





Ray Smith, Sr., and sons, Ray Smith, Jr., and W. Douglas Smith, founded the business, first known as Smith Machine Tool Company in McMinnville, Tennessee. Ray, Sr., and his brothers were the owners and managers of Powermatic, the McMinnville-based manufacturer of wood and metalworking machinery, which was established by their father, Leonard F. Smith, Sr., back in 1928. Smith Machine Tool Co. was later reincorporated as TENNSMITH, INC.

All TENNSMITH products are built in the USA, backed by an industry-leading 3-year limited warranty.

Today, the Smith family continues to build upon eight decades of manufacturing excellence with TENNSMITH

American-made metal

forming machinery. TENNSMITH has developed a full range of sheet metal tools including Automatic Folders, Hand Brakes, Shears, Slip Rolls, Cleat Benders, Notchers and Rotary Machines. The company is recognized worldwide as a premier leader in the manufacture of sheet metal fabricating machinery. All TENNSMITH products are

built in the USA. Our 100,000-square-foot manufacturing facility is well equipped with the very latest in machine tool technology.



Inside Smith Machine Shop (Powermatic), early 1940s.

TENNSMITH
machinery is backed
by an industry
leading 3-year
limited warranty.

Quality
workmanship,
product performance

and customer satisfaction are the key ingredients of maintaining our future growth. If you have suggestions, opinions or ideas that will help us improve our products, we would enjoy hearing from you.



SHEARS



MODELS





TENNSMITH's squaring shears offer precision shearing and rugged construction at an affordable price. The shear frame, bed and cutter head assemblies are constructed of heavy-duty cast iron. The shear bed is machined and then surface ground to precision tolerances to ensure an accurate working surface.

These shears feature triaction, high-carbon/high-chromium (HCHC) steel blades. Both the upper and lower blades have a 2-degree edge relief and the lower blade has an additional 1-degree face relief for maximum material penetration with minimum effort. Triaction blades help prevent material movement while shearing, prolonging blade life.

TENNSMITH shears have the most complete adjustment features of any sheet metal shear

on the market. The lower shear blade is bedadjusting and the upper blade is adjustable by means of a truss bar on the cutter head. The spring-activated holddown feet clamp the work piece securely in place and are easily adjustable to compensate holding pressure for light or heavy gauge material. There is ample clearance between the holddown feet and shear blades to allow good operator vision for line-of-sight cutting. The standard, double-locking back gauge, which features embossed scales and vernier wheels for fine adjustment, gives highly accurate readings.

Foot-Squaring Shears	Model 36	Model 52
Maximum shearing capacity, mild steel	16 gauge/1.6 mm	16 gauge/1.6 mm
Maximum shearing capacity, stainless steel	20 gauge/1.0 mm	20 gauge/1.0 mm
Maximum cutting length	37 in./940 mm	52-1/4 in./1327 mm
Back gauge range	30 in./762 mm	30 in./762 mm
Front gauge range	37 in./940 mm	37 in./940 mm
Floor space, gauges in position	45 x 80 in. 1143 x 2032 mm	60 x 80 in. 1524 x 2032 mm
Dimensions, less gauges, LxWxH	46-1/2 x 27 x 42 in. 1181 x 686 x 1067 mm	61 x 36 x 42 in. 1550 x 915 x 1067 mm
Shipping weight	700 lbs./317.5 kg	950 lbs./431 kg

Standard equipment includes a back gauge, front extension arms with stop, bevel gauge and graduated side scales. Additional option: Squaring arm.



TENNSMITH's power shears combine all of the features of our foot shears with the advantage and convenience of air or hydraulic operation. TENNSMITH power shears are a productive addition to any shop. The air shears utilize heavy-duty, tie rod-type pneumatic cylinders, which provide up to 40 strokes per minute in capacity materials.

A foot-operated air valve control, pressure regulator, air gauge, oiler/condenser cups and neoprene, padded holddown feet are standard features. We recommend a maximum air supply of 75 psi for operating these shears at rated capacity. Where air supply pressures exceed 75 psi, an in-line regulator is helpful to provide pressure control.

