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**MODEL  
AL150-HS  
HIGH SPEED  
PIPE NOTCHER  
GRINDER**

*VERSION 1 - JULY 2019*

# MODEL AL150-HS HIGH SPEED PIPE NOTCHER GRINDER

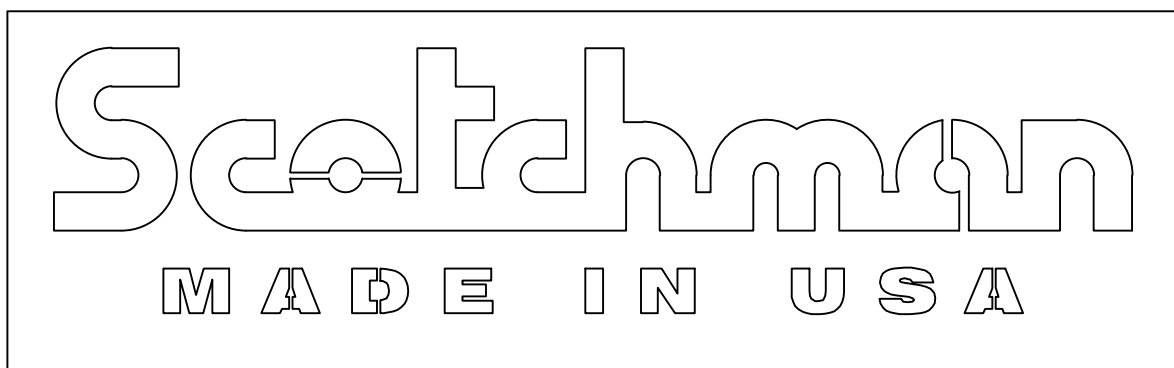


# **TUBE & PIPE GRINDER NOTCHERS**

**The AL150-HS is ideal for grinding & notching stainless steel and aluminum, producing a gap-free fit ready for welding.**

**With the AL150-HS you are able to grind 3x faster than the AL150 due to the higher grinding belt speed of 4,300 RPM . Also, your grinding belt will see a 3 times longer life than other grinders when grinding at this High Speed. This machine will grind steel, stainless steel, aluminum, inconel and plastics. It is equipped with a high speed parts grinder that can be used for more than just your typical deburring.**

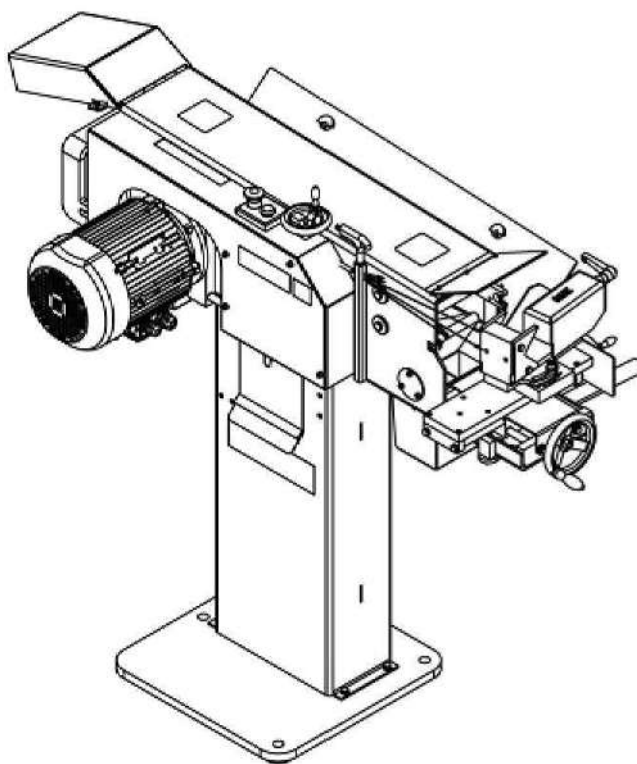
**Thank You for your purchase of Scotchman products - We appreciate your business!!**



# TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE #
1.0	INTRODUCTION	6
2.0	SAFETY PRECAUTIONS	6
2.1	Warranty	7
3.0	MACHINE DECALS	9
3.1	Warning Symbols	9
4.0	INSTALLATION AND SET UP	10
4.1	Physical Dimensions	10
4.2	Assembling Machine & Moving	12
4.3	Machine Identification	15
4.4	Electrical Requirements	15
4.5	Wiring Diagrams	16
5.0	MACHINE START-UP	18
5.1	Machine Controls & Adjustments	20
6.0	MACHINE OPERATIONS	22
6.1	Starting and Stopping Belt	22
6.2	Drive for the Grinding Belt	22
6.3	Securing a Tubing Section	22
6.4	Angle Adjustment	22
6.5	Depth Stop	23
6.6	Length Stop	24
6.7	Notching the Tubing	25
6.8	Deburring	25
7.0	NOTCHING CAPACITIES	29
7.1	Angled Notching Capacity	30

8.0	CHANGING ROLLERS AND BELT	31
8.1	Belt Tension	31
8.2	Notcher Roller Support	32
8.3	Changing The Roller	33
8.4	Setting Belt Tension	35
8.5	Setting The Belt Tracking	36
8.6	Adjustment Of Grinding Roller	37
9.0	AVAILABLE OPTIONS	38
9.1	Roller Holder	38
10.0	AVAILABLE ROLLERS	40
11.0	AVAILABLE GRINDING BELTS	40
12.0	AL 150-HS PARTS LIST	41
12.1	AL 150-HS Exploded Views	45
	OPTIONAL BACK GAUGE	49



# **1.0 INTRODUCTION**

## **Tube & Pipe Notch Grinders**

Scotchman Tube & Pipe Grinder/Notchers are strong, accurate machines. The AL150-HS operates at a higher speed than our other grinders and grinds a notch much faster. Stainless-steel sections and pipes can be machined problem free, at high speed without grinding burrs or heat discoloration. The grinding rollers can be changed without tools in just seconds, saving time and money! The grinding belt can also be changed easily from one side of the machine. Once the sections and pipes have been ground, they can be deburred using the high speed parts grinder on the other end of the machine.

The AL150-HS can feed the tube with either a handwheel or a lever. The pipe grinder/notchers offer trouble-free, accurate, quick and efficient machining of tubes and pipes for many years; and are backed by a 3-year warranty.

### **FEATURES:**

**Fast, strong and accurate**

**Ideally suited for grinding stainless quickly**

**Fitted with grinding rollers that can be changed in seconds**

**Equipped with a high speed parts grinder**

**Tool Free Belt and Mandrel Change Over**

**Grinds tube and pipe at every angle between 30 degrees and 90 degrees**

**3-Year Warranty**

## **2.0 SAFETY PRECAUTIONS**

- 1. The operators of this machine must be qualified and well trained in the operation of the machine. The operators must be aware of the capacities of the machine and the proper use of the holding device and the guards provided with the machine. This manual is not intended to teach untrained personnel how to operate machinery.**
- 2. All of the guards, and awareness barriers must be installed on the machine and kept in good working order. Promptly replace worn or damaged parts with the correct authorized parts.**
- 3. Never place any part of your body into any of the machine's moving parts or hold devices.**
- 4. Wear the appropriate personal protective equipment. This machine grinds metal and creates abrasive and metallic particles so Safety Glasses are required at all times!! Whether operating, setting up or observing this machine in operation, Safety Glasses are a requirement.**
- 5. Since pieces of metal with sharp edges are processed on this machine, the operator should also wear steel-toed shoes and leather gloves.**
- 6. Strictly comply with all warning labels and decals on the machine. Never remove any of the labels and replace worn or damaged labels promptly.**
- 7. Always disconnect and lock out the power when performing maintenance work or repairs on this machine.**
- 8. Replace sanding belt when needed. Never operate this machine with a sanding belt that is worn out. The excessive pressure required to notch a tube with a worn out sanding belt can damage roller and cut the sanding belt.**

8. **Practice good housekeeping. Keep the area around the machine clear and well lit. Do not obstruct the operator's position by placing anything around the machine that would impede the operator's access to the machine.**
9. **Never modify this machine in any way without the written permission of the manufacturer.**
10. **Never leave this machine running unattended.**
11. **Never operate any of the work stations from a sitting or kneeling position.**
12. **Always be aware of what others around you are doing at all times.**
13. **Set up a program of routine inspections and maintenance for this machine. Make all repairs and adjustments in accordance with the manufacturer's instructions.**

## **2.1 WARRANTY**

**Scotchman Industries, Inc. will, within three (3) years of the date of purchase, replace F.O.B. the factory or refund the purchase price for any goods which are defective in materials or workmanship, provided the buyer returns the warranty registration card within thirty (30) days of the purchase date and, at the seller's option, returns the defective goods freight and delivery prepaid to the seller, which shall be the buyer's sole and exclusive remedy for defective goods.**

**Hydraulic and electrical components are subject to their respective manufacturer's warranties.**

**This warranty does not apply to machines and/or components which have been altered, changed or modified in any way or subjected to abuse and abnormal use, inadequate maintenance and lubrication or subjected to use beyond the seller's recommended capacities and specifications.**

**In no event shall the seller be liable for labor cost expended on such goods or consequential damages.**

**The seller shall not be liable to the purchaser or any other person for loss or damage directly or indirectly arising from the use of the goods or from any other cause. No officer, employee or agent of the seller is authorized to make any oral representations or warranty of fitness or to waive any of the foregoing terms of sale and none shall be binding on the seller.**

**Any electrical changes made to the standard machine due to local electrical code variation must be paid by purchaser. As we constantly strive to improve our products, we reserve the right to make changes without notification.**

**Scotchman<sup>®</sup>**  
**by ALMI**

### 3.0 MACHINE DECALS

Item	Qty	Part #	Description
1	2	A050.00024	Safety Sticker 8 x 8 cm
2	1	A050.00025	Sticker side flap 13x5 cm
3	1	A050.00045	Instruction sticker AL150HS
4	1	N/A	Triangle Pinch Point Sticker



"CE" Identification on Other Side


ALMI		Motor		CE
Type	AL 150 HS	Volt	230	
Sr.No.		Hz.	60	
		l/min	4300	
	2019	Weight	275	

FIGURE 1



## 3.1 WARNING SYMBOLS

### **BEFORE OPERATING THIS MACHINE**



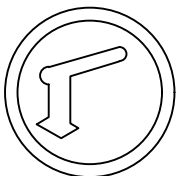
**PICTOGRAM 1:  
READ OWNERS MANUAL FIRST!!**



**PICTOGRAM 2:  
USE OF EYE PROTECTION REQUIRED!!**



**PICTOGRAM 3:  
USE OF HEARING PROTECTION REQUIRED!!**



**PICTOGRAM 4:  
KEEP LID CLAP CLOSED  
WHILE BELT IS IN MOTION!!**

**Strictly comply with all warning labels and decals on the machine. Never remove any of the labels and replace worn or damaged labels promptly!!**

## 4.0 INSTALLATION AND SET UP

► **CAUTION:** THIS SECTION (4.0 to 5.0) DISCUSSES INSTALLATION AND SET-UP PROCEDURES. PLEASE READ THOROUGHLY BEFORE OPERATING THIS MACHINE.

### 4.1 PHYSICAL DIMENSIONS

► **SEE FIGURE 2** ◀

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>INCHES</b>	<b>CM</b>
<b>1</b>	<b>Machine Height</b>	<b>50</b>	<b>127</b>
<b>2</b>	<b>Length</b>	<b>53</b>	<b>134.6</b>
<b>3</b>	<b>Width</b>	<b>31</b>	<b>78.7</b>
<b>4</b>	<b>Base Length</b>	<b>19-1/4</b>	<b>48.9</b>
<b>5</b>	<b>Base Width</b>	<b>19-1/4</b>	<b>48.9</b>
<b>6</b>	<b>Base Height</b>	<b>34-1/2</b>	<b>87.6</b>
<b>7</b>	<b>Front from Base</b>	<b>22-3/4</b>	<b>57.8</b>
<b>8</b>	<b>Rear from Base</b>	<b>11</b>	<b>27.9</b>
<b>9</b>	<b>Weight</b>	<b>695 LBS.</b>	<b>315 KG.</b>

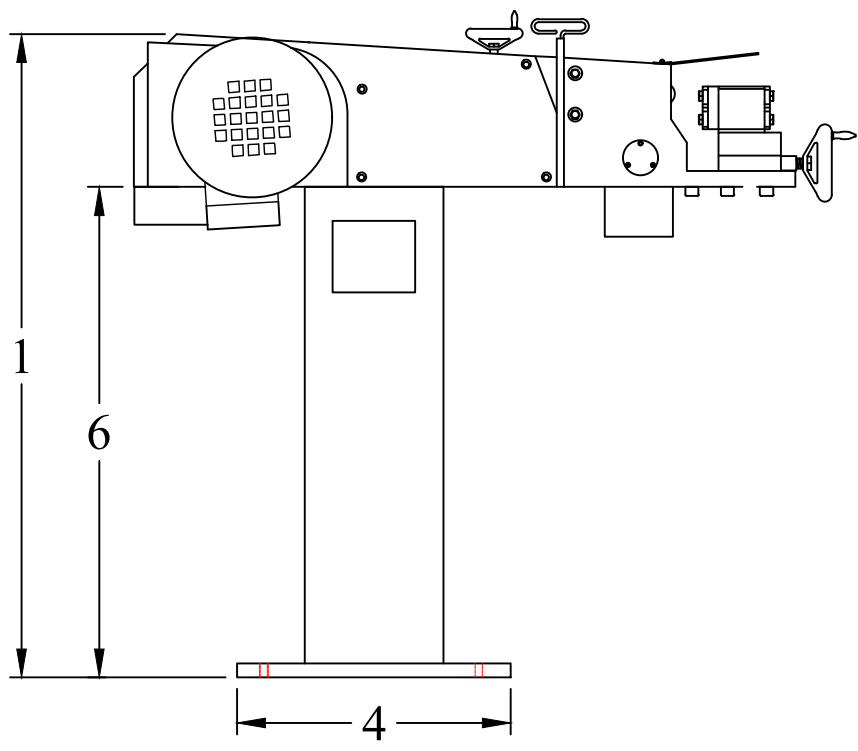
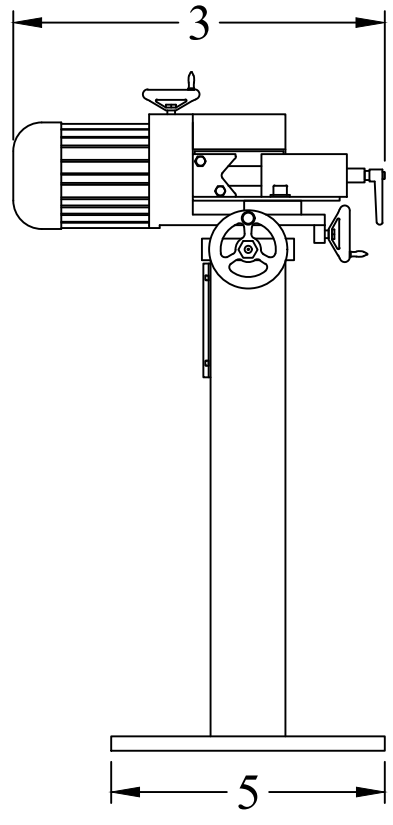
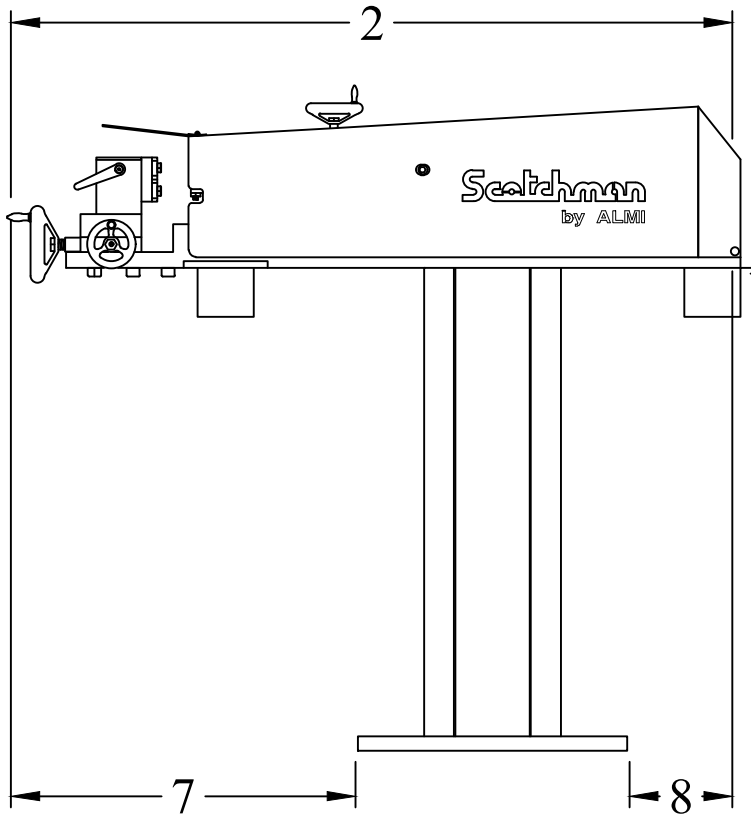


