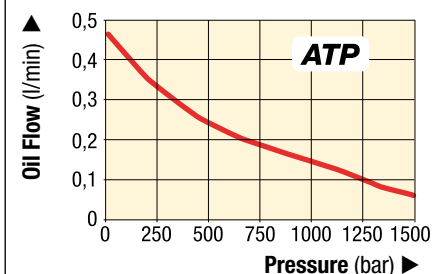
The ATP-Pump is tested and certified according ATEX.

 II 2 GD ck T4

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OIL FLOW VERSUS PRESSURE

Flow (l/min) at 6,2 bar air input



Tensioning every single stud in a joint simultaneously



▲ *Multi Stud Tensioning Set-Up.*

MULTI STUD TENSIONERS

Enerpac Multi Stud Tensioning (MST) systems are capable of tensioning every single stud in a joint simultaneously. By applying a predictable and accurate pre-load to all studs, problems associated with conventional bolt tightening techniques are avoided. Typical Enerpac Multi Stud Tensioning applications include:

Manway, Hand Hole & Inspection Covers

MST systems are the fastest and most accurate means of loosening and tightening studs on Primary & Secondary Manway Covers, Hand-Hole and Inspection Ports in nuclear facilities. Using special ram areas and strong lightweight materials, the MST's reduce bolting time by as much as 75%.

Coolant Pump

A custom slimline tensioning system for a Nuclear Reactor Coolant Pump, using six equally spaced tensioners and tightening studs in four passes, has reduced bolting times by 25% and significantly increased tensioning accuracy.

Wind Turbine Blade Assembly

Using an Enerpac MST has allowed wind turbine blade assembly times to be reduced by approx. 65% while bolt load accuracy and consistency have improved, resulting in better joint life and reduced maintenance requirements. The MST, comprising four tool segments, is capable of simultaneously tensioning up to 88 bolts connecting a 125 ft long blade to a bearing slew ring.

MST - Multi Stud Tensioners

This tool can be custom-designed, and built, for virtually any nuclear facility. We specialise in addressing difficult projects that demand accurate loads within tight space envelopes, while also seeking ease of operation and performance.

- Designed in segments enabling the operator to easily and quickly connect each segment to the joint and link together to provide simultaneous loading.
- Very accurate and fast closure system for large tensioning applications on pumps, valves, and steam-generators, for example.
- For ease of handling on-site, Enerpac MST systems can be supplied with an integral lifting frame and trolley.



▲ *Multi Stud Tensioner.*



▲ *Multi Stud Tensioning application.*

A simple and effective method of tensioning large bolts in difficult to access areas



▲ Tensioning with hydraulic nuts.

HYDRAULIC NUTS

Enerpac hydraulic nuts (HN) are used in many process-critical bolting applications where the ease of installation and manpower time savings are substantial and on-going. Moreover, they eliminate many of the uncertainties of torque arising from friction, point loading and load scatter.

Enerpac Hydraulic Nuts are a simple and effective method of tensioning large bolts in difficult to access areas with insufficient space for standard tensioners. Typically used when installing and maintaining bolting systems, hydraulic nuts can replace both conventional hexagon nuts and standard round nuts providing a high and predictable degree of tensioning accuracy.

Threaded directly onto the stud, Enerpac hydraulic nuts apply a direct axial elongation by means of hydraulic force generated via the nut's integral hydraulic cylinder. The nut is held in place either by means of a top or bottom load retaining collar externally located on the nut or by the insertion of mechanical shims. Enerpac hydraulic nuts can be retrofitted to existing plant providing an accurate solution to mechanical jointing problems.

Benefits of Enerpac Hydraulic Nuts

- Highly Accurate & Repeatable Bolt Loads
- Ideal where space limitations prevent use of standard detachable tensioners
- Direct Axial Loading - No nut rotation required
- Multiple Nuts can be connected and tightened / loosened simultaneously
- Eliminates issues with friction
- Substantial time savings due to the quick set-up and hydraulic nuts remaining in-situ
- No stud or flange damage (Galling, Seizure)
- No need to change joint hardware – system works with existing studs
- Ideal when the tension in bolts needs to be checked regularly such as vibration loosening.

Enerpac hydraulic nut (HN) applications have included:

The Hydraulic Nut is a permanent fixture, replacing the conventional nut and retaining the high bolt load and extension in small space envelopes where there may not be sufficient space to use tensioners.

- Flange Clamps: Pipeline, Structural
- Turbines: Gas, Wind, Steam
- Pressure & Reactor Vessels
- Diesel Engines
- Nuclear Applications: Steam Generators
- Hydraulic and Mechanical Presses
- Heat Exchangers
- Pipeline Flanges, Valves and Control Systems
- Valves & Pumps
- Cranes – Slew Ring Bolts, Tower Cranes
- Shaft Couplings
- Mining: Grinders, Cutters, Earth Moving Equipment.



▲ Hydraulic nuts on a diesel engine.

