



MILLENNIUM™
Torque & Tensioning Inc.

Product Catalog

TORQUE TOOL SALES & RENTALS, PIPE & FLANGE MACHINING TOOLS,
MOBILE REPAIR & CALIBRATION



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About Us

**Privately
Owned and
Held**

**Quality Torque
& Tensioning
Equipment Since
1987**

**Full Selection of
Torquing
Equipment Pumps
& Accessories**

**In- House
and On-Site
Repair &
Calibration**

Millennium Torque & Tensioning, Inc. is a privately-owned manufacturer of pneumatic and electric driven gear multipliers.

Since 1987, MTT has supplied numerous industries with quality torque and tensioning equipment. Our tooling has been used in virtually every industry. Along with a full selection of torquing equipment, pumps, and accessory items, MTT also provides its customers with repair & calibration of all major brands of hydraulic, pneumatic, electric, and hand torque tools (both in-house and on-site).

Our MTT dual-speed and single-speed torque wrenches are field proven and engineered for maximum reliability and dependability because we know what it takes.

Locations

Canonsburg, PA

Toledo, OH

Chicago, IL

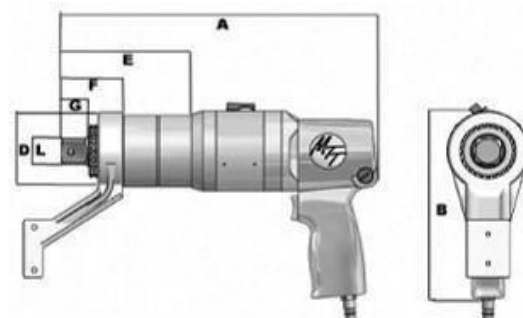
Spartanburg, SC

Sarasota, FL

Mobile, AL

MTT 2- Speed Pneumatic Torque Gun

Made in the USA, this multi-sleeve, pneumatic operated continuous rotation nutrunner will loosen or tighten threaded fasteners with a system accuracy of $\pm 3\%$ and repeatability of $\pm 2\%$. The Millennium Tru-Torc® (MTT) will produce from 60-5000 ft. lbs. of torque while the operator only feels 12 to 18 inch lbs. on the free swing pistol grip.



Custom reaction arms available upon request

SYSTEM	TORQUE (ft lbs.)	IDLING RPM	WEIGHT (lbs)
MTT-7	60-670	60	11
MTT-13	100-1300	25	14
MTT-30	250-2500	10	18
MTT-40	350-3700	8	19
MTT-50	500-5000	6	29

SYSTEM	A (in)	B (in)	C (in)	D (in)	E (in)	F (in)	G (in)	L (in)
MTT-7	12.1	7.5	3.23	2.92	4.93	2.25	0.95	3/4"
MTT-13	12.57	7.5	3.23	3.66	5.52	2.4	1.06	1"
MTT-30	14.16	7.5	3.23	3.56	5.91	2.88	1.06	1"
MTT-40	15.84	7.5	3.23	3.9	6.38	3.39	1.58	1-1/2"
MTT-50	17.1	7.5	3.23	4.73	8.59	3.86	1.65	1-1/2"

SS Single-Speed Pneumatic Torque Gun

The Single Speed Torque Wrench was designed to access smaller, tighter space envelopes than any other pneumatic nut runner available. The tight radius and shorter length of this tool will allow users to torque and disassemble more threaded fasteners than current models.



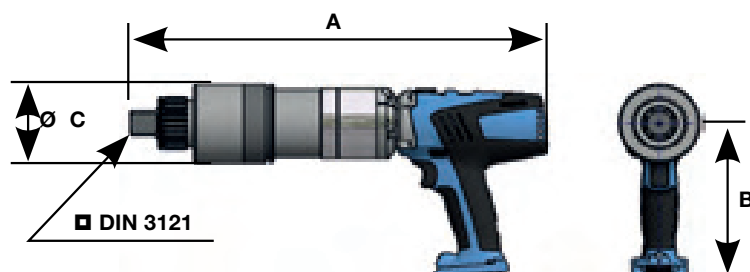
SYSTEM	TORQUE (ft lbs.)	Drive	LENGTH (in)	WEIGHT (lbs)
SS-7	70 - 700	3/4 "	9.5	9
SS-10	100 – 1,000	3/4 "	9.5	9
SS-13	130 – 1,300	1"	10.65	10
SS-30	300 – 3,000	1"	12.5	16

Features & Benefits

- Superior Gear Design
- High Torsional Strength
- Faster Operating Capability
- Lower CFM Requirement (24 Max)
- User Friendly Pistol Grip with 360 Rotation
- Multiple Reaction Arm Capabilities
- Small Nose Radius

Battery Operated Torque Gun

With our new MTA2 battery tool, a decisive step forward has been achieved with the newest gearbox technology which enables simpler handling and reduced weight and size. Mobile, cordless bolting is now safer due to the additional automatic locking of the motor and gearbox.



Features & Benefits

- Optimized handling
- More light and compact
- Automatic locking of gearbox and motor
- Integrated free turning of motor
- Active two steps battery charge indicator
- Six sizes up to a maximum of 5,900 ft/lbs.
- Includes protective carrying case, battery charger, and one spare battery



Model	A (in)	B (in)	C (in)
MT A2-05	14.37	7.28	2.7
MT A2-10	14.37	7.28	2.7
MT A2-20	15.94	7.28	3.15
MT A2-30	15.94	7.28	3.15
MT A2-36	15.94	7.28	3.15
MT A2-48	17.2	7.28	3.39
MT A2-80	20.51	7.28	3.98

Model	Torque Range (lb-ft)	RPM Gear 1	RPM Gear 2	RPM Gear 3	RPM Gear 4	Drive Size	Weight (lb)	# of Tightenings / Single Battery
MT A2-05	95-405	8.4	16.6	37	71.6	3/4"	11.79	680
MT A2-10	130-735	5.3	10.8	24.5	48	3/4"	11.79	350
MT A2-20	160-1475	3	5.6	12.7	24.6	1"	15.1	200
MT A2-30	240-2200	2.3	4.6	10.3	20.9	1"	15.1	100
MT A2-36	280-2655	1.8	3.3	7.8	15.3	1"	15.1	95
MT A2-48	370-3500	1.4	2.9	6.4	12.9	1 1/2"	18.73	80
MT A2-80	515-5900	0.65	1.1	2.92	5.65	1 1/2"	27.55	15





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Hand Clickers

The Hand Clickers have an accuracy of +/-3% of reading. They include a traceable calibration certificate. The extension handle can be used to reduce operator stress and injury. A positive 'click' can be seen and heard.



