

# TIN KNOCKER

## TK 2024 SLITTER

### INSTRUCTIONS & PARTS DIAGRAM



Shown with Optional Stand

### **TAAG MACHINERY CO.**

(Master Distributor)

1257-B Activity Dr.

Vista, CA 92081

Tel: (800) 640-0746 Fax: (760) 727-9948

Website: [www.tinknocker.com](http://www.tinknocker.com) \* Email: [taag@sbcglobal.net](mailto:taag@sbcglobal.net)

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## SAFETY RULES

### TK 2024 SLITTER

1. **WARNING:**

Electrical Danger---Misuse or improper installation of machinery connected to a source of electricity may result in accidental shock that could cause injury or death. Installation must conform to National Electric Code (Article 250-Grounding, etc.)

A trained and qualified electrician must make electrical connections. Electrical characteristics shown on motor plate and control panel must match the power source; and all electrically powered equipment must be grounded.

2. **WARNING:**

Mechanical Danger- The cutting blades of the Slitter rotate at all times when power is supplied to the motor. Never place any part of the body including loose clothing near or onto the rotating rolls. (KEEP HANDS AWAY). Failure to comply will lead to personal body injury. Do not exceed the work-piece material capacity – otherwise serious damage will occur to your Slitter.

3. Machine to be operated by authorized personnel who have been trained by their supervisor with the working and safety features of the machine, and by reading and understanding the Operator's Manual.
4. Do not operate Slitter without reading Operator's Manual and without proper supervisory instructions.
5. Perform all installation and set-up operations before applying power for electrical start-up.
6. Never operate machine with any guard removed; i.e., all required guarding to be installed and effective. Do not override the safety features of the equipment. Do not remove, paint over, alter, or deface any machine-mounted warning and instruction plates and signs.
7. Never leave machine running unattended. When not in use, turn off electrical power.
8. Never adjust machine with power on.
9. Avoid accidental start-up.
10. Do not use machine if servicing is required.
11. Use safety glasses and required protective tools.
12. Keep work areas clean and in proper order.
13. Be alert to all potential hazards. Notify your supervisor whenever you feel there is a hazard involving the equipment or the performance of your job.

## WARRANTY

All new machines are sold with a one-year limited warranty, on factory defective parts. The warranty is limited to the original user. TAAG Machinery Co. at its option, will repair, replace or refund the purchase price of any part, tool or machine that fails during the warranty period. TAAG Machinery Co. will pay normal shipping charges for replacement parts. After 90 days from date of purchase, all express or overnight delivery charges are the responsibility of the customer. Purchaser must deliver to TAAG Machinery Co., at the address below, any written claim, with proof of original purchase. Replacement parts will be invoiced to purchaser and credit issued when the failed part is delivered to TAAG Machinery Co. Removal, reinstallation or replacement parts shall be at purchasers' / user's expense. Failure due to improper use of the machine voids the warranty.

**NOTE: 1.** This machine has been tested and adjusted prior to shipment, but can and often does require readjustment due to vibration and bouncing during transport. Following the procedures described within can easily do readjustment. These are procedures with which you, as a user, should be familiar, as you will use them repeatedly over the life use of the machine. If you have difficulty in performing these procedures, we are here to support you. Call us at: (800) 640-0746.

2. Opening rolls (for Philipsburg Lock) are consumable items and not subject to warranty.

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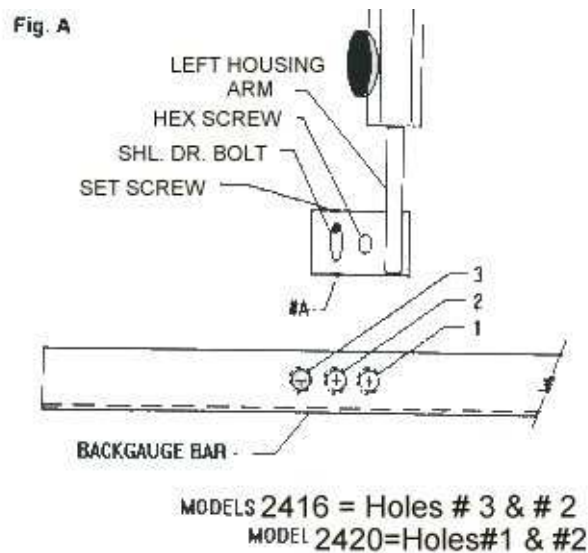
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## **SPECIFICATIONS**

Model	TK 2024 Slitter
Max. cutting capacity (mild steel)	20 ga. (.0359)
Maximum cut width	24.25 inches
Minimum cut width	1.25 inches
Cutting speed	90 sfm
Horsepower	1/3 hp
Voltage	115
Phase	1ph
Cycle	60 hz
Full load amps	6.4 amps
Shaft diameter	
Blades	
Dry weight	215 lbs.
Approx. shipping weight	280 lbs.

