



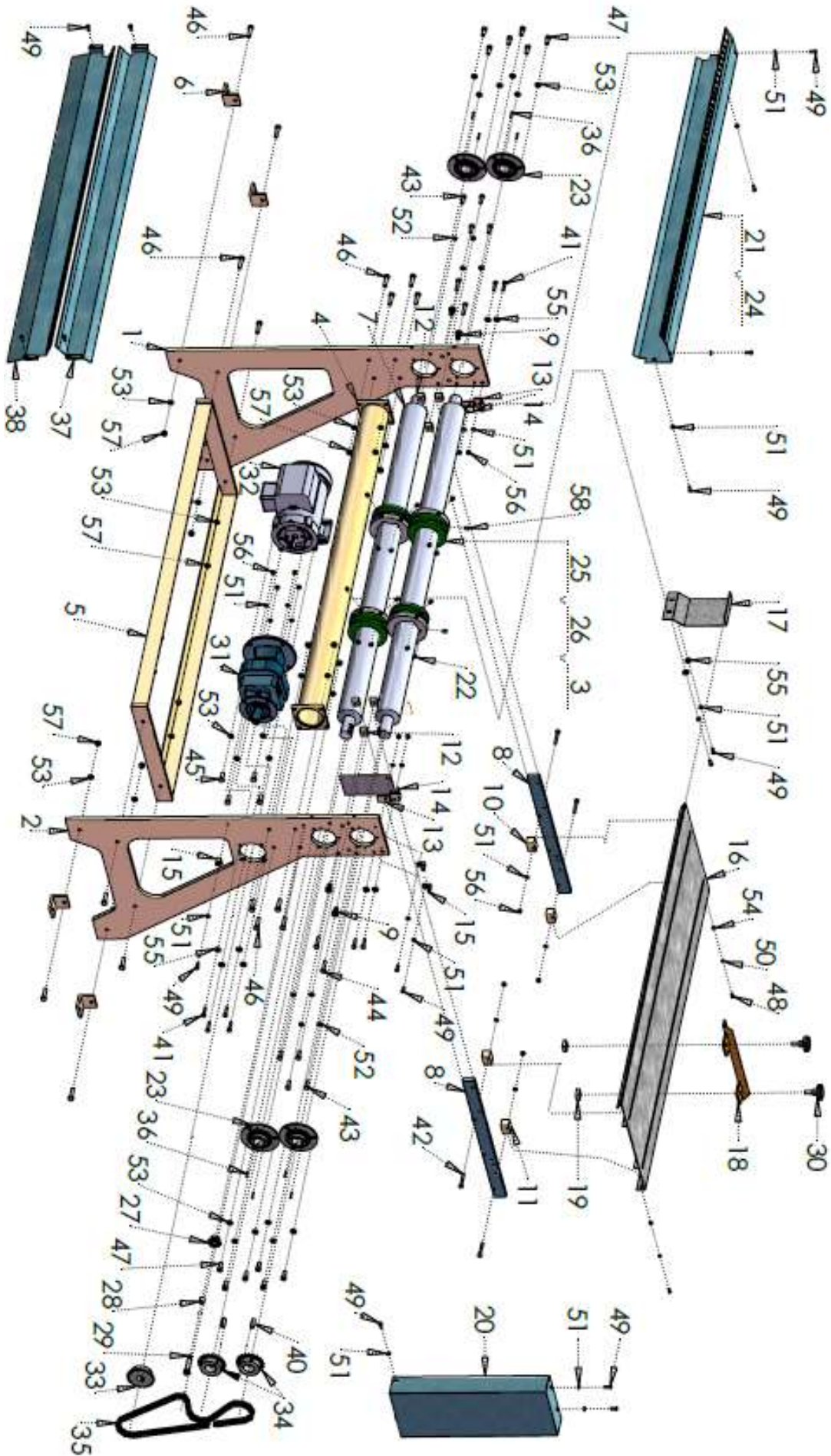
Model GSL48-16 Shown

## MODEL GLS48-16 GANG SLITTER OPERATION, PARTS & MAINTENANCE MANUAL

<b>Model:</b>	<b>Purchased From:</b>
<b>Serial #:</b>	<b>Date Received:</b>

USA  MADE

# Model GLS48-16 Parts View



#	PART #	DESCRIPTION	Saw Material	QTY.
1	GSL4816-101 (LH)	LH SIDE PANEL	1/2 X 22 X 40 3/8 A36 HRS	1
2	GSL4816-101 (RH)	RH SIDE PANEL	1/2 X 22 X 40 3/8 A36 HRS	1
3	GSL4816-102	KNIVES	Ø5 OVERSIZED X 7/8 D2 TOOL STEEL	4
4	GSL4816-TUBING- MFG1	TUBE WELDEMENT	N/A	1
	GSL4816-103	SUPPORT TUBE	Ø3 1/2 OD X .188 wall CS DOM tubing (silver) X 51 3/4	1
	GSL4816-104	END PLATE - SUPPORT TUBE ASSEMBLY	1/2 X 4 A36 HRS X 4	2
5	GSL4816-TRAY-MFG1	TRAY WELDEMENT	N/A	1
	GSL4816-105	ANGLE - TRAY WELDEMENT	2 X 2 X 1/8 wall angle A36 HRS X 51 1/4	2
	GSL4816-106	END PLATE - TRAY WELDEMENT	1/2 X 2 A36 HRS X 17 1/2	2
6	GSL4816-107	BOLT DOWN BRACKET	2 X 2 X 5/16 wall angle A36 HRS X 2	4
7	GSL4816-108	ARBOR - KNIVES	Ø3 X 57 1/4 C1045 CFTGP (BLUE)	2
8	GSL4816-109	MTG BRACKET - RH AND LH - SHEET SUPPORT	1/2 X 1 1/2 C1018 CRS X 21 1/2	2
9	GSL4816-110	HOLLOW INVERTED NUT - SHEET SUPPORT ADJUSTMENT	Make from 1/2-20 x 3/4 HH	4
10	GSL4816-111 (FR)	FRONT BLOCKS - SHEET SUPPORT	1 X 1 A36 HRS X 1 9/16	2
11	GSL4816-111 (BA)	BACK BLOCKS - SHEET SUPPORT	1 X 1 A36 HRS X 1 9/16	2
12	GSL4816-112	GUIDE BLOCKS - SHEET SUPPORT	1/2 X 1 3/4 C1018 CR X 1 (makes 2 pcs)	8
13	GSL4816-114 (LH)	LH BRACKETS - TOP COVER	1 X 1 X 1/8 angle A36 HR X 1 1/2", Can form 10 Ga	2
14	GSL4816-114 (RH)	RH BRACKETS - TOP COVER	1 X 1 X 1/8 angle A36 HR X 1 1/2", Can form 10 Ga	2
15	GSL4816-115	BRACKET - CHAIN COVER	9017K651 McMASTER, 1 X 1 X 1/4 angle A36 HR X 1/2"	3
16	GSL4816-TABLE- MFG1	SHEET SUPPORT WELDEMENT	N/A	1

