

## **OPERATION and MAINTENANCE MANUAL**



## **MG5/MG6/MG56 Gutter Machines**

[www.NewTechMachinery.com](http://www.NewTechMachinery.com)

# **TABLE OF CONTENTS**

	LIST OF FIGURES .....	ii
CHAPTER.....1	SPECIFICATIONS .....	1
CHAPTER.....2	PRECAUTIONS.....	2
CHAPTER.....3	MACHINE ORIENTATION .....	3
CHAPTER.....4	GENERAL MAINTENANCE .....	7
	Recommended Lubricants .....	8
CHAPTER.....5	MACHINE OPERATION SUMMARY .....	9
CHAPTER.....6	ELECTRICAL CONTROLS AND OPERATION .....	10
CHAPTER.....7	MOUNTING MACHINE.....	13
CHAPTER.....8	CRADLES AND REELS .....	15
	Cradles.....	15
	Loading Coil onto the Cradle .....	17
	Turnstile Reel Stand .....	17
	Loading Coil onto the Reel .....	20
CHAPTER.....9	ENTRY GUIDE ASSEMBLY .....	22
	Entry Guide Adjustment.....	22
	Feeding Material.....	29
CHAPTER....10	DRIVE ASSEMBLY .....	31
CHAPTER....11	GUTTER BOX ADJUSTMENTS .....	33
CHAPTER....12	EXIT DRIVE AND FORMING STATION .....	35
CHAPTER....13	BEAD ROLLER ASSEMBLY .....	38
CHAPTER....14	SHEAR ASSEMBLY.....	40
CHAPTER....15	BASIC SETUP DIMENSIONS .....	42
	Machine Specific Dimensions.....	44
CHAPTER....16	COMBO CHANGEOVER PROCEDURE FROM 5" TO 6" .....	53
CHAPTER....17	COMBO CHANGEOVER PROCEDURE FROM 6" TO 5" .....	67
CHAPTER....18	HOOK ASSEMBLY (OPTIONAL) .....	81
	5" Gutter Machine.....	81
	6" Gutter Machine.....	83
	Combo Gutter Machine .....	85
	Adjustment for Hook Assembly.....	87
CHAPTER....19	BOTTOM BEAD ROLLER (OPTIONAL) .....	88
CHAPTER....20	TRANSFER RACK ASSEMBLY (OPTIONAL) .....	90
CHAPTER....21	CE INFORMATION .....	91
CHAPTER....22	TROUBLESHOOTING .....	93
	Common Terms.....	93
	Analyzing the Gutter .....	96
	Head Goes Up and Into the House OR Down and Away From the House....	96
	Face Goes Up and Into the House OR Down and Away From the House....	96
	Drive Rollers Slip.....	97
	Too Much or Too Little Lip .....	97
	Rippling or Indentation .....	97
	Scratches or Other Outside Marks.....	97
CHAPTER....23	WIRING DIAGRAMS .....	98

# LIST OF FIGURES

Figure 1: Machine Overview .....	3
Figure 2: MG5 Machine Layout .....	4
Figure 3: MG6 Machine Layout .....	5
Figure 4: M56 Machine Layout .....	6
Figure 5: Remote and Main Control Panels.....	11
Figure 6: Fuse Holder .....	12
Figure 7: Mounting Hole Layout .....	14
Figure 8: Cradle Assembly (5" Position Shown).....	15
Figure 9: Cradle - 5 Inch Position.....	16
Figure 10: Cradle - 6 Inch Position.....	17
Figure 11: Reel Stand.....	19
Figure 12: Reel Stand Clamp .....	19
Figure 13: Coil Routing .....	20
Figure 14: 5" and 6" Reel Settings .....	21
Figure 15: MG5 Entry Guide Setup.....	25
Figure 16: MG6 Entry Guide Setup.....	26
Figure 17: M56 Entry Guide Setup for 5" .....	27
Figure 18: M56 Entry Guide Setup for 6" .....	28
Figure 19: Feeding Material – 1 <sup>st</sup> Skate Bearing .....	29
Figure 20: Feeding Material - 3rd Skate Bearing .....	30
Figure 21: Top Drive Pressure Adjustment Screws.....	31
Figure 22: Chains and Tensioners.....	32
Figure 23: Gutter Box Assembly .....	34
Figure 24: Exit Drive and Forming Station .....	37
Figure 25: Bead Roller.....	38
Figure 26: Bead Roller.....	39
Figure 27: Shear Alignment.....	41
Figure 28: Basic Setup Dimensions (See table below).....	43
Figure 29: Exit Drive Clearances.....	44
Figure 30: Setup Dimensions.....	45
Figure 31: Setup Dimension – Entry Guide.....	46
Figure 32: Setup Dimension – Face Assembly 1 .....	48
Figure 33: Setup Dimension – Face Assembly 2.....	48
Figure 34: Setup Dimensions – Face Assembly 3 .....	49
Figure 35: Setup Dimensions – Box Assembly 1 .....	50
Figure 36: Setup Dimensions – Box Assembly 2 .....	51
Figure 37: Optional Hook Assembly .....	52
Figure 38: Remove 6" Shear.....	54
Figure 39: Remove Covers .....	54
Figure 40: Shear Pin.....	55
Figure 41: Combo Bead Roller Adjustment .....	56
Figure 42: Back Bell Roller .....	56
Figure 43: Back Guide Rod .....	57
Figure 44: Skate Roller Pin.....	57
Figure 45: Exit Top Roller.....	58
Figure 46: Face Guide Rod.....	60
Figure 47: Face Assembly .....	61

Figure 48: Combo Box Assembly.....	62
Figure 49: Combo Box Assembly Positions.....	63
Figure 50: 5" Roller Bar .....	63
Figure 51: 6" Roller Bar .....	64
Figure 52: Unused Inside Box Roller Stored.....	65
Figure 53: Reel Stand - 6" Position .....	66
Figure 54: Remove 5" Shear.....	68
Figure 55: Remove Covers .....	68
Figure 56: Shear Pin.....	69
Figure 57: Back Bell Roller .....	70
Figure 58: Exit Top Roller .....	71
Figure 59: Combo Bead Roller Adjustment .....	72
Figure 60: Skate Roller Pin.....	73
Figure 61: Back Guide Rod .....	73
Figure 62: Face Guide Rod.....	74
Figure 63: Face Assembly .....	75
Figure 64: 6" Roller Bar .....	76
Figure 65: Combo Box Assembly.....	77
Figure 66: Combo Box Assembly Positions.....	78
Figure 67: 5" Roller Bar .....	78
Figure 68: Unused Inside Box Roller Stored.....	79
Figure 69: Reel Stand - 5" Position .....	80
Figure 70: 5" Hook Assembly .....	81
Figure 71: Bead Roller Assembly - MG5 .....	82
Figure 72: 6" Hook Assembly .....	83
Figure 73: Bead Roller Assembly – MG6 .....	84
Figure 74: Combo Machine Hook Assembly .....	85
Figure 75: Bead Roller Assembly – M56 (Shown in 5" Position) .....	86
Figure 76: Bead Assembly Stored .....	86
Figure 77: Bottom Bead Roller - Engaged .....	88
Figure 78: Bottom Bead Roller - Disengaged.....	88
Figure 79: Bottom Bead Roller Assembly.....	89
Figure 80: Transfer Rack .....	90
Figure 81: 5" Gutter Profile .....	94
Figure 82: 6" Gutter Profile .....	94
Figure 83: Gutter Profile Between Face and Box Roller Assemblies .....	95
Figure 84: Points on Gutter Profile.....	95
Figure 85: MG5110-60/MG6110-60 – 110VAC 60Hz Wiring Diagram.....	99
Figure 86: MG110-50 – 110VAC, 50Hz Wiring Diagram.....	100
Figure 87: MG220-50 – 220VAC, 50Hz Wiring Diagram.....	101
Figure 88: MG230-50CE – 230VAC, 50Hz CE Wiring Diagram.....	102
Figure 89: MG12V – 12VDC Wiring Diagram.....	103
Figure 90: 12VDC Power and Ground Connections .....	104



CHAPTER 1  
**SPECIFICATIONS**

## SPECIFICATIONS

<b>DIMENSIONS:</b>	Length-		
	MG5:	95 1/2"	(2430 mm)
	MG6:	119 1/2"	(3040 mm)
	M56:	119 1/2"	(3040 mm)
	Width at base		
	MG5/MG6/M56:	24"	(610 mm)
	Width Overall		
	MG5/MG6:	27"	(690 mm)
	M56:	31"	(790 mm)
	Height		
	MG5/MG6:	19"	(480 mm)
	M56:	23"	(580 mm)
	Option Height - Cradle		
<b>WEIGHT:</b>	MG5/MG6/M56:	31"	(790 mm)
	Option Height – Reel		
	MG5/MG6/M56:	48"	(1220 mm)
<b>POWER:</b>	MG5 Approx.	1078 lbs.	(490 Kg)
	MG6 Approx.	1240 lbs.	(564 Kg)
	M56 Approx.	1330 lbs.	(605 Kg)
<b>DRIVE:</b>	3/4 HP; 120VAC/60Hz Single phase TEFC. ; 15A		
	3/4 HP; 110 VAC/50 Hz Single phase TEFC. ; 15A		
	3/4 HP; 230 VAC/50 Hz Single phase TEFC. ; 10A		
	1 HP; 12VDC, 80.0A		
<b>DRIVE:</b>	Polyurethane rollers driven via chain and sprocket		
<b>FORMING ROLLERS:</b>	Free Floating, Stainless Steel		
<b>SHEAR:</b>	Forward Pulling Manual Rack and Gear w/ Hardened tool Steel Dies		
<b>SPEED:</b>	Approximately 50 ft/min (15m/min)		
<b>CONTROLS:</b>	Push button entry and exit end manual controls		
<b>MATERIALS FORMED:</b>	Coil Width:		
	MG5:	11 3/4" to 12 3/8"	(300 to 315 mm)
	MG6:	15"	(380 mm)
	Max: Aluminum:	.032"	(0.8mm)
	Steel:	24 gauge	(0.6mm)
	Galvanized Plus:	24 gauge	(0.6mm)
	Ternecoat SS:	26 gauge	(0.5mm)
	Copper:	20 oz. 3/4 hard	(0.7mm)

CHAPTER 2  
**PRECAUTIONS**

## PRECAUTIONS

1. Make sure the operator of the machine has read and understands this manual in its entirety before attempting to operate this equipment.
2. **ALWAYS** keep covers, guards and lids mounted to machine during operation
3. **OBSERVE and OBEY** all safety and warning signs affixed to the machine.
4. **ALWAYS** adhere to and follow all local and national safety codes concerning the loading and un-loading of reeled coils.
5. **USE ONLY** properly rated devices for lifting reeled coils into or out of the reel stand assembly.
6. **DO NOT** wear loose clothing, jewelry etc. that could become entangled in the moving parts of the machine when operating.
7. **STOP THE MACHINE** and disconnect the power before attempting to make any adjustments, perform any maintenance or changeover procedures.
8. **AVOID** storing the machine outdoors for long periods of time. Cover with a tarp but provide good ventilation to prevent condensation and rust.
9. If the temperature of the machine is at 32°F (0°C) or below, set the **JOG/RUN** switch to “**RUN**” and run the machine empty for at least 10 minutes before attempting to run any material through the machine.
10. **DO NOT USE SOLVENTS TO CLEAN DRIVE ROLLERS!**
11. **ALWAYS EMPTY MACHINE OF MATERIAL BEFORE TRANSPORT AND STORAGE.**

CHAPTER 3  
**MACHINE ORIENTATION**

MACHINE ORIENTATION

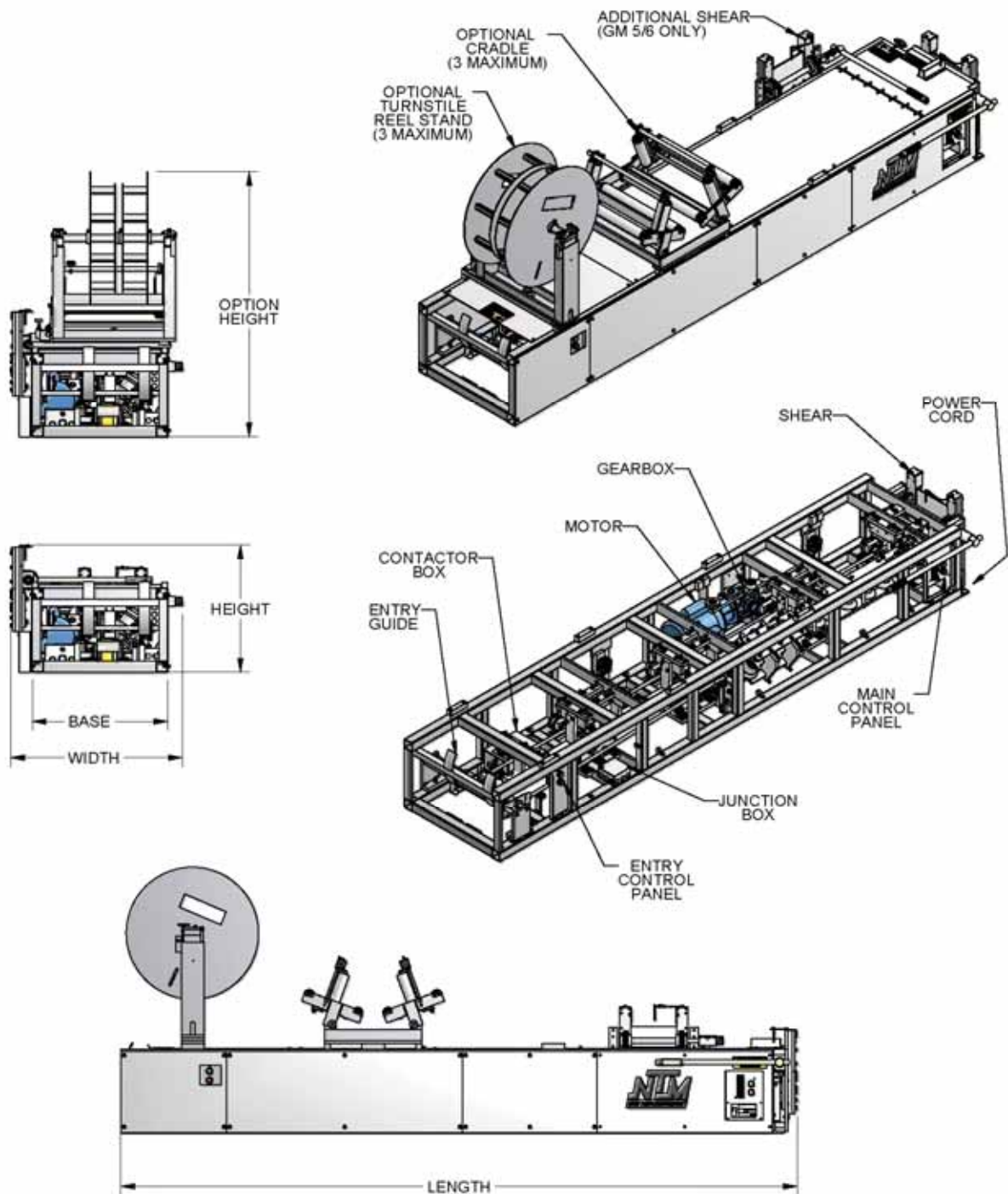


Figure 1: Machine Overview

# CHAPTER 3

## MACHINE ORIENTATION

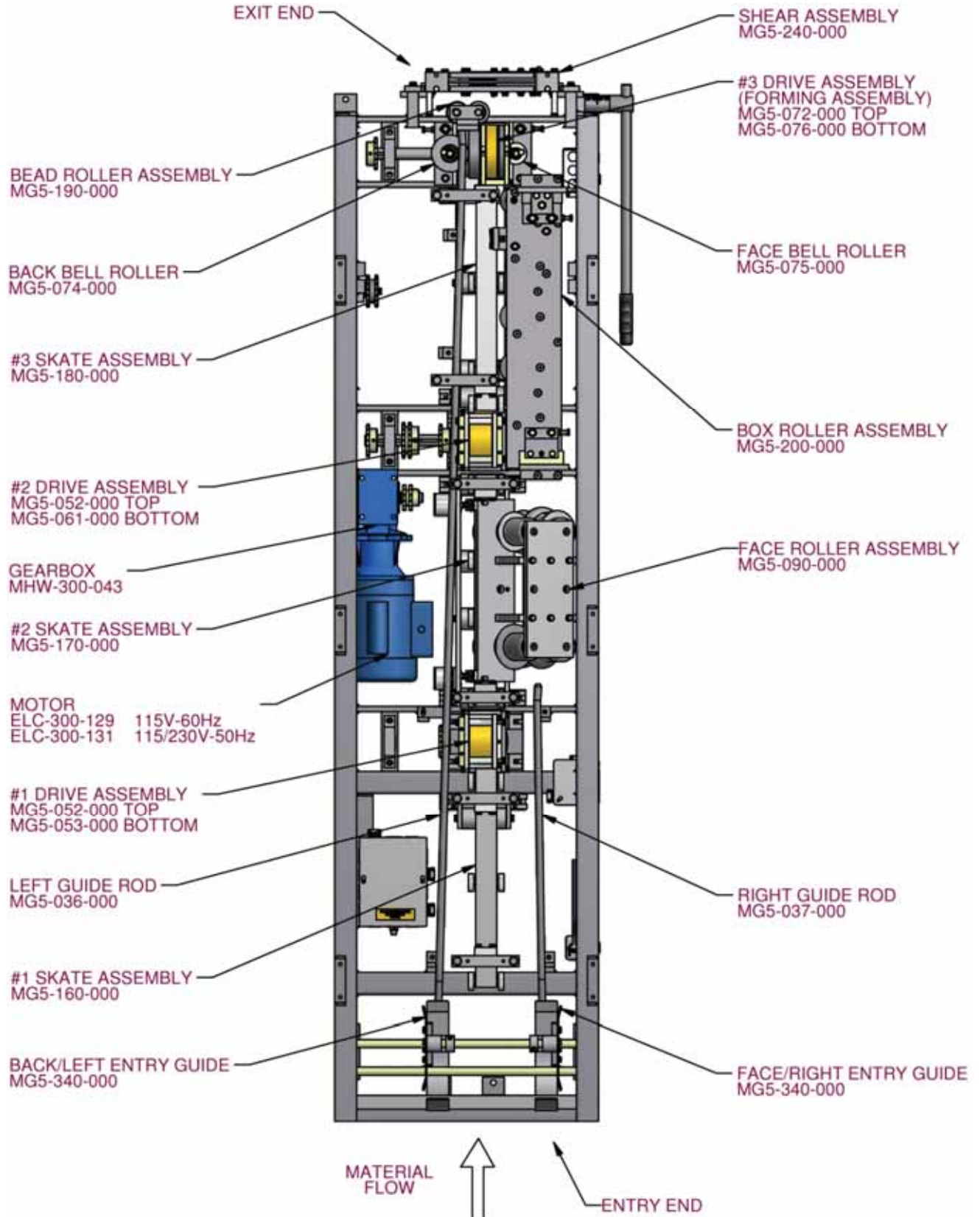


Figure 2: MG5 Machine Layout

# CHAPTER 3

## MACHINE ORIENTATION

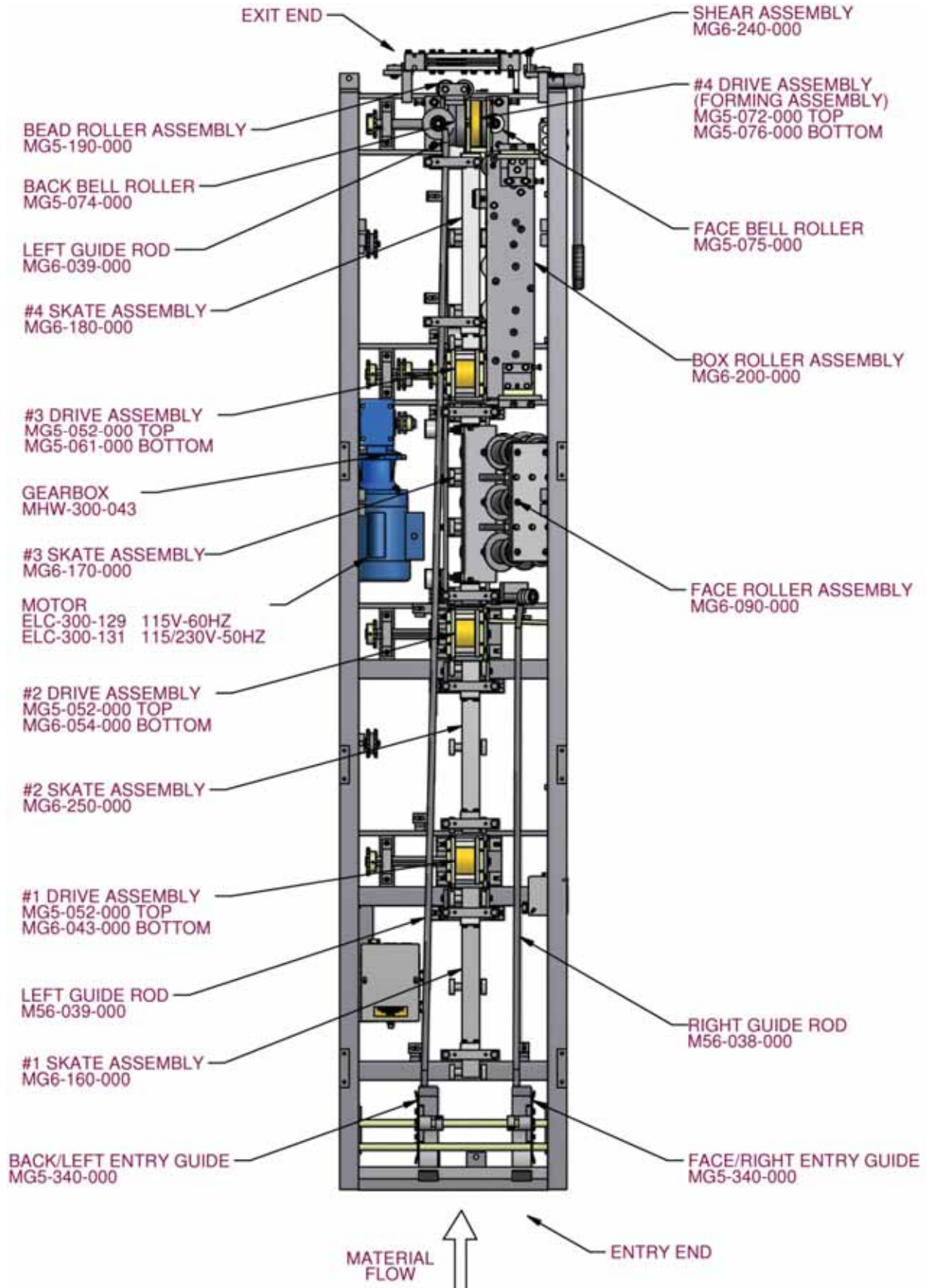


Figure 3: MG6 Machine Layout



# CHAPTER 3

## MACHINE ORIENTATION

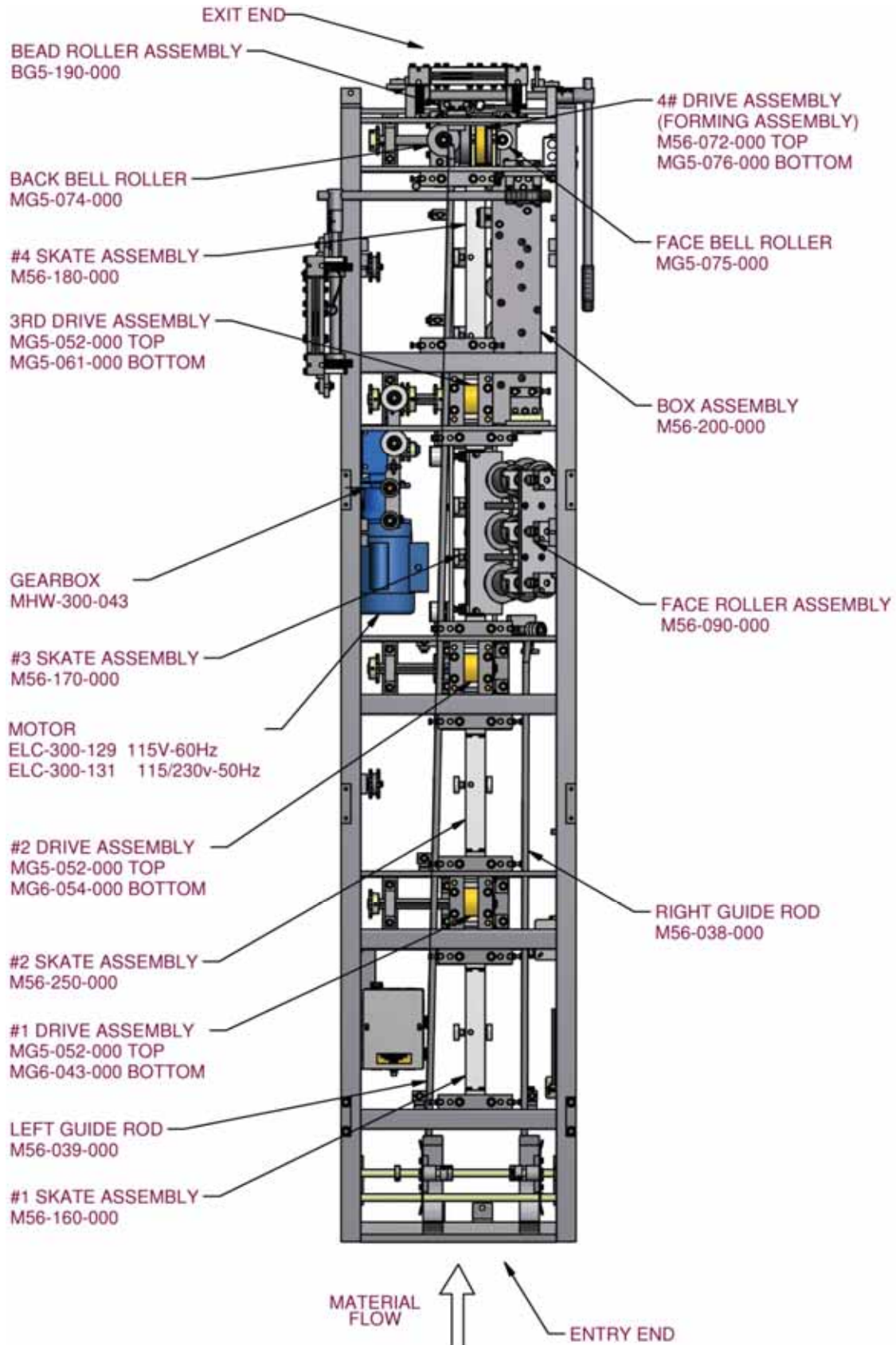


Figure 4: M56 Machine Layout

CHAPTER 4  
**GENERAL MAINTENANCE**

## GENERAL MAINTENANCE

1. Always keep covers on during operation and storage. The covers are for operator safety, but also protect the internal components of the machine from the environment.
2. Avoid storage of the machine outdoors for long periods of time. Cover the machine with a tarp or machine cover (optional) for protection. Provide good ventilation to prevent condensation and rust.
3. Keep the machine clean. This will increase the life of the machine and make maintenance easier. A clean machine will provide a clean product.
4. Before operating the machine, visually inspect for foreign objects debris or anything unusual. If something doesn't seem correct, inspect and remedy prior to operation.
5. Keep chains properly tensioned. This will add to the life of the chains and sprockets. The chains should be just snug. An over-tightened chain is just as bad for the machine as a loose chain.
6. Lubricate the chains a minimum of every 40 hours of operation. It is preferable to use a dry motorcycle chain lube or equivalent.
7. Keep Entry Guide Carriage clean and lubricate as needed with Spray Lube.
8. Keep cradles lubricated with Clear Grease (Figure 11 on page 19).
9. Clean Forming Rollers as needed with a Scotch Brite Pad and a small amount of solvent.
10. Clean Drive Rollers with soap and water or mild solvent free spray cleaner.  
**CAUTION: Do not use harsh chemicals or solvents or damage will occur.**
11. Lubricate both faces of the Shear Blades and Dies a minimum of once daily with Spray Lube. More should be added as needed before the cut edges begin to deteriorate.

CHAPTER 4  
**GENERAL MAINTENANCE**

## Recommended Lubricants

**Spray Lube for:**

**Shear Blades, Dies, Entry Guide, Bead Roller Carriage Shafts.**

Super Lube - Multi-Purpose Synthetic Aerosol Lubricant with Syncolon (PTFE)

Catalog No. 31110

11 oz. Aerosol Can

Available from:

MSC Supply at 1-800-645-7270

**Clear Grease for:**

**Arbor Cradles**

Synthetic Extreme Pressure, High Temperature Grease with Syncolon (PTFE)

Catalog No. 71160

400 gram container

Available from:

MSC Supply at 1-800-645-7270

**Spray Lube for:**

**Chains**

Super Lube - Multi-Purpose Synthetic Dri Film Aerosol Lubricant with Syncolon (PTFE)

Catalog No. 11016

11 oz. Aerosol Can

Available from:

MSC Supply at 1-800-645-7270

## CHAPTER 5

# MACHINE OPERATION SUMMARY

## MACHINE OPERATION SUMMARY

This is a brief summary in the operation of the machine. However, this chapter is not a substitute for the rest of the manual. Read the entire machine operating manual before attempting to operate the machine.

### Order of Procedure to Operate the Machine

- On the control panel near the exit end of the machine, turn the **JOG/RUN** switch to “**JOG**” and the **FORWARD/REVERSE** switch to “**FORWARD**”. Plug in the machine. Select the reel that has the material to be formed into a gutter profile. Loosen the brakes on the reel to be used. Leave some drag on the brake so that the coil will not unravel.
- For 5” gutter make a mark on the leading edge of the coil 5” from the right edge.
- For 6” gutter make a mark on the leading edge of the coil 6” from the right edge.
- Cut a 1” triangle off the 2 leading corners of the coil and feed it into the entry guides so that the mark on the leading edge of the coil lines up with the first Skate Bearing.
- Continue to push the material until it makes contact with the first Drive Roller.
- Press and Release the JOG button on the entry end of the machine to jog the material through the machine until the material is half way through the machine,
- Move to the exit end of the machine and use the JOG button on the main panel to finish jogging material through the machine. Pay close attention as the material enters the shear to prevent the material from crashing into the shear.
- Advance the gutter a few inches and cut off the end of gutter. Check the profile and especially the lip to be sure that the material was fed in straight, when it was guided into the machine. The machine is now ready to operate.
- Turn the **JOG/RUN** switch to “**RUN**”. Using the start and stop buttons at the exit end of the machine, run out about 2ft of gutter. Attach the end of a measuring tape to the end of the gutter and proceed to run out the first length of gutter. Set up run- out stands at approximately every 15ft as required until the acquired length is achieved.
- Stop the machine and cut the gutter with the shear.

**NOTE:** Always keep the shear blade well lubricated during use and when storing machine.

Remove coil material from machine when storing or transporting machine. The drive rollers will perform better if the machine is not stored with material.

In order to minimize material waste when completing a job or when switching colors of coil, precut the last piece of material to be run before it enters the machine.

### **MG6 or M56 Example:**

If the last piece of the day to be run is 25’-0”, run approximately 15’-0” through the machine, leaving 10’-0” to be run. Then cut the material near the entry guide and run the remaining material through the machine. Shear the material at 25’-0” and there will be a minimal length of scrap left in the machine to be removed.

### **MG5 Example:**

If the last piece of the day to be run is 25’-0”, run approximately 17’-0” through the machine, leaving 8’-0” to be run. Then cut the material near the entry guide and run the remaining material through the machine. Shear the material at 25’-0” and there will be a minimal length of scrap left in the machine to be removed.

CHAPTER 6  
**ELECTRICAL CONTROLS AND OPERATION**

## ELECTRICAL CONTROLS AND OPERATION

### 1. POWER CORD REQUIREMENTS

It is very important to follow the power cord requirement prescribed by the motor and electrical control manufacturers to maintain their respective warranties. Make sure the cord being used is marked properly. Do not assume that because an extension cord looks heavy enough that it is the right gauge. **Use of the wrong gauge extension cord will void the warranty on motor and electrical controls.**

### **GENERATOR USE FOR ELECTRIC MOTOR MACHINES**

If a generator will be used to power the machine it must be large enough to handle the amp draw requirements of the motor. A **4500-5000 watt** generator is recommended.

**Use of an improperly sized generator will cause a low voltage situation of the electric motor and controls which will void the warranty.**

The minimum extension cord wire size for the  $\frac{3}{4}$  or 1HP motor is as follows:

Up to 25 ft.	12AWG (4 mm <sup>2</sup> )
25 ft. to 100 ft	10AWG (6 mm <sup>2</sup> )

### 2. CONTROL PANEL OPERATION

(Figure 5)

The Main Control Panel is located at the exit end of the machine, on the right side. The Entry Control Panel is located at the entry end of the machine, on the right side.

#### A. FORWARD-REVERSE Switch

This selector switch controls the direction of movement of the material through the machine. Select forward to feed material and run gutter through the machine.

**NOTE: For operator safety, the machine will not run continuously in reverse.**

#### B. JOG-RUN Switch

This selector switch allows the machine to run continuously, or jog material through the machine. Select JOG to load coil into machine and to move material through the machine in small increments until it clears the shear. Select run after material has cleared the shear and the machine is ready to run gutter.

#### C. START FEED (Green button)

This button is used to activate the drive system of the machine.

#### D. STOP FEED (Red button)

Pressing either the entry or exit button will stop the drive system of the machine.



CHAPTER 6  
**ELECTRICAL CONTROLS AND OPERATION**



**Figure 5: Remote and Main Control Panels**

**3. POWER INTERRUPTION SAFETY WIRING**

When electrical power is interrupted to the machine, such as an unplugged extension cord, or tripped circuit breaker, it will not restart by simply restoring power to it. For safety, the operator must push the Start Feed pushbutton at either end of the machine to restart the forming process.

**4. DUPLEX RECEPTACLE**

120V~ 60 Hz machines are equipped with a standard 120V duplex outlet. All other models do not come equipped with an electrical outlet.

