



**TORC STAR**

**BOLTING & HYDRAULIC TOOLS**



**Tough Tools, Perfect Solution**



## Vision

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To provide quality tools for all industrial applications and to be preferred global brand.

## Mission

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To provide complete torquing and jacking solution of industrial needs to run industries effectively and efficiently.

## Innovation

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### ***Torc Star innovates tools for industrial application***

We are glad that we have been including new innovative Tools to provide the Best Tool you need, when you need it. Torc Star with the experience of a decade in the service of Industry has grown stronger since its inception in 1989 with the continued patronage of every customer.

We determine the most appropriate approach for Bolting solution by assessing the Bolting needs and requirements.

### **Features of Torc Star Professional Tools.**

Over 20 years of hands on experience in manufacturing.

## Quality Assurance

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We standardize our self to match and comply with ISO 9001: 2008 Standard and manufactured according to AMERICAL NATIONAL STANDARDS, DIN STANDARDS.

### ***Torc Star delivers quality tools for industrial application***

Over 20 years of hands on experience in manufacturing supplying proves us Torc Star Tools are accepted throughout the world as

the Toughest Tools. In providing high quality tools we at Torc Star seek constant improvements in materials and manufacturing techniques. Our quality assurance department is continually striving, for zero errors to maintain our high level of product quality right from design engineering to production and packing. Our quality standards are very high and are second to none.

## Customer Care

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Timely supplies, best after sales service and support has been Torc Star Trademark since inception.

Torc Star has maintained a position of Leadership, in the field of industrial Tightening / Loosening Tools for more than a two decades. Today Torc Star stands ready to improve the productivity of assembly operations around the world with unsurpassed Tool Performance and Customer Satisfaction.

Torc Star Extensive distributor channel, sales network and Sales Depot help us to supply the material on time every time. We are striving hard to ensure passed the customer satisfaction.

Torc Star product range is ready for off the shelf delivery. Torc Star provides a broad section of Fastener Tools and are glad to offer a Tool for almost every type of application. Torc Star design department with its experienced manpower is set to take care of any requirement of tools for any specific application.

## Business Associates

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The right partner in life can sometimes be a challenge to unearth; but when you do find them you instinctively know, the relationship is going to be flawless. For over Two Decades, the Torc Star has taken a proactive role in supporting their Distributors by an extremely diverse range of product Portfolios by excellent services.

Each year we look to create a number of significant alliances with highly dynamic organizations who have both a strong sense of vision and purpose. With an ethos to thrive on success and an

absolute focus on unprecedented achievement we look to support projects demonstrating constant momentum and motivation.

Working closely together, our aim is to generate maximum impact by identifying positive sponsorship opportunities. By creatively playing on fundamental strengths, we look to champion campaigns that are thunderous and capable of generating an advantage to all involved.

• For more information, please contact : Saurabh Sharma Mob: 0091-9773186760 Email : saurabh@tristarbolting.com

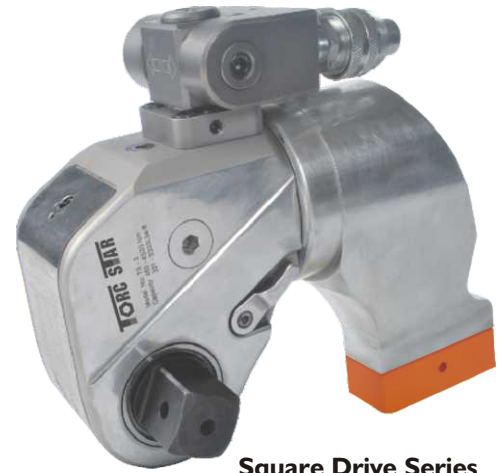




# HYDRAULIC TORQUE WRENCHES

## FEATURES :

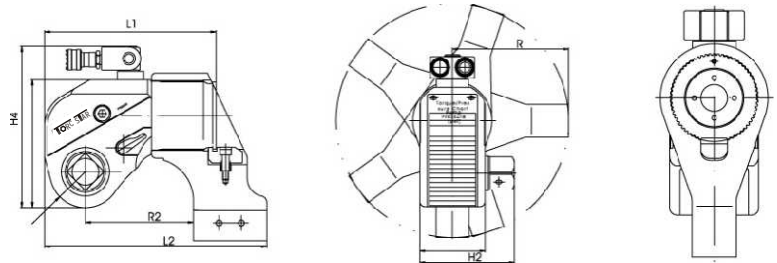
- One-piece forming machine body made of aluminum titanium alloy, high strength, high tenacity and design to exert torque on toughest for a smaller operating radius
- 360° click-on, multi position reaction arm with accuracy  $\pm 3\%$
- Light weight, ergonomic design for easy handling & an easy fit even in application where access is limited
- 60 free positions in 360°, easy positioning, capability of bearing the maximum torque at any angle
- Check pawl design critical for overcoming the back turn of the wrench, and improving both efficiency and torque precision
- A comparison list of pressures and torques on the dust cover for quick searching of torque value
- New type anti-loosening quick-acting coupling to ensure an unblocked oil path



**Square Drive Series**

## ACCESSORIES :

- Special Design Reaction Arms
- Square Drives
- Direct Hex Drives
- Impact Sockets
- Torc Star recommends use of Torc Star standard accessories ensuring precise performance & best suitability



## SQUARE DRIVE TYPE

Model Nos	Units	THTW-2S	THTW-5S	THTW-8S	THTW-10S	THTW-15S	THTW-25S	THTW-35S	THTW-50S	THTW-70S
Square Drive	Inch	3/4	1	1.1/2	1.1/2	1.1/2	2.1/2	2.1/2	2.1/2	2.1/2
Torque Range	Nm	180-1810	450-4510	750-7520	1070-10800	1550-15510	2650-26600	3470-34750	4850-48600	7150-71499
	Ft.Lbs	135-1357	331-3333	553-5553	775-7965	1106-11450	1917-19675	2551-25630	3611-36113	5324-53248
Body Length (L1)	mm	142	175	210	222	244	305	324	370	400
	inch	5.59	6.88	8.26	8.74	9.6	12	12.75	14.6	15.75
Overall length (L2)	mm	170	230	270	290	316	382	400	465	516
	inch	6.81	9.01	10.62	11.49	12.48	15.00	15.75	18.3	20.31
Tool Width (H1)	mm	50	68	80	90	100	120	135	152	160
	inch	1.65	1.96	2.6	3.14	3.54	3.93	4.72	5.39	6.29
Overall Width Includes Square drive(H2)	mm	71	95	122	134	142	182	200	216	222
	inch	2.83	3.7	4.84	5.2	5.59	7.2	7.87	8.5	8.74
Tool height (H3)	mm	95	125	148	167	181	220	246	282	290
	inch	3.77	4.96	5.88	6.57	7.16	8.66	9.68	11.1	11.415
Overall Height (H4)	mm	130	175	198	216	230	270	296	331	340
	inch	5.15	6.92	7.83	8.54	9.13	10.62	11.69	13.07	13.38
Tool Radius Around Bolt (R1)	mm	26	34	38	47	50	60	66	77	80
	inch	1.01	1.33	1.53	1.85	2	2.32	2.59	3.03	3.15
Reaction Reach (R2)	mm	85	115	137	152	154	185	199	240	260
	inch	3.34	4.48	5.39	6.02	6.06	7.32	7.83	9.48	10.23
Weight	Kg	2.5	5.0	8.0	11.0	15.2	26.5	35	50	87
	Lbs	5.5	11	17.6	24.2	33.44	57.2	74.8	110	191.4