#	PART #	DESCRIPTION	Saw Material	QTY.
	GSL4816-116	SHEET SUPPORT	12 GA X 17 7/8 X 50 15/16 GALVANIZED	1
	GSL4816-117	BRACES - SHEET SUPPORT	3/4 x 3/4 x 1/8 wall angle A36 HR x 50", Can form 10 Ga	2
17	GSL4816-118	BRACE - MIDWAY OF SHEET SUPPORT	12 GA or 13 GA X 4 1/2 X 9 17/32 GALVANIZED A653	1
18	GSL4816-MATERIAL- GUIDE-MFG1	MATERIAL GUIDE WELDEMENT	N/A	1
	GSL4816-119	ANGLE - MATERIAL GUIDE	9017K443 McMASTER, 1 x 1 x 1/8 wall angle x 13 3/4 HRS	1
	GSL4816-120	MOUNTING PAD - MATERIAL GUIDE	1/4 A36 HRS X 2 X 2	2
19	GSL4816-121	CUSTOM NUT - MATERIAL GUIDE	3/8 X 1 A36 HRS X 1	2
20	GSL4816-122	CHAIN COVER	16 GA X 14 13/16 X 22 7/8 A1011 CS (Yellow)	1
21	GSL4816-123	TOP COVER	16 GA X 10 1/4 X 52 3/16 A1011 CS (Yellow)	1
22	GSL4816-124	GIB KEY - KNIVES	Ø1/2 X 9/16 A36 HRS	8
23	GSL4816-125	FLANGE MOUNT BALL BEARINGS - KNIVES SHAFTS	02703347 Motion Ind, 1.4375 Bore, 3.9375 Bolt Circle	4
24	GSL4816-126	RULER	ER-S072L-TC Oregonrule.com, 1 1/4" x 72", 1/16 grades, Adhesive- back, horiz left to right easy reader	1
25	GSL4816-127	STRIPPERS	60 ±5 Durometer dark green Buna N Rubber	4
26	GSL4816-128	QUICK RELEASE CLAMP - STRIPPERS	5322K18 McMASTER, 1 1/2 to 3 1/2 clamp range x 9/16 wide	4
27	GSL4816-129	SPROCKET - IDLER	00167750 Motion Ind, 40BS9, Ø5/8 Bore, 9 Teeth	1
28	GSL4816-130	BRASS BUSHING - IDLER	CB-0810-05, 00010583 Motion Ind, Ø1/2 X Ø5/8 X 5/8	1
29	GSL4816-131	SHOULDER BOLT - CHAIN IDLER	3/8-16 X 5/8, Ø1/2 X 2 shoulder	1

#	PART #	DESCRIPTION	Saw Material	QTY.
30	GSL4816-132	KNOB - MATERIAL GUIDE	EN 5337.4-1,97-3_8x16-1,00-ST Star knob JW Winco	2
31	GSL4816-133	GEARBOX	RF27 AM56 SEW Eurodrive	1
32	GSL4816-134	MOTOR	00542170 Motion Ind, Baldor CL3507 .75HP, 1725RPM, 1PH, 60HZ, 56C, 115/208-230, 3428LC, TEFC, F, 34LYG451_12.47	1
33	GSL4816-135	SPROCKET - MOTOR	00168348 Motion Ind, 40BS20-1 Martin, 20 teeth, 1/2 pitch, 40 chain, 1" bore	1
34	GSL4816-136	SPROCKETS - KNIVES'	00168391 Motion Ind, 40BS20-1 7/16 Martin, 20 teeth, 1/2 pitch, 40 chain, 1 7/16" bore	2
35	GSL4816-137	CHAIN	00151345 Motion Ind, ANSI 40 roller chain X 31 1/2"	1
36	GSL4816-138	SPLIT PIN - BEARING UNIT	98296A883 McMaster, Ø1/8 x 1	8
37	GSL4816-143	Guard - Back - Upper	16 Gauge x 6 3/16 x 54 25/32 A1011	1
38	GSL4816-144	Guard - Back - Lower	16 Gauge x 7 3/4 x 54 25/32 A1011	1
39	GSL4816-145	BRACKET - ON/OFF SWITCH	12 Gauge GALVANIZED X 3 1/2 X 6 1/2	1
40	GSL4816-139	KEY - SPROCKETS - ARBORS	3/8 X 3/8 X 1 1/4 KEYSTOCK	2
41	HBOLT 0.2500- 20x1.25x0.75-N			8
42	HBOLT 0.2500- 20x2x0.75-N			4
43	HBOLT 0.3125- 18x1x0.875-N			8
44	HBOLT 0.3125- 18x1.5x0.875-N			4
45	HBOLT 0.3750- 16x1x1-N			4
46	HBOLT 0.3750- 16x1.5x1-N			16
47	HX-SHCS 0.375- 16x0.875x0.875-N			12

