INDUSTRIES®

INSTALLATION & OPERATING INSTRUCTION MANUAL

Form 524 3-08

MECHANICAL SCRAP CHOPPER

Model SC-3
Model SC-6
Model SC-9
Model SC-12

AIR SCRAP CHOPPER

Model ASC-6
Model ASC-9
Model ASC-12

PNEUMATIC STOCK CUTTER

Model PSC-1.5
Model PSC-3
Model PSC-5
Model PSC-7

PNEUMATIC STOCK CUTTER

Model PSC-6
Model PSC-12

THE MECHANICAL SCRAP CHOPPER.

The P/A Mechanical Scrap Chopper has a unique helical-ground blade which chops a wide variety of materials from .004" paper to 3/16" CRS without adjustment. Once installed, any number of stock thicknesses and widths can be fed into the chopper without any additional set-up time.

With a P/A Scrap Chopper mounted on your machine, you eliminate the need for air blow-offs, sheet metal chutes, conveyors and rakes used by operators to get the scrap out of the tool area and into containers.

Providing one chopper per press can save the cost of designing and building guillotine choppers for every die.

Rugged cast iron construction with few moving parts assures maintenance-free production. The Reel-Type scissor action reduces off center loading by chopping a width of only 14 times the maximum material thickness at one time regardless of total stock width.

THE AIR SCRAP CHOPPER.

The P/A Air Scrap Chopper is designed to operate where mechanical actuation is not possible or desirable. Using the same principle as our Ram Driven Scrap Chopper, this pneumatically powered chopper is designed to shear scrap material from .004" to .074" thick mild steel. Set-up is simple having no mechanical connections, allowing for a stand-alone operation if desired.

The operation is pneumatic using an electrical signal from the press, limit switch, or rotary cam. A powerful, double acting air cylinder provides controlled chopping while integral dampeners absorb snap through shock. The helically ground upper blade, made of high chrome steel, shears any kind of material.

A four-way solenoid valve controls the sequencing. This valve can be synchronized with any machine by a limit switch, proximity sensor, or programmable rotary limit switch. If a timing relay counter is used, the chopper can be set to cycle when desired with any multiple of press cycle or a timing cycle unrelated to the parent device is possible for longer scrap pieces or extremely high-speed operations.

THE PNEUMATIC STOCK CUTTER.

This pneumatically powered scrap chopper is designed to shear scrap material from .004" to .074" thick mild steel.

A powerful, double acting air cylinder provides controlled chopping while integral dampeners absorb snap through shock. The helically ground upper blade, made of high chrome tool steel, shears any kind of material.

A four-way solenoid valve controls the sequencing and can be synchronized with any machine by a limit switch, proximity sensor or programmable rotary limit switch. If a timing relay or counter is used, every other press stroke operation is possible for longer scrap pieces or extremely high speed operations.

MECHANICAL SCRAP CHOPPER

AIR SCRAP CHOPPER

PNEUMATIC STOCK CUTTER

MECHANICAL SCRAP CHOPPER

RECEIVING INSPECTION

Before removing unit from its packaging, check for visual damage, especially if crate, skid, or carton has been damaged in transit. Any damage caused by shipping should be immediately reported to the carrier. If unit appears in satisfactory condition, remove all packing and wipe rust preventive from rollers with mild solvent.

DESCRIPTION

The P/A Scrap Chopper is a precision shear blade metal cutter useful for reducing to "bite size" scrap. Skeleton material continuously discharges from a press or similar machine tool. In contradiction to its designation as a scrap maker, the Scrap Chopper is equally useful for cutting coiled stock into strip length on the material preparation side of a machining operation.

In the simplest cases, the Chopper may be integrated into a long-term production set up by mounting the Chopper directly onto a press and actuating the Chopper through a lever arm contacted by the reciprocating ram. When variation in cutter action is desired (e.g. in relationship between machine and cutter stroke length or timing), the Chopper may be activated by an independent power source such as an adjustable eccentric crank or even a pneumatic or hydraulic cylinder.

The separate parts of the Chopper are shown in PARTS LIST drawing on page 10). Installation information is shown in the DIMENSIONAL drawing on page 11). A typical installation of the Chopper, mounted on a press and actuated by a lever arm contacting the ram, is shown in the photographs on page 7.

SET-UP

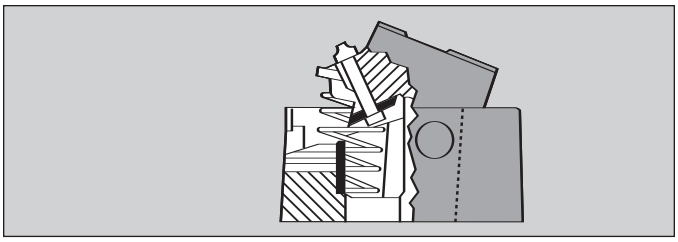
Mounting Location

The Chopper must be mounted with consideration for the following factors:

Stockline Height

The elevation of the mounting base must be established to coordinate the vertical alignment requirements between the feeding device and the Chopper's mouth. If a spacer has to be used to raise the Chopper from an available fixed bedplate, it must be flat and conform generally to the bottom contour of the Chopper. Small spacers located only under the two mounting bolt slots in the back of the base are not recommended. The elevation from the bottom of the Chopper to the top of its lower blade edge and the open position blade gap (mouth height) are shown on the installation drawing.

NOTE: THE LEADING SURFACE ACROSS WHICH THE MATERIAL FEEDS INTO THE CHOPPER IS RAMPED TO AVOID SNAGS FROM MATERIAL PROJECTIONS (E.G. "RAGGED" SKELETONS). THE LOWER BLADE PROJECTS VERY SLIGHTLY ABOVE THE LEADING SURFACE OF THE BASE CASTING. IF THIS SMALL STEP IS FOUND TO BE TROUBLESOME, THEN A SHEET OF SPACER STOCK MAY BE PLACED OVER THE LEADING SURFACE OF THE CASTING (REFER TO FIGURE 1), OR AT A SACRIFICE OF REDUCING THE NUMBER OF AVAILABLE CUTTING EDGES ON THE LOWER BLADE, REMOVE THE LOWER BLADE AND GRIND A BEVEL ON ITS LEADING EDGE (FIGURE 2).



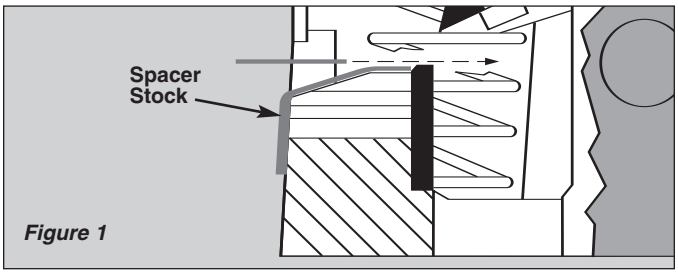


Figure 1

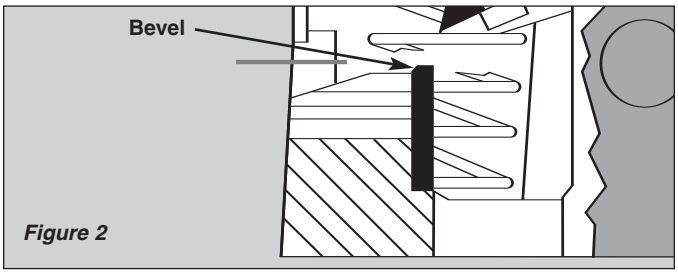


Figure 2

If the Guide Bar across the front of the base catches the material, then it too may be modified by beveling or replacing it with a tube flattened at each end for attachment to the base.

Stockline Centering

Generally, the Chopper should be mounted so that the material feeds centrally into its mouth. This allows maximum wander in the material before it contacts a guide post on either side of the mouth.

In special cases, where varieties of material widths are fed to a single Chopper, it is possible to gain some advantage. Where the stroke limitation is a problem due to the upper blade angle, the narrow and thicker material should be fed toward the left hand edge of the mouth of the Chopper.

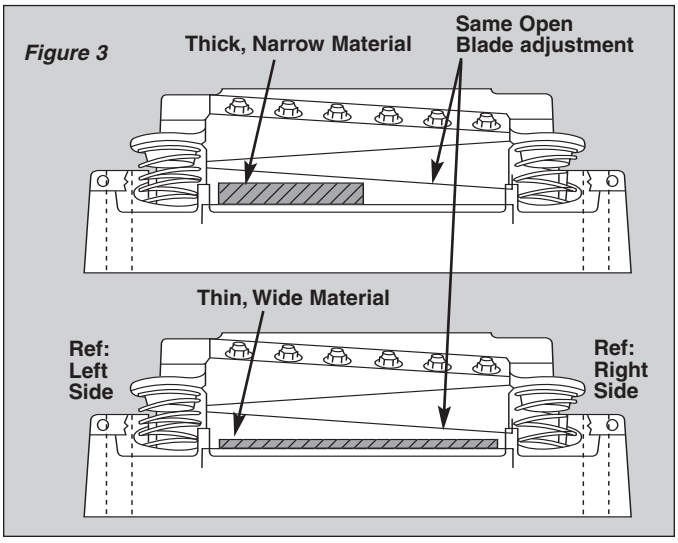


Figure 3

MECHANICAL SCRAP CHOPPER

Actuator Offset Distance

The final location of the Chopper pivot centerline relative to your ram centerline (refer to "**B**" & "**C**", Figure 4) depends upon your selection of those two distances.

- Adjust height of Ram Actuator so that Scrap Chopper

CAUTION: YOU WILL HAVE TO READJUST THE CHOPPER ACTUATOR HEIGHT WHEN RAM SHUT HEIGHT IS CHANGED.

cut is completed with Ram at BDC position.

- Select Actuator Offset Distance "**B**" to insure sufficient blade opening at start of material feed.

The selection of the **maximum** allowable "**B**" distance, which will satisfy your operating conditions, is described as follows. The selection of "**C**" distance depends upon the design of your particular machine. If obstructions prevent placing the Chopper close enough to the Ram for the lever arm ("**B**" distance) to reach an actuation point directly on the Ram, then make a horizontal extension from the Ram to provide the actuation point. Increase the "**C**" distance. Do not arbitrarily increase the Chopper lever arm length and offset distance "**B**".

When the Chopper is to be actuated by the reciprocating Ram of a press, the lever arm travel **required** by the Chopper must be matched against the **usable** Ram travel of the press through proper selection of the "**B**" distance. If the lever arm and off¬set distance "**B**" is made too long, the ram will not allow the Chopper mouth to open wide enough to take the material at the time feed starts. On the other hand, if the lever arm and offset distance "**B**" is made too short, the actuation force level may be excessive. A compromise in specifying feed start point, may be needed in some cases where thick material is involved, to meet all requirements.

The following tables may be used to quickly estimate the useable Ram travel "**A**" and the associated actuator offset distance "**B**".

These distances (**A** and **B**), depend upon your specification of:

	Model of Scrap Chopper – (Width of Model chosen, in Inches.) SC3, SC6, SC9, SC12. (Refer to Figure 4)
Variable	Description
L	Total Press Stroke Length, inches
D	Degrees of usable crankshaft rotation, to feed start point (or feed start O'clock position)
T	Max. thickness of material to be cut in inches

EXAMPLE:

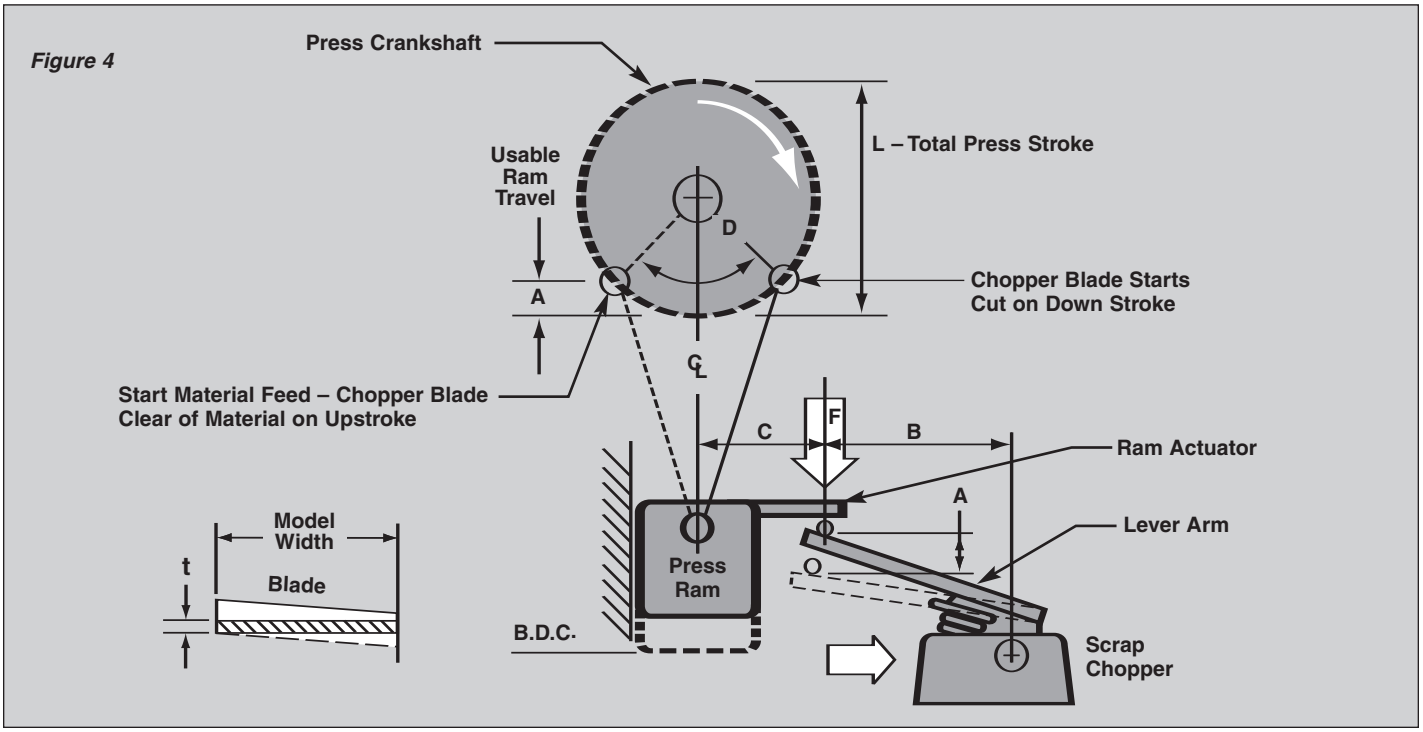
1. GIVEN: Total Press Stroke, **L** = 6 in.
   Start Feed at 8:00
   (usable crankshaft rotation angle, **D** = 1200)

2. FIND IN "**A**" TABLE: **L** =6"
   ↓
   8:00 (**D** =120) → **A** =1.50"

3. GIVEN: Scrap Chopper Model #SC 6
   Maximum material thickness, **t** =.15"

4. FIND IN "**B**" TABLE FOR SC 6: **A** = 15"
   ↓
   t =.15" → **B** = 6.1"

Figure 4



MECHANICAL SCRAP CHOPPER

"A" TABLE: Specify Ram Stroke **"L"** inches and Usable crankshaft angle **"D"** in degrees (or O'clock position of feed start).

L ↓ D → A

Crank Angle		**"A"** TABLE							
		Usable	**L** = total press stroke length						
Start Feed **0'**	Start Chopper Cut **0'**	Crankshaft Rotation **"D"**	**2"**	**3"**	**4"**	**5"**	**6"**	**7"**	**8"**
7:00	5:00	60°	.134	.201	.268	.335	.402	.469	.536
7:30	4:30	90°	.293	.439	.586	.732	.879	1.03	1.17
8:00	4:00	120°	.500	.750	1.00	1.25	1.50	1.75	2.00
8:30	3:30	150°	.741	1.1	1.48	1.85	2.22	2.59	2.96
9:00	3:00	180°	1.00	1.50	2.00	2.50	3.00	3.50	4.00

NOTE: THE ABOVE TABLE IS BASED ON THE ASSUMPTION OF FEEDING TAKING PLACE FOR 180° OF CRANKSHAFT ROTATION. THE START OF THE CHOPPER CUT CAN BEGIN AT ANY TIME AFTER THE FEED HAS STOPPED, I.E., START FEED AT 9 O'CLOCK, FEED STOPS AT 3 O'CLOCK, CHOPPER CUT WOULD START AT 3:00, 3:30, 4:00, 4:30, OR 5:00 O'CLOCK.