The model 52H cycles at 45 strokes a minute, thanks to its first class hydraulic system. The hydraulic unit is of a low maintenance design featuring a solenoid actuated valve, 3-hp electric motor, self-contained pump in tank with pressure gauge, check valve and industrial quality cylinders. The motor is protected by a magnetic starter.

Other electrical safety features include a low voltage on/off switch; low voltage, shrouded, electric foot switch; step-down transformer with low voltage circuit fuse; fully enclosed electrical box; and insulated reinforced conduit for all wiring. Models 36A and 52A are ideal ways to enhance shearing productivity with minimal investment.

All shears are standard, equipped with high-carbon/high-chromium (HCHC) blades.

Power Shears	Model 36A	Model 52A/52H
Maximum shearing capacity, mild steel	16 gauge/1.6 mm	16 gauge/1.6 mm
Maximum shearing capacity, stainless steel	20 gauge/1.0 mm	20 gauge/1.0 mm
Maximum cutting length	37 in./940 mm	52-1/4 in./1327 mm
Back gauge range	30 in./762 mm	30 in./762 mm
Front gauge range	37 in./940 mm	37 in./940 mm
Floor space, gauges in position	45 x 80 in. 1143 x 2032 mm	60 x 80 in. 1524 x 2032 mm
Dimensions, less gauges, LxWxH	46-1/4 x 24 x 42 in. 1181 x 686 x 1067 mm	61 x 25 x 42 in. 1550 x 915 x 1067 mm
Strokes per minute, full length	40	40/45
Maximum operating pressure	75 psi/5.1 atmos.	75 psi/1450 psi 5.1 atmos./98.6 atmos.
Air consumption per stroke	1.1 cu. ft./0.031 cu. m.	1.33 cu. ft. / n/a 0.038 cu. m. / n/a
Motor–230/460v, 3-phase, 60Hz, 1745 RPM	n/a	n/a / 3 hp
Shipping weight	800 lbs./363 kg	1085 lbs./1300 lbs. 492 kg/590 kgs

Standard equipment includes back gauge, front extension arms with stop, bevel gauge, graduated side gauges, foot control and neoprene padded holddown feet.

Available options: Squaring arm and one-shot lubricating system.

Optional: parallel drive backgauge, rack & pinion type.

HAND SHEAR



MODEL SK1020



TENNSMITH's SK Series shear is built with the quality and high exacting standards that our customers have come to expect from our line of machinery. This model is ideal for customers interested in 10-foot shearing capacity with the affordability of manual operation.

The SK shear is equipped with a standard 2x-R, 0-24 inch, quick-moving back gauge system, 4-edge high carbon/high chromium (HCHC) blades and precision bearings.

Please consult a TENNSMITH sales representative for more information on the SK model shear.

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20 ga: 2 men 22 ga: 1-2 men 24 ga: 1 man

SK Series Shear	SK1020
Maximum shearing capacity, mild steel	20 gauge/1.0 mm
Maximum shearing capacity, stainless steel	24 gauge/0.61 mm
Maximum cutting length	121 in./3073 mm
Back gauge range	24 in./610 mm
Dimensions, LxWxH	135 x 60 x 55-1/2 in. 3429 x 1524 x 1410 mm
Shipping weight	2,900 lbs./1318 kg

Available options: Five-foot squaring arm, front support arms and protractor.



Model SK1020 Back Gauge

MECHANICAL SHEARS









TENNSMITH's MSE Series is based on our popular LM model shears.

Standard features include:

- 30-inch front-operated 2x back gauge system
- 4-edge high carbon/high chromium (HCHC) blades and precision bearings

The MSE616 is available as a standard model or in our popular Performance Package.

Model MSE1016 comes standard with Performance Package F or R(see box).

Numerous options are available. Please consult a TENNSMITH sales representative for specific details.



Mode MSE1016-F shown from rear. (Sheet Support System-F)



Model MSE1016 shown with 2x back gauge.