▼ From left to right: **ATM4, ATM9, ATM2** (ATM9 shown without pump and hose)



- Enerpac ATM-Series tools rectify twist and rotational misalignment quickly, safely and without the need for an external power source
- Appropriate for use on most ANSI, API, BS and DIN flanges
- Reduces set-up time: no need for chains, pulleys or rigs
- Safety strap helps provide secure operation
- Can be installed and used in any position
- Stays stable in position under full load
- Portable, lightweight design enables easy transport and use, even in remote locations
- Each ATM-model contains a tool and kit box.

▼ The compact ATM2 is actuated by simply hand turning the crank.



The faster, simpler and safer way to align flanges



Adjustable Reach

The highly adjustable reach of the wing and drop leg on ATM4 and ATM9 allow precise alignment.



Gauge and Adaptor

The ATM9 includes P142 hand pump and HC7206C 1,8 m long hose. Enerpac recommend the use of the pressure gauge GP10S and gauge adaptor GA4 for easy mounting of the gauge onto your system or use GA456C Gauge Adaptor Assembly.

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TFA-Series Wind Turbine Tower Flange Alignment Tools

The TFA-Series Wind Turbine Tower Flange Alignment Tools have been developed to aid the alignment of large flanges on the inside of wind turbine towers during their assembly or installation.

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▼ The ATM9 is shown here with optional pressure gauge and gauge adaptor.



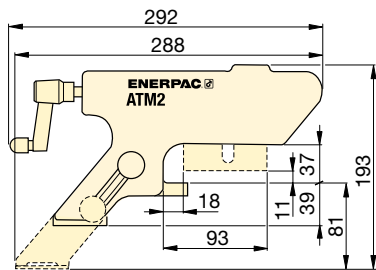
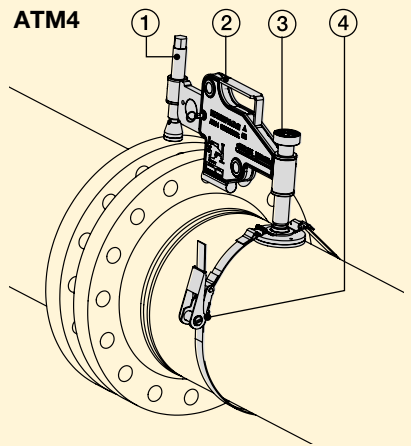


Applications

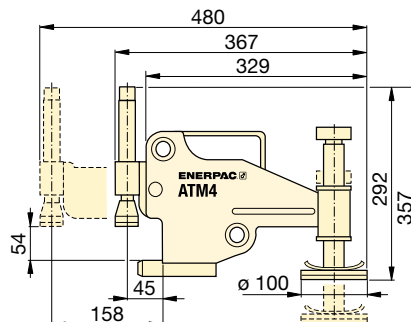
Enerpac ATM-Series Tools help correct flange misalignment, and allow bolts to be placed into joints. This alignment takes place during pipework construction, or maintenance.

These tools provide pipe installers and maintenance personnel with some of the simplest, safest and most productive solutions available for flange alignment in the market today.

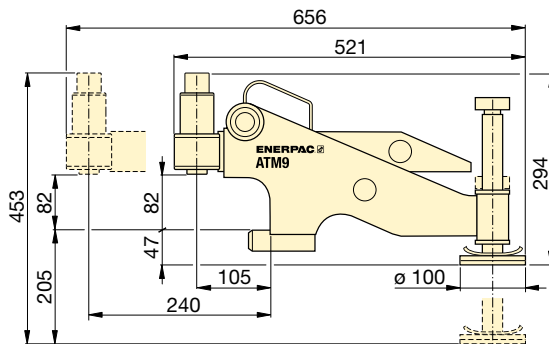
- ① Extendable wing provides usage on wide variety of flanges.
- ② Portable, light weight design enables easy transport and use.
- ③ Hand-adjustable base for easy positioning by a single operator.
- ④ Safety strap helps provide secure operation from a horizontal or vertical position.



ATM2



ATM4



ATM9

Maximum Lifting Force		Model Number	Minimum Bolt Size		Flange Wall Thickness		Weight (kg)
(ton)	(kN)		(mm)	(inch)	(mm)	(inch)	
1	10	ATM2	16	.63	14 - 82	.55 - 3.29	1,6
4	40	ATM4	24	.95	30 - 133	1.18 - 5.23	8,6
9	90	ATM9 *	35,5	1.40	93 - 228	3.66 - 9.00	14,5

* ATM9 includes an Enerpac hand pump and hydraulic hose (gauge and adaptor sold separately). ATM9 weight includes tool only.

ATM Series



Minimum Bolt Size:

16 - 35,5 mm

Flange Wall Thickness:

14 - 228 mm

Maximum Lifting Force:

1 - 9 ton (10 - 90 kN)



Cylinder-Pump Sets

Hydraulic cylinders, jacks and lifting wedges can also be used to assist in pipe line positioning and aligning.

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Pipe Flange Face Tool

The portable, hand powered tool FF120 makes even the hardest to reach pipe flanges resurfaceable in a safe and convenient way.

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▼ The ATM-Series – the faster, simpler and safer way to align flanges.