"**B**" TABLES: Find "**B**" in the table below for your specific chopper model, at the intersection of **"A"**" (taken from previous table) and material thickness, **t**.

Model SC-3

L ↓ D → A

t = thickness of material to be cut in inches	**"A"** = Factor from **A** Table **L** = total press stroke length							
	.2	**.4**	**.6**	**.8**	**1.0**	**1.2**	**1.4**	**1.6**
.05	1.7	3.5	5.7	7.5	9.3	11.3	13.2	15.2
.10	1.3*	2.9	4.9	6.5	8.1	9.9	11.6	13.4
.15	1.0*	2.4	4.1	5.5	6.9	8.5	9.9	11.6
.20	.7*	1.8	3.3	4.5	5.7	7.1	8.3	9.8
.25	---	1.3*	2.5	3.5	4.5	5.7	7.1	8.0

Model SC-6

L ↓ D → A

t = thickness of material to be cut in inches	**"A"** = Factor from **A** Table **L** = total press stroke length							
	.3	**.6**	**.9**	**1.2**	**1.5**	**1.8**	**2.1**	**.3**
.05	1.3*	2.7	4.3	5.7	7.4	8.8	10.3	11.8
.10	1.1*	2.4	3.8	5.2	6.7	8.0	9.5	10.8
.15	.9*	2.0	3.4	4.7	6.1	7.3	8.6	9.8
.20	.7*	1.7	3.0	4.2	5.4	6.5	7.8	8.8
.25	---	1.5	2.6	3.7	4.8	5.8	6.9	7.9

Model SC-9

L ↓ D → A

t = thickness of material to be cut in inches	**"A"** = Factor from **A** Table **L** = total press stroke length							
	.4	**.8**	**1.2**	**1.6**	**2.0**	**2.4**	**2.8**	**3.2**
.05	.9*	2.3	3.8	5.2	6.5	7.9	9.3	10.7
.10	.8*	2.1	3.5	4.8	6.0	7.4	8.7	10.0
.15	.7*	1.9	3.2	4.4	5.6	6.9	8.1	9.3
.20	.5*	1.7	2.9	4.1	5.1	6.3	7.5	8.6
.25	---	1.5	2.6	3.7	4.7	5.8	6.9	7.9

Model SC-12

L ↓ D → A

t = thickness of material to be cut in inches	**"A"** = Factor from **A** Table **L** = total press stroke length							
	.5	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**3.5**	**4.0**
.05	.7*	2.0	3.3	4.7	5.9	7.2	8.4	9.8
.10	.6*	1.8	3.1	4.4	5.7	6.8	8.0	9.3
.15	.5*	1.7	2.9	4.1	5.4	6.5	7.6	8.8
.20	.4*	1.6	2.7	3.8	5.1	6.1	7.2	8.3
.25	---	1.4*	2.5	3.5	4.8	5.7	6.8	7.8

* Distance less than minimum recommended – shown for use only. See Note 3.

NOTES:

1. The "**B**" distance given by this table is a **maximum** distance, which may be used to insure adequate blade opening for given material and ram stroke conditions. These tables are designed to give a fast, simple, **approximate** determination of that distance. In all cases, the final adjustment should be checked by temporarily mounting the chopper on the press. The "**B**" distance should be decreased slightly to eliminate material feed interference with the open blade, if necessary.

2. If you cannot mount the chopper close enough to the ram for a lever arm to reach it within "**B**" distance found from table above, then make a horizontal extension for your ram actuator to increase "**C**" distance.

3. A "**B**" distance less than 1/2 inch should not be used with materials requiring more than 3000 ft lb. of actuation torque.

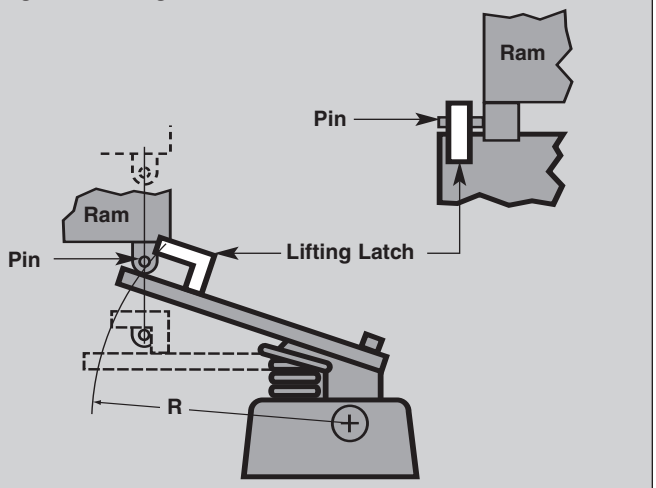
Lever Arm Attachment

A simple lever arm may be attached to the chopper across the top surface as indicated in the installation drawing. Attachment holes are provided for 1/2" bolts. The holes may be tapped for 5/8-11 UNC thread, if desired. The lever arm must be long enough to satisfy the requirements associated with the selection of Actuator Offset Distance "**B**" if ram operated. The arm must also be strong enough to transmit the actuating force required. The selection of the **maximum** allowable "**B**" distance, which will satisfy your operating conditions, is described below. The selection of "**C**" distance depends upon the design of your particular machine. If obstructions prevent placing the Chopper close enough to the Ram, for the lever arm ("**B**" distance) to reach an actuation point directly on the Ram, then make a horizontal extension from the Ram to provide the actuation point (i.e. increase "**C**" do not arbitrarily increase the Chopper lever arm length, and offset distance "**B**"). Refer to the following data.

For reference, an arm made from steel plate, 3/4 inch thick, 8 inches long, and 3 inches wide, was more than adequate for shearing 4 inches thick mild steel material, in P/A test work.

The lever arm should not be so heavy that the chopper springs are unable to lift the lever in the stroke time interval between cuts. If return force is required, a "Lifting Latch" can be devised as shown in Figure 5.

Figure 5. Lifting Latch



Actuating Force Requirement

The amount of actuating force required to cut material depends primarily upon the shear strength and thickness of the material. The width of material does not matter when the width is over 10 – 15 times the material thickness, because of the 4° angle between the upper and lower shear blades.

The curves in Figure 6 show the relation between material shear strength, thickness, and lever torque required.

EXAMPLE:

1. GIVEN: Material Thickness, **t** = .15 in.
Material Shear Strength, **S** = 40 KPSI (=40,000 PSI)
Actuator Offset Distance, **B** =6.1 inches

2. FIND: Lever Arm Torque, **t** = 1500 ft lb. using Figure 6

3. CALCULATE: Actuator Force, **F** (lb.) = **t** (ft lb) x 12 / **B** (in) (See Figure 4

$$\mathbf{F} = \frac{1500 \times 12}{6.1}$$

F = 2950 lb.

NOTE: IF THE RESULTING FORCE LEVEL IS CONSIDERED EXCESSIVE, RETARD THE START POINT OF MATERIAL FEED TO ENABLE USE OF A LONGER PORTION OF THE RAM STROKE FOR CUTTING THE MATERIAL. RECALCULATE ACTUATOR OFF SET DISTANCE "B" AND THEN RECALCULATE ACTUATOR FORCE "F". THE LONGER THE ACTUATOR OFFSET DISTANCE "B" AND STAY UNDER ITS MAXIMUM ALLOWABLE LENGTH AS DETERMINED BY TABLES A AND B, THE SMALLER THE ACTUATING FORCE REQUIRED TO COMPLETE A CUT WILL BE.

Initial Blade Adjustment

The cutting clearance between the blades is factory set at "Near Zero", which is correct for most materials. For cutting heavy stock (1/8th inch or more of steel), the clearance should be readjusted to about .003, as described earlier.

MAINTENANCE AND ADJUSTMENT

Stroke Adjustment

When an actuator with tremendous force capability is used, such as a press ram, it is important that the actuating linkage be adjusted so that the actuator bottoms before the chopper bottoms. Ideally, the chopper blades should be just closed, without unnecessary overtravel, with the actuator bottomed, see Figure 7. Similarly, if a "Lifting Latch" is needed to return the lever to open position, make sure that the latch separates before the chopper lever stops are contacted.

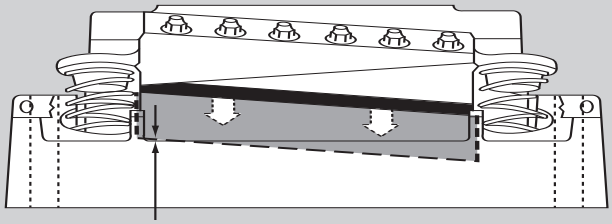


Figure 7. **Blades just closed at left side with Actuator bottomed**

The result of improper setting is obvious; you will smash the chopper and instead of having a scrap chopper, the result could be a **scrapped** chopper.

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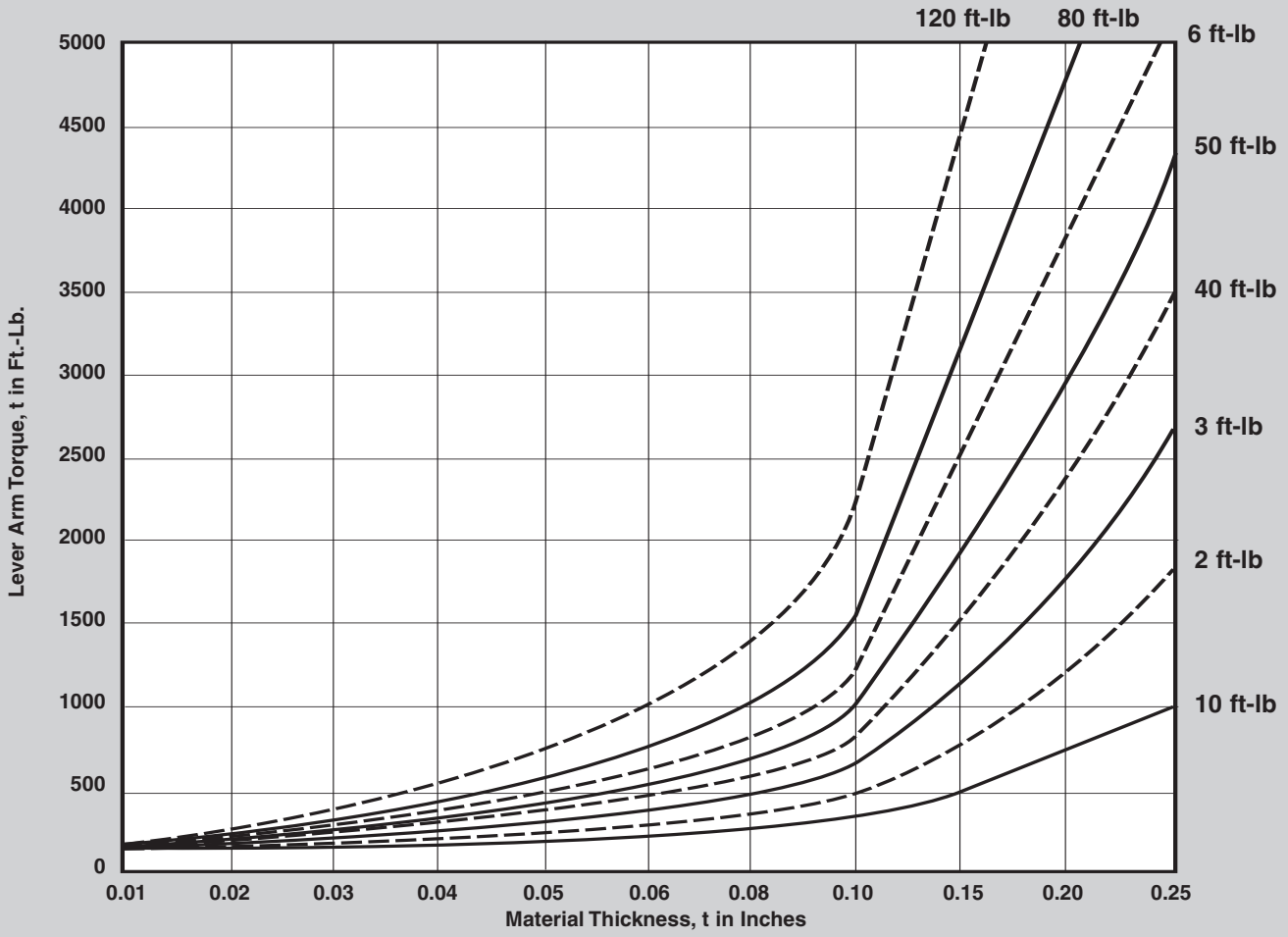
Figure 6. Scrap Chopper Lever Torque Required for Various Material Thickness and Shear Strength



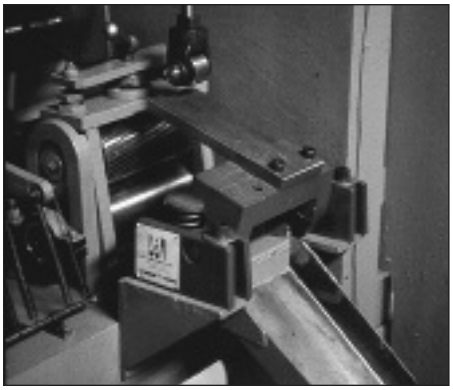
EXAMPLE: **t** = .15 in.
S = 40 KPSI
T = 1500 ft lb

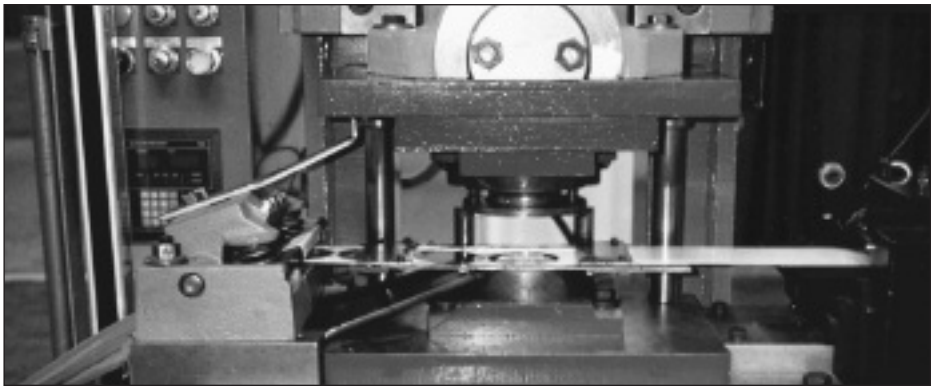
Reference: **T** (ft lb) = 872 x **S** (KPSI) x [**t** (in)]$^{1.7}$+150

T = 872 x 40 KPSI x (.15")$^{1.7}$+ 150
T = 872 x 40 KPSI x .3975" + 150

$$\mathbf{T} = \frac{1537 \text{ in-lb}}{12} = 1500$$

NOTE:
TORQUE VALUES SHOWN ARE FOR MATERIAL WIDTH AT LEAST 10 - 5 TIMES THICKNESS. IF MATERIAL WIDTH IS LESS, TORQUE WILL BE PROPORTIONALLY LESS THAN SHOWN.





Adjustment of Cutting Clearance Between Blades

Adjustment of clearance between the cutting edges of the upper and lower blades is accomplished by adjusting the setscrews (refer to page 10) to tilt the top of the lower blade toward the upper blade. To reduce the clearance between the blades, loosen the flat head screws (refer to item 4) slightly, using a 5/32" T handle Allen type wrench, and tighten the set screws, using a 1/8" T handle Allen type wrench. If blade interference is created by over adjustment, then back off the setscrew and retighten the flat head screw. If major adjustment is required all across the blade, a good technique for initial adjustment is to loosen all of the flat head screws and then lower the lever (either by hand with a lever arm) about 3 feet long or by inching the press down. Be certain that there is no blade interference before you start lowering the lever; otherwise, the blade could break. Continue lowering the lever until the right hand edge of the upper blade is just below the cutting edge of the lower blade. Tighten the right hand setscrew until the lower blade comes into contact (lightly) with the upper blade, at that point. Tighten the mating flat head screw (tightly).