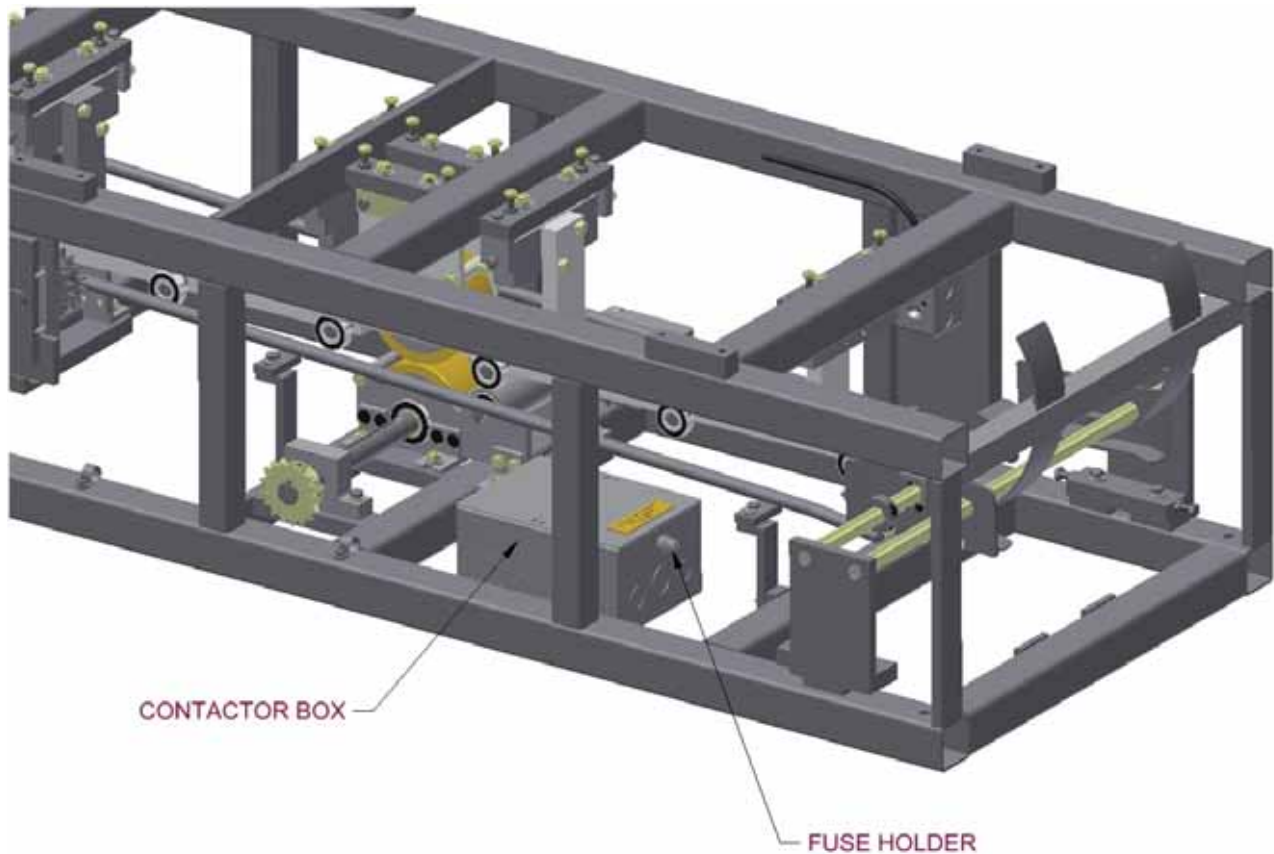
**5. FUSE**

(Figure 6)

The electrical logic circuit of this machine is protected by a 10A time delay fuse (Bussman type MDA or equivalent). The fuse holder is located in the entry end of the contactor box.

For CE marked units the fuse is located in an in-line fuse holder located inside the contactor box.

CHAPTER 6  
**ELECTRICAL CONTROLS AND OPERATION**



**Figure 6: Fuse Holder**

## CHAPTER 7

# **MOUNTING MACHINE**

## MOUNTING MACHINE

(Figure 7)

Before mounting the machine, inspect the platform on which the machine is to be mounted. Take into account the total weight of the machine with a full load of coil(s) on top. The platform should be solid and not corroded. Any repair to the platform should be made before mounting the machine. There are four (4) mounting brackets to secure the gutter machine to the platform. Do NOT add additional brackets to tie the machine down. Additional mounting bracket could result in a twisted frame.

Care must be taken when moving the machine from the shipping skid and installing the machine onto its final platform.

To secure the machine to the platform use 3/8" grade (8) bolts with lock and flat washers and nuts. Use a backing plate under the platform at each bolt to distribute the pressure over a larger area to prevent the bolt from pulling out of the platform. It is recommended that a minimum 4" x 4" x 1/8" thick galvanized steel plate can be used as a backing plate.

When lifting and moving the machine use proper equipment and safe techniques.

CHAPTER 7  
**MOUNTING MACHINE**

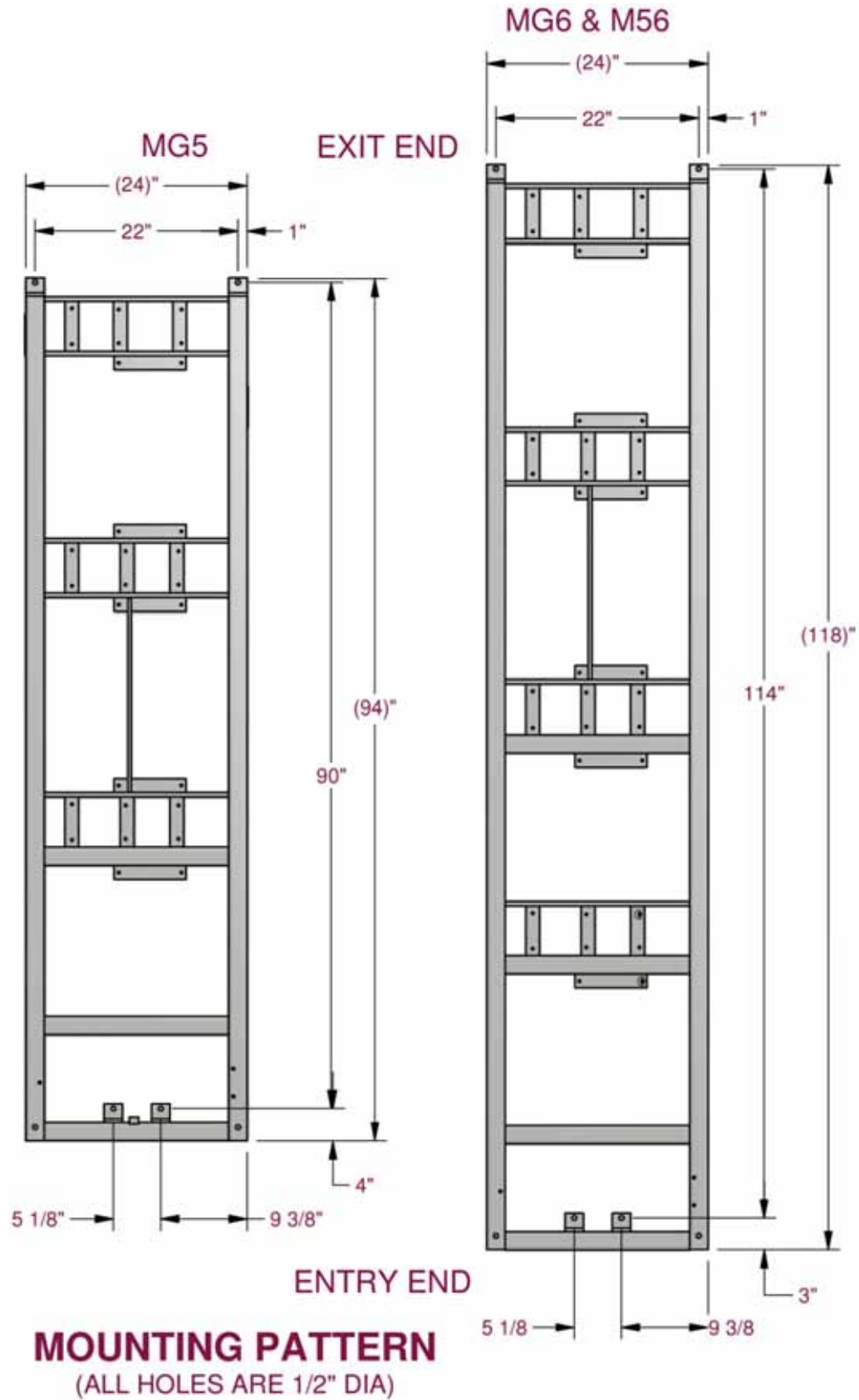


Figure 7: Mounting Hole Layout

## CHAPTER 8

# CRADLES AND REELS

## CRADLES AND REELS

The machine can be equipped with optional cradles or reels or a combination of both style decoilers.

### Cradles

(Figure 8)

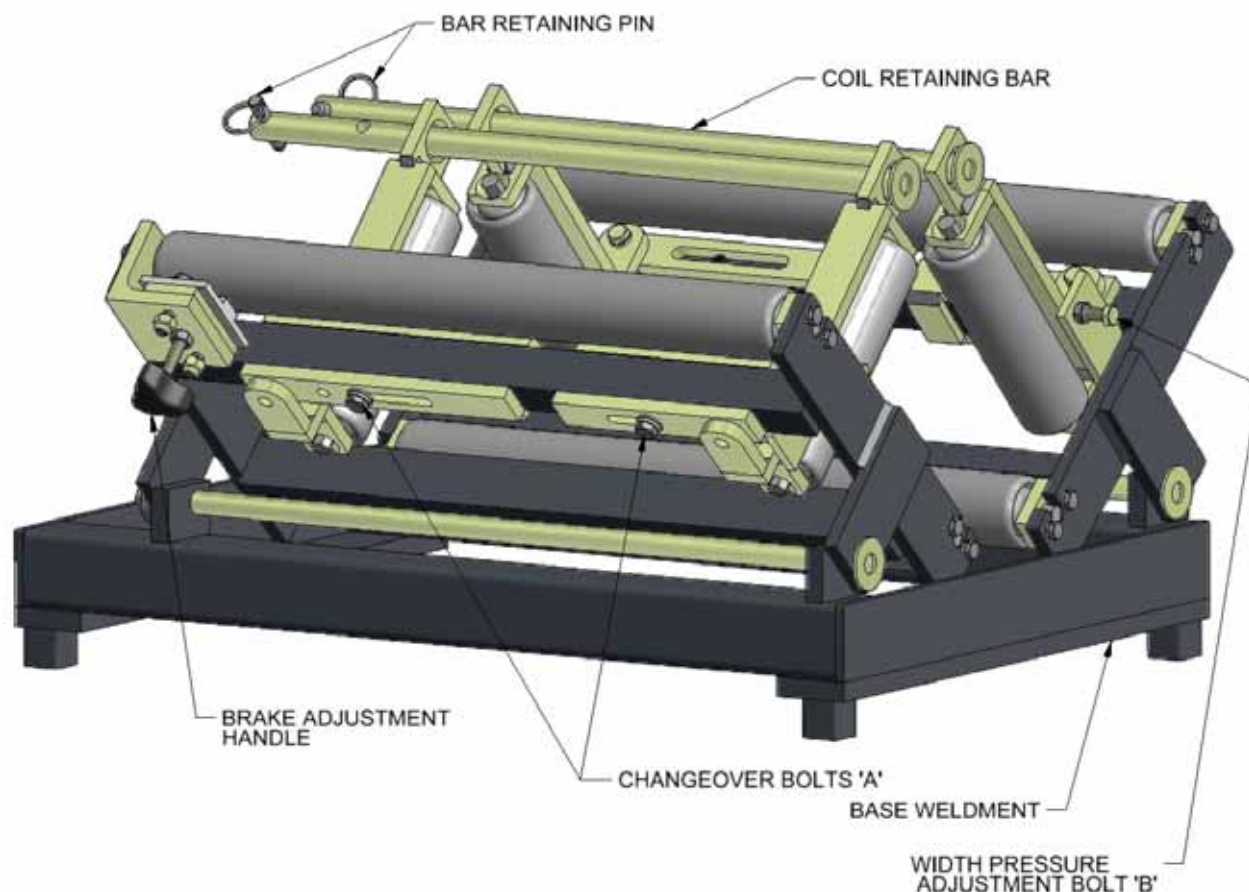


Figure 8: Cradle Assembly (5" Position Shown)

#### 1. BRAKE:

The cradles are equipped with a braking mechanism under one of the conveyor rollers. The brake is used to keep the coil from turning during transporting of the machine, as well as, control the amount of drag on the reel and coil while the machine is in operation. It is very important that the brake adjustment is loose enough so that the loaded reel can be turned by hand, with just enough resistance to keep the coil from unwinding when the machine stops running.

**CAUTION:** Undo strain will be put on the electric motor and drive system if the BRAKE is not properly adjusted.

#### 2. SECURING THE COIL TO THE CRADLE:

Be sure that the coil retaining bar(s) are inserted through the holes on the cradle ends and through the middle of the coil. To keep the retaining bars from falling out from vibration, ensure that the retaining pins are inserted in the holes on the retaining bar.



## CHAPTER 8

# **CRADLES AND REELS**

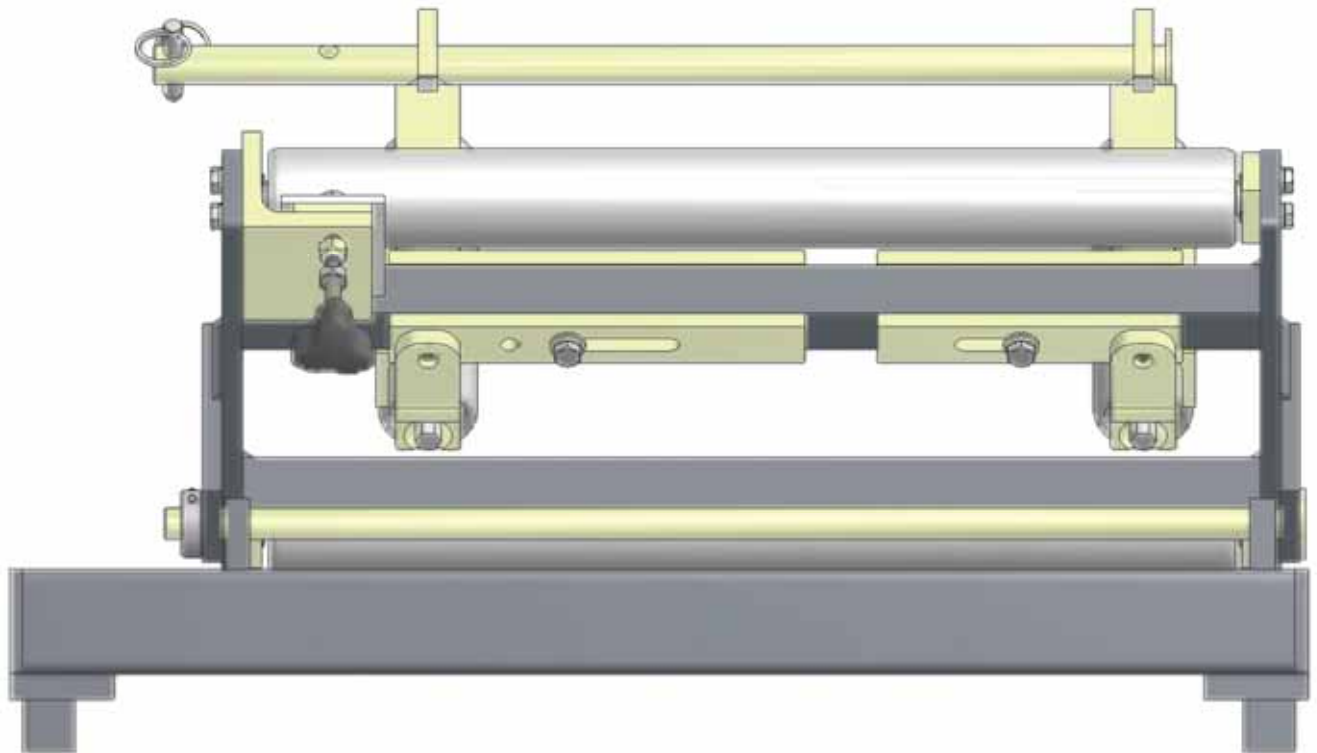
### **3. CRADLE POSITIONS**

(Figure 9 and Figure 10)

The cradles can be setup in different positions depending on the gutter configuration that is to be ran through the machine.

To change the cradle position:

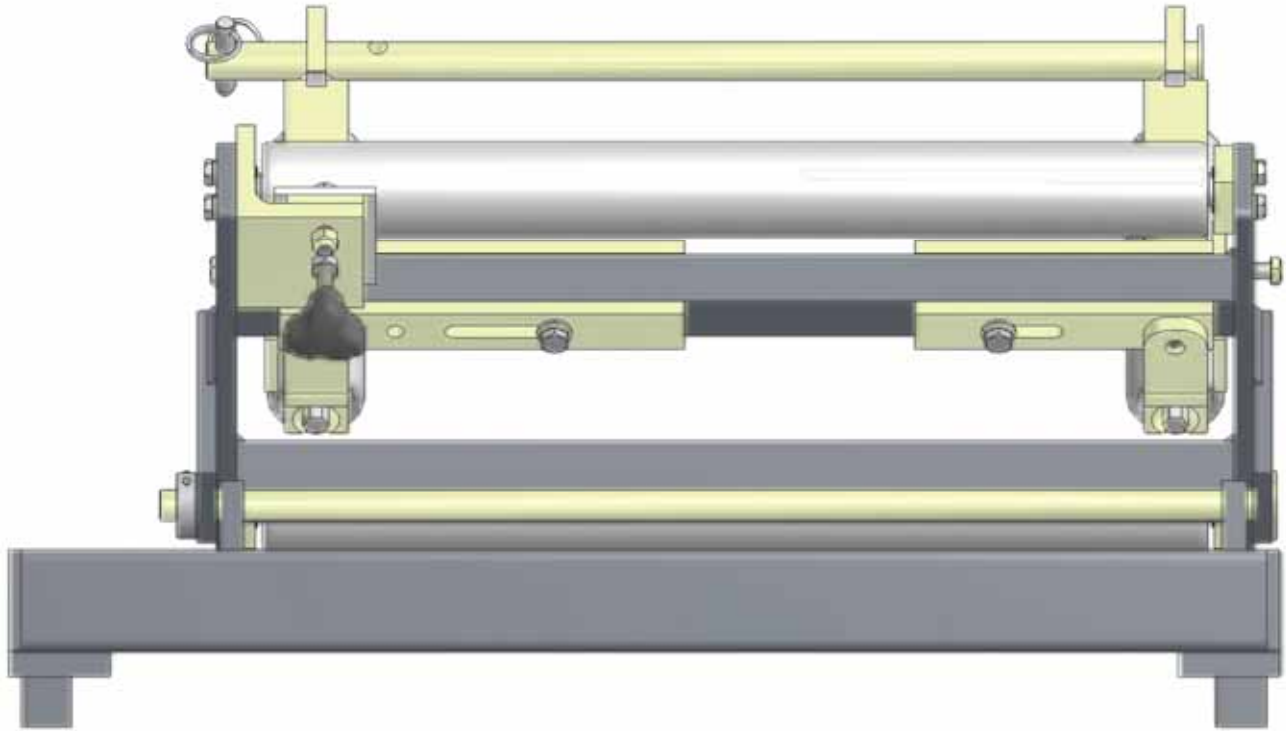
1. Loosen (2) changeover bolts “A” on each slider.
2. Move the sliders in and out as needed to the end of the slots.
3. Tighten all the changeover bolts.
4. Adjust the width pressure bolts “B” as needed to keep the material coiled neatly.



**Figure 9: Cradle - 5 Inch Position**

## CHAPTER 8

# CRADLES AND REELS



**Figure 10: Cradle - 6 Inch Position**

### Loading Coil onto the Cradle

To load coil into the cradle:

1. Remove retaining bar pins and retaining bars from cradle.
2. Lower material into cradle.
3. Replace retaining bars and retaining bar pins.
4. Ensure brake is adjusted properly.

### Turnstile Reel Stand

(Figure 11 and Figure 12)

#### **1. REEL LOCK / BRAKE:**

There is a **REEL LOCK / BRAKE mechanism** on both sides of each reel upright. These mechanisms serve three basic functions. First they are used to secure the reel assembly and coil up on the rack. Second they serve to act as a brake to keep the coil from turning during transporting of the machine. The third function is to control the amount of drag on the reel and coil while the machine is in operation.

#### **2. SECURING THE REEL AND COIL:**

To secure the reel and coil on the rack the reel lock/brake handles must be threaded into the cradle base see Figure 11. Turn and engage the threads on the knobs until the reel lock/ bar secures the shaft down into the cradle base.

To remove the reels from the machine, first turn the knobs counter clockwise until they are disengaged from the cradle base. Rotate the **REEL LOCK / BRAKE** bars out of the way so that the reels can be removed from the reel stands.

## CHAPTER 8

# **CRADLES AND REELS**

### **3. USING THE BRAKE FOR TRANSPORTING**

To use the **REEL LOCK / BRAKE** assembly as a lock to stop the coil from unwinding during transportation, tighten the **REEL LOCK / BRAKE** bars tightly over the reel shafts, to prevent the reel coil from turning.

**CAUTION: Do NOT transport the machine without having the reel locking device on the reel rack properly secured.**

### **4. USING THE BRAKE DURING MACHINE OPERATION**

Before operating the machine, it is very important that the **REEL LOCK / BRAKE** assembly be loose enough so that the loaded reel can be turned by hand, with just enough resistance to keep the coil from unwinding when the machine stops running.

**CAUTION: Undo strain will be put on the electric motor and drive system if the REEL LOCK / BRAKE is not properly adjusted.**

### **5. TURNSTILE OPERATION**

(Figure 12)

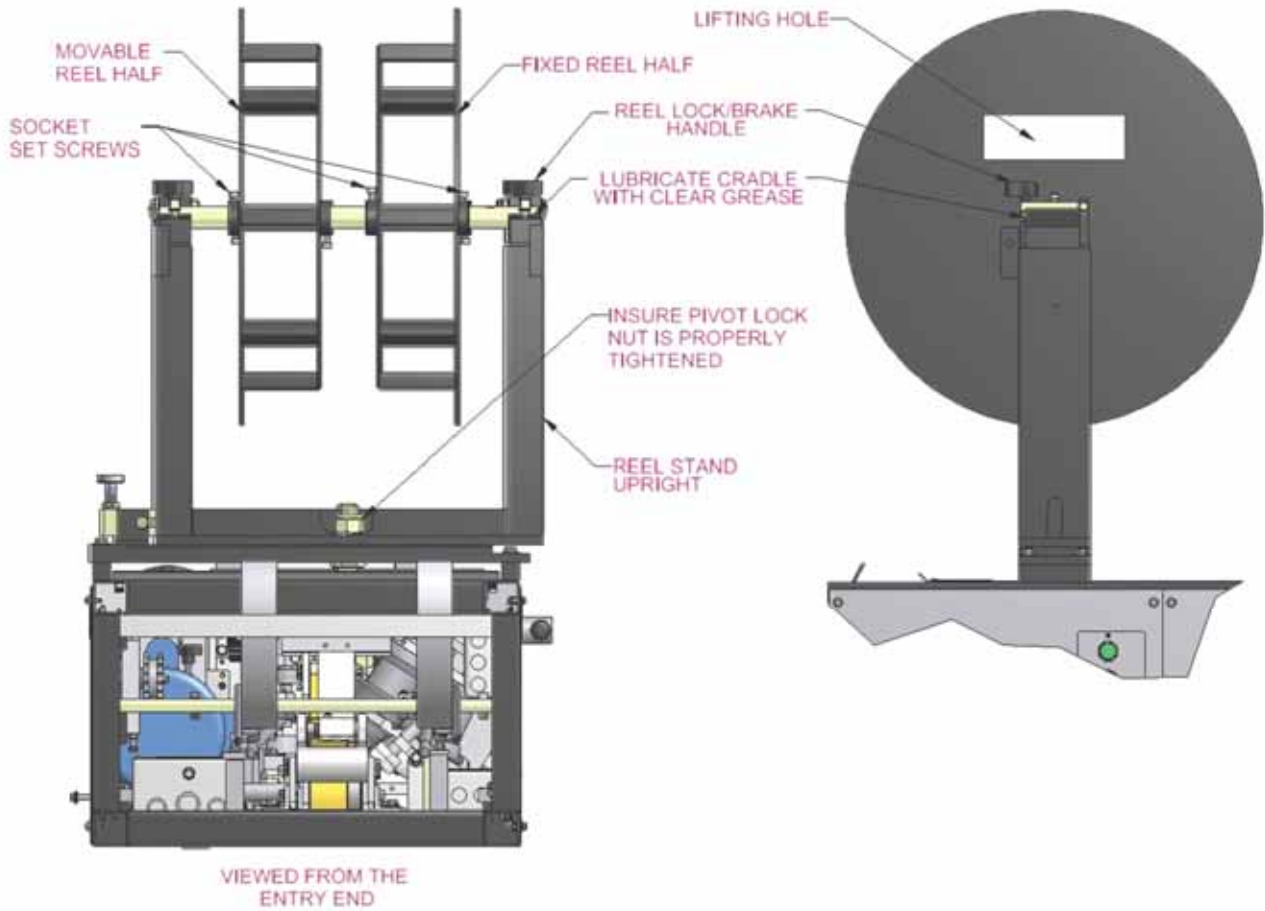
The reel stands on the machine will turn 360 degrees to allow running two sided coils and also aid in the loading of the coils. To rotate reel stand:

1. Loosen the wing nut and turn the hand knob counterclockwise to loosen the clamp bar.
2. Pull back on the hand knob to move the clamp bar out from inside and clear the reel stand upright.
3. Turn the reel stand 180 degrees and push the clamp bar back into the opening located on the reel stand upright.
4. Turn the hand knob clockwise until the clamp bar is tight.
5. Tighten the wing nut down against the clamp bar to secure the assembly.

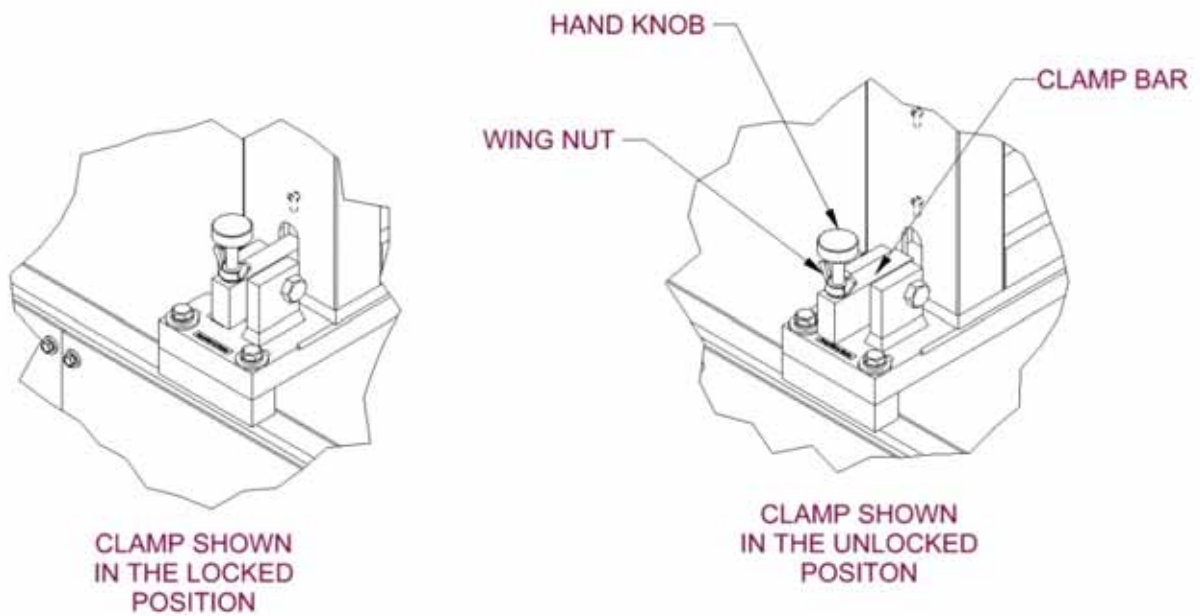
**CAUTION: Make sure the clamp bar is completely engaged in the turnstile reel stand base before operation or transportation begins.**

## CHAPTER 8

# CRADLES AND REELS



**Figure 11: Reel Stand**



**Figure 12: Reel Stand Clamp**

## CHAPTER 8

# CRADLES AND REELS

### Loading Coil onto the Reel

#### 1. LOADING AND UNLOADING REELS FROM THE TURNSTILE REEL STAND:

Understand the procedure of loading and unloading coil properly before attempting to load the reel. Be sure to keep area clear around the machine while loading or unloading the coil. Improper loading can result in machine damage and/or bodily injury.

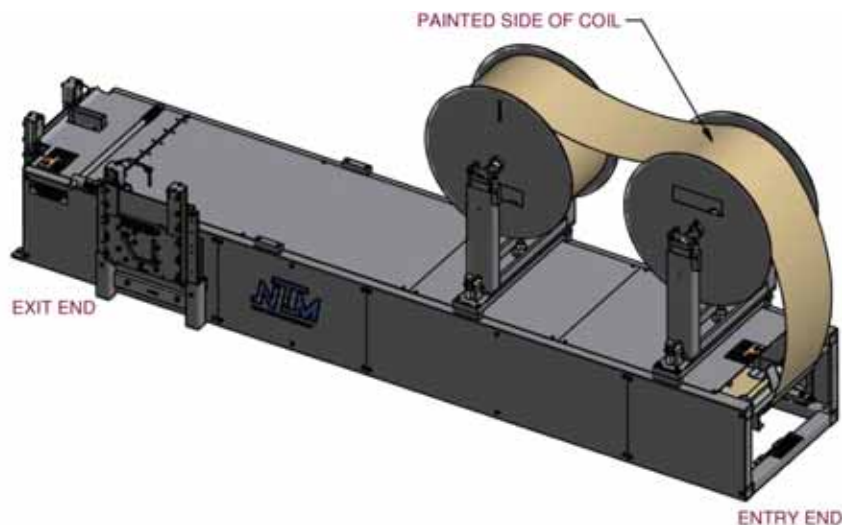
1. Before lifting the reel onto or off the turnstile reel stand, check to insure that the **LOCKING DEVICE** on the turnstile reel stand is securely in place and that the REEL LOCK BRAKES are in the open position to clear the reel shaft.
2. Rotate the reels so that the reel lifting holes are at the top of the reel.
3. Place an approved lifting device in the reel lifting holes.
4. Secure the lifting device onto the reel.
5. Lift the reel, slowly and safely and move the reel to its new destination. Set the reel down and block the reel before removing the lifting device.

**CAUTION: Do NOT attempt to load or unload coil with the reel rack unsecured. The LOCKING DEVICE on the reel rack must be securely in place before loading or unloading the coil.**

#### 2. LOADING COIL ONTO THE REELS:

The reel assembly is made up of two reel halves. One reel half is removable and the other reel half is fixed in position on the shaft by seating a socket set screw down into a shaft divot. See Figure 14 through Figure 53 for configurations on 5", 6" or 5"/6" combo gutter reel assemblies.

1. To load the reel assembly, locate the reel half that does **NOT** have the shaft **divots**.
2. Remove this reel half from the shaft and load the coil onto the remaining reel half with the shaft attached.  
**NOTE:** Do **NOT** move the fixed reel half. The fixed reel half locates the position of the material in line with the Face/Right Entry Guide of the machine.
3. The combo reel uses both the 5" and 6" divot located on the shaft. The inner most divot is for the 5" gutter position and the outer most position is for the 6" gutter position.
4. Slide the removable reel half back onto the shaft, so that it captures the coil between the two sides.
5. Lock the removable reel half into position with the socket head cap screw.

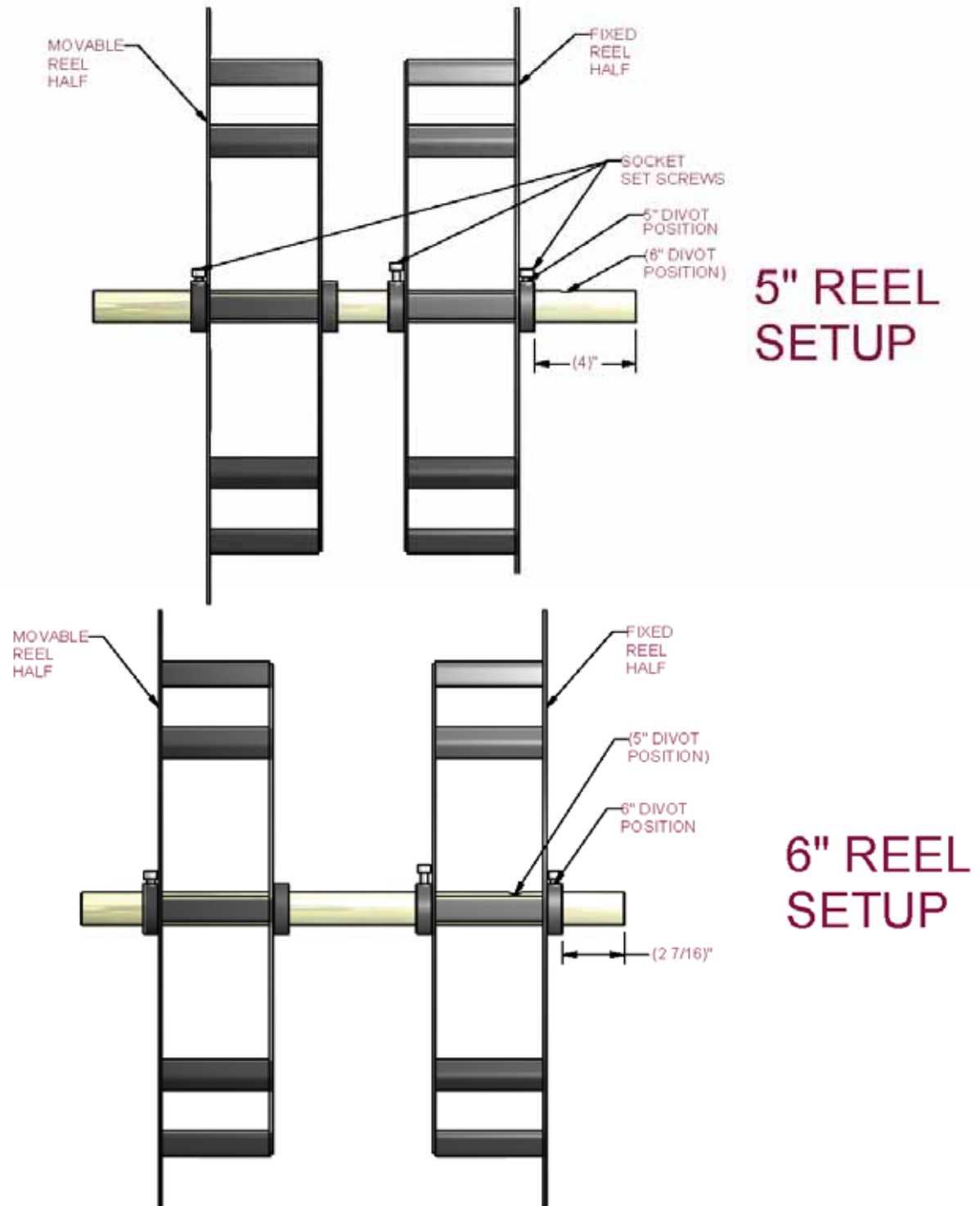


**Figure 13: Coil Routing**



CHAPTER 8  
**CRADLES AND REELS**

**MAXIMUM LOAD CAPACITY:** 1000 lbs. for each reel.



**Figure 14: 5" and 6" Reel Settings**

## CHAPTER 9

# ENTRY GUIDE ASSEMBLY

## ENTRY GUIDE ASSEMBLY

### Entry Guide Adjustment

(Figure 15 - Figure 20)

The Face/Right Entry Guide controls the amount of material that is fed into the face roller, and box assembly. It should be moved only to increase, or decrease the amount of lip turned under.

