

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



## Accurate, Efficient Torque Multiplication

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

- High-efficiency planetary gear sets achieve high output torque from low input torque
- Most models operator protected by anti-backlash device
- Multiplier output accuracy  $\pm 5\%$  of input torque
- Reversible, tighten or loosen bolts
- Reaction bar or reaction plate type
- Angle-of-turn protractor standard on E300 series models
- Reaction plate models offer increased versatility with reaction point locations
- E300 and E400 series replaceable shear drives provide overload protection of internal power train (one replacement shear drive is included)



### Typical Torque Multiplier Applications

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



### ▼ SELECTION CHART

Torque Multiplier Type	Nominal Output Torque Capacity		Model Number
	(Ft.lbs)	(Nm)	
Reaction Bar Multiplier	750	1015	<b>E290PLUS</b>
	1000	1355	<b>E291</b>
	1200	1625	<b>E391</b>
	2200	2980	<b>E392</b>
	3200	4340	<b>E393</b>
Reaction Plate Multiplier	2200	2980	<b>E492</b>
	3200	4340	<b>E493</b>
	5000	6780	<b>E494</b>
	8000	10845	<b>E495</b>

# Manual Torque Multipliers



## Manual Torque Multipliers

Enerpac manual torque multipliers provide efficient torque multiplication in wide clearance applications and when external power sources are not available.

Manual torque multipliers are used in most industrial, construction, and equipment maintenance applications. Hydraulic torque wrenches are better suited for tight tolerance, flange and repetitious bolting applications.

## Use Reaction Bar Models:

- where space is limited
- where multiple reaction points are available
- when portability is desirable

## Use Reaction Plate Models:

- above 3200 Ft.-lbs. output torque
- on flanges and applications where neighboring bolt or nut is available to react against
- when extreme reaction forces are generated

## E Series



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

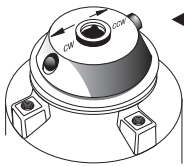
Torque Ratio:  
**3:1-52:1**

Multiplier Output Ratio Accuracy:  
**± 5 %**

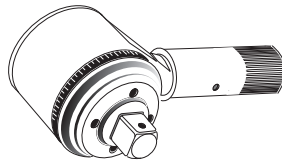


### CAUTION!

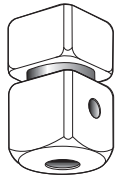
Never use impact type air tools for power driving torque multipliers. Torque multiplier drive train damage will occur.



**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.



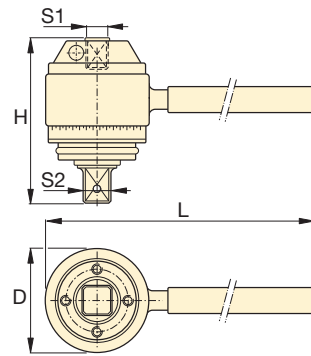
**Shearable Square Drive**  
Designed to provide overload protection on E300- and E400-series multiplier power train by shearing when excess input torque is applied. Internal shear pin prevents tool from falling off bolt.



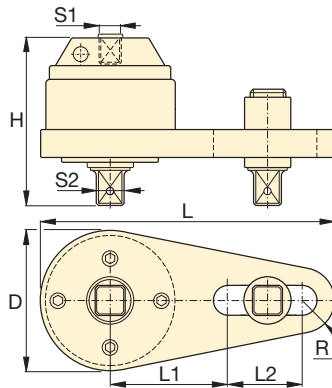
### Hydraulic Torque Wrenches

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

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Reaction Bar Type <sup>1)</sup>



Reaction Plate Type <sup>1)</sup>



### BSH-Series Sockets

Heavy-Duty Impact Sockets for power driven torquing equipment.

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Input Torque		Torque Ratio	Input Female Square Drive		Output Male Square Drive		Over-load Protection	Anti-Back-lash	Dimensions (in)						Wt. (lbs)	Model Number
(Ft.lbs)	(Nm)		S1 (in)	S2 (in)	Replaceable Shear Drive Model No.	D			H	L	L1	L2	R			
250	338	3 : 1	½	¾	–	No	No	2.8	3.3	8.6	–	–	–	4.0	<b>E290PLUS</b>	
333	451	3 : 1	½	¾	–	No	No	2.8	3.3	17.4	–	–	–	5.5	<b>E291</b>	
200	271	6 : 1	½	¾	E391SDK	Yes	No	3.9	4.0	19.6	–	–	–	13.8	<b>E391</b>	
162	219	13.6 : 1	½	1	E392SDK	Yes	Yes	4.1	5.7	19.6	–	–	–	18.3	<b>E392</b>	
173	234	18.5 : 1	½	1	E393SDK	Yes	Yes	4.1	6.5	19.6	–	–	–	15.2	<b>E393</b>	
162	219	13.6 : 1	½	1	E392SDK	Yes	Yes	4.9	5.5	14.0	5.5	4.9	1.3	17.2	<b>E492</b>	
173	234	18.5 : 1	½	1	E393SDK	Yes	Yes	4.9	6.4	14.0	5.5	4.9	1.3	23.4	<b>E493</b>	
189	256	26.5 : 1	½	1½	E494SDK	Yes	Yes	5.6	8.7	14.9	7.0	3.5	1.7	34.0	<b>E494</b>	
154	208	52 : 1	½	1½	E495SDK	Yes	Yes	5.8	10.7	15.2	7.0	3.5	1.9	50.3	<b>E495</b>	

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

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