## INSTALLATION INSTRUCTIONS

1. With minimal set-up, your slitler can be put into immediate production.
2. After reading the Operator's manual thoroughly, carefully remove all the packaged parts and inspect to ensure all the required items were included. Inspect for any damage that may have occurred during shipping, if damage is present, immediately contact the carrier responsible.
3. Carefully place the slitler on a bench or on the "optional stand". DO NOT loosen the clamping knobs (#5 & # 6) until required.
4. Carefully insert the back gauge bar (#1) through the throat of the slitler, the bar's machined groove should face towards the front of the slitler. Align the threaded holes of the back gauge bar with the proper mounting hole/slot of the left housing arm (#2). (See illustration below for proper holes to be used for your slitler model.) Insert the M8-1.25 hex screw, lock washer and the 8-1.25 shoulder bolt but do not tighten. **NOTE:** You will notice a setscrew in the rear portion of the slotted hole. These screws are used to re-align the back gauge bar to its original set position.
5. Insert the setscrews into the threaded hole (A) and continue turning screw until contact is made with the shoulder bolt, turn until full contact is made with the rear set screws. DO NOT over tighten.
6. The left side is now properly positioned, the hex screw can now be tightened to 10 ft. lbs. Before the shoulder bolt can be tightened, the front setscrew must be loosened to allow the shoulder bolt to turn. After the shoulder bolt has been tightened, re-tighten the setscrew against the shoulder bolt.



**IMPORTANT:** Your splitter may be equipped with the cant adjustment screws (#27) which are installed in the right housing arm. DO NOT tamper with them until the instructions on “cant adjustment” has been completely read.

- Loosen both clamping knobs (#5 & #6), then bring together the back gauge bar and the right housing arm, align the parts, then carefully inspect both parts to insure complete and even contact is being made. (See figures D and F for the types of misalignment possible. This alignment is very important; because if left uncorrected, binding of the parts will occur when final tightening of the mounting bolts is attempted.

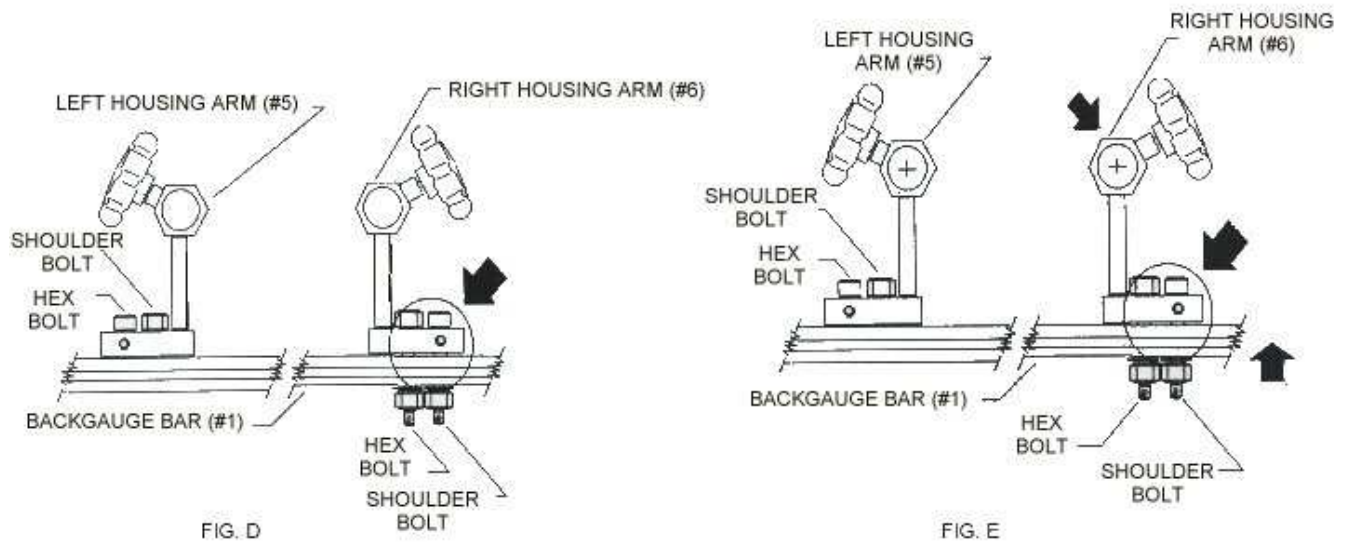


FIGURE D: Shows the misalignment possible, as viewed from the front of the splitter. (Circled Area.)  
 FIGURE E: If this type of misalignment is not corrected before the mounting bolts are tightened, then binding will occur in the areas shown by the two smaller arrows.

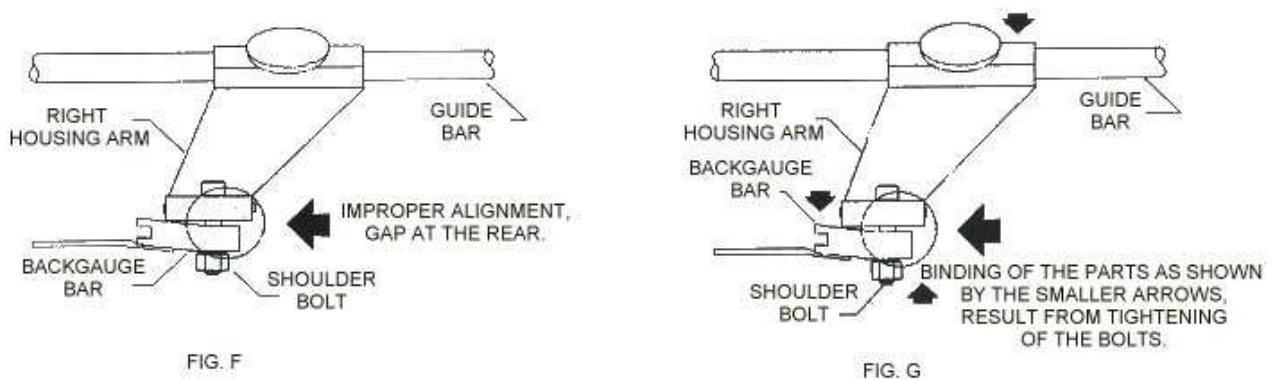


FIGURE F: Shows the misalignment possible. (Circled Area.)