If an adjustment is made on the Face/Right Entry Guide, an adjustment must be made on the to the auxiliary guide posts on the 1<sup>st</sup> skate assembly as well as the Back/Left Entry Guide, using coil as a guide. There should be no visible play between the entry guides and the coil. The guide should also not be so tight as to cause the gutter material to bind in the entry guide assembly.

#### **1. ADJUSTMENT FOR THE MG5 or MG6 ENTRY GUIDE**

1. Before moving the face/right entry guide, measure the distance between the face/right entry guide and the entry guide support shown as 2 7/8" in Figure 15 for the MG5 and 1 3/4" in Figure 16 for the MG6. This will give a reference point from which to start and a point to return to if the guide is moved in the wrong direction.
2. To move the guides, first loosen Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
3. To **increase** the amount of lip turned under, move the Face/Right Entry Guide toward the right side (face side) of the machine. To **decrease** the amount of lip turned under, move the Face/Right Entry Guide toward the left side (back side) of the machine.
4. Tighten Screw "A" on the Face/Right Entry Guide.
5. Using the coil as a gauge, engage the coil between the entry guide flanges and adjust the Back/Left Entry Guide. There should be no visible play between the entry guides and coil. The guide should not be so tight to cause the gutter material to bind in the entry guide assembly.
6. Tighten Screw "B" on the Back/Left Entry Guide.
7. Feed a short test piece of coil or the end of the coil that will be used into the entry guides. Make a mark on the leading edge of the material next to the first skate bearing as shown in Figure 19. Continue to feed the material past the Auxiliary Guide Posts. If necessary, loosen Screws "D" and/or "E" and move the guide posts towards the outside of the machine in order to make space for the material.
8. Align the mark on the leading edge of the material to the third skate bearing as shown in Figure 20.
9. Adjust the Auxiliary Guide Posts so that they slightly touch the edge of the material and tighten Screws "D" and/or "E".

#### **2. ADJUSTMENT FOR THE M56 COMBO ENTRY GUIDE**

The entry guide for the M56 COMBO includes factory set stop collars which allow the entry guide to be quickly repositioned between the 5" mode and the 6" mode. There are also factory set stops for the auxiliary guide posts. Changing the entry guides from 5" to 6" position or 6" to 5" position:

1. Loosen Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
2. Slide the Face/Right Entry Guide and the Back/Left Entry Guide either inboard for the 5" position or outboard for the 6" position until both entry guides are in contact with the clamp collars.

## CHAPTER 9

### **ENTRY GUIDE ASSEMBLY**

3. Tighten Screw “A” on the Face/Right Entry Guide and Screw “B” on the Back/Left Entry Guide.
4. Loosen Screws “D” and “E” on the right and left auxiliary guide posts.
5. Slide the guide posts inboard for the 5” position or outboard for the 6” position until both guide posts are in contact with the stops in the slot.
6. Tighten Screws “D” and “E” on the right and left auxiliary guide posts.

#### **3. ADJUSTING THE STOP COLLARS ON THE M56 COMBO ENTRY GUIDE**

The stop collars should not be moved unless the lip needs to be increased or decreased. Before moving the stop collars, measure the distance between the face/right entry guide and the entry guide support as shown as 2 7/8” for the 5” position in Figure 15 and Figure 17, as well as, 1 3/4” for the 6” position in Figure 16 and Figure 18. This will give a reference point from which to start and a point to return to if the guide is moved in the wrong direction.

#### **Increase the Amount of Lip Turned Under (5” Position)**

1. Loosen Lock Collars #2 & #3 and Screw “A” on the Face/Right Entry Guide and Screw “B” on the Back/Left Entry Guide.
2. Move the Face/Right Entry Guide toward the right side (face side) of the machine.
3. Tighten Screw “A” on the Face/Right Entry Guide.
4. Slide Lock Collar #3 against the Face/Right Entry Guide and tighten Lock Collar #3.
5. Using the coil as a gauge, engage the coil between the entry guide flanges and adjust the Back/Left Entry Guide. There should be no visible play between the entry guides and coil. The guide should also not be so tight to cause the gutter material to bind in the entry guide assembly.
6. Tighten Screw “B” on the Back/Left Entry Guide.
7. Slide Lock Collar #2 against the Back/Left Entry Guide and tighten Lock Collar #2.
8. Loosen the bolts on the 5” Post Stops and move them inboard as far as they will go.
9. See steps 7-9 on page 22 to adjust the Auxiliary Guide Posts.
10. Reposition the 5” Post Stops so they are touching the guide posts and tighten the bolts.

#### **Increase the Amount of Lip Turned Under (6” Position)**

1. Loosen Lock Collars #1 & 4 and Screw “A” on the Face/Right Entry Guide and Screw “B” on the Back/Left Entry Guide.
2. Move the Face/Right Entry Guide toward the right side (face side) of the machine.
3. Tighten Screw “A” on the Face/Right Entry Guide.
4. Slide Lock Collar #4 against the Face/Right Entry Guide and tighten Lock Collar #4.
5. Using the coil as a gauge, engage the coil between the entry guide flanges and adjust the Back/Left Entry Guide. There should be no visible play between the entry guides and coil. The guide should also not be so tight to cause the gutter material to bind in the entry guide assembly.
6. Tighten Screw “B” on the Back/Left Entry Guide.
7. Slide Lock Collar #1 against the Back/Left Entry Guide and tighten Lock Collar #1.
8. Loosen the bolts on the 6” Post Stops and move them outboard as far as they will go.
9. See steps 7-9 on page 22 to adjust the auxiliary guide posts.
10. Reposition the 6” Post Stops so they are touching the guide posts and tighten the bolts.

CHAPTER 9  
**ENTRY GUIDE ASSEMBLY**

**Decrease the Amount of Lip Turned Under (5" Position)**

1. Loosen Lock Collars #2 & 3 and Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
2. Move the Face/Right Entry Guide toward the left side (back side) of the machine.
3. Tighten Screw "A" on the Face/Right Entry Guide.
4. Slide Lock Collar #3 against the Face/Right Entry Guide and tighten Lock Collar #3.
5. Using the coil as a gauge, engage the coil between the entry guide flanges and adjust the Back/Left Entry Guide. There should be no visible play between the entry guides and coil. The guide should also not be so tight to cause the gutter material to bind in the entry guide assembly.
6. Tighten Screw "B" on the Back/Left Entry Guide.
7. Slide Lock Collar #2 against the Back/Left Entry Guide and tighten Lock Collar #2.
8. Loosen the bolts on the 5" Post Stops and move them inboard as far as they will go.
9. See steps 7-9 on page 22 to adjust the auxiliary guide posts.
10. Reposition the 5" Post Stops so they are touching the guide posts and tighten the bolts.

**Decrease the Amount of Lip Turned Under (6" Position)**

1. Loosen Lock Collars #1 & 4 and Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
2. Move the Face/Right Entry Guide toward the left side (back side) of the machine.
3. Tighten Screw "A" on the Face/Right Entry Guide.
4. Slide Lock Collar #4 against the Face/Right Entry Guide and tighten Lock Collar #4.
5. Using the coil as a gauge, engage the coil between the entry guide flanges and adjust the Back/Left Entry Guide. There should be no visible play between the entry guides and coil. The guide should also not be so tight to cause the gutter material to bind in the entry guide assembly.
6. Tighten Screw "B" on the Back/Left Entry Guide.
7. Slide Lock Collar #1 against the Back/Left Entry Guide and tighten Lock Collar #1.
8. Loosen the bolts on the 6" Post Stops and move them outboard as far as they will go.
9. See steps 7-9 on page 22 to adjust the auxiliary guide posts.
10. Reposition the 6" Post Stops so they are touching the guide posts and tighten the bolts.

CHAPTER 9  
**ENTRY GUIDE ASSEMBLY**

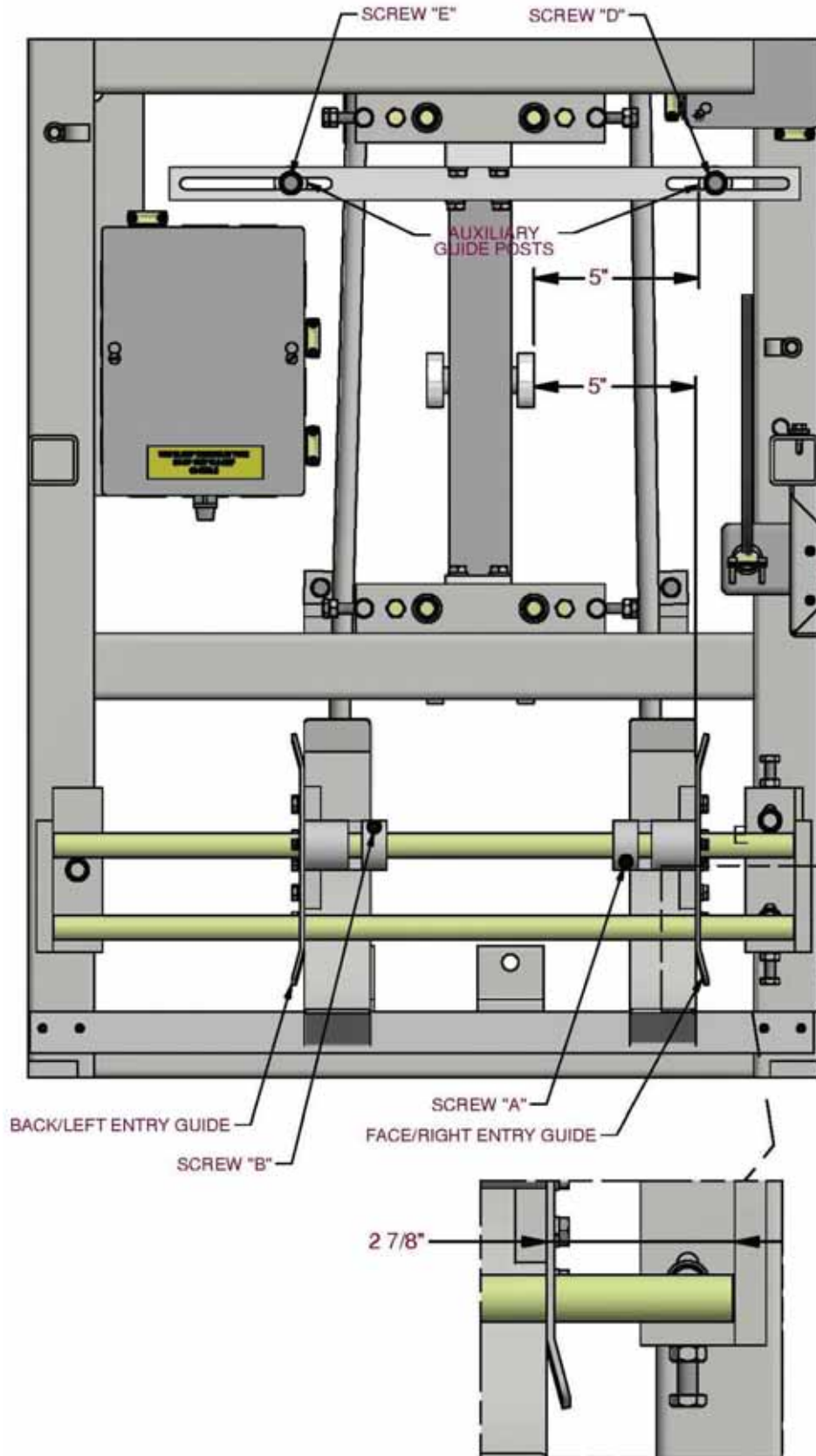
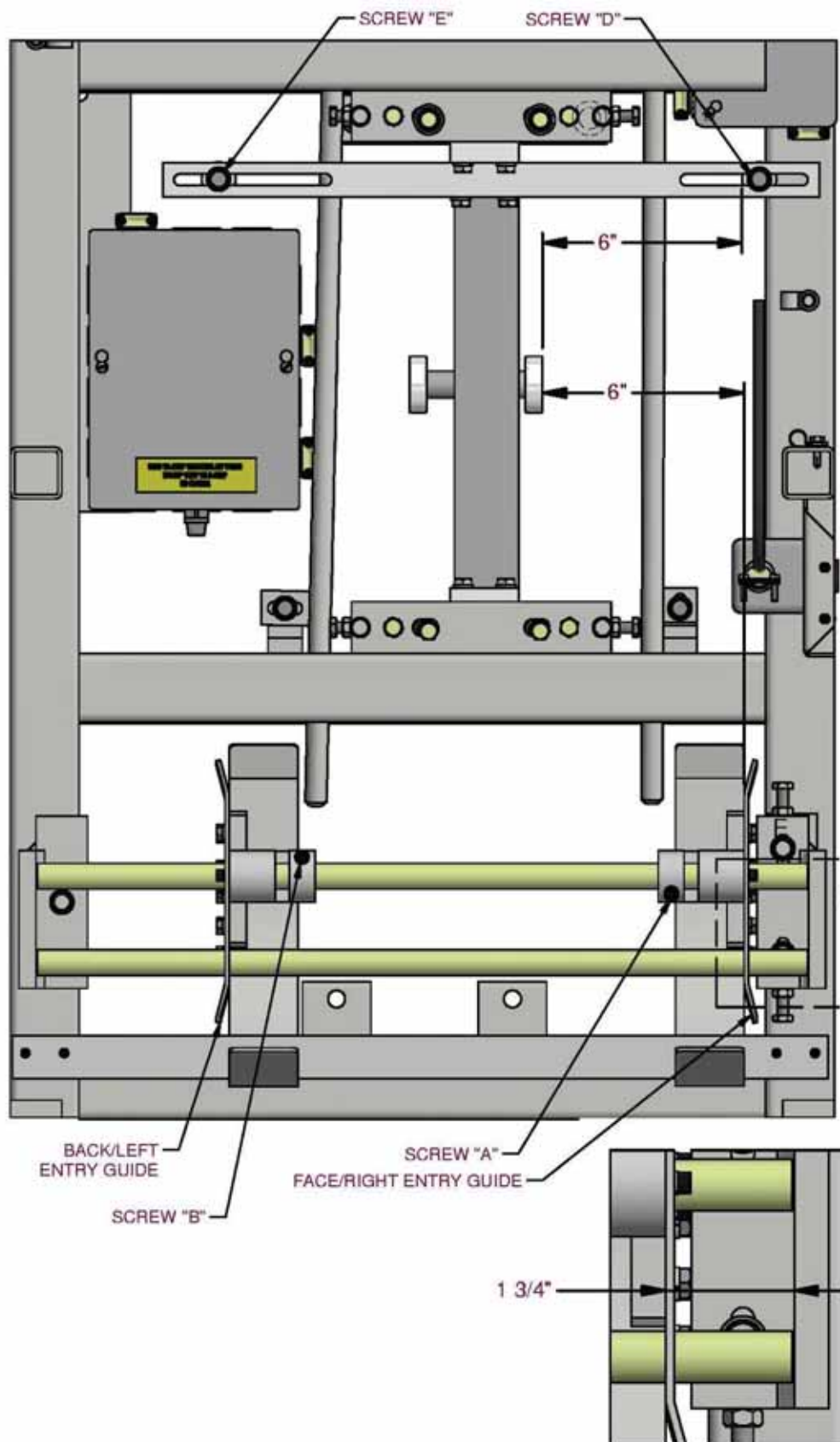


Figure 15: MG5 Entry Guide Setup

CHAPTER 9  
**ENTRY GUIDE ASSEMBLY**



**Figure 16: MG6 Entry Guide Setup**



# CHAPTER 9

## ENTRY GUIDE ASSEMBLY

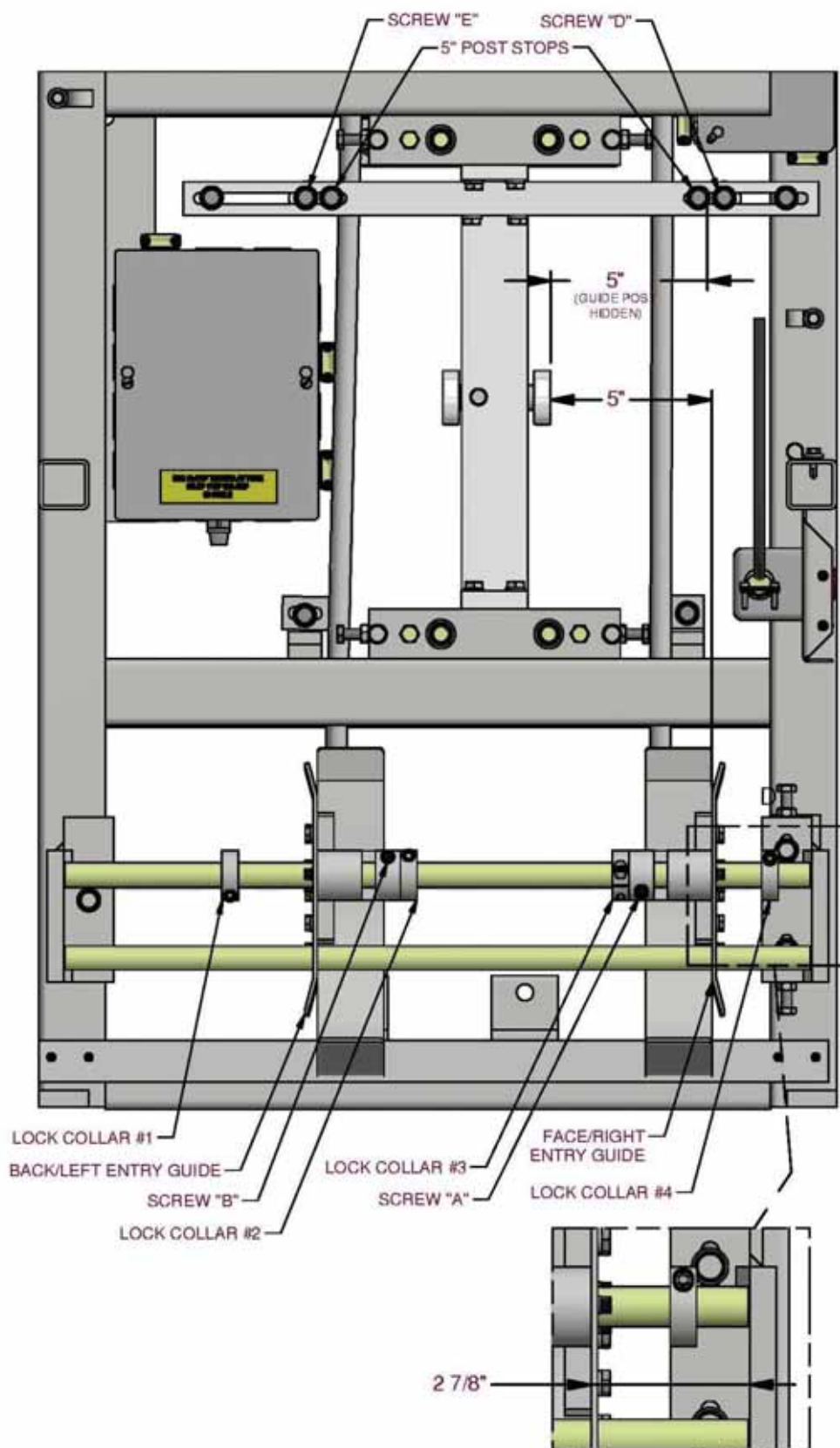
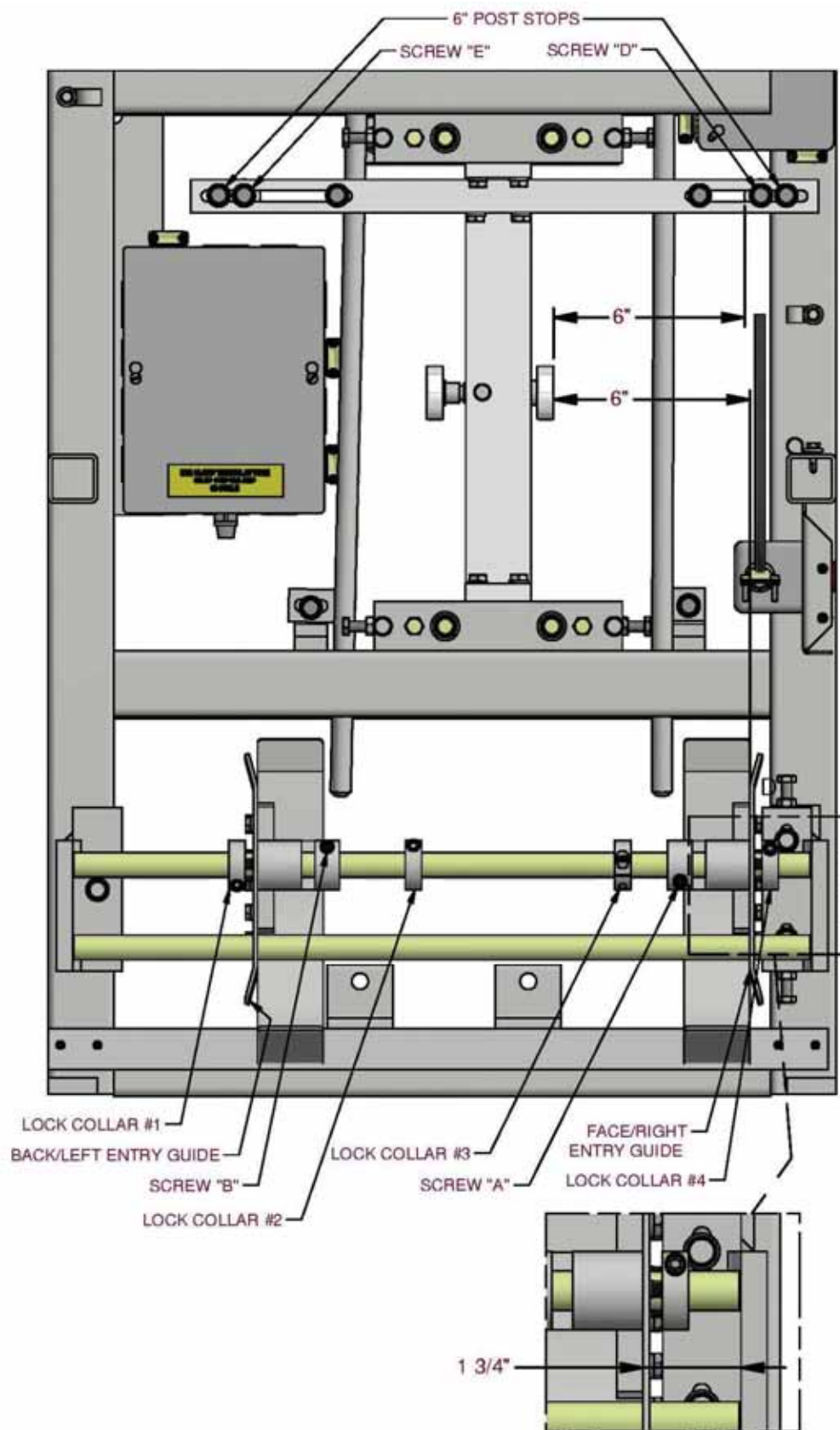


Figure 17: M56 Entry Guide Setup for 5"

CHAPTER 9  
**ENTRY GUIDE ASSEMBLY**



**Figure 18: M56 Entry Guide Setup for 6"**

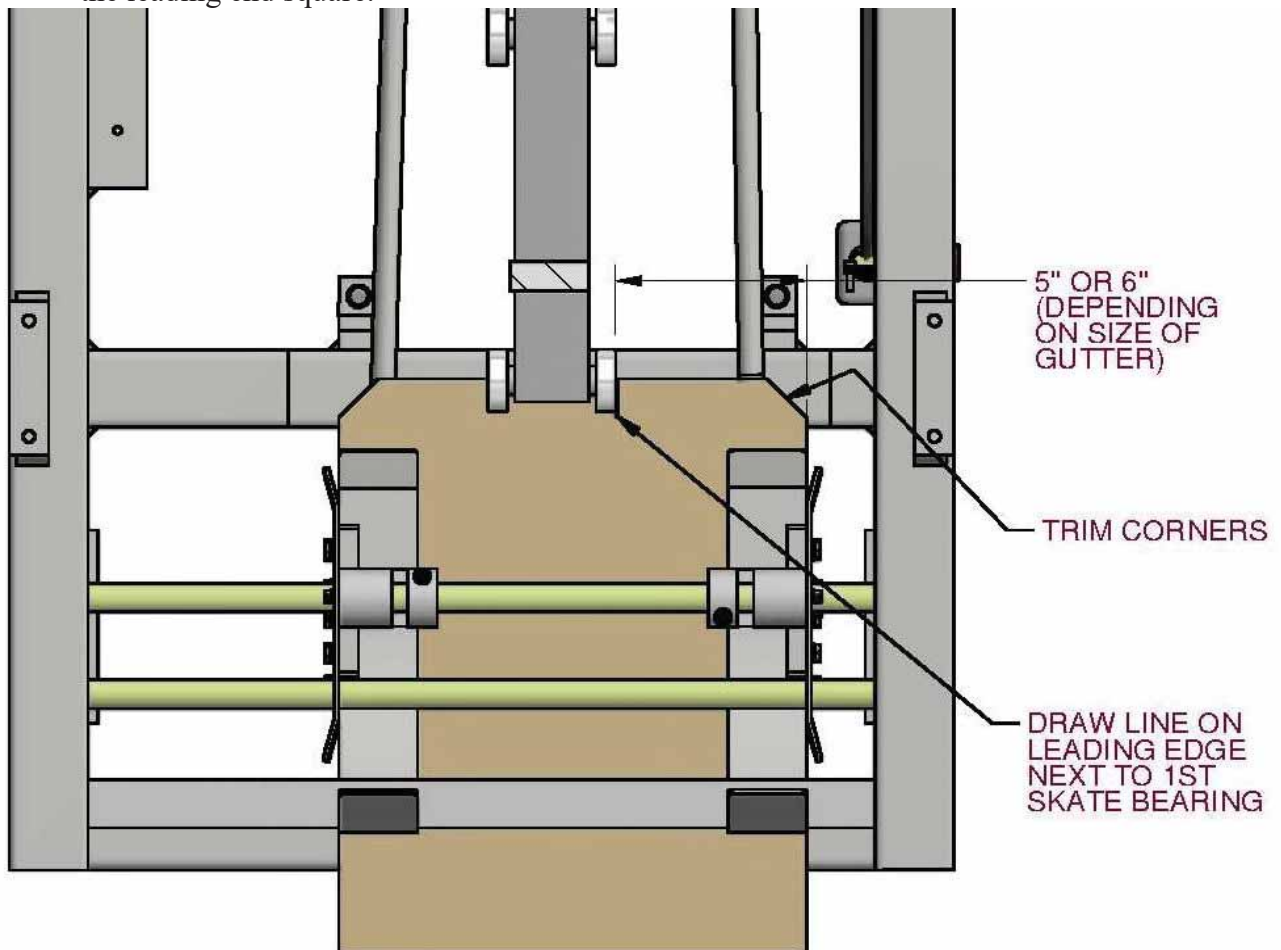
## CHAPTER 9

# ENTRY GUIDE ASSEMBLY

### Feeding Material

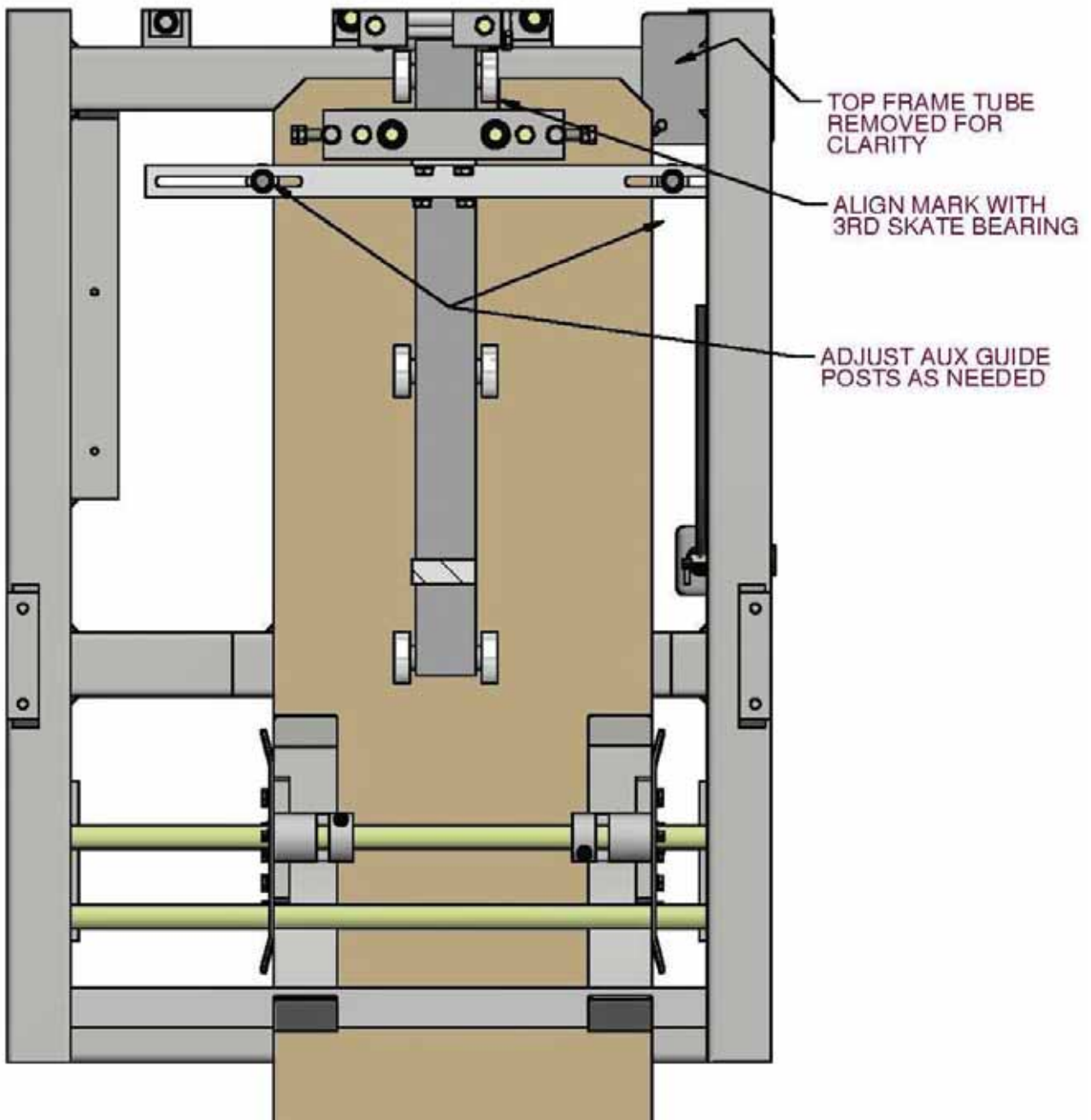
**CAUTION: Be sure machine is in the “JOG” mode before feeding.**

1. To help feed the material straight into the machine it is helpful to make a mark on the leading edge of the material that will line up the material under the first Skate Bearing.  
For 5” gutter make a mark on the leading edge of the coil 5” from the right edge.  
For 6” gutter make a mark on the leading edge of the coil 6” from the right edge.
2. Cut a 1” triangle off of the 2 leading corners of the coil and feed it into the entry guides so that the mark on the leading edge of the coil lines up with the first Skate Bearing.
3. Continue to push the material until it makes contact with the first Drive Roller.
4. Press and Release the JOG button on the entry end of the machine to jog the material through the machine until the material is half way through the machine,
5. Move to the exit end of the machine and use the JOG button on the main panel to finish jogging material through the machine. Pay close attention as the material enters the Shear to prevent the material from crashing into the Shear.
6. Once the material has exited the machine, stop jogging the material and use the Shear to cut the leading end square.



**Figure 19: Feeding Material – 1<sup>st</sup> Skate Bearing**

CHAPTER 9  
**ENTRY GUIDE ASSEMBLY**



**Figure 20: Feeding Material - 3rd Skate Bearing**

## CHAPTER 10

# DRIVE ASSEMBLY

## DRIVE ASSEMBLY

The drive system is mostly maintenance free. The roller pressures are factory set. To clean the drive rollers do NOT use any harsh chemicals. Use soap and water to remove any dirt or film from the surfaces of the drive roller.