Tool Model	Minimum Torque (lb-ft)	Maximum Torque (lb-ft)	Square Drive
HH150	30	150	1/2"
HH250	45	220	1/2"
HH500	100	480	3/4"
HH600-075	150	600	3/4"
HH600-100	150	600	1"
HH750-075	220	750	3/4"
HH750-100	220	750	1"
HH1100-075	370	1,100	3/4"
HH1100-100	370	1,100	1"

Low Clearance Hydraulic Torque Wrench TWLC

The TW Series Wrench was designed for the most inaccessible bolting areas found in the industry. Its long neck, short height, and small radius have all contributed to its great success.



Features & Benefits

- Low Width-High Strength Design
- Superior Torsional Strength
- Fast Operation Cycle
- Rigid Steel Body Construction
- Internal Swivel Manifold Relief
- Built-in Reaction Pad
- Small Nose Radius
- Tool Free Link Change
- Corrosion Resistant Finish
- Multi-Axis High Flow Swivel Manifold

**Smallest nose radius on the market;
minimal height and width
dimensions**

Drive Body	Hex Range		Minimum Torque (lb-ft)	Maximum Torque (lb-ft)
	Minimum (in)	Maximum (in)		
TWLC2	1-1/8"	2-3/8"	189	1575
TWLC4	1-5/16"	3-1/8"	477	3975
TWLC8	1-7/8"	3-15/16"	954	7950
TWLC15	2-7/16"	4-5/8"	1,782	14850
TWLC30	3-1/8"	6-1/16"	3,456	28800



SlimLine Hydraulic Torque Wrench TWSL

The SlimLine Torque Wrench is engineered to fit inaccessible applications with minimal clearance. The Drive Body is designed to interchange with the TWLC (Low Clearance) and the new TWSL (SlimLine) Links, lowering your tool investment across each series to broaden your application reach.



Smallest nose radius on the market; minimal height and width dimensions

Features & Benefits

- Dynamic engineer modeling (FEA) optimized tool design to extend life and durability
- The SlimLine links use the same quick-change Drive Body as the existing TWLC links
- Small nose radius fits all standard API and ANSI flanges
- Rigid steel body construction with corrosion resistant plating
- Fully enclosed drive mechanism for operator safety
- Swivel manifold has an internal relief valve to prevent retract side over pressurization
- Multi-Swivel technology for free positioning of tool and hoses
- Perfect for wellhead applicators

Nut A/F		Link Order Number	Maximum Torque (lb-ft)	Weight (Link Only) (lbs)
(in.)	(mm)			
1-13/16"	46	TWSL4-046	2,639	8
2"	50	TWSL4-050	3,271	8.2
2-3/16"	55	TWSL4-055	3,568	8.2
2-3/8"	60	TWSL4-060	3,867	8.3
2-9/16"	65	TWSL4-065	4,210	8.4
2-3/4"	70	TWSL4-070	4,210	8.4
2-15/16"	75	TWSL4-075	4,210	8.4
3-1/8"	80	TWSL4-080	4,210	8.4



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High Cycle Square Drive Hydraulic Wrench TWHC

The TWHC is a lightweight, high-strength tool that features superior torsional strength, fast operation cycle, fine tooth pawl, and a floating piston design.



Quality Means Lower Cost of Ownership

- Designed for high cycle life: 2 to 3x more than existing technology
- Increased reliability: simple drive assembly means less downtime
- Corrosion resistant material adequate for harsh environments

Enhanced Usability

- Compact nose radius allows the tool to fit in tighter, hard-to-reach spaces
- Low weight, high strength design
- Fast operation, long stroke and optimum flow
- Multi-direction high flow swivel manifold
- Push button square drive reversal and reaction arm positioning
- Push-button release of square drive & reaction arm for all models except TWHC50

Designed with Safety in Mind

- Fully enclosed drive mechanism for operator safety
- Swivel manifold internal relief valve prevents retract side over pressurization
- Fine tooth pawl prevents tool "lock -on"

Tool Model	Torque Min. (lb-ft)	Torque Max. (lb-ft)	Square Drive	Weight (lbs)
TWHC1	170	1,413	3/4"	6.2
TWHC3	376	3,136	1"	11.7
TWHC6	726	6,050	1-1/2"	19.4
TWSD11	1,313	10,940	1-1/2"	28.9
TWSD25	2,940	24,500	2-1/2"	65
TWHC50	6,360	53,000	2-1/2"	152



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Millennium Square Drive MSD

Millennium manufactures simpler, faster, and more efficient and reliable Hydraulic Torque Wrenches that are user friendly. The high strength alloy steel and controlled vacuum heat treatment ensures stronger drive components. Improved high pressure seal design is suitable for static & dynamic applications.

Features and Benefits

- Fine Ratchet and Pawl for better engagement
- Multi tooth drive segment ensures up to 32 Degree
- Balanced drive Rod-Side load & free piston movement
- Laser engraved torque chart (Nm & Ft lbs)
- Hard chrome plating of piston rod which ensures better wear resistance of rod seal
- Self lubricating low Nickel Bronze drive bush to protect body from wear 360 x 180 Degree swivel for better degree of movement Leak proof quick connect couplers for easy and safe operation
- End-cap design for sufficient back pressure for smooth piston forward force
- Rigid reaction suitable for heavy load application. Simple design reaction arm release button for ease of operations.
- Cold worked cylinder bore for longer life and super finish for long working conditions



TOOL MODEL	MINIMUM TORQUE (lb-ft)	MAXIMUM TORQUE (lb-ft)	SQUARE DRIVE	WEIGHT (lbs)
MSD- .7	80	830	3/4"	3.9
MSD- 1	131	1,312	3/4"	5.5
MSD- 3	310	3,098	1"	10.8
MSD- 5	535	5,347	1-1/2"	20.9
MSD- 8	775	7,965	1-1/2"	23.7
MSD- 10	1,131	11,307	1-1/2"	32.4
MSD- 20	1,917	19,675	2-1/2"	57.2
MSD- 25	1,551	25,630	2-1/2"	74.8
MSD- 35	3,611	36,113	2-1/2"	110
MSD- 50	5,107	51,073	2-1/2"	143



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Electric Hydraulic Pump PE55TWP

The PE55TWP-BS has been the market leading electric pump for over 30 years and is therefore tried and tested. A simple, lightweight design with a recent upgrade that has created a cost-effective workhorse.