Please observe safety advices



# DIRECT HEX TYPE

## FEATURES :

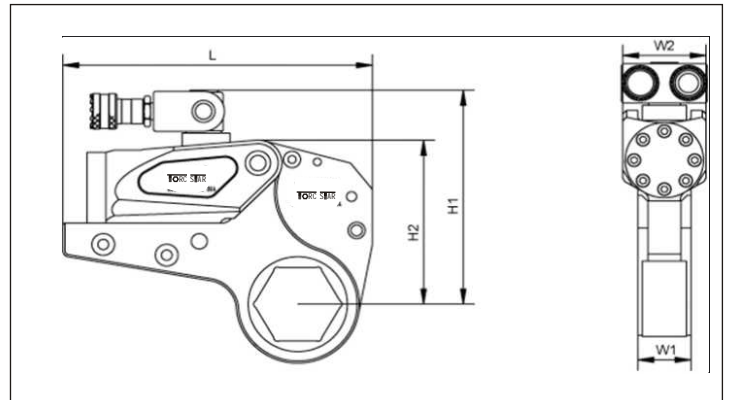
- Cylinders & low profile cassettes have been engineered to give ultra slim compact low clearance tooling with a small nose radius
- Novel anti-loosening quick-acting coupling to ensure an unblocked oil path
- 360°\*180°rotary oil pipe joint, no limit on the application space, convenient operation
- One-piece forming machine body made of aluminum titanium alloy, high strength, high tenacity, lightness and agility
- Check pawl design critical for overcoming the back turn of the wrench, and improving both efficiency and torque precision
- One-piece lengthened design, longer arm of force, comprehensively improved reliability
- Hollow design, more accurate torque and more convenience due to the direct action of wrench on nut
- Expanding the use range of the wrench through a transition piece
- Cover the nut size from 3/4" - 6.7/8"



**LOW PROFILE HEX SERIES**

## ACCESSORIES

- Long Extended Reaction Arm
- Square drive adapter kit.
- Hex Reducers
- Stack Socket.



Model Nos	Units	THTW-2H	THTW-6H	THTW-8H	THTW-20H	THTW-45H				
Torque Range	Nm	230-2330	240-2410	580-5860	640-6470	1090-10950	1170-11770	1850-18520	4180-41885	4460-44600
	Ft.Lbs	180-1850	176-1784	400-4500	474-4800	777-8111	860-8726	1370-13722	3038-31030	3297-33038
Nut on the side	mm	19-55	55-60	34-65	70-80	41-95	100-105	50-117	110-155	160-175
	inch	¾-2.3/16	2.3/16-2.3/8	1.5/16-2.9/16	2.3/4-3.1/8	1.5/8-3.3/4	3.7/8-4.1/8	2-4.1/2	4.1/4-6.1/8	6.1/8-6.7/8
Overall Length L	mm	196.4	196.4	245	246	300	301	361	430	441
	inch	7.7"	7.7	9.6	9.6	11.8	11.8	14.27	16.92	17.36
H1	mm	125.9	128.5	177	187	207	216	239	303	315
	inch	4.95	5.05	6.96	7.36	8.14	8.5	9.4	11.9	12.4
H2	mm	102.3	105	135.7	145.7	169	178	204	272	285
	inch	4.02	4.13	5.34	5.73	6.65	7	8.03	10.7	11.22
Width at the link W1	mm	32	32	42	42	53	53	64	85	85
	inch	1.25	1.25	1.625	1.625	2.1	2.1	2.55	3.34	3.34
Width at the cylinder W2	mm	51	51	66	66	83	83	99	131	131
	inch	2	2	2.59	2.59	3.26	3.26	3.89	5.15	5.15
Nose Radius (R)	mm	27 to 43	43 to 46	36 to 53	56 to 61	46-71	75 to 78	60 to 87	85 to 155	160-175
Weight	Kg	1	1	2	2	3.3	3.3	5.5	11.4	11.4
Drive Unit	Lbs	2.2	2.2	4.4	4.4	7.2	7.2	12.1	25.3	25.3
Weight	Kg	1.6	1.7	4.4	4.6	8	8.4	11.6	29	30
Ratchet Unit	Lbs	3.5	3.7	9.6	10.1	17.6	18.4	25.5	63.8	66



Please observe safety advices



# HYDRAULIC POWER PACKS



## ELECTRICALLY OPERATED HYDRAULIC POWER PACK FOR TORQUE WRENCHES

Model No.	: TPH - 1TW
Power Rating	: 1.5HP
Maximum Pressure	: 700Bar
Flow Rate	: 7.5LPM @ 70Bar 0.9LPM @ 700Bar
Oil tank Capacity	: 5 Liters / 10 Liters



## ELECTRICALLY OPERATED POWER PACK FOR TORQUE WRENCHES

MODEL NO. THP	: TPH - 3TW
Power Rating	: 1.5HP
Maximum pressure	: 700Bar
Flow Rate	: 9.7LPM @ 100Bar 0.97 LPM @ 700Bar

- In built heat exchanger to cool the system
- Reduces & Dissipates the heat in the oil to decrease operating temperature for extended work cycles

## PNEUMO HYDRAULIC PUMP



## AIR OPERATED HYDRAULIC TORQUE WRENCH POWER PACK

Model No	: TPP - 10TW
Maximum Pressure	: 700Bar
Power Rating	: 1.7HP
Flow Rate	: 7.5LPM @ 70Bar 0.9LPM @ 700Bar
Tank Capacity	: 5 Liters / 10 Liters



## AIR OPERATED HYDRAULIC POWER PACK FOR BOLT TENSIONERS

The air Operated pumps are designed considering the safety, reliability and maximum operator comfort. All the pressure connections are facing away from operator.

Model No	: TPP-1BT
Pressure Ratio	: 1: 220Bar
Tank Capacity	: 10 Liters
Flow at Max. Pressure	: 0.01 Liter per min.
Air Pressure	: 1.8 - 7 Bar

**Optional** : 1600 Bar Hand Pump available for Hydraulic Bolt Tensioning.





# HYDRAULIC BOLT TENSIONERS 1500 BAR

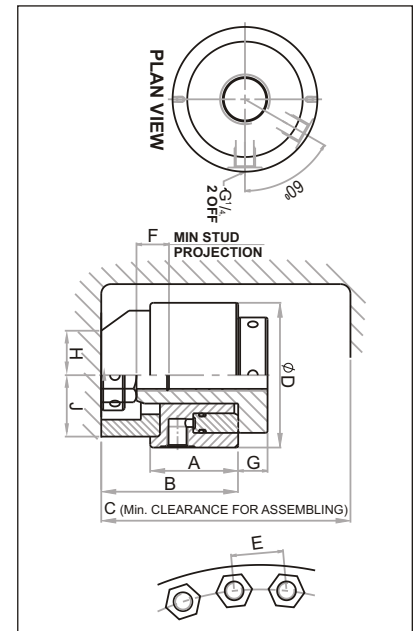
Torc Star Bolt Tensioners is swift method of tightening & opening by tensioning bolt / studs. after applying the oil pressure by Torc Star Pneumo Hydraulics pump load cell lift the puller up side i.e. tightly gripped with stud bolt thread. This cause release of nut and it becomes loosen. Nut can be easily rotated with nut rotating Socket and Tommy bar and tightening completed the same process is used for swift loosening operating It mainly consists of Load Cell, puller, nut rotating sockets & bridge

## Application

- Suitable for tensioning of flanges of pressure Vessels, Boiler feed pumps,
- Compressor covers, Heat exchangers, Pipe flanges and Anchor bolts.
- Used in Steel, Cement and Power plants, Petroleum extraction & Process plants.
- Particularly beneficial on applications requiring uniform joint loading.