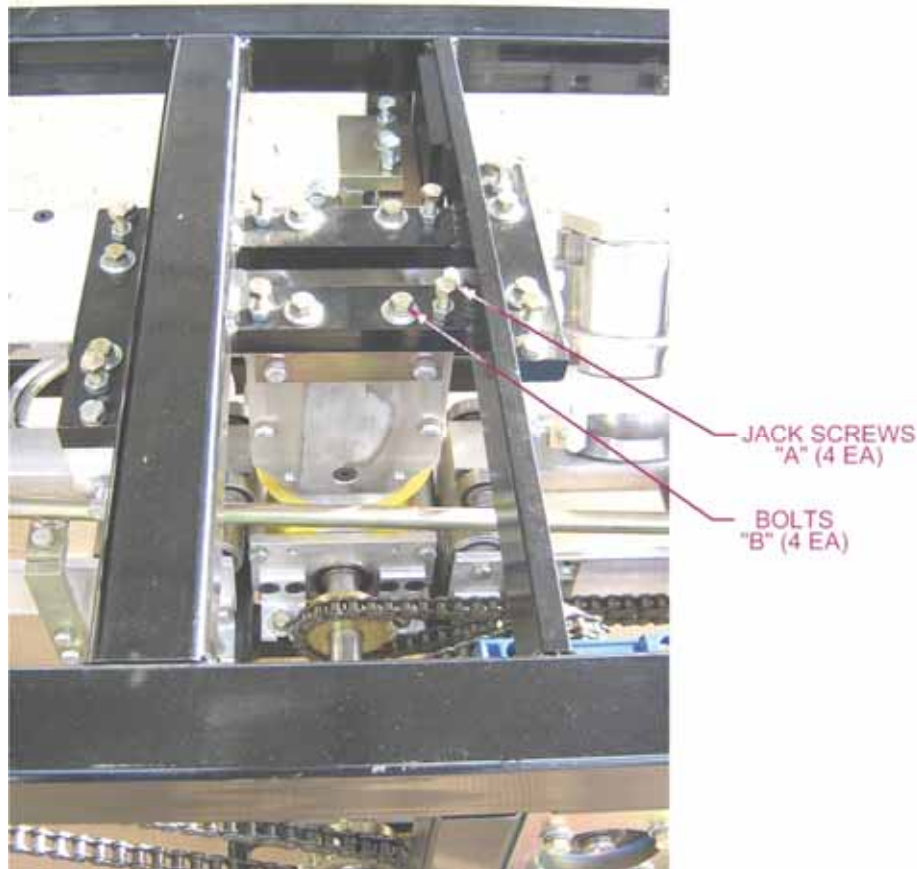
If adjustment is necessary, because a roller was replaced or some slippage of the gutter material through the machine is being experienced, the top roller can be adjusted down.

### 1. DRIVE ROLLER ADJUSTMENT AND CLEANING

(Figure 21)

1. Adjust the drive system by starting with the #1 top drive roller. Loosen the lock nuts on jack screws "A".
2. Loosen bolts "B" just enough to break them loose.
3. Turn all four (4) Jack Screws "A", 1/8 of a turn clockwise. Re-tighten all bolts "B" and run the machine forward to see if traction has been gained.
4. If more traction is required, repeat the same steps with the #2 top drive roller.
5. Repeat the process until the proper traction is obtained by alternating between #1 and #2 for the 5" gutter machine or the #1, #2 and #3 top drive roller for the 6" and 5"/6" combo gutter machines.
6. Retighten lock nuts on jack screws "A".

NOTE: Do **NOT** over tighten drive rollers. Maximum pressure recommended is 1/4 turn past factory setting.



**Figure 21: Top Drive Pressure Adjustment Screws**



## CHAPTER 10

# DRIVE ASSEMBLY

The factory setting is  $\frac{1}{2}$  to  $\frac{3}{4}$  turn clockwise past the point of contact between the top and bottom drive roller

Do NOT use solvents such as paint thinners, acetone, etc. to clean drive rollers. Use of a cleaner such as 409 or mild soap and water is recommended.

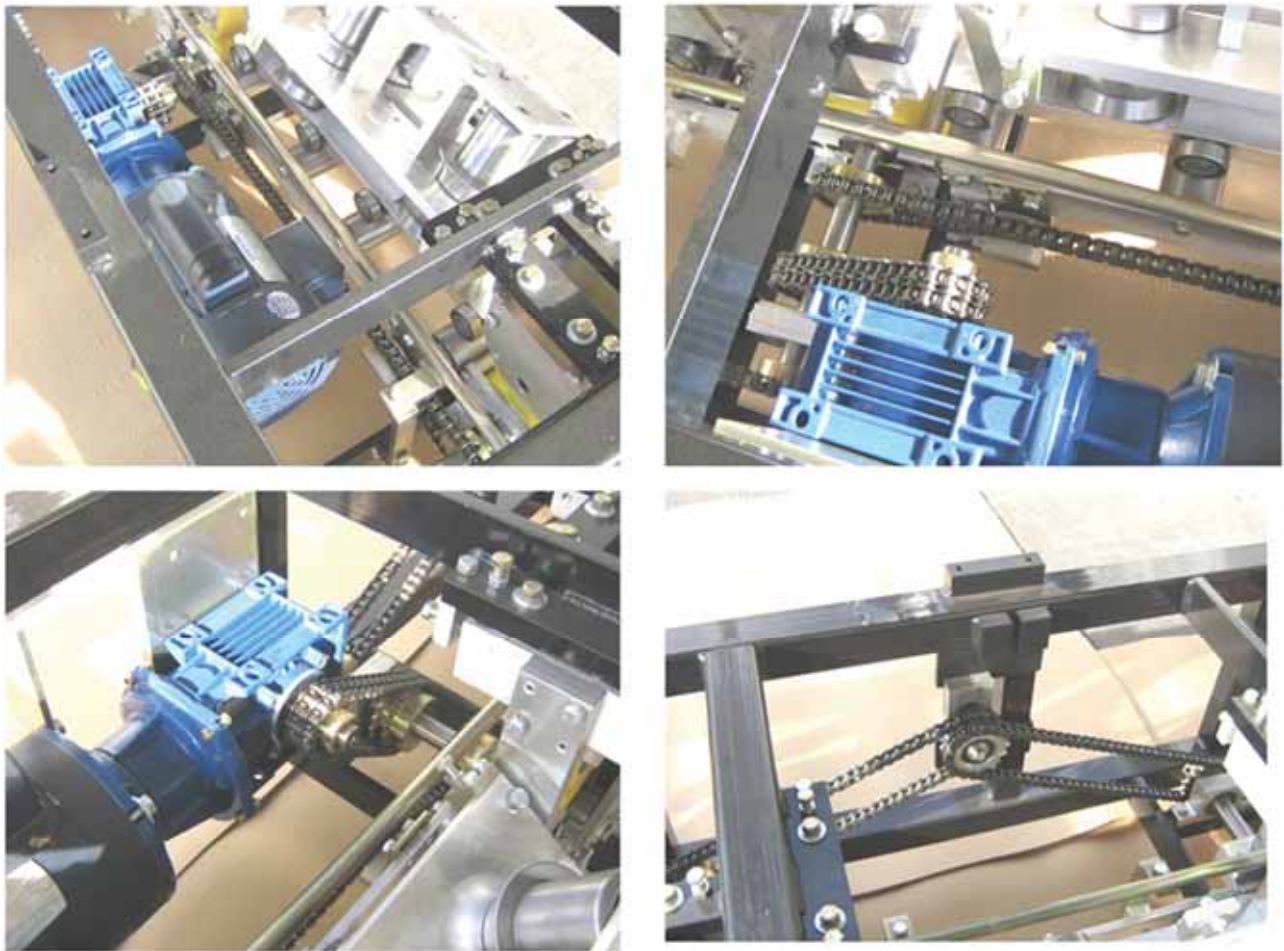
### 2. CHAIN TENSION AND LUBRICATION

(Figure 22)

Check chain tension and adjust as necessary at least twice a year. Chains should have a minimum of  $\frac{1}{16}$ " (1.6 mm) of play. Tighten loose chains using the chain tensioners.

#### **CAUTION: Do not over tighten chains**

Lubricate chains at least twice a year or whenever they appear dry. It is recommended that a dry lubricant be used to avoid sand, dirt, and foreign matter build up. See Recommended Lubricants section on page 8.



**Figure 22: Chains and Tensioners**



## CHAPTER 11

# GUTTER BOX ADJUSTMENTS

## GUTTER BOX ADJUSTMENTS

(Figure 23)

The gutter box is state of the art and designed for ease of adjustment. The box consists of seven stations. There are three basic adjustment areas on the box. They are as follows:

- Entry mount adjustment
- Exit mount adjustment
- Swing shaft adjustment

**CAUTION:** The adjustments listed below are sensitive and care should be taken when making these adjustments. Never attempt to adjust with more than 1/8 turn at a time.

### Entry Mount Adjustment Assembly

This adjustment is set at the factory and should not be changed.

### Exit Mount Adjustment Assembly

NOTE: Refer to the TROUBLESHOOTING section on page 93 before making any adjustments. The Exit Mount Adjustment Assembly which is color coded **Blue** is used to control the “Uphill” and “Downhill” effect. The “Width of the Gutter” is also affected with this adjustment.

#### Uphill/Downhill

To adjust the vertical axis which is color coded **Blue**:

1. Loosen the bolts “F”.
2. Turn bolt “E” to raise or lower.
  - To raise the box turn bolt “E” clockwise.
  - To lower the box turn bolt “E” counterclockwise.
  - For each revolution of the bolt “E,” the box will move .056 (approx. 1/16”) up or down.
3. Retighten bolts “F”

#### Width of the Gutter

To adjust the horizontal axis which is color coded **Orange**:

1. Loosen the lock nut on bolt “G” and bolts “H”.
2. Using the adjustment bolt “G”, adjust the box from side to side.
  - To adjust the box IN and reduce the width of the gutter, turn bolt “G” clockwise.
  - To adjust the box OUT and increase the width of the gutter, turn bolt “G” counterclockwise.
  - For each revolution of the bolt “G,” the box will move .056 (approx. 1/16”) in or out.
3. While holding the box against bolt “G,” re-tighten the bolts “H” and the lock nut on bolt “G”.

### Swing Shaft Adjustment Assembly

NOTE: Refer to the TROUBLESHOOTING section on page 93 before making any adjustments. The swing shaft adjustment assembly which is color coded **Green** is used to apply pressure to the head of the gutter. This will tend to cause the forming of the head of the gutter to go “Into the

## CHAPTER 11

# GUTTER BOX ADJUSTMENTS

**House” or “Away From the House”.** This is the most common adjustment used to straighten the gutter.

To adjust the swing shaft:

1. Loosen the bolts “J” just enough to allow the swing shaft assembly to slide.
2. Turn adjustment bolt “K” to move the swing shaft assembly.

To cause the gutter to form into the house, turn the bolt “K” clockwise.

To cause the gutter to form away from the house, turn bolt “K” counterclockwise.

For each revolution of the bolt “K” the swing shaft assembly will move .056 (approx. 1/16”) in or out.

3. While holding the swing shaft adjustment assembly so that the bolt “K” is against the box assembly, re-tighten bolts “J”.

NOTE: Adjusting the swing shaft **DOES** have an effect on the size of the lip. Always check the gutter lip before completing adjustments.

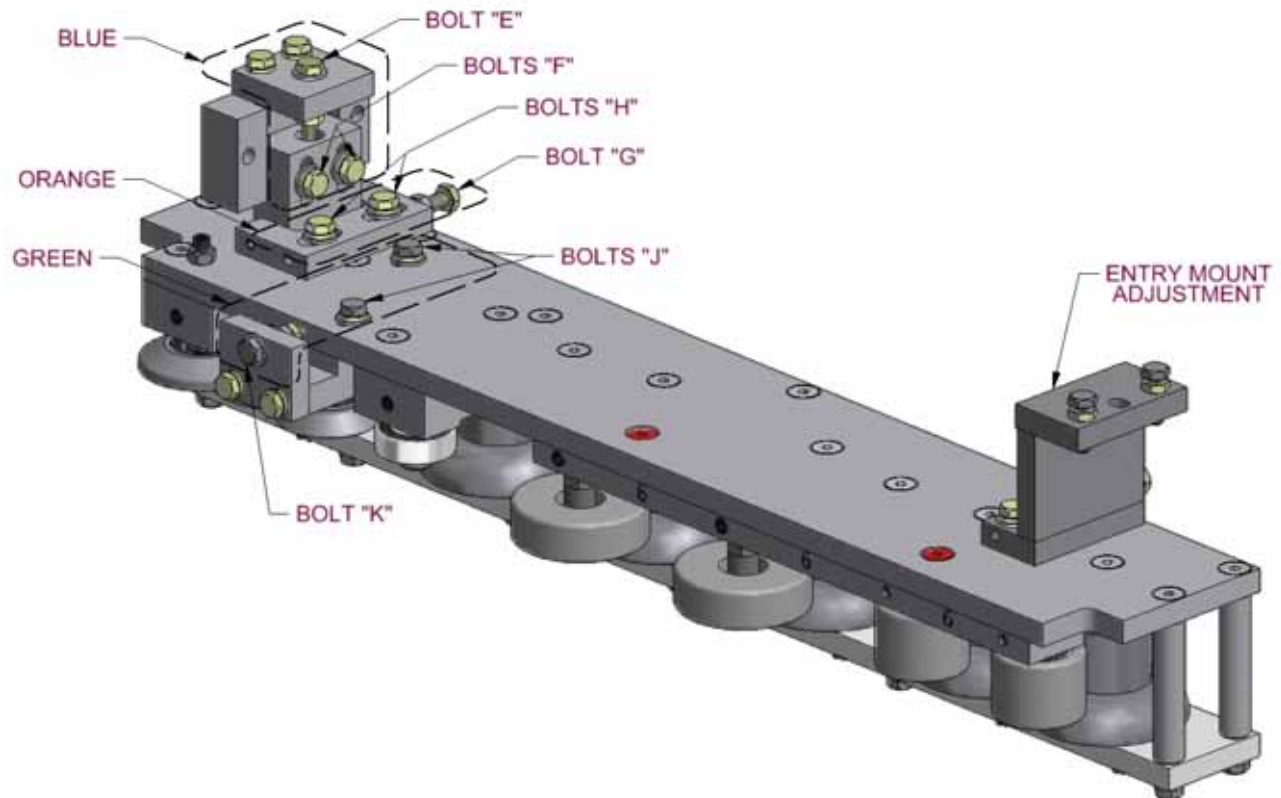


Figure 23: Gutter Box Assembly

## CHAPTER 12

# **EXIT DRIVE AND FORMING STATION**

## EXIT DRIVE AND FORMING STATION

(Figure 24)

The adjustment screws on this assembly are color coded: **Yellow**. This assembly drives and forms at the same time. This station employs the polyurethane drive rollers for traction but works in harmony with the forming tools to provide maximum control over the gutter as it exits the machine.

The exit drive assembly is bolted to the last skate with bolts “A”. These bolts keep the exit drive assembly square with the last skate assembly. Before making any adjustments to this assembly be sure to loosen bolts “A” just enough to allow the Exit Drive Assembly to move without affecting the last skate assembly. Failure to do this will result in distortion of the last skate assembly and may affect how the gutter is formed. Be sure to re-tighten bolts “A” after making any adjustments to the Exit Drive Assembly.

**NOTE:** Refer to the TROUBLESHOOTING section on page 93 before making any adjustments.

**NOTE:** The following adjustments are very responsive and should be done in small increments

### **Adjusting the Exit Top Roller – Face Side**

The adjustment at the exit top roller face side is used to affect “Uphill”, “Downhill”, “Into the House”, and “Away From the House” on the face.

To adjust the top face side of the roller:

1. Loosen bolts “A”, the lock-nuts on jackscrews “B”, bolts “C”, lock-nut on jackscrew “F” and jackscrew “F”.
2. Turn jackscrews “B” 1/8 of a turn in or out.  
To cause the face of the gutter to form into the house, turn the screw “B” clockwise.  
To cause the face of the gutter to form away from the house, turn screw “B” counterclockwise.  
Each revolution of screw “B” is equal to .056” (approx. 1/16”) of movement.
3. Re-tighten all bolts and lock nuts.

### **Adjusting the Exit Top Roller – Back Side**

The adjustment at the exit top roller back side is used to affect “Uphill”, “Downhill”, “Into the House”, and “Away From the House” on the back.

To adjust the top back side of the roller:

1. Loosen bolts “A”, the lock-nuts on jackscrews “D”, bolts “E”, lock-nut on jackscrew “G” and jackscrew “G”.
2. Turn jackscrews “D” 1/8 of a turn in or out.  
To cause the back of the gutter to form away the house, turn the screw “D” clockwise.  
To cause the back of the gutter to form into from the house, turn screw “D” counterclockwise.  
Each revolution of screw “B” is equal to .056” (approx. 1/16”) of movement.
3. Re-tighten all bolts and lock nuts.

CHAPTER 12

**EXIT DRIVE AND FORMING STATION**

**Adjusting the Exit Face and Back Bell Rollers**

The adjustment at the exit face and back bell rollers are used to affect “**Into the House**”, “**Away From the House**”, and squaring the front and back of the bottom corners.

To adjust the bell rollers:

1. Empty the material from the machine
2. Loosen bolt “H” slightly and loosen bolt “J”.
3. Turn jackscrew “K” to move the bell roller toward or away from the top face roller.  
To move the bell roller toward the top face roller, turn jackscrew “K” counterclockwise.  
To move the bell roller away from the top face roller, turn jackscrew “K” clockwise.  
For each revolution of the jackscrew “K,” the bell roller will move .056 (approx. 1/16”) in or out.
4. Apply pressure on the bell roller mount towards the top face roller and retighten bolts “J” & “H” and retighten the lock-nut on jackscrew “K”.

**Adjusting Pressure for the Exit Drive Roller**

If adjustment is necessary, because a roller was replaced or some slippage of the gutter material through the machine is being experienced, the top roller can be adjusted down to add drive pressure.

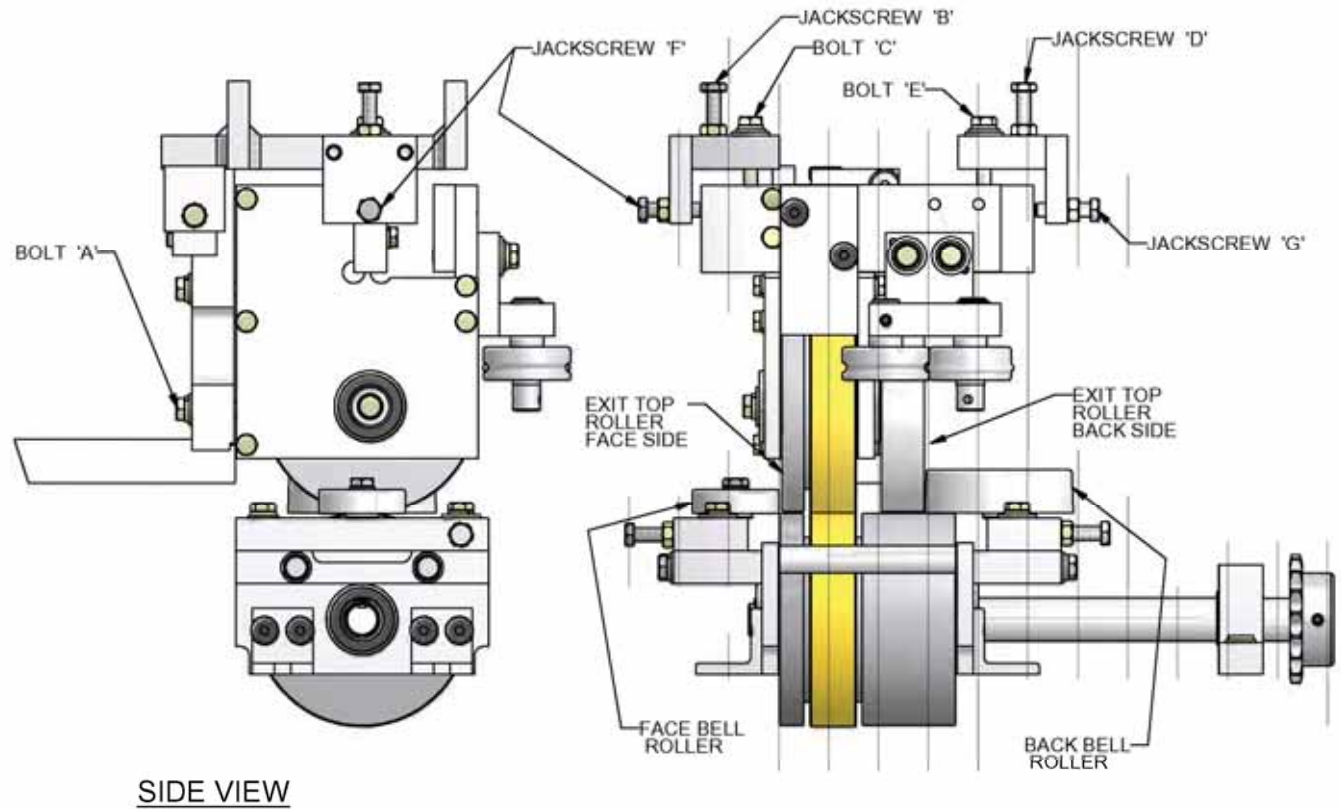
To add pressure:

1. Loosen the lock nuts on jack screws “B” & “D” then loosen bolts “C” & “E”.
2. Turn jackscrews “B” & “D” clockwise 1/16 of a turn.
3. Retighten bolts “C” & “E”.
4. Test the machine for sufficient drive.
5. Repeat the process until the proper traction is obtained.
6. Retighten lock nuts on jack screws “B” & “D”.

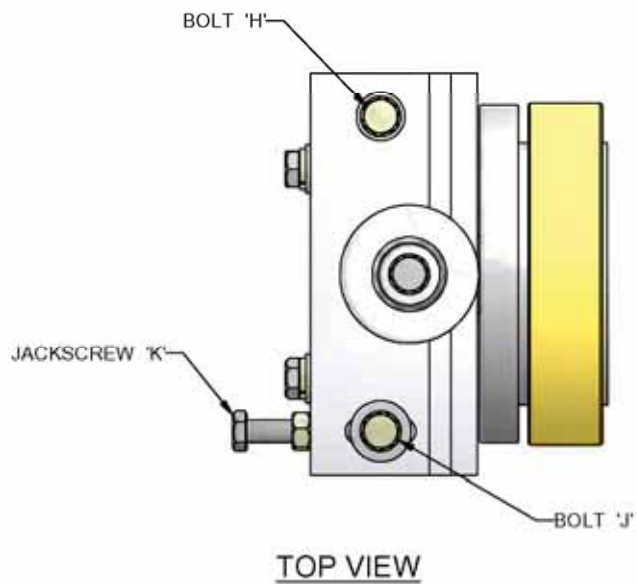
**NOTE:** Do **NOT** over tighten drive rollers. Maximum pressure recommended is 1/8 turn past factory setting.

CHAPTER 12

## EXIT DRIVE AND FORMING STATION



EXIT VIEW



**Figure 24: Exit Drive and Forming Station**

CHAPTER 13  
**BEAD ROLLER ASSEMBLY**

## BEAD ROLLER ASSEMBLY

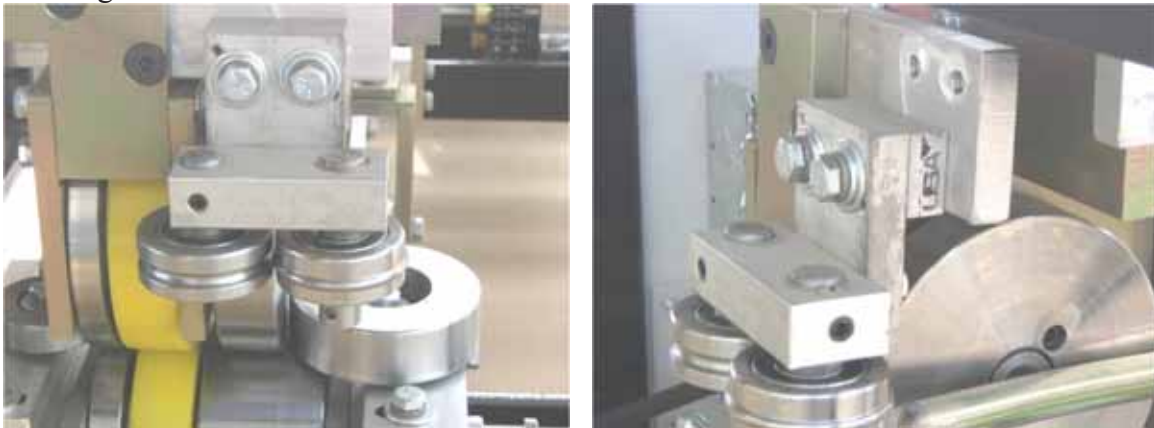
The bead roller assembly has three primary functions as follows:

- To stiffen the back or give the back structure.
- Controlling the back of the gutter during the forming process.
- Guiding the back of the gutter into the shear.

### 3. ADJUSTING BEAD ROLLER ASSEMBLY

(Figure 25 & Figure 26)

1. Feed material through the machine and up to the bead roller assembly. The bead should engage the gutter  $\frac{3}{8}$ " down from the top of the gutter. The gutter should be pulled away from the back face of the exit top roller located just prior to the bead roller assembly. There should be a gap of  $\frac{1}{32}$ " between the gutter and the back face of the exit top roller.
2. Loosen bolts "A" and align the bead roller assembly. Re-tighten bolts "A" before proceeding.
3. Run the gutter through the bead roller and stop the machine.
4. Loosen set screw "B" and using the adjustment hole and a  $\frac{3}{16}$ " Allen wrench, turn the electric shaft to engage or disengage the bead roller.
5. Engaging or closing the gap between the two bead rollers, will have an uphill effect on the back of the gutter. Opening or disengaging the gap between the two bead rollers, will have a downhill effect on the back of the gutter.
6. Re-tighten set screw "B".

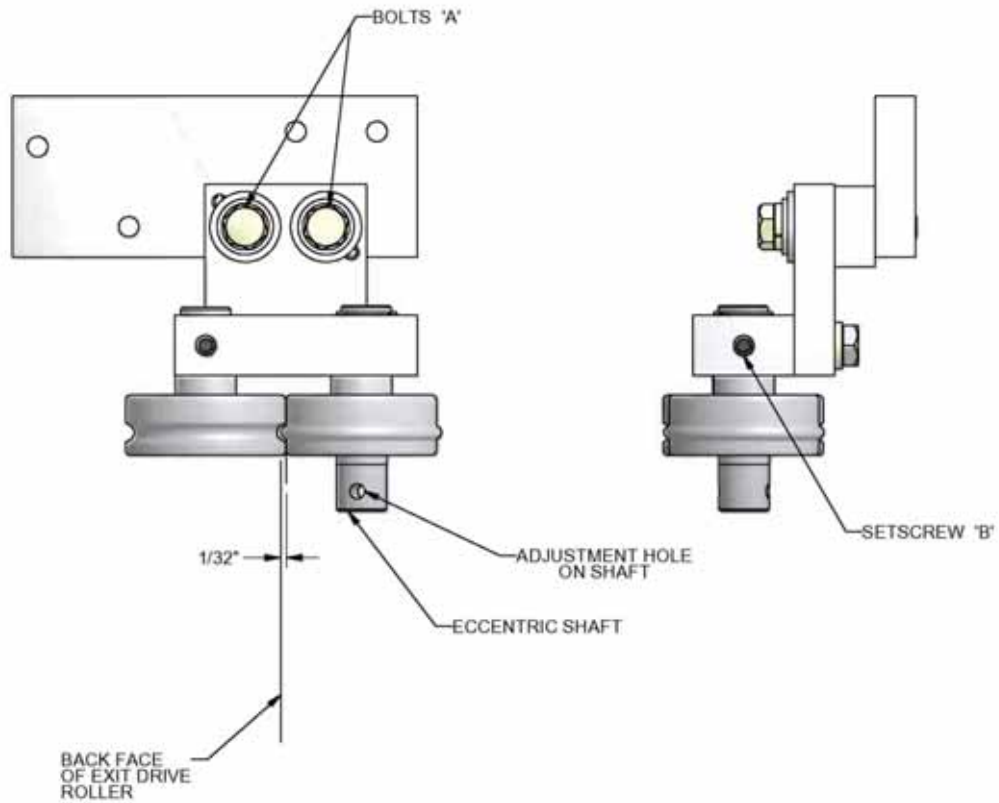


**Figure 25: Bead Roller**



CHAPTER 13

## **BEAD ROLLER ASSEMBLY**



**Figure 26: Bead Roller**

## CHAPTER 14

# **SHEAR ASSEMBLY**

## SHEAR ASSEMBLY

(Figure 27)

The shear is a unique rack and pinion design. This design requires less force than the pulling action associated with the guillotine dies. The shear is designed to cut 24 gauge steel easily. The shear is adjustable up and down or side to side.

### **4. UP OR DOWN ADJUSTMENT**

1. Loosen lock-nuts on jackscrews “A” then loosen bolts “B”.
2. Adjust the shear up or down using jackscrews “A”. The best way to adjust is with the gutter material advanced through the shear.
3. Check all around the gutter for height clearance.
4. Retighten lock-nuts on jackscrews “A” and retighten the bolts “B”.

### **5. SIDE TO SIDE ADJUSTMENT**

1. Loosen bolts “B”.
2. Slide the shear from side to side to obtain proper clearance.
3. Retighten the bolts “B”.

NOTE: The shear has a safety pin to prevent the shear handle from rotating when transporting the machine or removing the shear from the machine.

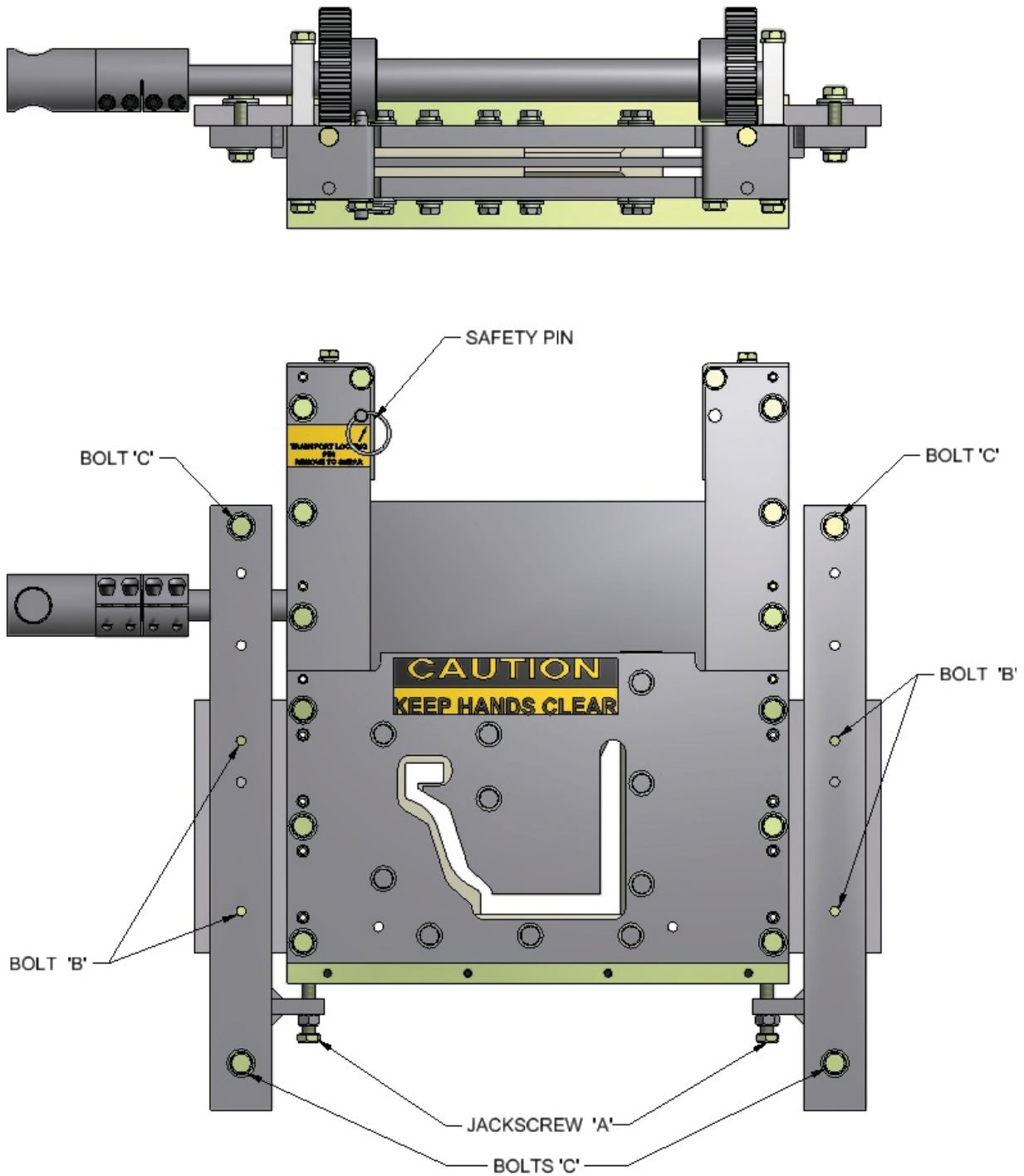
### **DANGER:**

**THE SHEAR IS A VERY DANGEROUS APPARATUS. THE SAFETY PIN MUST BE IN PLACE WHEN REMOVING THE SHEAR FROM THE MACHINE. FAILURE TO DO SO WILL ALLOW THE BLADE TO PROTRUDE THROUGH THE BOTTOM OF THE SHEAR AND CAN CAUSE SEVERE INJURY.**

### **6. MAINTENANCE**

Keep the Blade and Dies well lubricated. Lubricate the blade and dies at least once a day during normal use, or whenever cutting surfaces look dry. Clean the blade and dies at least once a week during normal use. Failure to do so will cause premature failure of the blade and dies. With proper care the shear will perform trouble free and prevent rust formation for years. See Recommended Lubricants section on page 8.