Quality means Lower Life-Cycle Costs

- Over 100,000 cycles
- Continuous duty up to 120°F (50°C) ambient
- Proven design= proven reliability

Enhanced Usability

- Two speed high performance pump
- Retract side internal relief valve protects tool
- Hand remote
- 4" calibration capable gauge
- Use with single or double acting tools
- Four-tool manifold (-4 models only) allow use of up to four tools simultaneously

Air Hydraulic Pump RWP55

The RWP55-BS has been the market leading pump for over 30 years and is therefore tried and tested. A simple, lightweight design with a recent upgrade that has created a cost-effective workhorse.

Quality means Lower Life-Cycle Costs

- Over 100,000 cycles
- Continuous duty up to 122°F (50°C) ambient
- Proven design= proven reliability

Enhanced Usability

- Powerful 3 hp motor
- Retract side internal relief valve protects tool
- Use with single or double acting tools (not for lifting applications)
- 4" calibration capable gauge
- Four-tool manifold (-4 models only) allow use of up to four tools simultaneously





Spring Return Hydraulic Stud Tensioner SRT

The SPX SRT (Spring Return Tensioners) are the quickest and most efficient tools available in today's market. They include a spring return load cell to expedite ram retraction. **They are lighter in weight and offer a host of safety and fail-safe features such as safety relief valve to eliminate over stroking the ram and having to change the seal.**

TOOL REF - Load Cell Order No.	Stud Diameter				Tool Load		Hydraulic Area		Approx. Wt.	
	Metric	Adapter Kit Order No.	Imperial	Adapter Kit Order No.	kN	Lbf	mm²	in²	kg	lb
(SRT 0) SRTAS000001	M20	SRTAS000006	3/4"	SRTAS000002	160	35,971	1,067	1,654	1.4	3.1
	M22	SRTAS000008	7/8"	SRTAS000004						
(SRT 1) SRTAS010001	M24	SRTAS010007	1"	SRTAS010003	280	62,950	1,867	2,894	2.7	6
	M27	SRTAS010009	—	—						
	—	—	1-1/8"	SRTAS010005						
(SRT 2) SRTAS020001	M24	SRTAS020011	1"	SRTAS020003	450	101,169	3,001	4,652	4.1	9
	M27	SRTAS020013	—	—						
	M30	SRTAS020014	1-1/8"	SRTAS020005						
	M33	SRTAS020015	1-1/4"	SRTAS020007						
	M36	SRTAS020016	1-3/8"	SRTAS020009						
(SRT 3) SRTAS030001	M33	SRTAS030011	1-1/4"	SRTAS030003	660	148,381	4,401	6,822	5.4	11.9
	M36	SRTAS030012	1-3/8"	SRTAS030005						
	M39	SRTAS030013	1-1/2"	SRTAS030007						
	M42	SRTAS030014	1-5/8"	SRTAS030009						
(SRT 4) SRTAS040001	M39	SRTAS040014	1-1/2"	SRTAS040004	1,000	224,820	6,668	10,335	8.4	18.5
	M42	SRTAS040015	1-5/8"	SRTAS040006						
	M45	SRTAS040016	1-3/4"	SRTAS040008						
	M48	SRTAS040017	1-7/8"	SRTAS040010						
	—	—	2"	SRTAS040012						
(SRT 5) SRTAS050001	M52	SRTAS050012	2"	SRTAS050004	1,500	337,230	10,003	15,504	13.8	30.4
	M56	SRTAS050013	2-1/4"	SRTAS050006						
	M60	SRTAS050015	—	—						
	M64	SRTAS050016	2-1/2"	SRTAS050008						
	M68	SRTAS050018	—	—						
	M70	SRTAS050020	—	—						
	—	—	2-3/4"	SRTAS050010						
(SRT 6) SRTAS060001	M72	SRTAS060014	2-3/4"	SRTAS060004	2,500	562,050	16,671	25.84	23	50.7
	M76	SRTAS060016	3"	SRTAS060006						
	M80	SRTAS060018	—	—						
	M85	SRTAS060020	3-1/4"	SRTAS060008						
	M90	SRTAS060022	3-1/2"	SRTAS060010						
(SRT 7) SRTAS070001	M90	SRTAS070010	3-1/2"	SRTAS070004	3,200	719,424	21,339	33.076	32	70.5
	M95	SRTAS070012	—	—						
	M100	SRTAS070014	3-3/4"	SRTAS070006						
	—	—	4"	SRTAS070008						
(SRT 8)* SRTAS080001	M105	SRTAS080010	4"	SRTAS080004	4,100	921,762	27,340	42.377	45	99.2
	M110	SRTAS080012	—	—						
	M115	SRTAS080014	4-1/4"	SRTAS080006						
	—	—	4-1/2"	SRTAS080008						

Features and Benefits

- Automatic powered piston retract mechanism
- Unique quick release bridge adaption
- Encapsulated nut rotator disk
- Lightweight compact load cell
- Dual inlets eliminate hose tee pieces
- Piston over-stroke prevention with safety relief valve
- Piston/cylinder misalignment compensation





MILLENNIUM™
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Power Team Hydraulic Equipment- Cylinders

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Cylinder Models:

- C Series
- CPS/RPS
- CBT
- RP SERIES
- RA Series
- RLS Series
- RSS Series
- RH Series
- RT Series
- RGG Series
- RDG Series
- RGL Series
- RGP Series
- RD Series
- R Series
- RA_L Series
- R_L Series

Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Power Team Hydraulic Equipment- Jacks

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Jack Models:

- Sidewinder jacks
- Low profile bottle jacks
- Bottle jacks
- Telescoping bottle jacks
- Economy toe jacks
- Heavy-duty toe jacks
- RJ series
- JE/JA series
- Inflatable jacks
- Maintenance sets
- SK series
- Post tensioning jacks

Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Power Team Hydraulic Equipment- Pumps

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Pump Models:

- P SERIES
- RPS SERIES
- PA6 SERIES
- PA6D SERIES
- PA9 SERIES
- PA60 SERIES
- PA50 SERIES
- PA17 SERIES
- PA46/PA55
- PB SERIES
- PE10 SERIES
- PE17 SERIES
- PE18 SERIES
- PE21 SERIES
- PED SERIES
- PE30 SERIES
- PE46 SERIES
- PE60 SERIES
- PQ60 SERIES
- PQ120 SERIES
- PE400 SERIES
- MCS SERIES
- PE-NUT SERIES
- PG120 SERIES
- PG30/PG55 SERIES
- PG120/PG420 SERIES
- HB SERIES
- INTENSIFIERS
- ATO SERIES

Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Power Team Hydraulic Shop Equipment

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Shop Equipment Options:

- C-FRAME (25T)
- H-FRAME (10T)
- H-FRAME (25T)
- H-FRAME (55T)
- H-FRAME (100T)
- H-FRAME (150 - 200T)
- ROLL-BED (80 - 200T)
- FLOOR CRANES
- HYDRAULIC VISE

Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Power Team Hydraulic System Components

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

System Component Models:

- COUPLERS
- FITTINGS
- GAUGES
- HOSES
- HYDRAULIC FLUIDS
- MANIFOLDS
- COMPONENTS
- VALVES

Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Power Team Hydraulic Equipment- Tools

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Tool Models:

- C-CLAMP
- CRIMPERS
- CUTTERS
- HAND TOOLS
- HP SERIES
- HT SERIES
- ALIGNMENT TOOLS



Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs



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Power Team Hydraulic Equipment- Pullers

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Puller Models:

- POSI LOCK PULLERS
- MECHANICAL PULLERS
- HYDRAULIC PULLERS
- ENFORCERS
- RAIL BEARING PULLERS
- PULLER BLANKETS
- PULLER SETS
- PULLER ACCESSORIES



Capabilities High Force Tools & Bolting Equipment:

- Manufacturing facilities
- Heavy lifting & positioning solutions
- Custom product requests
- Hydraulic training programs





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Torque & Tensioning Inc.

Power Team Hydraulic Heavy Lifting & Positioning Solutions

SPX FLOW brand Power Team specializes in high-pressure hydraulic technology. Through a broad range of leading-edge component parts, accessories and tools, Power Team enables the creation and upkeep of concentrated force delivery solutions that can meet any application criteria. Thanks to rugged design plus advanced protective coatings, Power Team equipment is able to cope with deployment in the most uncompromising of applications. It thereby delivers ongoing functional reliability under a range of stresses to an extent.

Heavy Lifting & Positioning Solutions:

- MCS SERIES
- PE400 SERIES
- PQ120 SERIES
- PG120/PG420 SERIES
- RD SERIES
- RH SERIES
- C SERIES
- BS PE55 SERIES





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Superbolt Mechanical Tensioner

Superbolt Tensioners offer you simple and cost-effective tightening of large size bolts. Your joints can be tightened with high accuracy without requiring specialized skills or heavy tooling. A wide range of tensioners is available in the standard series, as well as an unlimited capacity to create special designs to meet your unique needs.

Benefits

- Quick and easy installation and removal
- Only hand tools required
- Safe method for installation
- Fits in restricted areas
- Profitable life-cycle cost
- Reliable operation
- Simple maintenance procedure

Features

- Dimension range: (3/4" - 6")
- Approx. bolt stress depending on size: 250 to 1200 N/mm² (35 to 175 ksi)
- Temperature range: -40 to 350°C (-40 to 650°F)
- Custom product design upon request



Superbolt NXT

- Fewer, stronger jackbolts than any other multi-jackbolt tensioner
- 30% faster to install, with an extremely accurate preload range of $\pm 10\%$ providing the same security while reducing installation and removal time
- Laser markings clearly indicate the optimal tightening sequence
- Knurling layer adds sturdy, no-slip grip for safe use in cold environments or when using gloves, minimizing the risk of injury/damage caused by dropping
- NXT can replace any hex nut or round nut
- Superbolt Tool-compatible





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Superbolt Flexnuts

Flexnuts have been specially developed for through-hole applications. Their reactive design distributes the bolt load along many threads, adds elasticity and prevents stress concentrations in the first few threads. This helps relieve stress concentrations and increases the fatigue life of the bolt. Since Flexnuts are reactive nuts to be used opposite our tensioners, they are never torqued directly to achieve preload.



SX8 Series FlexNut

Benefits

- Ensures an equal load distribution on the thread of the bolt/stud, under load
- Adds elasticity in the joint
- Increases the fatigue life of the bolt/stud



SX12 Series FlexNut

Features

- Dimension range: M20 - M160 (3/4" - 6")
- Approx. bolt stress depending on size: 450 to 900 N/mm² (60 to 130 ksi)
- Temperature range: -10 to 250°C (0 to 500°F)
- Custom product design upon request



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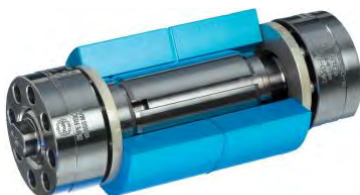
Superbolt EZFit Mechanical Expansion Bolts

EZFit mechanical expansion bolts offer tremendous radial expansion and joint clamping power in one bolting system for threadless bore, blind holes, and through-holes. They are specially designed for rotating couplings or alignment systems that require the bolts to transfer forces in shear. This innovative product replaces large fitted or interference fit bolts, no modifications required. The key to this solution is the split expansion sleeve that mates with the customers' machined holes.



Benefits

- Quick and easy to install and remove – only hand tools needed
- No need for special high-powered tools and bolt deep freezing
- Saves money over alternative solutions in time and tooling
- Reusable split sleeve that springs back to original size, use after use



Features

- The split sleeve requires less tolerance on mating parts than is traditionally required with interference fit, saving critical machining time
- EzFit mechanical expansion bolts can be designed using latest FEA technology for any type of coupling with bolts of diameter 20mm (3/4") or upwards
- Unique features and advantages of both hydraulic and mechanical expansion sleeve coupling bolts can be combined to best suit your specific requirements
- Custom product design upon request



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Superbolt Load Sensing Tensioner

Equipped with a strain-measuring device, the patented Load Sensing Tensioner (LST) analyzes the variation of the tensioner's circumference in proportion to the variation in bolt preload. Additionally, the LST offers remote monitoring and a live reading of data – all with an accuracy that is better than $\pm 5\%$! The LST features a wealth of benefits without the need for any modification of the bolted joint.