▼ FSC14, FSM8 and FSH14 with safety blocks SB1



- **Unique interlocking wedge design** no first step bending and risk of slipping out of joint
- **Requires very small access gap** of only 6 mm
- **Few moving parts** mean durability and low maintenance
- **Safety block SB1** included with FSC14, FSH14 and FSM8
- **Ratchet spanner SW22** included with FSM8 mechanical spreader
- **Singleacting cylinder** included with FSH14 hydraulic spreader.

▼ Two FSH14 spreaders used simultaneously with Enerpac handpump, hoses and AM21 control manifold.



Practical, portable and lightweight



FSC14 with integrated hand pump

Powered by a builtin hydraulic hand pump, the FSC14 is a readytouse tool – no making or breaking hydraulic connections. This compact tool delivers 14 US tons of force and requires a clearance gap as small as 6 mm.



Stepped Blocks FSB1

Use stepped blocks to increase wedge opening up to 80 mm. Fits both FSC, FSH and FSM models.



AM-Series Control Manifolds

For simultaneously and even spreading of flange joints, 180° apart with FSH14.

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Flange Maintenance Tools

Secure-Grip and Zero-Gap flange spreading tools for application on flanges with a zero or small gap.

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Flange Spreading Wedges



Flange Spreading Wedges

The flange spreading tools have been developed to aid and simplify the maintenance of flange joints. No longer will those tasked with separating flanges have to rely on using ropes and pulleys, podgers, tiffors, come-alongs or hammers – there is a safe, quick and effective alternative, the Enerpac range of spreaders.

These spreaders use mechanical and hydraulic principles for separating flanges and can spread small, medium or large flange joints. Tool selection is made on the basis of the access gap between the flange faces, the flange size and the required scope of work.

FSC, FSH, FSM Series



Tip Clearance / Maximum Spread ¹⁾:

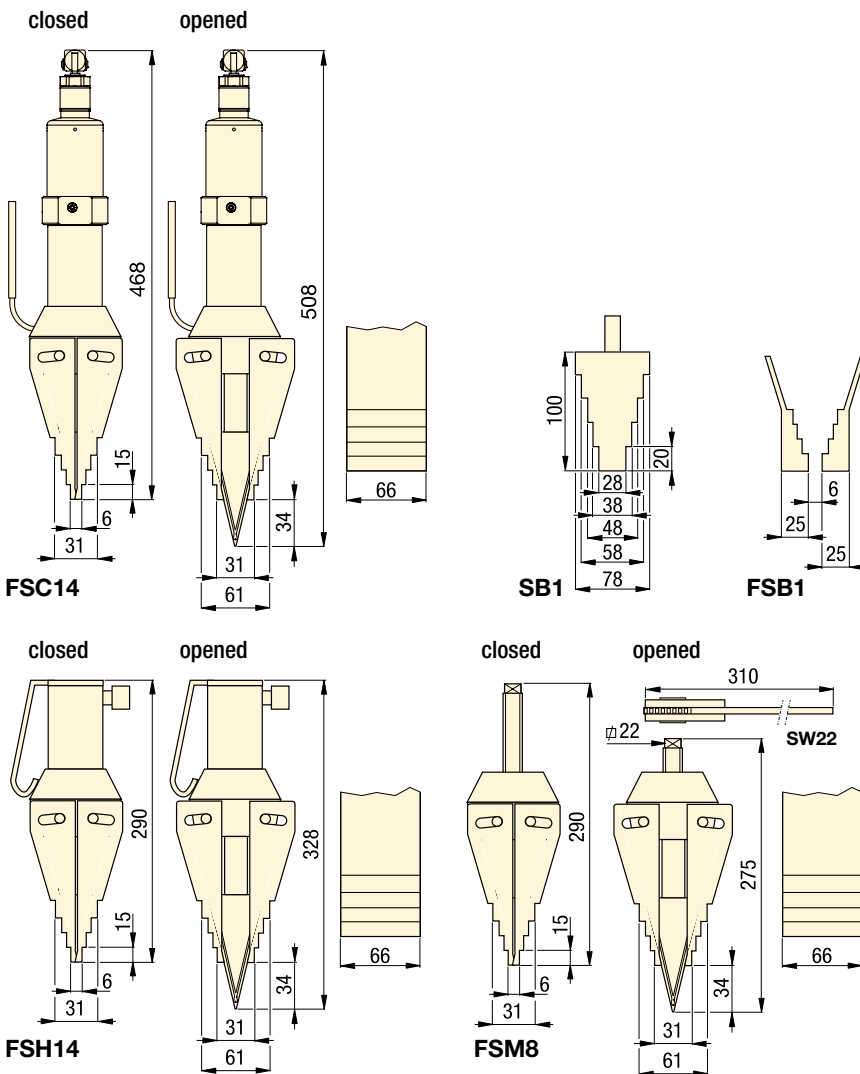
6 mm / 80 mm

Maximum Spread Force:

8 - 14 US tons

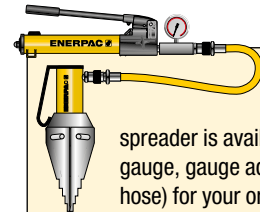
Maximum Operating Pressure:

700 bar (FSH14)



Safety Lanyard FSC1

Recommended safety accessory to compliment bolting applications. Includes steel cable with carabiners.