CHAPTER 14  
**SHEAR ASSEMBLY**



**Figure 27: Shear Alignment**

CHAPTER 15  
**BASIC SETUP DIMENSIONS**

## BASIC SETUP DIMENSIONS

(Figure 28)

The basic set up dimensions are for establishing a reference point and may require further adjustment to finalize the positioning of each component on the machine. The dimensions for the entry skate, bottom drive roller and bottom keel rail are dimensioned from a string that is used to align the machine.

Use a 30lb. fishing line as the alignment string. The string is attached to either end of the machine as shown. Use two (2) 5/16" diameter set screws and place them at either end between the string and the vertical upright on the frame as shown in Figure 28.

### **7. "A" DIMENSION**

The dimension for the entry guide is the starting point for any type of gutter material used. Start with the right guide first and then bring the left guide over until it is snug but not binding the gutter material.

### **8. "B" & "C" DIMENSIONS**

The horizontal dimension for the box assembly is measured from the vertical supports on the last skate.

### **9. "D" DIMENSION**

The swing shaft dimension is the starting point for both steel or aluminum gutter.

### **10. "E" & "F" DIMENSIONS**

The vertical measurements are measured from the top of the skate to the top of the box.

### **11. ENTRY SKATE DIMENSIONS**

The entry skate is dimensioned from the top face of the bottom frame cross-member to the bottom of the skate rollers on the skate assembly.

### **12. EXIT DRIVE CLEARANCE**

See Figure 29 for clearance and location.

# CHAPTER 15

## BASIC SETUP DIMENSIONS

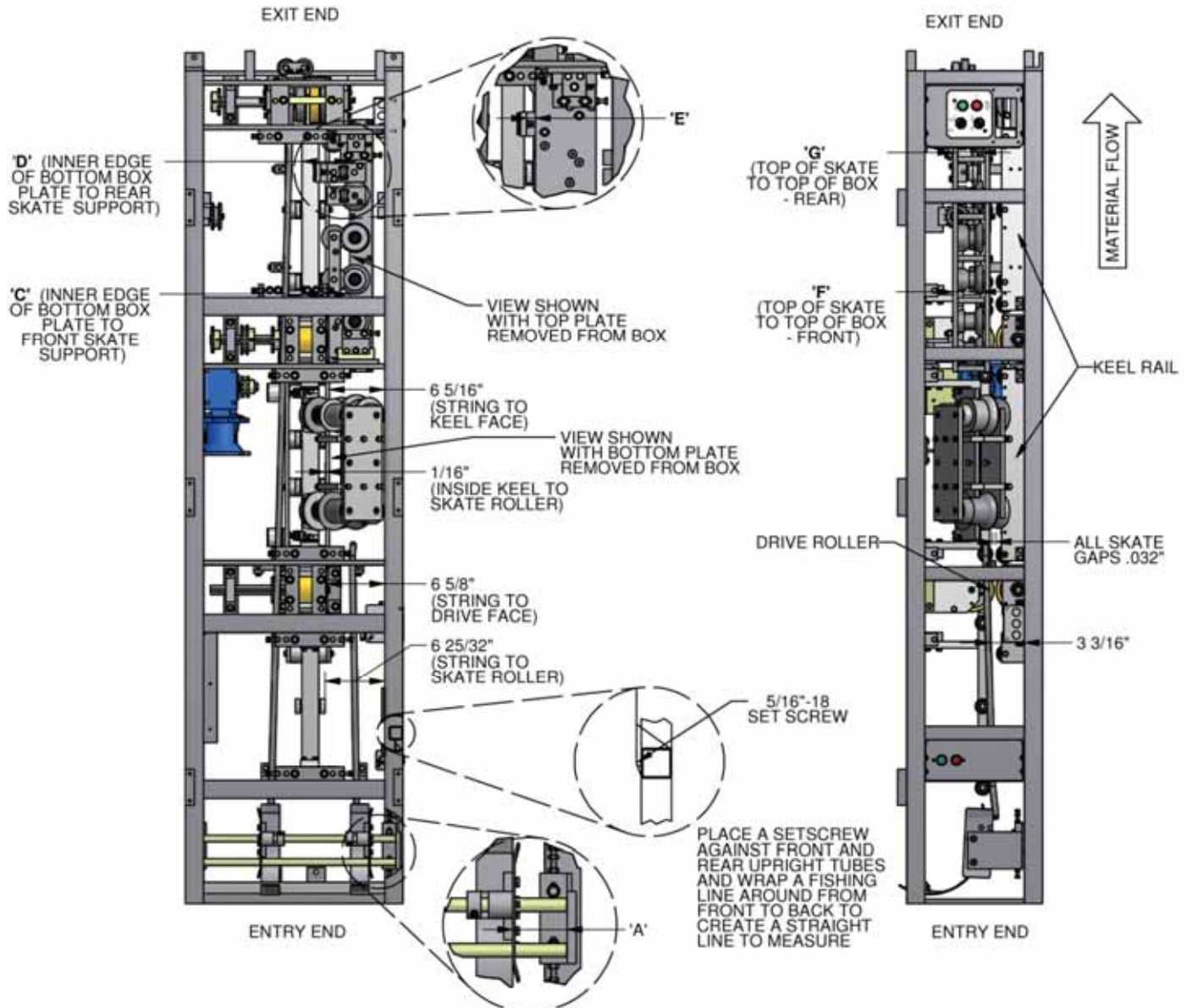


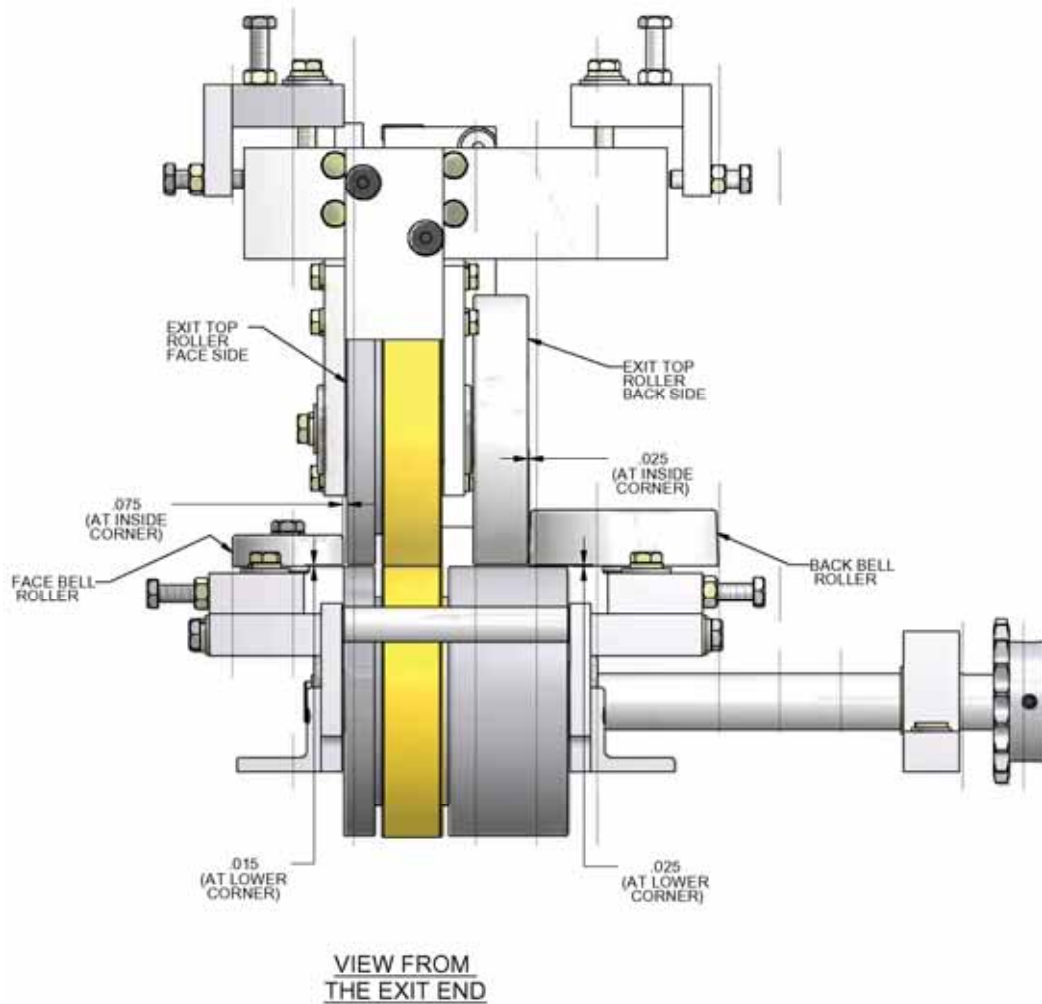
Figure 28: Basic Setup Dimensions (See table below)

Table 1: Basic Setup Dimensions

	A	C	D	E	F	G
MG5	2 7/8"	5 3/8"	5"	11/16"	3 9/16"	3 3/4"
MG6	1 3/4"	5 13/16"	5 7/16"	11/16"	4 5/8"	4 7/8"
M56 - 5"	2 7/8"	5 3/8"	5"	11/16"	3 9/16"	3 3/4"
M56 - 6"	1 3/4"	5 13/16"	5 7/16"	11/16"	4 5/8"	4 7/8"

CHAPTER 15

## **BASIC SETUP DIMENSIONS**



**Figure 29: Exit Drive Clearances**

### Machine Specific Dimensions

(Figure 30 through Figure 36)d

The following figures and numbers are filled in at the factory and are specific to this particular gutter machine and manual. All figures show the M56 machine, however, the MG5 and MG6 are similar.



CHAPTER 15

**BASIC SETUP DIMENSIONS**

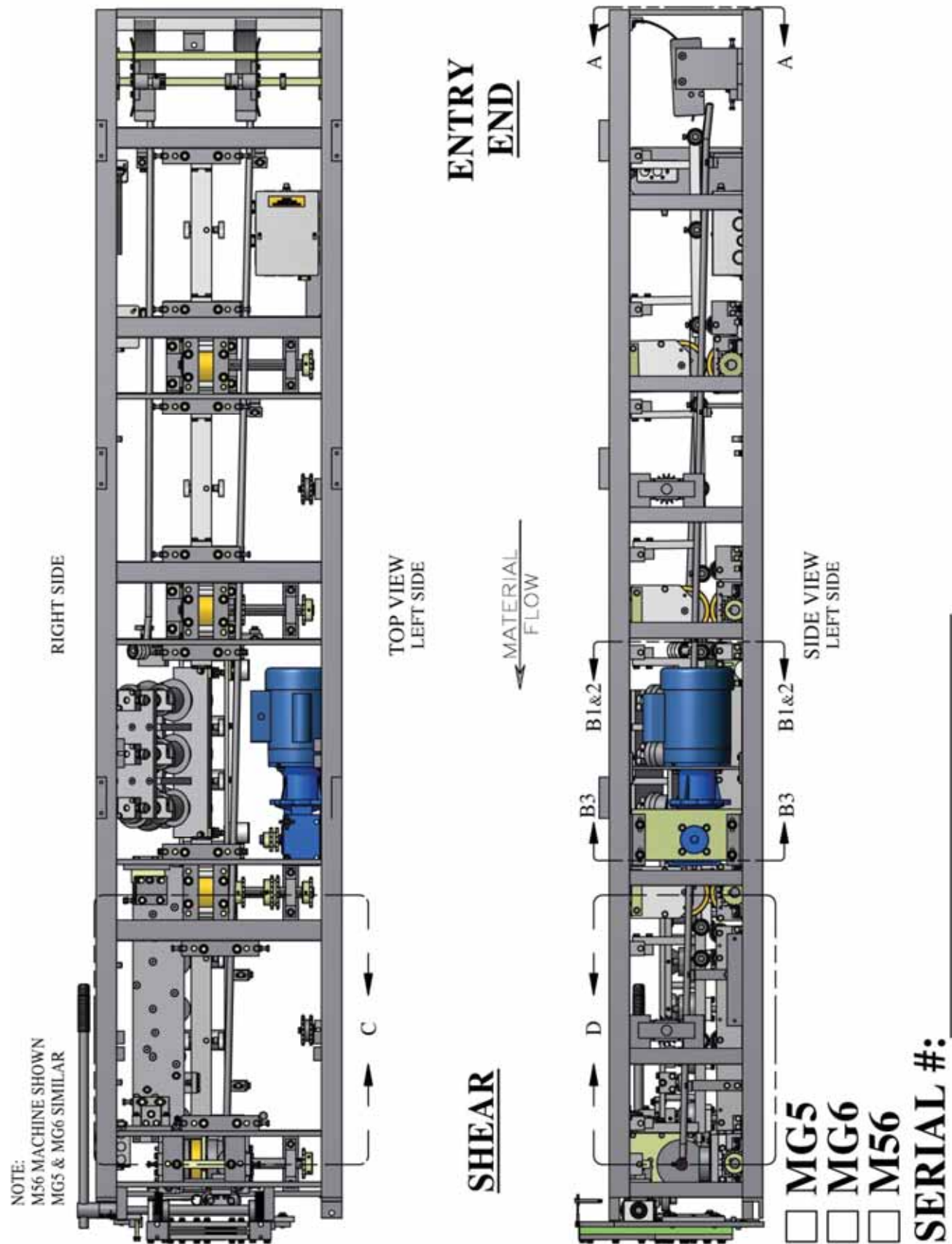


Figure 30: Setup Dimensions

45

# BASIC SETUP DIMENSIONS

## RIGHT ENTRY GUIDE SET-UP

### DETAIL A

**NOTE:**  
PERFORM MEASUREMENTS  
FROM THE TIPS OF THE  
ARROWHEADS

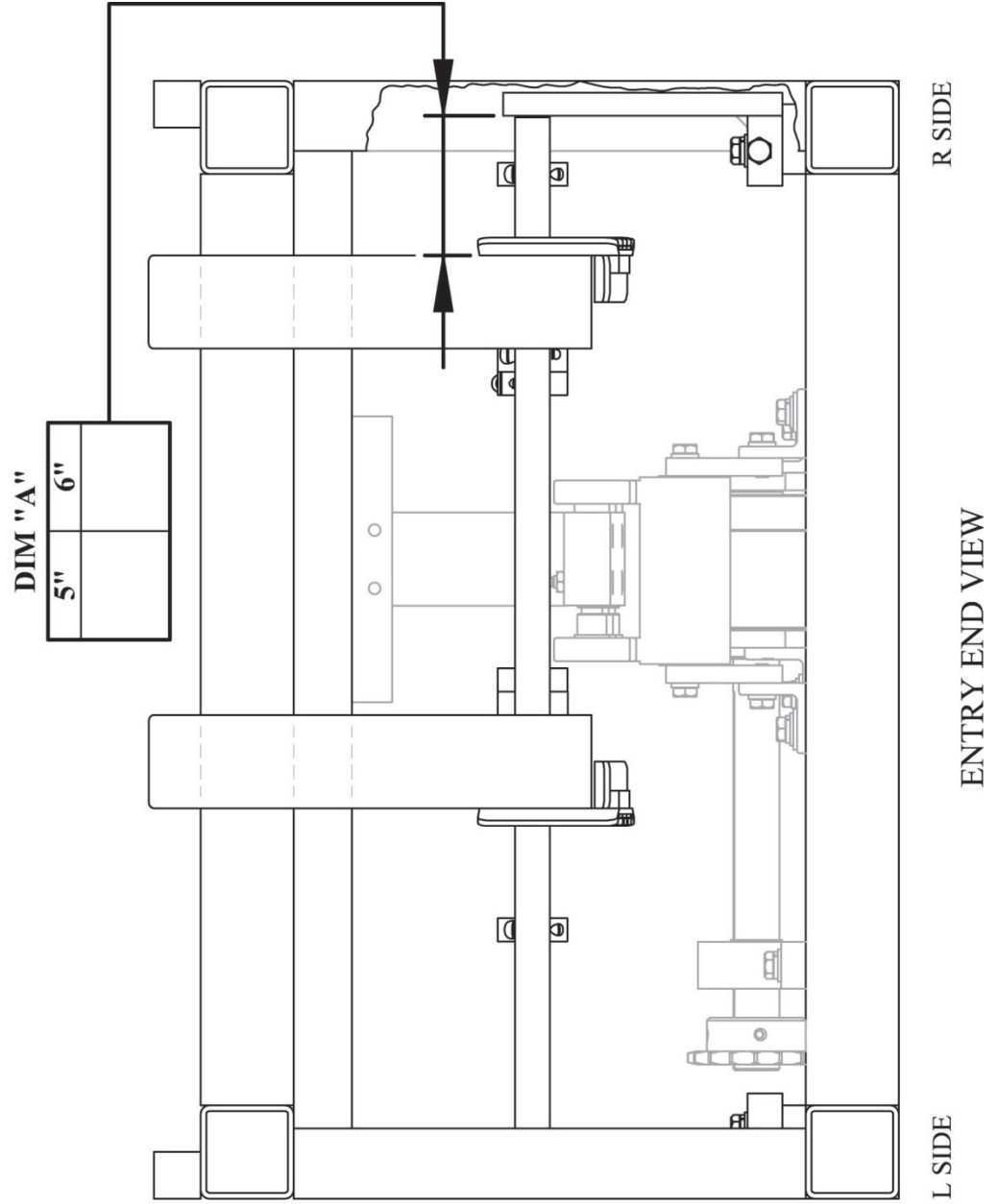


Figure 31: Setup Dimension – Entry Guide

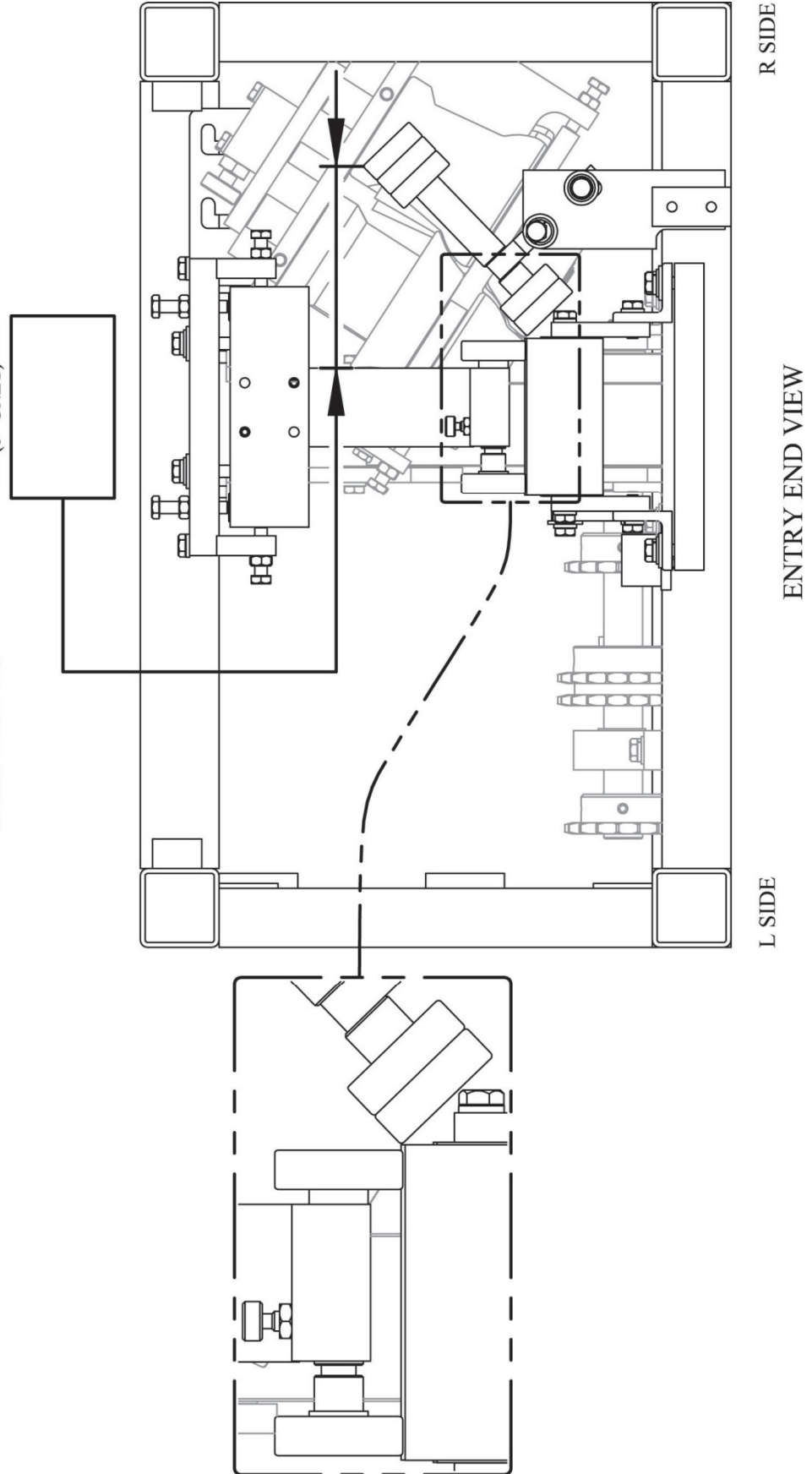
# BASIC SETUP DIMENSIONS

## AUX. FACE ASSEMBLY SET-UP

### DETAIL B-1

**NOTE:**  
PERFORM MEASUREMENTS  
FROM THE TIPS OF THE  
ARROWHEADS

**DIM "B"**  
(6" ONLY)



# BASIC SETUP DIMENSIONS

Figure 32: Setup Dimension – Face Assembly 1

## ROLLER FACE ASSEMBLY SET-UP

### DETAIL B-2

**NOTE:**  
PERFORM MEASUREMENTS  
FROM THE TIPS OF THE  
ARROWHEADS

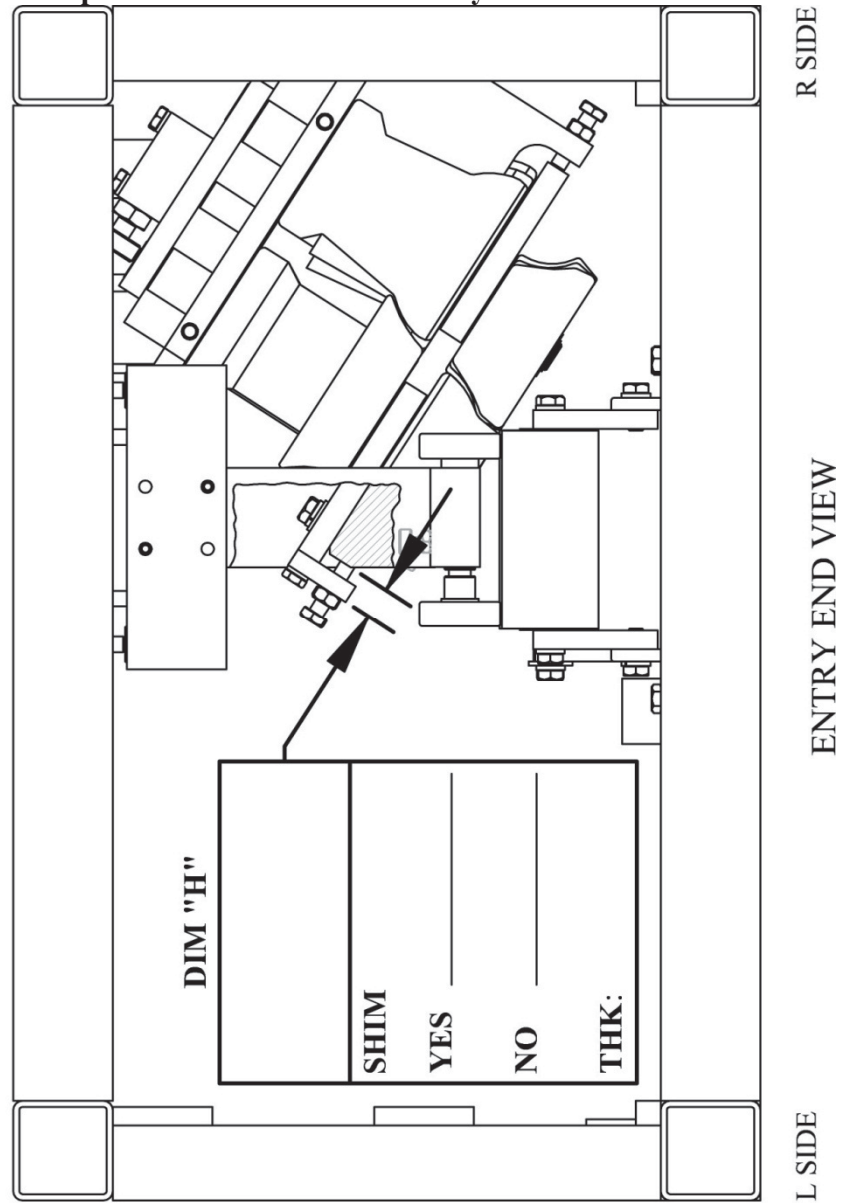


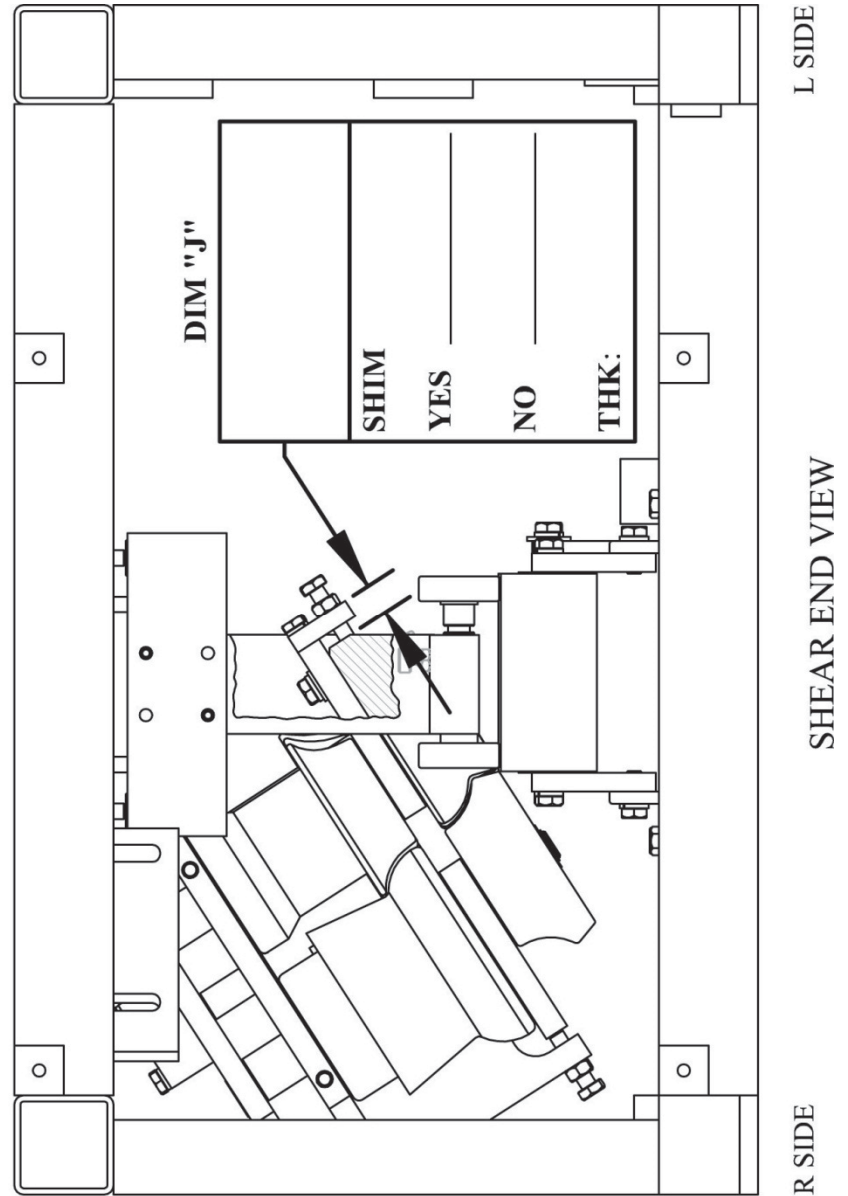
Figure 33: Setup Dimension – Face Assembly 2