Model No	Bolt / Stud Size		Cylinder (tons)	Stroke Cap (mm)	Effective Area (cm <sup>2</sup> )	Dimension								Approx. Weight (Kg)	
	(metric)	(Inch)				A	B	C	D	E	F	G	H		J
THT-3	M16	-	23.5	10	15.7	62	90	168	75	49	28	16	30	32.5	2
	M18	3/4"								49					
	M20	-								51					
	M22	7/8"								51					
THT-5	M24	1"	50	15	33	60	106	187	102	60	44	22	36	47	4
	M27	1 1/8"								72					
	M30	-								74					
	M33	1 1/4"								76					
THT-9	M36	1 3/8"	90	15	59.7	60	120	208	133	80	56	28	49	61	6
	M39	1 1/2"								88					
	M42	1 5/8"								90					
	M45	1 3/4"								94					
THT-13	M48	1 7/8"	125	15	83	62	135	231	163	100	68	34	59	73	10
	M52	2"								104					
	M56	2 1/4"								110					
	M60	-								112					
	M64	2 1/2"								118					
	M68	-								126					
THT-19	M72	2 3/4"	185	15	123	62	150	254	193	126	80	42	66	86.5	15
	M76	3"								136					
	M80	-								144					
THT-27	M85	3 1/4"	265	15	176	73	180	286	233	146	104	48	77	110	24.5
	M90	3 1/2"								154					
	M95	3 3/4"								162					
	M100	4"								162					
										174					



## Typical Applications

- Pipeline Flanges
- Pressure Vessels
- Valves and Pumps
- Manways
- Heat Exchangers
- Diesel Engines
- Cranes
- Presses
- Steam and Gas Turbines
- Shaft Couplings
- Coal and Rock Grinders
- Catalyst Reactors
- Wind Turbines
- Electric & Steam Generators

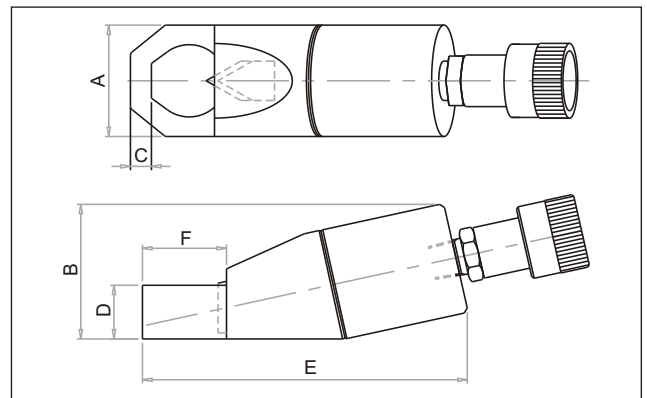




# HYDRAULIC NUT SPLITTER

Model	Hex Size (mm)	Thread Size (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Wt. (Approx) (Kg)
TNS 1019	10-19	M6-M12	40	52	8	20	130	30	1
TNS 1924	19-24	M12-M16	54	67	12	24	163	41	2
TNS 2432	24-32	M16-M22	64	79	13	30	187	52	3
TNS 3241	32-41	M22-M27	78	94	20	37	219	69	4.5
TNS 4150	41-50	M27-M33	95	113	21	45	265	78	9.6
TNS 5060	50-60	M33-M39	106	128	25	54	297	91	13
TNS 6075	60-75	M39-M48	156	185	27	75	375	110	34
TNS 7598	75-98	M48-M64	162	192	29	80	458	184	100
TNS 95108	95-108	M64-M72	190	194	29	96	578	250	205
TNS 114127	114-127	M76-M83	230	194	29	105	585	250	210
TNS 124136	124-136	M83-M89	240	194	29	105	596	250	215
TNS 146165	146-165	M95-M108	300	240	29	127	610	317	215

Torc Star Nut Splitter is sold Complete with Hydraulic Cylinder, Housing, Chisel, Set of Allen Keys, Spacer Set and is packed in a Rugged Steel Tool Box.



## Flange Spreaders

**Hydraulic or Manual "One Size Fits All"**

Open any size flange with controlled force!



Specification	Imperial		Metric	
	TFS10H	TFS10M	TFS10H	TFS10M
Weight	12 lbs	13.5 lbs	5.4 kg	6.1 kg
Length	14"	13.25"	355 mm	336 mm
Width of Jaws	4.5"	4.5"	114 mm	114 mm
Width of Body	4.5"	4.5"	114 mm	114 mm
Jaws Closed	0.09"	0.09"	2.3 mm	2.33 mm
Jaws Open	3"	3"	76.2 mm	76.2 mm
Jaw Penetration	1.5"	1.5"	38.1 mm	38.1 mm
Rated Force	10 lbs	10 lbs	4.5 kg	4.5 kg

\* Hydraulic hand pump and air / electric pumps available for operating all Hydraulic tools





# HYDRAULIC JACKS & CYLINDERS

## General Purpose Cylinders



Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCG 52	5	50	140
TCG 53		76	165
TCG 54		100	190
TCG 55		127	215
TCG 56		150	240
TCG 57		177	273
TCG 102		10	50
TCG 104	100		190
TCG 106	150		240
TCG 108	200		290
TCG 1010	257		349
TCG 1012	304		400
TCG 252	25		50
TCG 254		100	220
TCG 256		150	270
TCG 258		200	320
TCG 2510		261	375
TCG 2512		311	425
TCG 2514		362	476
TCG 302	30	50	180
TCG 304		100	230
TCG 306		150	280
TCG 308		200	330
TCG 3010		261	370
TCG 3012		311	420
TCG 3014		362	471
TCG 502	50	50	190
TCG 504		100	240
TCG 506		150	290
TCG 508		200	340
TCG 5010		261	384
TCG 5013		337	460
TCG 756		75	150
TCG 758	200		345
TCG 7513	333		492
TCG 1006	100	150	315
TCG 1008		200	345
TCG 10010		260	449
TCG 1504	150	100	275
TCG 1506		150	325
TCG 2004	200	100	290
TCG 2006		150	340
TCG 2504		100	290
TCG 2506	250	150	345
TCG 2508		200	395

### Application

- Standard multipurpose application jacks.
- Guide rings at piston and gland nut facilitates to use all direction centrally loaded.
- Base mounting holes and collar threads are optional.