Tool-Pump Sets

The hydraulic flange spreader is available as set (pump, tool, gauge, gauge adaptor, couplers and hose) for your ordering convenience.

Spreader Model Nr.	Handpump Model Nr.	Set Model Number
FSH14	P392	STF14H

▼ Flange maintenance and joint separation with FSH14 Hydraulic Wedge Spreader.



Maximum Spreading Force US tons (kN)	Model Number	Tip Clearance (mm)	Maximum Spread ¹⁾ (mm)	Spreader Type	Oil Capacity (cm ³)	Weight (kg)
14 (118)	FSC14	6	80	Integral hydraulics	–	9,0
14 (125)	FSH14 *	6	80	External hydraulics	78	7,1
8 (72)	FSM8	6	80	Mechanical	–	6,5

¹⁾ Using stepped blocks FSB1.

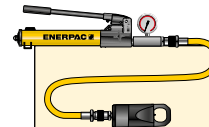
* Available as pump-tool set, see note on this page.

▼ Shown from left to right: NC3241, NC1019, NC1924



- Compact and ergonomic design, easy to use
- Unique angled head design
- Two blade design (NC-D models) for time saving operation – nuts are split from two sides in one action
- Single-acting, spring return cylinder
- Heavy duty chisels can be reground
- Nut splitters include spare chisel, spare set screw and wrench used to secure the chisel.
- CR400 female half coupler is standard.

The safest and easiest way to remove corroded and frozen nuts



Tool-Pump Sets

Hydraulic Nut Splitters are available as **sets** (pump, tool, gauge, gauge adaptor, couplers and hose) for your ordering convenience.

Nut Splitter Model Nr.	Hand Pump Model Nr.	Nut Splitter Set Model Number
NC1924	P392	STN1924H
NC2432	P392	STN2432H
NC3241	P392	STN3241H



High Pressure Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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▼ Enerpac hydraulic nut splitters – the safest and easiest way to remove corroded and frozen nuts.



GA45GC Gauge Adaptor Assembly

Protect yourself from system overloading by simply ordering one part number for a pre-assembled gauge, adaptor block and coupler.

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Single-Acting Hydraulic Nut Splitters



Frozen or Corroded Nuts

Often nuts are difficult to remove, while loosening using tightening tools is possible, it generally requires larger equipment and is time consuming. The use of cutting torches or hammers and chisels can cause damage to the joint components, requires significantly longer setup and operational time, and can present a potential safety risk.

Hydraulic Nut Splitters

Nut splitting with the Enerpac Hydraulic Nut Splitters is the safest method. It takes less time and avoids costly damage to joint components. The head design fitted with heavy-duty chisels permits the splitting of nuts on a wide variety of applications. With the two blades models nuts are split from two side in one action.

NC STN Series



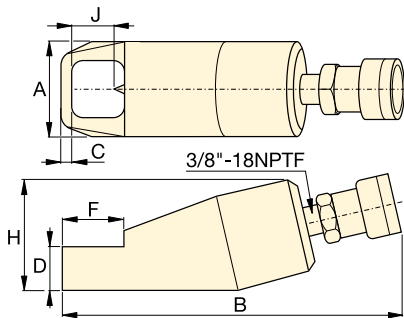
Bolt Range:
M6 - M48

Hexagon Nut Range:
10 - 75 mm

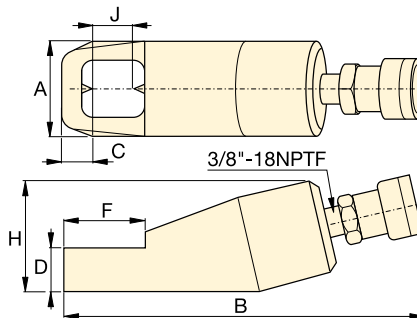
Capacity:
49 - 882 kN

Maximum Operating Pressure:
700 bar

For Nut Splitter Model Nr.	Replacement Chisel Model Numbers	
	Moving	Static
NC1019	NCB1019	-
NC1924	NCB1924	-
NC2432	NCB2432	-
NC3241	NCB3241	-
NC4150	NCB4150	-
NC5060	NCB5060	-
NC6075	NCB6075	-
NC1924D	NCB1924	NCB1924D
NC2432D	NCB2432	NCB2432D
NC3241D	NCB3241	NCB3241D



Single Blade Models (NC)



Double Blade Models (NC-D)