#	PART #	DESCRIPTION	Saw Material	QTY.
48	IN-HHMS 0.19-32x0.5x0.5-N			2
49	SBHCSCREW 0.25-20x0.75-HX-N			16
50	Regular LW 0.19			2
51	Regular LW 0.25			24
52	Regular LW 0.3125			8
53	Regular LW 0.375			32
54	Selected Narrow FW 0.219			2
55	Selected Wide FW 0.250 (LIKE IN FOLDER ASSY)		Ø.312 X Ø.734	10
56	HNUT 0.2500-20-D-N			12
57	HNUT 0.3750-16-D-N			16
58	SSHDOGSKT 0.375-24x0.5-HX-N			8

## **FOREWORD**

This manual has been prepared for the owner and operators of the TENNSMITH Model GLS48-16 slitter.

Its purpose, aside from operation instruction, is to promote safety through the use of accepted operating procedures. Read all instructions thoroughly before operating your shear.

Also contained in this manual is the parts list for your shear. It is recommended that only TENNSMITH factory authorized parts be used for replacement parts.

### **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 the 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 F.O.B. 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 warranty by their manufacturer. Further, we cannot be responsible for the cost of repairs made or attempted outside 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 expressed or implied, with respect to fitness, merchantability, quality or operational ness. 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 the date of delivery.

## SAFETY INSTRUCTIONS

1. Know the safety and operating instructions contained in this manual prior to operation of this shear. Become familiar with and understand the hazards and limitations of this shear. Always practice safety.
2. Wear approved eye safety protection, such as safety glasses or goggles, etc., when operating the shear to protect your eyes.
3. Protective type footwear should be worn, and jewelry such as rings, watches, necklaces, etc., should be removed prior to operation of this shear.
4. **Do not remove the front and rear guards (Index # 21, 37 and # 38). These are protective devices. If the guards are damaged or removed, immediately stop using the machine, and contact Tennsmith or your authorized distributor for a replacement part.**
5. Always keep hands clear of the rotating blades.
6. Should the machine become jammed, do not insert hand in to the point of operation to remove material until the following is completed:
  - Shut off the machine.
  - Disconnect from power source (unplug)
  - Alert a supervisor of the issue.
7. Do not misuse the slitter by using it for other than its intended purpose.
8. Never exceed the rated capacity of this machine.
9. Keep the work area clear and clean to avoid tripping or slipping.
10. Any malfunction or abnormality pertaining to this machine should be reported to the maintenance supervisor immediately.
11. When not in use make sure the power is off and the machine is unplugged.



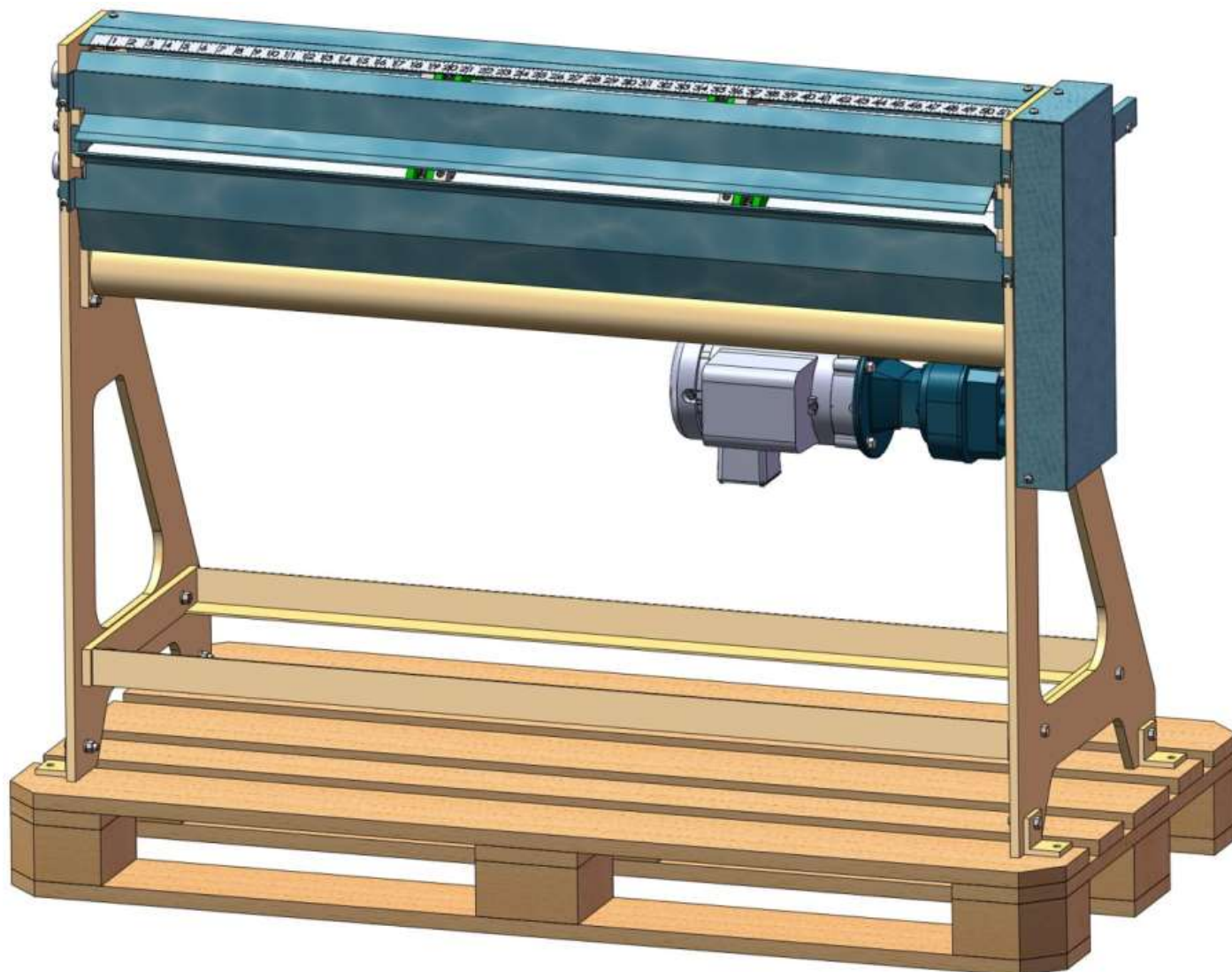


## RECEIVING THE SLITTER

Examine the slitter and accessories package for evidence of any possible damage sustained during transit. Any damage should be reported to your distributor immediately.