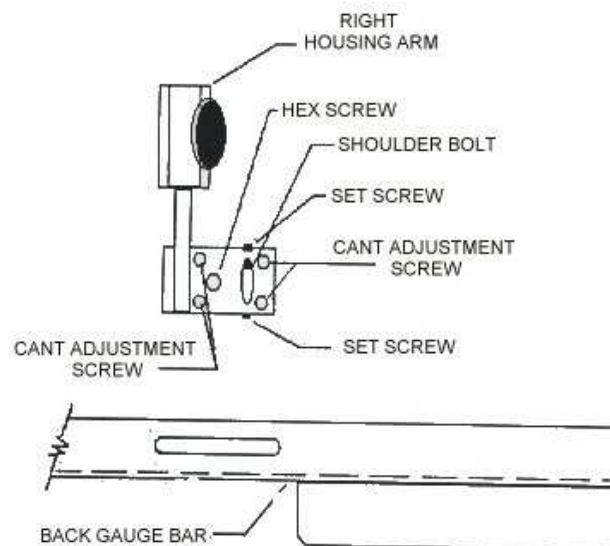
FIGURE E: If this type of misalignment is not corrected before the mounting bolts are tightened, the back gauge bar will be drawn towards the housing, thus cause the bar to twist and the housing arm to bind against the guide shaft.

8. While holding the back gauge bar and right housing arm in proper alignment, insert the hex screw and secure with a flat washer, lock washer and hex nut. DO NOT tighten. Continue holding the parts in position while inserting the shoulder bolt through the slotted holes, then secure with a flat washer, lock washer and a hex nut. DO NOT tighten.
9. Insert the setscrew into threaded hole, turn until the shoulder bolt is contacted and pushed against the “pre-set” set screws. This procedure aligns the back gauge bar back to its original setting.
10. The back gauge assembly should slide along the entire movement range without binding. Clean and lubricate the guide shafts with good slide ways oil. If binding is present, loosen the hex nuts on the right housing arm until the binding is eliminated.
11. Slide the assembly back and forth while slowly tightening the hex screw and hex nut. If alignment is correct, then the assembly should move freely without binding. If binding occurs and assembly won't move easily, then see instructions on “CANT ADJUSTMENT”.
12. Install the scrap guide to the left side of the slit and secure with the pin. Attach the spring to the cotter pin, which protrudes through the side of the slit.
13. Connect to the proper electrical receptacle and then turn on slit. Allow running without a load for a few minutes, and then turning off. Set back gauge for a 3 inch wide cut, then slit a small sample, measure the piece for accuracy. Set the scale pointer to the Actual measured width, if necessary.

### CANT ADJUSTMENT:

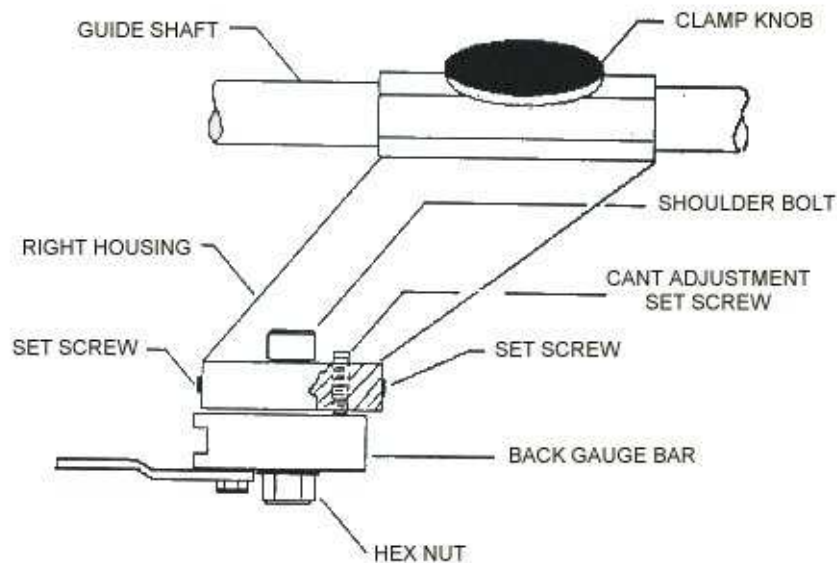
NOTE: If the back gauge bar “loading angle” is correct, but the assembly will not move freely, follow these instructions to correct problem.