Benefits

- Remote preload monitoring and a live reading of data
- Facilitates more uptime during service
- Precise and repeatable preload reading
- Eliminates the need for modifications of the bolt
- Seamless to retrofit/upgrade — simply replace original nut with the LST
- Robust and reliable, IP67 classed
- Accurate preload verification without adjustment of clamped parts
- No alteration needed of the assembly (including stud or joint design or geometry)
- Removes risk of injuries for operators in hazardous areas
- Eliminates high costs on labor, additional measuring devices and periodic verification by maintenance
- Custom product design upon request



LST With Internal or External Ring:

- **LST with Internal Ring** (Sensors mounted in the groove)
 - CY or MT version
 - Standard sizes are M36 - M100
 - Standard shaped MJT
 - Sensors covered by ring in Delrin material IP67 classed M5 connector in the nuthouse
- **LST with External Ring** (Sensors mounted on the outer diameter)
 - Enables the use of more readily available standard configuration Multi-Jackbolt Tensioners (MJTs) to achieve faster turnarounds
 - The External Protective Ring covers the externally mounted sensors and fully contains the wiring and M5 connector





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Superbolt Load Sensing Flexnut

The Load Sensing Flexnut's (LSF) built-in sensors automatically measure and communicate preload values, allowing for seamless remote monitoring; and this SMART product can be used in conjunction with any type of tightening method (tensioning, torquing, heating, etc.).



Benefits

- Measures preload with an accuracy that is better than $\pm 5\%$
- Reduces stress concentration of threads
- Easy to operate, no advanced training needed
- Both local and remote monitoring options
- Robust and reliable, IP67 classed
- Custom product design upon request



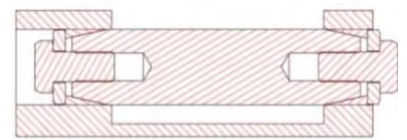
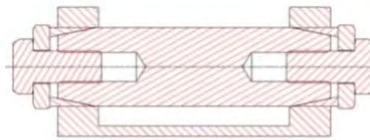
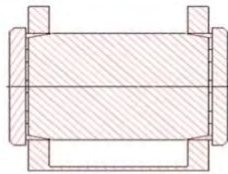
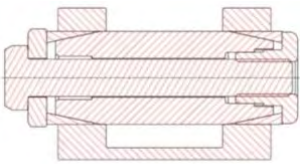


Expander Pin

Lug wear is a common problem with all machinery. Repairs involve a costly, time-consuming process with significant downtime and must be repeated several times over a machine's life. With the Expander System, the repair can be carried out directly in the worn mountings without welding and line boring – a permanent solution to lug wear.

Benefits

- Permanent solution to lug wear
- An award-winning solution with over one million systems installed since 1985
- The design is adaptable for any obstacle, lubrication and application needs

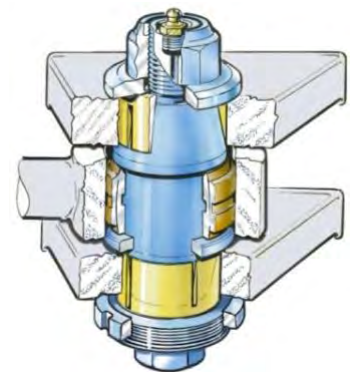
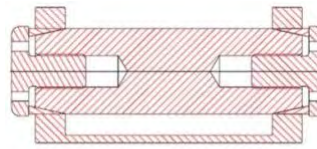
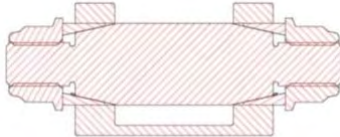
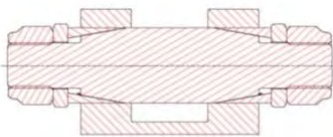


Through Bolt Design

Multi-Bolt Arrangement

Bolt Fastener With Washer

Bolt Fastener With Recessed Washer



Lock Nut & Washer

Flange Nut Without Washer

Flat Head Fastener With Mounting Tool

Stepped Pin With Axial Locking



Wedge Locking Technology Washers

Nord-Lock wedge-locking washers utilize tension instead of friction in order to secure bolted joints exposed to severe vibration and dynamic loads. Over the operational life cycle, Nord-Lock washers offer increased operational reliability and lower maintenance costs, while significantly reducing the risks of production stops, accidents and warranty claims. Nord-Lock steel washer promises the highest corrosion resistance on the market.

Washer Types

- **Nord-Lock Steel Washers**
 - Applications: General steel applications
 - Size range: M3-M130 #5 TO 5"
 - Coating: Delta Protekt® KL100 zinc flake coating
 - Bolt grades: Up to 12.9
 - Temperature Range: -50°C to 200°C
- **Nord-Lock Stainless Steel Washers**
 - Applications: General steel applications
 - Size range: M3-M80 #5 TO 3 1/8"
 - Bolt grades: Up to A4-80
 - Temperature Range: -160°C to 500°C
- **Nord-Lock 254 SMO® Washers**
 - Applications: Corrosive environment – chloride rich environments, offshore, pumps, heat exchangers, nuclear, food, medical, processing
 - Size range: M3-M39 #5 TO 1 1/2"
 - Bolt grades: Up to A4-80
 - Temperature Range: -160°C to 500°C
- **Nord-Lock Alloy 718 Washers**
 - Applications: Acidic environment – chemical industry, evaporators, offshore, downhole tooling
 - Size range: M4-M20 #8 TO 1 1/2"
 - Temperature Range: -160°C to 500°C
- **Nord-Lock Alloy 718 Washers**
 - Applications: High temperatures – gas turbines, turbo charges, incinerators
 - Size range: M4-M20 #5 TO 1 1/2"
 - Temperature Range: -160°C to 700°C

Benefits

- Quick and easy to install and remove with hand tools
- Locking function not affected by lubrication
- High corrosion resistance
- Reliable locking, even for joints with short clamp length
- Reusable (depending on usage environment)
- Tested with at least 1,000 hours in the Neutral Salt Spray Test* - ensuring optimum performance over time, even in the most extreme environments
- Custom product design upon request





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Hydraulic Nuts

Hydraulic nuts enable large diameter bolts to be tensioned with ease to high and accurate preloads. A hydraulic pump activates the internal jacking system, so the effort required to tighten a very large diameter bolt is reduced to the effort needed to operate the pump. As there is no nut rotation during tightening, the operation can be performed in a confined space and torsional stresses on thread damage are eliminated. Any number of hydraulic nuts can be connected together for simultaneous operation, ensuring all bolts in the joint can be evenly loaded to the same high and accurate preload.