# BASIC SETUP DIMENSIONS

## ROLLER FACE ASSEMBLY SET-UP

### DETAIL B-3

**NOTE:**  
PERFORM MEASUREMENTS  
FROM THE TIPS OF THE  
ARROWHEADS



**Figure 34: Setup Dimensions – Face Assembly 3**

# **BASIC SETUP DIMENSIONS**

## **BOX ASSEMBLY SET-UP**

### **DETAIL C**

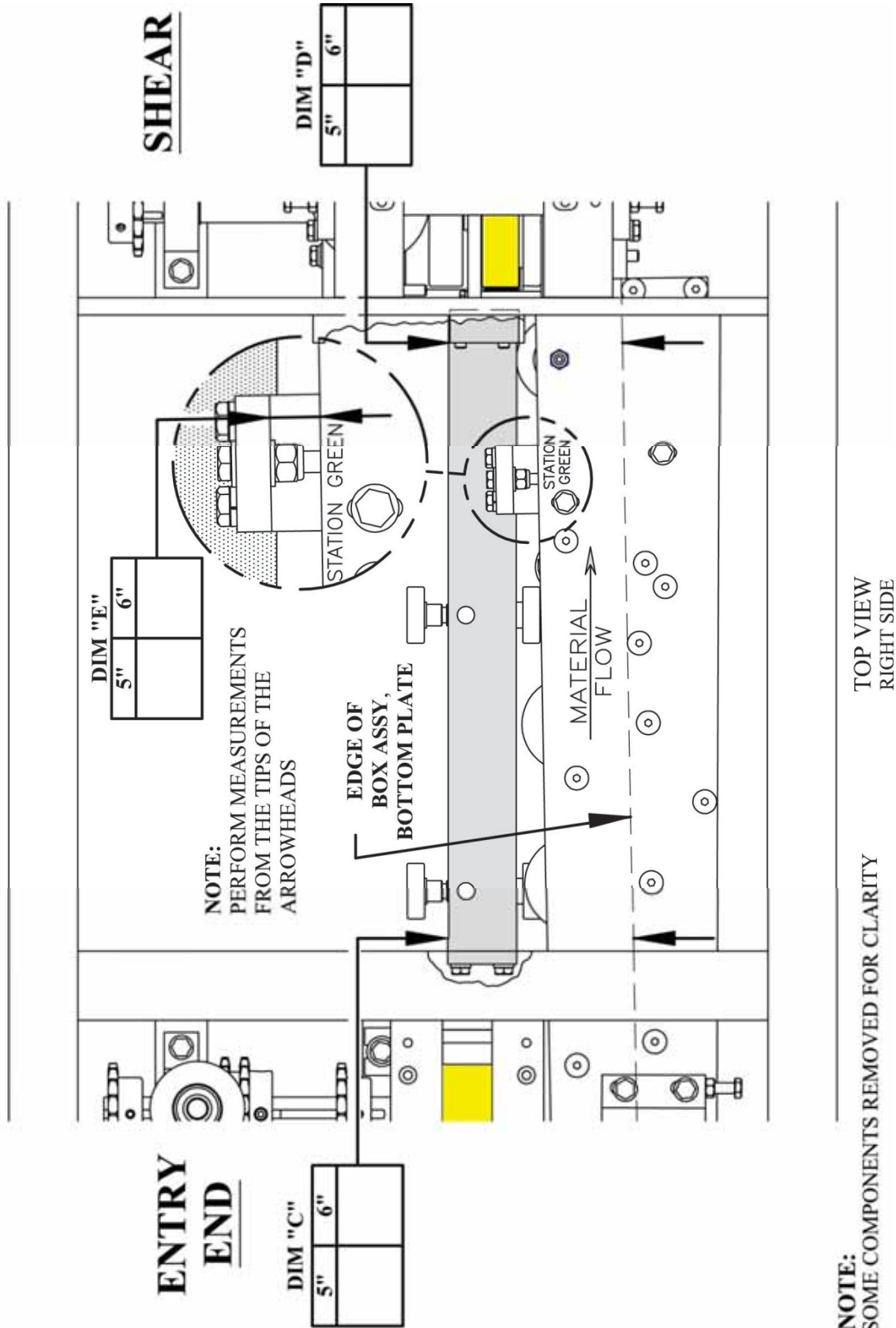


Figure 35: Setup Dimensions – Box Assembly 1



# BASIC SETUP DIMENSIONS

## BOX ASSEMBLY SET-UP

### DETAIL D

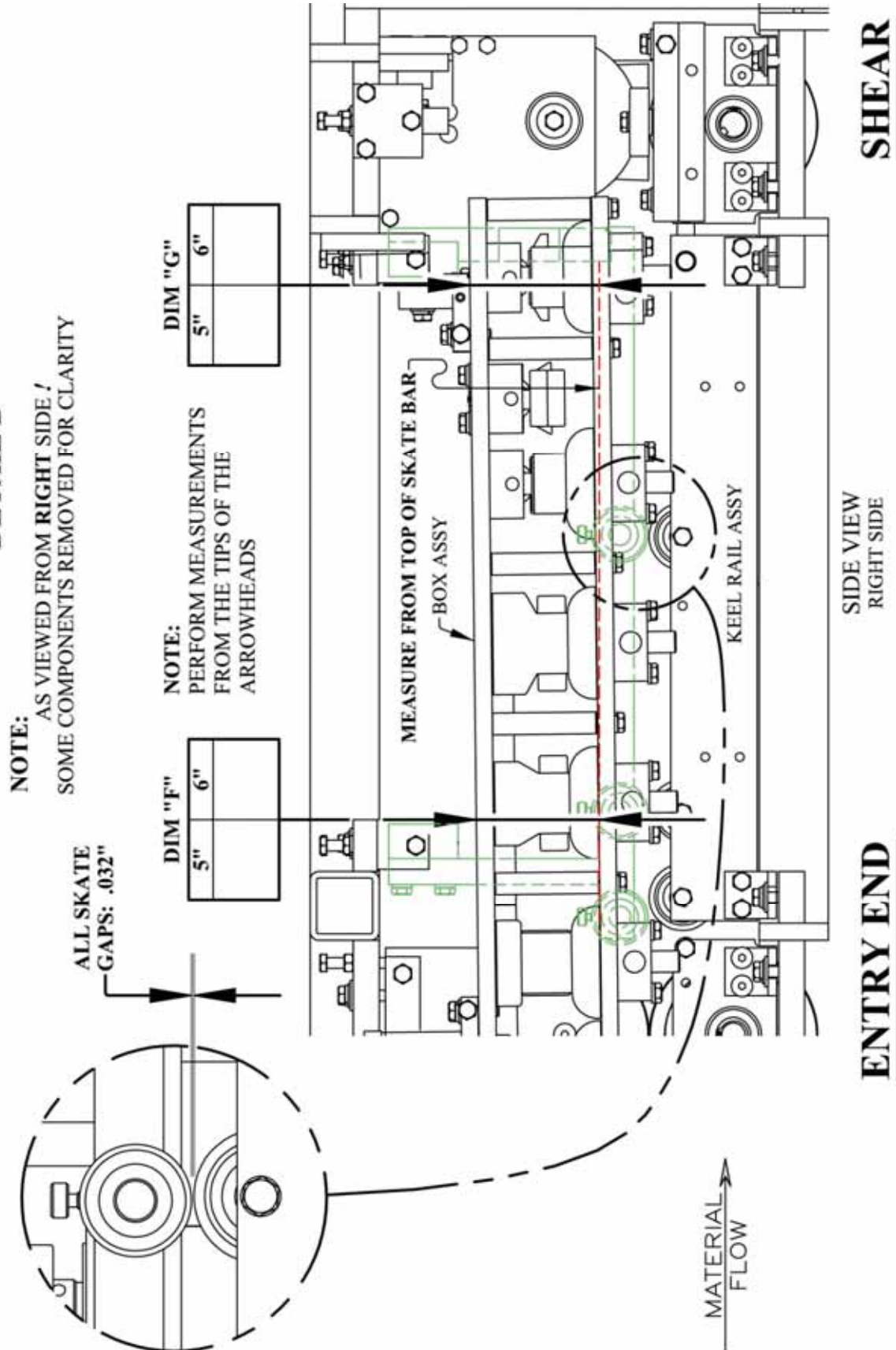
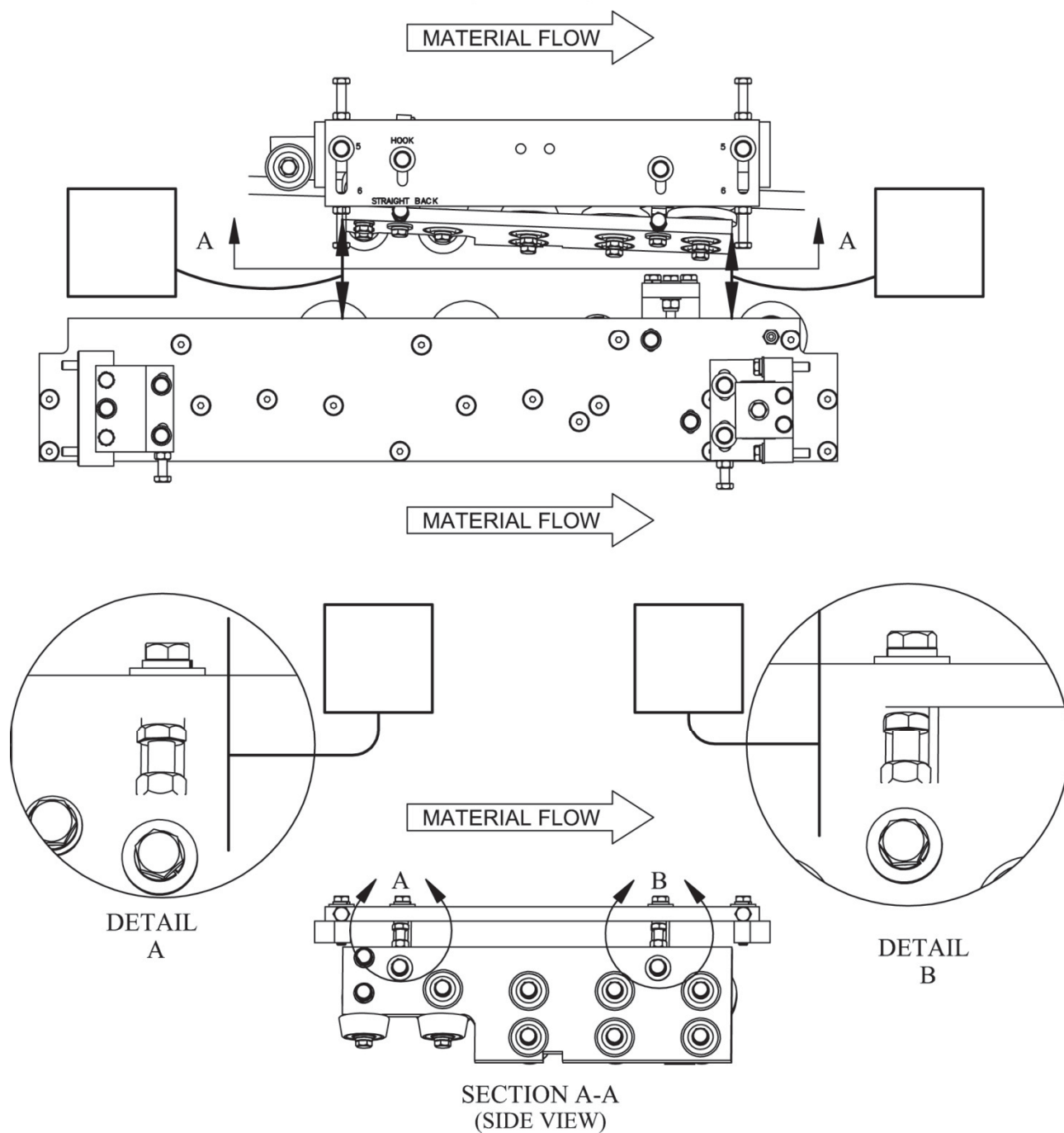


Figure 36: Setup Dimensions – Box Assembly 2

CHAPTER 15  
**BASIC SETUP DIMENSIONS**

**MG5 SET-UP SHEET**  
HOOK ASSEMBLY  
(OPTIONAL)



**Figure 37: Optional Hook Assembly**

CHAPTER 16  
**COMBO 5" TO 6" CHANGEOVER PROCEDURE**

## COMBO CHANGEOVER PROCEDURE FROM 5" TO 6"

**CAUTION:** Disconnect machine from power source before proceeding with changeover. The procedure to change from a 5" gutter configuration to a 6" configuration and back again is greatly simplified by the use of locator pins with two fixed positions which provide a quick change to either gutter size. There is a tool kit included with every combo machine. It is located inside the left side cover at the exit end of the machine.

It is important that while changing the machine from one gutter size to another that the proper sequence be followed. Failure to do so may result in wasted time. The sequence to change from 5" to 6" or 6" to 5" is similar but not exactly the same. See page 67 for 6" to 5" procedure.

**1. REMOVE 6" SHEAR FROM SIDE OF MACHINE AND SET ASIDE**

**CAUTION:** BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE

**2. REMOVE COVERS**

**3. REMOVE 5" SHEAR AND SET ASIDE**

**CAUTION:** BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE

**4. MOVE BEAD ASSEMBLY**

**5. REMOVE BACK BELL ROLLER**

**6. MOVE BACK GUIDE ROD**

**7. MOVE SKATE ROLLERS**

**8. REMOVE AND REINSTALL EXIT TOP BACK SIDE ROLLER**

**9. RE-INSTALL BACK BELL ROLLER**

**10. MOVE ENTRY GUIDES AND AUXILIARY GUIDE POSTS**

**11. MOVE FACE GUIDE ROD**

**12. MOVE FACE ASSEMBLY STATIONS**

**13. MOVE BOX ASSEMBLY**

**14. REMOVE 5" INSIDE BOX ROLLER BAR ASSEMBLY**

**15. MOVE OUTSIDE BOX ROLLERS**

**16. INSTALL 6" INSIDE BOX ROLLER BAR ASSEMBLY**

**17. STORE 5" INSIDE BOX ROLLER BAR ASSEMBLY**

**18. REPLACE COVERS**

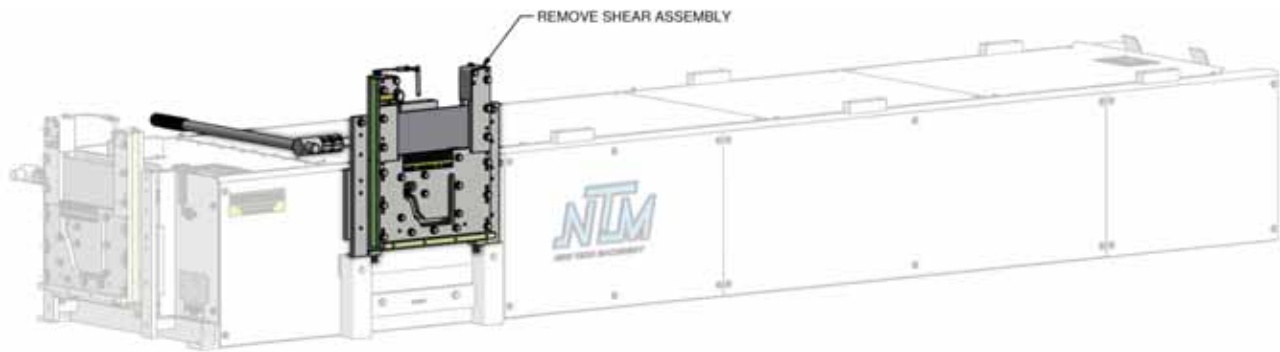
**19. MOVE 6" REEL RACK ASSEMBLY** – (if machine is equipped with reels)

**20. MOVE CRADLE TO 6" POSITION** – (If machine is equipped with cradles)

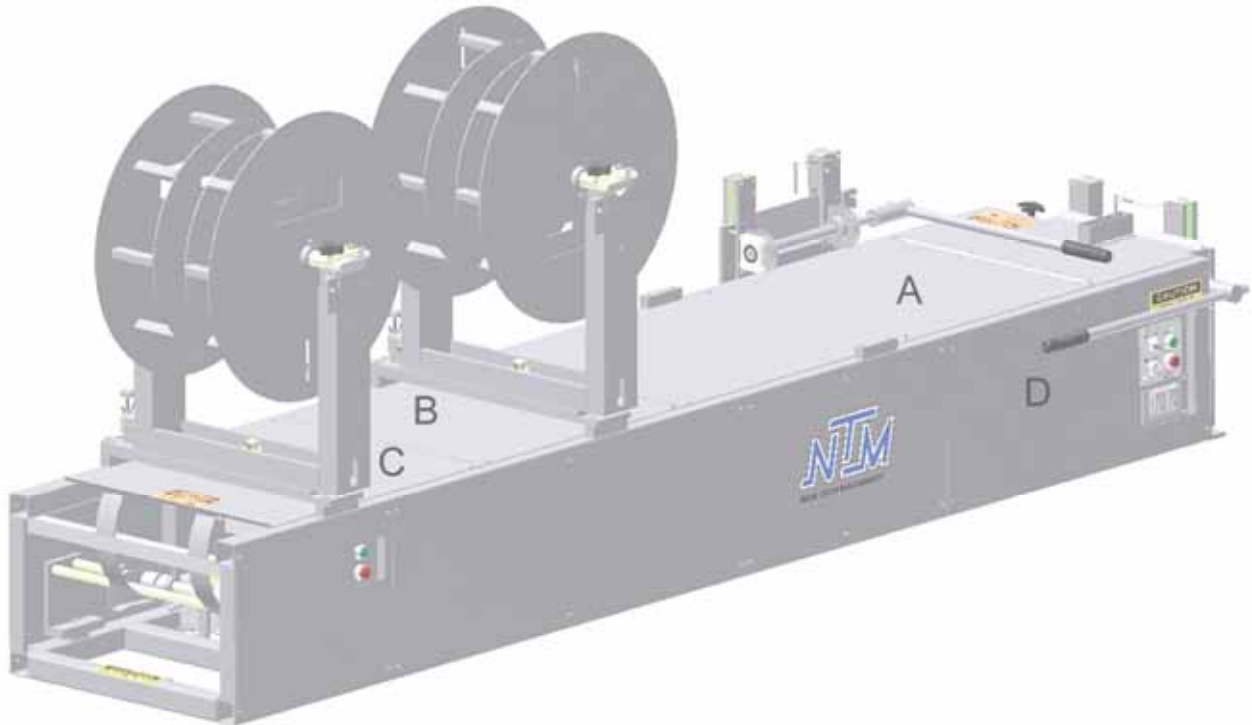
**21. STORE 5" SHEAR**

**22. INSTALL 6" SHEAR**

**CAUTION:** BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE INSTALLING THE SHEAR ONTO THE MACHINE

**COMBO 5" TO 6" CHANGEOVER PROCEDURE****1. REMOVE 6" SHEAR FROM SIDE OF MACHINE****Figure 38: Remove 6" Shear****2. REMOVE COVERS**

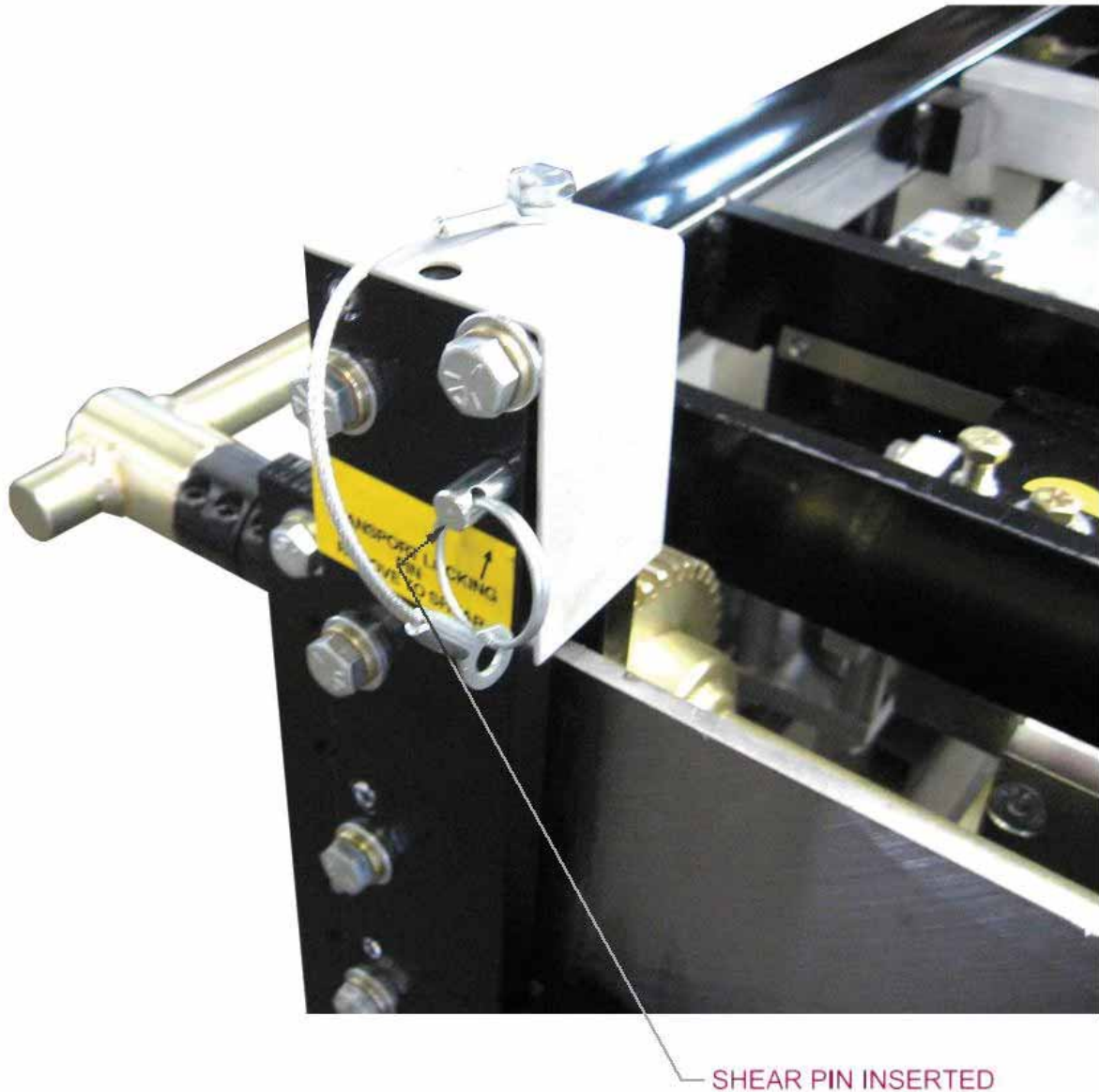
The covers that are removed to change the combo are fastened to the machine with quarter turn screws. To unfasten using a flat blade screwdriver, turn the screw counterclockwise one quarter turn. Remove the lids "A", "B" & "C" on the top of the machine and remove the side cover "D".

**Figure 39: Remove Covers**

CHAPTER 16  
**COMBO 5" TO 6" CHANGEOVER PROCEDURE**

**3. REMOVE 5" SHEAR**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE.**



**Figure 40: Shear Pin**

Remove the shear with the four (4) bolts “C” that secure the shear to the frame and set the shear aside (Figure 27).

**4. MOVE BEAD ASSEMBLY**

(Figure 41)

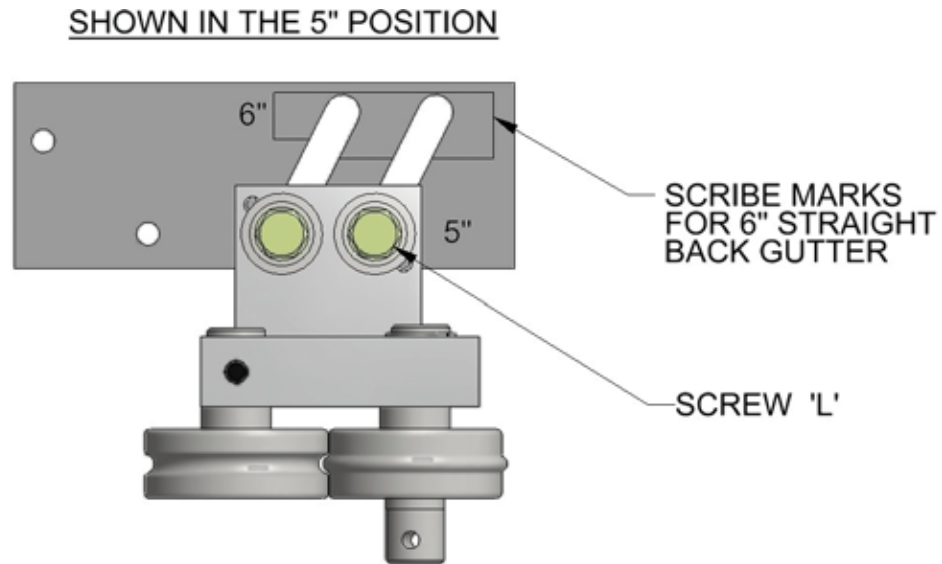
Loosen the two (2) “L” screws and slide the assembly up for the 6” position. The 5” and 6” positions are scribed on the mounting block for ease of placement. Re-tighten screws “L”.

**NOTE:** Do not over tighten “L” screws.



CHAPTER 16

## COMBO 5" TO 6" CHANGEOVER PROCEDURE

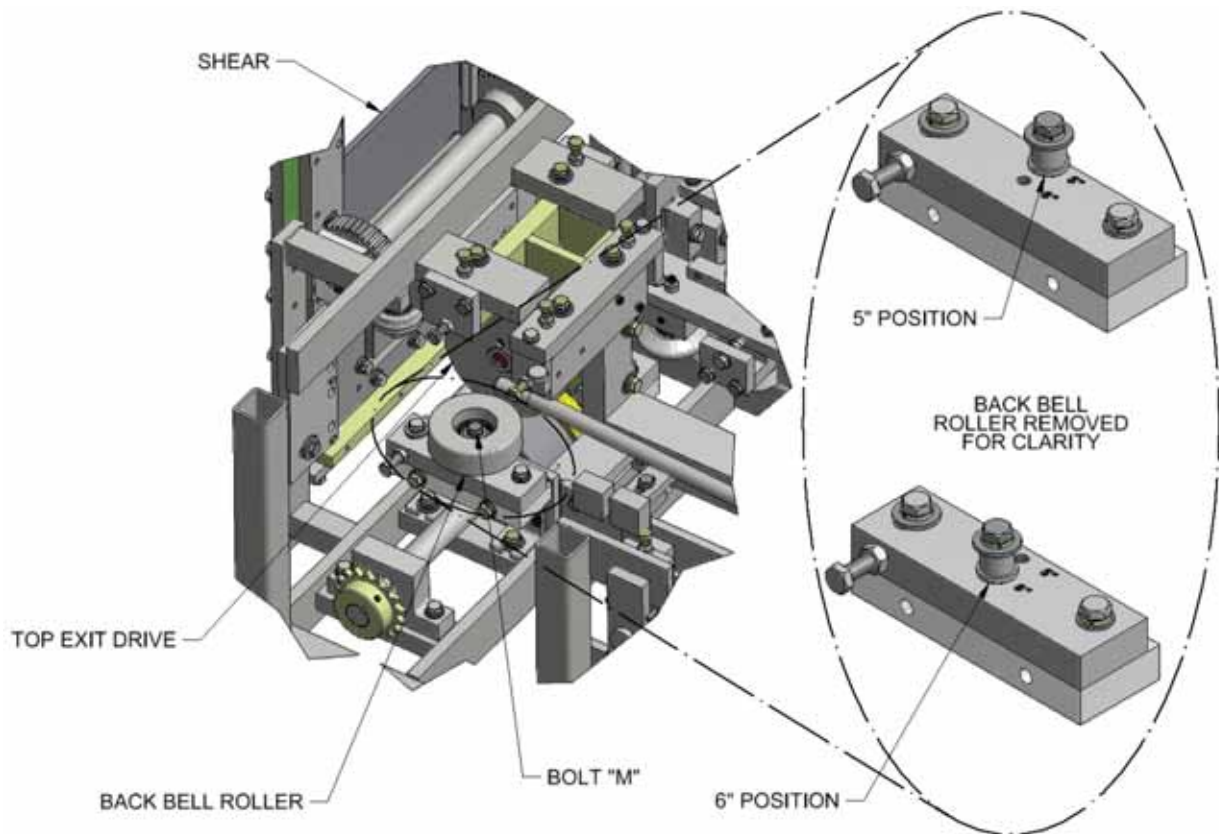


**Figure 41: Combo Bead Roller Adjustment**

### **5. REMOVE BACK BELL ROLLER**

(Figure 42)

Remove the back bell roller with the bolt "M" that holds the center shaft in place. Set this assembly aside.



**Figure 42: Back Bell Roller**

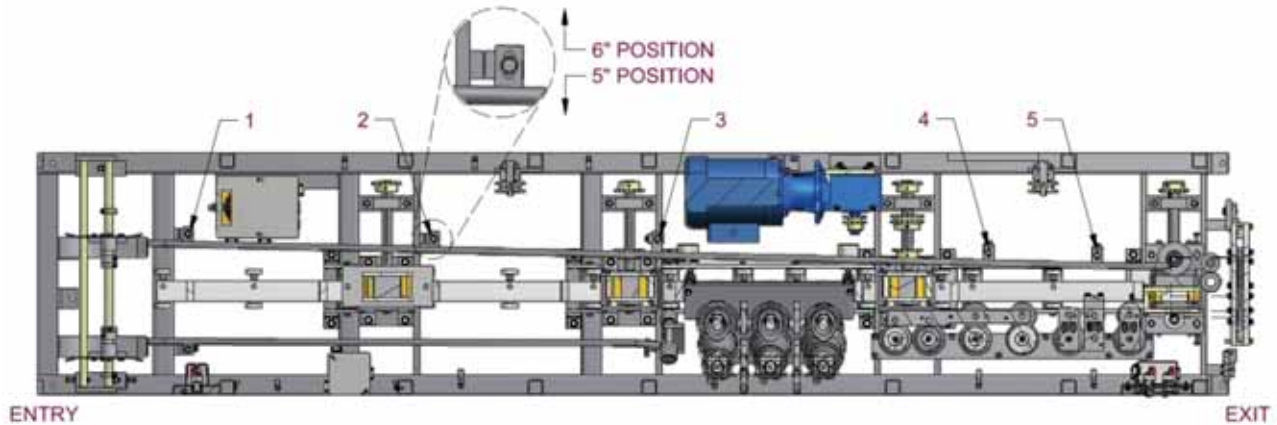


## **COMBO 5" TO 6" CHANGEOVER PROCEDURE**

### **6. MOVE BACK GUIDE ROD**

(Figure 43)

Loosen the five (5) bolts on the back guide rod, move the guide rod away from the skate into the 6" position. Re-tighten the five (5) bolts.

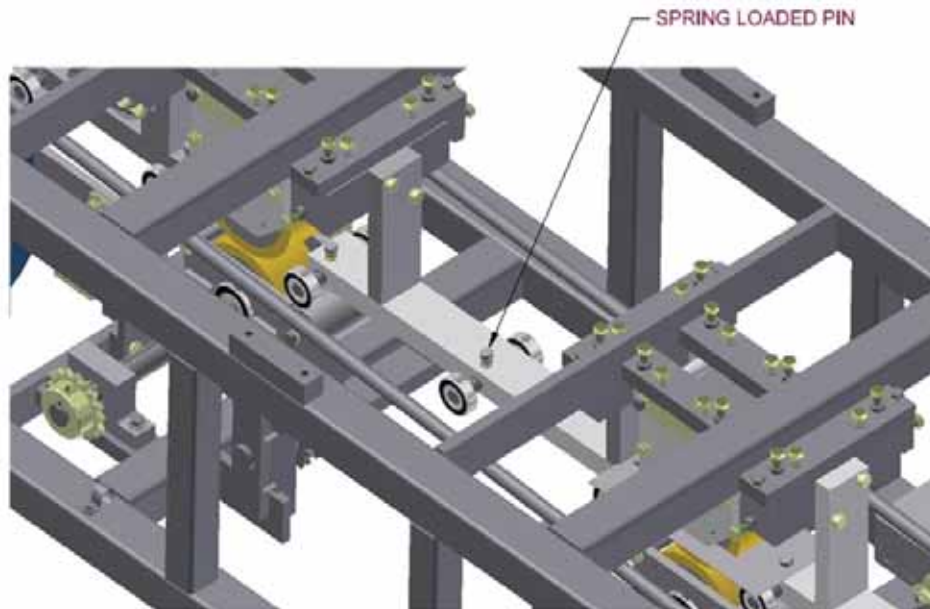


**Figure 43: Back Guide Rod**

### **7. MOVE SKATE ROLLERS**

(Figure 44)

There are four (4) center skates in the combo machine. Each of these skates have retractable rear skate forming rollers that adjust in and out for 5" and 6" gutter. To change the skate roller positions, pull the spring loaded pin up at the skate bearing until the pin disengages. Move the skate roller slightly away from the skate for the 6" position. Release the spring pin and continue moving the roller until the pin snaps back into place. Repeat this for all thirteen (13) rear skate forming rollers.



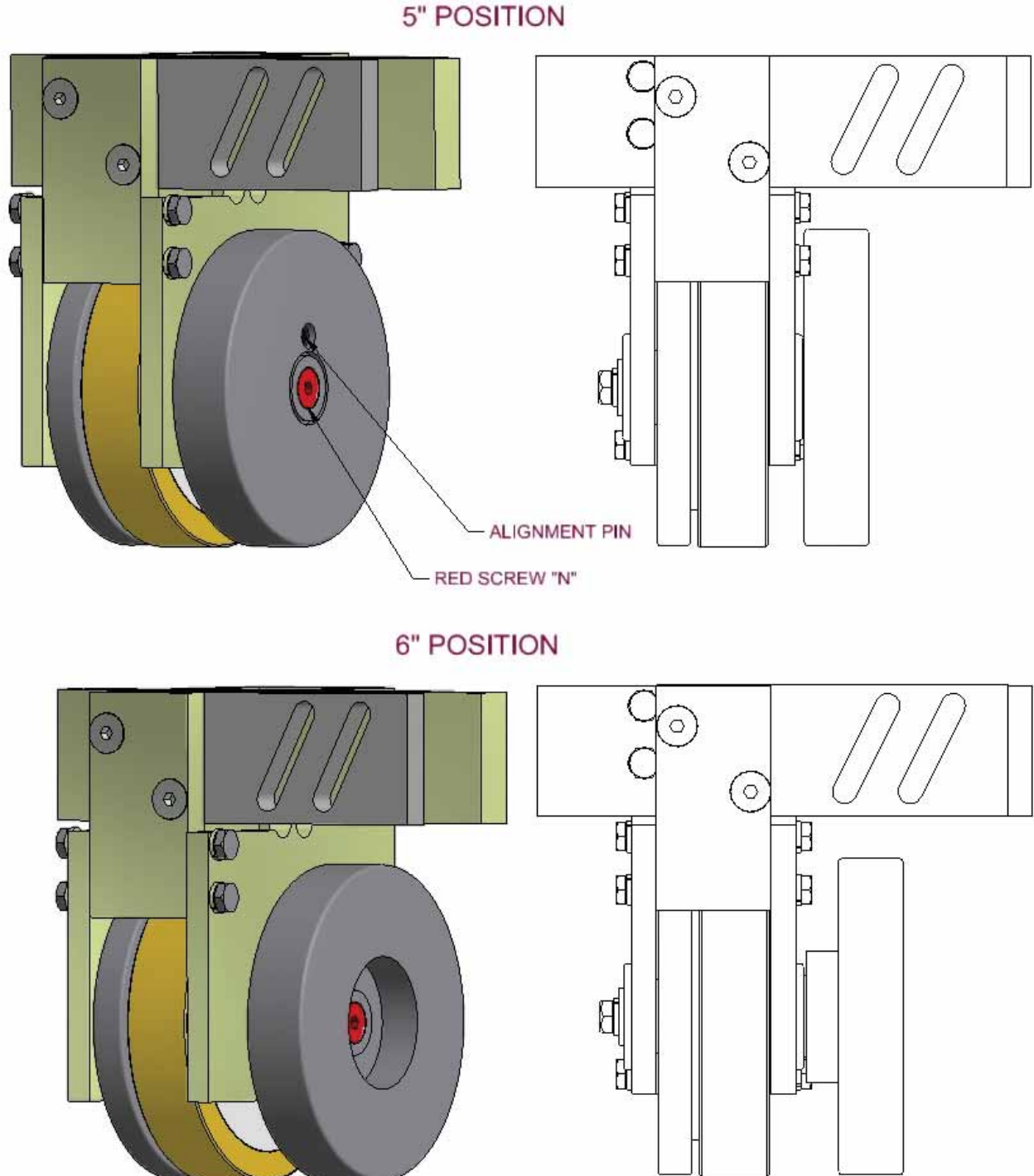
**Figure 44: Skate Roller Pin**

**COMBO 5" TO 6" CHANGEOVER PROCEDURE****8. REMOVE AND REINSTALL EXIT TOP BACK SIDE ROLLER**

(Figure 45)

Remove the exit top back roller by removing the red flat head socket screw "N" and beveled washer located at the center of the roller. Turn the roller end for end and re-install it back onto the shaft by aligning the locating pin attached to the shaft with the locator hole on the exit top roller backside, before tightening the center screw "N". Failure to align the roller properly will cause damage.

**NOTE:** Do not over tighten "N" screw.



**Figure 45: Exit Top Roller**

CHAPTER 16

**COMBO 5" TO 6" CHANGEOVER PROCEDURE**

**9. RE-INSTALL BACK BELL ROLLER**

(Figure 29 and Figure 42)

Re-install the back bell roller with the bolt "M". Push outward on bell roller while tightening bolt "M". Check the clearance between the Back Bell Roller and the Top Back Roller to be sure they are properly gaped.

**10. MOVE ENTRY GUIDES AND AUXILIARY GUIDE POSTS**

(Figure 18)

The entry guide includes factory set stop collars which allow the entry guide to be quickly repositioned between the 5" and the 6" positions. To change the entry guides to the 6" position:

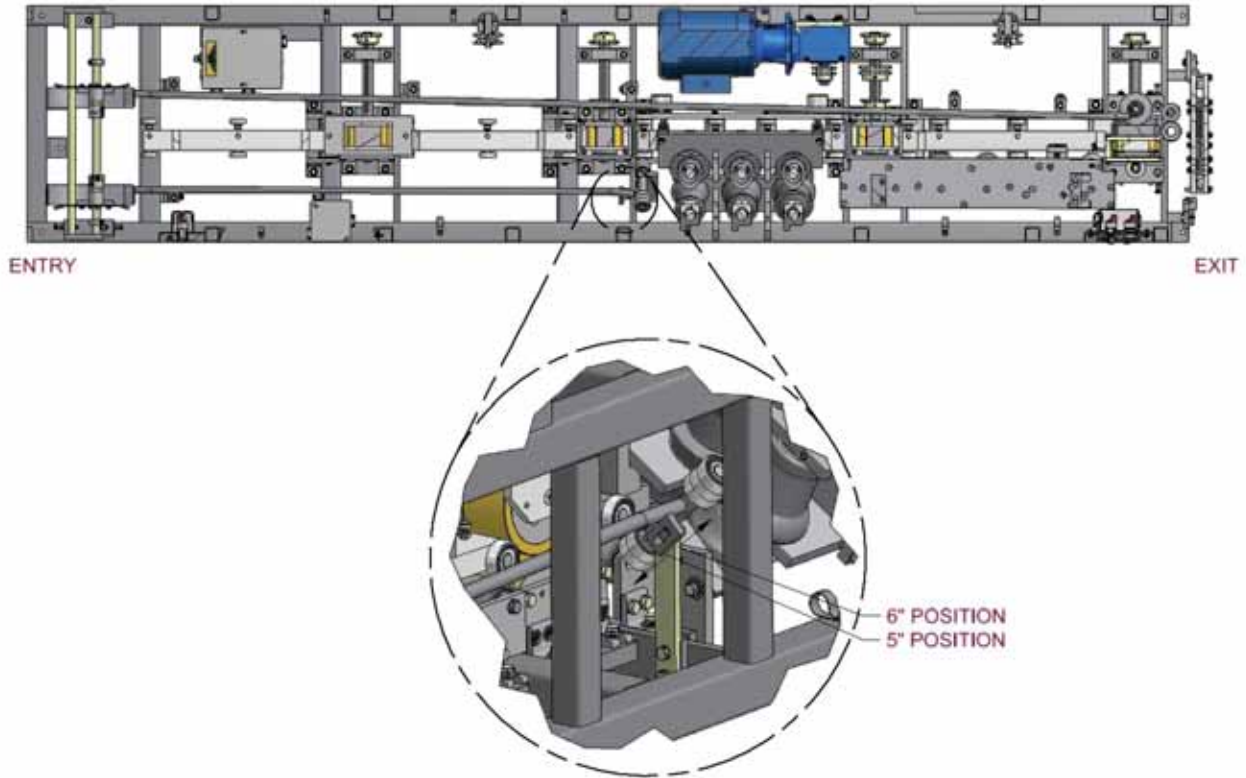
1. Loosen Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
2. Slide the Face/Right Entry Guide and the Back/Left Entry Guide outboard for the 6" position until both entry guides are in contact with the clamp collars.
3. While holding the entry guides in position, tighten Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
4. Loosen Screws "D" and "E" on the right and left auxiliary guide posts.
5. Slide the guide posts outboard to the 6" position until both guide posts are in contact with the stops in the slot.
6. Tighten Screws "D" and "E" on the right and left auxiliary guide posts.