Repeat by lowering the lever further and working the remaining set screws and flat head screws toward the left. Trial cuts can be made using ordinary notepaper. Several runs across the adjusting screws may be required before a perfect cut is made. For light stock thickness, the blade clearance should be adjusted to "Near Zero" (cleanly cutting ordinary notepaper).

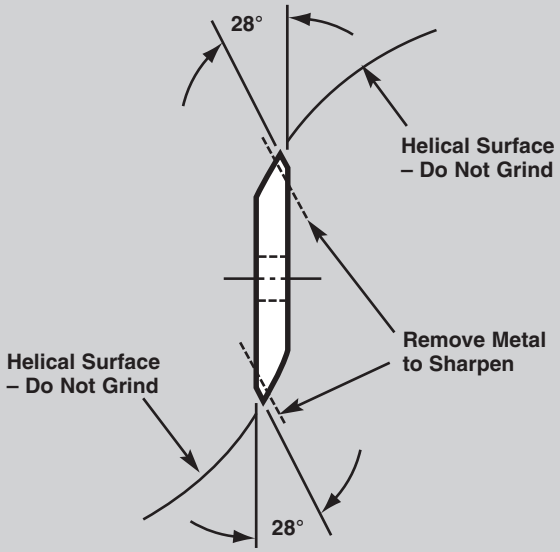
For **Heavy Stock Thickness** (1/8th inch or more steel) **the blade clearance should be adjusted to about .003.** This is the point at which ordinary notepaper cuts ragged or just barely not at all. This is to allow for slight thermal expansion of the blades caused by heat generation of heavy cuts. Make sure that all screws holding the lower blade have been tightened, and **for heavy stock thickness, recheck the tightness of the screws** after an initial short run several minutes.

Upper Blade Replacement and Sharpening (Figure 9)

The upper blade is fastened to the lever casting by two shoulder screws for positive location and remaining socket head bolts. The blade is provided with two sharpened edges which may be used, in turn, before resharpening is needed. To change the cutting side of the blade, remove the fastening screws, turn it over, and replace the screws. Tighten to 20 ft lb. torque. Non symmetrical fastening holes will prevent re assembly if the blade is turned around rather than turned over. The lower blade should be readjusted, if necessary, after turning the upper blade.

If you are careful to work on the correct surface(s) indicated in Figure 9, the blade may re-sharpened several times in your own shop. Use a flat belt, disc, or bench grinder to remove metal only from the flat surfaces indicated. **If you grind into the helical surface by mistake, you will ruin that cutting edge of the blade.**

Figure 9. Upper Blade Cross Section



Lower Blade Replacement and Sharpening (Figure 10)

The lower blade is fastened to the base casting by flat head screws. All four corner edges of the blade are cutting edges. The fastening holes are symmetrical, so that the blade can be turned either over or around, to use all four edges before re-sharpening is needed. The blade may be re-sharpened several times with a surface grinder to remove metal from the sides indicated in Figure 10.

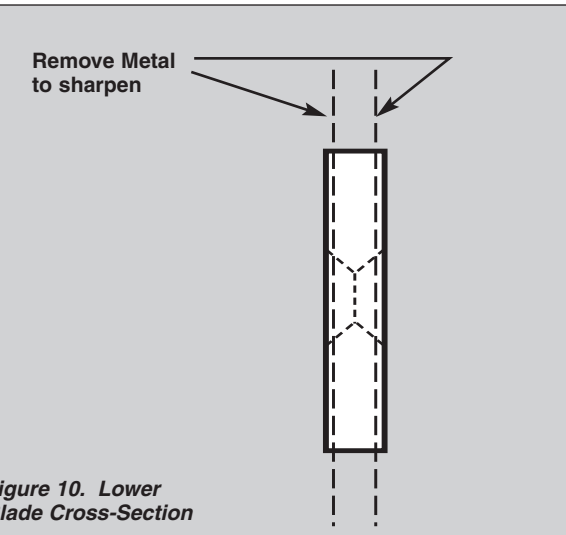


Figure 10. Lower Blade Cross-Section

Pivot Pin and Bearing

The pivot bearings are oil impregnated bronze type and further lubrication is not normally required. The pivot pins are press fitted into the lever casting and are further locked with set screws. No adjustment or servicing should be needed.

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If you should ever want to replace the bearings, you may order them from P/A (Quantity 2, Part Number 12128-34). Refer to item 5 on page 10 for assembly instructions.

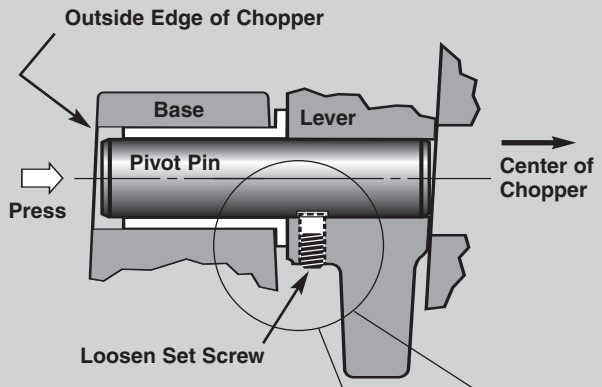
To remove the existing bearings proceed as follows:

1. Clamp or Strap the lever in position to keep the springs from "flying apart" when the pins are removed.

2. Remove the setscrews (refer to item 18) with application of heat to 350° if necessary to weaken the Loctite bond.

3. Put a backup support against the inside of the lever casting (refer to figure 8a) to provide support while pressing or driving the pin **completely** out of the lever casting in the direction of the center of the chopper.

Figure 8a.



Turn the chopper around and press the other pin in similar fashion, into the lever until it disengages from the bearing. There is no need to remove the pin completely.

4. Loosen the clamp or strap and remove the lever.

5. Press out the two "old" bearings with the same type of "inside" backup support for the base. If necessary, apply heat to weaken the original adhesive bond.

6. Clean the holes in the base casting. Reapply adhesive to the inside surface of the two holes and to outside surface of new
bearings.

7. Install both new bearings into the base with their flanges on the "inside". Check that the space between the two bearing flanges is slightly greater than the lever length by temporarily lifting the lever back into place. If there is interference, file off the face or backside of one of the flanges where it touches the base casting to provide at least .003 end clearance.

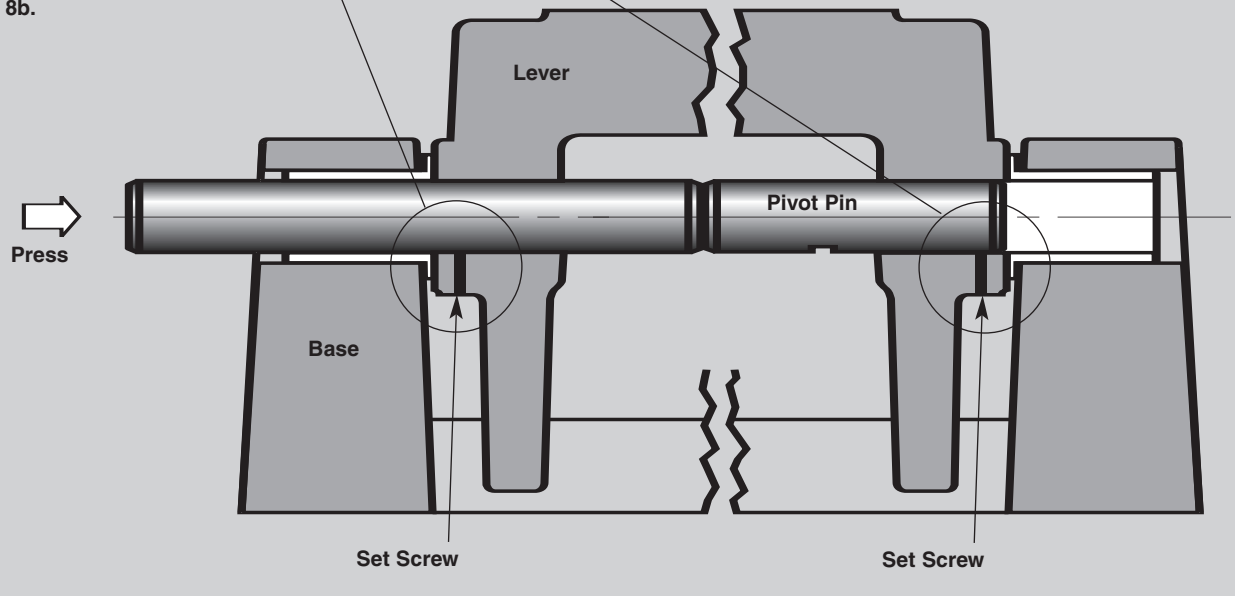
8. Replace the lever, using the clamp or strap if needed to compress the springs. Align the pivot pin left in the lever with its bearing bore. Press the pivot pin back into the new bearing. The best way to do this is to use a rod under 7/8" dia thru other bearing and pivot pinhole, as shown in Figure 8b.

9. Replace the loose pivot pin thru the bearing on the other end. With the flat spot on the pin turned toward the setscrew and with the lever hole in alignment to the pin, press the pin back into the lever.

10. Retighten setscrews on both pins.

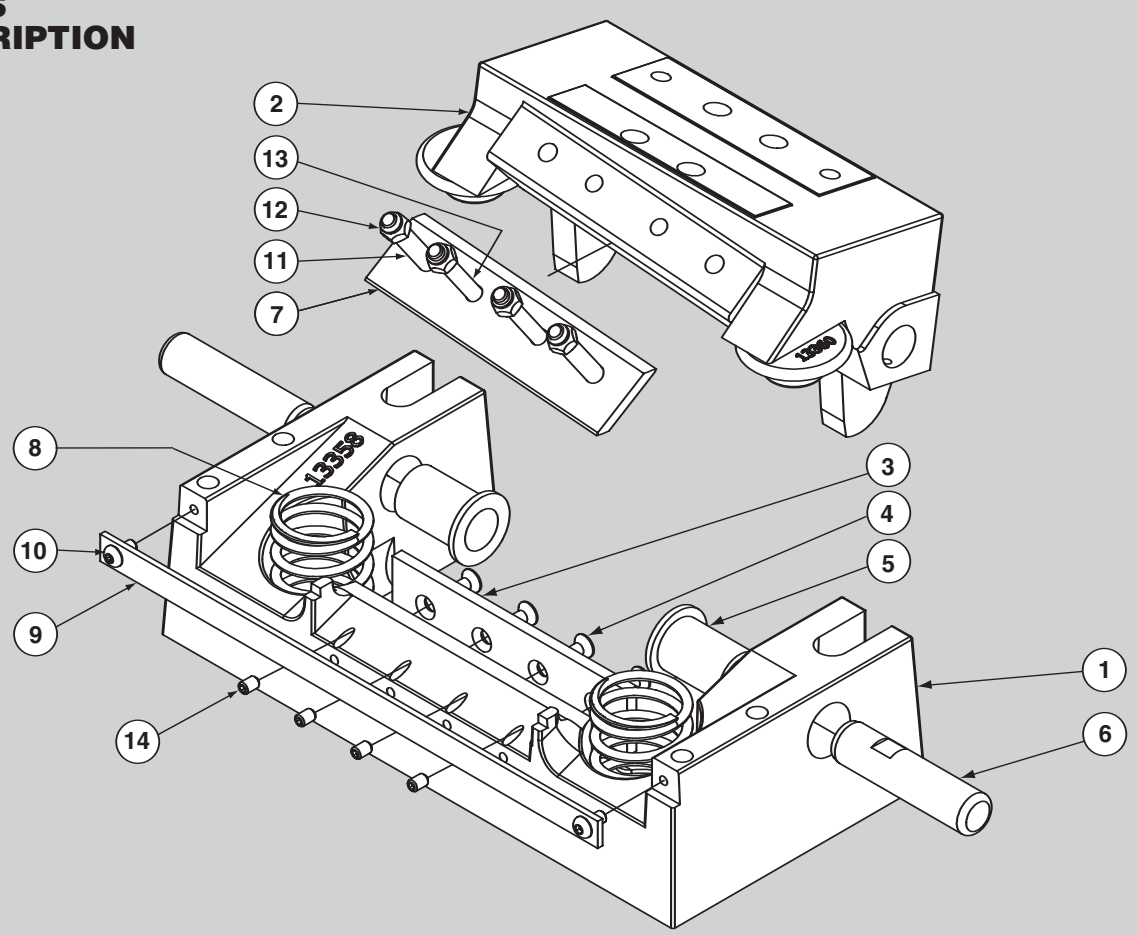
11. Check blade-cutting clearance and readjust if needed.

Figure 8b.



MECHANICAL SCRAP CHOPPER - SC-3, 6, 9, 12

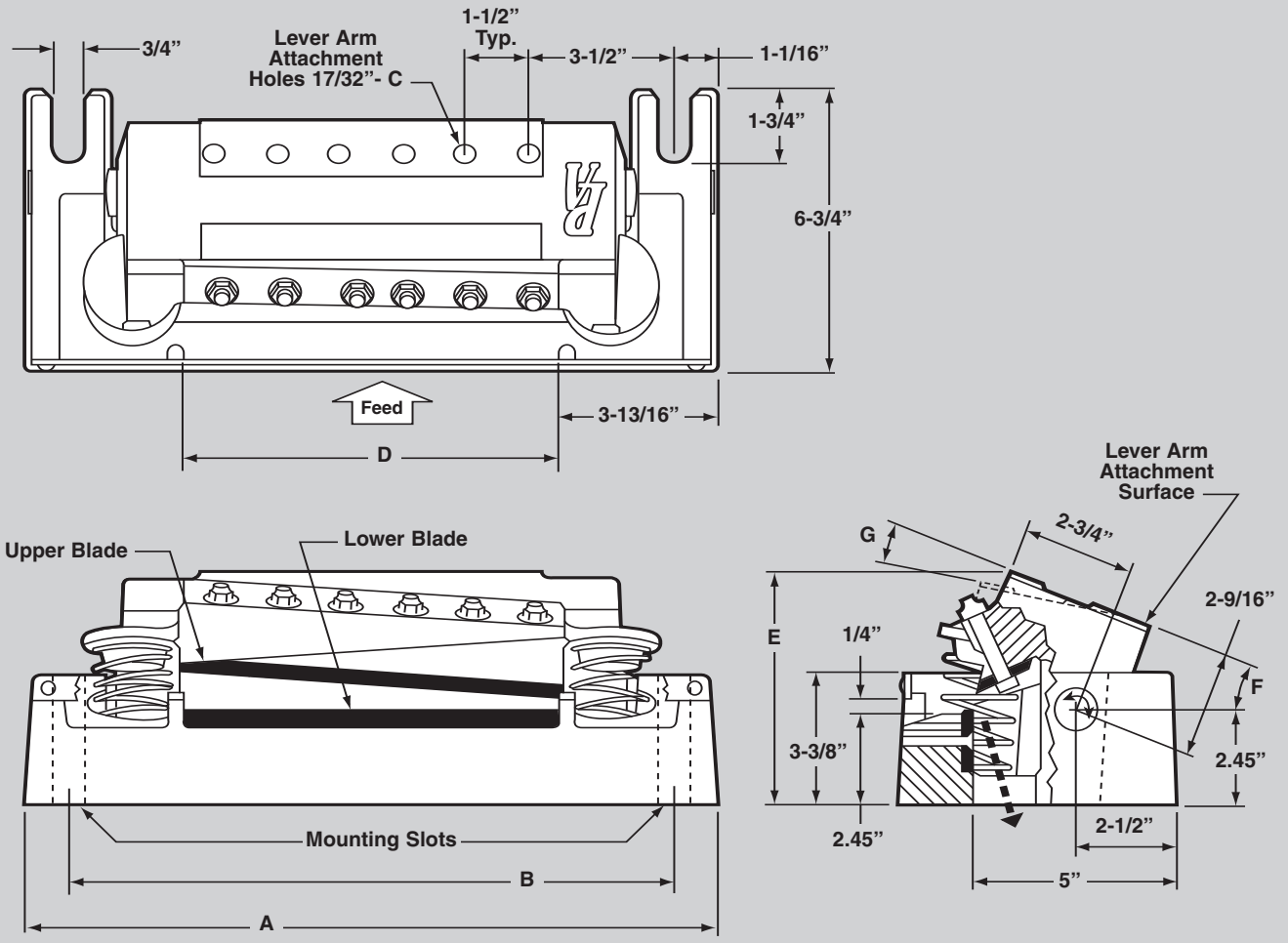
PARTS DESCRIPTION



			Part Number			
Item	**Qty**	**Description**	**SC-3**	**SC-6**	**SC-9**	**SC-12**
1	1	Base	13642	13644	13646	13648
2	1	Lever	13643	16345	13647	13649
3	1	Blade, Lower	13356-01	13356-02	13356-03	13356-04
4	4	1/4 - 20 x 3/4 Lg, FHSCS, Black	904025-06			
5	2	Bushing, Bronze, 1.125 OD x .875 ID x 1.75	12128-34			
6	2	Pin, Dowel, .87 Dia x 3.5 Lg, Modified	13934			
7	1	Blade, Upper	13456	13457	13458	13459
8	2	Spring, Compression	13453-03			
9	1	Bar, Guide	13462-01	13462-02	13462-03	13462-04
10	2	1/4 - 20 x 1/2 BHCS	902025-04			
11	2	Fastener, Screw, Shoulder, 3/8 x 1-3/4 x 5/16-18	12466-18			
12	4	5/16-18, Hex Nut, Nylon Insert Lock Nut	942031			
13	2	5/16-18 x 2-1/4 Lg, SHCS, Black	900031-18			