1. DO NOT loosen any of the bolts of the left housing arm.
2. Loosen both clamp knobs. Inspect, clean and lubricate the guide shafts prior to adjustments.
3. Remove the hex nuts from the right housing arm ONLY. Loosen the front setscrew away from the shoulder bolt. REMEMBER NOT to move the rear set screws as they determine the correct position of the back gauge bar when final adjustments are performed.
4. If equipped with cant adjustment screws back them off until they do not protrude below the part surface.
5. The back gauge bar should detach from the housing arm. (remove any burrs visible on the back gauge bar before continuing.) Both part surfaces should be clean of any burrs or foreign matter, as their presence may hamper the alignment procedure.



6. Return the back gauge bar to its original position, making certain that both part surfaces are making full contact with each other. Install the hex nuts back onto their respectable bolts. **DO NOT** tighten completely.
7. Inspect parts for any possible misalignment. If any are visible, determine the type present. Correct misalignment by inserting the cant adjustment screws in the area of the misalignment, gap caused by the misalignment.

FIG. C



8. Turn the front set screw until it contacts the shoulder bolt. This procedure will return the back gauge bar to its original position.
9. The back gauge assembly should move freely through the entire movable range.
10. While moving the back gauge assembly back and forth, slowly tighten the hex nuts in small increment. If binding occurs before the nuts are fully tightened, **STOP** turning or turn back the nuts to the point where the binding first occurs. Slowly turn in both cant adjustment screws in small and equal increments until the assembly frees-up and moves easily again.

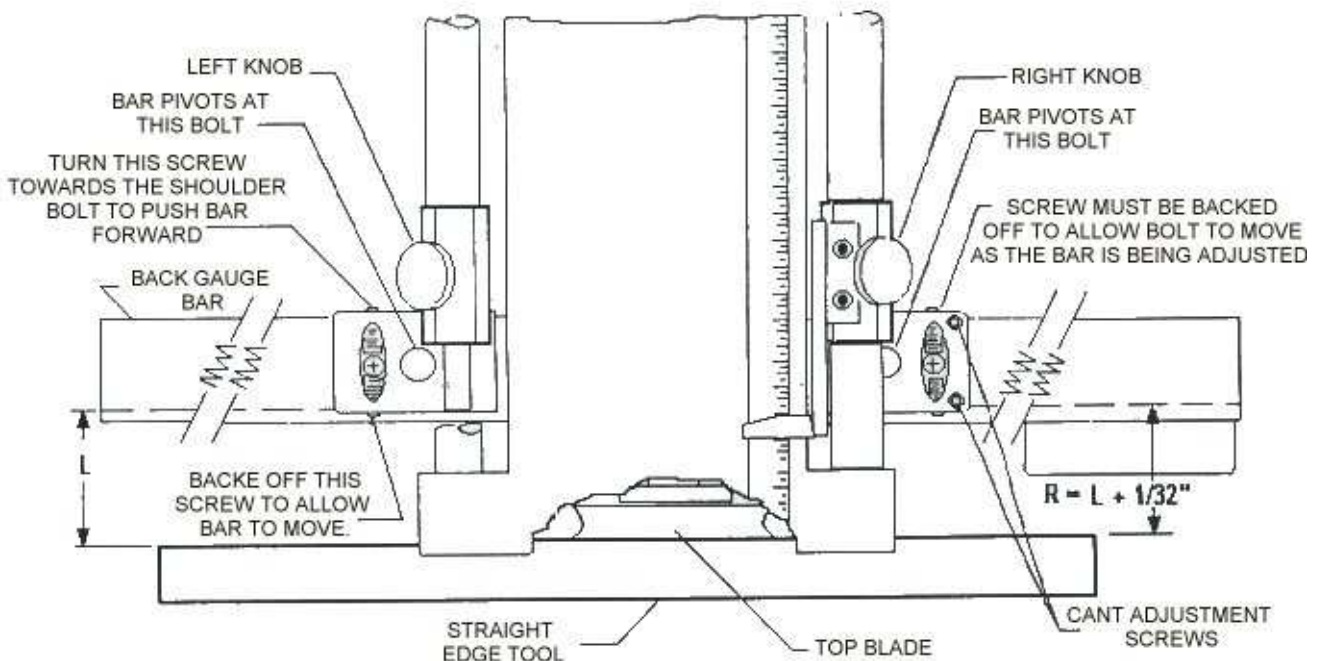


## BACK GAUGE BAR LOADING ANGLE

Setting up and adjusting the back gauge bar, as described below, is so accomplished to run the “line of cut”, (which is parallel to the back gauge bar’s machined groove), approximately midway through the “blade divergence angle”. The action of the top blade when slitting causes a very slight load to be put on the sheet being slit, thus holding the sheet in the back gauge’s groove. This helps the operator in keeping the sheet against the back gauge bar during the entire slitting process, thus resulting in a straight cut.

1. Slide back gauge assembly to 3” on the scale, and then tighten both knobs.
2. Remove the top blade cover and the top cutting guide. Place a precision straight edge against the face of the top blade **Important: the straight edge must be held against the top blade or this adjustment will be incorrect!**
3. While holding the straight edge in place (assistance in this procedure would be helpful), starting at the far left hand side of the back gauge bar, measure the distance from the straight edge to the back gauge bar’s machine groove.
4. Using the same procedure, measure the far right hand side of the back gauge bar. When correctly set, the right side measurement is (.0312”) more than the left side measurement. This adjustment accomplishes the back gauge loading angle. Should this angle be too great, it will result in buckling of lighter material or the stalling or dragging of the material being slit.