Refer to the ADJUSTING THE STOP COLLARS ON THE M56 COMBO ENTRY GUIDE section on page 23 if stop collar adjustment is necessary.

**COMBO 5" TO 6" CHANGEOVER PROCEDURE****11. MOVE FACE GUIDE ROD**

(Figure 46)

Loosen only the guide rod mount bolt nearest to the face roller assembly and move the guide rod up and away from the skate for the 6" position. Re-tighten the bolt.

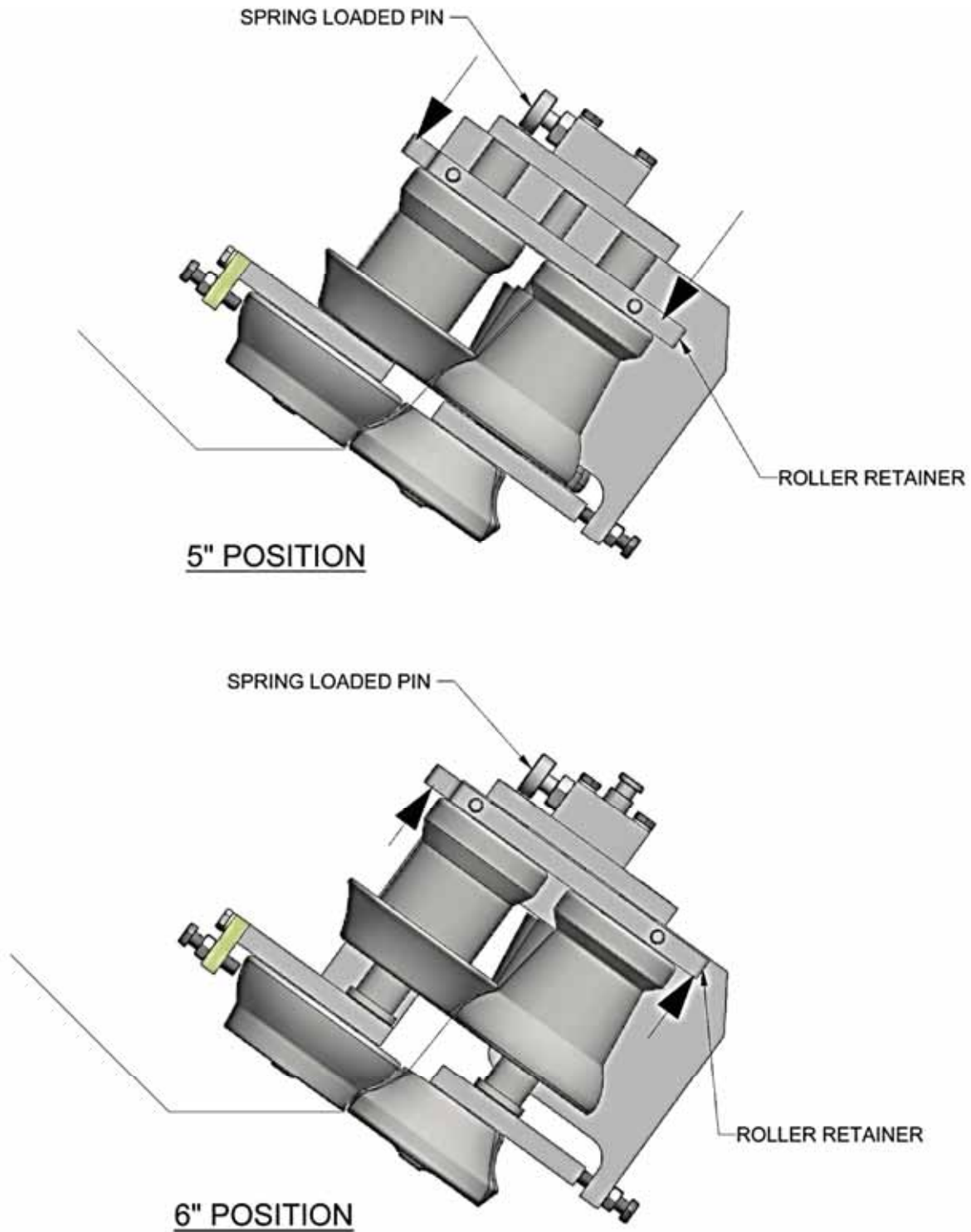
**Figure 46: Face Guide Rod****12. MOVE FACE ASSEMBLY STATIONS**

(Figure 47)

To move the three (3) face roller assemblies, pull the Spring Loaded Pin, located at the top of each assembly. Pull the roller assembly up for the 6" position and release the pin back into the groove in the shaft. Repeat this for all three (3) face roller assemblies.

CHAPTER 16

## **COMBO 5" TO 6" CHANGEOVER PROCEDURE**



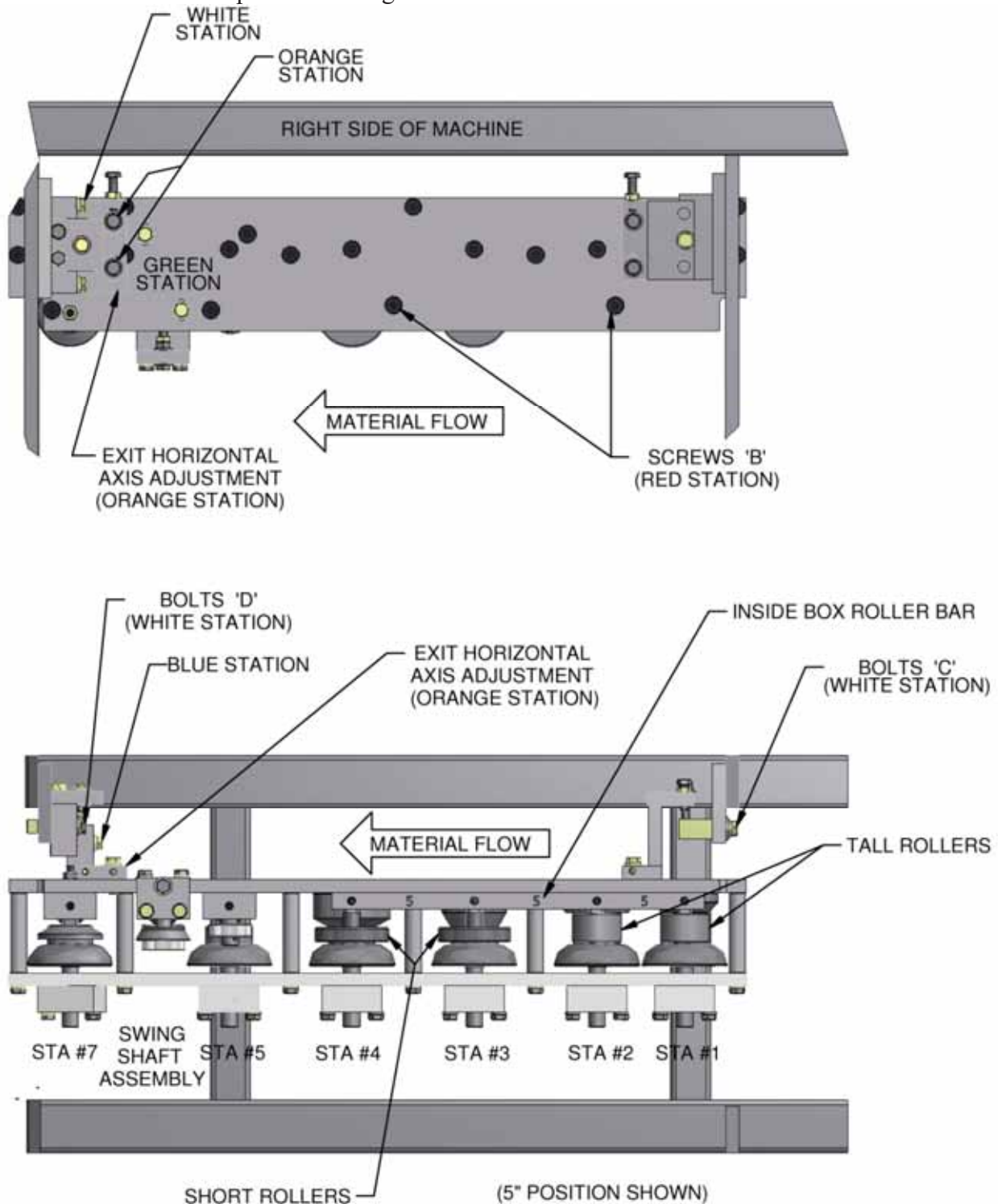
**Figure 47: Face Assembly**



**COMBO 5" TO 6" CHANGEOVER PROCEDURE****13. MOVE BOX ASSEMBLY**

(Figure 48 &amp; Figure 49)

Loosen the two (2) bolts "C" and the two (2) bolts "D" (**White** station). Move box up and away from the skate for the 6" position. Retighten "C" & "D" bolts.

**Figure 48: Combo Box Assembly**



CHAPTER 16

## COMBO 5" TO 6" CHANGEOVER PROCEDURE

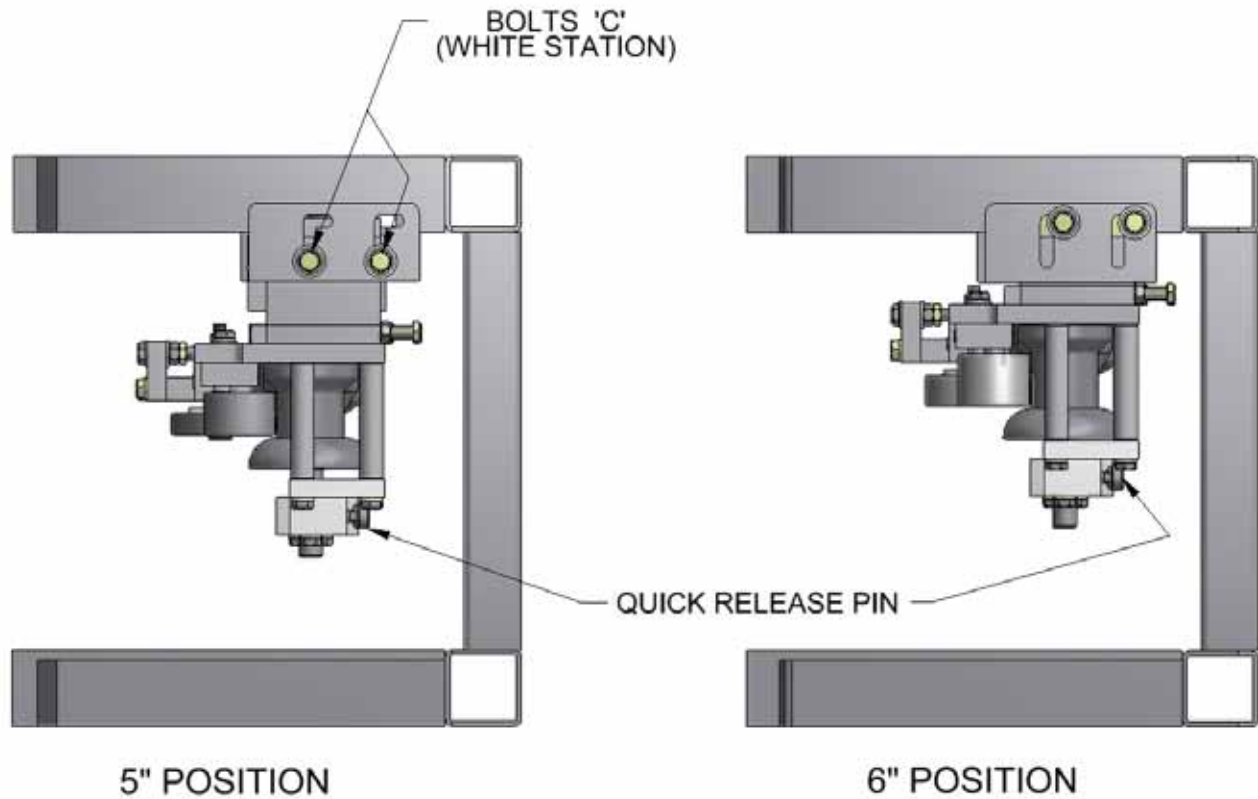


Figure 49: Combo Box Assembly Positions

### 14. REMOVE THE 5" INSIDE BOX ROLLER BAR

(Figure 50)

Remove the inside box roller bar assembly by removing the two (2) **red** marked screws "B", located on the top of the box (Figure 48). Set this assembly aside.

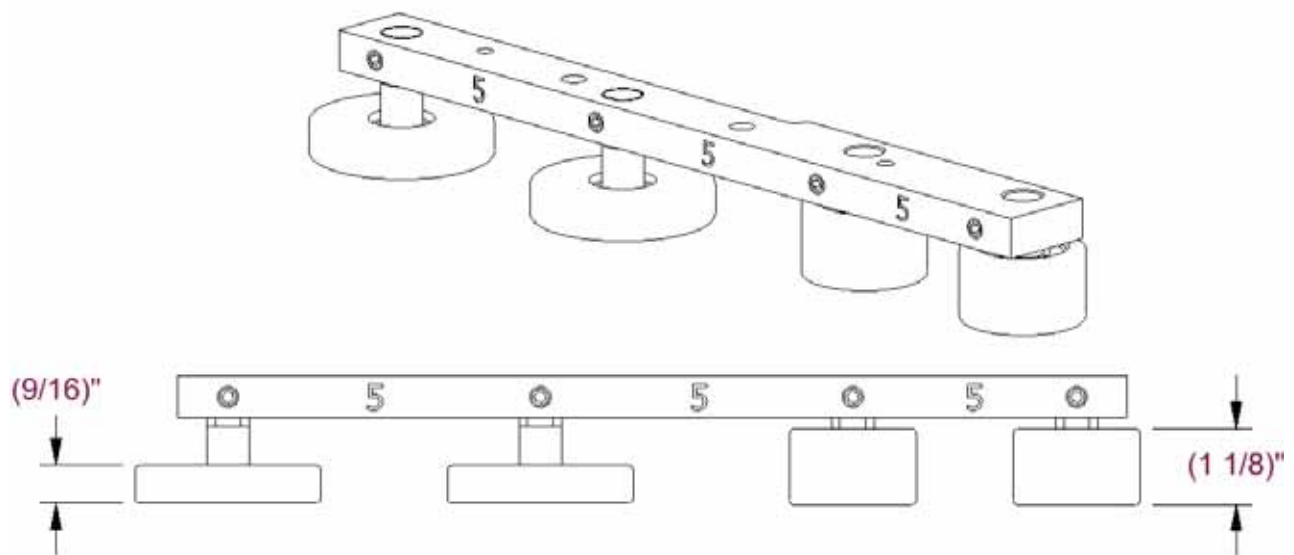


Figure 50: 5" Roller Bar

**COMBO 5" TO 6" CHANGEOVER PROCEDURE****15. MOVE OUTSIDE BOX ROLLERS**

(Figure 48 and Figure 49)

There are a total of six (6) quick release pins at the bottom of the box. Retract each pin and move the bottom portion of the outside roller down for the 6" position. Release the quick release pins back into the shaft grooves.

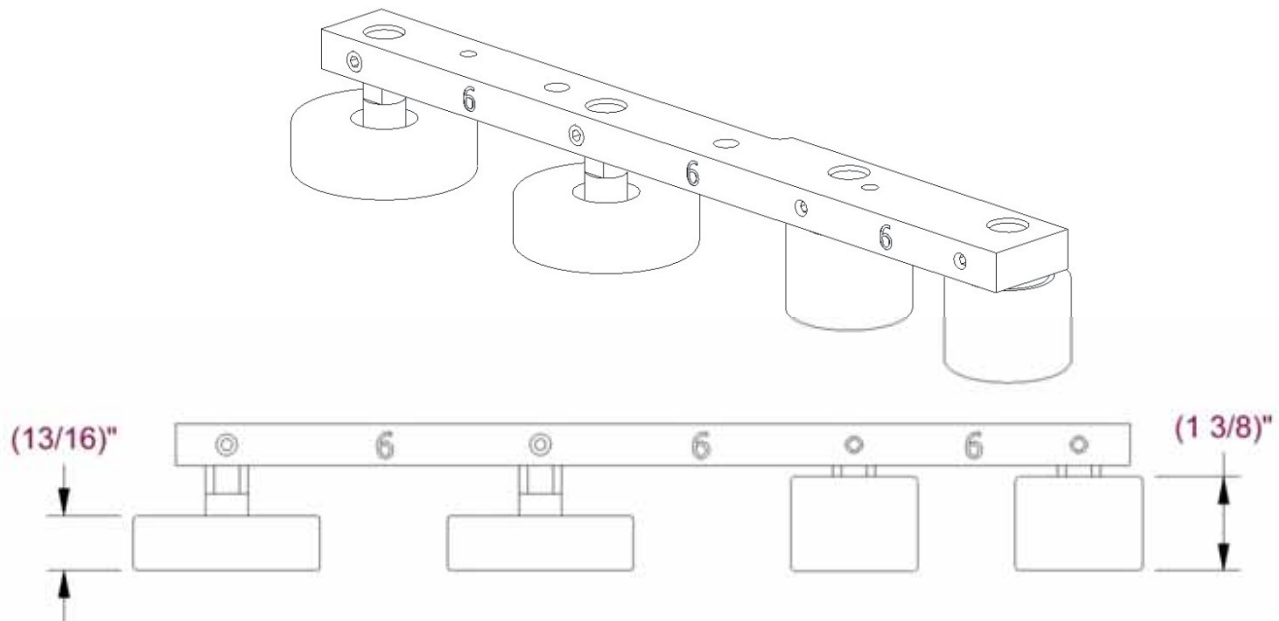
**16. INSTALL THE 6" INSIDE BOX ROLLER BAR**

(Figure 51)

Remove the 6" inside box roller bar from the storage location and install into the box assembly.

The tall rollers locate in the station #1, and #2 positions while the short rollers locate in the station #3, and #4 positions. Re-install the 2 (two) **red** marked screws "B" and tighten (Figure 48).

**NOTE:** Do not over tighten red screws "B"



**Figure 51: 6" Roller Bar**

**17. STORE THE 5" INSIDE BOX ROLLER BAR**

(Figure 52)

Store the unused 5" roller bar assembly.

CHAPTER 16  
**COMBO 5" TO 6" CHANGEOVER PROCEDURE**



**Figure 52: Unused Inside Box Roller Stored**

**18. REPLACE COVERS**

(Figure 39)

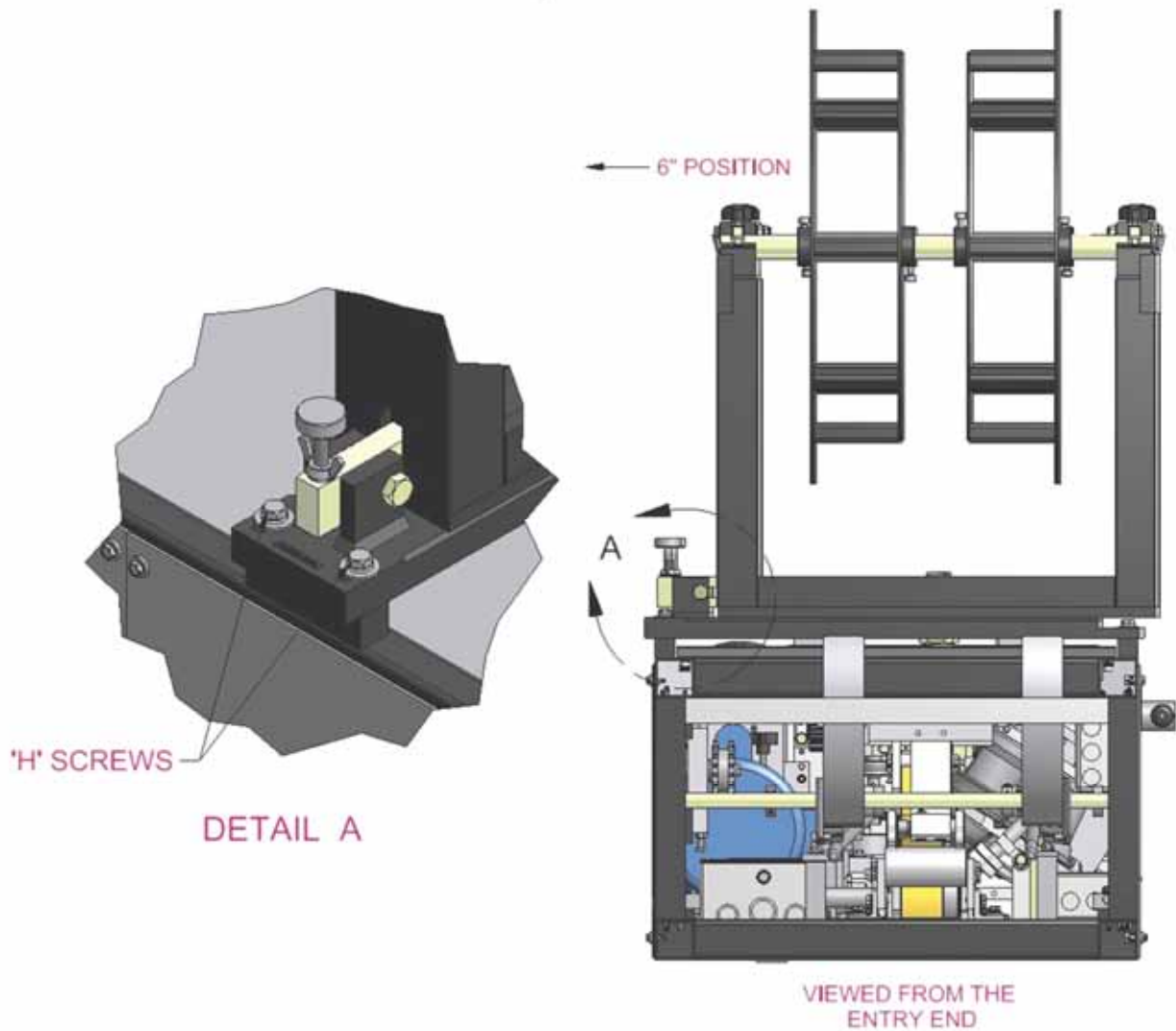
Replace the covers “A”, “B”, and “C” on the top of the machine. Replace the side cover “D”. To refasten, turn the cover screws one quarter turn clockwise.

**19. POSITION REEL RACK ASSEMBLY (If equipped)**

(Figure 53)

If the machine is equipped with reel(s), loosen the four (4) screws “H”. Slide the reel rack assembly to towards the face side of the machine. Retighten the four (4) screws “H”.

CHAPTER 16  
**COMBO 5" TO 6" CHANGEOVER PROCEDURE**



**Figure 53: Reel Stand - 6" Position**

**20. CONFIGURE CRADLE ASSEMBLY** (If equipped)

(Figure 8 and Figure 10)

If the machine is equipped with Cradles, loosen the four (4) changeover bolts "A". Move the slides on the cradle outward for the 6" position. Retighten screws "A".

**21. STORE 5" SHEAR**

Store the unused shear on the side of the machine.

**22. INSTALL 6" SHEAR**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE. (Figure 40)**

Install the shear on the frame with the four (4) bolts "B" (Figure 27). The shear is preset from the factory and should not need any adjustment.

CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**

## COMBO CHANGEOVER PROCEDURE FROM 6" TO 5"

**CAUTION: Disconnect machine from power source before proceeding with changeover.** The procedure to change from a 5" gutter configuration to a 6" configuration and back again is greatly simplified by the use of locator pins with two fixed positions which provide a quick change to either gutter size. There is a tool kit included with every combo machine. It is located inside the left side cover at the exit end of the machine.

It is important that while changing the machine from one gutter size to another that the proper sequence be followed. Failure to do so may result in wasted time. The sequence to change from 5" to 6" or 6" to 5" is similar but not exactly the same. See page 53 for 5" to 6" procedure.

### **CAUTION: Unplug machine before proceeding**

1. **REMOVE 5" SHEAR FROM SIDE OF MACHINE AND SET ASIDE**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE**

2. **REMOVE COVERS**

3. **REMOVE 6" SHEAR AND SET ASIDE**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE**

4. **REMOVE BACK BELL ROLLER**

5. **REMOVE AND REINSTALL EXIT TOP ROLLER BACK SIDE**

6. **RE-INSTALL BACK BELL ROLLER**

7. **MOVE BEAD ASSEMBLY**

8. **MOVE SKATE ROLLERS**

9. **MOVE BACK GUIDE ROD**

10. **MOVE ENTRY GUIDES AND AUXILIARY GUIDE POSTS**

11. **MOVE FACE GUIDE ROD**

12. **MOVE FACE ASSEMBLY STATIONS**

13. **REMOVE 6" INSIDE BOX ROLLER BAR ASSEMBLY**

14. **MOVE OUTSIDE BOX ROLLERS**

15. **INSTALL 5" INSIDE BOX ROLLER BAR ASSEMBLY**

16. **STORE 6" INSIDE BOX ROLLER BAR ASSEMBLY**

17. **MOVE BOX ASSEMBLY**

18. **REPLACE COVERS**

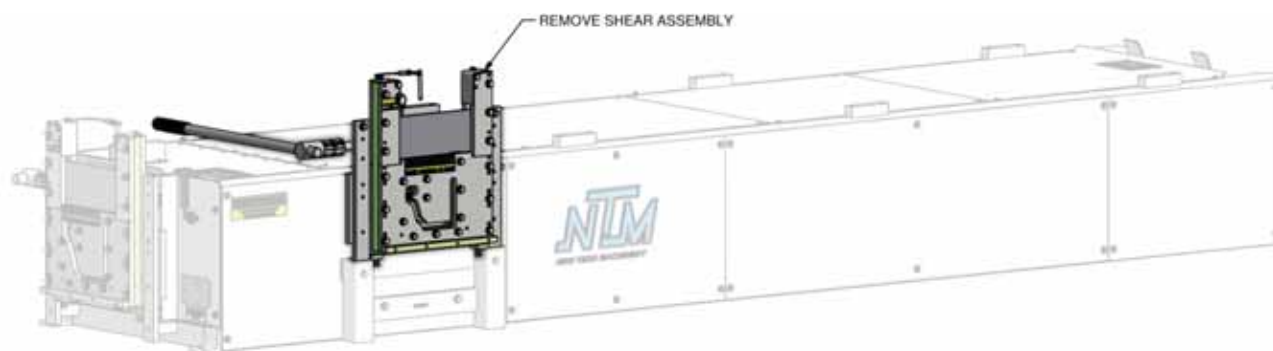
19. **MOVE 5" REEL RACK ASSEMBLY** – (if machine is equipped with reel(s))

20. **MOVE CRADLE TO 5" POSITION** – (If machine is equipped with cradles)

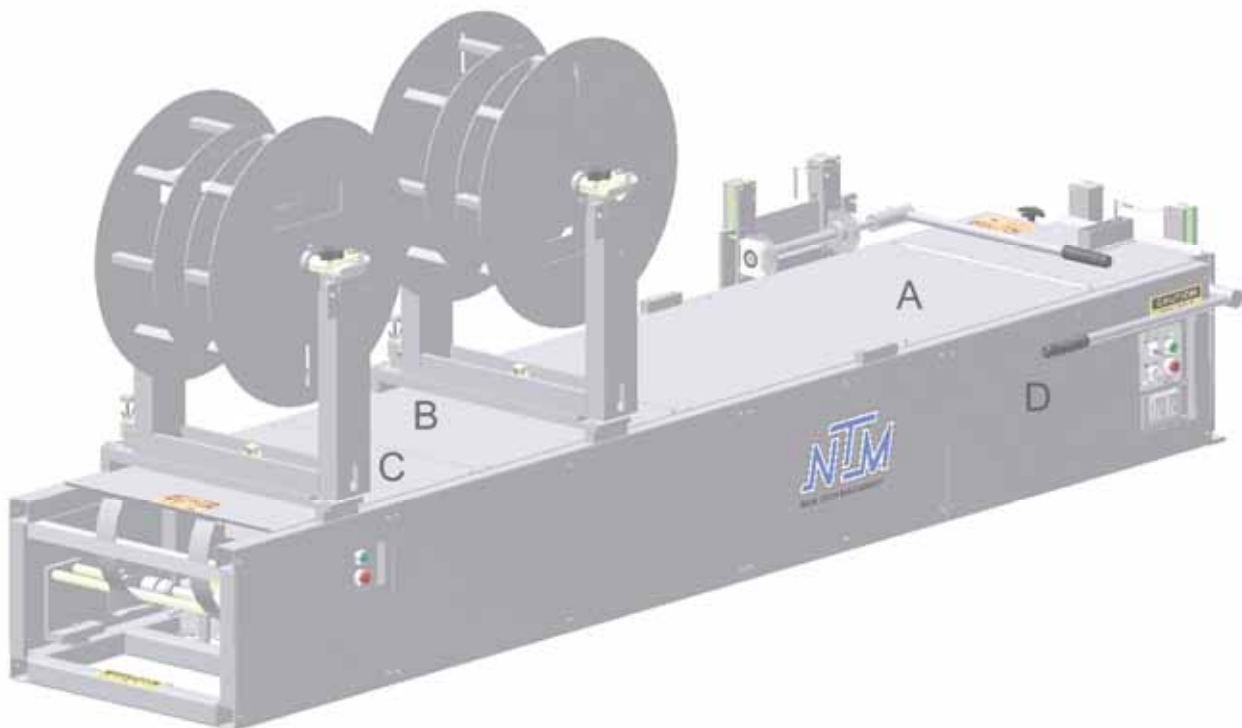
21. **STORE 6" SHEAR**

22. **INSTALL 5" SHEAR**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE INSTALLING THE SHEAR ONTO THE MACHINE**

**COMBO 6" TO 5" CHANGEOVER PROCEDURE****1. REMOVE 5" SHEAR FROM SIDE OF MACHINE****Figure 54: Remove 5" Shear****2. REMOVE COVERS**

The covers that are removed to change the combo are fastened to the machine with quarter turn screws. To unfasten using a flat blade screwdriver, turn the screw counterclockwise one quarter turn. Remove the lids "A", "B" & "C" on the top of the machine and remove the side cover "D".

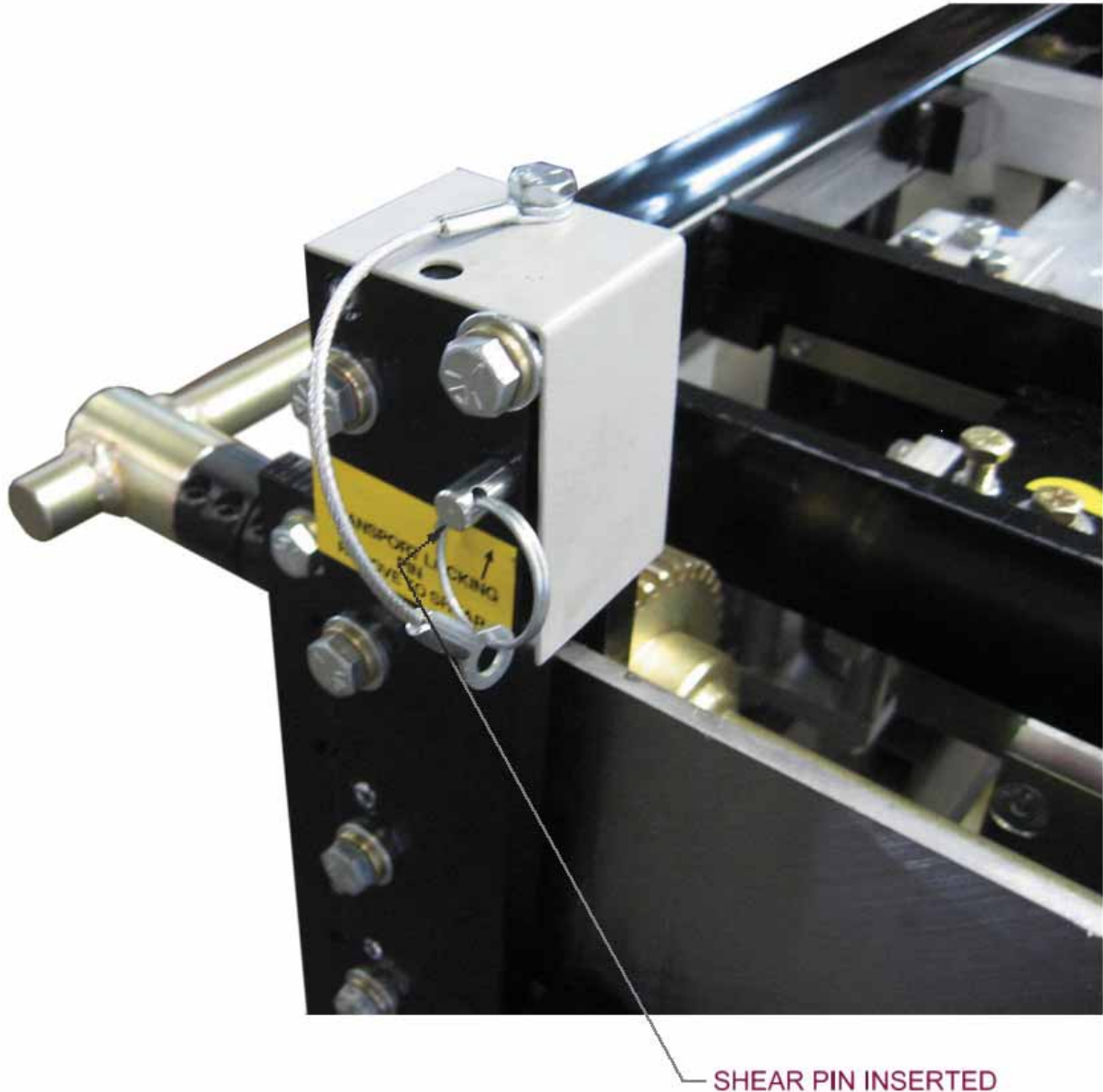
**Figure 55: Remove Covers**



CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**

**3. REMOVE 6" SHEAR**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE.**



**Figure 56: Shear Pin**

Remove the shear with the four (4) bolts “C” that secure the shear to the frame and set the shear aside (Figure 27).