Benefits

- Quick and easy to install
- Even and accurate load as it is developed hydraulically
- Low loss of initial load (shim)
- No torque or torsion stress
- No flogging hammers or spanners
- Self-aligning (shim)
- Improved fatigue performance
- 100% simultaneous tension
- Long life of internal jack - very compact and cost effective
- Less stud protrusion required than for tensioners

Features

- Available as bottom collar, top collar, and shim type
- Standard 1500bar and 2500bar designs
- A20/A15 range
- Substitutes original nut – combines tensioner and permanent nut
- All in one solution – nut remains in place post tensioning
- Special designs available
- Supplied up to M400 in size (to date) – larger sizes quoted
- High temperature solutions available
- Custom product design upon request





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Nut Splitter

The SPX ENS nut splitter offers a reliable and effective solution to the removal of seized and eroded nuts. Order a cylinder and a head to make a complete nut splitter. Cylinders are interchangeable with heads in specific size ranges, and each are sold separately.

Tool Reference - Order No.			Range					
STANDARD Standard Cylinder Single Acting	Head	Bolt Diameter		Nut A/F		Approx. Wt.		
		(in.)	metric	(in.)	(mm.)	kg	lb	
ENSAS010001	ENSAS010002	3/4"	M20	1-1/4"	30	6.7	14.8	
		7/8"	M22	1-7/16"	32			
		1"	M24	1-3/8"	36			
		—	M27	—	41			
	ENSAS010003	3/4"	M20	1-1/4"	30	6.9	15.2	
		7/8"	M22	1-7/16"	32			
		1"	M24	1-3/8"	36			
		1-1/8"	M27	1-13/16"	41			
		1-1/4"	M30	2"	46			
		—	M33	—	50			
ENSAS020001	ENSAS020002	1-1/8"	M30	1-13/16"	46	15.8	34.8	
		1-1/4"	M33	2"	50			
		1-3/8"	M36	2-3/16"	55			
		1-1/2"	M39	2-3/8"	60			
	ENSAS020003	1-1/8"	M30	1-13/16"	46	16	35.3	
		1-1/4"	M33	2"	50			
		1-3/8"	M36	2-3/16"	55			
		1-1/2"	M39	2-3/8"	60			
		1-5/8"	M42	2-9/16"	65			
		1-3/4"	M45	2-3/4"	70			
		1-3/4"	M45	2-3/4"	70			
		1-7/8"	M48	2-15/16"	75			
ENSAS030002	2"	M52	3-1/8"	80	42	92.6		
	1-3/4"	M45	2-3/4"	70				
	1-7/8"	M48	2-15/16"	75				
	2"	M52	3-1/8"	80				
	2-1/4"	M56	3-1/2"	85				
	1-3/4"	M45	2-3/4"	70				
ENSAS030001	ENSAS030003	1-7/8"	M48	2-15/16"	75	42.5	93.7	
		2"	M52	3-1/8"	80			
		2-1/4"	M56	3-1/2"	85			
		1-3/4"	M45	2-3/4"	70			
	ENSAS030004	1-7/8"	M48	2-15/16"	75	43	94.8	
		2"	M52	3-1/8"	80			
		2-1/4"	M56	3-1/2"	85			
		2-1/2"	M60	3-7/8"	90			
		—	M64	—	95			
		1-3/4"	M45	2-3/4"	70			
ENSAS030005	1-7/8"	M48	2-15/16"	75	44	97.0		
	2"	M52	3-1/8"	80				
	2-1/4"	M56	3-1/2"	85				
	2-1/2"	M60	3-7/8"	90				
	2-3/4"	M64	4-1/4"	95				
	—	M68	—	100				
	—	M72	—	105				
	ENSAS040001	ENSAS040002	2-3/4"	M76			4-1/4"	110
3"			M80	4-5/8"	115			
2-3/4"			M76	4-1/4"	110			
ENSAS040003		3"	M80	4-5/8"	115	75	165.3	
		3-1/4"	M85	5"	120			
		3-1/2"	M90	5-3/8"	130			

Features and Benefits

- Triple edge replaceable cutting blade
- Blade positioning scale to eliminate bolt damage
- Cutting depth adjusted by rotating the cylinder
- Size range from 3/4" to 3-1/2" bolt diameter
- Designed to fit BS 1560/ANSI 16.5 flanges
- Special subsea versions available
- Versatile, reliable, and trouble-free operations
- **Operates off a standard 10,000 psi pump unit**



Flange Alignment Pins



Features and Benefits

- Safe, fast, and effective
- The pin's tapered shaft is a patented feature which eliminates the need for hammering and prying when lining up flange bolt holes
- Sold individually and in sets within a custom-made, foam-lined kit
- Sizes range from 3/8" to 3-5/8" hole diameter

Lokrite™ Backup Wrenches

Features and Benefits

- Great for areas that require non-sparking torque applications
- Units hold themselves in place. Hands are not needed to hold backup in place, and a hammer is not needed to remove the wrench
- Available in hex sizes 1-1/16" to 6-1/8"





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Hydraulic Flange Spreaders

The Hydraulic Flange Spreaders FLS15 require a minimum access gap of 0.025". However, the spreading force has been increased to 15 tons on the first step and 20 tons on the remaining steps. Used on pipe flange work from construction to maintenance and turnarounds.