MECHANICAL SCRAP CHOPPER - SC-3, 6, 9, 12

DIMENSIONAL DRAWING



DIMENSIONS

Model	Width A	Mounting Bolt Space B	Number of Lever Attachment Holes C	Max. Feed Width D	Height E	Lever Angle at Open Position F	Lever Rotation thru Full Stroke G
SC-3	10.6"	8.5"	2	3"	5.75"	17.2°	10.7°
SC-6	13.6"	11.5"	4	6"	5.84"	19.6°	15.5°
SC-9	16.6"	14.5"	6	9"	5.94"	22.0°	20.1°
SC-12	19.6"	17.5"	8	12"	6.03"	24.4°	24.5°

SPECIFICATIONS

Model	Max. Stock Width (In.)	Stock Thickness Range (In.)	Max. SPM Full Width	Shipping Weight (Lbs.)
SC-3	3	.004 – .187 CRS	750	45
SC-6	6	.004 – .187 CRS	650	52
SC-9	9	.004 – .187 CRS	550	60
SC-12	12	.004 – .187 CRS	450	68

AIR SCRAP CHOPPER – ASC-6, 9, 12

RECEIVING INSPECTION

Before removing unit from its packaging, check for visual damage, especially if crate, skid, or carton has been damaged in transit. Any damage caused by shipping should be immediately reported to the carrier. If unit appears in satisfactory condition, remove all packing and wipe rust preventive from rollers with mild solvent.

DESCRIPTION

The P/A Air Scrap Chopper is designed to operate where mechanical actuation is not possible or desirable. Using the same principle as our Ram Driven Scrap Chopper, this pneumatically powered chopper is designed to shear scrap material from .004" to .074" thick mild steel. Set-up is simple having no mechanical connections, allowing for a stand-alone operation if desired.

The operation is pneumatic using an electrical signal from the press, limit switch, or rotary cam. A powerful, double acting air cylinder provides controlled chopping while integral dampeners absorb snap through shock. The helically ground upper blade, made of high chrome steel, shears any kind of material.

A four-way solenoid valve controls the sequencing. This valve can be synchronized with any machine by a limit switch, proximity sensor, or programmable rotary limit switch. If a timing relay counter is used, the chopper can be set to cycle when desired with any multiple of press cycle or a timing cycle unrelated to the parent device is possible for longer scrap pieces or extremely high-speed operations.

SET-UP

The Air Scrap Chopper is a slight modification to the Mechanical Scrap Chopper (see pages 3 through 11).

Pneumatic Connections

A 3/8" NPT port on the Solenoid Valve is supplied for supply air connection. It is recommended that a minimum of 3/8" line size be maintained. In addition, a dryer/filter/lubricator of comparable size should be used. The Air Scrap Chopper uses a 4-way solenoid valve and double acting pneumatic cylinder for higher speed operation. This may be faster than required or may cause higher air consumption than desired. In that case the valve can be used as a 3-way valve by plugging port #2 on the valve and adapting a free flowing filter/silencer to the 1/4" NPT rod end port on the cylinder. This arrangement causes a pneumatic operated cutting stroke and a spring force return stroke

Electrical Signal

A two lead cable is provided from the solenoid valve for actuation of the Air Scrap Chopper. The valve is connected such that the blades are open with no signal.

A signal of proper voltage and sufficient timing is required to actuate the valve and cut the material. The timing should be to allow complete cutting, with the strip in a stationary position.

The standard solenoid voltage is 120 VAC. Other optional voltages are 220 VAC, 24 VAC or 24 VDC. Check for the proper voltage on the solenoid label.

Blade Adjustments

The scrap chopper comes with the blade adjusted at the factory. In fully the retracted position the cylinder piston must bottom out in the air cylinder. This prevents the cast ears of the lever from touching the back end of the base in the retracted position. Use the following procedure for adjustment (if necessary) of retracted cylinder stroke.

1. Retract the air cylinder and **shut off** air.

2. Check the clearance between the lever ears and the base. Allow .015 to .025 minimum distance.

3. Loosen the check nut on the end of the piston rod. Place a shim between the lever ear and the base.

4. Turn the piston rod relative to the rod end to obtain proper clearance mentioned in step 2.

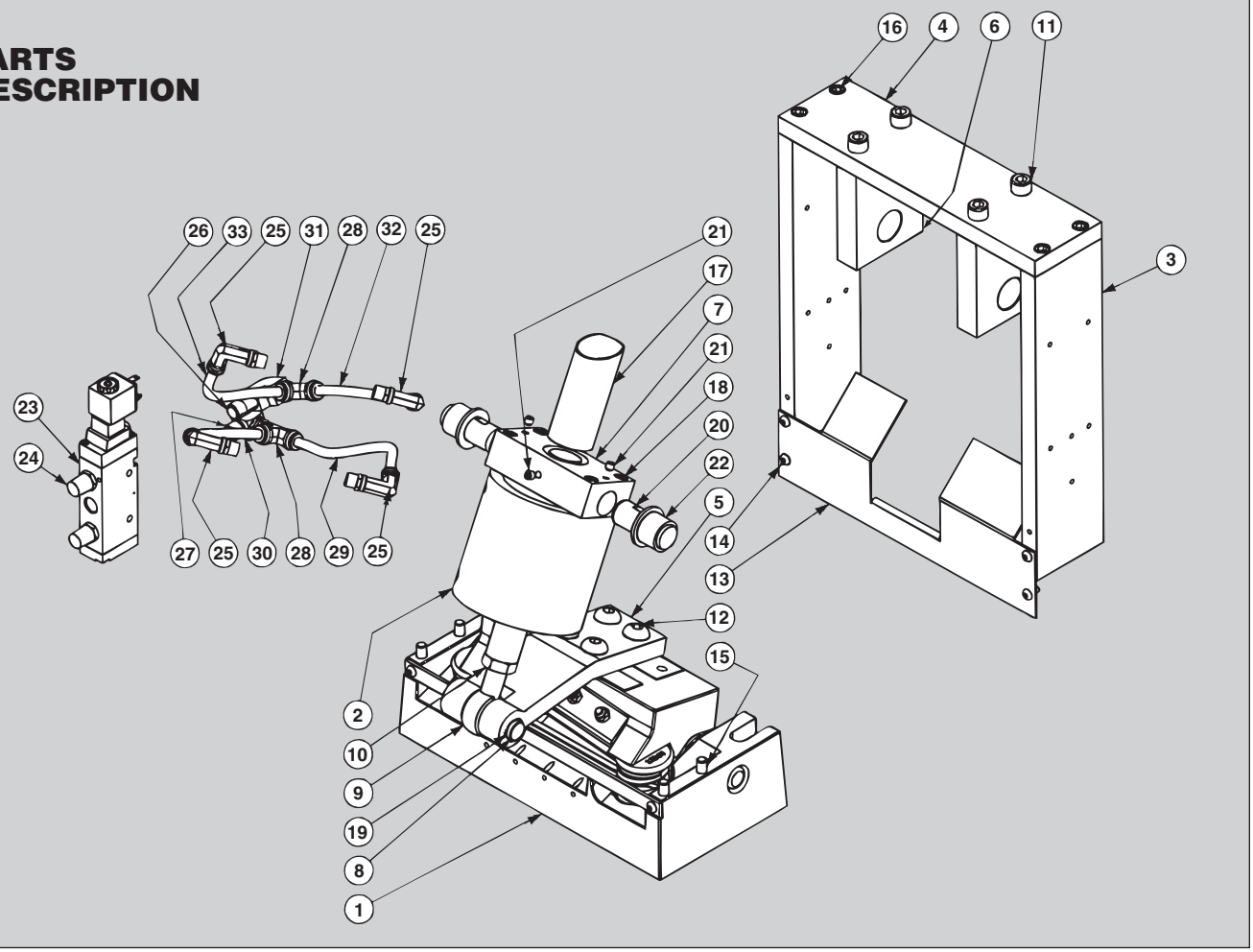
5. Manually push the lever down to maximum position (use pry bar if necessary) and check for .03” minimum blade overlap.

6. Tighten check nut and turn on air.

7. Cycle chopper and check stroke in both directions. The result of improper setting is obvious, you will smash the chopper - and instead of having a scrap chopper, you’ll have a **scrapped** chopper.

AIR SCRAP CHOPPER – ASC-6, 9, 12

PARTS DESCRIPTION

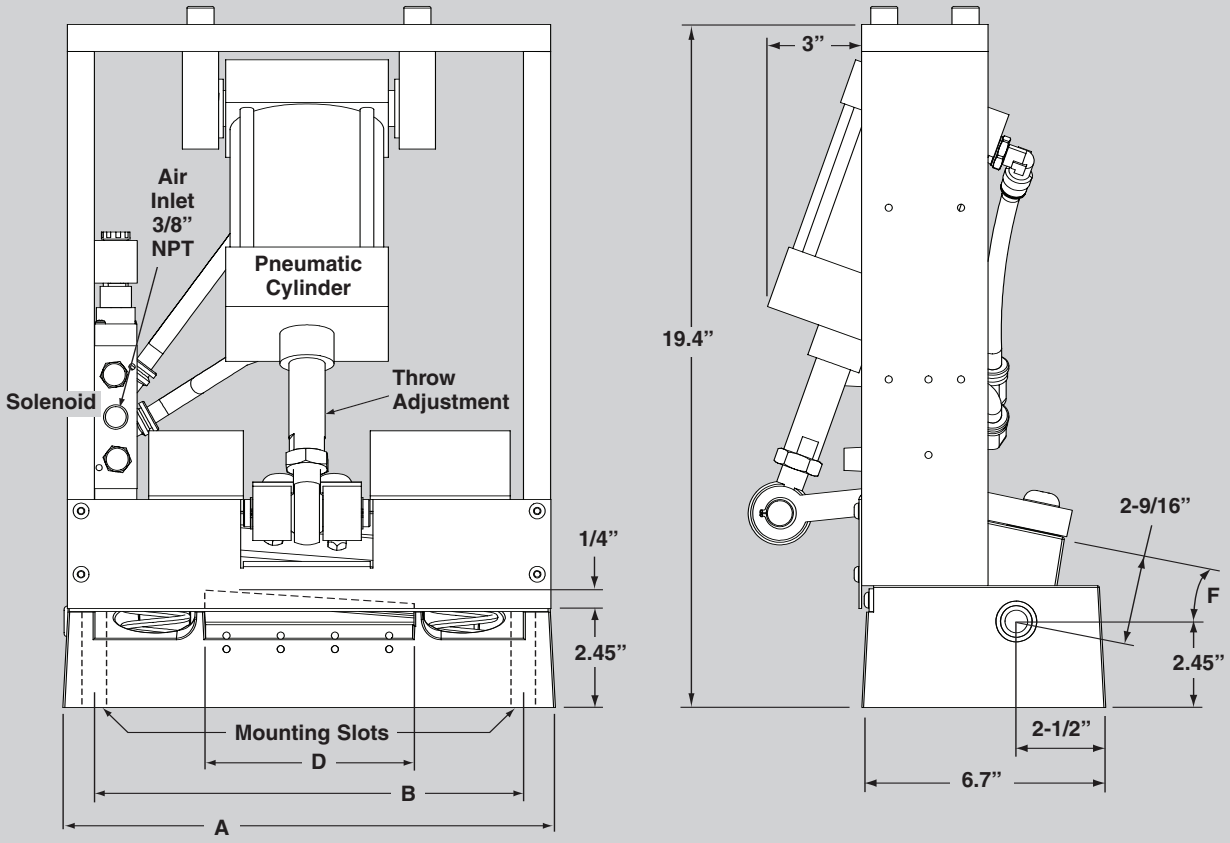


Item	Qty	Description	Part Number
1	1 1 1	Base, SC-6 Base, SC-9 Base, SC-12	13377-02 13377-03 13377-04
2	1	Cylinder, Air 4"B x 3" ST QJ96-2761-A1	17570-01
3	2	Bracket, Upright	16789
4	1 1 1	Support, Top, ASC-6 Support, Top, ASC-9 Support, Top, ASC-12	16790-01 16790-02 16790-03
5	1	Actuator	16791
6	2	Support, Cylinder Mounting	17572
7	1	Connector, Cylinder Mounting	17571
8	1	Pin, Pivot	16793
9	1	Rod End, 3/4-16 Thd. Male, Spherical Brg	12582-09
10	1	3/4-16, Jam Nut, Hex, ZP	947075ZP
11	4	1/2-13x1-1/2, SHCS, Black	900050-12
12	4	5/8 - 11 x 2 BHCS	902062-16
13	1 1 1	Guard, ASC-6 Guard, ASC-9 Guard, ASC-12	16792-01 16792-02 16792-03
14	4	5/16-18 x 2 1/4 LG, SHCS	902025-04
15	4	3/8-16x3 LG, SHCS, Black	900038-24
16	4	3/8-16x1.0 LG, SHCS, Black	900038-08
17	1	Shield, Piston Rod	17594

Item	Qty	Description	Part Number
18	4	5/16-18x2" LG, SHCS, Black	900031-16
19	2	Spring Retaining Ring	12013-12
20	2	Dowel Pin, 1.0 Dia x 2.50 Long, Modified	13379-24
21	3	5/16-18x1/4 Lg, Sock Set Scr, Cup PT, Black	930031-02
22	2	Bushing, Flanged 1.0 ID x 1.25 OD x 1.0 Lg	12128-74
23	1	Valve, Solenoid, 4-Way, 120 VAC, Parker	12039-110
24	2	Silencer, 3/8 MNPT Porous Metal	12024-14
25	4	Fitting, Elbow, Male Swivel, 1/4 NPT x 3/8	12032-153
26	1	Fitting, Nipple, 3/8 NPT x 1.5" Long	12032-155
27	1	Fitting, Street Elbow, 3/8 NPT	12032-156
28	2	Fitting, Tee, Male Run, 3/8 NPT x 3/8	12032-154
29	1	Tubing, 3/8 Plastic, Flexible, Black	15676-20
30	1	Tubing, 3/8 Plastic, Flexible, Black	15676-20
31	1	Fitting, 90 Deg Union, 3/8 NPT Female	12032-55
32	1	Tubing, 3/8 Plastic, Flexible, Black	15676-20
33	1	Tubing, 3/8 Plastic, Flexible, Black	15676-20

AIR SCRAP CHOPPER – ASC-6, 9, 12

DIMENSIONAL DRAWING



DIMENSIONS

Model	Width A	Mounting Bolt Space B	Number of Lever Attachment Holes C	Max. Feed Width D	Lever Angle at Open Position F	Lever Rotation thru Full Stroke G
ASC-6	13.6"	11.5"	4	6"	19.6°	15.5°
ASC-9	16.6"	14.5"	6	9"	22.0°	20.1°
ASC-12	19.6"	17.5"	8	12"	24.4°	24.5°

SPECIFICATIONS

Model	Max. Stock Width (In.)	Stock Thickness Range (In.)	Max. Force (Lbs.) at 100 PSI	Max. Cycles/Min. No Load *	Air Consumption at Max. SPM and 100 PSI	Shipping Weight (Lbs.)
ASC-6	6	.004 – .074 CRS	2800	200	72 CFM	80
ASC-9	9	.004 – .074 CRS	2800	190	72 CFM	90
ASC-12	12	.004 – .074 CRS	2800	180	73 CFM	100

* Actual SPM is dependent on material thickness, strip feed window, and average pressure. Air consumption is free air at 100 PSI pressure and maximum SPM.