Solid holddown bar with urethane insert.

MSE Series Shears	MSE616	MSE1016
Maximum shearing capacity, mild steel	16 gauge/1.6 mm	16 gauge/1.6 mm
Maximum shearing capacity, stainless steel	20 gauge/1.0 mm	20 gauge/1.0 mm
Maximum cutting length	73 in./1854 mm	121 in./3073 mm
Back gauge range	30 in./762 mm	30 in./762 mm
Strokes per minute, full length	40	40
Motor-230/460v, 3-phase, 60Hz	3 hp	3 hp
Number of holddowns	Solid BAR	Solid BAR
Floor space, gauges in position	92 x 69 x 50 in. 2337 x 1753 x 1270 mm	140 x 69 x 50 in. 3556 x 1753 x 1270 mm
Shipping weight	2,300 lbs./1046 kg	4,150 lbs./1886 kg

Available options: Air-operated sheet support system, five-foot squaring arm, front support arms, protractor and stroke counter.

The MSE Performance Package includes:

1. Five-foot squaring arm. 2. Pair of front support arms. 3. Air-operated sheet support system, F or R. ("F" is a Front Return Material System via material tray located under the shear table. "R" is a Rear Return Material System.)

LOW-PROFILE SHEARS



MODELS LM410 LM610 LM810



TENNSMITH's low-profile LM Series mechanical shears utilize a simple low-maintenance design, coupled with an array of standard features for an attractive combination of high value and solid performance.

Models LM410, LM610, LM810, LM1012, LM1014 and LM1214 incorporate the unique 2x back gauge system. This allows the operator to move the backstop from 0 up to 30 inches (0 to 24 inches for Model LM410) in approximately 2 seconds with only two rotations of the handle. An optional digital readout is available for this system.

The LM Series shears are standard with fouredge, high carbon/high chromium (HCHC) top and bottom blades, independent, self-leveling holddown feet with neoprene inserts, single,

Low-Profile Mechanical Shears	LM410	LM610	LM810
Maximum shearing capacity, mild steel	10 gauge/3.5 mm	10 gauge/3.5 mm	10 gauge/3.5 mm
Maximum shearing capacity, stainless steel	14 gauge/2.0 mm	14 gauge/2.0 mm	14 gauge/2.0 mm
Maximum cutting length	52-1/2 in./1334 mm	73 in./1854 mm	97 in./2464 mm
Back gauge range	24 in./610 mm	30 in./762 mm	30 in./762 mm
Strokes per minute, full length	35	35	35
Number of holddown feet	8	12	14
Motor–230/460v, 3-phase, 60Hz	7.5 hp	7.5 hp	10 hp
Dimensions, LxWxH	72 x 68 x 55-1/2 in. 1829 x 1753 x 1410 mm	81 x 69 x 56 in. 2058 x 1753 x 1423 mm	116 x 72 x 56 in. 2947 x 1829 x 1423 mm
Shipping weight	3,400 lbs./1542 kg	4,000 lbs./1815 kg	6,800 lbs./3091 kg

Available options: Please consult a representative for a complete listing.

continuous and job stroke cycles, motor reverse switch, precision-machined table with hand well, dual inch/metric inlaid bed scales and

non-metallic gibs. The LM410 model incorporates all of the popular LM series features into this 52-1/2" cutting length, 10-gauge mild-

steel capacity shear. Model LM610 has a rated capacity of 10-gauge mild steel with a maximum cutting length of 60-1/2 inches.

Options: 45 spm on 410, 59 spm at reduced capacity all three.



The LM1014 will handle 14-gauge mild steel up to 121 inches. The LM1214 is rated for 14-gauge mild steel with 145-inch cutting length.

To enhance productivity, optional equipment available for the machines include:

- Five or ten-foot squaring arm
- Front support arms
- Protractor attachment

On models LM1014 and LM1214, the air operated sheet support is available in two styles:

- **System R** drops the supported material to the rear of the machine.
- **System F** returns the supported material to the front of the machine via a front return chute.