Bolt Range (mm)	Hexagon Nut Range (mm)	Maximum Cutting Force ton (kN)	Oil Capacity (cm ³)	Model Number	Dimensions (mm)							Weight (kg)	
					A	B	C	D	F	H	J		
	M6 - M12	10 - 19	5 (49)	15	NC1019	40	170	7	19	28	48	21	1,2
	M12 - M16	19 - 24	10 (98)	20	NC1924 *	54	191	10	26	40	62	25	2,0
	M16 - M22	24 - 32	15 (147)	60	NC2432 *	64	222	13	29	51	72	33	3,0
	M22 - M27	32 - 41	20 (196)	80	NC3241 *	75	244	17	36	66	88	43	4,4
	M27 - M33	41 - 50	35 (343)	155	NC4150	94	288	21	45	74	105	54	8,2
	M33 - M39	50 - 60	50 (490)	240	NC5060	106	318	23	54	90	128	60	11,8
	M39 - M48	60 - 75	90 (882)	492	NC6075	156	393	26	72	110	181	80	34,1
	M12 - M16	19 - 24	10 (98)	20	NC1924D	54	168	22	25	50	66	26	3,8
	M16 - M22	24 - 32	15 (147)	60	NC2432D	64	275	25	31	65	78	33	5,4
	M22 - M27	32 - 41	20 (196)	80	NC3241D	77	305	31	37	80	90	43	7,2

Ordering Notes: Maximum allowable hardness to split is 44HRc. Not to be used on square nuts or stainless steel.

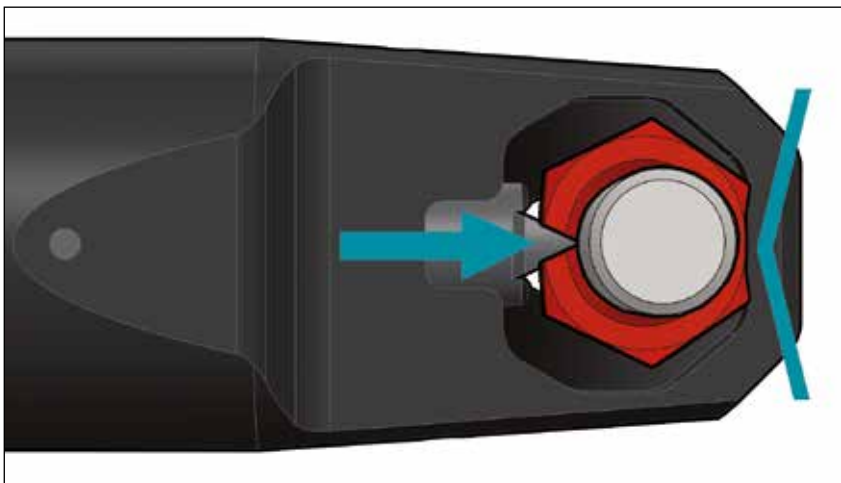
* Available as Tool-Pump Set, see note on page 318.

▼ Shown from left to right: NSH1927, NSC1927



- **NSC-Series with built-in small hand pump** – useful for subsea applications and working at heights
- **Quick and easy cutting tip replacement**
- **Drop-tested revolving anchor point and safety lanyard**
- **Revolving composite handle for vibration and shock isolation**
- **Nut Splitters include set of hexagon keys and following spare parts:**
 - cutting tip,
 - tip retention screw,
 - spare alignment screw
- **CR400 female half coupler is standard (NSH).**

▼ *The sharp cutting tip and opposing convex reaction point encourages more efficient splitting by spreading the nut open rather than squashing the nut onto the stud. This makes it easier to rotate the nut for the second cut.*



Designed to meet the challenges of bolted pipe-line flange joints



NSC-Series Nut Splitters with integral hand pump

Powered by a built-in hydraulic hand pump, the NSC-Series are a ready-to-use tool – no need for hose, separate hand pump or couplings.



Carry Case

Nut splitters (up to NSH6575) come in a carry case for portability and easy storage.



Safety Lanyard FSC1

Standard Safety Lanyard with each nut splitter. Includes steel cable with carabiners.



Single-Acting Integral & Hydraulic Nut Splitters



Frozen or Corroded Nuts

Often nuts are difficult to remove, while loosening using tightening tools is possible, it generally requires larger equipment and is time consuming.

The use of cutting torches or hammers and chisels can cause damage to the joint components, requires significantly longer setup and operational time, and can present a potential safety risk.

Hydraulic Nut Splitters

Nut splitting with the Enerpac Hydraulic Nut Splitters is the safest method. It takes less time and avoids costly damage to joint components. The head design fitted with heavy-duty chisels permits the splitting of nuts on a wide variety of applications.

NSC NSH Series



Bolt Range:

M12 - M48

Hexagon Nut Range:

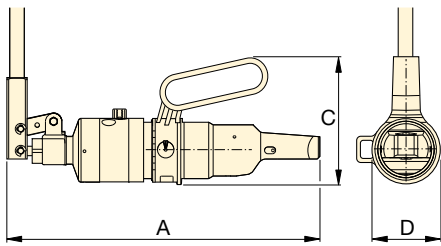
19 - 75 mm

Capacity:

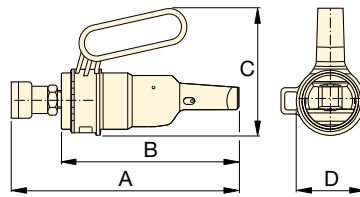
120 - 500 kN (12 - 50 ton)

Maximum Operating Pressure:

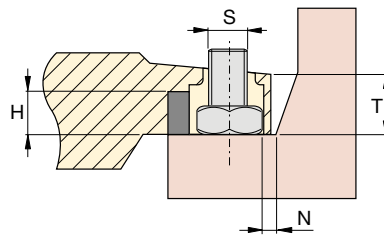
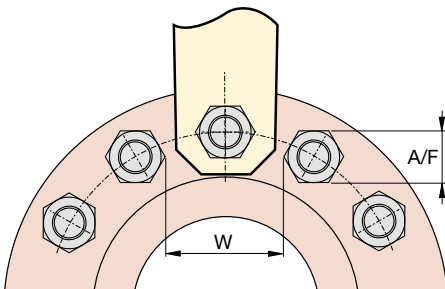
700 bar (NSH-Series)



NSC



NSH



High Pressure Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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Joint Separation Tools

Flange Spreading Wedges (FSC, FSH, FSM-Series) provide quick and easy joint separation using hydraulic or mechanical force.