FIGURE 2

## **4.2 ASSEMBLING MACHINE & MOVING**

### **ASSEMBLING OVERVIEW**

**This grinder/notcher machine is shipped unassembled in a wooden crate. There are basically three (3) main parts. See FIGURE 3 on the next page.**

**FOOT PLATE: This is a 1 inch thick by 19-1/2 inch square metal plate that sits on the floor.**

**SUPPORT PILLAR: This is the rectangular "box" that mounts to the Base with 4 bolts and washers.**

**GRINDER: This is the main part of the machine. It mounts on top of the Column with four (4) bolts and washers.**

**NOTE: SEE FIGURE 3 ON THE NEXT PAGE**

### **ASSEMBLY & MOVING MACHINE**

- **Remove loose components from the packaging. Inside the support pillar you will find a box with any ordered grinding belts and grinding rollers, the grinding waste containers, the handle, and the attachment hardware.**
- **Remove the attachment bolts with which the universal pipe notcher is attached to the bottom plate of the packaging.**
- **Remove the wood screws with which the support pillar and foot plate are attached to the crate.**
- **Remove the support pillar from the packaging and bolt to foot with (4) bolts and washers.**
- **Remove the machine from the packaging. This part of the machine weighs approximately 225 kg (500 lbs) and keep in mind the "motor end" is the heaviest.**

#### **USING EXTREME CARE & THE PROPER LIFTING EQUIPMENT**

**Set it on top of the pillar as shown in FIGURE 3.**

- **Open the side cover of the machine and attach the machine to the support pillar using (4) M12 hex bolts and nuts and (8) washers.**
- **Slide the grinding waste containers under the machine - One in front and the other in back.**

**NOTE: Two (2) round aluminum hand-wheels need to be installed. FIGURE 4 However, an in-feed lever that can be mounted under the cross support is supplied with this machine. The lever is used to feed the pipe into the belt for notching. The larger feed handwheel and spindle must be removed for it to work. It is used in conjunction with the handwheel that moves the pipe side to side.**

# Assembling Foot Plate, Pillar, Grinder and Waste Container

**MACHINE IS TOP HEAVY!!**

Use The Proper Lifting Equipment  
& Use Extreme Caution when moving

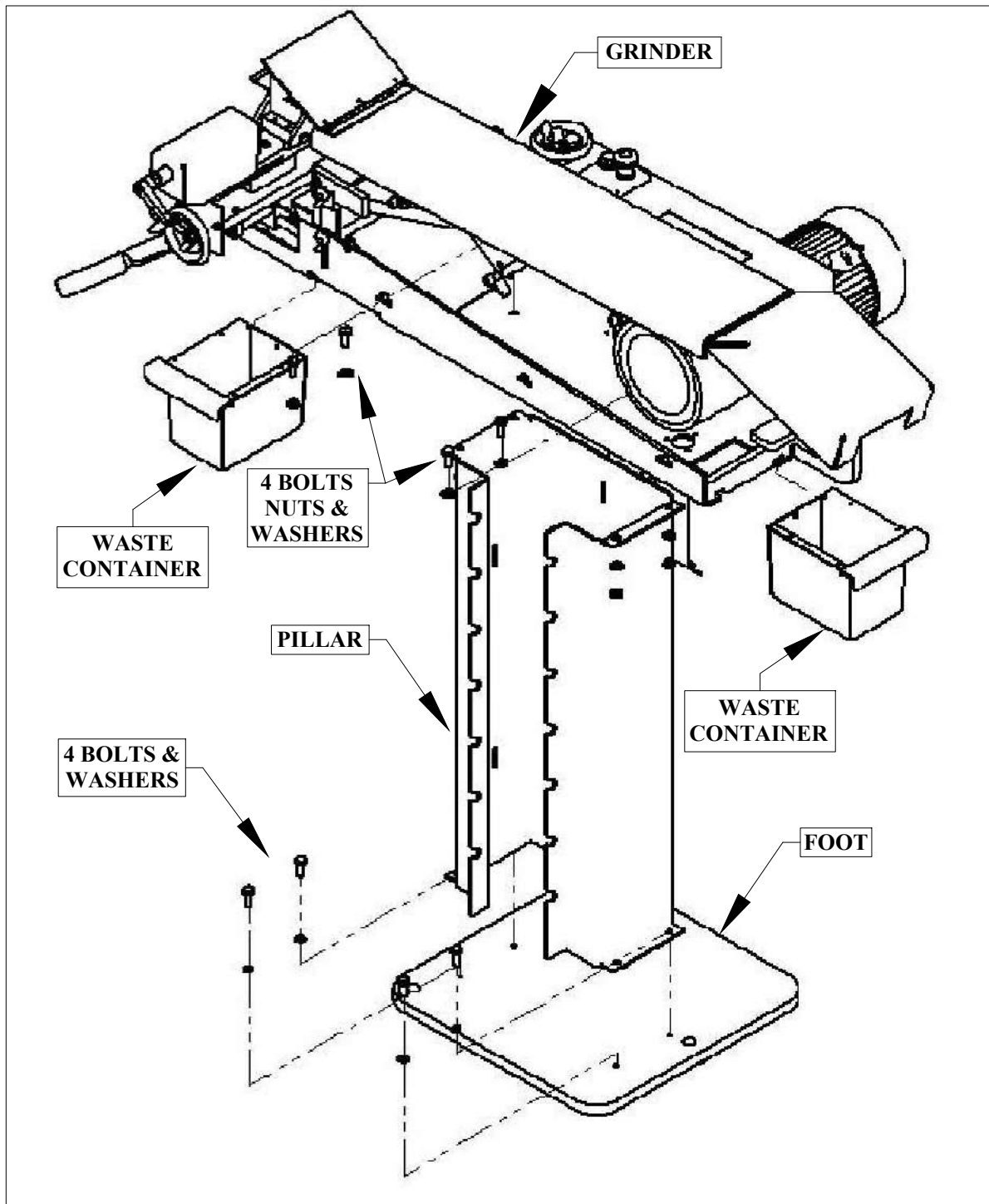
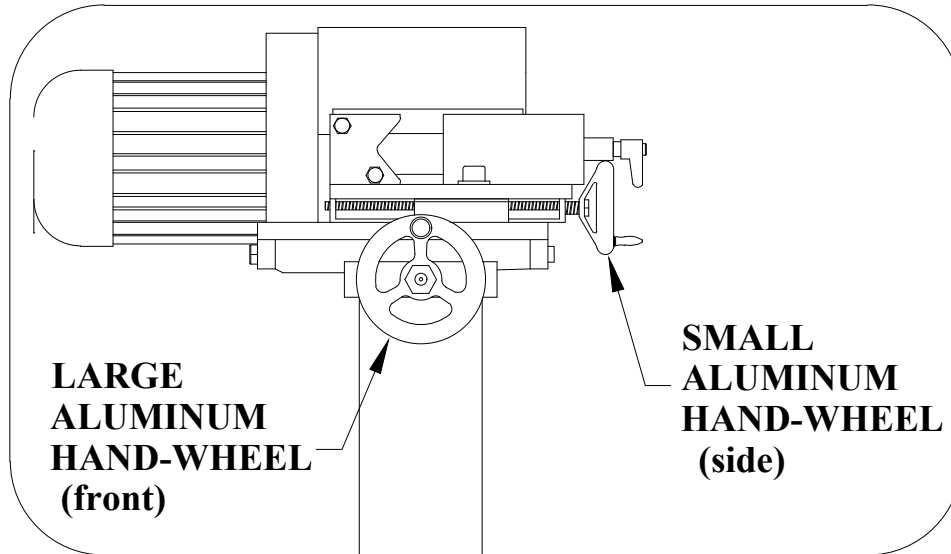


FIGURE 3

# Installing The HandWheels



# Installing The Feed Lever

Below view is looking up at the front underside of the machine

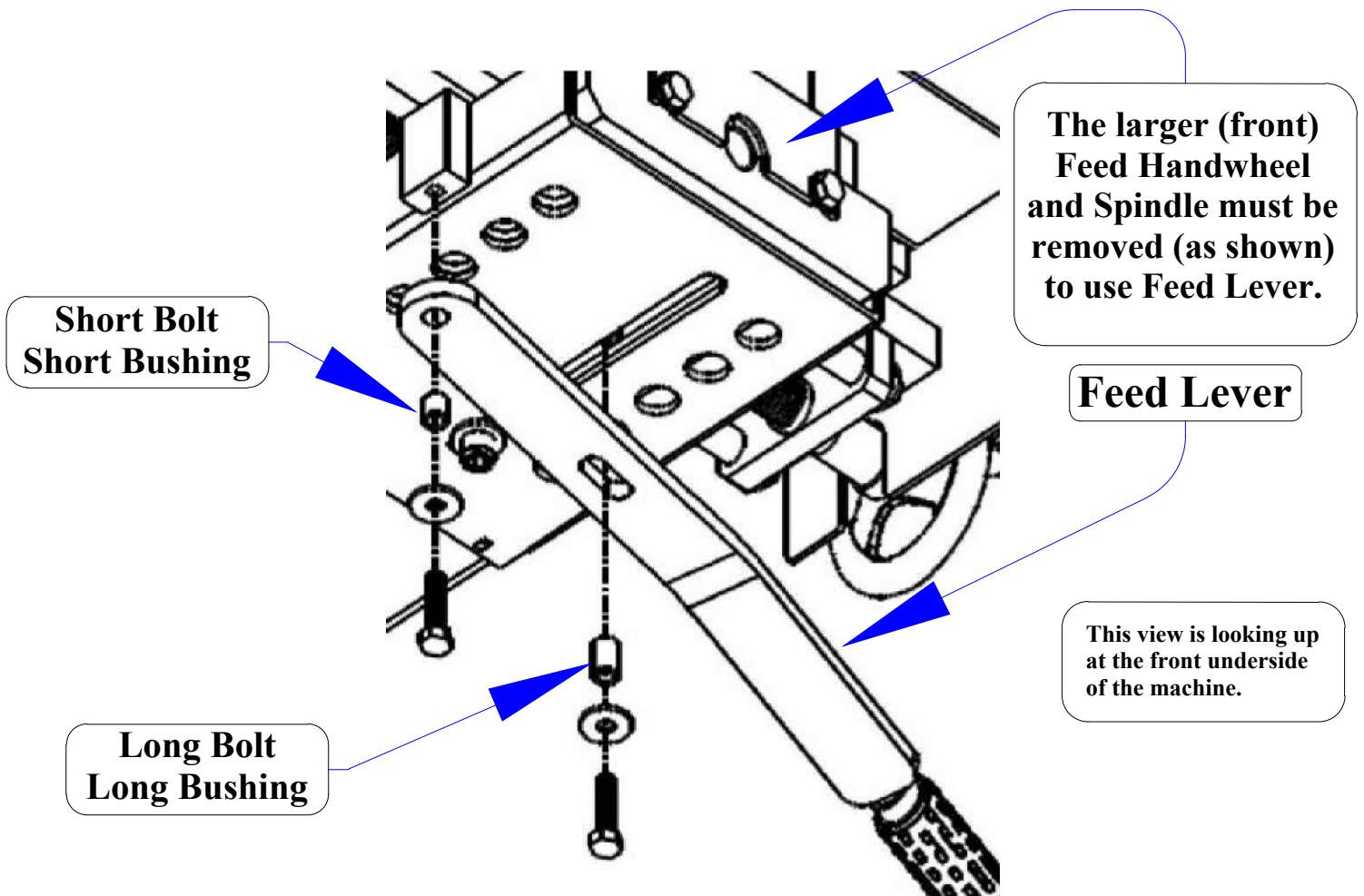



FIGURE 4

## 4.3 MACHINE IDENTIFICATION

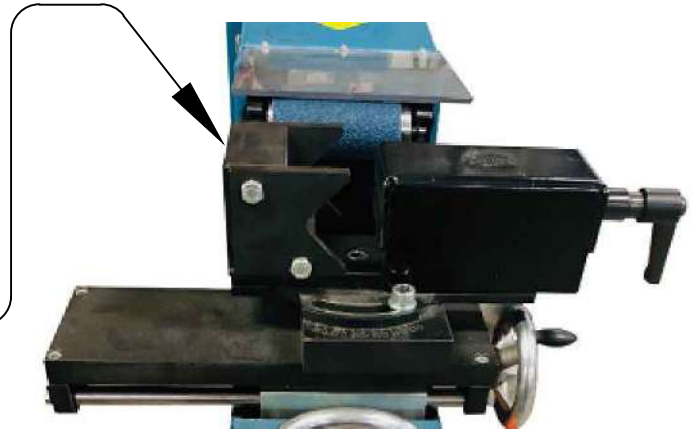
These machines have a white "CE" Decal on them that Identifies the machine and has other important information such as machine Voltage, Hz, RPM, Weight & Year of Manufacture.

This Decal is located on the black cover on the motor side of the machine, under the START & STOP buttons. You will need this information for ordering parts or service for the machine.

An example of what the CE Decal looks like below:

ALMI		Motor		CE
Type	AL 150 HS	Volt	230	
Sr.No.		Hz.	60	
		l/min	4300	
	2019	Weight	275	

Additionally, the machine Serial Number is located on top of the tube clamp on the left side.



## 4.4 ELECTRICAL REQUIREMENTS

**CAUTION: TO PREVENT DAMAGE TO THE MOTOR AND DANGER TO THE OPERATOR, ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A LICENSED ELECTRICIAN.**

The AL150 HS is available 240V and 440V Three Phase. Single Phase is NOT available. To ensure satisfactory machine performance, the supply voltage should be +/- 10% of the motor voltage rating. Check the motor data tag for full load current requirements. The electrical diagram for the motor is inside the cover of the motor box.

For electrical supply lines ten feet (3 m) or shorter, we recommend at least 12 and preferably, 10 gauge wire. For longer supply lines, use at least 10 gauge and preferably, 8 gauge. We do not recommend supply lines longer than twenty five feet (7.5 m).

### POWER REQUIREMENTS:

**Motor: CANTONI 3SIEK112M12**

#### **MOTOR VOLTAGE**

**230**

**460**

**230 (Single phase)**

**Motor power rating: Approx. 4.75hp**

**Grinding Belt Pulley rpm: 4300**

**KVA power rating:**

**Starting Current:**

#### **FULL LOAD AMPS**

**13.0 Amps**

**7.5 Amps**

**Not Available**

**Motor rpm: 3500**

**4.6 KVA at 60 Hz**

**210% Full Load**

**FIGURE 5**

## 4.5 WIRING DIAGRAMS

The wiring diagram for the AL 150 HS is on the next page - See FIGURE 6A.