**If this angle should be less than required, the material can possibly wander or pull away from the back gauge bar, thus resulting in an uneven or narrow cut.**



5. If re-adjusting is required, follow the instructions below.



6. Loosen bolts just enough to allow the back gauge bar to move while adjusting.
7. Loosen the right knob to allow the right housing arm to move with the back gauge bar as it is being adjusted. Because the hex bolts are stationary, the bar must pivot from these two bolts. When the left side of the bar is being adjusted, the bar must pivot at the hex bolt. The slotted holes in the bar allows' the shoulder bolts to move during adjusting. These setscrews control the degree of bar movement. Note; the amount of movement on the left side will result in a opposite movement on the right side.
8. When turning the left housing arm set screws against the shoulder bolt, it is very important to back off the set screw on the other side of the shoulder bolt to allow movement of the shoulder bolt / back gauge bar. You **MUST** also back off the setscrew on the right housing arm to also allow shoulder bolt / back gauge bar movement.
9. Make adjustments in very small increments, as very little is needed to change the bar's loading angle. Check measurements after each adjustment, and then slowly tighten the hex bolts first. Check again to assure the settings are correct before tightening the shoulder bolts. When the correct load angle is achieved and all bolts are tightened, replace all set screws.
10. The back gauge assembly should slide freely, if unacceptable, refer to cant adjustment.

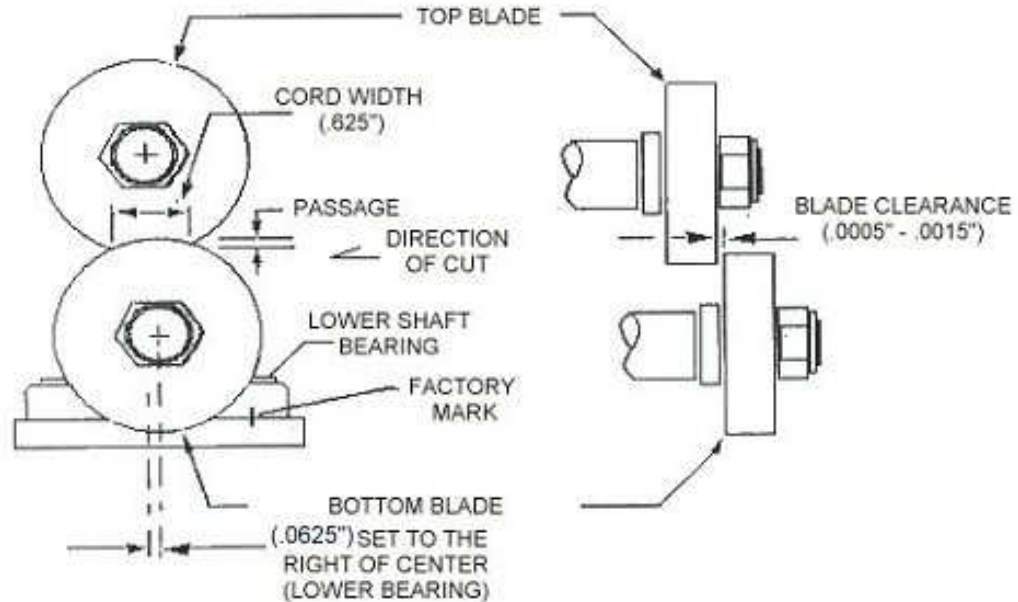
## **BLADE CUTTING DEPTH**

The proper cutting depth ensures complete shearing of the metal while slitting, This depth or setting is adjusted by the removal or addition of shims under either the upper or lower front shaft bearings. This adjustment affects the amount of pull the blades will exert on the material while slitting and when properly adjusted, will ensure the sheet being slit will be pulled thru by the blades requiring minimum effort from the operator. The proper chord width having the best results has been found to be .625" wide.

**CAUTION! EXCEEDING THE MAXIMUM CHORD WIDTH MAY NOT IMPROVE CUTTING CAPACITY, BUT MAY LEAD TO POSSIBLE DAMAGE TO THE SLITTER, CAUSED BY THE EXCESSIVE LOADS BROUGHT UPON BY TO MUCH BLADE OVER-LAP.**