PNEUMATIC STOCK CUTTER

RECEIVING INSPECTION
Before removing unit from its packaging, check for visual damage, especially if crate, skid, or carton has been damaged in transit. Any damage caused by shipping should be immediately reported to the carrier. If unit appears in satisfactory condition, remove all packing and wipe rust preventive from rollers with mild solvent.

DESCRIPTION
The P/A Industries Pneumatic Stock Cutter (PSC) is a sturdy design providing for accurate cut-off and cut-to-length applications. A variety of materials can be cut with no folding and bending of the material.

The standard operation is pneumatic, using an electrical signal from a limit switch, rotary cam or other signaling device to actuate the solenoid valve.

There are no mechanical linkages or strikers needed, allowing for a stand alone operation. This is helpful where mechanical actuation is not possible or desirable.

The PSC has factory installed guards which must be installed when operating the unit for operator safety.

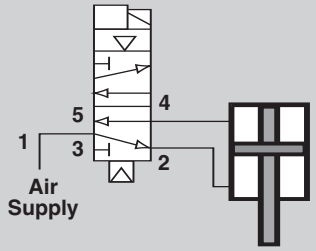
SET-UP
Set-up is simple but does require attention. To attain best accuracy the cutter must be level, square to the cut-off and bolted securely to a sturdy bracket. The material should be straightened and supported as flatly as possible. The more bends and bows in the material the less consistent the cut.

CONNECTIONS

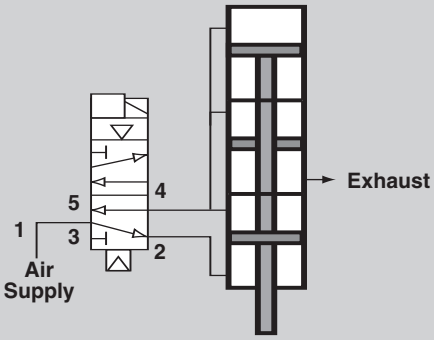
Pneumatic
The Pneumatic Stock Cutter uses a 4-way solenoid valve and double acting pneumatic cylinders, allowing higher speed operation.

A 3/8" port on the Solenoid Valve is provided for the Supply Air location. Supply Air is 80-110 PSI. It is recommended that a minimum of 3/8" ID line be maintained to the Cutter. Clean, dry, lubricated air must be provided through a filter/dryer/lubricator of comparable size.

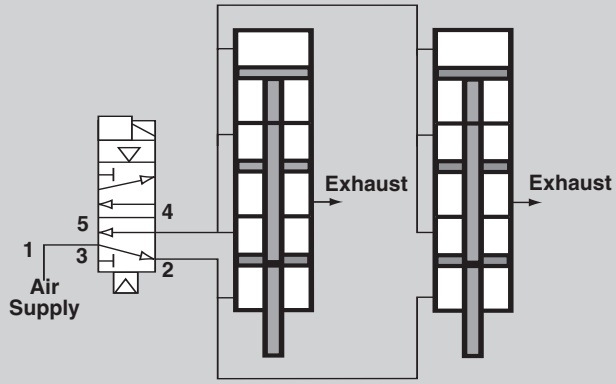
PSC-3 Pneumatic Diagram



PSC-6 Pneumatic Diagram



PSC-12 Pneumatic Diagram



Electric
A signal of proper voltage and sufficient timing is required to actuate the valve, cut the material, then retract the upper blade in position for the next feed. The timing must allow complete cutting with the strip in a stationary position being held by the clamp block.

An 18 AWG, 3 connector SJO cord is provided from the solenoid valve for actuation of the Pneumatic Stock Cutter with a signal from linear cam, rotary limit switch or other timing device.

With no signal applied, the blades are open with the factory pneumatic connections on the PSC solenoid valve. Reversing the valve porting #2 & #4 will reverse this set-up.

The standard solenoid voltage is 120 VAC. Other optional voltages are possible such as 220 VAC & 24 VDC. Check for the proper voltage and wattage on the solenoid label.

All electrical connections should be to local & national wiring codes.

SAFETY WARNING: DISCONNECT OR LOCK-OUT ELECTRIC POWER AND AIR LINE BEFORE ATTEMPTING ANY SERVICE.

BLADE REMOVAL & INSTALLATION

Lower Blade Removal
1. Retract upper Blade (then REMOVE AIR FROM PSC).
2. Remove Blade from Lower Blade Holder.

Lower Blade Installation
1. Attach Blade to Lower Blade Holder and adjust height as required.
2. Adjust blade clearance if required.
3. Tighten all screws.

Upper Blade Removal
1. Remove Exit Guard.
2. Remove Blade.

Upper Blade Installation
1. Attach Blade to Upper Blade Holder and adjust height as required.
2. Tighten all screws.
3. Attach Exit Guard.

BLADE ADJUSTMENTS

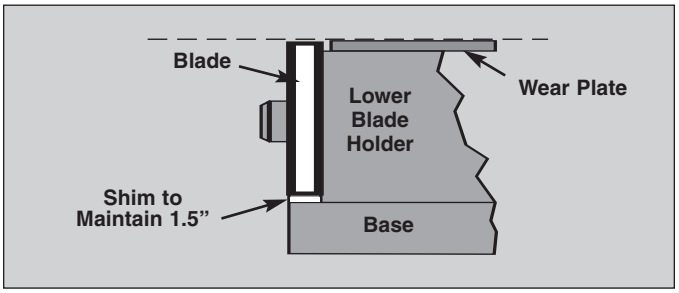
Height Adjustment - New Blade
1. Install both Blades without shims.
2. Adjust blade clearance if required.

Height Adjustment - Resharpened Blade
With NEW Blades installed, no shimming is required. As the blades are sharpened on the long narrow faces, the blades must be shimmed to proper height.

The Lower Blade is shimmed "up" level with the wear plate to 1.500” from its shelf.

The Upper Blade is shimmed "down" to allow proper opening for material when retracted and proper overlap with the blade down to1.500" from its shelf.

1. Install both blades with shim(s) to 1.500" from their shelf.
2. Adjust blade clearance if required.

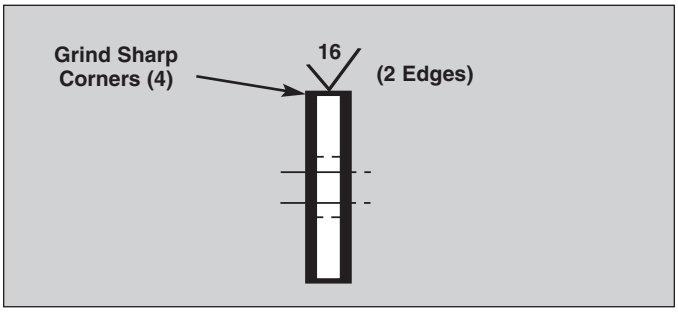


Blade Clearance
1. Actuate blade DOWN – then REMOVE AIR SUPPLY.
2. Loosen exposed screws in Lower Blade Holder to finger tight.
3. Slide Lower Blade Holder along base toward upper Blade until desired gap between the blades is achieved (.001"–005") as the material becomes tougher Tighten screws.
4. Test unit for proper operation.

Blade Sharpening
The Blade requires sharpening when the cutting edge becomes dull (rounded) or excessively chipped.

The upper and lower blades are the same when new. As sharpening is required, the heights (1.500”) may differ.

Sharpening is accomplished by grinding of the long, narrow edges to obtain sharp edges. Remove burrs but **DO NOT** break edge. **DO NOT GRIND LARGE FACES**. To retain quality cutting, the two sharpened edges must remain parallel within .002”.



CYLINDER REMOVAL & INSTALLATION

Disassembly
If it becomes necessary to remove the cylinder:

1. Remove Inlet and Outlet guards.
2. Remove air valve and all plumbing as necessary.
3. Remove all mounting screws from Top Plate.
4. Lift up Top Plate with Upper Blade Holder approximately one inch.
5. Extend Piston Rod to full stroke.
6. Loosen Piston Rod Connector and turn Piston Rod out.
7. Remove air cylinder mounting screws.

Assembly: In Reverse Order
Be sure to tighten Rod End Connector snug against Piston Rod end when connecting air cylinder.

Maintenance
The PIA Industries Pneumatic Stock Cutter is a high quality, low maintenance tool. There are some moving parts which will eventually wear with continuous use.

The bearings are self lubricating for life. No lubrication is required.

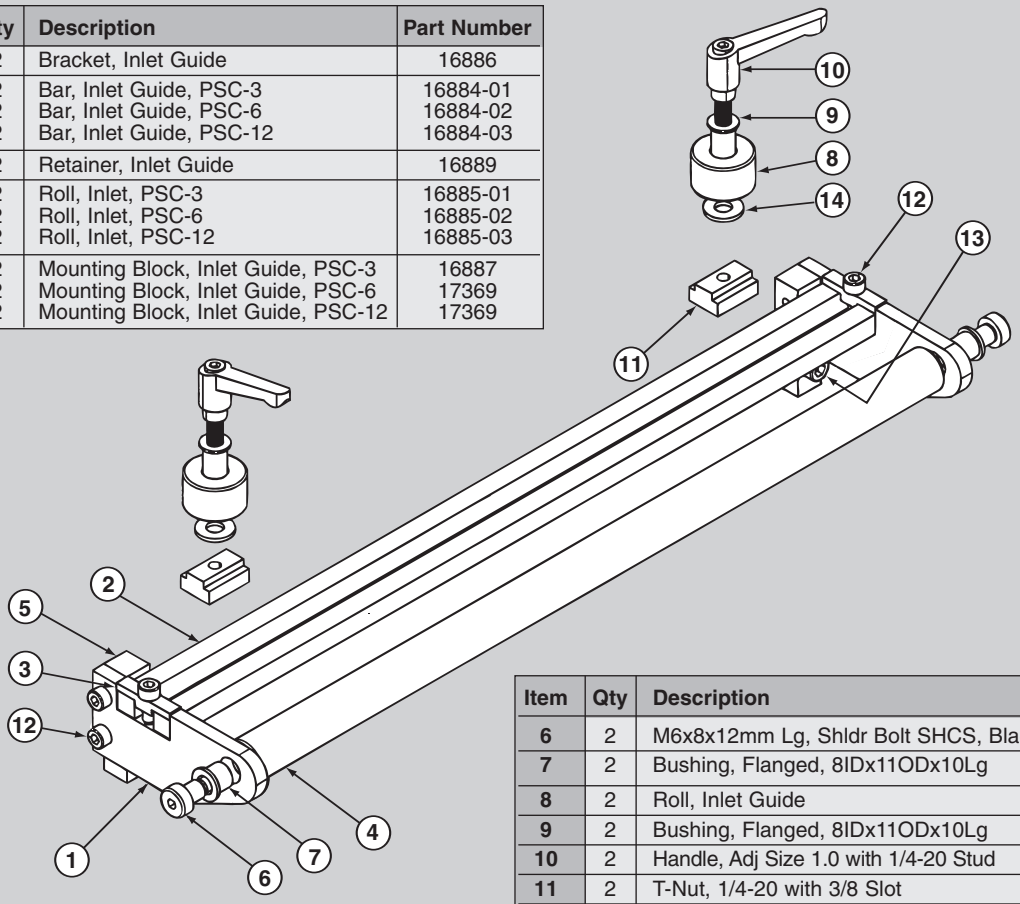
The solenoid valve requires no internal maintenance. The supply air must be clean, dry & lightly oiled. The cylinders require no internal maintenance. The supply air must be clean, dry & lightly oiled. Use cylinder label information for repair part. As with any equipment, it should be kept clean, free of any obstructions & in good operating condition for best service.

For the safety of the operator, **ALL SAFETY DEVICES MUST BE IN PLACE AND IN GOOD CONDITION.**

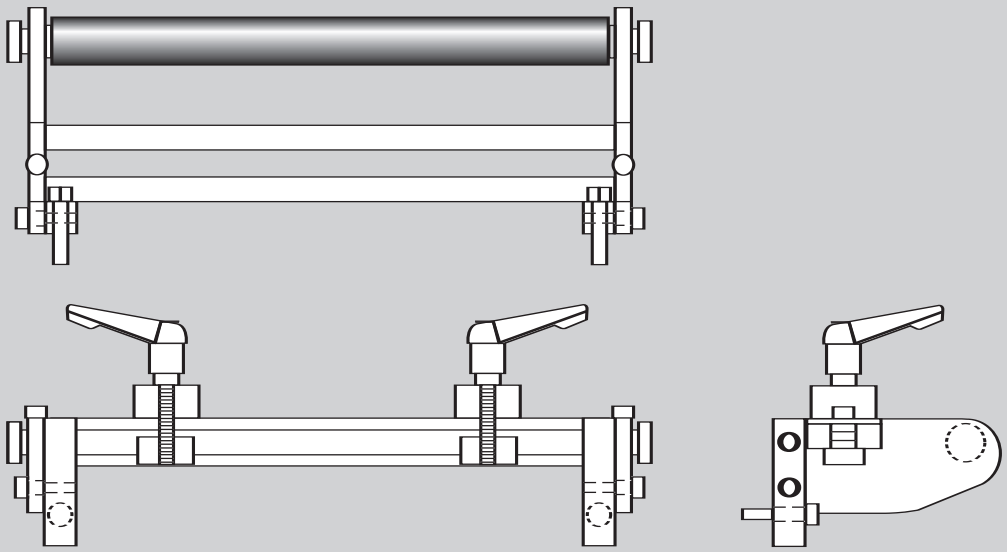
INLET GUIDE ASSEMBLY for PNEUMATIC STOCK CUTTER

PARTS DESCRIPTION

Item	Qty	Description	Part Number
1	2	Bracket, Inlet Guide	16886
2	2 2 2	Bar, Inlet Guide, PSC-3 Bar, Inlet Guide, PSC-6 Bar, Inlet Guide, PSC-12	16884-01 16884-02 16884-03
3	2	Retainer, Inlet Guide	16889
4	2 2 2	Roll, Inlet, PSC-3 Roll, Inlet, PSC-6 Roll, Inlet, PSC-12	16885-01 16885-02 16885-03
5 5 5	2 2 2	Mounting Block, Inlet Guide, PSC-3 Mounting Block, Inlet Guide, PSC-6 Mounting Block, Inlet Guide, PSC-12	16887 17369 17369