The wiring and electrical components are located on the motor side of the machine. To access the electrical components, a cover needs to be removed (shown below).

The metal cover is mounted to the machine with six (6) bolts - Four (4) on the motor side and two (2) on the deburring end of the machine. It fits around where the motor mounts.

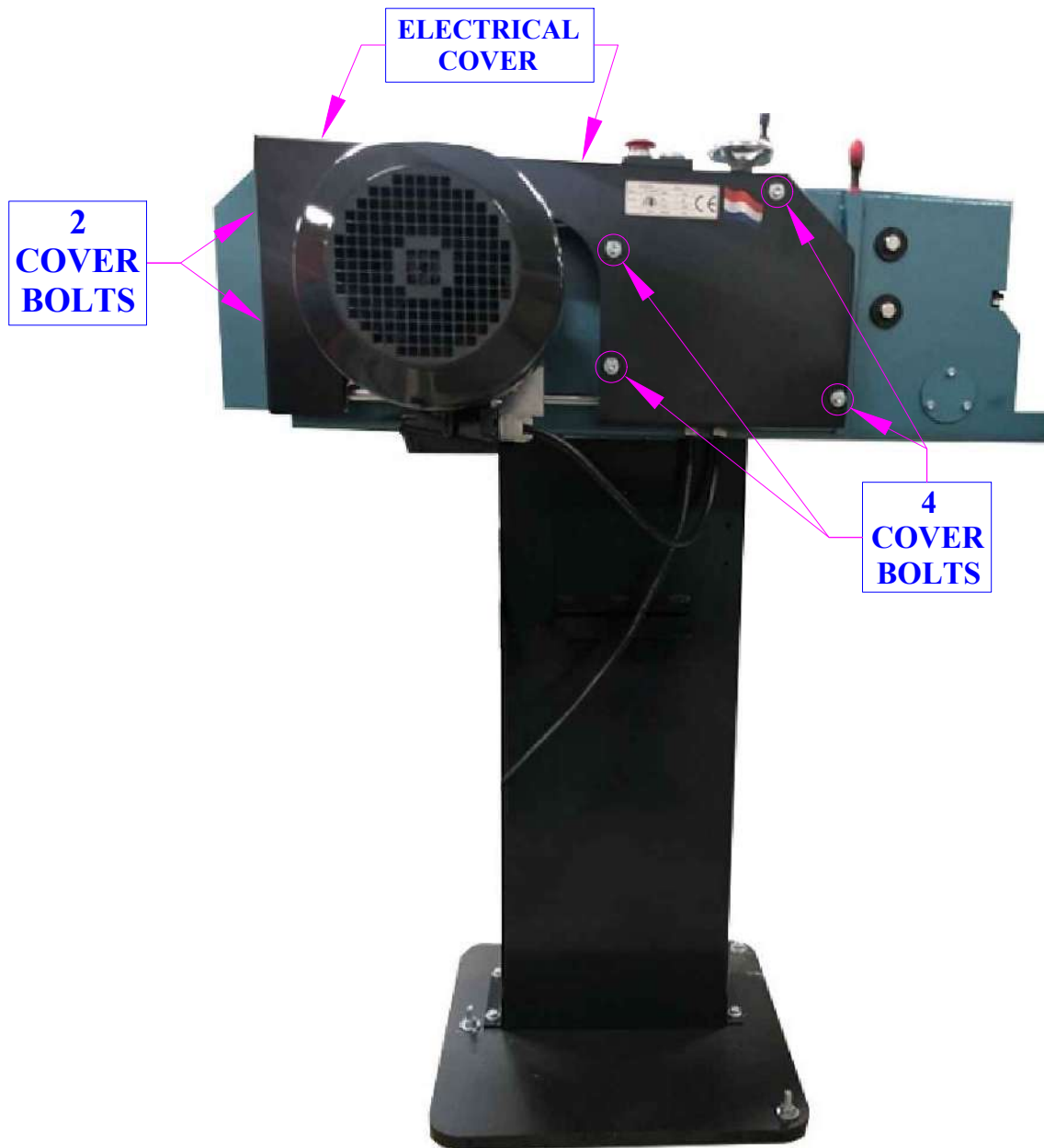
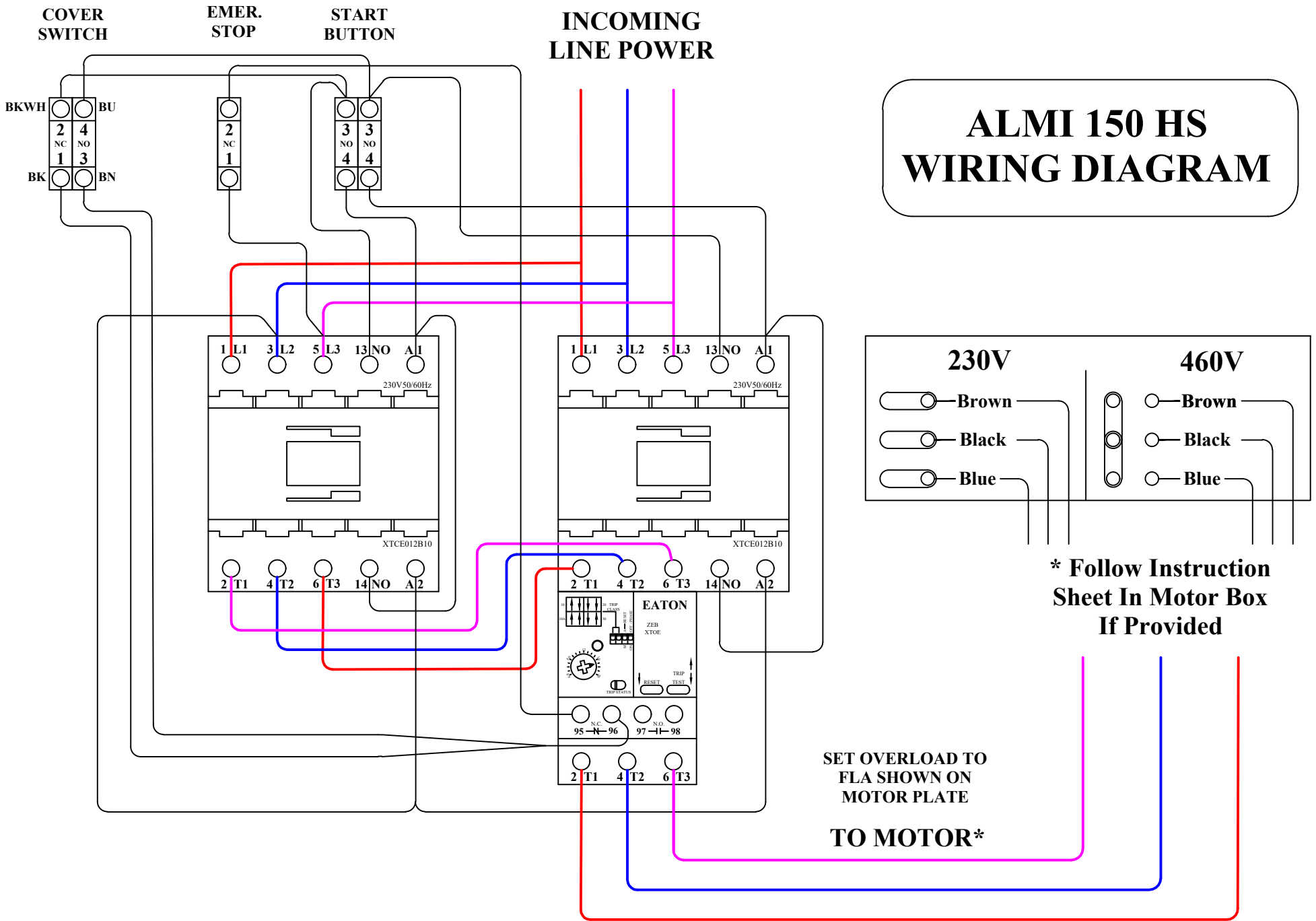


FIGURE 6





**FIGURE 6A**

## 5.0 MACHINE START-UP

This machine is equipped with (3) switches. The START and STOP buttons are located on the top of the machine. The 3rd switch is activated by opening or closing the hinged cover on the deburring end of the machine.

**REFER TO FIGURE 7 BELOW ON THE NEXT PAGE**

To start, push the Green START Button to start the machine. Push the Red EMERGENCY STOP button to stop the machine.

**NOTE:** The AL 150 HS is a bit unique as it is designed to reverse directions (rotation). After a pipe has been notched, in order to deburr it on the other end of the machine, the grinding belt must change directions.

**REFER TO FIGURE 8 ON THE NEXT PAGE**

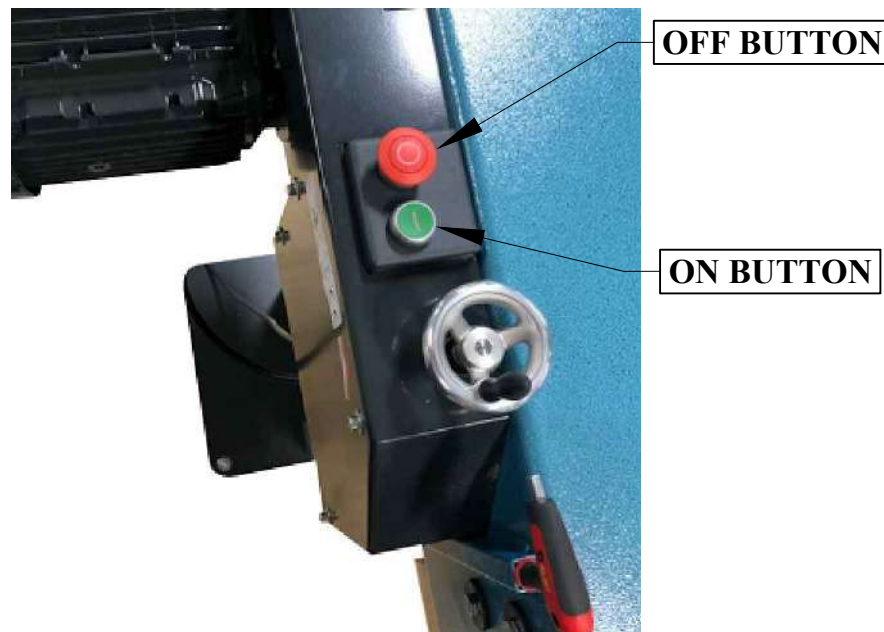
A switch is mounted on the deburring end (back end) of the machine that is activated by opening or closing the hinged clap cover.

It is OK to open or close this cover while the machine is running - This will cause the belt to come to a stop. The green START button must be pushed again and the machine will restart.

**CAUTION:** Make sure the belt comes to a COMPLETE STOP before pushing the START button!



**FAILURE TO DO SO CAN RESULT IN DAMAGE TO THE MACHINE**



**FIGURE 7**

# REAR COVER & SWITCH

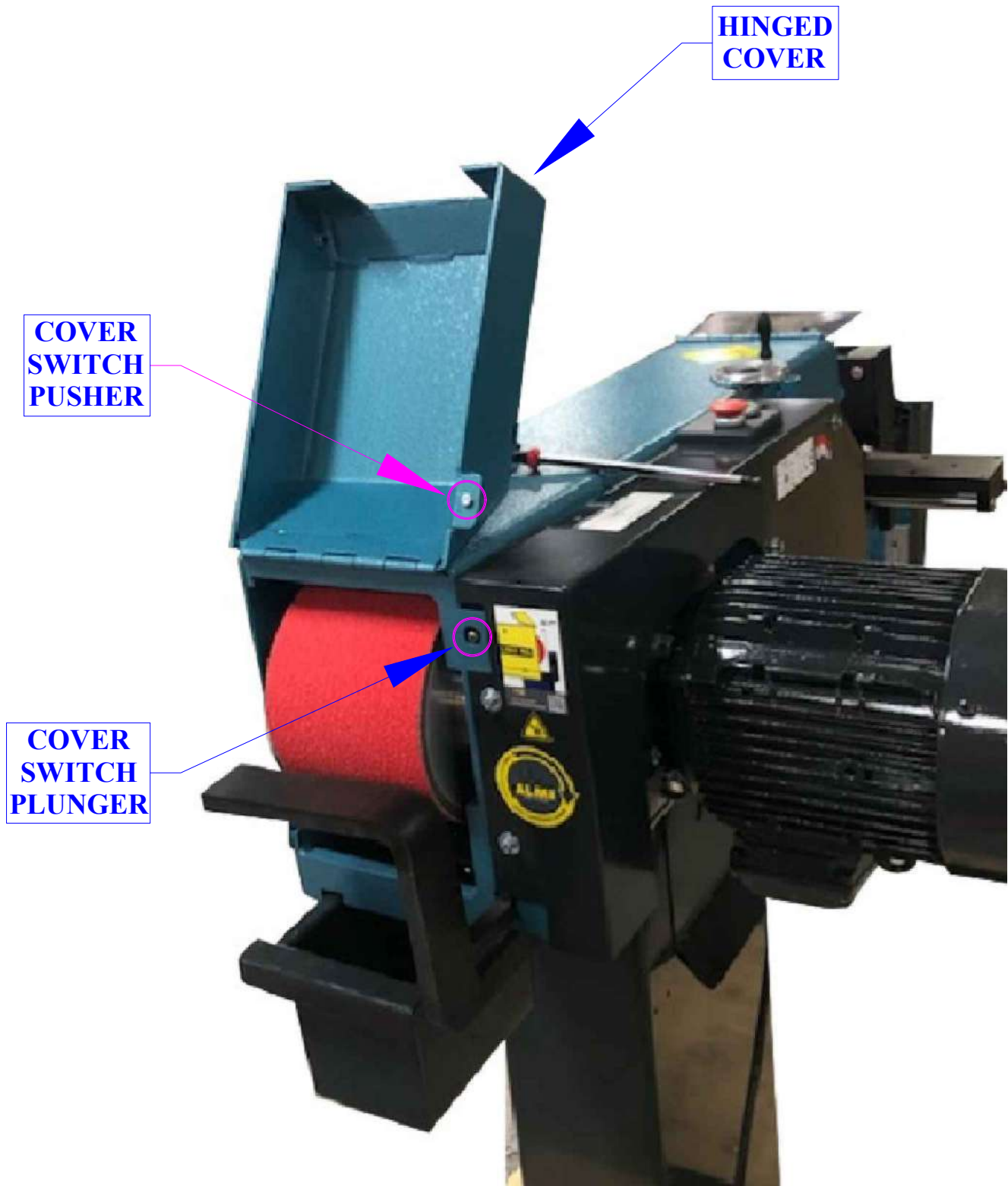


FIGURE 8

# **5.1 MACHINE CONTROLS & ADJUSTMENTS**

## **MODEL - AL150-HS**

### **REFER TO FIGURE 9**

- 1. Allen key, 8mm, with handle; for securing rotatable tubing clamp, for securing standard stopper, and for adjustment of grinding belt.**
- 2. Allen bolts for opening and closing side cover. Use key with handle (1).**
- 3. Allen bolt to adjust belt tracking. Use key with handle (1).**
- 4. Hand Wheel for adjusting tubing clamp into and away from grinding roller.**
- 5. Hand Wheel for adjusting tubing clamp side to side to grinding roller.**
- 6. Handle for clamping work-piece in tubing clamp.**
- 7. Allen bolt for securing rotatable clamp. There is another bolt (not shown) in the center of the clamp that also must be loosened & tightened to adjust the clamp. Use key with handle (1).**
- 8. Grinding Roller Support - Held in place by (2) wing-nuts.**
- 9. Hand Wheel used to adjust Grinding belt tension.**