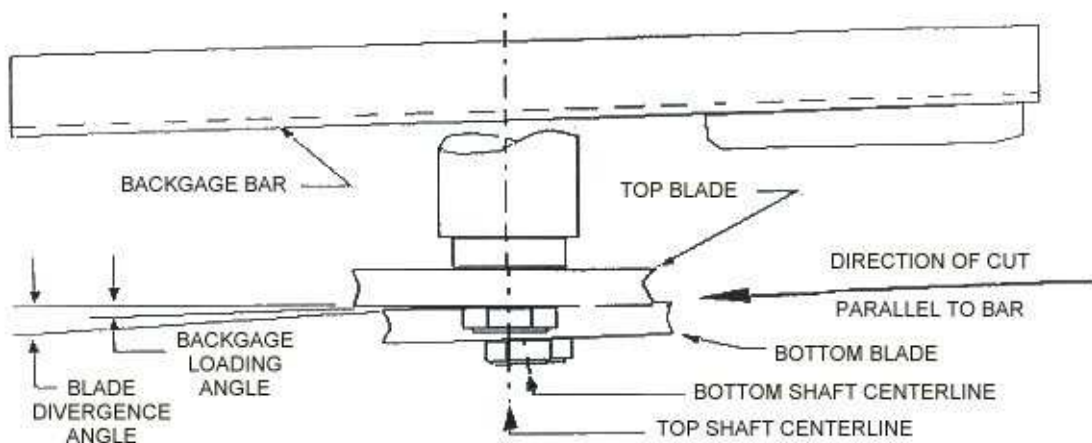
### BLADE CLEARANCE

BLADE CLEARANCE IS ADJUSTED BY THE USE OF SHIMS OF VARYING THICKNESS, WHICH ARE LOCATED BEHIND EITHER CUTTING BLADES. The proper blade clearance should be from (.0005" - .0015") which gives a good practical average for the various thicknesses of metal and enables the blades to hold a sharp cutting edge for a long period of time.



### BLADE DIVERGENCE ANGLE

To assure a longer blade life, the cutting blades of the slitter are set at a very slight angle to each other which helps eliminate the abrasive wearing action on the sides of the blades as the sheared edge of the sheet metal passes by the blades after being parted. This angle, which has been pre-set and marked at the factory, is accomplished by setting the lower front shaft bearing to the right of center 1/16 inch.