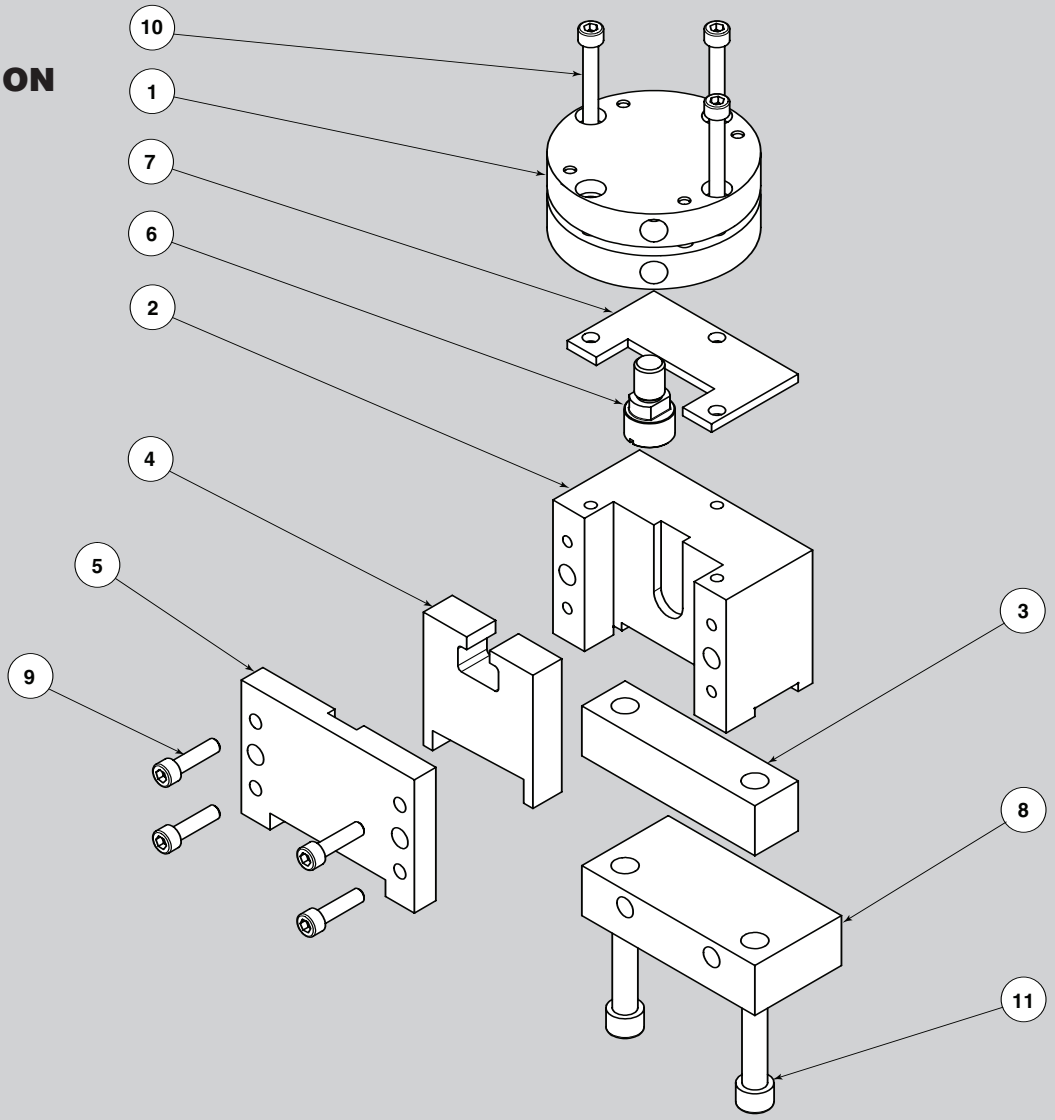


Item	Qty	Description	Part Number
6	2	M6x8x12mm Lg, Shldr Bolt SHCS, Black	Din-SB912-M6x8x12
7	2	Bushing, Flanged, 8IDx11ODx10Lg	12128-62
8	2	Roll, Inlet Guide	16888
9	2	Bushing, Flanged, 8IDx11ODx10Lg	12128-63
10	2	Handle, Adj Size 1.0 with 1/4-20 Stud	12416-28
11	2	T-Nut, 1/4-20 with 3/8 Slot	12466-44
12	6	M5x12mm Lg, SHCS, Black	Din-912-M5x12
13	2	M6x25mm Lg, SHCS, Black	Din-912-M6x25
14	2	9/32, Flat Washer, 5/8ODx.065 Thk SAE	958027



PNEUMATIC STOCK CUTTER – PSC-1.5

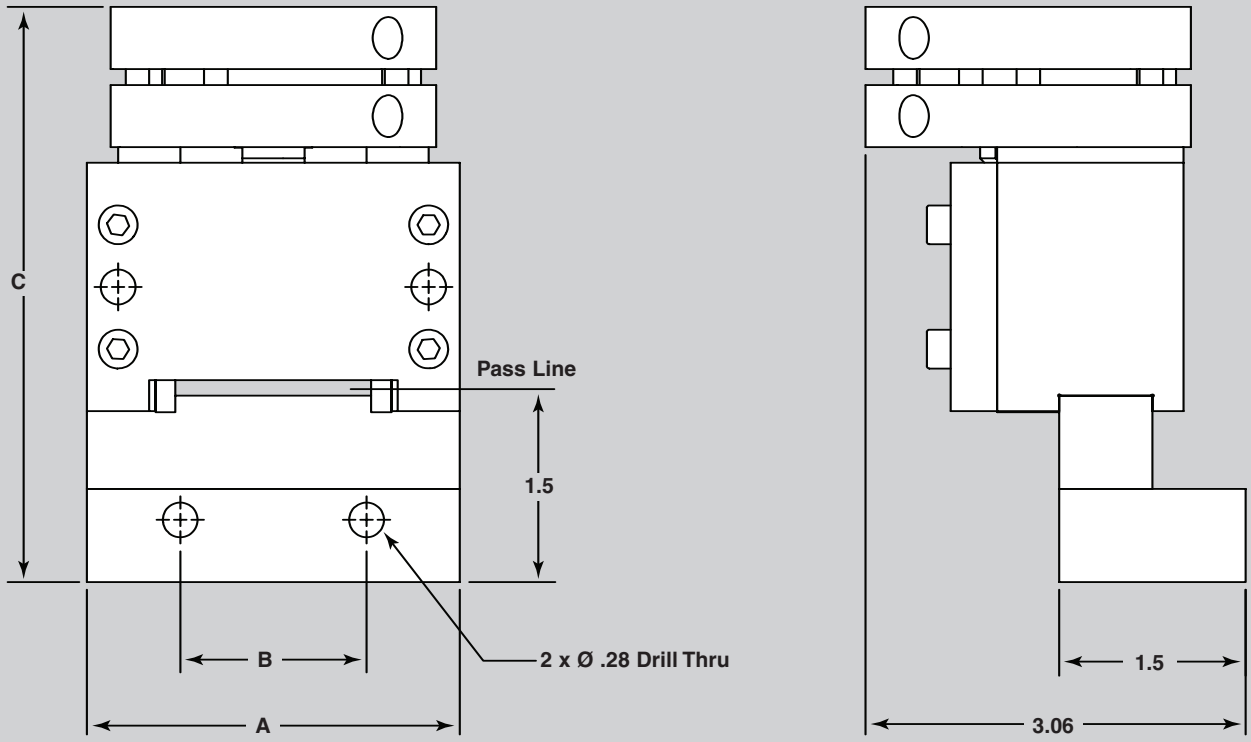
PARTS DESCRIPTION



			Part Number
Item	**Qty**	**Description**	**SC-1.5**
1	1	Cylinder, Round, 1.5” Bore x .25 Stroke	12111-238
2	1	Housing, 1.5” Scrap Chopper	19587-01
3	1	Fixed Blade, 1.5” Scrap Chopper	19588-01
4	1	Moving Blade, 1.5” Scrap Chopper	19589-01
5	1	Cover Plate, 1.5” Scrap Chopper	19590-01
6	1	Cylinder Adapter, 1.5” Scrap Chopper	19591-01
7	1	Cylinder Bracket, 1.5” Scrap Chopper	19592-01
8	1	Mounting Block, 1.5” Scrap Chopper	19593-01
9	4	10-32 UNF - 0.75 Hexagon Socket Head Cap Screw	901010-06
10	3	10-32 UNF - 1.25 Hexagon Socket Head Cap Screw	901010-10
11	2	5/16-24 UNF - 1.5 Hexagon Socket Head Cap Screw	901031-12

PNEUMATIC STOCK CUTTER – PSC-1.5

DIMENSIONAL DRAWING



DIMENSIONS

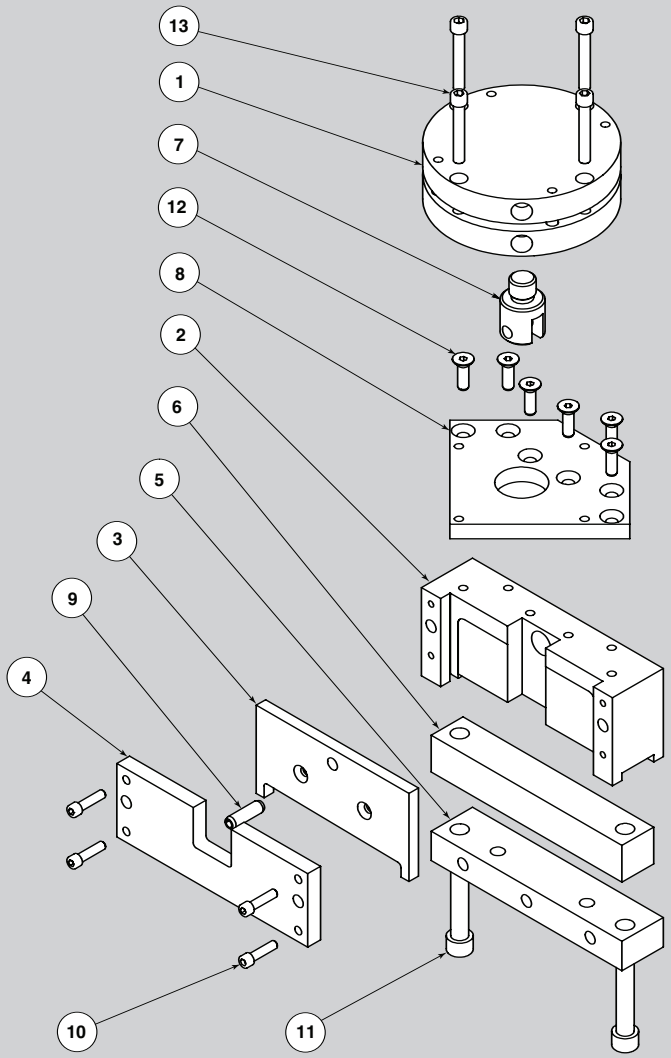
Model	A	B	C
PSC-1.5	3.00	1.50	4.63

SPECIFICATIONS

Model	Max. Stock Width (In.)	Max. Material Thickness at Full Width (In.)			Cylinder Diameter (In.)	Air Max. Force (Lbs.) at 100 PSI	Consumption (CFM) at Max. SPM and 100 PSI
		Aluminum Brass	C.R. Steel	Stainless Steel			
PSC-1.5	1.5	0.021	0.011	0.009	1.5	132	3

PNEUMATIC STOCK CUTTER – PSC-3, 5, 7 with 4” Cylinder

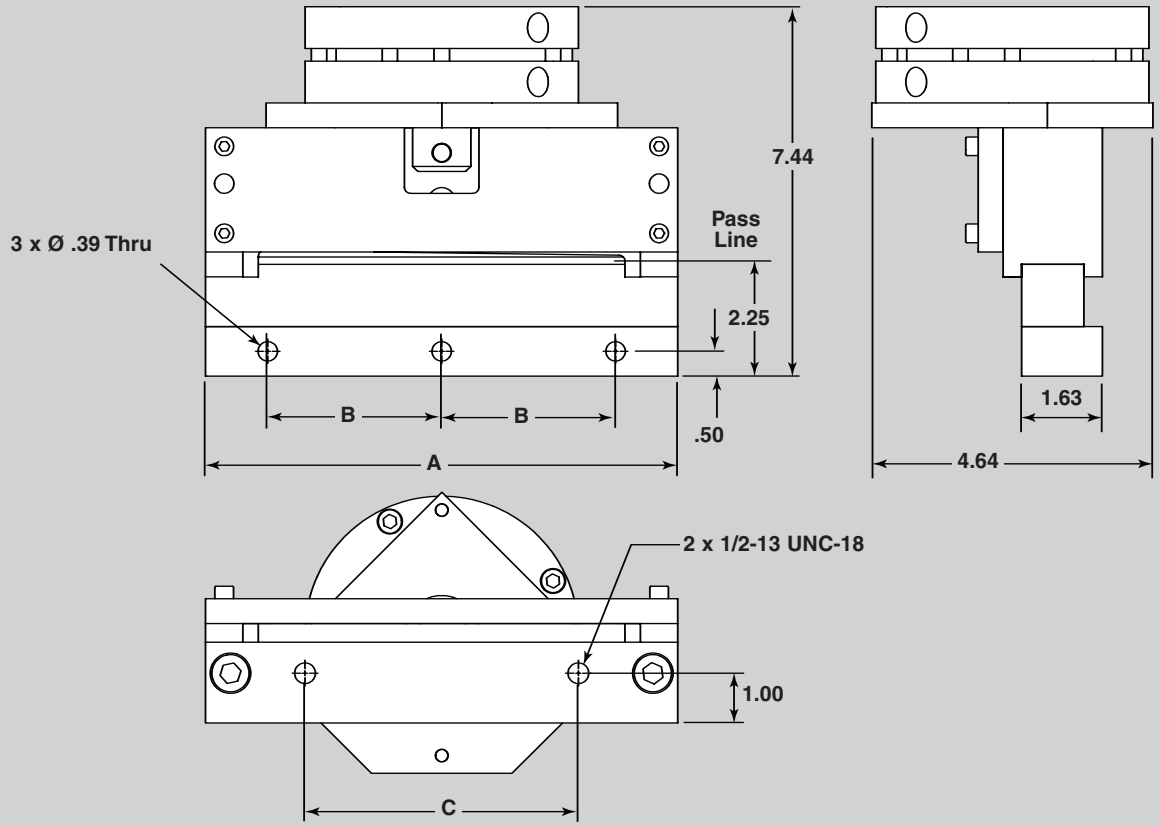
PARTS DESCRIPTION



			Part Number		
Item	**Qty**	**Description**	**PSC-3**	**PSC-5**	**PSC-7**
1	1	Cylinder, Round, 4” Bore x 3/8 Stroke	12111-239		
2	1	Housing, Scrap Chopper	19587-03	19587-05	19587-07
3	1	Moving Blade, Scrap Chopper	19589-03	19589-05	19589-07
4	1	Cover Plate, Scrap Chopper	19590-03	19590-05	19590-07
5	1	Mounting Block, Scrap Chopper	19593-03	19593-05	19593-07
6	1	Fixed Blade, Scrap Chopper	19588-03	19588-05	19588-07
7	1	Cylinder Adapter, Scrap Chopper	19591		
8	1	Cylinder Bracket, Scrap Chopper	19592-03	19592-05	19592-07
9	1	3/8 x 1-1/4 Pin - Slotted Spring	972P38-10		
10	4	1/4 - 20 - Hexagon Socket Head Cap Screw	900025-10		
11	2	1/2-20 UNF - 2.5 Hexagon Socket Head Cap Screw	901050-20		
12	6	5/16-18 UNC x 1 Flat Countersunk Head Cap Screw	904031-08		
13	4	5/16-18 x 2” Lg, SHCS, Black	900031-16		

PNEUMATIC STOCK CUTTER – PSC-3, 5, 7 with 4” Cylinder

DIMENSIONAL DRAWING



DIMENSIONS

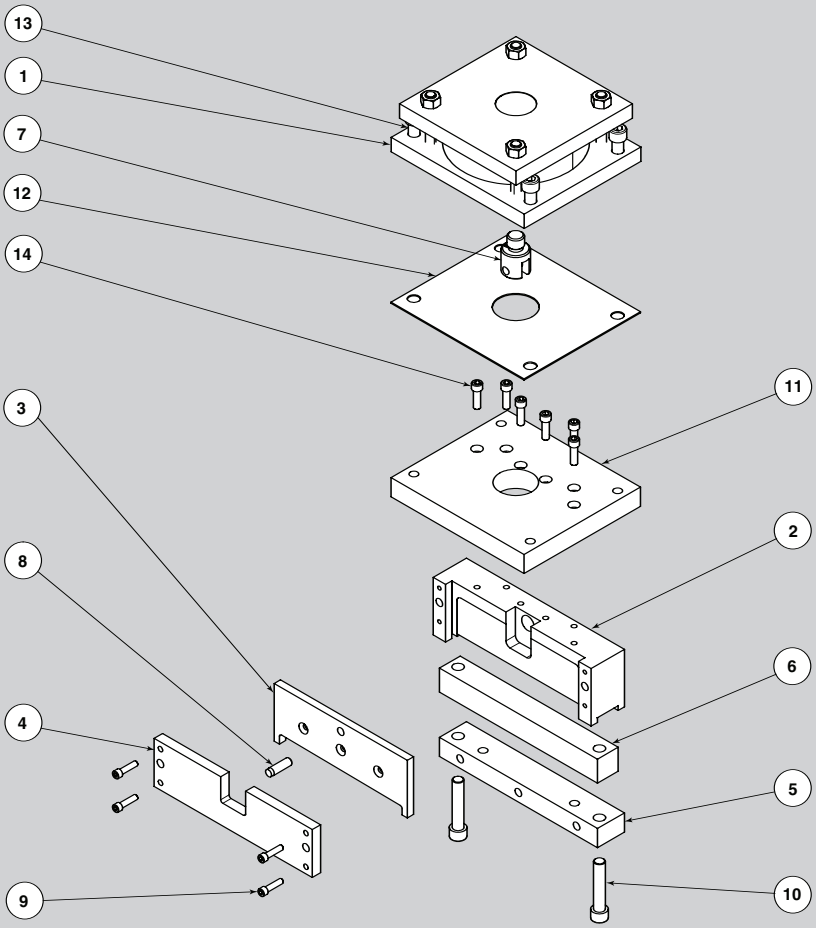
Model	A	B	C
PSC-3	5.50	1.50	1.50
PSC-5	7.50	2.50	3.50
PSC-7	9.50	3.50	5.50