# MODEL - AL 150-HS

## CONTROLS & ADJUSTMENTS

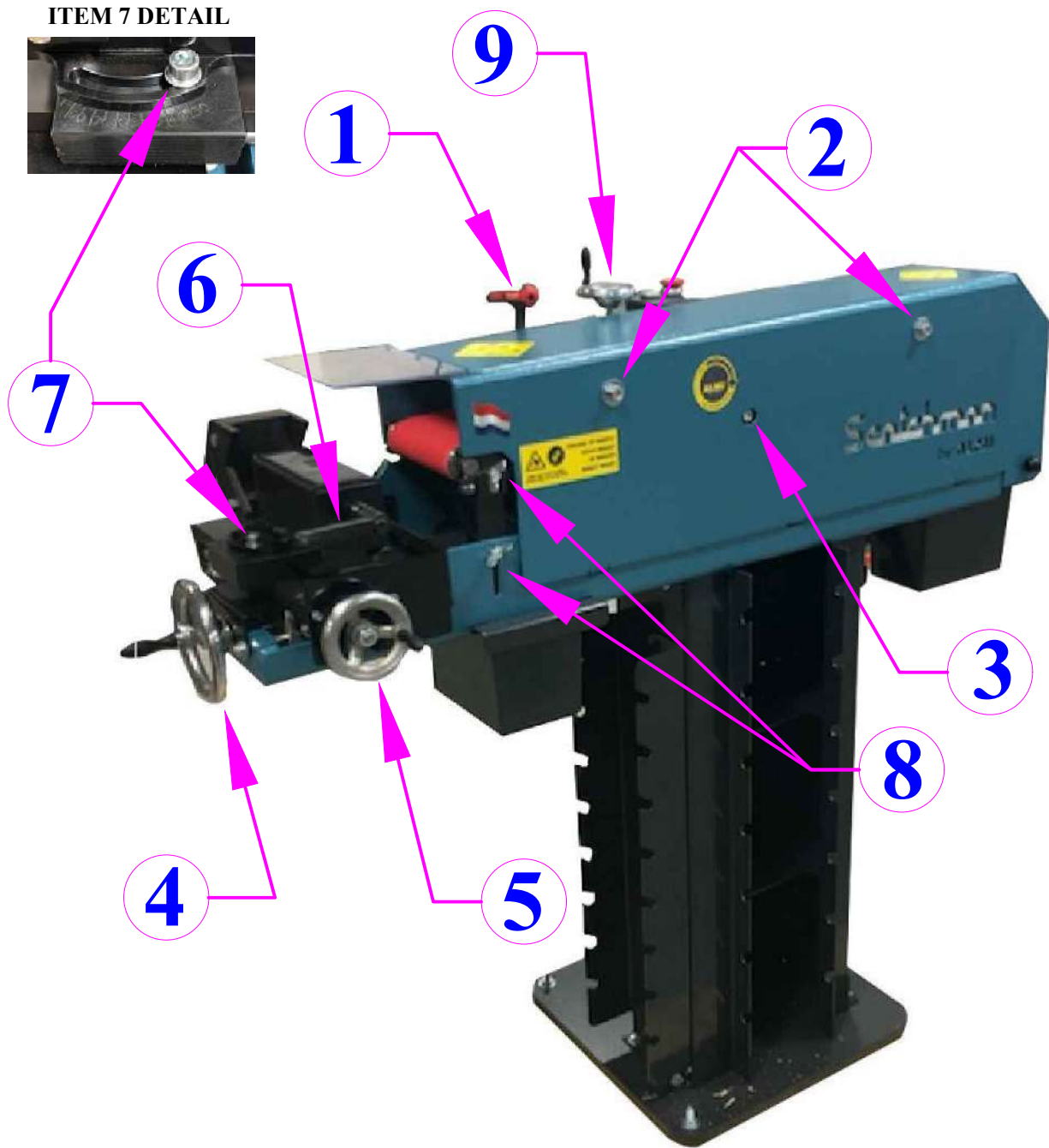


FIGURE 9

## **6.0 MACHINE OPERATION**

**CAUTION: MAKE SURE ALL GUARDS AND COVERS ARE IN PLACE**

### **6.1 STARTING AND STOPPING BELT**

The switches are located on top of the machine above the guard on the motor side of machine.

To START the machine, push the GREEN button.

To STOP the machine, push the RED button.

REFER TO SECT. 5.0 SEE FIGURE 7

### **6.2 DRIVE FOR THE GRINDING BELT**

A pulley with a rubber coating is mounted to a bearing housing with a shaft on the deburring end of machine . This shaft is driven by the motor via a cogged belt and toothed pulleys. The rubber coating on the pulley that drives the belt, in combination with the correct belt tension, ensures the required grip of the grinding belt to the pulley.

Usually the direction of rotation is indicated on the grinding belt. Even though this machine is designed to reverse the rotation of the belt, it is recommended that the belt be installed to go with the rotation for notching.

### **6.3 SECURING A TUBING SECTION**

The clamp for the tubing has V-shaped side plates on the left side and is suitable for clamping tubing with a diameter of 18 - 76 mm (3/4 - 4-1/2 in).

ITEM 6 in FIGURE 9 is the handle to operate the tubing clamp.

When the V-shaped side plates are removed, the tubing clamp can also be used to secure rectangular and square tubing. In the case of rectangular and square tubing, the center of the tubing profile must be at the same height as the center of the grinding roller. To achieve the correct height of the tubing profile, a fill block can be used under the tubing section.

### **6.4 ANGLE ADJUSTMENT**

ITEM 7 in FIGURE 9 shows an allen bolt that is used to set the angle of tubing clamp. There is also another bolt (not shown) in the center of this clamp.

## 6.5 DEPTH STOP

Pipe Notcher is provided with a Depth Stop. There is a slot under the front of the machine and the Depth Stop is located there.

The Depth Stop works to stop the movement of the support toward the grinding roller. This Stop is secured with an Allen bolt and the 8mm Allen key can be used for adjustment.

The Depth Stop is designed to ensure that a series of tubing sections with the same dimensions are all notched to the same depth.

FIGURE 10 below shows where the Depth Stop is located and what it looks like. Loosen the bolt and move the Depth Stop along the slot to where you need it and tighten the bolt.

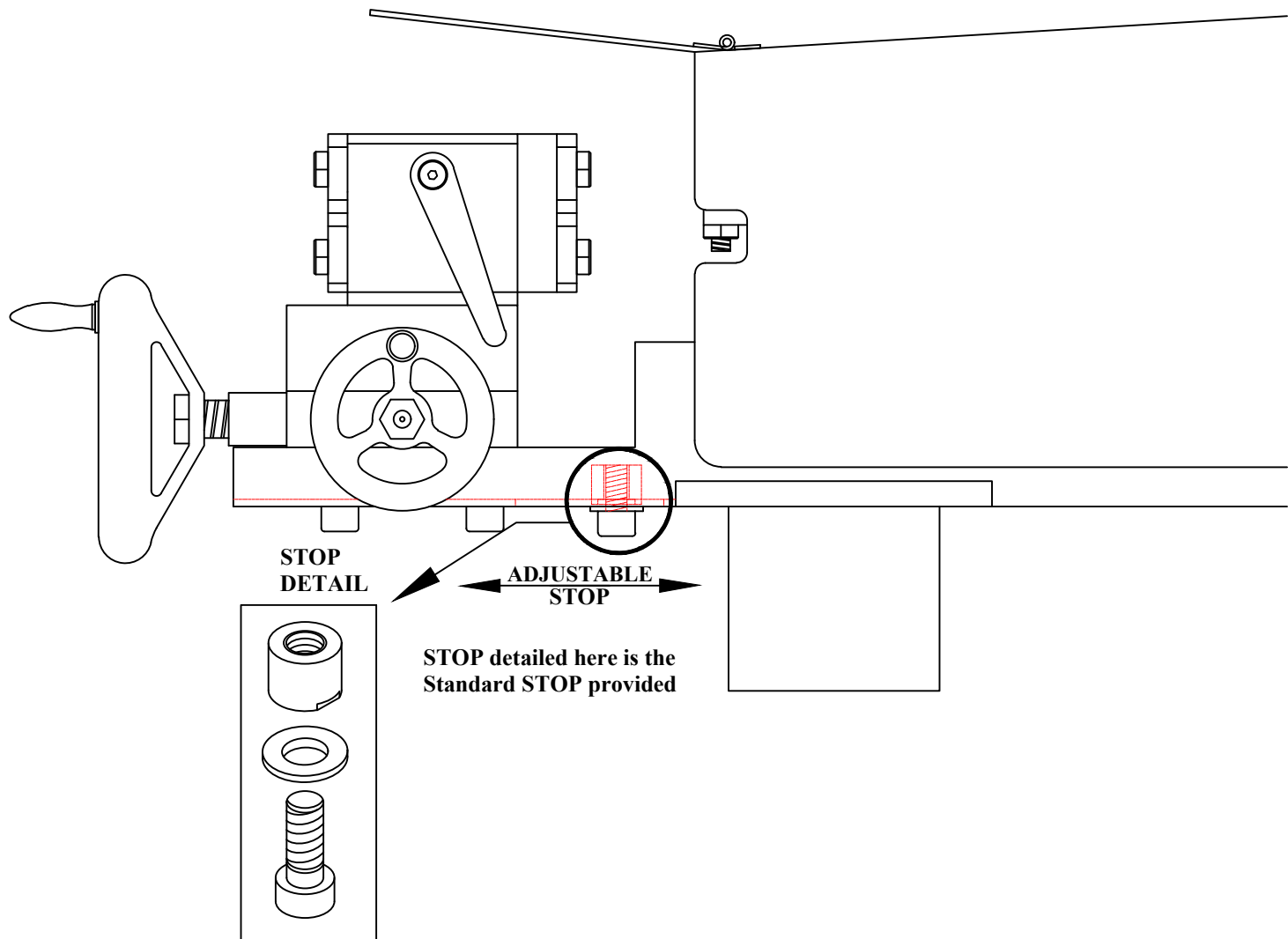


FIGURE 10

## 6.6 LENGTH STOP

On the flat side (left side) of the tubing clamp there are (2) threaded bolt holes.

See FIGURE 11 below.

A Length Stop can be fabricated and attached with these bolt holes.

In doing a run of same-sized tubing, a Length Stop would ensure that each piece of tubing is clamped in the tubing clamp the same.

A Length Stop used in conjunction with the Depth Stop will make for grinding an easily repeatable and very consistent notch into the same sized tubing.

Again, a Length Stop is NOT included with the machine and can be fabricated by the user.

**NOTE: SCOTCHMAN INDS. HAS A OPTIONAL BACK GAUGE AVAILABLE FOR THIS MACHINE  
SEE PAGE 49 - P/N 04.00931**

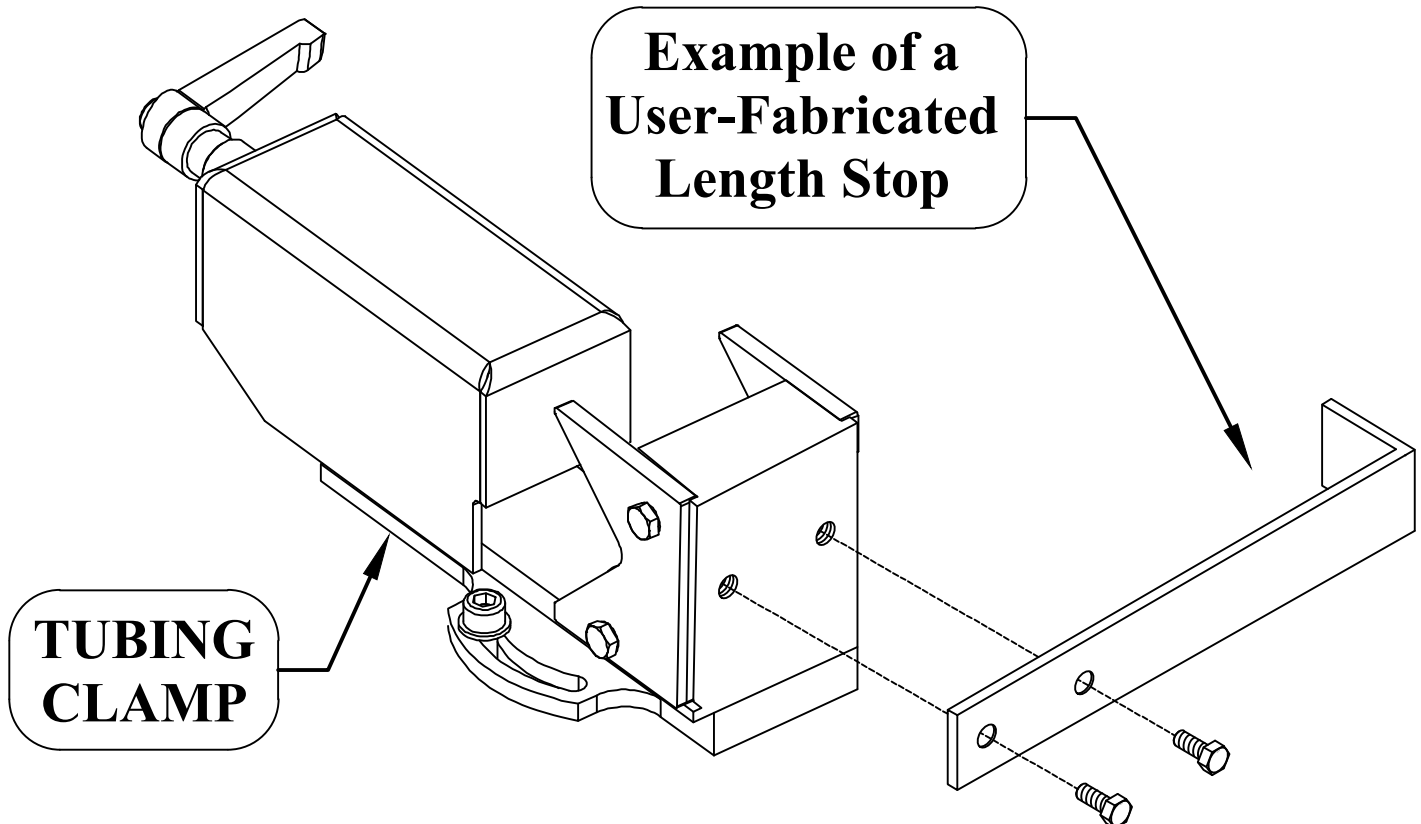


FIGURE 11



## 6.7 NOTCHING THE TUBING

SEE FIGURE 9

After adjusting to the correct angle (7) and the Stops (if desired) have been set up, clamp a piece of tubing into the tubing clamp using the handle (6).

The side with hand wheel (5) moves tubing clamp side to side. It must be positioned so the piece of tubing that is to be notched is moved toward the center of the grinding roller. Hand wheel (4) moves tubing clamp into and away from the grinding roller. By moving the tubing clamp into the grinding roller, the tubing section can be notched.

Care must be given to ensure that the width of the notch does not exceed the width of the grinding belt on the roller. Otherwise, the tube would contact the roller itself. SEE FIGURE 16 - PAGE 30

The Feed Lever (shown in SECT. 4.2, FIGURE 4) can be installed and used in conjunction with the hand wheel (5). The larger hand wheel (4) and it's spindle must be removed to use the Feed Lever.

## 6.8 DEBURRING

The other end of this machine is equipped with a deburring wheel for deburring the tubing that was notched. There is a hinged cover that covers the deburring wheel that must be opened to access the deburring wheel.

**IMPORTANT:** Go to SECTION 5 MACHINE START UP and read the NOTE: and the CAUTION:

### FOLD AWAY TOOL REST

The deburring end of the machine has a tool rest that is attached to the machine on the motor side. It hangs below the machine when not in use.