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▼ NUT SPLITTER SPECIFICATIONS

Bolt Range	Hexagon Nut Range	Maximum Cutting Force	Oil Capacity	Model Number	Nut Splitter Type	Dimensions (mm)										Cutting Tip Service Kit Model Nr.
						A	B	C	D	H max.	N min.	S max.	T	W min.	(kg)	
M12 - M18	19 - 27	12 (120)	—	NSC1927	Integral pump	353	—	152	81	18	11,5	24,5	26,5	53,5	5,8	NSH1927CTK
M16 - M22	24 - 32	15 (150)	—	NSC2432		370	—	152	81	25	9,0	26,6	32,0	57,5	6,3	NSH2432CTK
M12 - M18	19 - 27	12 (120)	46	NSH1927	Hydraulic	258	213	152	81	18	11,5	24,5	26,5	53,5	3,5	NSH1927CTK
M16 - M22	24 - 32	15 (150)	46	NSH2432		265	220	152	81	25	9,0	26,5	32,0	57,5	4,0	NSH2432CTK
M24 - M30	36 - 46	20 (200)	80	NSH3646		290	239	169	93	34	16,0	39,0	44,0	83,5	6,9	NSH3646CTK
M33 - M42	50 - 65	36 (360)	230	NSH5065		377	322	210	185	45	23,0	49,5	52,0	108,0	10,9	NSH5065CTK
M42 - M48	65 - 75	50 (500)	328	NSH6575		396	345	220	202	54	27,0	61,0	65,0	135,0	24,5	NSH6575CTK

Ordering Notes: Maximum allowable hardness to split is ASTM A194 Gr 2H. Not to be used on square nuts or stainless steel.

▼ Shown: NSH31 with NSPH3, NSH41 with NSPH4



- Designed to fit standard BS/ANSI flanges
- Blade positioning scale to eliminate bolt damage
- Adjustable cutting depth
- Ergonomically designed and positioned handle
- Interchangeable power heads with cutting blade
- Single-acting spring return power head (NSPH)
- Double-acting power head (NSPH-D) for subsea operation
- Nut splitters include spare chisel, spare set screw and wrench used to secure the chisel
- CR400 female half coupler standard on NSPH
- CR400 + CH604 couplers standard on NSPH-D.

ATEX certified

- All NSH-tools are CE - ATEX certified.

Versatile, reliable and trouble free operation



Blade Positioning Scale

The power head can be adjusted to preset the blade cutting distance in order to prevent damage to the bolt thread as the nut is cut.

The blade positioning scale can be used with the following bolt and nut forms:

- Unified bolt threads (UN) with heavy series hexagon nuts;
- Metric bolt threads (M) with standard series hexagon nuts.



Steel Hand Pumps

The **P80** and **P84** two speed hand pumps are ideal to operate nut splitters. The P84 can be used to power the double-acting tools.

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High Pressure Hoses

Enerpac offers a complete line of high quality hydraulic hoses. To ensure the integrity of your system, specify only genuine Enerpac hydraulic hoses.

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Single- and Double-Acting Hydraulic Nut Splitters



Hydraulic Nut Splitters

These Hydraulic Nut Splitters are the ideal tools for removing seized and corroded nuts, eradicating the need for unsafe grinding or flame cutting.

They are designed with a single acting spring return cylinder and boast a 360 degree rotation, lockable handle improving operator safety.

The heavy duty blades can also be easily removed to enable replacement blades to be fitted.

Operator Safety

To improve operator safety an ergonomic, adjustable handle is available which can be easily fitted to the Nut Splitter.

This lightweight, durable accessory can prevent injuries such as trapped fingers by eliminating the need to hold the tool itself.

ATEX Certified: Ex II 2 G c T6

These Nut Splitters are tested and certified to conform to the 94/9/EC "ATEX Directive". The explosion protection is for Equipment Group II, Equipment Category 2 (Hazardous Zone Area 1) in Gas and/or Dust atmospheres.