## INSTALLING THE SLITTER

Carefully remove the slitter from the shipping pallet.



Locate the slitter in a well-lighted area on a solid level floor. Use bolts or similar holding devices through the mounting holes, located on the bottom legs of the machine.

Place an accurate machinist level on the top of machine and check the level of the machine in both directions. After the machine is level, tighten the mounting bolts.

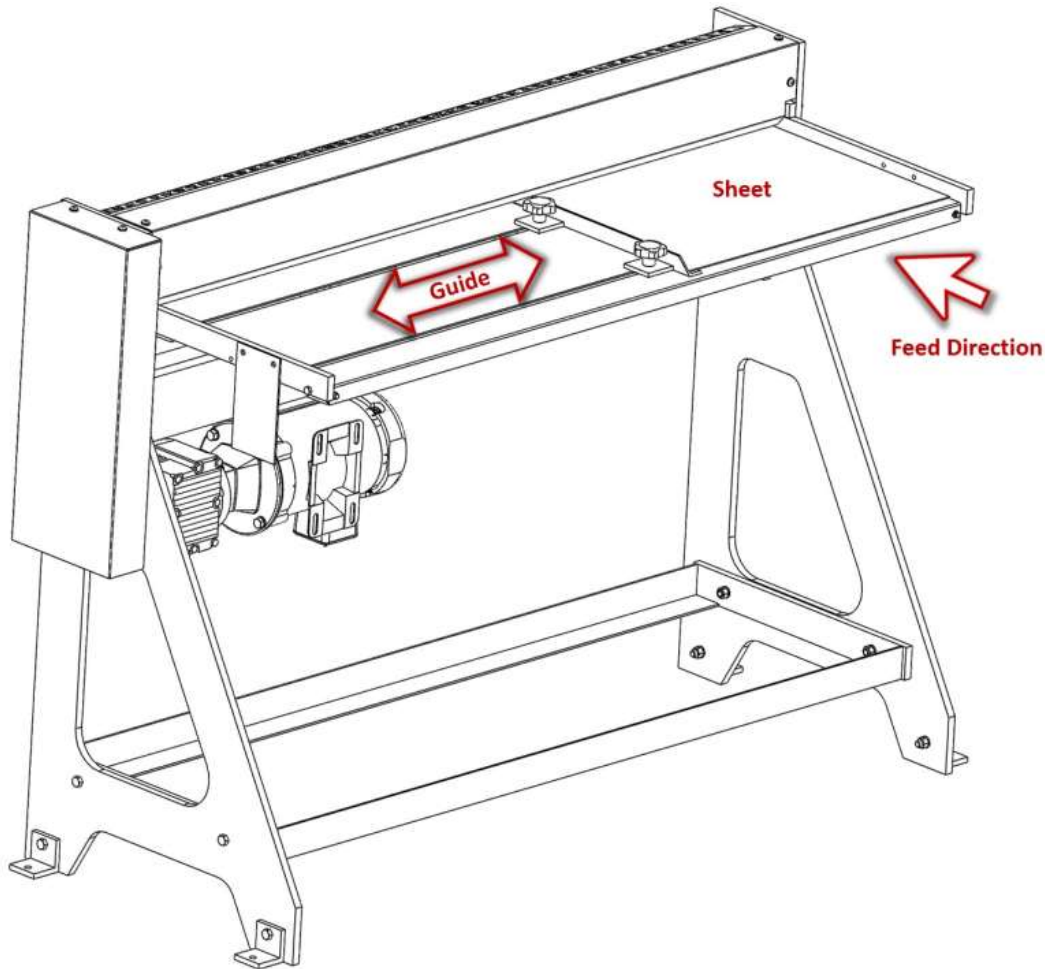
**Periodically, recheck the unit for levelness.**

**NOTE: Proper levelness greatly affects the performance of your slitter, it is very important to ensure your machine is level prior to operation.**

## OPERATION INSTRUCTIONS

The mild steel capacity of the Model GSL48-16 is 16 gauge. Included in the manual is a standard shearing, bending, and forming conversion chart for various materials including Aluminum, Stainless, and Plastics. If you have any capacity related questions on materials that do not appear on the chart, please contact Tennsmith technical support to help determine the exact capacity ratings.

**NEVER ATTEMPT TO CUT ANY MATERIAL GREATER THAN THE MAXIMUM RATING FOR YOUR SLITTER. Never attempt to slit any material which would be less than a 1".**



Plug the slitter into a 110v outlet. Press the green toggle switch which will activated the slitter. Note the turning of the blades. The blades should be rotating in a clockwise direction. The SLE24-16 is designed to be fed from the right-hand side of the machine with the slit material exiting from the left as the operator stands facing the front of the machine.



Position the material into the gauge as the above figure shows. Guide the material firmly against the back gauge on the right side of the machine. The slit material will exit the left side of the machine.

**Keep hands and clothing clear of open side of the machine and rotating shaft on the exit side.**

Upon initial operation of machine to check width and squareness accuracy by running some test strips (2" - 3" wide). If width is not as set using gauge pointer, pointer may need to be repositioned to correct. If parts are tapered, gauge squareness may not be correct (refer to set-up procedure for gauge squareness).