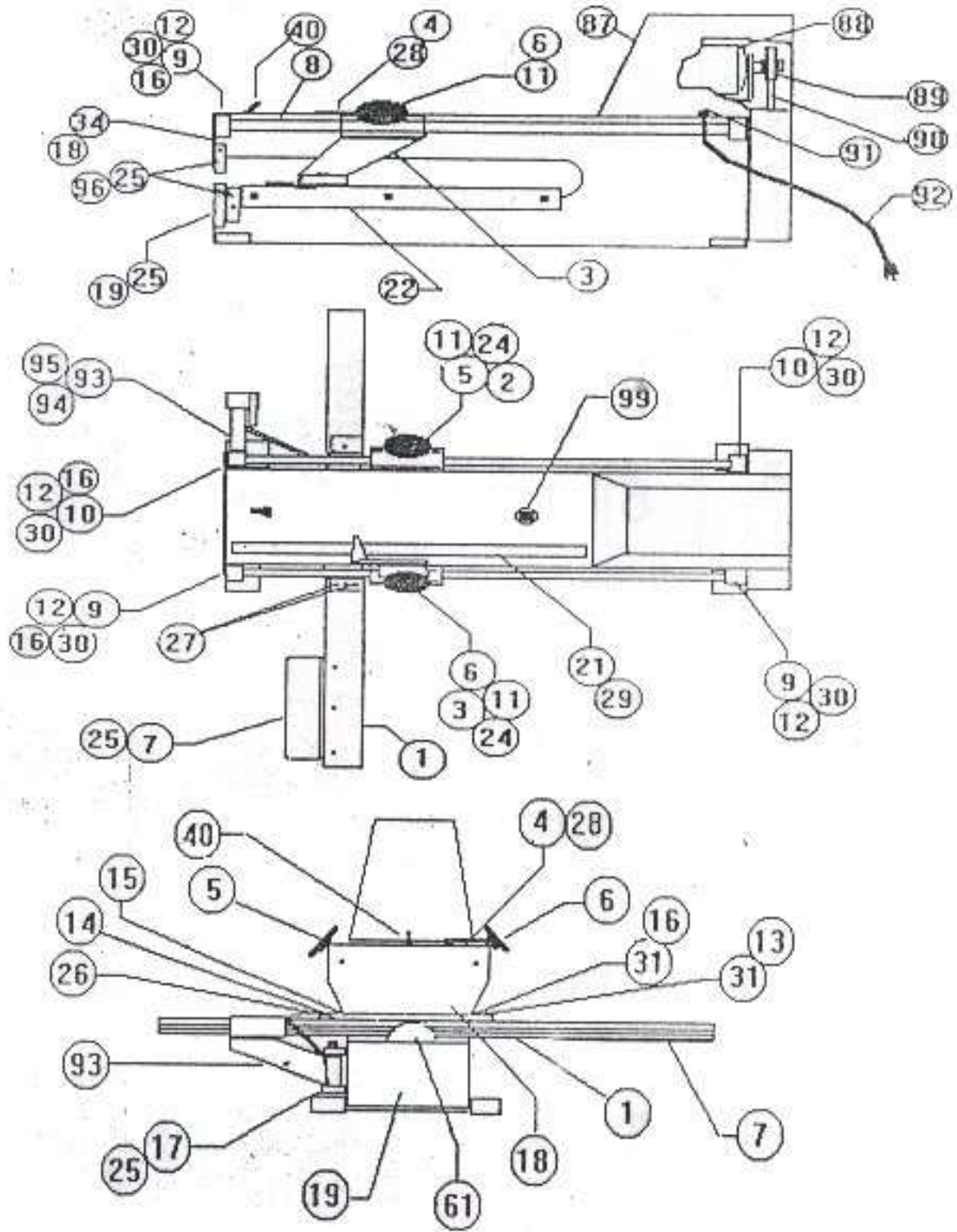
## TROUBLESHOOTING

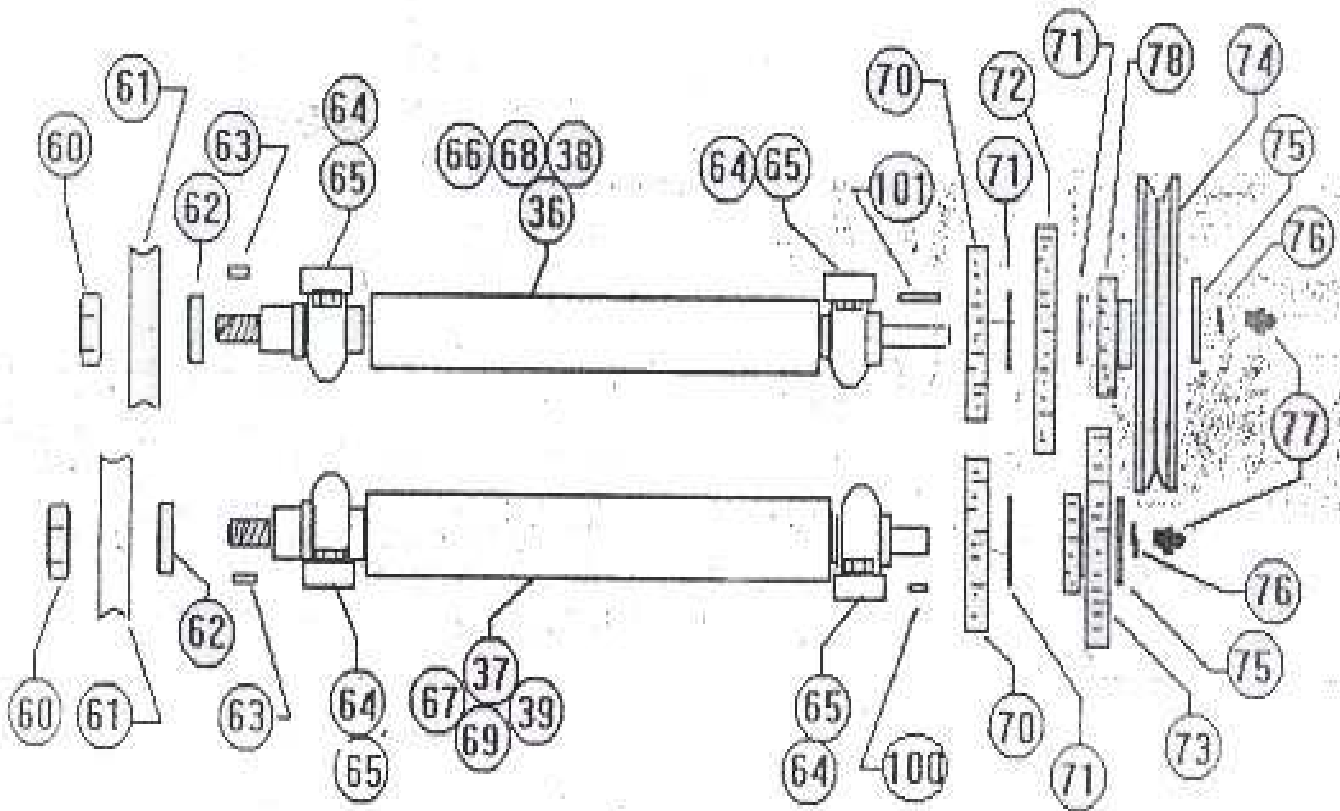
<b><u>PROBLEMS</u></b>	<b><u>PROBABLE CAUSE</u></b>	<b><u>SOLUTION</u></b>
Wavy or uneven cuts	Insufficient back gauge loading angle Sheet material edge not straight Sheet sagging during slitting Damaged blade edges Worn groove in back gauge bar	Check and set to specifications Inspect prior to slitting Support sheet with tables Inspect, repair if needed Check with straight edge; replace
Light gauge metals buckle or strips hangs up after slitting	Excessive back gauge loading angle Improper support of sheet during slitting	Check and decrease load angle Support sheet with tables
Score marks on materials after slitting	Excessive blade overlap Cutting guide height improperly set Scrap guide improperly set Incorrect blade type	Check for proper overlap 5/8 cord Inspect and adjust if necessary Inspect and adjust if necessary
Small pieces catches on bar and pivots around	Excessive back gauge loading angle Sheet too small Bad spot in bar's groove Corner of sheet hangs-up in groove's bad spot	Check and decrease load angle Avoid if possible Inspect and repair Grind or file off sharp corner
Sheet hard to start	Material exceeds machine's capacity Excessive blade overlap Feed height alignment incorrect Oil on blade surface	Check thickness prior to slitting Check and decrease if necessary Sheet should feed as level as possible Inspect and clean
Motor runs, but blades do not rotate	Loose v-belt Sheared or damaged key in gears Motor pulley loose Damaged teeth in gears	Tighten Inspect and repair Inspect and tighten set screw Inspect and replace
Motor stalls or stops	Defective wiring Incorrect voltage Defective motor/overheats Exceeding capacity of machine	Inspect by qualified technician Test for proper voltage and wiring Inspect and replace Stay within machine's capacity
Blades do not pull sheet during slitting	Pre-painted type sheets Oil on blades Excessive back gauge loading angle Excessive drag improper set-up	Keep blades clean and dry Inspect and clean Check and decrease Lubricate bar groove, support sheet properly, minimize sheet sagging and drag.