SPECIFICATIONS

Model	Max. Stock Width (In.)	Max. Material Thickness at Full Width (In.)			Cylinder Diameter (In.)	Air Max. Force (Lbs.) at 100 PSI	Consumption (CFM) at Max. SPM and 100 PSI
		Aluminum Brass	C.R. Steel	Stainless Steel			
PSC-3	3	0.057	0.030	0.024	4	942	14
PSC-5	5	0.057	0.030	0.024	4	942	14
PSC-7	7	0.057	0.030	0.024	4	942	14

PNEUMATIC STOCK CUTTER – PSC-3X, 5X, 7X with 6” Cylinder

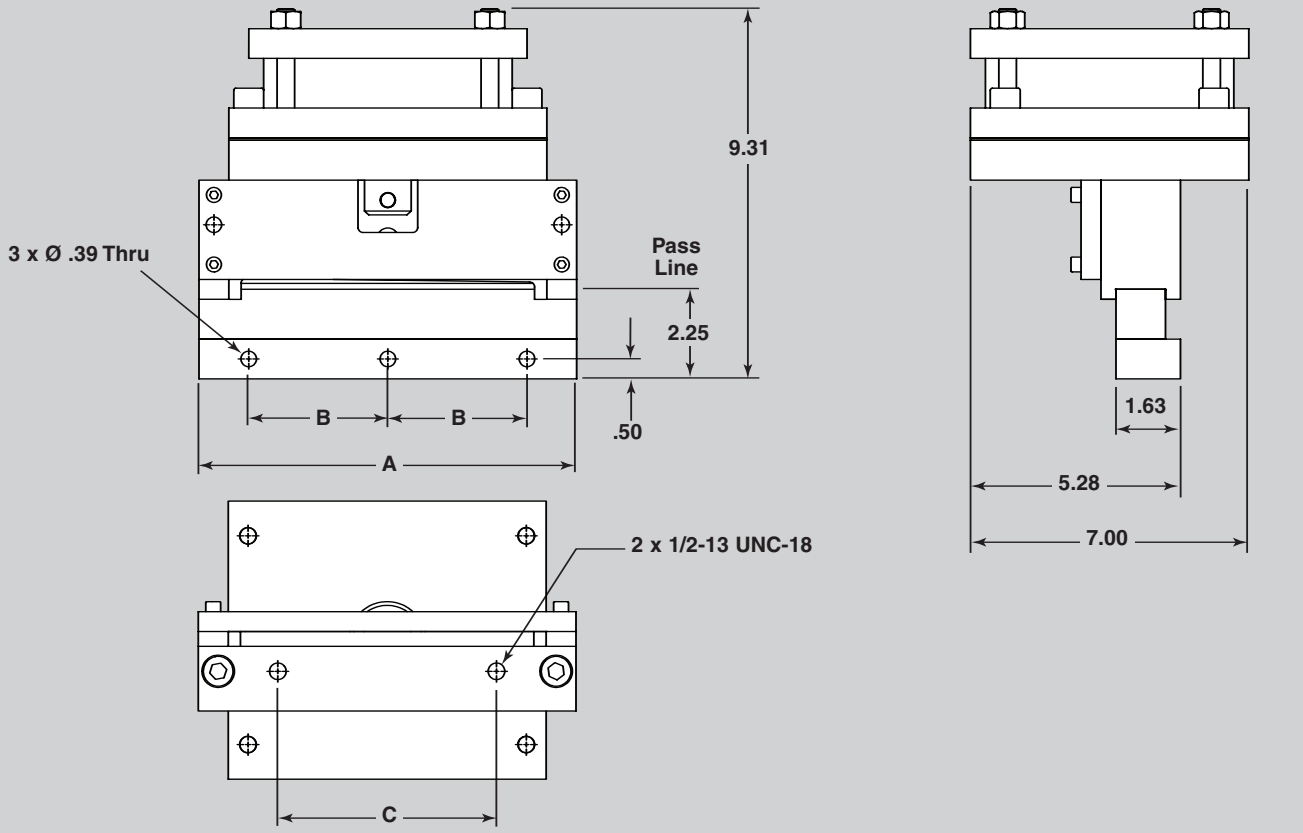
PARTS DESCRIPTION



			Part Number		
Item	**Qty**	**Description**	**PSC-3X**	**PSC-5X**	**PSC-7X**
1	1	Cylinder, 6” Bore x .375 Stroke	12111-266		
2	1	Housing, Scrap Chopper	19587-03	19587-05	19587-07
3	1	Moving Blade, Scrap Chopper	19589-03	19589-05	19589-07
4	1	Cover Plate, Scrap Chopper	19590-03	19590-05	19590-07
5	1	Mounting Block, Scrap Chopper	19593-03	19593-05	19593-07
6	1	Fixed Blade, Scrap Chopper	19588-03	19588-05	19588-07
7	1	Cylinder Adapter, Scrap Chopper	19591		
8	1	3/8 x 1-1/4 Pin - Slotted Spring	972P38-10		
9	4	1/4-20 x 1.0 Lg, SHCS, Black	900025-08		
10	2	1/2-20 UNF - 2.5 Hexagon Socket Head Cap Screw	901050-20		
11	1	Adapter Plate, 6” Cylinder Mounting	19592-04	19592-06	19592-06
12	1	Spacer, 6” Cylinder Mounting	19592-08		
13	4	1/2-13 x 1-1/2, SHCS, Black	900050-12		
14	6	5/16-18 x 1-1/2 Lg, SHCS, Black	900031-12		

PNEUMATIC STOCK CUTTER – PSC-3X, 5X, 7X with 6” Cylinder

DIMENSIONAL DRAWING



DIMENSIONS

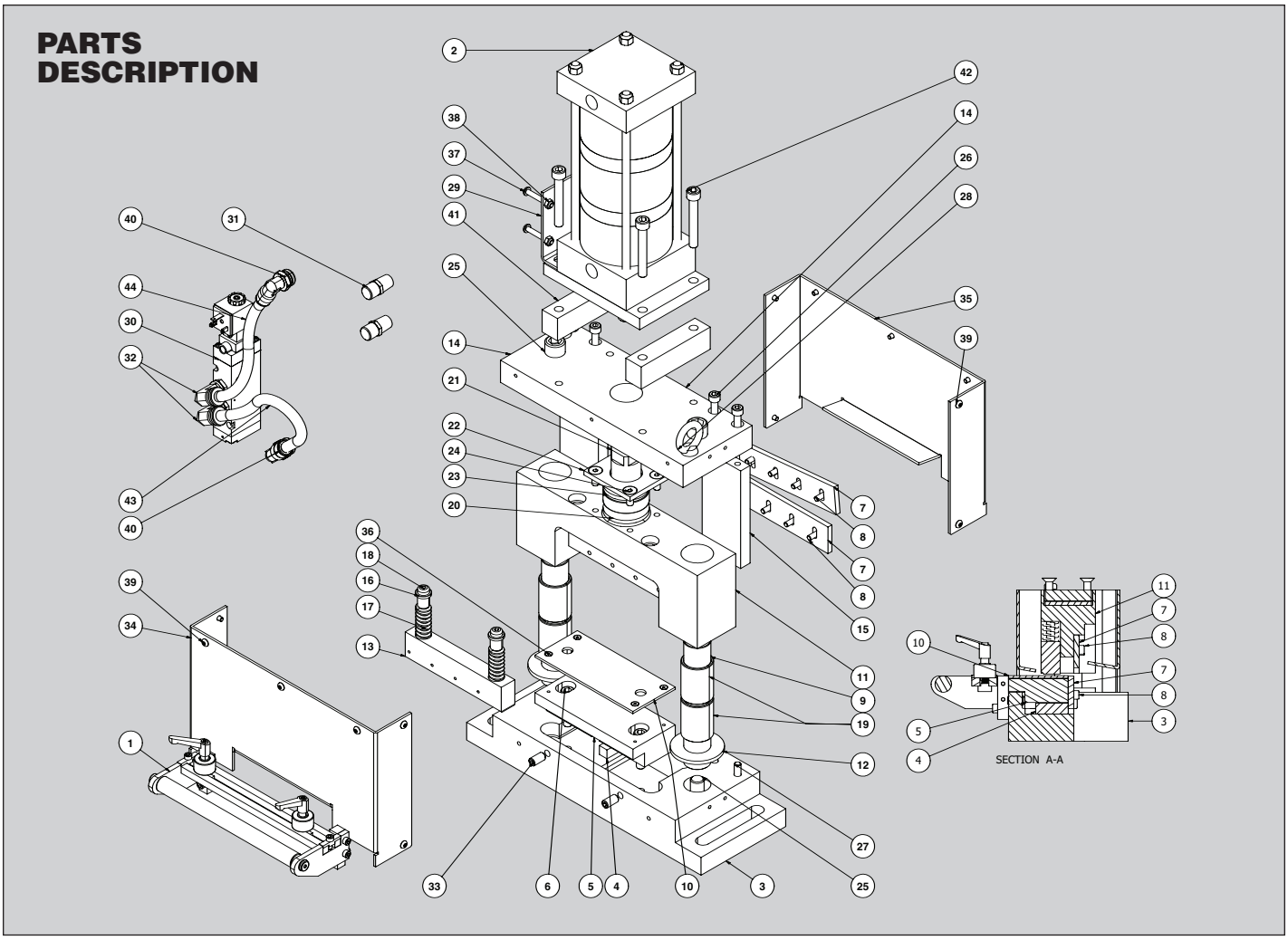
Model	A	B	C
PSC-3-6X	5.50	1.50	1.50
PSC-5-6X	7.50	2.50	3.50
PSC-7-6X	9.50	3.50	5.50

SPECIFICATIONS

Model	Max. Stock Width (In.)	Max. Material Thickness at Full Width (In.)			Cylinder Diameter (In.)	Air Max. Force (Lbs.) at 100 PSI	Consumption (CFM) at Max. SPM and 100 PSI
		Aluminum Brass	C.R. Steel	Stainless Steel			
PSC-3-6X	3	0.085	0.044	0.036	6	2073	25
PSC-5-6X	5	0.085	0.044	0.036	6	2073	25
PSC-7-6X	7	0.085	0.044	0.036	6	2073	25

PNEUMATIC STOCK CUTTER – PSC-6

PARTS DESCRIPTION

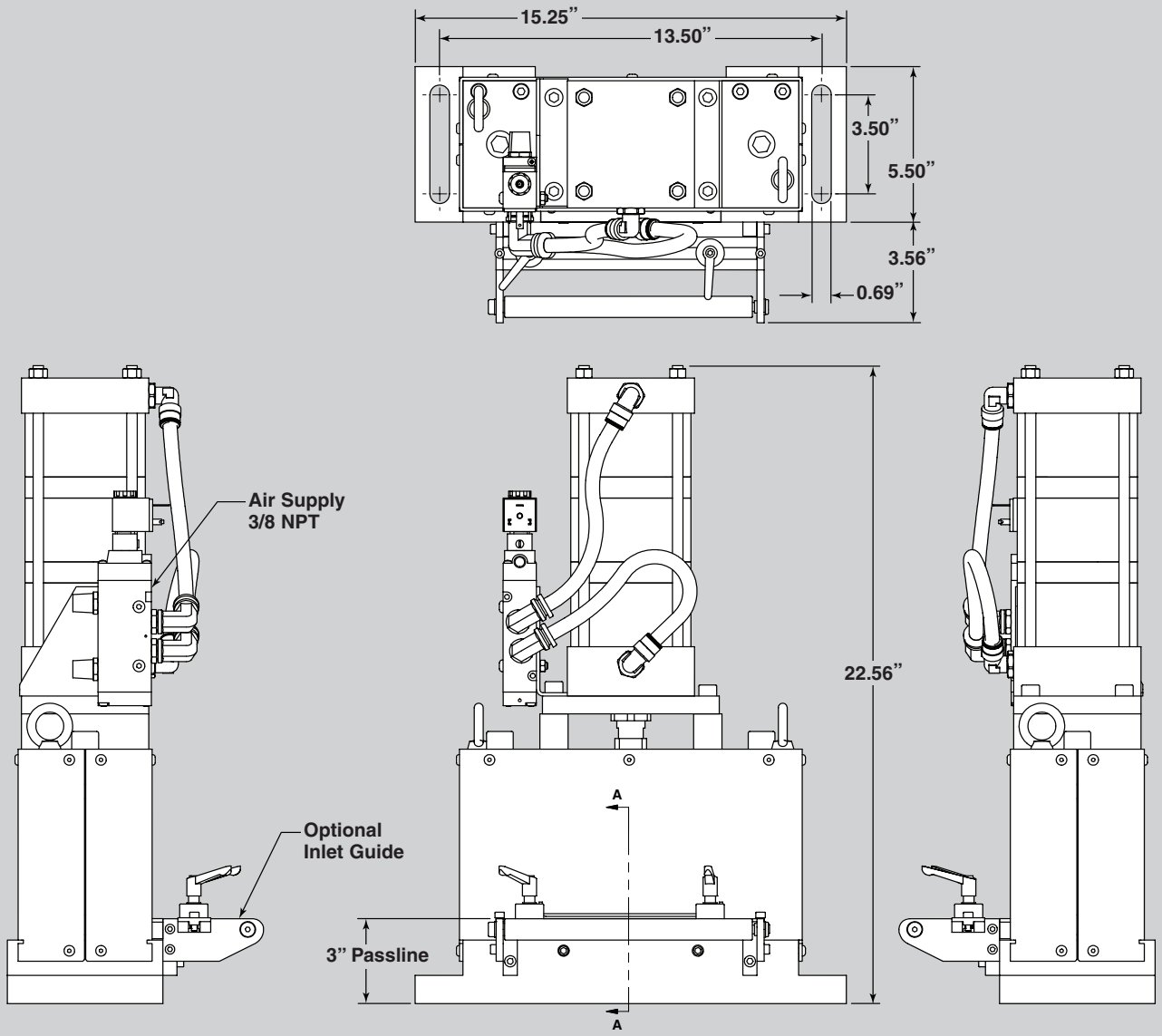


Item	Qty	Description	Part Number
1	1	Inlet Guide Assembly, PSC-6	16883-02
2	1	Cylinder, 3 Stage, 4" Bore, 1" Stroke	12111-254
3	1	Base, PSC-6	17372
4	1	Key, 1/2 Sq. x 1-1/2" Lg Sq. Ends	15104-10
5	1	Blade Holder, Lower, PSC-6	17373
6	2	M10x40mm Lg, SHCS, Black	Din-912-M10x40
7	2	Blade, Upper/Lower, PSC-12	16881
8	8	M6x16mm Lg, SHCS, Black	Din-912-M6x16
9	2	Shaft, Guide, PSC-6/12	17355
10	1	Wear Plate, PSC-6	17374
11	1	Upper Blade Holder, PSC-6	17375
12	2	Bumper, 2.5 OD x 1.25 ID x .187	16882-02
13	1	Clamp Pad, PSC-6	17376
14	1	Top Plate, PSC-6	17378
15	2	Top Plate, Support, PSC-6 & -12	17360
16	2	Bushing, 3/8 ID x .56 OD x .75 Lg Flgd.	12128-66
17	2	Spring, Die, .750 OD x 2.6 Free Length	12442-47
18	2	5/16 x 3-1/4 Lg, Shldr Scr, Soc Head	919032-26
19	4	Linear, Sleeve Bearing, 1.2515 ID	15433-05
20	1	Bumper, 2.125 OD x .187	16882-04
21	1	Piston Rod Connector, PSC-6/12	17364-02
22	1	Retainer, Pist Rod Connector, PSC-6/12	17365