The LM Series shears are now available in an optional "Performance Package" configuration.

Added LM1416, LM1416F,LM1416R. 174" x 16 gauge, 30"POBG.

Low-Profile Mechanical Shears	LM1012	LM1014	LM1214
Maximum shearing capacity, mild steel	12 gauge/2.7 mm	14 gauge/2.0 mm	14 gauge/2.0 mm
Maximum shearing capacity, stainless steel	16 gauge/1.6 mm	18 gauge/1.25 mm	18 gauge/1.25 mm
Maximum cutting length	121 in./3073 mm	121 in./3073 mm	145 in./3683 mm
Back gauge range	30 in./762 mm	30 in./762 mm	30 in./762 mm
Strokes per minute, full length	35	35	35
Number of holddown feet	16	16	18
Motor–230/460v, 3-phase, 60Hz	7.5 hp	5 hp	7.5 hp
Dimensions, LxWxH	140 x 72 x 56 in. 3556 x 1829 x 1423 mm	143 x 72 x 56 in. 3632 x 1829 x 1423 mm	164 x 72 x 56 in. 4166 x 1829 x 1423 mm
Shipping weight	6,400 lbs./2910 kg	5,900 lbs./2682 kg	7,530 lbs./3423 kg

Available options: Please consult a representative for a complete listing.

The LM Performance Package includes:

1. Five-foot squaring arm. 2. Pair of front support arms. 3. Air-operated sheet support system, F or R. ("F" is a Front Return Material System via material tray located under the shear table. "R" is a Rear Return Material System.)

LOW-PROFILE SHEARS





TENNSMITH's LM1010 is equipped with a standard "GO TO" 30-inch back gauge system. The ballscrew-driven back gauge provides quick, accurate cuts. The LM1010 is powered by a 12-1/2-hp gear motor attached to a mechanical linkage which provides smooth, quiet operation.

The LM1010 is rated at a maximum of 10-gauge material with a cutting width of 121 inches. To enhance productivity, optional equipment available for the machines include: five or ten-foot squaring arm, front support arms, light beam and protractor attachment. A rear drop sheet support system is available for the LM1010.

Additionally, the LM1010-2x is equipped with the popular 2x manual back gauge option. This allows the operator to move the backstop from 0 to 30 inches in approximately two seconds

Low-Profile Mechanical Shears	LM1010	LM1010-2x	LM1210		
Maximum shearing capacity, mild steel	10 gauge/3.5 mm	10 gauge/3.5 mm	10 gauge/3.5 mm		
Maximum shearing capacity, stainless steel	14 gauge/2.0 mm	14 gauge/2.0 mm	14 gauge/2.0 mm		
Maximum cutting length	121 in./3073 mm	121 in./3073 mm	145 in./3683 mm		
Back gauge range	30 in./762 mm (Go-To)	30 in./762 mm (2x)	30 in./762 mm (Go-To)		
Strokes per minute, full length	31	31	31		
Number of holddown feet	16	16	18		
Motor-230/460v, 3-phase, 60Hz	12.5 hp	12.5 hp	2 x 7.5 hp		
Dimensions, less gauges, LxWxH	145 x 39 x 59-1/2 in. 3683 x 991 x 1511 mm	145 x 39 x 59-1/2 in. 3683 x 991 x 1511 mm	169 x 39 x 60 in. 4293 x 991 x 1524 mm		
Floor space, gauges in position	145 x 78 x 60 in. 3683 x 1981 x 1524 mm	145 x 78 x 60 in. 3683 x 1981 x 1524 mm	169 x 78 x 60 in. 4293 x 1981 x 1524 mm		
Shipping weight	9,400 lbs./4272 kg	9,400 lbs./4272 kg	11,400 lbs./5182 kg		

Available options: Please consult a representative for a complete listing.

with only two rotations of the handle. An optional digital readout is available for this system.

TENNSMITH LM Series shears are quality manufactured in the USA at competitive prices.