**THIS TOOL REST MUST BE USED FOR SAFETY!!!**

SEE FIGURE 12 and FIGURE 13

To use the Tool Rest - After the machine comes to a complete stop:

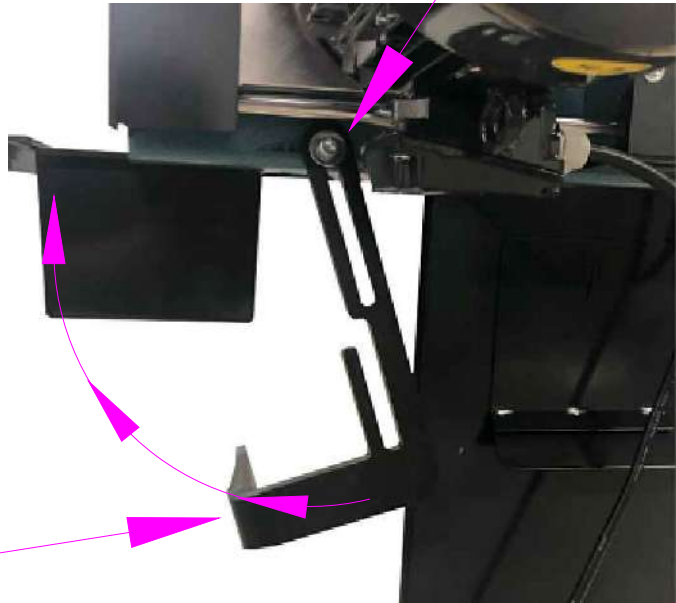
1. Loosen tool rest mounting bolt with the 8mm Allen Key (See Figure 9 Item 1)
2. Rotate the tool rest up toward and out from the deburring wheel
3. There is a slot built into this end of the machine
4. Tool Rest is made with a shaft that fits into this slot
5. Insert the shaft into the slot and push the tool rest in toward the deburring wheel
6. When the tool rest is 10mm (3/8") away from the deburring wheel, tighten the mounting bolt.
7. When the machine is restarted, it will run in the opposite direction so deburring sparks are directed downward into the grinding waste container located underneath the grinding wheel.

# TOOL REST IMAGES

SEE FIGURE 12 Below

SEE FIGURE 13 on the Next Page

TOOL REST  
MOUNTING  
BOLT



TOOL REST  
POSITION  
WHEN  
NOTCHING

SLOT IN  
MACHINE  
&  
SHAFT ON  
TOOL REST



FIGURE 12

**TOOL REST IS 3/8" AWAY FROM  
GRINDING WHEEL - MOUNTING BOLT  
(below) IS TIGHT - READY FOR USE**



**FIGURE 13**

# DEBURRING GUARD

SEE FIGURE 14 BELOW

If a large number of parts are being deburred, or if a grinding a large amount of material from a part is required, it is recommended that the extra deburring cover for the notching end of the machine is used.

This cover is stored on the motor side of the machine below the motor and electrical cover. It is "hung" on to the pillar and just lift up on it to remove it from the pillar. SEE FIGURE 14A

It mounts with a built in slot in front of the notcher roller as shown in FIGURE 14B.

After it's mounted, the hinged clear cover should be rest on top of it as shown in FIGURE 14C.

FIGURE 14A



FIGURE 14B



FIGURE 14C



FIGURE 14

# 7.0 NOTCHING CAPACITIES

SEE FIGURE 15

The capacity of the AL 150-HS machine is 1/2" to 4" O.D. (12.7mm to 114mm).  
Machine is supplied with (2) belts and (2) pipe mandrels (1-1/4" & 1-1/2").  
There are 17 mandrels available to ensure correct gap-free fits.  
The grinding rollers (mandrels) and belt can be changed tool-free in seconds.  
The size of the notch is changed by exchanging the grinding roller in front of the machine.  
The Angle Range is 90° (straight) to 20°

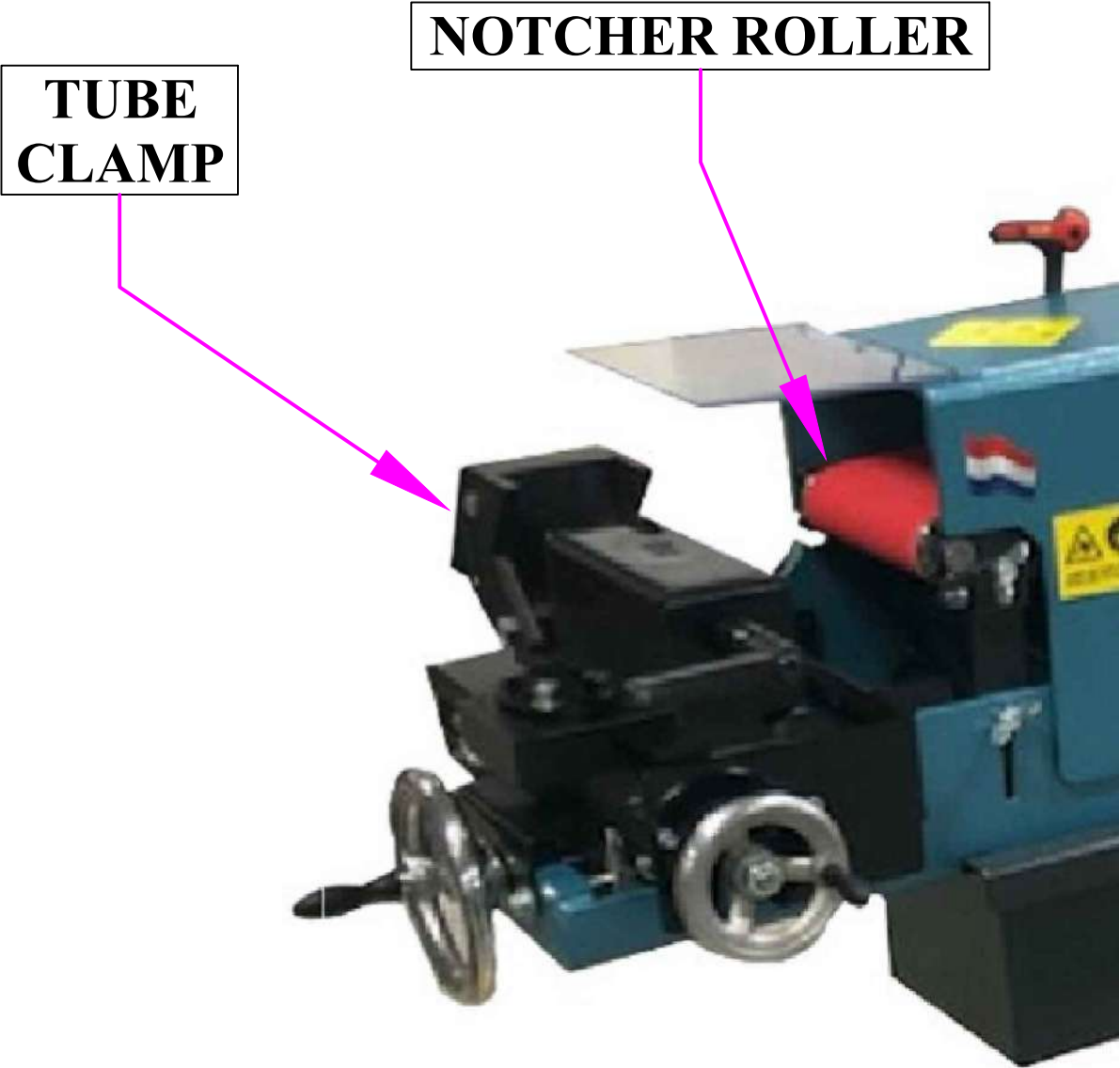


FIGURE 15

# 7.1 ANGLED NOTCHING CAPACITY

SEE FIGURE 16

Below shows the capacities for the AL 150 Grinder/Notchers when grinding tubes at an angle. The tube size must be reduced as the angle is increased.

**ANGLE RANGE: STRAIGHT=90° TO 20°**

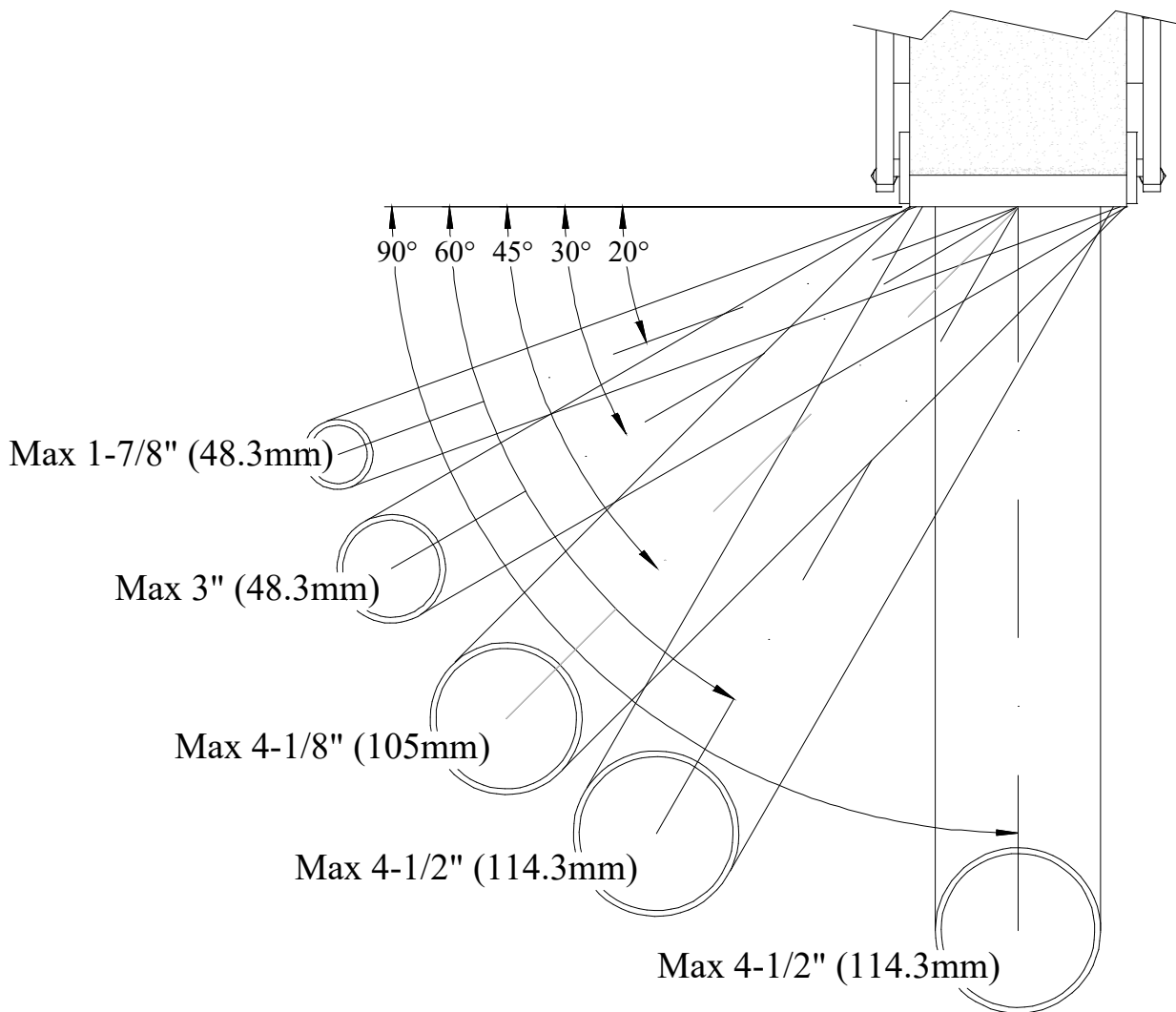


FIGURE 16



## 8.0 CHANGING ROLLERS AND BELT

SEE FIGURE 17

 **CAUTION: DISCONNECT POWER FROM MACHINE BEFORE PROCEEDING**

To gain access to the grinding belt, the large hinged side cover and hinged deburring cover must be opened. Use the Allen Key to turn the bolts indicated below to release the side cover. Note the the large hinged side cover is heavy and should be opened with care.



## 8.1 BELT TENSION

SEE FIGURE 18 ON THE NEXT PAGE

After the power has been disconnected and the covers are opened, grinding belt tension is adjusted by using the small wheel handle located on the top, motor side of the machine, next to the ON button. It's location is shown on the next page. Spring tension is used to keep the belt tight.

Make sure to turn the wheel handle in the correct direction to loosen the belt.

**NOTE:** Wear Safety Gloves when changing the grinding roller or grinding belt.  
Through intensive use, the roller can become extremely hot!!

FIGURE 17

## 8.2 NOTCHER ROLLER SUPPORT

SEE FIGURE 18 BELOW

Before the grinding belt can be removed, the roller support on the notcher end of the machine must be loosened and one end of it disconnected. It is held in place by wing-nut type fasteners.

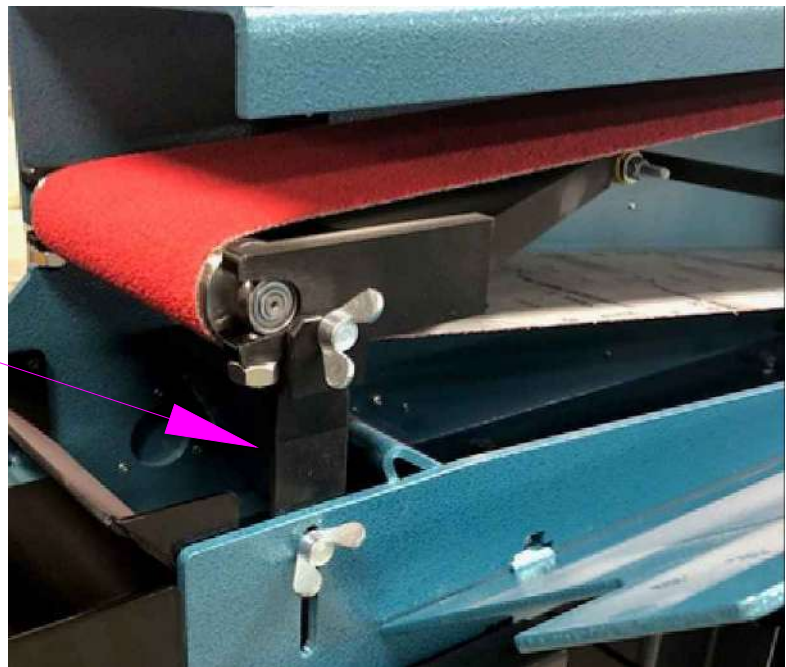
**NOTE:** There should be a mark inside the grinding belt indicating the rotation. If not, make sure to note which way the belt was turning so it can be reinstalled in the same way.

In most instances, the direction of rotation is indicated on the grinding belt. Even though this machine is designed to reverse the rotation of the belt, it is recommended that the belt be installed to go with the rotation for notching.