NSH Series



Bolt Range:

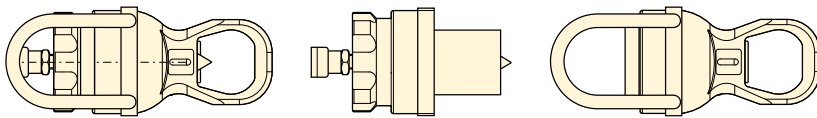
M45 - M90

Hexagon Nut Range:

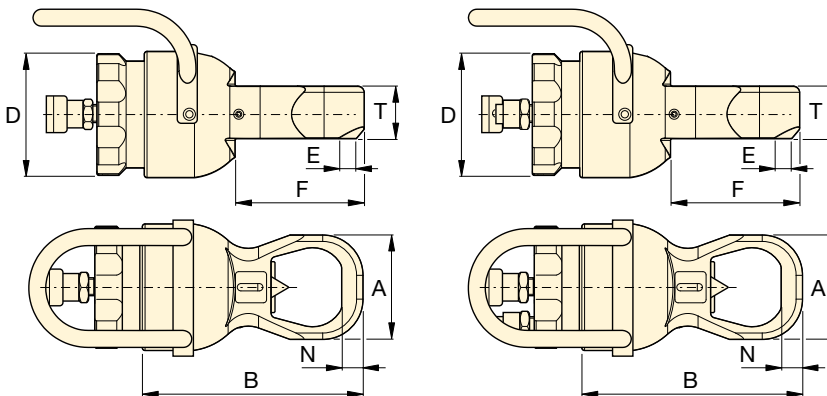
70 - 130 mm

Maximum Operating Pressure:

700 bar



Complete Nut Splitter = Power Head (NSPH) + Cutting Head (NSH)



NSPH + NSH

NSPH-D + NSH



Joint Separation Tools

Flange Spreading Wedges (FSC, FSH, FSM-Serie) provide quick and easy joint separation using hydraulic or mechanical force.

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For Power Head Model Nr.		Cutting Tip Service Kit Model Nr.
NSPH3	NSPH3D	NSPH3CTK
NSPH4	NSPH4D	NSPH4CTK

▼ NUT SPLITTER SPECIFICATIONS

Bolt Range (mm)	Hexagon Nut Range (mm)	Maximum Cutting Force ton (kN)	Oil Capacity (cm ³)	Model Numbers Nut Splitter Components				Dimensions (mm)							Cutting + Power Head (kg)	
				Cutting Head	Power Heads	Power Heads	Power Heads	A	B	D	E	F	N	T		
M45 - M52	70 - 80	105 (1025)	550	NSH31	20	NSPH3	NSPH3D	22	132	308	190	7	189	28	81	42
M45 - M56	70 - 85	105 (1025)	550	NSH32	21	NSPH3	NSPH3D	22	145	323	190	15	200	30	81	43
M45 - M64	70 - 95	105 (1025)	550	NSH33	22	NSPH3	NSPH3D	22	160	331	190	11	200	32	81	44
M45 - M70	70 - 100	105 (1025)	550	NSH34	22	NSPH3	NSPH3D	22	174	342	190	11	204	35	81	44
M76 - M80	110 - 115	178 (1733)	1100	NSH41	32	NSPH4	NSPH4D	38	189	365	235	4,5	230	36	111	70
M76 - M90	110 - 130	178 (1733)	1100	NSH42	44	NSPH4	NSPH4D	38	219	393	235	3	246	36	111	82

Ordering Notes: Maximum allowable hardness to split is ASTM A194 Gr 2H. Not to be used on square nuts or stainless steel.

▼ FF120



- Makes refacing easy – hand operated machine tool can be set up anywhere without the need for air, electric or hydraulic power
- Lightweight and portable (15 kg in storage box)
- Adjustable cutting head for reface of flat flange surfaces of pipes with flange outside diameter facing range 25,4 - 304,8 mm [1 - 12 inch]
- Interchangeable collets for ID mounting range 25,4 - 152,4 mm [1-6 inch] allow the user to work on many different flanges with minimal time between set-ups
- Interchangeable lead screws suitable for refacing damaged raised-face (RF) or flat-face (FF) joint flanges
- Tool body with expanding collets centers itself providing real concentric operation.

▼ The Enerpac FF120 used to face a pipe flange.



Safe, efficient and accurate refacing of flat pipe flange surfaces



Complete in Wheeled Carrying Case

The FF120 comes as portable set (15 kg). Can be transported, easy set-up and operated by a single

technician. Set includes:

FFL-kit with locators, O-Rings and extensions;
FSS-kit with feed screw and nut ½”-20 UN for surface roughness Ra 1,6 - 2,4 μ.

FSF-kit with feed screw and nut ½”-11 UNF for surface roughness Ra 3,2 - 6,3 μ.



Joint Separation Tools

FSC, FSH, FSM-Series parallel wedge spreaders provide quick and easy joint separation using hydraulic or mechanical force.

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Flange Alignment Tools

The ATM-Series provide safe and high-precision flange alignment tools that fit most commonly used ANSI, API, BS and DIN flanges.

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Controlled Tightening and Loosening

Use Enerpac Bolting Tools to seal the joint to the precise torque or tension required: torque

multipliers, torque wrenches and hydraulic bolt tensioners.

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On-site Machining Tools

Explore the full product line from flange facing machines, milling machine, drilling and tapping machines to clamshell pipe

cutters, bevelling machines and much more.

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QuickFace – Mechanical Pipe Flange Face Tool



Mechanical Flange Face Tool

Portable, hand powered tool makes even the hardest to reach pipe flanges resurfaceable in a safe and convenient way.