OPTIONAL SHEET SUPPORT SYSTEM

Example 1

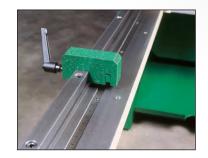
Example 2

The optional sheet support system is recommended for gauging of thin material. With this air-powered support mechanism, one operator can effectively shear cumbersome, light-gauge stock. The sheet support system is available in two styles: **System F**, available on models LM1014 and LM1214, is a front return support which drops sheared parts to a front chute for easy retrieval; and support **System R** which drops sheared material to the rear of the machine.

Unlike competitive front return systems, with the LM Series Performance Package F, you can cut materials longer than the standard back gauge length by deactivating the sheet support.

Example 1 illustrates longer material being sheared by sliding material under the backstop. Most competitors are limited to 24" or 30," and longer pieces cannot be sheared like a TENNSMITH does.

Example 2 illustrates the sheet support system.



OPTIONAL SQUARING ARM

The optional five-foot squaring arm is a precision gauge, which can be mounted left or right and has inlaid inch/metric scaling and adjustable guide block. Also available in ten and twelve-foot lengths. A toggle on the block lets sheet stock slide underneath, then pivots to the stop position.

MSE & LM SHEARS

Options



2X BACK GAUGE WITH DIGITAL READOUT

All MSE and LM models come standard with the unique 2x back-gauge system. The design of the 2x allows the operator to position the back stop from 0 to 30 inches with only two rotations of the handle. Speed of the 2x is unmatched with positioning speeds of only 2 seconds. With the combination

of the optional digital readout for 2x back gauge system, the operator adds both speed and great accuracy to the job. The optional digital display shows measurements in 0.001" increments. Longer travel ranges are available by request.



NOTE: Safety quard has been removed for photo purposes only

STANDARD INDEPENDENT HOLDDOWNS

Independent, spring-loaded, self-leveling holddowns exert uniform pressure on a work piece, ensuring an accurate cut. The plungers have neoprene inserts to prevent marring the surface of the piece.



OPTIONAL Powered BACK GAUGE SYSTEM

The optional powered back gauge system features a twin ball screw design which provides accuracy and repeatability. The standard travel range is 30-inches, longer travels are available. The back gauge is powered by a 3/4–hp gear motor and has digital readout. Models LM1010, LM1210, and LM1416 are standard with this system.

MORE OPTIONS AVAILABLE

- Five-foot squaring arm
- 10-foot squaring arm
- Front support arms
- T-slotted table (supports arms with inlaid inch/metric scales)
- Material cart (MSE1016 and LM1014)
- Stroke counter

- Protractor for angled cuts
- Powered ball screw driven back gauge
- High speed motors for increased cutting cycles
- Air-operated sheet support system (front or rear return)
- Performance Packages

GENERAL INFORMATION

Electrical Specifications

TENNSMITH power machinery features high quality brand name electrical components manufactured in the USA. Replacement components are generally readily available over the counter at electrical supply houses in any industrial market area. Our equipment features transformed control circuits for operator safety. TENNSMITH equipment is made to conform with J.I.C. standards through the addition of a NEMA-12 enclosure and disconnects. This is standard on all TENNSMITH machines.

Parts

Every effort is made for prompt fulfillment of parts orders. With the entire manufacturing process occurring at our facilities in Middle Tennessee, you can rest assured that parts for your TENNSMITH machinery are, and will continue to be, readily available. Parts may be ordered through your local TENNSMITH distributor. If further assistance is needed, feel free to contact the factory. To facilitate processing of your order, please specify the model and serial number of your machine, and include the part number you require. Additional parts manuals are available upon request.

Operating Capacities

Operating capacities of TENNSMITH machinery are rated for AISI 1020 steel, 80,000 psi tensile, 44,000 psi yield (unless otherwise specified).

Stainless: 90,000 psi tensile/ 55,000 psi yield.

Copper: 16 ounce = .022" 20 ounce = .032"

Call for conversions on materials not listed.