Features and Benefits

- 33,000 pound (15 metric ton) spreader features an incorporated wedge design that provides structural support to the shoes throughout the tool range to maximize tool longevity and performance.
- Jaws fully supported by wedge for excellent durability
- Ideal for flanges with narrow gaps - only 5 mm (.2 inches) required for entry
- Compact and lightweight design - only 287 mm (11.28 inches) long at a weight of 3.2 kg (7 pounds)
- Suitable for the offshore environment due to superior corrosion resistance
- Quick adjustments for various tasks due to interchangeable shoes (both stepped and serrated)
- Includes female half coupler - mates to standard 3/8" male half coupler





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Impact Sockets & Accessories

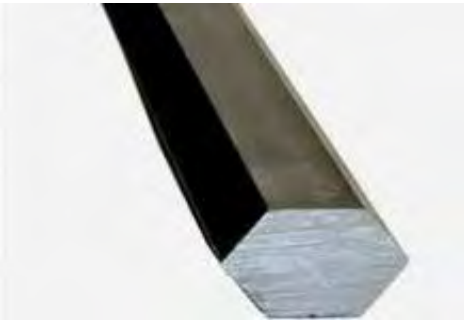
Sockets



Features and Benefits

- 1/2" to 2-1/2" Square Drive
- Fractional and Metric
- 6-Point and 12-Point
- #4 and #5 Spline Drive

Hex Stock



Features and Benefits

- Flat Striking Wrenches
- Offset Striking Wrenches
- Fractional and Metric
- 6-Point and 12-Point

Striking Wrenches



Features and Benefits

- Flat Striking Wrenches
- Offset Striking Wrenches
- Fractional and Metric



Split Frame Machines

Millennium has a vast inventory of split frame, clamshell style portable machine tools. These machines are designed to cut, bevel, single point, counterbore, and face flanges on pipe and tubing ranging from 2 to 48 inches O.D. (DN50-1200), on most wall thicknesses and materials.



Features and Benefits

- Machine quickly splits to mount around Outside Diameter of in-line pipe
- Parts and accessories are interchangeable between various sizes
- Cuts and bevels pipe of any wall thickness including materials: Carbon, Steel, Hastelloy™, Inconel™, and other exotic materials
- Self-squaring pipe clamping system with integrated, close tolerance legs and wide feet for exceptional stability
- Feed system offers low clearance operation with precise feed for controlled cutting
- The low friction and adjustable bearing system provides maximum stability and extended machine life
- Fully enclosed bearing and drive gear system for operational safety

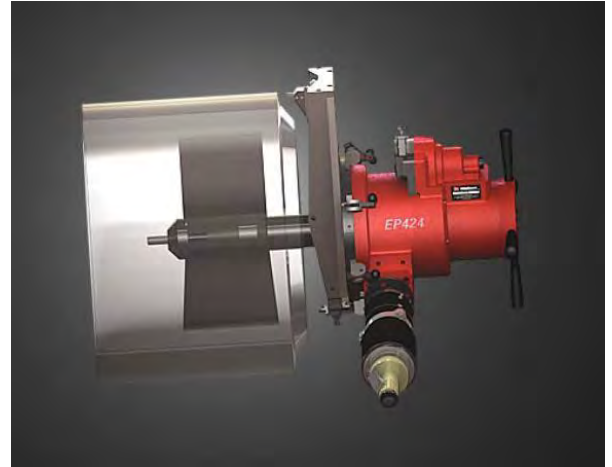
Model #	Pipe O.D. Range		Weight (lbs)
	MIN	MAX	
SF206	2"	6"	31
SF408	4"	8"	37
SF610	6"	10"	49
SF612	6"	12"	55
SF814	8"	14"	59
SF1016	10"	16"	77
SF1420	14"	20"	92
SF1824	18"	24"	189
SF2228	22"	28"	213
SF2632	26"	32"	235
SF3036	30"	36"	259
SF3642	36"	42"	297
SF4248	42"	48"	329



MILLENNIUM™
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EP 424 End Prep Bevelers

- Designed to bevel, compound bevel, J Prep, face, and counterbore pipe, fittings, and valves
- Our revolutionary Speed Prep Mechanism feeds simultaneously in the axial and radial planes
- The EP 424 is able to machine any bevel or compound bevel without templates, incline tool slides, or work stoppages