**BELT TENSION  
ADJUSTMENT  
HANDWHEEL**

**NOTCHER  
ROLLER  
SUPPORT**



**FIGURE 18**



## 8.3 CHANGING THE ROLLER

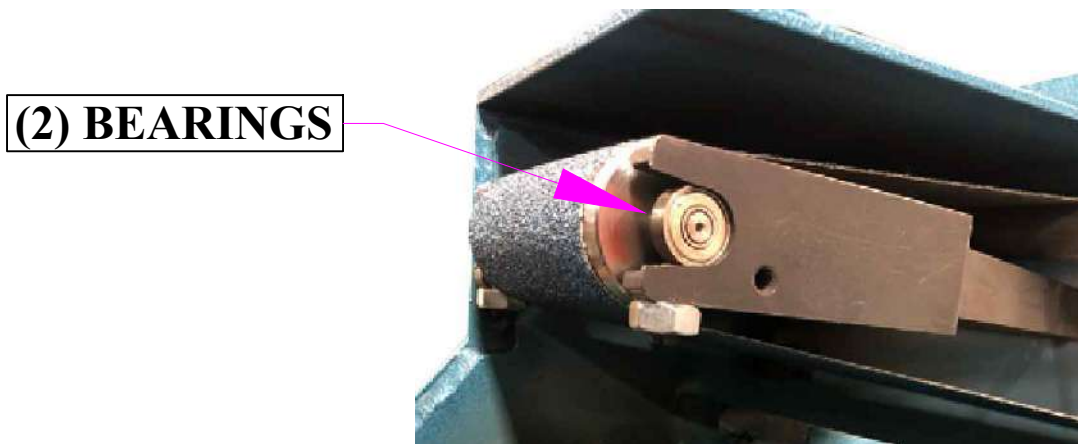
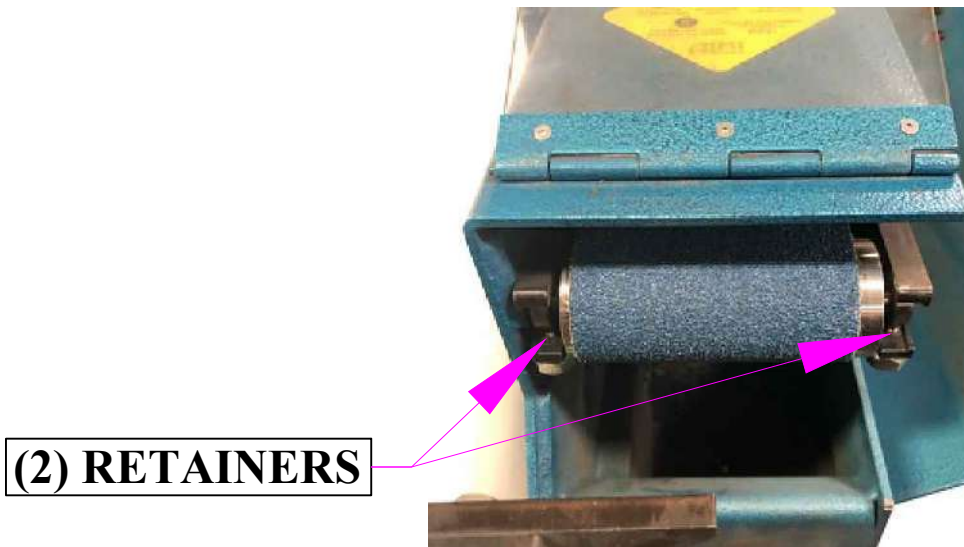
SEE FIGURE 19 BELOW

After the grinding belt is removed, the roller can be changed.



**CAUTION: WEAR SAFETY GLOVES!! WITH INTENSIVE USE  
THE ROLLER CAN BECOME EXTREMELY HOT.**

Below are a couple of images that show how the roller mounts to the machine. Each roller has (2) bearings - One on each end. The roller is held in the holder with (2) spring pressure retainers. These retainers have been properly adjusted by the manufacturer and should never need adjustment. Please see FIGURE 20 on the next page for an exploded view.



**FIGURE 19**

**SEE FIGURE 20 BELOW**

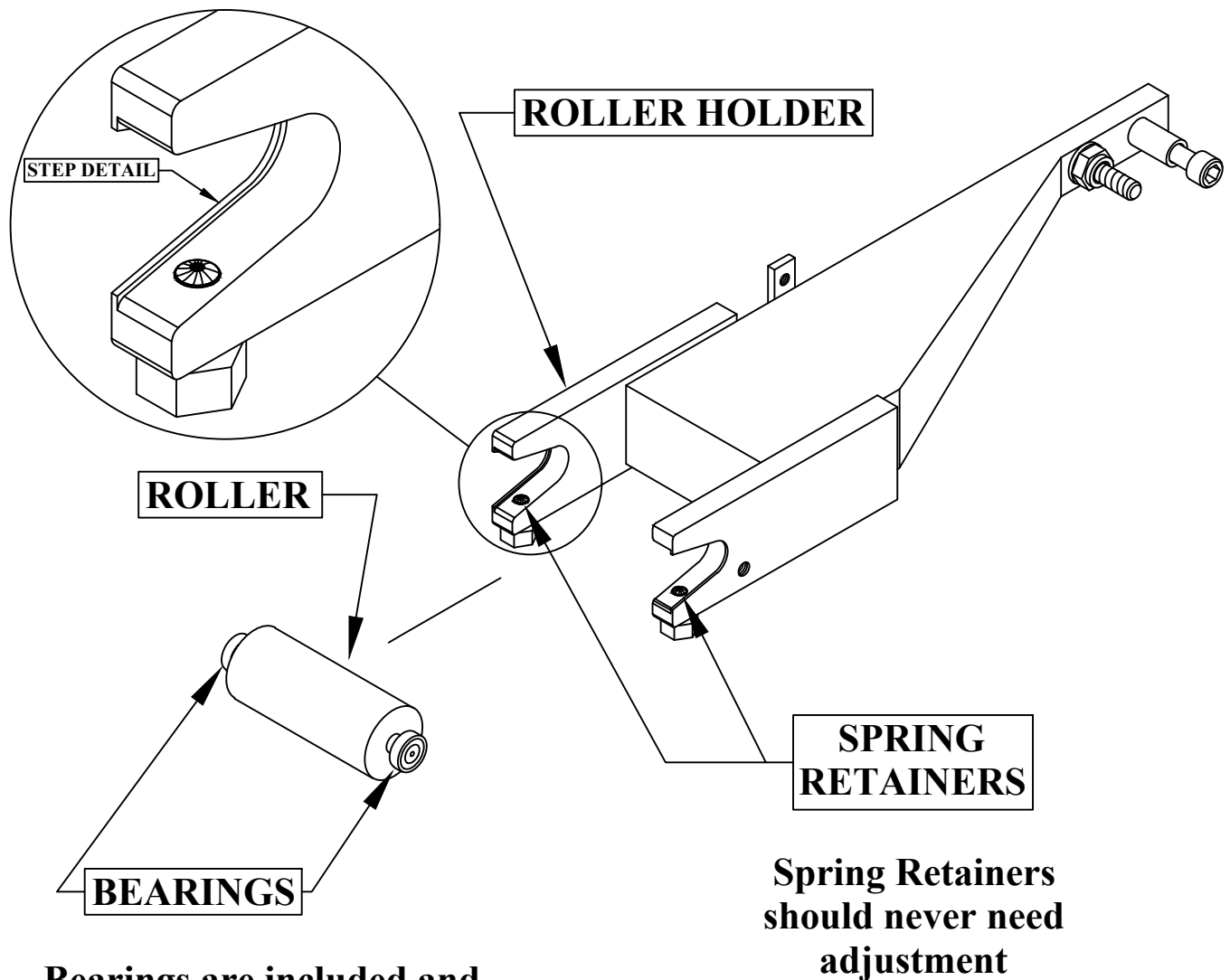
**Below is an exploded view of the roller and related parts.**

**To remove roller, grasp roller and pull it out of the holder.**

**Before the new grinding roller is installed, the recesses of the support for the grinding roller must be cleaned thoroughly!!**

**NOTE: The bearings that are mounted on the grinding roller must be handled with care because they can be easily damaged. Make sure they are in good condition before use.**

**To install roller, align the roller with the holder and push it in.  
It should be straight and stay in place and be inside the step machined on each side of the holder.  
See STEP DETAIL below.**



**Bearings are included and installed on all Rollers**

**FIGURE 20**

## 8.4 SETTING BELT TENSION

SEE FIGURE 21 BELOW

After changing the roller the belt can be installed. Slide the grinding belt over the drive pulley and the grinding roller. Make sure it is installed so it rotates in the right direction as shown in Sect. 8.1

NOTE: If a roller smaller than 30mm (1-3/16") diameter is being used, use a grinding belt that has been "broken in" meaning a belt that has been previously used on a roller with a larger diameter. A new grinding belt is very stiff and may break if used on a grinding roller with a small diameter.

After installing the new grinding belt, the notcher roller support must be reattached via the (2) wing-nut fasteners. See FIGURE 18

The belt must be tensioned properly. Turn the hand wheel to tighten the belt. To set the correct tension, use the "Tension Gauge" located on top of the machine. It's on the motor side and directly above the motor. the spring on the tensioning device should be compressed enough so there is a 8-10mm gap (.5/16 - .3/8") between the two white indicators as shown below in FIGURE 21.

**8-10mm GAP**  
**(5/16"-3/8")**  
**CORRECT**  
**TENSION**

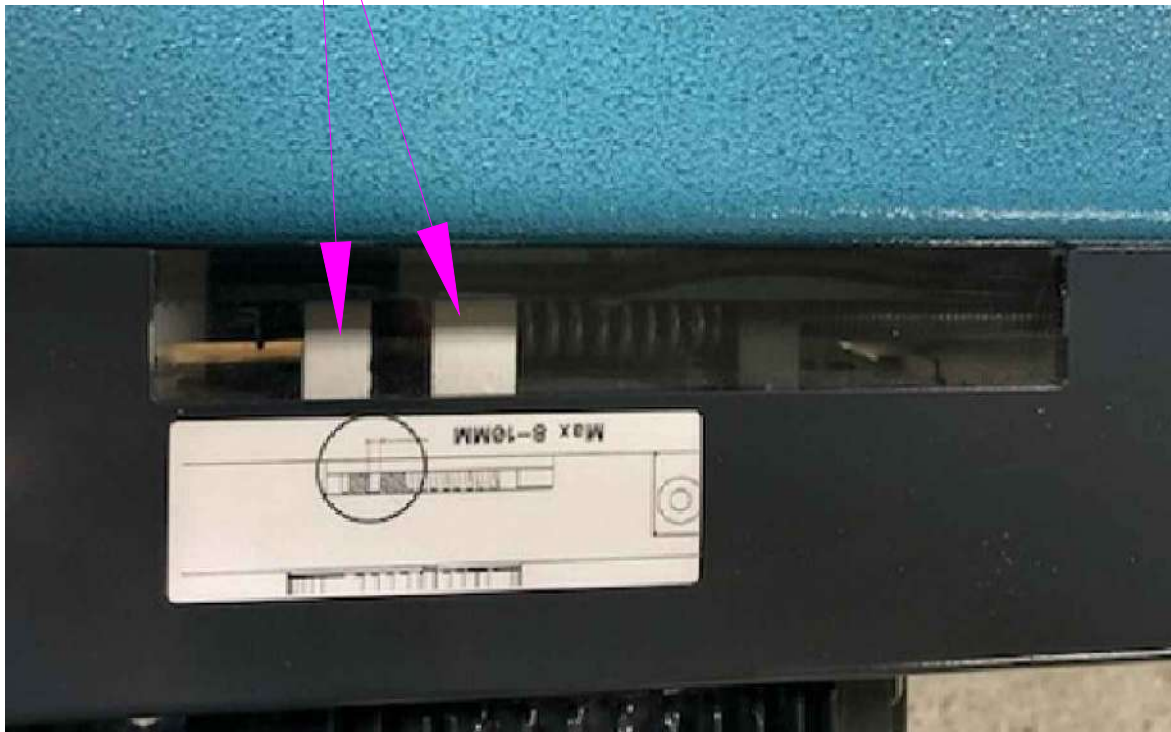


FIGURE 21

## 8.5 SETTING BELT TRACKING

After changing the roller and belt and tensioning it properly, The next thing is to check the tracking of the belt. You want the belt to run so it's as centered on the rollers as it can be.

To begin, make sure the machine is still DISCONNECTED FROM POWER.

Slowly roll the belt by hand in the right direction and see how it tracks. If it rubs on either side, adjust the tracking while rolling the belt by hand. Once belt is centered, roll it by hand for several revolutions. If it stays on the rollers and is NOT rubbing on either side, go ahead and close ALL the covers making sure they are properly locked shut. Make sure the clear cover on the notcher end of the machine is flipped down & deburring cover is closed.

Connect the power to the machine.

NOTE: Make sure you are wearing the proper safety equipment!!

At this point we're ready to start the machine. Be prepared to stop the machine in case any difficulties are encountered.

Once the machine is started and running, check the belt to see how it's tracking by watching the front roller. If it tracking off to one side or the other use the 8mm Allen key to slowly adjust the tracking.

**SEE FIGURE 22**

Below shows where the tracking adjustment is made. There is a hole in the side-cover of the machine that allows access to the adjustment bolt.

CAUTION: Turn Tracking Adjustment Bolt Slowly!!

Watch the grinding belt closely while turning the tracking adjustment bolt.

Once the belt is centered and tracking good, let the machine run for a minute to make sure it stays. Machine is now ready for use.



**FIGURE 22**

## 8.6 ADJUSTMENT OF GRINDING ROLLER

SEE FIGURE 23

The center of the grinding roller must be at the same height as the center of the tubing. This is set at the factory and generally doesn't need to be adjusted. If the center of the tubing isn't centered on the grinding roller it can be adjusted with the (2) bolts that are aligned vertically on the motor side of the machine - See Below.

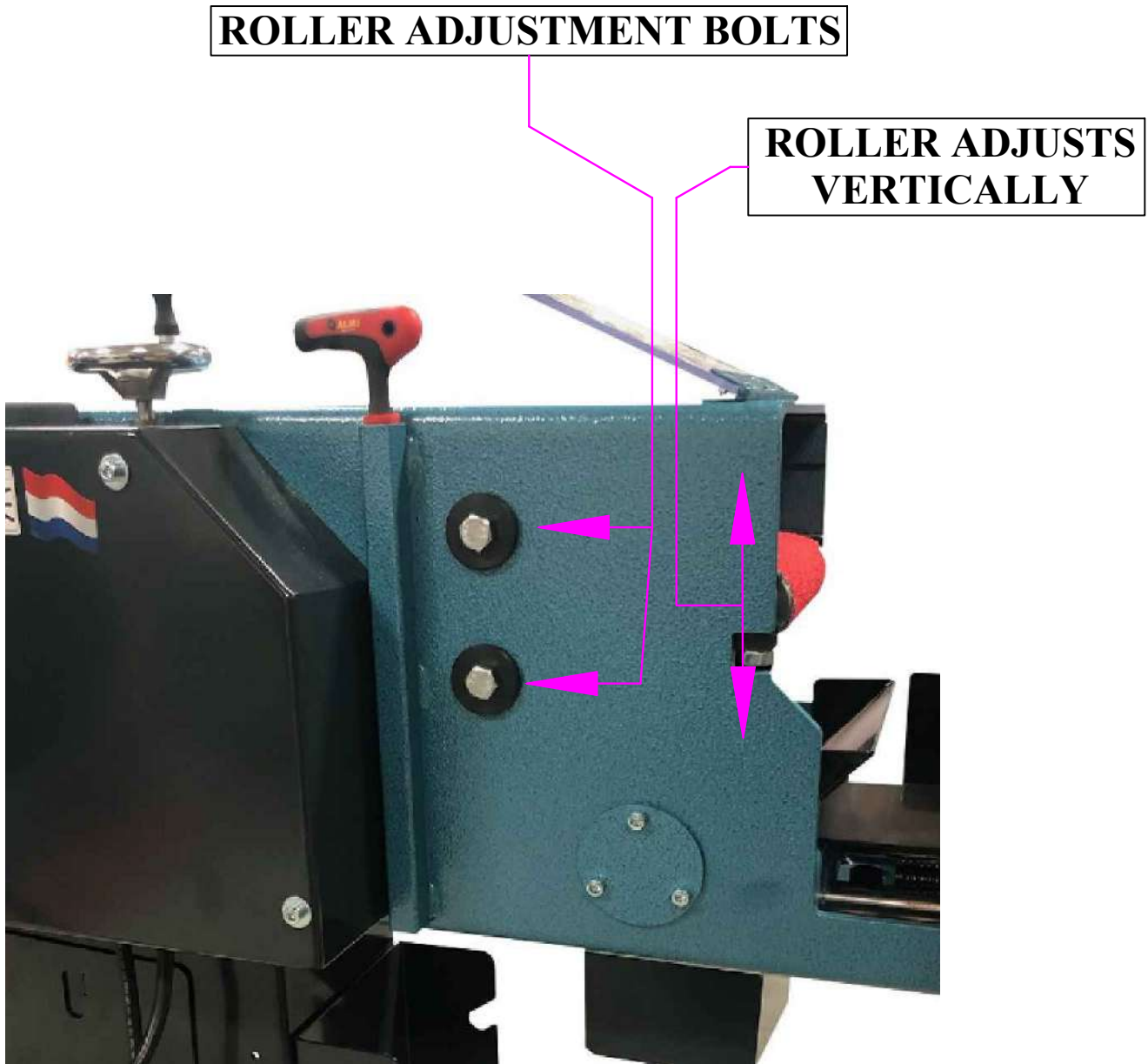


FIGURE 23

## 9.0 AVAILABLE OPTIONS

### 9.1 ROLLER HOLDER

The AL150 HS Grinder Notcher has a place for (7) different sizes of notcher rollers to be stored on the side of the machine. If more storage is needed, we have a solution.