**CAUTION: THIS SLITTER SHOULD NOT BE OPERATED WITHOUT THE GUARDS IN PLACE AND PROPERLY ALIGNED. (Index # 21 # 37 and #38).**



**REAR GUARDS IN PLACE**



**Guards should only be removed when setting the blades. The guards must be in place during operation.**

		<b>WARNING</b>
	<p><b>Rotating blades can cause severe injury.</b> Keep hands and loose clothing away. Keep machine guards in place.</p>	

## MACHINE CAPACITY

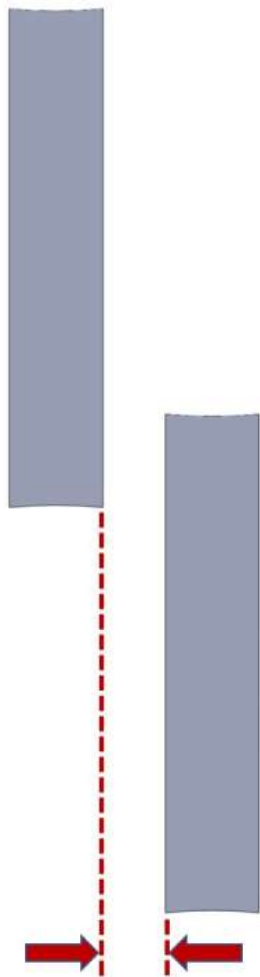
Exceeding capacity of the slitter will cause damage to the machine. Please following the capacity charts as follows:

Gauge	Material Thickness		Number of Slits
	Inches	Millimeters	
28	0.015	0.38	12
26	0.018	0.46	8
24	0.024	0.61	6
22	0.030	0.76	4
20	0.036	1.00	4
18	0.048	1.25	3
16	0.060	1.60	2
			1

	Approximate Gauge Equivalents							
<b>Gauge</b>	28	26	24	22	20	18	16	
<b>Inches</b>	.015	.018	.024	.030	.036	.048	.060	
<b>Millimeters</b>	.38	.46	.61	.76	1.00	1.25	1.60	

## BLADE ADJUSTMENT

The factory setting for the gap between the upper and lower blade is .0005. This setting was achieved using a piece of shim stock. However, if this is unavailable, the thickness of newsprint will approximate this dimension. The factory setting is the optimal clearance for the entire range of material likely to be sheared on this machine. Different materials and thickness may require a larger or slightly smaller clearance. If you have any specific questions regarding optimal blade gap, please consult Tennsmith.



**Factory Knife Clearance is set at ( $\pm$  .0005")**

This allows for slitting a wide range of materials, but may not be best for exclusive use on 18 to 16 gauge materials.

### **Material Thickness**

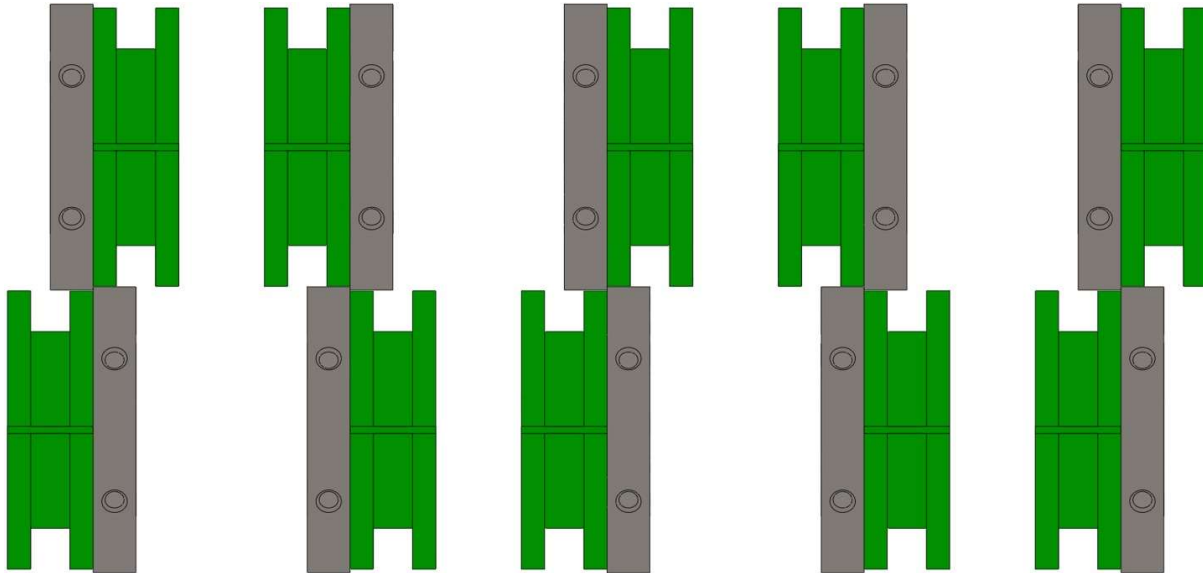
0.006" and less  
0.006" – 0.010"  
0.010" – 0.018"  
0.020" – 0.0625

### **Blade Gap**

NO CLEARANCE  
0.0005" to 0.00075"  
0.00075 to 0.001"  
10% of Material Thickness

Upper and Lower Blade overlap is set at the Factory 0.040" which will cut material up to 20 gauge mild steel (0.038" materials). See the following Illustration.