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCG 3004	300	100	305
TCG 3006		150	355
TCG 3008		200	405
TCG 4004	400	100	330
TCG 4006		150	380
TCG 4008		200	430
TCG 5004	500	100	350
TCG 5006		150	400
TCG 5008		200	450

## Aluminum Body Cylinders (TCA Series)



- Ideal where force is required with light weight cylinders
- Aluminum body resists corrosion and rust
- Sturdy steel ensures stability under heavy-duty applications

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCA 202	20	50	125
TCA 206		150	270
TCA 302	30	50	130
TCA 306		150	280
TCA 3010		261	370
TCA 502	50	50	145
TCA 506		150	295
TCA 5010		261	380
TCA 1002	100	50	165
TCA 1006		150	320
TCA 10010		261	382

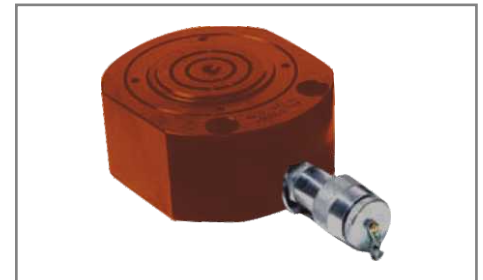
## Compact Profile Cylinders (TCC Series)



- Economical and general light weight usage
- Best solutions where minimal stroke is required
- Top mounting holes for easy fixturing

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCC 101	10	30	90
TCC 201	20	50	115
TCC 302	30	50	120
TCC 502	50	60	125
TCC 1002	100	60	150
TCC 1502	150	60	175
TCC 2002	200	60	200

## Flat Cylinders (TCS Series)



- Flat Design allows operation in close, tight spaces
- Grooved, hardened piston absorbs full force
- Body mounting holes for easy fixturing

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCS 50	5	8	35
TCS 100	10	12	45
TCS 200	20	12	55
TCS 300	30	12	60
TCS 500	50	16	65
TCS 750	75	16	80
TCS 1000	100	16	85
TCS 1500	150	16	100
TCS 2000	200	16	115



Please observe safety advices





# HYDRAULIC JACKS & CYLINDERS

## Hollow-Core Cylinders (THC Series)



- Hollow plunger design allows for both pull and push forces
- Collar threads designed to absorb full force
- Bronze brazing on stop ring and base plunger for enhanced side loading capacity

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
THC 102	10	50	160
THC 103		75	185
THC 104		100	210
THC 202	20	50	165
THC 204		100	215
THC 206		150	265
THC 302	30	50	185
THC 303		75	210
THC 304		100	235
THC 306		150	285
THC 503	50	75	220
THC 504		100	245
THC 603	60	75	235
THC 604		100	260
THC 606		150	310
THC 1003	100	75	265
THC 1004		100	290

## Super-Flat Cylinders (TSF Series)



Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TSF 10	10	10	30
TSF 20	20	10	35
TSF 30	30	10	40
TSF 50	50	10	50
TSF 100	100	10	70
TSF 150	150	10	75
TSF 200	200	10	80

## Heavy-Lift, High-Tonnage Threaded Nut Cylinders (TCT Series)

Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TCT 502	50	50	164
TCT 504		100	214
TCT 506		150	264
TCT 508		200	314
TCT 1002	100	50	187
TCT 1004		100	237
TCT 1006		150	287
TCT 1008		200	337
TCT 1502	150	50	209
TCT 1504		100	259
TCT 1506		150	309
TCT 1508		200	359
TCT 2002	200	50	233
TCT 2004		100	283
TCT 2006		150	333
TCT 2008		200	394
TCT 2502	250	50	249
TCT 2504		100	299
TCT 2506		150	349
TCT 2508		200	399
TCT 3002	300	50	295
TCT 3004		100	345
TCT 3006		150	395
TCT 3008		200	445
TCT 4002	400	50	335
TCT 4004		100	385
TCT 4006		150	435
TCT 4008		200	485
TCT 5002	500	50	375
TCT 5004		100	425
TCT 5006		150	475
TCT 5008		200	525
TCT 6002	600	50	395
TCT 6004		100	445
TCT 6006		150	495
TCT 6008		200	545
TCT8002	800	50	455
TCT 8004		100	505
TCT 8006		150	555
TCT 8008		200	605
TCT 10002	1000	50	495
TCT 10004		100	545
TCT 10006		150	595
TCT 10008		200	645



- High-tonnage lifting cylinders designed for sustained load holding
- Mechanical threaded locking nut ensures the safest lift
- Overflow port prevents over extension

## Hollow-Core Double Acting, Oil Return Cylinders (TCH Series)



Model	Cyl. Cap. (Ton)	Stroke (mm)	Collapsed Height (mm)
TDH 102	10	50	160
TDH 103		75	210
TDH 104		100	235
TDH 202	20	50	195
TDH 204		100	245
TDH 206		150	295
TDH 302	30	50	210
TDH 304		100	260
TDH 306		150	310
TDH 504	50	100	270
TDH 603	60	75	260
TDH 604		100	285
TDH 606		150	335
TDH 1003	100	75	290
TDH 1004		100	315



Please observe safety advices



# HYDRAULIC JACKS, CYLINDERS & PUMPS

## Heavy-Lift, Double - Acting Hydraulic Return Cylinders (CDL Series)



- Used in both vertical and horizontal positions and longer stroke application
- Hydraulic return allows controlled retractions at higher duty cycle applications
- Complete with 3/8" NPT high flow coupler on both ports, lifting eyes and safety valve on retract side to prevent over-pressurization

Model	Cyl. Cap. (Ton)	Max. Cyl Capacity (Ton)		Stroke (Mm)	Collapsed Height (mm)
		Adv.	Retr.		
TCDL 502	50	50	10	50	177
TCDL 504		50	10	100	227
TCDL 506		50	10	150	277
TCDL 508		50	10	200	327
TCDL 5010		50	10	250	377
TCDL 5012		50	10	300	427
TCDL 1002		100	93	43	50
TCDL 1004	93		43	100	233
TCDL 1006	93		43	150	283
TCDL 1008	93		43	200	333
TCDL 10010	93		43	250	383
TCDL 10012	93		43	300	433
TCDL 1502	150		139	68	50
TCDL 1504		139	68	100	262
TCDL 1506		139	68	150	312
TCDL 1508		139	68	200	362
TCDL 15010		139	68	250	412
TCDL 15012		139	68	300	462
TCDL 2002		200	186	89	50
TCDL 2004	186		89	100	280
TCDL 2006	186		89	150	330
TCDL 2008	186		89	200	380
TCDL 20010	186		89	250	430
TCDL 20012	186		89	300	480
TCDL 2502	250		256	106	50
TCDL 2504		256	106	100	307
TCDL 2506		256	106	150	357
TCDL 2508		256	106	200	407
TCDL 25010		256	106	250	457
TCDL 25012		256	106	300	507
TCDL 3002		300	319	106	50
TCDL 3004	319		106	100	400
TCDL 3006	319		106	150	450
TCDL 3008	319		106	200	500
TCDL 30010	319		106	250	550
TCDL 30012	319		106	300	600

Model	Cyl. Cap. (Ton)	Max. Cyl Capacity (Ton)		Stroke (Mm)	Collapsed Height (mm)
		Adv.	Retr.		
TCDL 4002	400	392	136	50	380
TCDL 4004		392	136	100	430
TCDL 4006		392	136	150	480
TCDL 4008		392	136	200	530
TCDL 40010		392	136	250	580
TCDL 40012		392	136	300	630
TCDL 5002		500	512	174	50
TCDL 5004	512		174	100	475
TCDL 5006	512		174	150	525
TCDL 5008	512		174	200	575
TCDL 50010	512		174	250	625
TCDL 50012	512		174	300	675
TCDL 6002	600		598	206	50
TCDL 6004		598	206	100	495
TCDL 6006		598	206	150	545
TCDL 6008		598	206	200	595
TCDL 60010		598	206	250	645
TCDL 60012		598	206	300	695
TCDL 8002		800	824	271	50
TCDL 8004	824		271	100	545
TCDL 8006	824		271	150	595
TCDL 8008	824		271	200	645
TCDL 80010	824		271	250	695
TCDL 80012	824		271	300	740
TCDL 10002	1000		1027	380	50
TCDL 10004		1027	380	100	585
TCDL 10006		1027	380	150	635
TCDL 10008		1027	380	200	685
TCDL 100010		1027	380	250	735
TCDL 100012		1027	380	300	785
TCDL 16006		1600	1603	440	150

## Hydraulic Hand Pumps

Max. Working Pressure 700 bar

### Features

- Heavy duty construction with hardened ground and plated piston.
- Replaceable cartridge valves.
- Durable polyurethane plunger seal.
- Collapsible handle - faster stroke at low pressure.