Approximate Shearing, Bending and Forming Capacities for Various Materials Compared to Mild Steel										
Mild Steel Capacity	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.	10 Ga.		
FERROUS METALS										
Iron – dead soft		Same as Mild Steel								
Steel – low carbon H.R.				— Same as	Mild Steel -					
Steel – low carbon C.R.				— Same as	Mild Steel -					
Steel – 40-50% carbon H.R.	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.		
Steel – 1074, 1095 C.R annealed spring steel	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.		
Steel – low carbon C.R. HARD	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.		
Stainless – annealed	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.		
NON-FERROUS METALS										
Aluminum – 1100-0, 2024-0, 3004-0, 5052-0, 5052-H32, 6061-T4, 6061-0, 6063-0, 6063-T4, 7075-0,3105-H191	.050	.060	.070	.090	.125	.150	.200	.3125		
Aluminum – 2011-T3, 2014-T4, 2024-T3, 5086-H36, 6061-T6	.030	.036	.048	.063	.090	.105	.125	.150		
Aluminum – 2014-T6, 7075-T4, 7075-T6	.015	.018	.024	.030	.036	.048	.060	.075		
Copper – electrolytic	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.	10 Ga.	8 Ga.		
Bronze – commercial	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.	10 Ga.	8 Ga.		
Brass 70-30	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.	10 Ga.	8 Ga.		
Nickel alloys – inconel 600, monel R405, nickel 200A annealed	28 Ga.	26 Ga.	24 Ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.		
Zinc – as rolled				— Same as	Mild Steel -					
PLASTICS										
ABS compounds	.060	.090	.120	.150	.200	.225	.250	.3125		
Polycarbonate	.048	.063	.075	.125	.125	.156	.188	.200		
PRINTED CIRCUIT BOARDS										
Copper-clad epoxy laminate	.058	.072	.086	.115	.150	.200	.250	.3125		

Approximate Gauge Equivalents											
Gauge 28 Ga. 26 Ga. 24 Ga. 22 Ga. 20 Ga. 18 Ga. 16 Ga. 14 Ga. 12 Ga. 11 Ga. 1								10 Ga.			
inches	.015	.018	.024	.030	.036	.048	.060	.075	.105	.120	.135
mm	.38	.46	.61	.76	1.00	1.25	1.60	2.00	2.70	3.05	3.50

^{*} some variance on longer 10 gauge shears.

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www.tennsmith.com

Proudly made in the USA

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3-YEAR LIMITED WARRANTY

TENNSMITH machinery and component parts are carefully inspected at various stages of production and are tested and inspected prior to shipment. We agree that for a period of twelve (12) months from date of delivery from our authorized distributor to replace, at our option, any machine (or component part thereof) proving defective within the above period. Additionally, we agree that for a period of thirty-six (36) months from date of delivery to replace component parts proving defective within the stated period. All warranty claims are made



FOB our plant, providing such machine (or component part) is returned freight prepaid to our plant, or a designated service center of the undersigned, for our examination. This

warranty does not include repair or replacement required because of misuse, abuse, or because of normal wear and tear; or electrical components which are warranted by their manufacturer. Further, we cannot be responsible for the cost of repairs made or attempted outside of our factory or designated service center without our authorization. No claims for defects will be honored if the name and data plate has been removed. This warranty is made expressly in place of all other warranties or guarantees, express or implied, with respect to fitness, merchantability, quality or operativeness. This warranty becomes effective only when the accompanying warranty card is fully and properly filled out and returned to the factory within ten (10) days from date of delivery.

OTHER APPLICATIONS FOR TENNSMITH MACHINERY

TENNSMITH tools are most often used in cutting and forming light gauge steel sheet but are also suitable for fabricating or processing stainless steel, aluminum, plastics, non-ferrous sheet, laminates, printed circuit boards, paper and card stock, wire cloth and numerous other materials. Space limitations prevent listing capacity comparisons on all of the various possibilities. However, we would be pleased to work with you on specific applications if you will call or write us at the factory. Material characteristics or samples are helpful.

Specifications subject to change without notice.