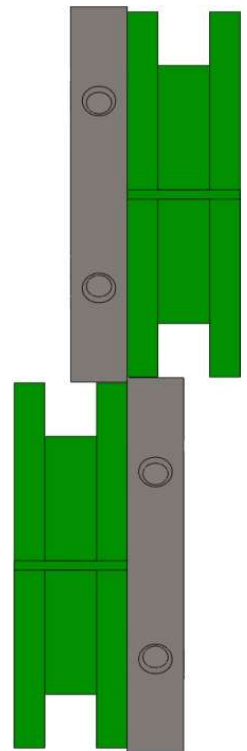
## CORRECT TOOLING SETUP



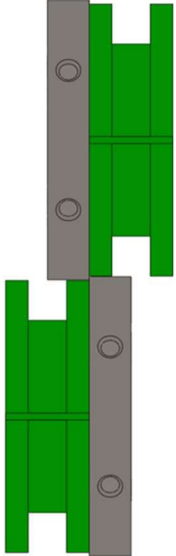
**Note that this illustration shows 5 total knife pairs. The machine comes standard with only 2 knife pairs.**

## SETTING OF THE STRIPPER RINGS

The Stripper Rings "push" the material from out between the knives and minimize chamber "twist".. To position the stripper rings, loosen the quip-clamp and then slide them either directly over a bottom knife or under an upper knife. Do not overtighten the clamps as this will increase the size of the rings and can prevent the slitter from cutting the material. Only tighten enough to hold the ring in position.



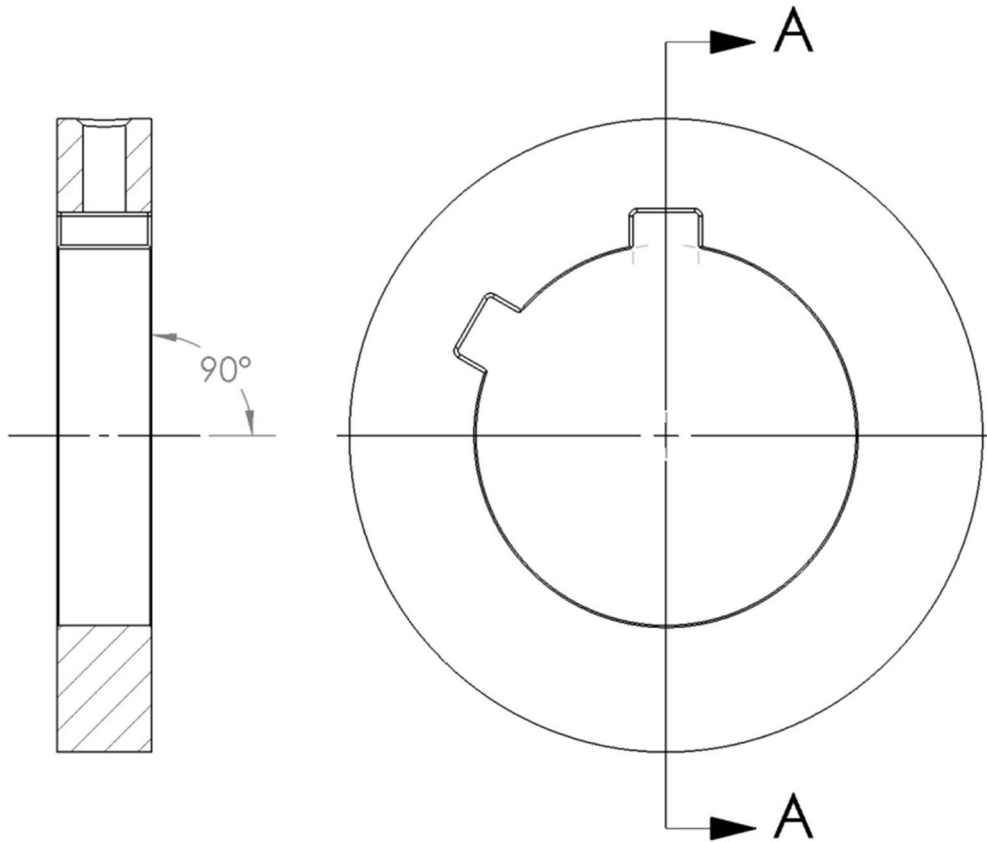
## Removing or Replacing of Knives

1. Remove top and back cutter guards. (Index # 21, 37 and # 38) Loosen the motor base pad and remove the drive chain part (Index #35). The chain is linked together with a master link. This master link can be removed with a screwdriver or other sharp edged device.
2. Jog machine around so that screws in retainer rings and knives are accessible with an Allen-wrench as shown in picture. Unplug machine. Loosen locking screws in retainer rings and setscrews in knives. Remove cam locking collars from the non-motor side of the unit. A 3/16" Allen wrench is required for the cam locking collars. After loosening Allen screw in cam locking collar, release collar by turning counterclockwise. If the collar does not move to release position then try clockwise. (File off burr left by setscrew before removing sprocket.) A 5/32" Allen wrench is required for the sprockets. Remove flange bolts from the bearing flanges on the motor side of the unit only.
3. Suspend each shaft by using a hoist or similar device. Use rope or nylon slings to prevent scoring the arbors. Set all knives at least six (6) inches apart, and none nearer than six (6) inches from the motor side of the unit. This refers to upper and lower arbor knife's part( Index #7).
4. Pry bearing flange off the roll pins on part #6 from the motor side of the unit. Identify location of the bearing flanges to insure re-installation in same position on unit.
5. Slide the shafts out of the right side bearings located in the end housing. 2 or 3 inches is sufficient to permit installation or removal of the knives as is required.
6. Reassemble unit by reversing above procedures.
7. **MAKE SURE ALL GUARDING IS IN PLACE BEFORE CONNECTING POWER**



## SHARPENING BLADES

Your TENNSMITH slitter features precision ground blades. The blades have two cutting edges. The blades can be turned over to expose the new cutting edge. It can be sharpened on a surface grinder by grinding both wide sides to the blade. (See Figure 2). Blade sharpening service is available from the factory.