Single Stage Hand Pump



Two Stage Hand Pump With DCV

Pump Stage	Single	Single	Two
Oil Tank Capacity (Ltrs.)	1.8	2.2	5
Model	TMP 2	TMP 3	TMP 5
Pressure (kg/cm) <sup>2</sup>			
1 <sup>st</sup> stage	-	-	30
2 <sup>nd</sup> stage	700	700	700
Flow / Stroke (cc)			
1 <sup>st</sup> stage	-	-	49
2 <sup>nd</sup> stage	2.8	2.8	2.8
Handle Effort (Kg)	40	40	40

Pump Stage	Two	Two	Two
Oil Tank Capacity (Ltrs.)	8	5	8
Model	TMP 8	TMP 5	TMP 9
Pressure (kg/cm) <sup>2</sup>			
1 <sup>st</sup> stage	30	30	30
2 <sup>nd</sup> stage	700	700	700
Flow / Stroke (cc)			
1 <sup>st</sup> stage	49	49	49
2 <sup>nd</sup> stage	2.8	2.8	2.8
Handle Effort (Kg)	40	40	40



Please observe safety advices



# HYDRAULIC PULLERS

## HYDRAULIC JAW PULLER ATTACHMENT

Capacity 10 - 100 ton

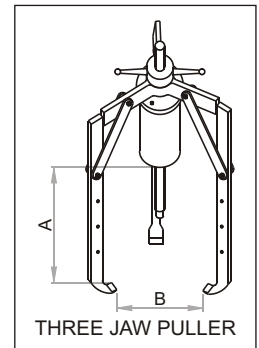
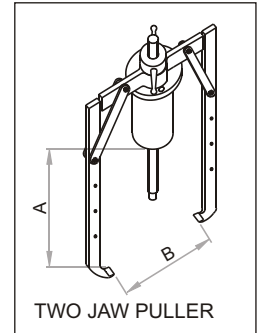
### Features :

- Two and three jaw design.
- Drop forged steel jaw for high strength.
- Jaw surface coated for corrosion protection.
- Flexible with adjustable reach and spread.

### Application :

- Maintenance of workshop equipment. Removal of wheels, pulleys, gears, sleeves and other press fit assemblies.

Model	No. of Jaws	Capacity (ton)	Reach 'A' (mm)	Spread 'B' (mm)
TPA 10 2J	2	10	265	250
TPA 10 3J	3	10	265	300
TPA 20 2J	2	20	300	325
TPA 20 3J	3	20	300	400
TPA 30 2J	2	30	485	500
TPA 30 3J	3	30	485	550
TPA 50 2J	2	50	730	700
TPA 50 3J	3	50	730	800
TPA100 2J	2	100	1025	1200
TPA100 3J	3	100	1025	1250



## HYDRAULIC PUSH PULLER ATTACHMENT

Capacity 10 - 50 ton

### Features :

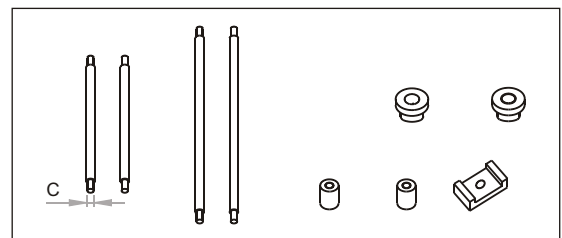
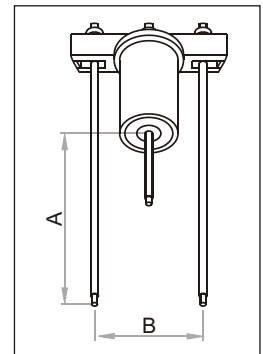
- Hardened tie rods for high strength.
- Surface coated for corrosion protection.

### Application :

- Maintenance of workshop equipment. Removal of wheels, pulleys, gears, sleeves and other press fit assemblies.

Model	Capacity (ton)	Reach 'A' (mm)			Spread 'B' (mm)	End Threads 'C' (mm)
		Short	Medium	Long		
TPA 10 PP	10	-	130	230	250	M16x2
TPA 20 PP	20	85	260	360	300	M16x2
TPA 30 PP	30	-	290	540	410	M24x1.5
TPA 50 PP	50	-	430	690	545	M32x2

- Specifications are subject to change due to continual improvement.





# HYDRAULIC PULLER

## HYDRAULIC BEARING PULLER ATTACHMENT

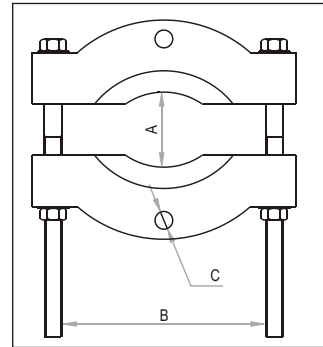
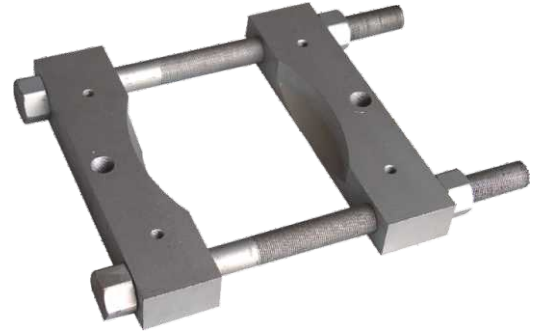
Capacity 10 - 50 ton

### Features :

- Knife edge gripping
- Adjustable spread by means of tie rod
- Surface coated for corrosion protection
- High strength forged steel construction

### Application

- Maintenance of workshop equipment. Removal of wheels, pulleys, gears, sleeves and other press fit assemblies.
- Particularly used for removal of bearing from shaft assemblies having less clearance. Used with push



Model	Capacity (ton)	'A' (mm)		'B' (mm)	TAP 'C' (mm)
		Min.	Max.		
TPA 10 HBP	10	20	100	110	M16x2
TPA 20 HBP	20	10	130	150	M16x2
TPA 30 HBP	30	15	240	245	M24x1.5
TPA 50A HBP	50	15	310	315	M32x2

- Specifications are subject to change due to continual improvement.