<b><u>PROBLEM</u></b>	<b><u>PROBABLE CAUSE</u></b>	<b><u>SOLUTION</u></b>
Incomplete cut/won't cut thru material	Exceeding machine capacity Dull blades/ improper clearances Insufficient blade over-lap Material too hard	Check thickness Reshape blades / adjust to proper clearances Inspect and adjust to specifications Check material's hardness
Excessive edge burrs or rolled edges	Dull blades Excessive blade clearances soft materials	Reverse blades Adjust to specifications Decrease overlap, set blade clearance to the minimum and keep sharp blade edges.
Excessive end play in drive shafts	Loose set screws in shaft bearings worn shaft bearings	Inspect and tighten Inspect / replace
Back gauge assembly binds, won't slide freely	Misalignment of parts when re-assembled or adjusted dry, dirty and / or damaged 1" guide shafts	See cant adjustment Inspect, clean and lubricate with oil
Excessive noises when operating	Loose v-belt / rubbing or guard cover Dry pulley and cluster gear assemblies Foreign object in gear teeth Dry gear teeth V-belt over tightened loose motor pulley defective motor Blades rubbing against each other 10" pulley or cluster gear assembly does not spin freely Motor mounts loose Motor mount plate not adjusted evenly	Inspect and tighten Grease via fittings at ends of shafts  Check for damage and remove Lubricate Adjust Inspect and tighten set screw Inspect and replace Inspect and correct Gears must spin freely on the shafts Check for clearance between the assemblies and the retainer washers Tighten Check for warpage of the mounting plate

## MAINTENANCE

- ✓ Keep blades clean and properly adjusted to ensure quality cuts.
- ✓ Lubricate motor per manufacturer's recommendations.
- ✓ Check v-belt for proper tension, do not over tighten.
- ✓ Remove slitter's rear cover panel and apply grease to the grease fittings on the end of each drive shaft.
- ✓ Keep guide shafts clean and well lubricated.
- ✓ Never slit materials of greater capacity, damage to the slitter may occur.
- ✓ Keep your slitter properly maintained and adjusted.







## Parts For 2024 Slitter

Fine No.	Part No.	Description	No. REQ'D.
1	SLIT20001	Linear motion Back gauge bar	1
2	SLIT00002	(L) Housing arm assy.-	1
3	SLIT00003	(R) Housing arm assy.-	1
4	SLIT00004A	Pointer assembly	1
5	SLIT00005	(L) Clamp knob – [2"]	1
6	SLIT00006	(R) Clamp knob- [2"]	1
7	SLIT00007	Back gauge material shelf – 14	1
8	SLIT00008	1" guide shafts- (33")	2
9	SLIT20010	( R) shaft blocks- 2024	2
10	SLIT20012	(L)shaft blocks- 2024	2
17	SLIT00013	Scrap guide mounting brackets	2
18	SLIT20014	2024 (T) blade cover	1
19	SLIT20016	2024 (B) blade cover	1
21	SLIT00018	30" scale	1
22	SLIT20020	Material belly pan – 2024	1
24	SLIT00021	Housing arm brushings-1.25"(od) x1" (id)	4
40	SLIT00024	On/off toggle switch	1
60	SLIT00025	"Blade" Jam nut	2
61	SLIT00026	(Std) 4" double edge blades	2
62	SLIT00027	Blade collars	2
63	SLIT00028	Blade key- ¼" x ½" sq.	2
64	SLIT00029	Shaft main bearings – 1" bore	4
66	SLIT20030	(T) 2024 shafts – 1.25" dia.	1
67	SLIT20031	(B) 2024 shafts – 1.25" dia.	1
70	SLIT00032	48T Equil. Gear	2
71	SLIT00033	Gear shims (.0625")	3
72	SLIT00034	66T drive gear	1
73	SLIT00035	Cluster gear assy. 66T x 30T	1
74	SLIT00036	10" Pulley assy. W/ 30T gear	1
75	SLIT00037	Retainer washer – ¼" x 1 ¼"	2
77	SLIT00038	¼-28 grease fitting	2
87	SLIT20039	2024 motor guard assy.	1
88	SLIT20041	2024 motor – 1/3 hp	1
89	SLIT20043	2024 motor pulley (3x900)	1
90	SLIT20045	v-belt (4L360)	1
92	SLIT00047	8ft. supply cord	1
93	SLIT00048	Scrap guide body (only)	1
94	SLIT00049	S.G. Pin	1
95	SLIT00050	S.G. Spring	1
96	SLIT20051	Cutting guides – 2024	2
98	SLIT00053	Shaft bearing set screws	8
99	SLIT20054	Frame 2024	1
101	SLITUCP205-25	shaft main bearing - 1 inch bore	1
102	SLIT99001	Shim Pkgs .0005,.001,.002,.003,.005, .010,.030	1