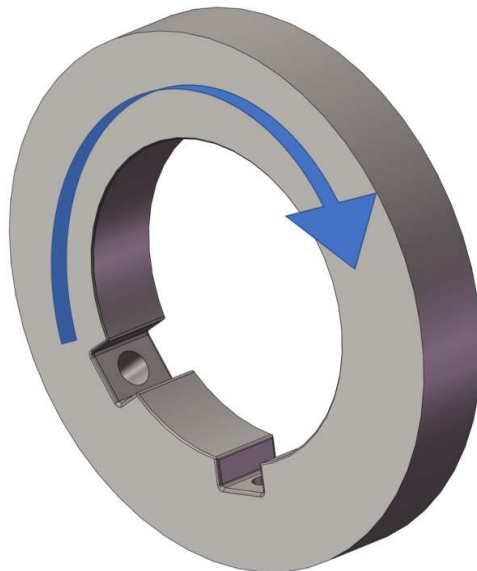


The knife sharpening by grinding the side faces.

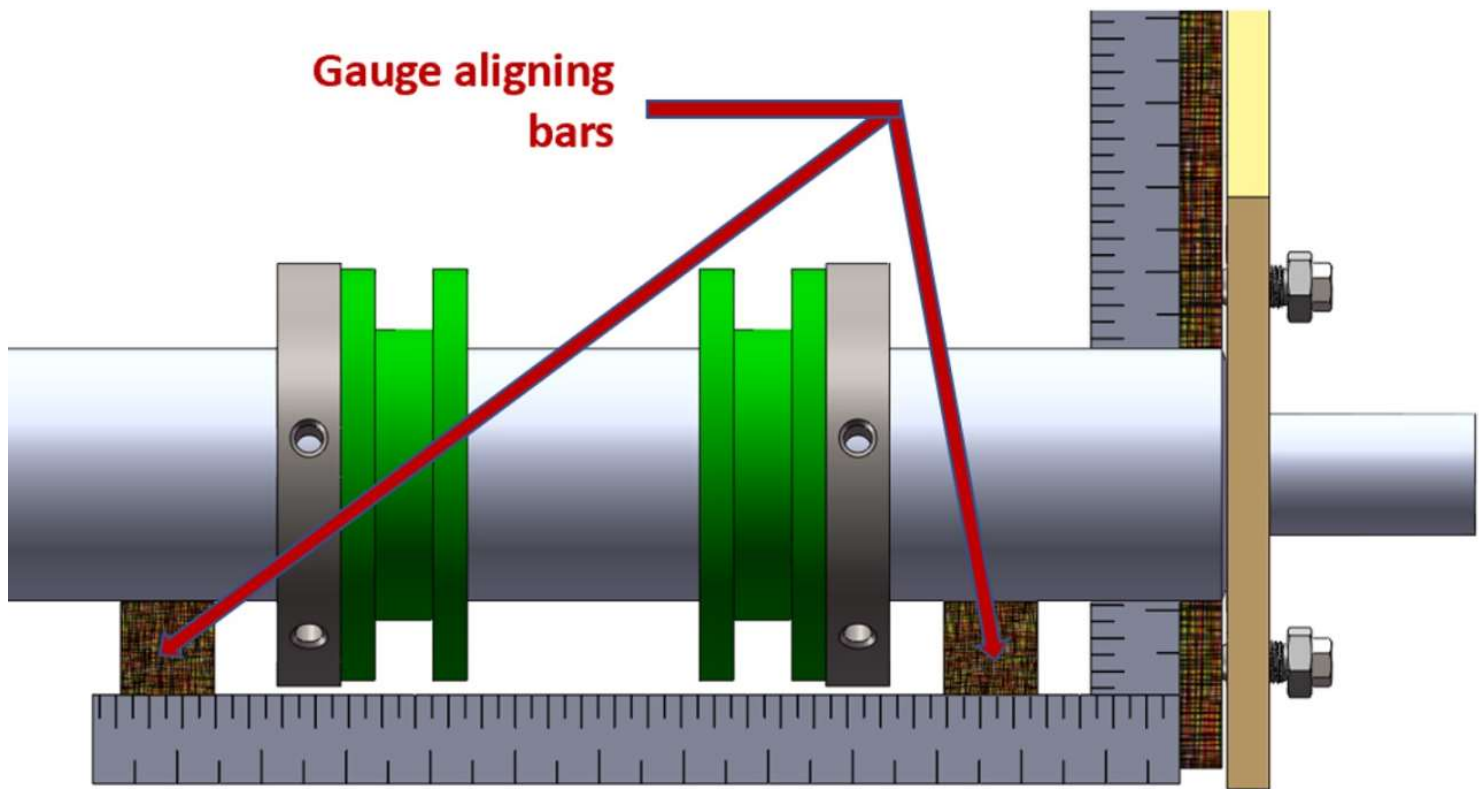
**DO NOT GRIND OUTSIDE DIAMETER.**

The squareness of bore to side face must be maintained. (90°)

Replace the Gib Keys after sharpening the knives.



## ALIGNING OF THE GAUGE BARS



To verify the squareness of the guide to the arbors, take two pieces of 1-Inch key stock and lay against the arbor faces. Using a square push tight against the key stock (Gauge Aligning Bars) and slide the square to the gauge. The square and gauge should be parallel. If not, use the adjusters on the End-Housing to align the gauge to the square.

If the cut has an excessive burr, make sure that the clearance between knives is not too great. If the cut consistently has a burr, with correct clearance the knives maybe dull and need sharpening.

Note: Due to the fixed knife overlap of this machine the material edge will have a slight roll as this is normal.

Small amounts of oil on the cutting edge of the knife will increase life as well as minimize a waved edge in light gauge material.

Separating the knives not in use will allow the material to pass through without damaging either knives or blank.

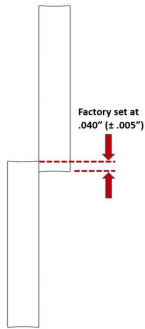
If the blanks are not coming out square, check the blank prior to slitting for squareness.

# Trouble Shooting

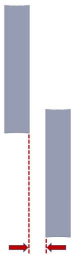
## MATERIAL NOT SLIT THROUGH

Material thickness or tensile strength exceeded the capacity of machine. 16 Ga. (0.062") is the maximum thickness & 50,000 psi is the maximum shear strength.