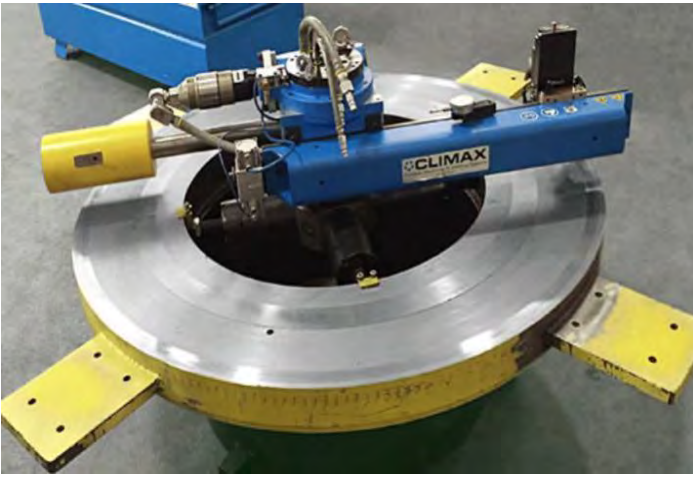


SBD Small Diameter Bevelers

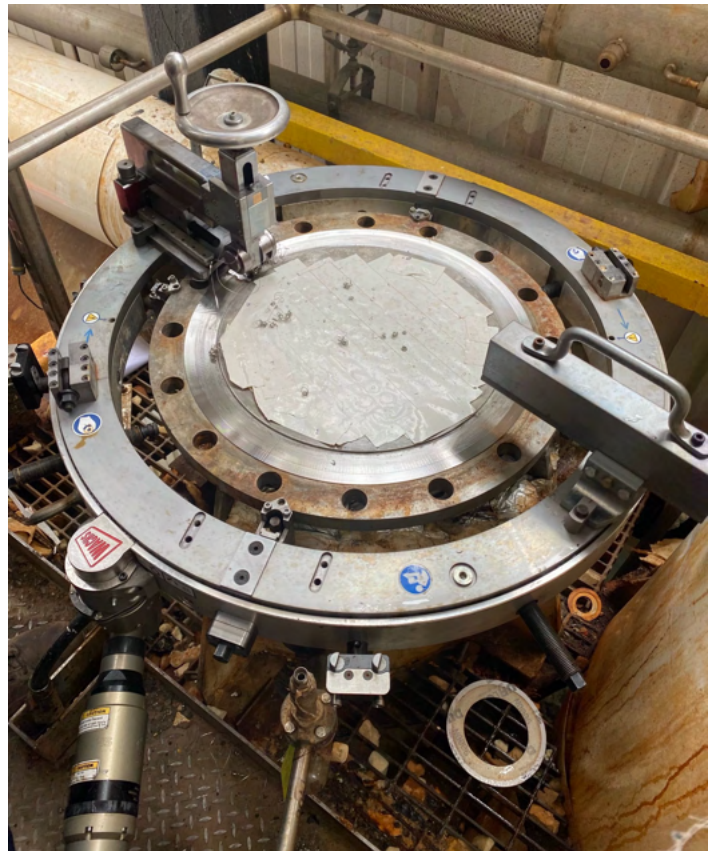


- Engineered for fast, precise onsite facing, beveling, compound beveling, and counterboring of light and heavy wall pipe, tube or casing
- They set up quickly with a self-centered mandrel and chuck assembly mounting to the pipe I.D.
- Three models are available to prep from .875"-12.75" (22.2mm-323.9mm) O.D.

Flange Facing Equipment



Millennium offers a variety of both ID and OD mount flange facers from 0.75" to 120" diameter. We carry both pneumatic and electric powered units which can also be equipped for milling, counter-bore, bevel, and end- prep configurations.





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Valve Operating Tools

Gate Valve

Basic Set Includes: MTT- DA2motion 10 (max. torque 730 lb-ft), (Digital) revolution counter including adapter, extendable reaction arm with impact protection, (2) 18 volt lithium batteries with charger, transport and storage box, and user manual including Md-selection chart.

Accessories A for Basic Set: Handwheel Adaptors (for valves with handwheel operation)

Each of both handwheel adapters (max. torque 730 lb-ft) is equipped with 5 pcs drive pawls for adjusting the handwheel adaptor to number of handwheel spokes – possible combinations 2/3/4/5 are engraved on the handwheel.

Handwheel "small" MTT-78857

(Pitch circle Ø for drive pawl 165 mm)



Handwheel "large" MTT-78858

(Pitch circle Ø for drive pawl 245 mm)





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Accessories B for Basic Set: Prolongation includes 6 pieces of coupling sleeves for underground valves, complete MTT-79598

We offer accessories to allow the extension of the valve tool to operate underground valves (pictured right). The set includes extension pieces as well as coupling-sleeve adapter (MTT-78867) and 6 pieces of coupling sleeves for underground valves.



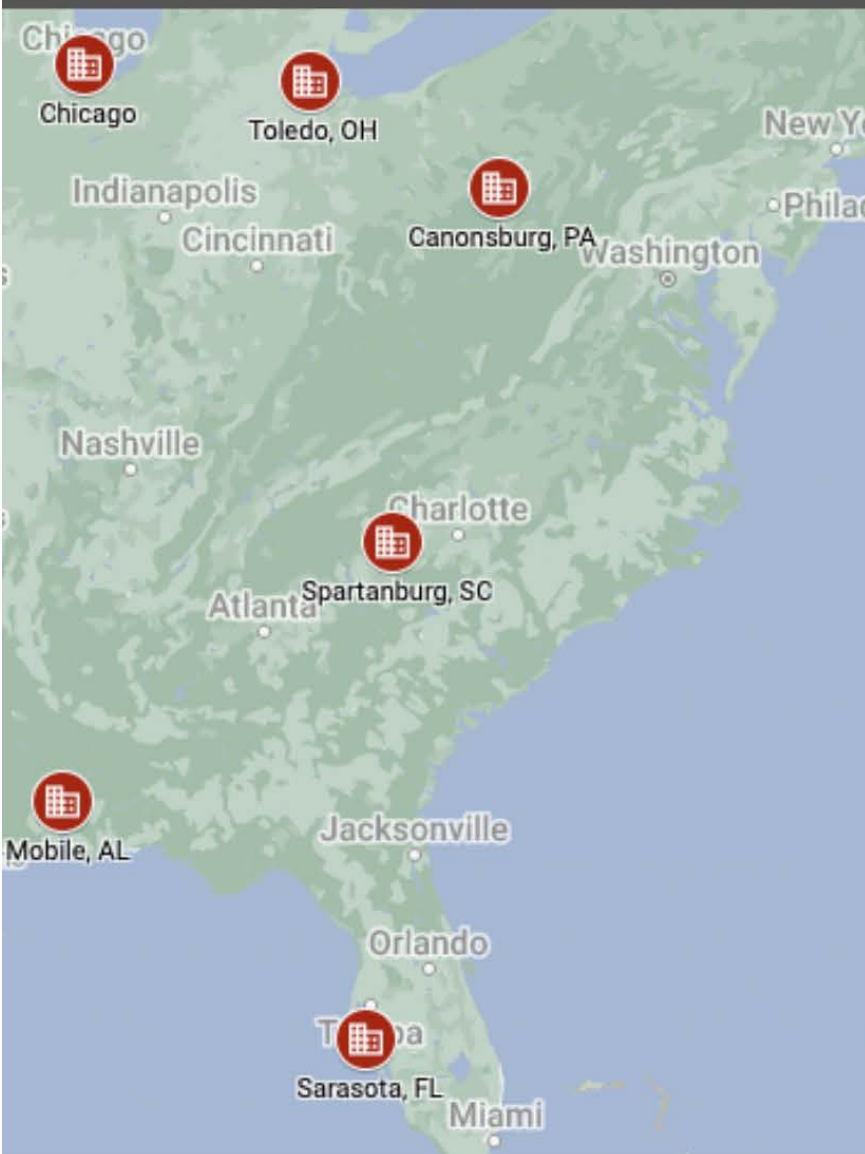
Rising Stem Valve

Basic Set Includes: Stem Valve offset gear with 1:1.5 input/output ratio and 10" diameter handwheel adapter

Offset gear available with
MTT-DA2motion 10



MTT Locations



Canonsburg, PA
Toledo, OH
Chicago, IL
Spartanburg, SC
Sarasota, FL
Mobile, AL