Makes refacing easy

A simple and cost effective solution – the FF120 turns a two man operation with heavy equipment, compressors and portable generators into a one man job.

The FF120 has interchangeable lead screws that make it suitable for resurfacing damaged flat-faced or raised-face joint flanges to the high safety standards required. FF120 is not suitable for lens-ring joint flanges or ring type joint (RTJ) flanges.

After selecting the correct lead screw for the operation, the tool body is inserted in the pipe end and centres itself with adjustable locators to provide real concentric operation.

The tool arm is then rotated by hand using a worm-gear mechanism to provide a perfect spiral “gramophone” finish. The tool can be adjusted with a calibrated slide to define cut depth and the correct finish.

Surface finish & accuracy

A serrated finish with 30-55 grooves per inch and a resultant roughness of between Ra 3,2-12,5 µ (125-500 micro inches). The FF-120 has same precision and quality of finish as a lathe.

Cost effective solution

Small and portable enough to be a permanent addition to your equipment range, Enerpac’s FF120 is the perfect solution to all of your small diameter facing problems.

For more Flange Facing Machines, see page 386.

FF Series



Pipe Flange Cutting Diameter Range:

Ø 25 - 305 mm / 1 - 12"

Internal Pipe Mounting Range:

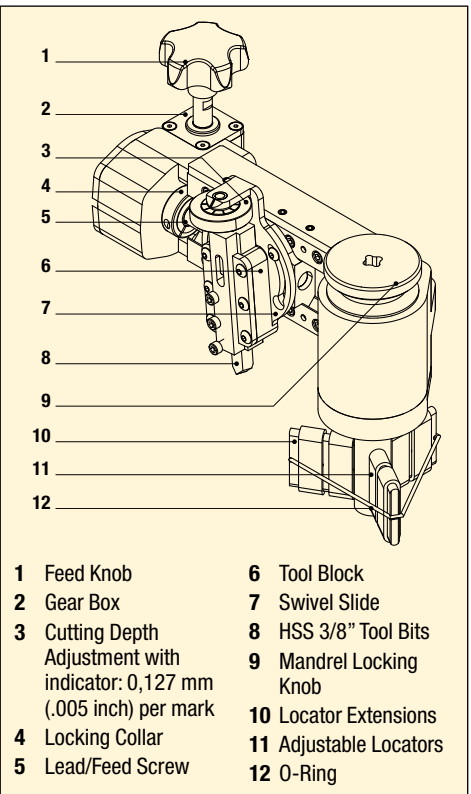
Ø 25 - 152 mm / 1 - 6"

Cutting Resultant Roughness:

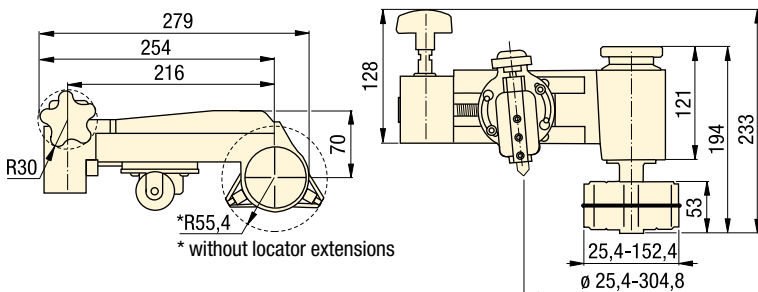
Ra 3,2 - 12,5 µ



- 1 Hand-operated cold work tool – no need for external power and hot work permits.
- 2 Calibrated cross slide for accurate cutting control.
- 3 Adjustable cutting head for reface of flat flange surfaces of pipes with flange OD facing range Ø 25,4-304,8 mm [1-12 inch].
- 4 Interchangeable lead screws enable selection of surface finish between Ra 3,2-12,5 µ.
- 5 Utilizes standard 3/8 inch or 10 mm tool steel.
- 6 Range of interchangeable collets allow the tool to accommodate Ø 25,4 - 152,4 mm (1 - 6 inch) pipe ID.
- 7 Tool body with expanding collets centers in the bore ensuring concentric and accurate set-up.



- | | |
|--|------------------------|
| 1 Feed Knob | 6 Tool Block |
| 2 Gear Box | 7 Swivel Slide |
| 3 Cutting Depth Adjustment with indicator: 0,127 mm (.005 inch) per mark | 8 HSS 3/8" Tool Bits |
| 4 Locking Collar | 9 Mandrel Locking Knob |
| 5 Lead/Feed Screw | 10 Locator Extensions |
| | 11 Adjustable Locators |
| | 12 O-Ring |



SELECTION CHART

Pipe Flange Cutting Diameter Range		Internal Pipe Mounting Diameter Range		Cutting Resultant Roughness	Model Number	Weight (kg)
(mm)	(inch)	(mm)	(inch)			
25,4 - 304,8	1,0 - 12,0	25,4 - 152,4	1,0 - 6,0	3,2 - 12,5	FF120	6,8

▼ The Enerpac FF120 QuickFace has same precision and quality of finish as a lathe.