There is a P/N 04.00303 - Roller Holder available for the AL150 HS Grinder Notcher. This holds (8) additional rollers allowing for storage of a total 15 rollers. This is a sheetmetal part that attaches to the front of the machine. There are (2) slots in the front on the column of the AL150 HS and the Roller Holder has (2) angled tabs that fit thru these slots. Put the tabs thru the slots and push the Roller Holder down and that's all it takes to attach it to the machine. See FIGURE 24 below & FIGURE 25 on the next page.

#### TAB - SLOT ATTACHMENT DETAIL

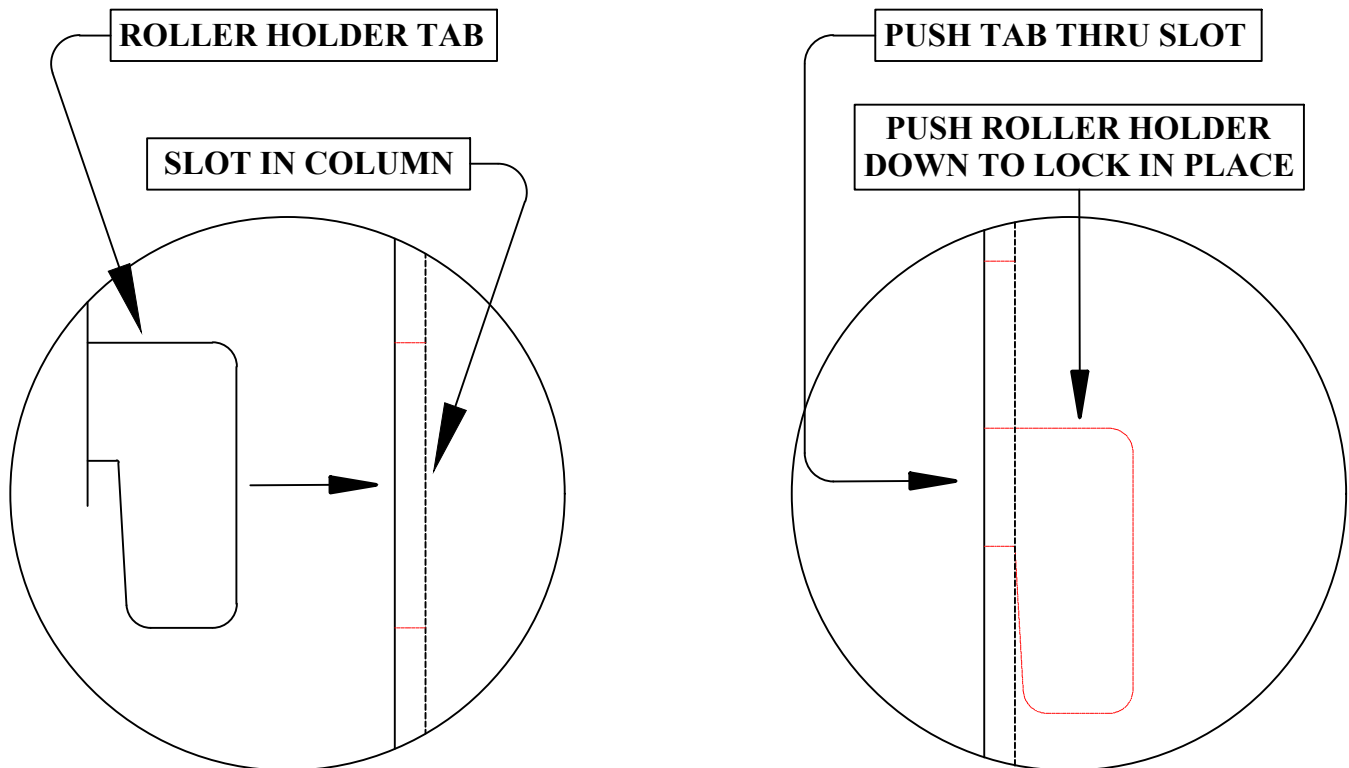
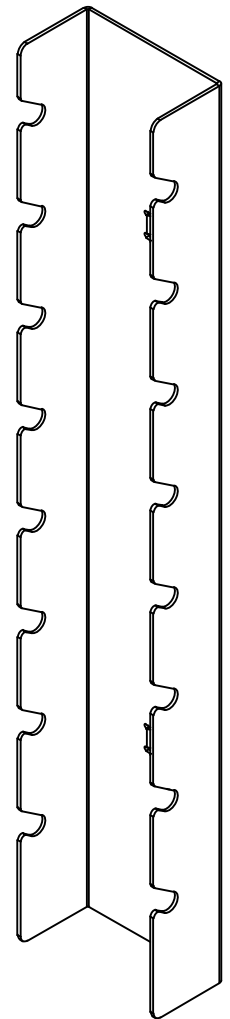
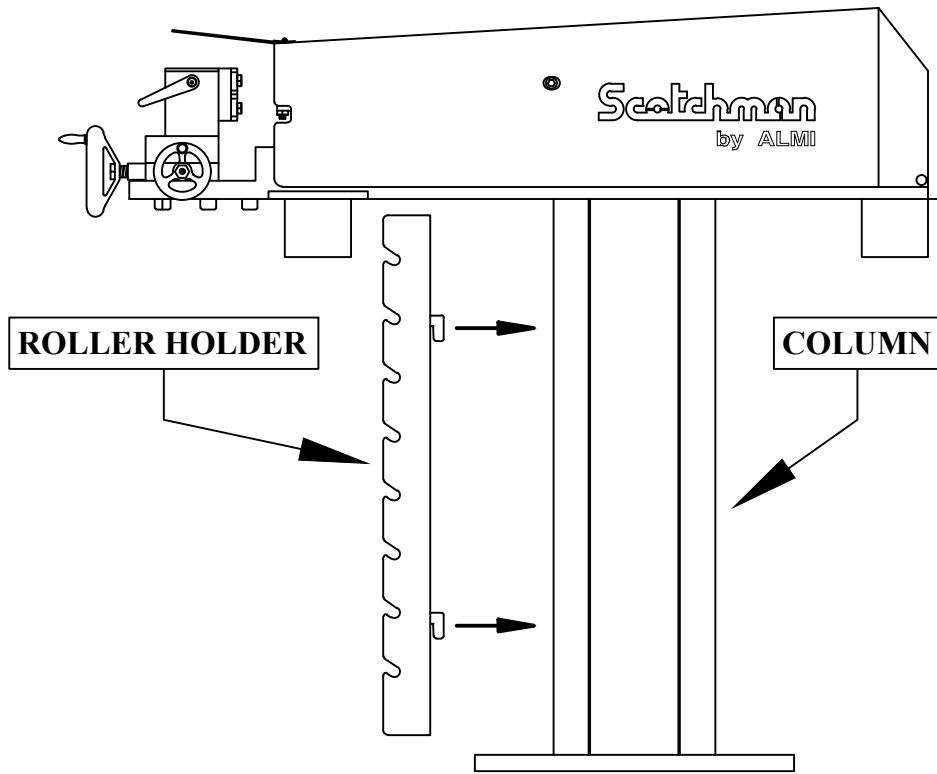


FIGURE 24



# ROLLER HOLDER INSTALLATION

ENLARGED  
ISOMETRIC  
VIEW



EXTRA ROLLERS ARE  
STORED SECURELY IN  
CUT-OUTS

FIGURE 25

## 10.0 AVAILABLE ROLLERS

Below is a list of sizes and part numbers of the standard rollers we have for PIPE and TUBE. Intermediate sizes are also available.

<u>PIPE</u>	<u>PART NUMBER</u>
1/2"	A043.21.3
3/4"	A043.26.9
1"	A043.33.7
1-1/4"	A043.42.4
1-1/2"	A043.48.3
2"	A043.60.3
2-1/2"	A043.73.1
3"	A043.88.9
3-1/2"	A043.101.6
4"	A043.114.3

<u>TUBE</u>	<u>PART NUMBER</u>
1.00"	A043.26
1.25"	A043.32
1.50"	A043.38
1.75"	A043.44
2.00"	A043.50
2.50"	A043.65.3
3.00"	A043.76.1
3.50"	A043.88.9

## 11.0 AVAILABLE GRINDING BELTS

<u>Item</u>	<u>Length / Grit</u>	<u>Part number</u>	<u>Packaging</u>
Standard Belts	6" x 78-3/4" / 36	A044.00002	1 box (10 belts)
Flex Belts	6" x 77-1/2" / 36	A044.00004	1 box (10 belts)



# 12.0 AL 150-HS PARTS LIST

All parts shown below are for the AL 150-HS.

ITEM	QTY	PART #	DESCRIPTION
1	1	04.00073	Foot
2	1	04.00924	Column
3	1	04.00942	ALMI Cap AL150HS
4	1	04.00179	Bearing holder
5	2	04.00809	Guide axis
6	1	04.00812	Plate
7	1	04.00822	Ash
8	1	04.00863	Transmission Hub (24T Pulley)
9	3	04.00049	Washer
10	1	04.00844	Pulley
11	1	04.00829	Strip
12	1	04.00842	Turning Part (Big Washer)
13	1	04.00840	Eccentric
14	1	E030.00019	Motor 230 / 400V 50Hz 3F 4KW
15	1	04.00825	Pulley 40T10 / 36 - (Scotchman 28T)
16	1	04.00871	Timing Belt 25T10 / 630 - (Scotchman 580)
17	1	04.00858	Plate
18	4	G020.00013	SKF Bearing 6200 2RSH
19	4	36200.30.gat	Seal Hole ø30
20	2	04.00860	AS
21	1	04.00828	Threaded Rod
22	1	M090.00007	Press d = 4 DM = 21.5 LO = 80
23	2	04.00833	Strip
24	2	04.00064	Nut
25	4	04.00810	Strip
26	2	04.00881	Gear Conical
27	1	M090.00002	Stamp Spring 25 / 12.5x38
28	2	M050.00001	Spring plunger GN615-M10-K
29	2	04.00875	Plate
30	1	04.00841	Mop
31	1	M010.00007	Handwheel DIN950-66-80-B10-F

**All parts shown below are for the AL 150-HS.**

<b>ITEM</b>	<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>
32	2	04.00257	Cover Plate
33	1	04.00876	Plate
34	1	04.00849	Plate
35	1	04.00853	Transparent Plate
36	1	04.00930	Valve
37	2	04.00843	Door Closure
38	2	04.00887	Garbage Bin
39	2	37810.10x20x10	Clamping Ring 10x20x10
40	1	04.00837	Plate
41	1	04.00206	Protective Glass
42	4	G060.00002	Plain Bearing PAP1525 P20
43	1	04.00874	Protective Plate
44	1	SPANBUS 6x24	SPANBUS 6x24
45	3	01210.M10x30	Socket Screw M10x30
46	4	07160.M10x50	Bzk.ck.schr. M10x50
47	1	01210.M16x40	Zk.tap bolt M16x40
48	2	07160.M6x50	Bzk.ck.schr. M6x50
49	4	01200.M12x40	01200.M12x40
50	6	01300.M12	Zk nut M12
51	2	38130.M16	Vlk.sluitr. M16
52	7	07840.M5x6	Bzk.st.schr. M5x6 45H ke.
53	1	01210.M8x100	Socket Screw M8x100
54	1	12300.M8	Locking Nut M8
55	5	38430.M8	Vlk.sluitr. M8 Zt.
56	10	38130.M8	Vlk.sluitr. M8 ev.
57	1	07160.M10x190	Bzk.ck.schr. M10x190
58	6	01300.M10	Zk nut M10
59	14	07160.M6x20	Bzk.ck.schr. M6x20
60	16	07160.M6x10	Bzk.ck.schr. M6x10
61	3	07160.M6x35	Bzk.ck.schr. M6x35
62	2	07160.M4x20	Bzk.ck.schr. M4x20

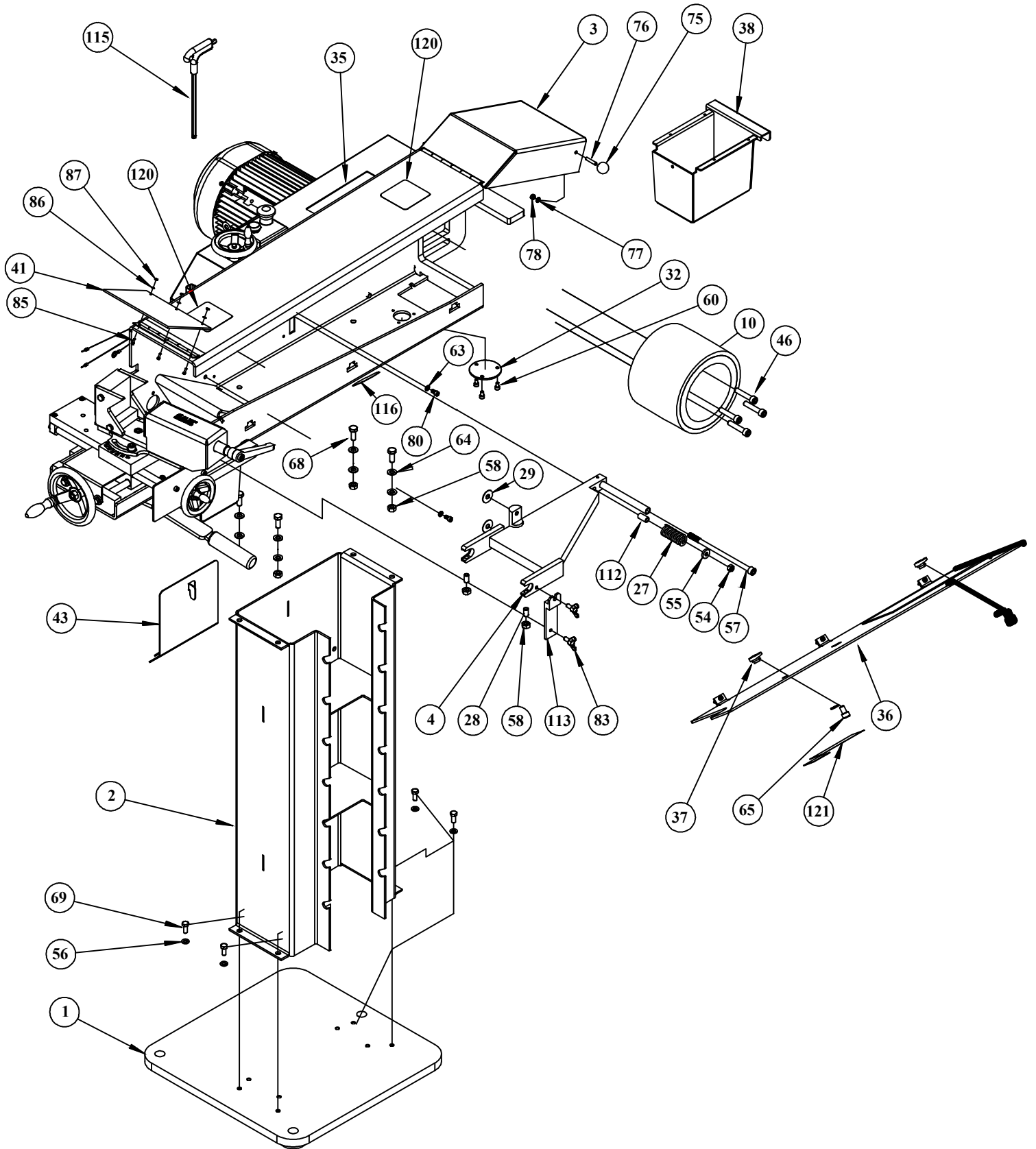
**All parts shown below are for the AL 150-HS.**