Knives overlap is not enough.



Blade Gap clearance is too great.



### Factory Blade Gap Clearance is set at (± .0005")

This allows for slitting a wide range of materials, but may not be best for exclusive use on 18 to 16 gauge materials.

### Material Thickness

0.006" and less  
0.006" – 0.010"  
0.010" – 0.018"  
0.020" – 0.0625

### Blade Gap

NO CLEARANCE  
0.0005" to 0.00075"  
0.00075 to 0.001"  
10% of Material Thickness

An arbor bearing may be loose, or the bearing pins removed from the housing.

## BURRED EDGE

Blade clearance is too much

Chipped knife (burr will be random along edge and occur at approx. 12½" intervals)

Dull knife

Soft material

Buildup of material on knife edge

## **ROLLED EDGE**

Dull knives

Excessive penetration of cutters (Note, penetration & side clearance of cutters is factory set to attain satisfactory results. Cutting material ranging from 30 ga. to 16 ga. a certain amount of rolled edge must be expected when slitting light gauge material)

## **TAPERED STRIPPED**

Gauge positioning out of square (refer to setup instructions)

Material not being held into gauge. (Refer to operating instructions under sheet guide

Build up on gauge

## **MATERIAL "HANGS-UP" IN THE MACHINE**

Ragged edge on material getting trapped in gauge

Back gauge out of adjustment.

## **MACHINE STALLING**

Capacity Exceeded

Improper Blade settings

Motor Defective

## **EXCESSIVE DRIVE TRAIN NOISE**

Chain loose. Adjust tension with take-up assembly; remove link from chain if take-up does not provide enough adjustment.

Gears worn in motor gearhead (refer to manufacturer's instructions).

Defective idler bearing on chain wrap.

Defective shaft bearing.

**NOTE:** Gearhead motors are normally noisy. If the motor is quiet when slitting material, the motor is ok.

## MAINTENANCE

To maintain the GSL48-16 Slitter the following items should be checked on a regular basis.

1. The arbors, knives, gauge bar, guide rods and skid table should be wiped down and lubricated with a light oil such as WD-40. This will help prevent rust and remove debris from the slitter. They should be re-lubricated on a regular basis. This re-lube period should be more often if the slitter is operated in extremely dusty environments.
2. The guard on the drive side of the slitter incorporates the main arbor bearings and provides access to the chain and gears. Use a heavy-duty chain lube to lubricate the chain and gears before replacing the guard. Keep the drive chain clean and well lubricated. Check the chain tension regularly.
3. Keep all fasteners tight and check that all guards are in place.
4. Lightly lubricate gauge rods regularly to maintain smooth movement as well as keep them clean.
5. Keep all unpainted surfaces lightly oiled to prevent rust.



SLE24-16 SINGLE WHEEL SLITTER	GSL48-16
Maximum Shearing Capacity, Mild Steel Mild Steel Rated Materials at 80,000 Tensile / 44,000 Yield	16 gauge / 1,5mm
Maximum Shearing Capacity, Stainless Steel Stainless Shear Rated Materials at 90,000 Tensile / 55,000 Yield	22 gauge / 0,75mm
Maximum Slitting Length	none
Maximum Slitting Width	48 - 1/2 in / 1232mm
Motor-110v, gear motor	3/4 hp.
Shipping Weight (machine only)	545 lbs.

**APPROXIMATE SHEARING, BENDING AND FORMING  
CAPCITIES FOR VARIOUS MATERIALS COMPARED TO MILD STEEL**

Mild Steel Capacity	20ga.	18ga.	16ga.	Mild Steel Capacity	20ga.	18ga.	16ga.
<b>NON-FERROUS METALS</b>				<b>FERROUS METALS</b>			
Aluminum				Iron-dead soft	20ga.	18ga.	16ga.
1100-0, 2024-0	.070	.090	.125	Steel low carbon			
5052-0, 6061-T4	.070	.090	.125	1074, 1095 C.R. Spring Steel	24ga.	22ga.	20ga.
2024-T3, 5052-H34	.048	.063	.090	Hot Rolled	20ga.	18ga.	16ga.
5086-H36, 6061-T6	.048	.063	.090	Low carbon Cold Rolled	20ga.	18ga.	16ga.
Copper and Alloys				Stainless Steel Annealed	24ga.	22ga.	20ga.
Electrolytic Copper	18ga.	16ga.	14ga.	<b>OTHER MATERIALS</b>			
Bronze Commercial	18ga.	16ga.	14ga.	Plastics			
Brass 70-30	18ga.	16ga.	14ga.	ABS Compounds	.120	.150	.200
Nickel Alloys				Polycarbonate	.075	.105	.125
Inconel 600	24ga.	22ga.	20ga.	Printed Circuit Boards			
Monel R405	24ga.	22ga.	20ga.	Copper-Clad			
Nickel 200A Annealed	24ga.	22ga.	20ga.	Epoxy Laminate	.086	.115	.150
Zinc as Rolled	20ga.	18ga.	16ga.				

	Approximate Gauge Equivalents										
<b>Gauge</b>	<b>28</b>	<b>26</b>	<b>24</b>	<b>22</b>	<b>20</b>	<b>18</b>	<b>16</b>	<b>14</b>	<b>12</b>	<b>11</b>	<b>10</b>
<b>Inches</b>	<b>.015</b>	<b>.018</b>	<b>.024</b>	<b>.030</b>	<b>.036</b>	<b>.048</b>	<b>.060</b>	<b>.075</b>	<b>.105</b>	<b>.120</b>	<b>.135</b>
<b>Millimeters</b>	<b>.38</b>	<b>.46</b>	<b>.61</b>	<b>.76</b>	<b>1.00</b>	<b>1.25</b>	<b>1.60</b>	<b>2.00</b>	<b>2.70</b>	<b>3.05</b>	<b>3.50</b>

# MACHINE DIMENISONS