## ELECTRIC SHEAR WRENCH -230V, SINGLE PHASE

Model	Bolt size (mm)	Max Torque	Speed	Weight
TCD-21	21	550N.m	25RPM	4.0kg
TCM-22	22	920N.m	20RPM	5.0kg
TCL-24	24	1200N.m	18RPM	6.0kg
TCH-27	27	1700N.m	10RPM	6.5kg
TCV-30	30	2500N.m	5RPM	7.5kg

Different sizes of sockets are available

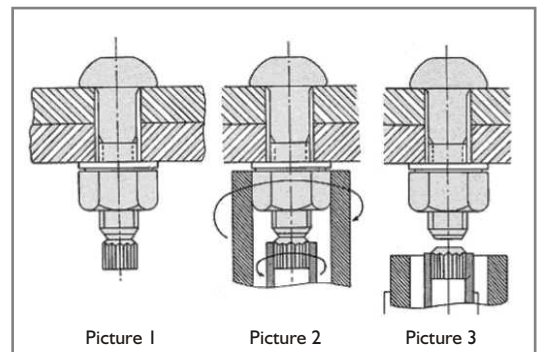
Shear wrenches are mainly used to fasten the TC (Torque Control) bolts which are more convenient and safe to use. The applications of Shear Wrenches are at:

- Erection of Power Plant Structure
- Steel Bridge Construction
- Mining Construction

**Picture-1** Shows the normal shape of the TC (Torque Control) Bolt which has splined part extended at the end.

**Picture-2** Shows Shear wrench special socket is applied at the nut of TC Bolt. The internal socket grips the splined part, while external socket grips and rotates the nut to tighten the Bolt.

**Picture-3** After the torque tightening is achieved the extended splined part of the bolt is sheared off from the bolt and the joint is successfully tightened to the required torque.



Please observe safety advices



# PNEUMATIC IMPACT WRENCHES

## 1" HEAVY DUTY AIR IMPACT WRENCH



Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAT 250	25.4	50	14.8	1/2"	1/2"	6.3	3,661	3,000	16.4	628
TAT 251S	25.4	44	12	1/2"	1/2"	6.3	2,445	4,000	10.6	536
TAT 252T	25.4	41	11	1/2"	1/2"	6.3	2,445	3,500	9.6	300
TAT 253C	25.4	45	14.5	1/2"	1/2"	6.3	2,445	4,000	7.2	251

## 3/4" HEAVY DUTY AIR IMPACT WRENCH



Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAT 190	19	27	7.2	3/8"	3/8"	6.3	1,086	4,800	4	244
TAT 191S	19	32	7.6	3/8"	3/8"	6.3	1,493	4,000	5.1	257
TAT 192T	19	32	8	3/8"	3/8"	6.3	1,695	5,000	4.3	217
TAT 192C	19	32	9.5	3/8"	3/8"	6.3	1,900	5,500	3.4	229





# PNEUMATIC IMPACT WRENCHES

## 1/2" HEAVY DUTY AIR IMPACT WRENCH



TAT 120



TAT 121



TAT 122



TAT 123C

Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAT 120	12.7	19	4.6	1/4"	3/8"	6.3	610	7,000	2.5	193
TAT 121	12.7	19	4.6	1/4"	3/8"	6.3	651	7,000	2.64	183
TAT 122	12.7	16	4.2	1/4"	3/8"	6.3	516	7,000	2.7	190
TAT 123C	12.7	19	4.6	1/4"	3/8"	6.3	678	7,000	2.6	175



TAT 124



TAT 125



TAT 126

Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAT 124	12.7	12.7	2.8	1/4"	3/8"	6.3	353	10,000	1.5	155
TAT 125SC	12.7	19	10.2	1/4"	3/8"	6.3	1,357	7,500	2.2	193
TAT 126PC	12.7	19	10.2	1/4"	3/8"	6.3	1,357	7,500	2	205



Please observe safety advices



# PNEUMATIC IMPACT WRENCHES

## 3/8" HEAVY DUTY AIR IMPACT WRENCH



TAT 90 Butterfly



TAT 91



TAT 92



TAT 93



TAT 94C

Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAT 90	9.5	10	2.3	1/4"	3/8"	6.3	176	10,000	0.93	160
TAT 91	9.5	12.7	2.8	1/4"	3/8"	6.3	325	10,000	1.5	155
TAT 92	9.5	12.7	2.8	1/4"	3/8"	6.3	298	10,000	1.5	155
TAT 93	9.5	12.7	2.8	1/4"	3/8"	6.3	272	10,000	1.63	162
TAT 94C	12.7	12.7	7.4	1/4"	3/8"	6.3	448	12,000	1.2	165

## 1/4" MINI AIR RATCHET WRENCH



TAR 63

## 3/8" HEAVY DUTY RATCHET WRENCH



TAR 64

Model No.	Square Drive (mm)	Bolt Capacity (mm)	Avg. Air Cons. (CFM)	Air Inlet (inch)	Hose Size (inch)	Air Pressure (kg/cm <sup>2</sup> )	Max. Torque (Nm)	Free Speed (Rpm)	Net Weight (Kg)	Length (mm)
TAR 63	6.35	6	4	1/4"	1/4"	6.3	35	260	0.45	130
TAR 64	9.5	9.5	3	1/4"	3/8"	6.3	82	160	1.20	270



Please observe safety advices



# NON SPARKING SPANNERS

## Non-Sparking Double Ended Open Type Spanners



A / F Sizes S <sub>1</sub> xS <sub>2</sub> (mm / inch)
5.5x7, 6x7, 6x8, 7x9, 8x9, 8x10, 9x10, 9x11, 10x11, 10x12, 10x14, 11x13, 12x13, 12x14, 13x17, 14x15, 14x17, 16x17, 16x18, 17x19, 17x21, 17x22, 18x19, 19x21, 19x22, 19x24, 20x22, 21x23, 21x26, 22x24, 22x27, 23x26, 24x26, 24x27, 24x30, 25x28, 26x29, 26x32, 27x29, 27x30, 27x32, 29x32, 30x32, 30x36, 32x34, 32x36, 34x36, 36x38, 36x41, 38x40, 41x46, 46x50, 50x55, 50x60, 55x60, 60x65, 65x70
1 / 4x5 / 16, 5 / 16x3 / 8, 3 / 8x7 / 16, 3 / 8x1 / 2, 7 / 16x1 / 2, 1 / 2x9 / 16, 9 / 16x5 / 8, 5 / 8x11 / 16, 5 / 8x3 / 4, 11 / 16x3 / 4, 3 / 4x13 / 16, 3 / 4x7 / 8, 13 / 16x7 / 8, 7 / 8x15 / 16, 15 / 16x1, 1x1 -1 / 16, 1-1 / 16x1-1/8, 1-1 / 8x1-3/16, 1-3 / 16x1-1/4, 1-1 / 4x1-5 / 16, 1-5 / 16x1-3 / 8, 1-3 / 8x1-7 / 16, 1-7 / 16x1-5 / 8, 1-1 / 2x1-9 / 16, 1-5 / 8x1-13 / 16, 1-13 / 16x2, 2x2-3 / 16, 2x2 3 / 8, 2-3 / 16x2-3 / 8, 2-3 / 8x2-9 / 16

## Non-sparking Double Ended Ring Type Spanners



A / F Sizes S <sub>1</sub> xS <sub>2</sub> (mm / inch)
5.5x7, 6x7, 6x8, 7x9, 8x9, 8x10, 9x10, 9x11, 10x11, 10x12, 10x14, 11x13, 12x13, 12x14, 13x17, 14x15, 14x17, 16x17, 16x18, 17x19, 17x21, 17x22, 18x19, 19x21, 19x22, 19x24, 20x22, 21x23, 21x26, 22x24, 22x27, 23x26, 24x26, 24x27, 24x30, 25x28, 26x29, 26x32, 27x29, 27x30, 27x32, 29x32, 30x32, 30x36, 32x34, 32x36, 34x36, 36x38, 36x41, 38x40, 41x46, 46x50, 50x55, 50x60, 55x60, 60x65, 65x70
1 / 4x5 / 16, 5 / 16x3 / 8, 3 / 8x7 / 16, 3 / 8x1 / 2, 7 / 16x1 / 2, 1 / 2x9 / 16, 9 / 16x5 / 8, 5 / 8x11 / 16, 5 / 8x3 / 4, 11 / 16x3 / 4, 3 / 4x13 / 16, 3 / 4x7 / 8, 13 / 16x7 / 8, 7 / 8x15 / 16, 15 / 16x1, 1x1 -1 / 16, 1-1 / 16x1-1/8, 1-1 / 8x1-3/16, 1-3 / 16x1-1/4, 1-1 / 4x-5 / 16, 1-5 / 16x1-3 / 8, 1-3 / 8x1-7 / 16, 1-7 / 16x1-5 / 8, 1-1 / 2x1-9 / 16, 1-5 / 8x1-13 / 16, 1-13 / 16x2, 2x2-3 / 16, 2x2 3 / 8, 2-3 / 16x2-3 / 8, 2-3 / 8x2-9 / 16