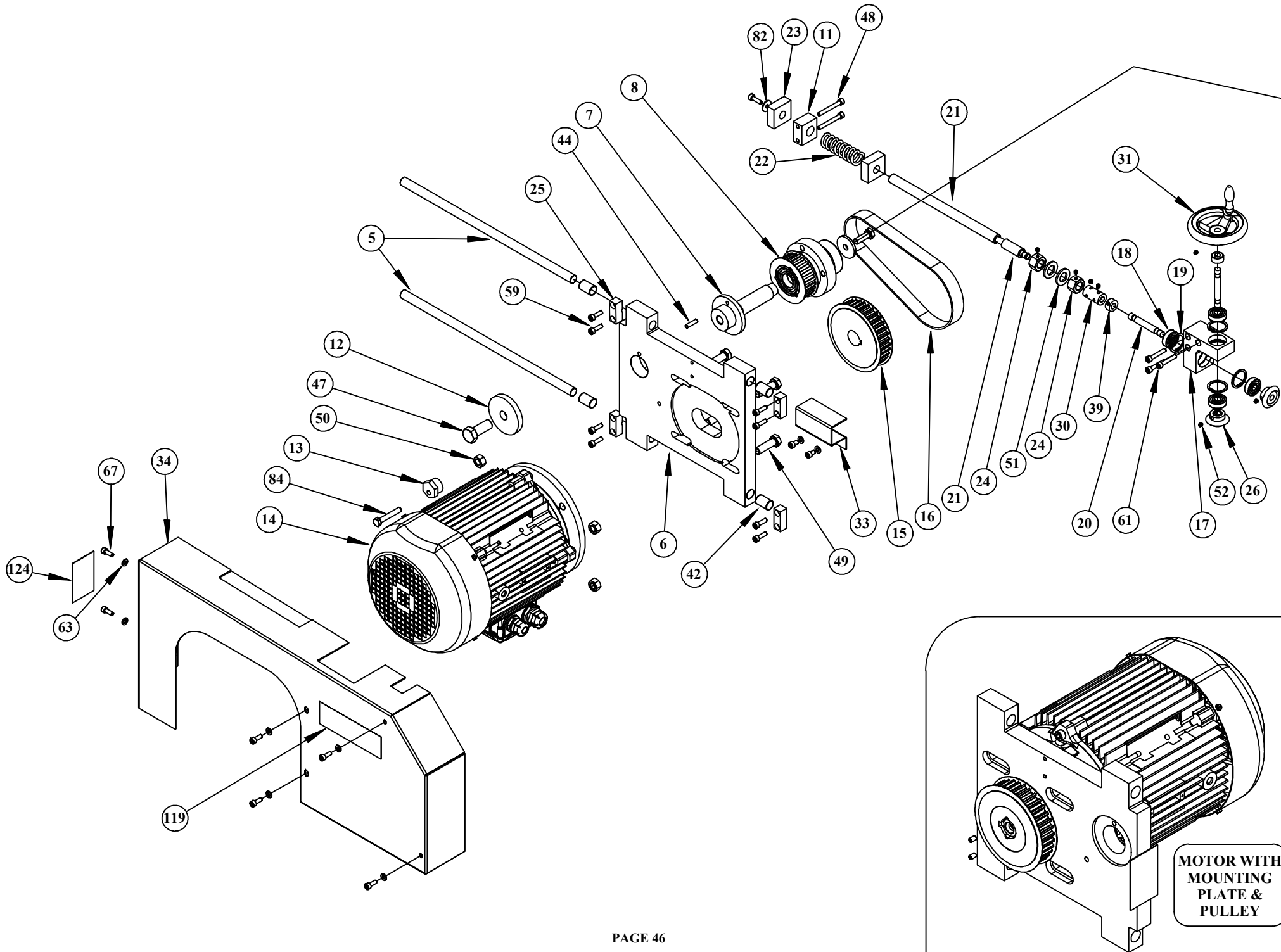
<b>ITEM</b>	<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>
63	16	38130.M6	Vlk.sluitr. M6
64	12	38130.M10	Vlk.sluitr. M10
65	2	07160.M10x16	Bzk.ck.schr. M10x16
66	1	07160.M10x30	Bzk.ck.schr. M10x30
67	6	07160.M6x16	Bzk.ck.schr. M6x16
68	4	01210.M10x25	Socket screw M10x25
69	4	01200.M8x20	Bolt M8x20
70	6	01210.M8x40	Zk. stud bolt M8x40
71	1	M010.00003	Handwheel DIN950-AL-140-M12-D
72	5	01210.M8x25	Socket screw M8x25
73	2	07160.M10x20	Bzk.ck.schr. M10x20
74	2	38210.M8	Vlk.sluitr. M8
75	1	M040.00014	Ball Knob Ø25 x M6
76	1	07840.M6x30	Bzk.st.schr. M6x30 45H ke.
77	2	37963.M6	Locking gr. M6 DIN 25 201
78	2	01300.M6	Zk Nut M6
79	1	07160.M6x12	Bzk.ck.schr. M6x12
80	2	07160.M6x12	Bzk.ck.schr. M6x12
81	1	38400.M6x30	Body Ring M6x30
82	1	38400.M6x20	Body Ring M6x20
83	2	16210.M8x16	Wing Scr. M8x16
84	1	01200.M8x50	01210.M8x50
85	3	07470.M3x10	Bzk.vk.schr. M3x10
86	3	38130.M3	Ring M3
87	3	01300.M3	Zk Nut M3
88	1	04.00175	Swivel Lever
89	2	04.00155	Guide Axis
90	1	04.00163	Threaded Spindle
91	1	04.00003	Slide Bearing
92	2	04.00004	Ring
93	1	04.00238	Cross Support
94	2	04.00156	Guide Axis

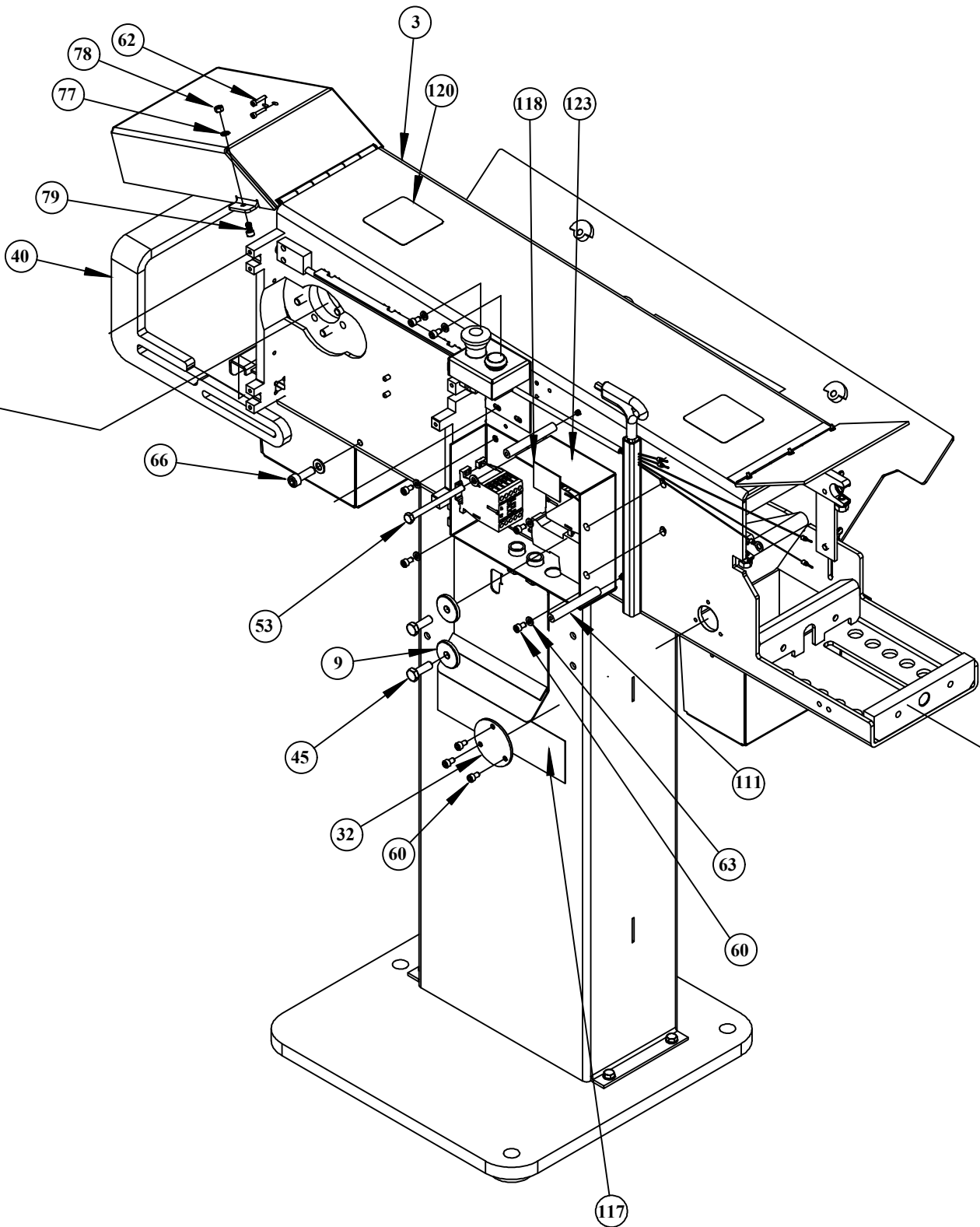
**All parts shown below are for the AL 150-HS.**

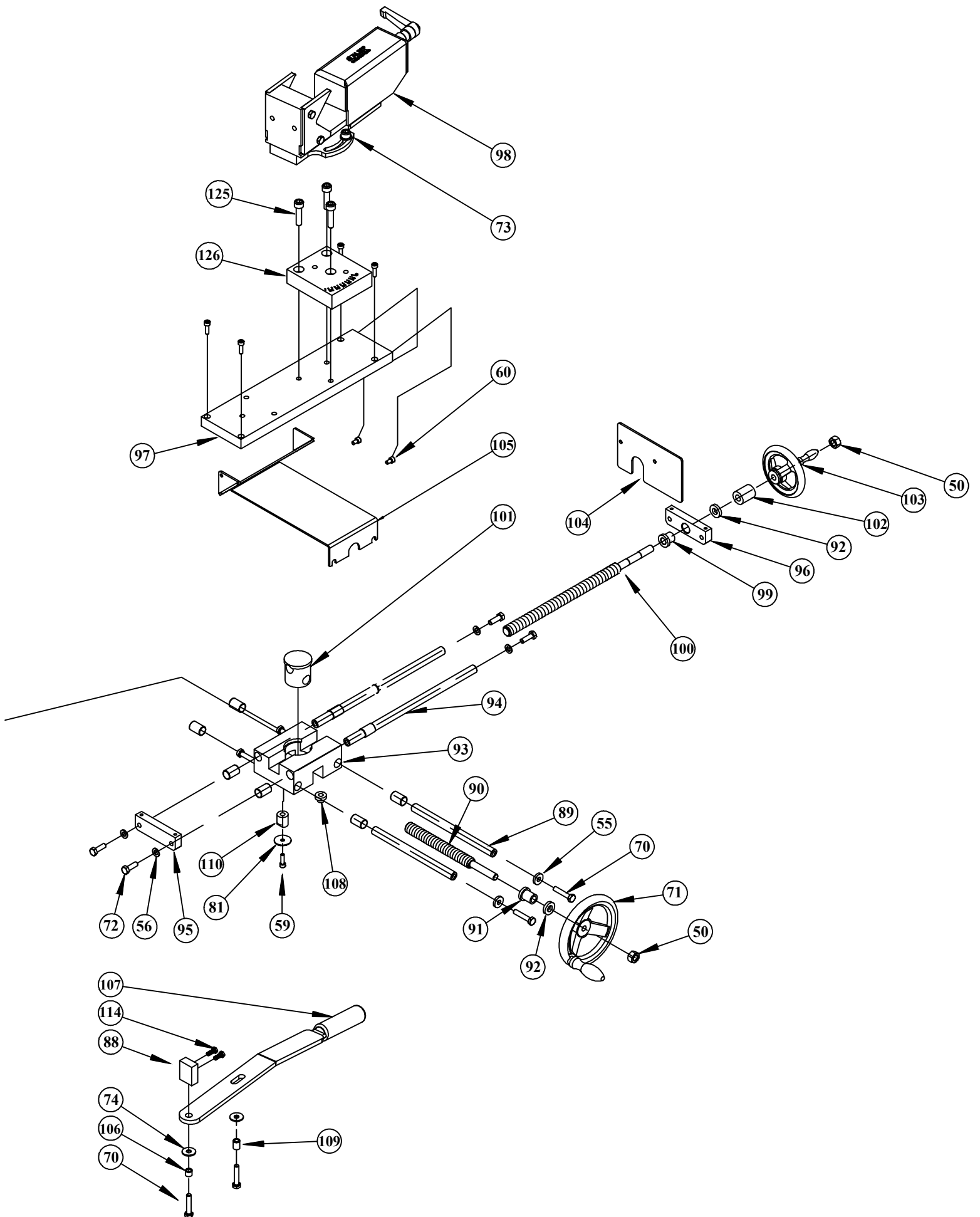
<b>ITEM</b>	<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>
95	1	04.00157	Block
96	1	04.00158	Block
97	1	04.00240	Base Plate Clamp
98	1	04.00152	Clamp
99	1	04.00170	Slide Bearing
100	1	04.00164	Threaded Spindle
101	1	04.00159	Threaded Bush
102	1	04.00178	Bus
103	1	M010.00001	Handwheel DIN950-AL-100-M12-D
104	1	04.00176	Protective Plate
105	1	04.00211	Cover Plate
106	1	G140.00001	Drilling Bush DIN179A-8x10
107	1	04.00241	Lever
108	1	04.00172	Bus
109	1	G140.00002	Drilling Bush DIN179A-8x16
110	1	04.00884	Attack
111	2	04.00879	Ash
112	1	04.00185	Pipe
113	1	04.00885	Anti-Vibration strip
114	2	01210.M6x16	Socket Screw M6x16
115	1	M130.00003	Allen Key
116	1	A050.00046	Easy Grinding Power (Sticker)
117	1	A050.00003	Almi Logo Large
118	2	A050.00039	Netherlands Flag
119	1	A050.00002	ALMI Logo Medium
120	2	A050.00024	Safety Sticker 8 x 8 cm
121	1	A050.00025	Sticker Side Flap 13x5 cm
122	2	07840.M6x10	Bzk.st.schr. M6x10 45H ke.
123	1	04.00919	Switch (sam) 230V 50Hz
124	1	A050.00045	Instruction Sticker AL150HS
125	3	221215	M10 X 35MM SHCS
126	1	04.00169	Degree Plate AL150HS

# 12.1 AL 150-HS EXPLODED VIEWS











# OPTIONAL BACK GAUGE

Scotchmans has Back Gauge available for our ALMI Grinder/Notcher machines. It mounts to the side of the tube clamp and is a real Time-Saver when you have many pieces of tubing that are the same length that need to be notched. Contact your Dealer or call us at 1-605-859-2542.