Item	Qty	Description	Part Number
23	1	Bumper, 2-1/8 OD x 1.38 ID x .187	16882-05
24	4	M8 x 20mm Lg, FHSCS, Zinc Plated	Din-7991-M8x20
25	4	M16 x 45mm Lg, SHCS, Black	Din-912-M16x45
26	4	M8 x 35mm Lg, SHCS, Black	Din-912-M8x35
27	4	M8 x 60mm Lg, SHCS, Black	Din-912-M8x60
28	2	Eye Bolt, Din 580 M10 x 17 Thread	12466-45
29	1	Mounting Bracket, Air Valve	17368
30	1	Valve, Solenoid, 4 Way, 120 VAC, Parker	12039-110
31	2	Silencer, 3/8 MNPT Porous Metal	12024-14
32	2	Fitting, Elbow, Swivel, 3/8 NPTM x 1/2 Tubing	12032-29
33	2	M10x20mm Lg, Sock Set Scr, Cup Pt, Black	Din-916-M10x20
34	1	Inlet Guard, PSC-12	17366
35	1	Exit Guard, PSC-6	17380
36	4	M4x10mm Lg, FHSCS, Zinc Plated	Din-7991-M4x10
37	2	M6x40mm Lg, BHCS, Black	Din-9427-M6x40
38	2	M6, Hex Nut, Black	Din-934-M6
39	14	M5x8mm Lg, BHCS, Black	Din-9427-M5x8
40	2	Fitting, Union Elbow Swivel, 1/2x1/2 NPT	12032-43
41	2	Riser Block, 1.25", PSC	20020
42	4	Cylinder Head Cap Screw	Din-912-M10x70
43	1	Tubing, 1/2 Plastic, Air Black ThinWall	15676-08
44	1	Tubing, 1/2 Plastic, Air Black ThinWall	15676-08

PNEUMATIC STOCK CUTTER – PSC-6

DIMENSIONAL DRAWING

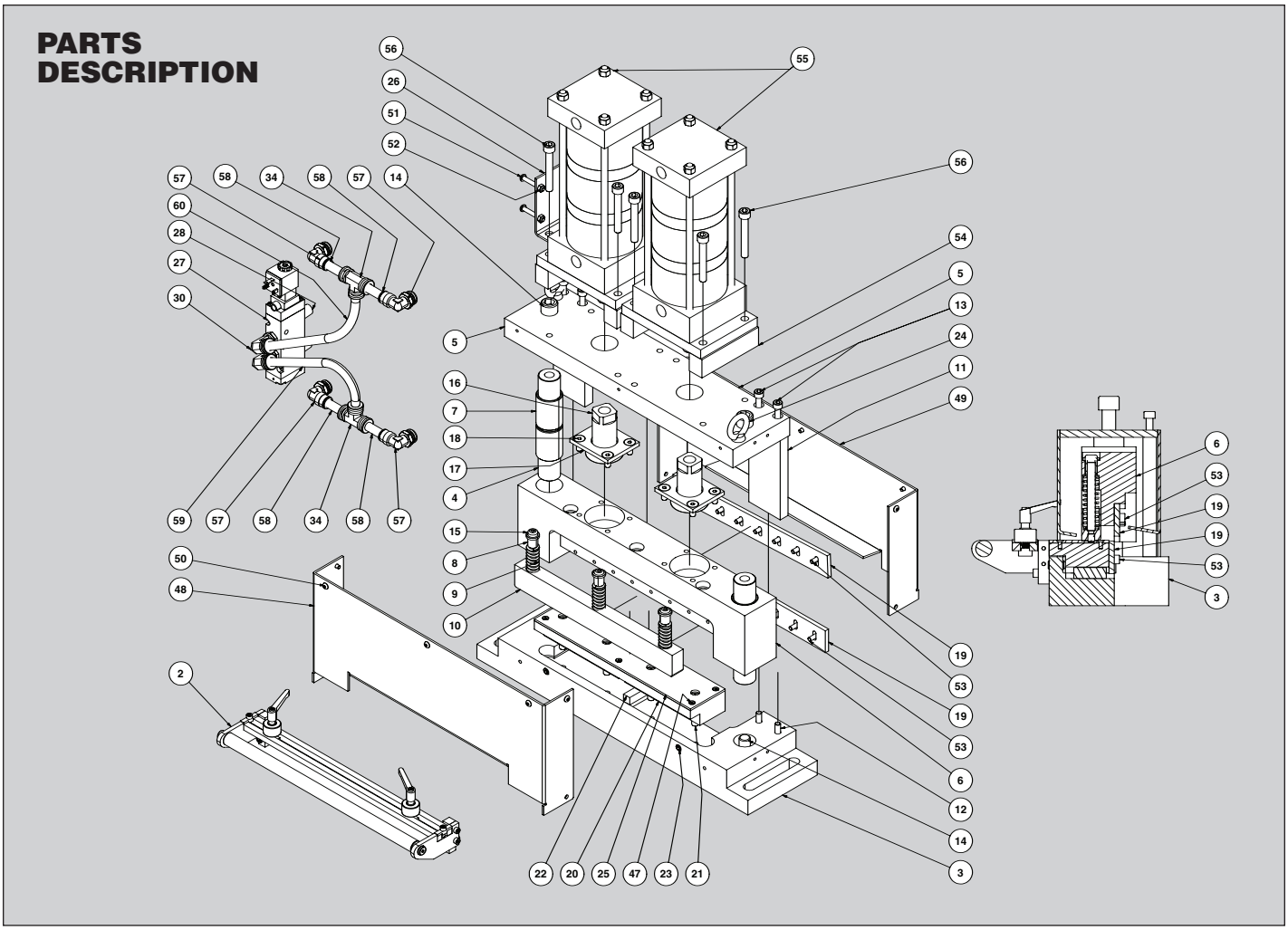


SPECIFICATIONS

Model	Max. Stock Width (In.)	Max. Material Thickness at Full Width (In.)			Cylinder Diameter (In.)	Air Max. Force (Lbs.) at 100 PSI	Consumption (CFM) at Max. SPM and 100 PSI
		Aluminum Brass	C.R. Steel	Stainless Steel			
PSC-6	6	.063	.046	.044	4” x 3	3750	27 CFM

PNEUMATIC STOCK CUTTER – PSC-12

PARTS DESCRIPTION

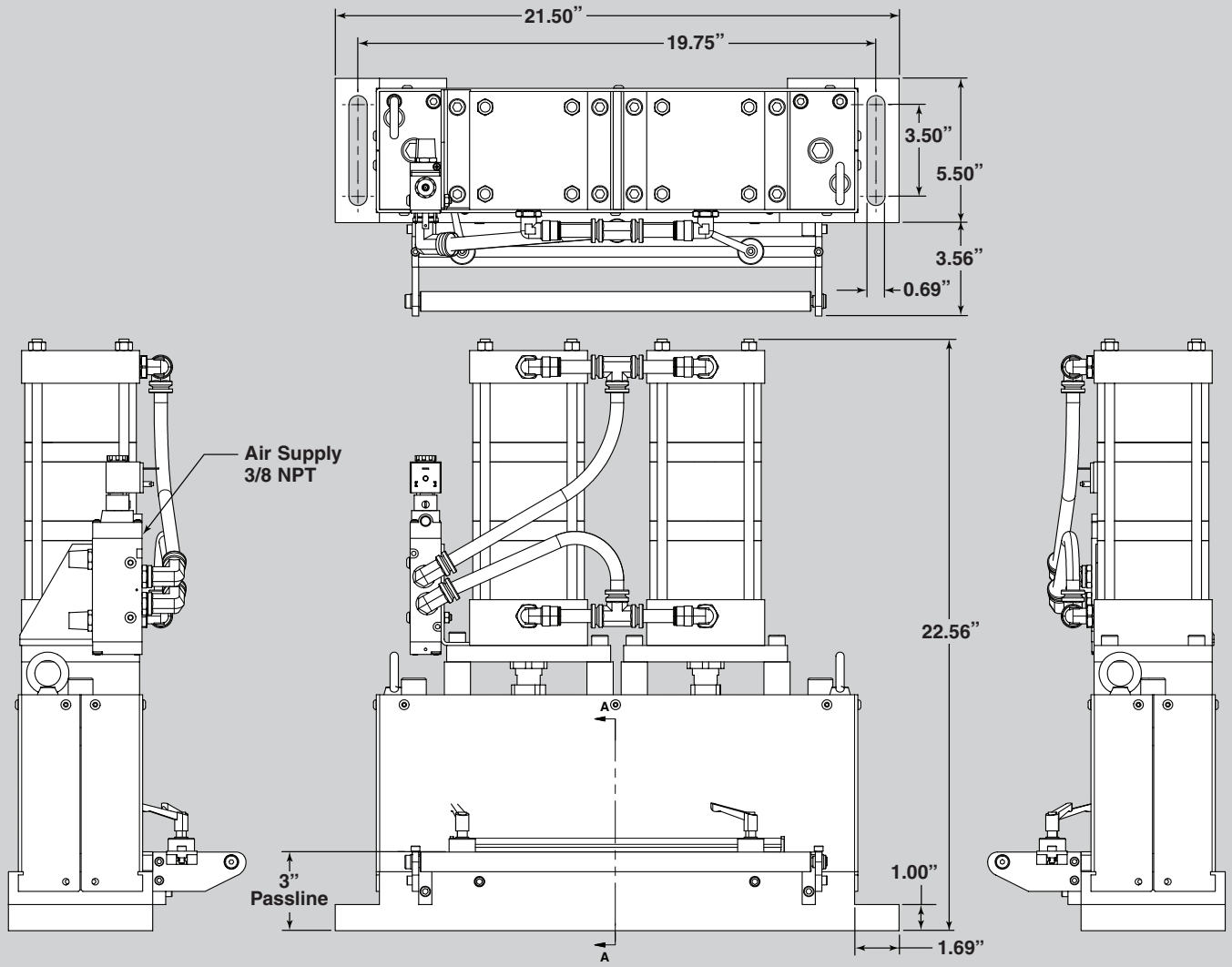


Item	Qty	Description	Part Number
2	1	Inlet Guide Assy, PSC-12	16883-03
3	1	Base, PSC-12	17347
4	2	Shaft, Guide, PSC-6/12	17355
5	1	Top Plate, PSC-12	17361
6	1	Upper Blade Holder, PSC-12	18631
7	4	Linear, Sleeve Bearing, 1.2515 ID	15433-05
8	3	Bushing, 3/8 ID x .56 OD x .75 Lg Flgd.	12128-66
9	3	Spring, Die, .750 OD x 2.6 Free Length	12442-47
10	1	Clamp Pad, PSC-12	18632
11	2	Top Plate, Support, PSC-6 & -12	17360
12	4	M8x60mm Lg, SHCS, Black	Din-912-M8x60
13	4	M8x35mm Lg, SHCS, Black	Din-912-M8x35
14	4	M16x45mm Lg, SHCS, Black	Din-912-M16x45
15	3	5/16x3-1/4 Lg, Shldr Scr, Soc Hd	919032-26
16	2	Piston Rod Connector, PSC-6/12	17364-02
17	2	Retainer, Pist Rod Conn, PSC-6/12	17365
18	8	M8 x 20mm Lg, FHSCS, Zinc Plated	Din-7991-M8x20
19	2	Blade, Upper/Lower, PSC-12	16881
20	1	Blade Holder, Lower, PSC-12	17356
21	4	M10 x 40mm Lg, SHCS, Black	Din-912-M10x40
22	1	Key, 1/2 Sq. x 1-1/2" Lg Sq. Ends	15104-10
23	2	M10x20mm Lg, Sock Set Scr, Cup Pt, Black	Din-916-M10x20

Item	Qty	Description	Part Number
24	2	Eye Bolt, Din 580 M10 x 17 Thread	12466-45
25	1	Wear Plate, PSC-12	17357
26	1	Mounting Bracket, Air Valve	17368
27	1	Valve, Solenoid, 4 Way, 120 VAC, Parker	12039-110
28	2	Silencer, 3/8 MNPT Porous Metal	12024-14
30	2	Fitting, Elbow, Swivel, 3/8 NPTM x 1/2 Tubing	12032-29
34	2	Fitting, Tee, Union, 1/2	12032-33
47	6	M4x10mm Lg, FHSCS, Zinc Plated	Din-7991-M4x10
48	1	Inlet Guard, PSC-12	17366
49	1	Exit Guard, PSC-12	17367
50	10	M5x8mm Lg, BHCS, Black	Din-9427-M5x8
51	2	M6x40mm Lg, BHCS, Black	Din-9427-M6x40
52	2	M6, Hex Nut, Black	Din-934-M6
53	16	M6x16mm Lg, SHCS, Black	Din-912-M6x16
54	4	Riser Block, 1.25", PSC	20020
55	2	Cylinder, 3 Stage, 4" Bore, 1" Str.	12000-254
56	8	Cylinder Head Cap Screw	Din-912-M10x70
57	4	Fitting, Union Elbow Swivel, 1/2 x 1/2 NPT	12032-43
58	4	Tubing, 1/2 Plastic, Air Black Thin Wall	15676-08
59	1	Tubing, 1/2 Plastic, Air Black Thin Wall	15676-08
60	1	Tubing, 1/2 Plastic, Air Black Thin Wall	15676-08

PNEUMATIC STOCK CUTTER – PSC-12

DIMENSIONAL DRAWING



SPECIFICATIONS

Model	Max. Stock Width (In.)	Max. Material Thickness at Full Width (In.)			Cylinder Diameter (In.)	Air Max. Force (Lbs.) at 100 PSI	Consumption (CFM) at Max. SPM and 100 PSI
		Aluminum Brass	C.R. Steel	Stainless Steel			
PSC-12	12	.089	.068	.063	4” x 6	7500	69 CFM

WARRANTY AND SAFETY PROGRAM

Warning

This equipment offers various means of operating or controlling machines. The operator must not be in or near the point-of-operation of the machine, or the operating parts of any equipment installed on the machine, or bodily injury could result. The EMPLOYER must post adequate warning signs onto the machine with proper warnings for his machine and the specific application to which the machine and equipment are being applied.

Occupational Safety and Health Act (OSHA) Sections 1910.211, 1910.212, and 1910.217 contain installation information on the distance between danger points and point-of-operation guards and devices. No specific references have been made to which paragraph of OSHA 1910.211, 1910.212, 1910.217 or any other applicable sections because the paragraphs may change with each edition of the publication of OSHA provisions.

All equipment manufactured by us is designed to meet the construction standards of OSHA in effect at the time of sale, but the EMPLOYER installs the equipment so the EMPLOYER is responsible for installation, use, application, training, and maintenance, as well as adequate signs on the machine onto which this equipment will be installed.

Remember, OSHA says that the EMPLOYER must use operating methods designed to control or eliminate hazards to operating personnel.

It shall be the responsibility of the EMPLOYER to establish and follow a program of periodic and regular inspections of his machine to insure that all their parts, auxiliary equipment, and safeguards are in a safe operating condition and adjustment. Each machine should be inspected and tested no less than weekly to determine the condition of the machine. Necessary maintenance or repair of both shall be performed and completed before the machine is operated. The EMPLOYER shall maintain records of these inspections and the maintenance work performed.

Our Company is not responsible to notify the user of this equipment of future changes in State or Federal laws, or construction standards.

Safety Program

Accident free operation will result from a well developed, management sponsored and enforced safety program.

Of vital importance to any successful program is the proper selection of guards and devices. However, there is no safety device that will bring “automatic” safety to your operation.

Of equal importance to this proper selection of the guard and the device is the training of your personnel. Each person must be trained as to the operation of the guard or safety device, highlighting why they have been provided on the equipment. Rules for safe operating should be written and enforced at all times. A final major concern of an effective safety program is regularly scheduled inspection and maintenance of all of the equipment.

To ensure continued safety at all times, top management, line supervision, safety engineers and all employees must assume their proper share of the responsibility in the program. Only as a group, one that knows your own operation and its problems, can you carry out an effective safety program.

To assist you in the development of and continued use of safety programs, many safety minded groups have made guidelines available to you. However, you must know when and how to apply these guidelines. The manufacturer provides information to assist you in properly adjusting and maintaining your equipment. There is no short cut to proper safety; therefore, it is recommended that you comply with their recommendations at all times.

Warranty

We warrant our new parts against defects under normal use and service for a period of 12 months after date of shipment. Our obligation under this warranty is limited to replacing or repairing (at our option) the defective part without charge, F.O.B. our plant in Bloomfield, Connecticut. The defective part must be forwarded or repair. EXCEPT AS EXPRESSLY PROVIDED HEREIN, THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING A WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Furthermore, the seller does not warrant or represent that the equipment complies with the provisions of any law, particularly including the Occupational Safety and Health Act of 1970, and regulations promulgated thereunder. In no event shall we be liable for special, indirect incidental or consequential damages, however rising.

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