## Non-sparking Combination Spanners



A / F Sizes (mm / inch)
6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
1 / 4, 5 / 16, 3 / 8, 7 / 16, 1 / 2, 9 / 16, 19 / 32, 5 / 8, 11 / 16, 3 / 4, 13 / 16, 7 / 8, 15 / 16, 1, 1-1 / 16, 1-1 / 8, 1-3 / 16, 1-1 / 4, 1-5 / 16, 1-3 / 8

## Non-sparking Slugging Wrenches Open Type



A / F Sizes (mm / inch)
17, 19, 20, 22, 24, 27, 30, 31, 32, 36, 38, 41, 46, 50, 52, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150
11 / 16, 11 / 16, 3 / 4, 7 / 8, 1, 1-1 / 16, 1-1 / 8, 1-3 / 16, 1-1 / 4, 1-3 / 8, 1-13 / 32, 1-1 / 2, 1-5 / 8, 1-3 / 4, 1-13 / 16, 2, 2-1 / 16, 2-3 / 16, 2-13 / 64, 2-5 / 16, 2-3 / 8, 2-1 / 2, 2-9 / 16, 2-5 / 8, 2-3 / 4, 2-15 / 16, 3, 3-1 / 16, 3-1 / 8, 3-3 / 8, 3-9 / 16, 3-3 / 4, 3-15 / 16, 4-1 / 8

## Non-sparking Slugging Wrenches Box Type



A / F Sizes (mm / inch)
17, 19, 20, 22, 24, 27, 30, 31, 32, 36, 38, 41, 46, 50, 52, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150
11 / 16, 11 / 16, 3 / 4, 7 / 8, 1, 1-1 / 16, 1-1 / 8, 1-3 / 16, 1-1 / 4, 1-3 / 8, 1-13 / 32, 1-1 / 2, 1-5 / 8, 1-3 / 4, 1-13 / 16, 2, 2-1 / 16, 2-3 / 16, 2-13 / 64, 2-5 / 16, 2-3 / 8, 2-1 / 2, 2-9 / 16, 2-5 / 8, 2-3 / 4, 2-15 / 16, 3, 3-1 / 16, 3-1 / 8, 3-3 / 8, 3-9 / 16, 3-3 / 4, 3-15 / 16, 4-1 / 8

## Non-sparking Ball Peen Hammers



Weight (gms)
230, 340, 450, 680, 910, 1130





# NON SPARKING TOOLS

## Non-Sparking Sledge Hammers

Weight (gms)
450, 1000, 1400, 1500, 1800, 2000, 2200, 2500, 2700, 3000, 3600, 4000, 4500, 5000, 5400, 6400, 7200, 8000, 8200, 9100, 9900



## Non-Sparking Flat / Half Round Files

Sizes (inches)
6, 8, 10, 12, 14, 16



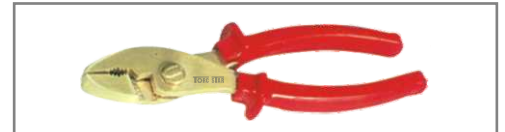
## Non-Sparking Chisels

Sizes
160, 160, 160, 200, 200, 250, 300, 300, 400, 500 500



## Non-Sparking Pliers

L (inch)	L (mm)	K (mm)
6	152	8
8	203	13



## Non-Sparking Adjustable Wrenches & Pipe Wrenches

L (mm)	L (inches)
150, 200, 250, 300, 350, 375, 450, 600	6, 8, 10, 12, 14, 15, 18, 24



## Non-Sparking Slotted Screwdrivers

L 1 (inches)
2, 2, 3, 3, 3, 4, 4, 4, 4, 5, 6, 6, 6, 8, 10, 10, 12, 12, 14, 16, 18



## Non-Sparking Hand / Impact Sockets

Sq. size	Socket A/F sizes (mm/inch)
1/4"	4, 4.5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 5 / 32, 3 / 16, 7 / 32, 1 / 4, 9 / 32, 5 / 16, 11 / 32, 3 / 8, 7 / 16, 1 / 2
3/8"	5 / 16, 3 / 8, 7 / 16, 1 / 2, 9 / 16, 5 / 8, 11 / 16, 3 / 4, 13 / 16, 7 / 8, 15 / 16 5 / 16, 3 / 8, 7 / 16, 1 / 2, 9 / 16, 5 / 8, 11 / 16, 3 / 4, 13 / 16, 7 / 8, 15 / 16
1 / 2"	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 32 5 / 16, 3 / 8, 7 / 16, 1 / 2, 9 / 16, 5 / 8, 11 / 16, 3 / 4, 13 / 16, 7 / 8, 15 / 16, 1, 1-1 / 16, 1-1 / 4, 1-7 / 16
3/4"	17, 19, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 36, 38, 41, 46, 50 3 / 16, 13 / 16, 7 / 8, 15 / 16, 1, 1-1 / 16, 1-1 / 8, 1-3 / 16, 1-1 / 4, 1-5 / 16, 1-3 / 8, 1-7 / 16, 1-1 / 2, 1-5 / 8, 1-3 / 4, 1-13 / 16, 1-7 / 8, 2
1"	22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 36, 38, 41, 46, 50, 55, 60, 65, 70, 75, 80 1-1 / 16, 1-1 / 16, 1-1 / 8, 1-3 / 16, 1-1 / 4, 1-5 / 16, 1-3 / 8, 1-7 / 16, 1-1 / 2, 1-5 / 8, 1-7 / 8, 2, 2-1 / 4, 2-1 / 2, 2-3 / 4, 3



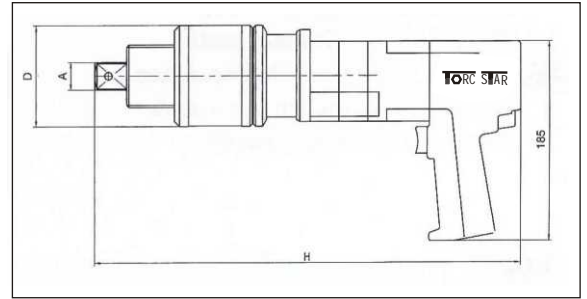
Material	Aluminium - Bronze					Copper-beryllium			
	Cu	Al	Ni	Fe	Mn	Be	Ni	Co	Cu
Analysis	Cu	Al	Ni	Fe	Mn	Be	Ni	Co	Cu
%	Rest	9-12	2-6	1-4	0-1.8	1.5-2	0.1-0.6	0.1-0.6	Rest

**Note:** We have also developed the ACETILEX Alloy tools (Less than 70% copper), 100% safe to be used in Acetylene environments





# PNEUMATIC TORQUE WRENCH



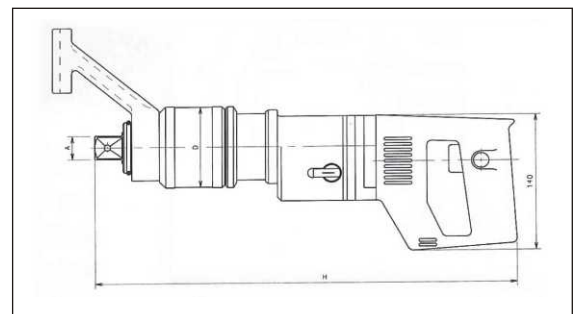
## Technical Data

TYPE	Torque (Nm)	Square drive min-max	Gear diam. (mm) D	Height (mm) H	Weight (kgs)	No-load speed
TPT-80	40-800	3/4"u. 1"	88	360	6	19
TPT-120	40-1200	1"	88	360	7	19
TPT-250	70-2500	1"	88	410	7	7,5
TPT-400	70-4000	1 1/2"	88	410	8	7,5
TPT-500	100-5000	1 1/2"	88	460	9	2
TPT-600	400-6000	1 1/2"	130	420	12	2,8
TPT-1000	450-10000	1 1/2"	130	460	16	1,8

# ELECTRIC TORQUE WRENCH

## Technical Data

TYPE	Torque (Nm) min.-max.	Gear diam. (mm) D	Height (mm) H	Weight (kgs)	No-load speed
TET-81 TETL-81	90-850	88	510	6,5	16
TET-101 TETL-101	30-1200	88	510	8	14
TET-241 TETL-241	430-2500	88	540	9	9
TET-351 TETL-351	360-3500	88	550	10	8
TET-501 TETL-501	800-5000	88	610	11	3
TET-601/1 TETL-601/1	820-6000	130	585	15	6
TET-901 TETL-901	1930-10000	130	620	18	2,5

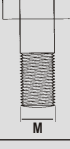



Please observe safety advices

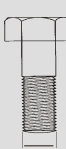



# TORQUE SPECIFICATIONS

## Metric Sizes

Bolt Size 	A / F 	Tightening Force = P(N) Torque = M <sub>A</sub> ( Nm )					
		8.8		10.9		12.9	
		P	M <sub>A</sub>	P	M <sub>A</sub>	P	M <sub>A</sub>
		N	Nm	N	Nm	N	Nm
M 2	4	863	0.373	1216	0.520	1461	0.628
M 2.3	4.5	1245	0.598	1755	0.843	2099	1.010
M 2.6	5	1598	0.863	2246	1.206	2697	1.451
M 3	5.5	2206	1.344	3109	1.883	3727	2.256
M 3.5	6	2962	2.060	4168	2.893	5001	3.481
M 4	7	3825	3.040	5374	4.315	6453	5.148
M 5	8-9	6257	6.031	8806	8.483	10591	10.200
M 6	10	8836	10.300	12405	14.710	14906	17.625
M 7	11-12	12945	17.162	18191	24.517	21771	28.439
M 8	13-14	16230	25.497	22751	35.304	27360	42.168
M 10	15-17	25791	50.014	36284	70.608	43541	85.317
M 12	19-21	37657	87.279	52956	122.60	63547	147.10
M 14	22-23	51681	138.30	72667	194.20	87279	235.40
M 16	24-26	71196	210.80	100027	299.10	120131	357.90
M 18	27	86494	289.30	121602	411.90	146118	490.30
M 20	30	111305	411.90	156415	578.60	187796	696.30
M 22	32	139254	559.00	195642	784.50	234378	941.40
M 24	36	160338	711.00	225552	1000	270662	1196
M 27	41	210842	1049	296159	1481	355980	1775
M 30	46	255952	1422	359902	2010	432471	2403
M 33	50	319695	1932	449142	2716	539363	3266
M 36	55	374612	2481	527595	3491	632526	4197
M 39	60	451104	3226	633506	4531	760992	5443
M 42	65	515827	3991	725688	5609	870826	6727
M 45	70	604087	4992	850232	7012	1019886	8414
M 48	75	679597	6021	956144	8473	1147372	10150
M 52	80	815909	7747	1147372	10885	1377827	13092
M 56	85	940453	9650	1323891	13582	1588669	16279
M 60	90	1098339	11964	1544540	16867	1853447	20202
M 64	95	1245438	14416	1750478	20300	2098612	24320
M 68	100	1425787	17615	2005013	24771	2406016	29725
M 72	105	1620036	21081	2278175	29645	2733810	35575
M 76	110	1826672	24973	2568758	35118	3082510	42141
M 80	115	2045697	29314	2876762	41222	3452115	49467
M 90	130	2647453	42525	3722982	59801	4467578	71761
M 100	145	3326624	59200	4678066	83250	5613679	99900

## Imperial Sizes

Bolt Size 	A / F 	Tightening Force = P(N) Torque = M <sub>A</sub> ( Nm )					
		P		S		T	
		P	M <sub>A</sub>	P	M <sub>A</sub>	P	M <sub>A</sub>
		N	Nm	N	Nm	N	Nm
1/4"	7/16"	4379	5.43	8320	10.3	8980	11.1
5/16"	1/2"	7344	11.2	13954	21.3	15061	23.0
3/8"	9/16"	10951	19.9	20807	37.9	22458	40.9
7/16"	5/8"	15065	31.9	28623	60.7	30894	65.5
1/2"	3/4"	20244	48.8	38463	92.7	41516	100
9/16"	7/8"	26075	70.4	49542	134	53474	144
5/8"	15/16"	32452	97.4	61658	185	66552	200
3/4"	1.1/8"	49781	178	94584	338	102091	364
7/8"	1.5/16"	67157	279	127599	530	137725	572
1"	1.1/2"	88221	418	167620	795	180923	858
1.1/8"	1.11/16"	111007	593	210913	1126	227652	1216
1.1/4"	1.7/8"	142135	837	270091	1591	291527	1717
1.3/8"	2.1/16"	168641	1096	320417	2083	345847	2248
1.1/2"	2.1/4"	206578	1456	392498	2767	423648	2987
UNF							
1/4"	7/16"	5232	6.28	9941	11.9	10730	12.9
5/16"	1/2"	8410	12.5	15979	23.8	17247	25.7
3/8"	9/16"	12911	22.7	24531	43.2	26478	46.6
7/16"	5/8"	17416	35.9	33091	68.2	35717	73.6
1/2"	3/4"	23685	55.4	45002	105	48574	114
9/16"	7/8"	30075	79.0	57143	150	61678	162
5/8"	15/16"	38156	111	72496	210	78250	227
3/4"	1.1/8"	56078	195	106549	370	115005	399
7/8"	1.5/16"	76297	309	144965	587	156470	634
1"	1.1/2"	99200	459	188480	873	203439	942
1.1/8"	1.11/16"	128738	667	244602	1267	264015	1368
1.1/4"	1.7/8"	161358	925	306580	1757	330911	1896
1.3/8"	2.1/16"	199331	1252	378728	2378	408786	2567
1.1/2"	2.1/4"	240377	1642	456717	3119	492965	3367

Newton - Meter Nm to Foot-Pounds lbf. ft. (1Nm = 0.738 lbf. ft.)  
 Kilogram - Force Meter to Newton - Meter (1 Kgm = 9.80 Nm)



Please observe safety advices



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& PUMPS**

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**BOLT TENSIONER, NUT SPLITTER,  
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