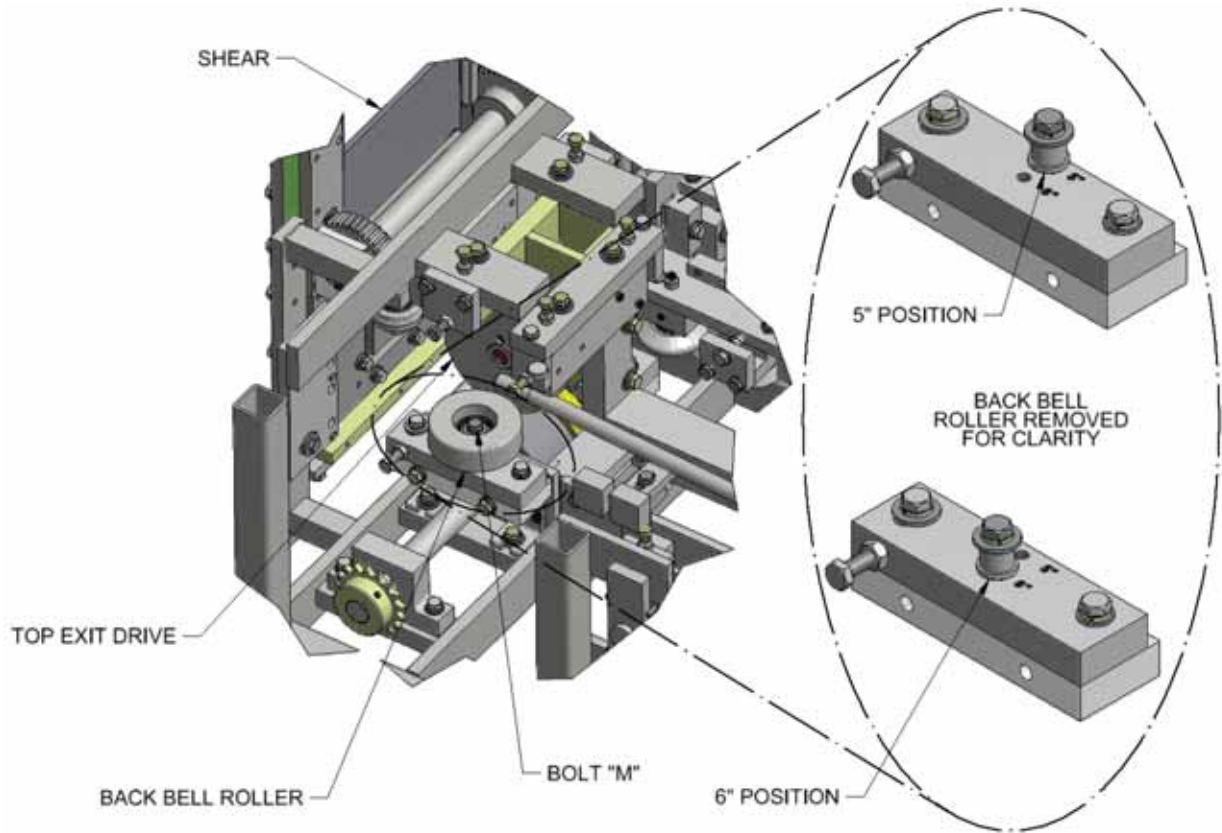
**4. REMOVE BACK BELL ROLLER**

(Figure 57)

Remove the back bell roller with the bolt “M” that holds the center shaft in place. Set this assembly aside.

CHAPTER 17

## **COMBO 6" TO 5" CHANGEOVER PROCEDURE**



**Figure 57: Back Bell Roller**

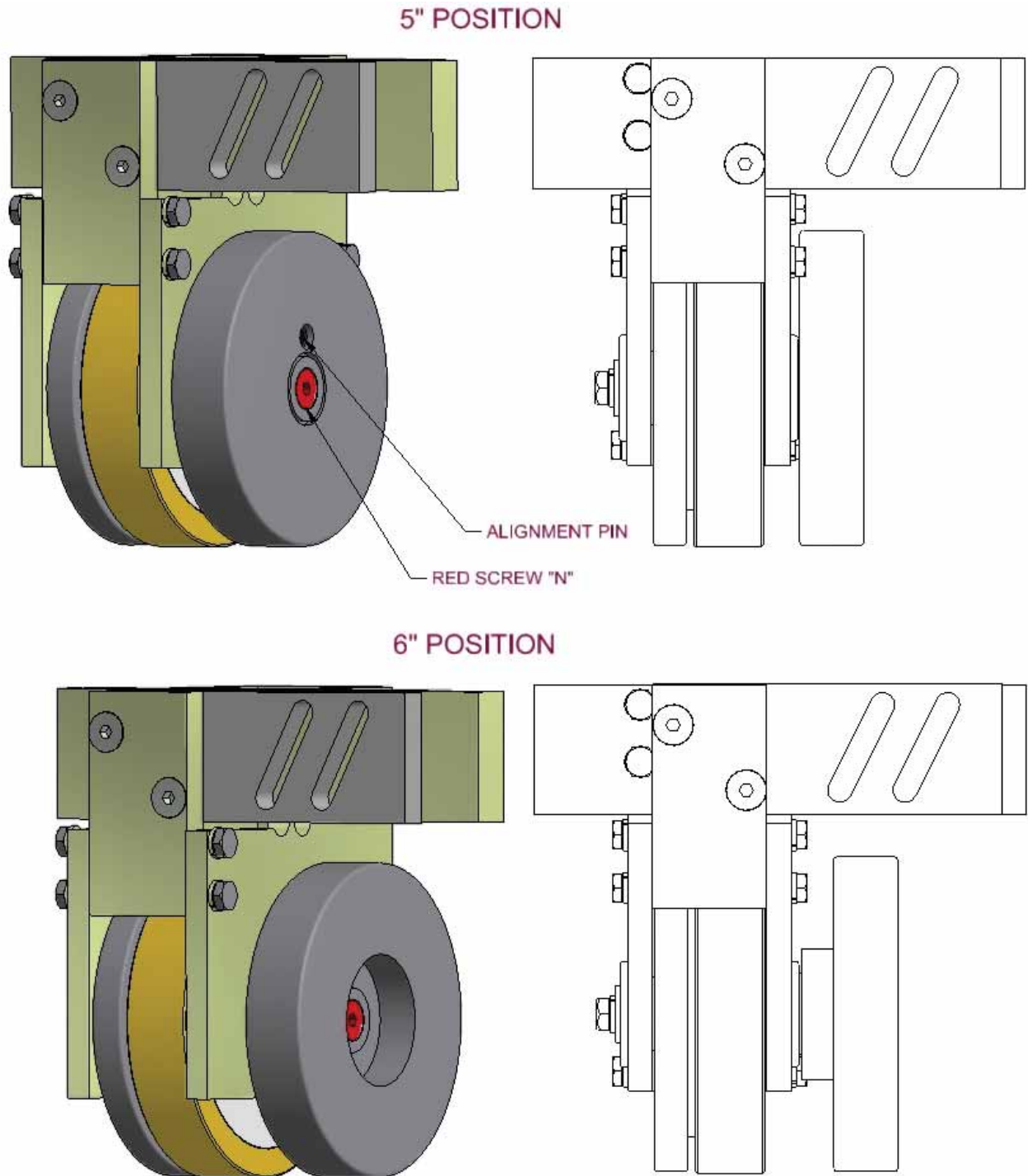
### **5. REMOVE AND REINSTALL EXIT TOP BACK SIDE ROLLER**

(Figure 58)

Remove the exit top back roller by removing the red flat head socket screw “N” and beveled washer located at the center of the roller. Turn the roller end for end and re-install it back onto the shaft by aligning the locating pin attached to the shaft with the locator hole on the exit top roller backside, before tightening the center screw “N”. Failure to align the roller properly will cause damage.

**NOTE:** Do not over tighten “N” screws.

CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**



**Figure 58: Exit Top Roller**

**6. RE-INSTALL BACK BELL ROLLER**

(Figure 29 and Figure 57)

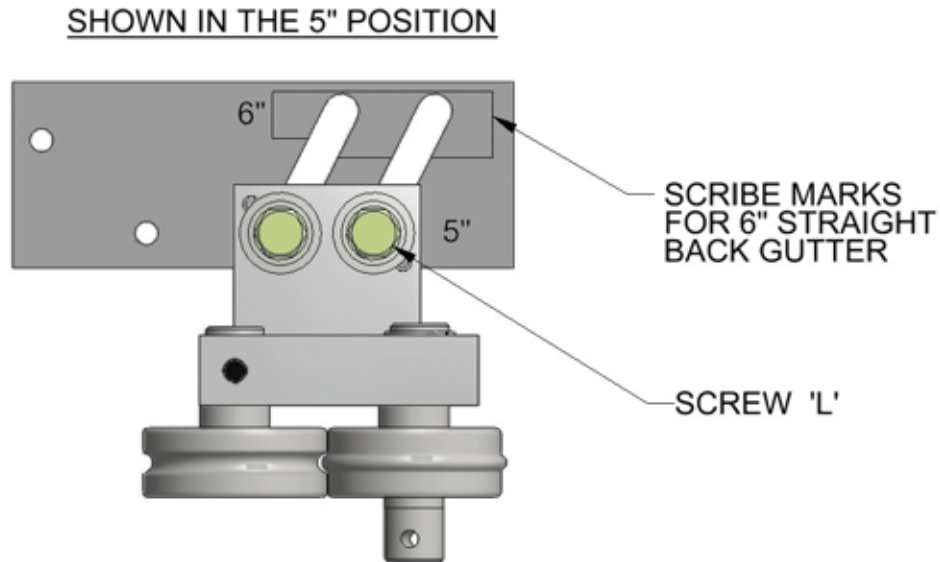
Re-install the back bell roller with the bolt “M”. Push outward on bell roller while tightening bolt “M”. Check the clearance between the Back Bell Roller and the Top Back Roller to be sure they are properly gaped.

**COMBO 6" TO 5" CHANGEOVER PROCEDURE****7. MOVE BEAD ASSEMBLY**

(Figure 59)

Loosen the two (2) screws marked "L" and slide the assembly down for the 5" position. The positions are scribed on the mounting block for ease of placement. Re-tighten screws "L".

**NOTE:** Do not over tighten "L" screws.



**Figure 59: Combo Bead Roller Adjustment**

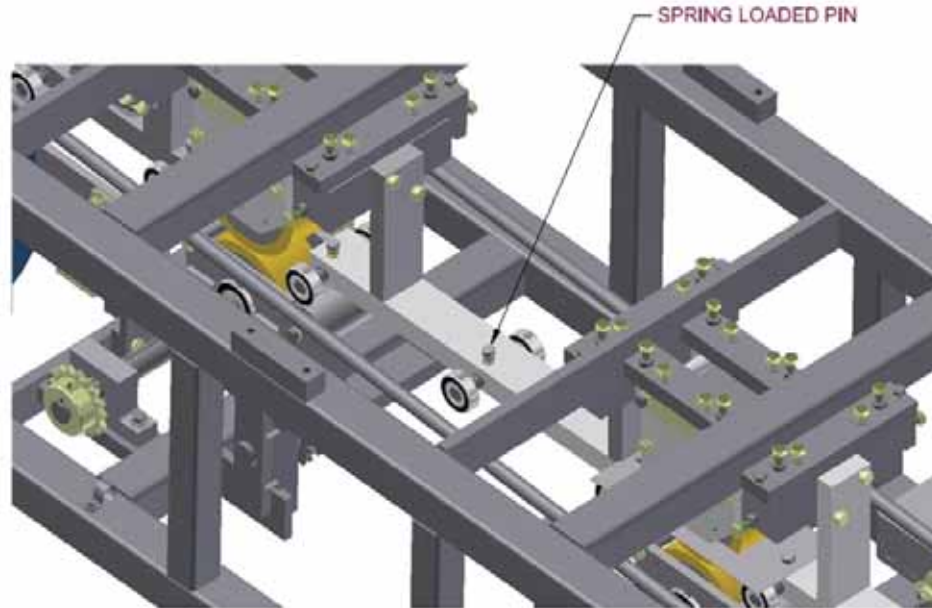
**8. MOVE SKATE ROLLERS**

(Figure 60)

There are four (4) center skates in the combo machine. Each of these skates have retractable rear skate forming rollers that expand between 5" and 6" gutter. To change, pull the spring loaded pin up at each skate bearing until the pin disengages. Move the forming roller slightly towards the skate for the 5" position. Release the spring pin and continue moving the roller until the pin snaps back into place. Repeat this for all thirteen (13) rear skate forming rollers.

CHAPTER 17

## **COMBO 6" TO 5" CHANGEOVER PROCEDURE**

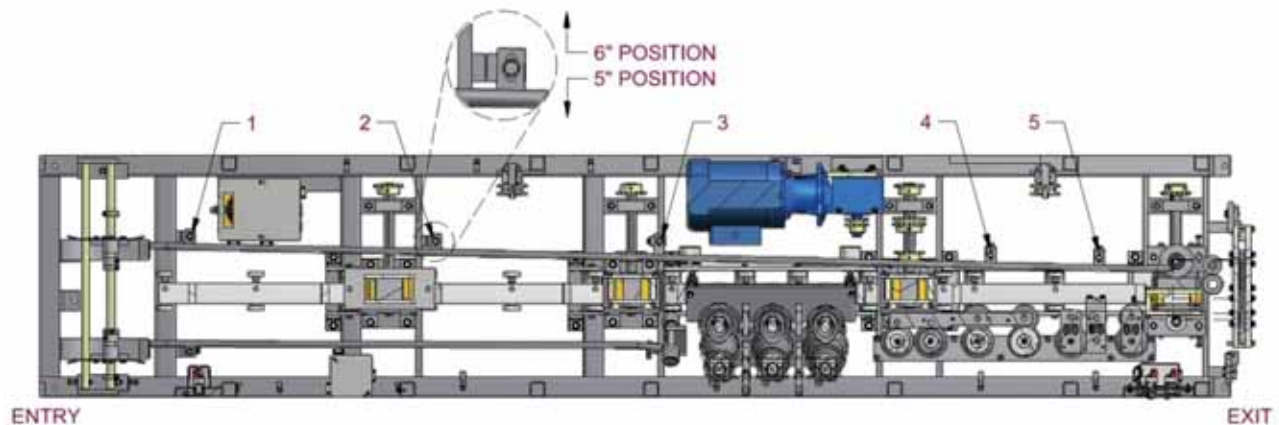


**Figure 60: Skate Roller Pin**

### **9. MOVE BACK GUIDE ROD**

(Figure 61)

Loosen the five (5) bolts on the back guide rod, move the guide rod closer to the skate for the 5" position. Re-tighten the five (5) bolts.



**Figure 61: Back Guide Rod**

### **10. MOVE ENTRY GUIDES**

(Figure 17)

The entry guide for the M56 COMBO includes factory set stop collars which allow the entry guide to be quickly repositioned between the 5" and the 6" positions. Change the entry guides to the 5" position:

1. Loosen Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.
2. Slide the Face/Right Entry Guide and the Back/Left Entry Guide either inboard for the 5" position until both entry guides are in contact with the clamp collars.
3. While holding the entry guides in place, tighten Screw "A" on the Face/Right Entry Guide and Screw "B" on the Back/Left Entry Guide.



## **COMBO 6" TO 5" CHANGEOVER PROCEDURE**

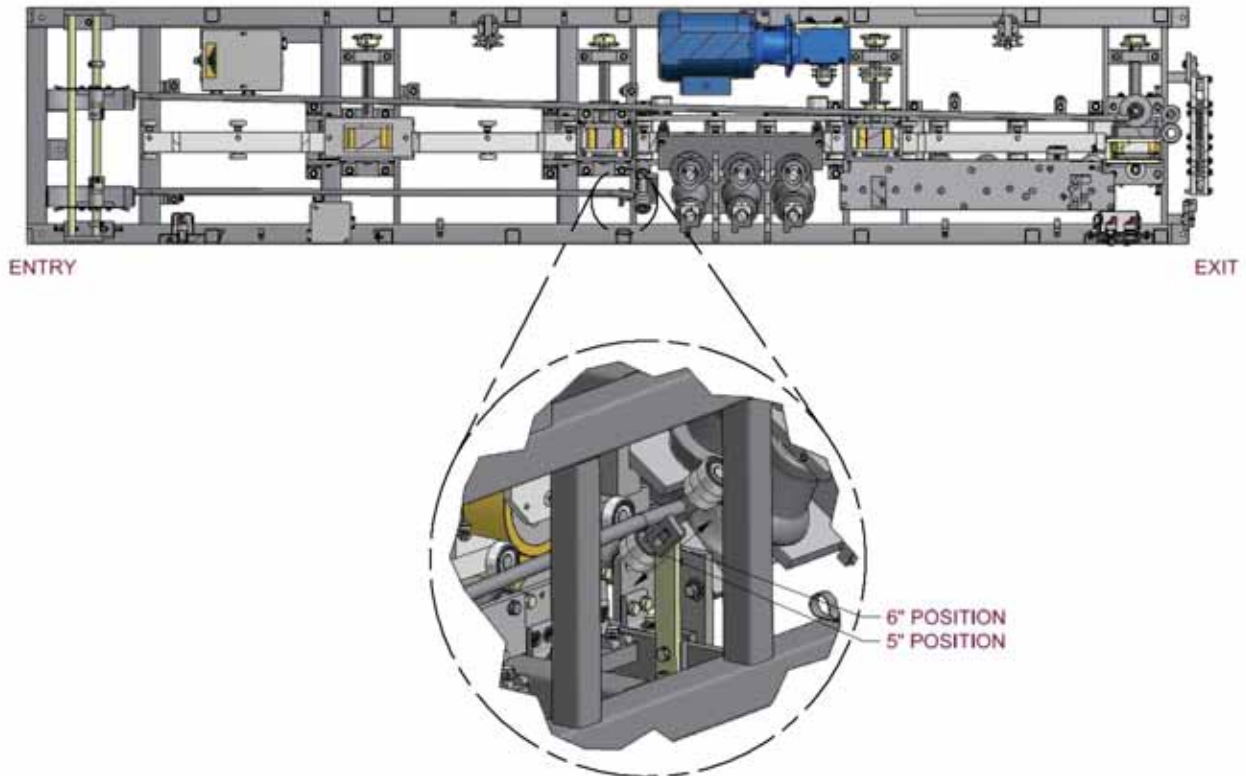
4. Loosen Screws "D" and "E" on the right and left auxiliary guide posts.
5. Slide the guide posts inboard to the 5" position until both guide posts are in contact with the stops in the slot.
6. Tighten Screws "D" and "E" on the right and left auxiliary guide posts.

Refer to the ADJUSTING THE STOP COLLARS ON THE M56 COMBO ENTRY GUIDE section on page 23 if stop collar adjustment is necessary.

### **11. MOVE FACE GUIDE ROD**

(Figure 62)

Loosen only the guide rod mount bolt nearest to the face roller assembly and move the guide rod down and in towards the skate for the 5" position. Re-tighten the bolt.



**Figure 62: Face Guide Rod**

### **12. MOVE FACE ASSEMBLY STATIONS**

(Figure 63)

To move the three (3) face roller assemblies, pull the Spring Loaded Pin, located at the top of each assembly. Allow the roller assembly to slide down into the 5" position and release the pin back into the groove in the shaft. Repeat this for all three (3) face roller assemblies.



CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**

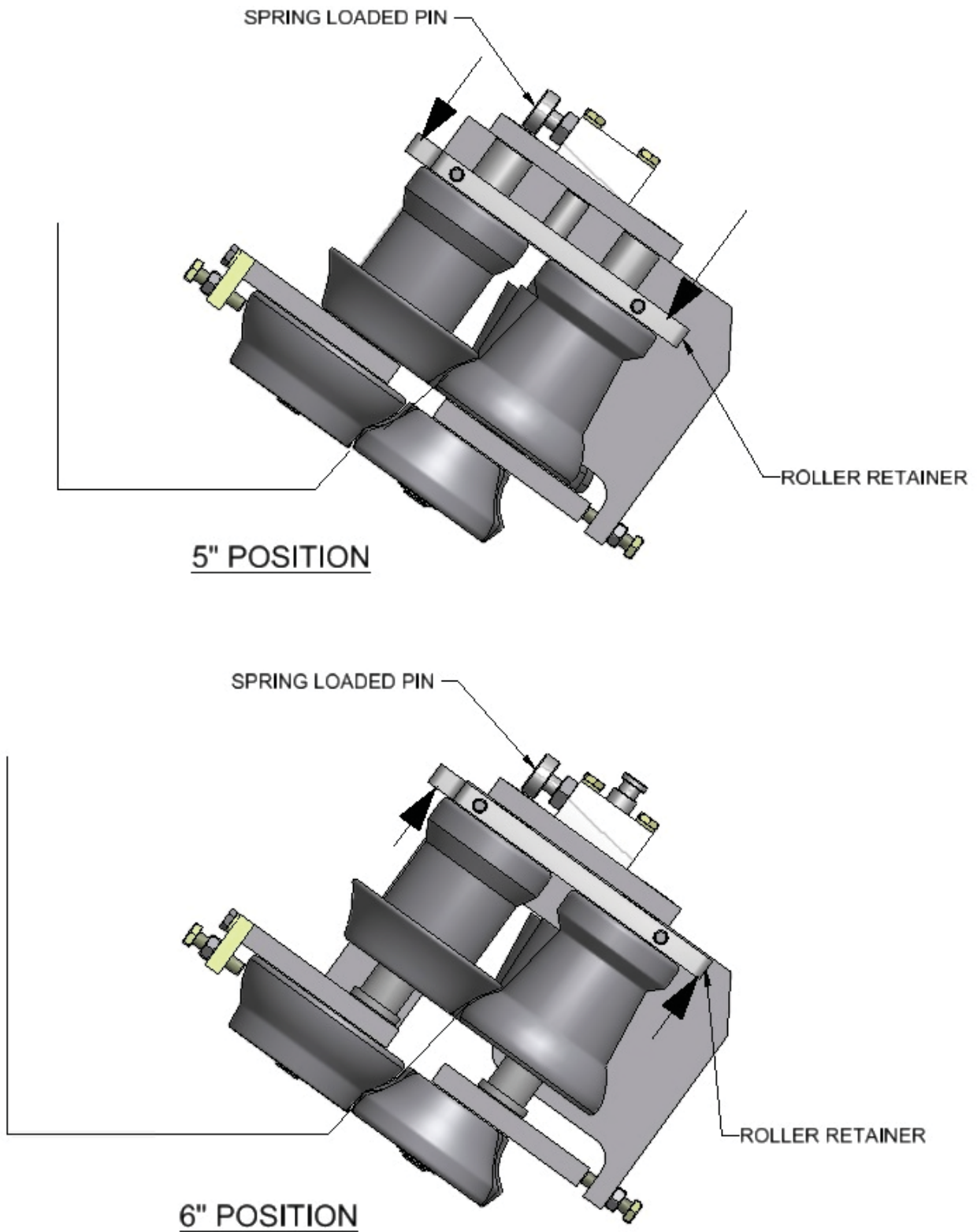
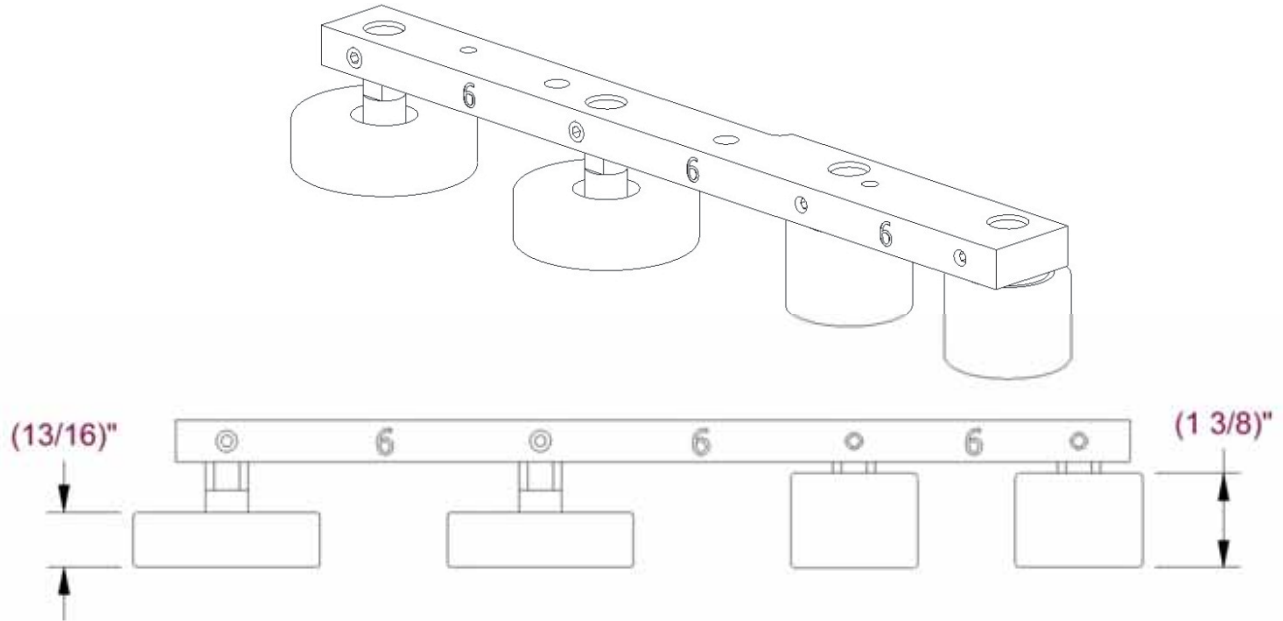


Figure 63: Face Assembly

**COMBO 6" TO 5" CHANGEOVER PROCEDURE****13. REMOVE THE 6" INSIDE BOX ROLLER BAR**

(Figure 64)

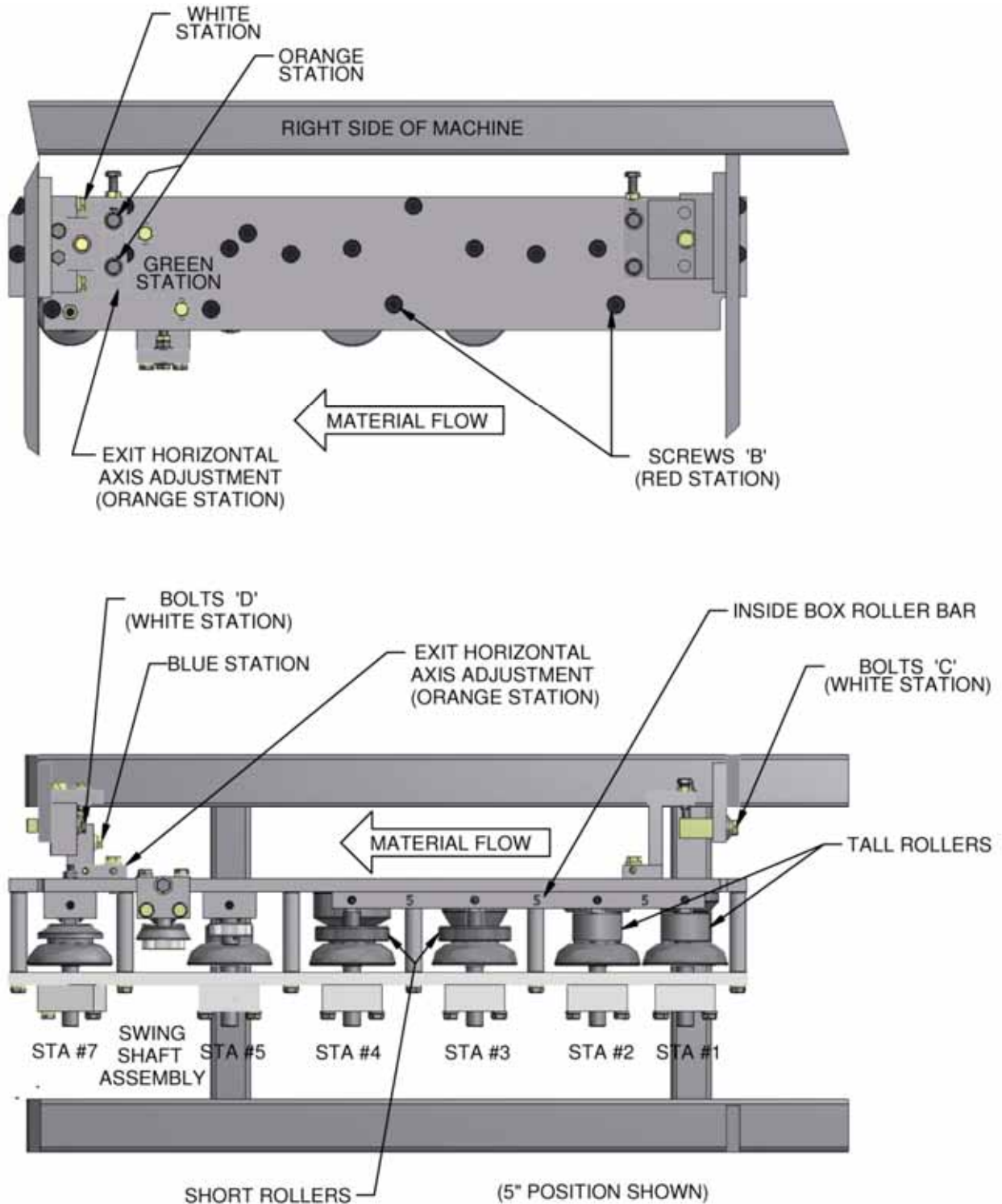
Remove the inside box roller bar assembly by removing the two (2) **red** marked screws "B", located on the top of the box (Figure 65). Set this assembly aside.

**Figure 64: 6" Roller Bar****14. MOVE OUTSIDE BOX ROLLERS**

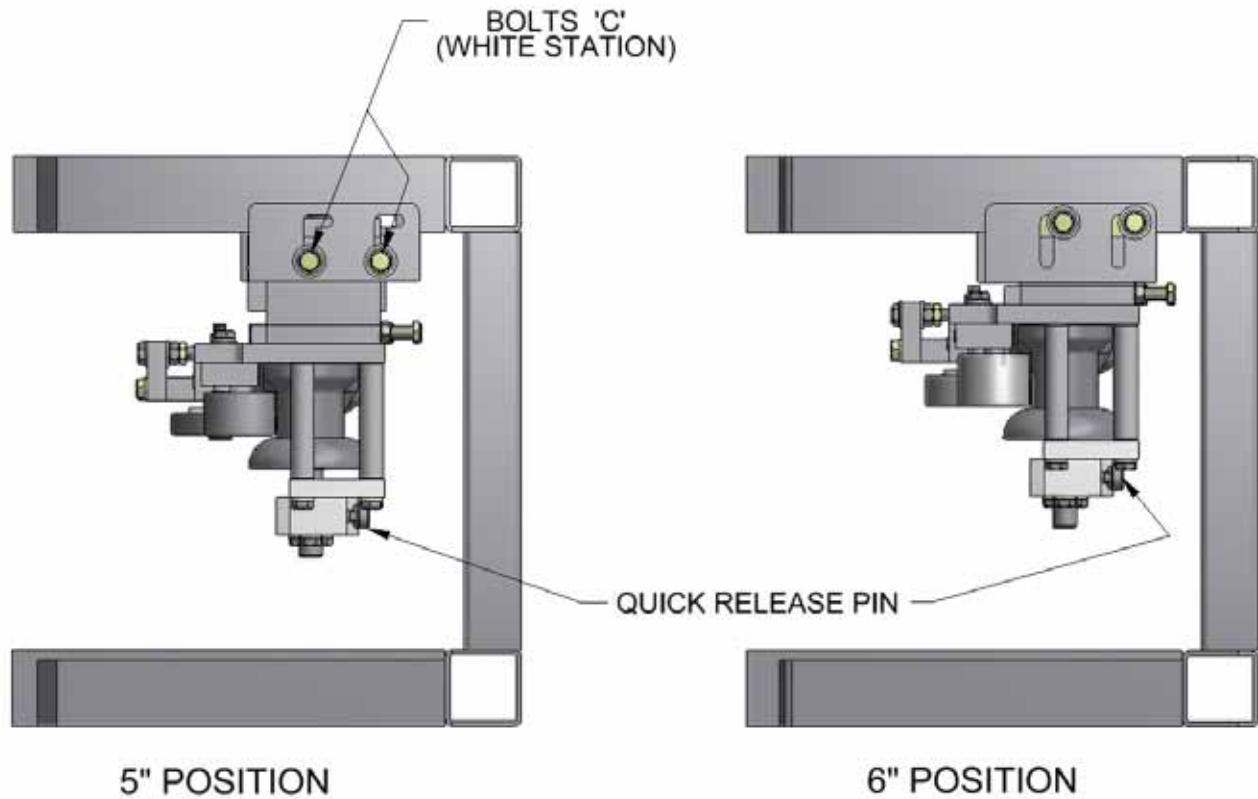
(Figure 65 and Figure 66)

There are a total of six (6) quick release pins at the bottom of the box. Retract each pin and move the bottom portion of the outside roller up for the 5" position. Release the quick release pins back into the shaft grooves.

# COMBO 6" TO 5" CHANGEOVER PROCEDURE



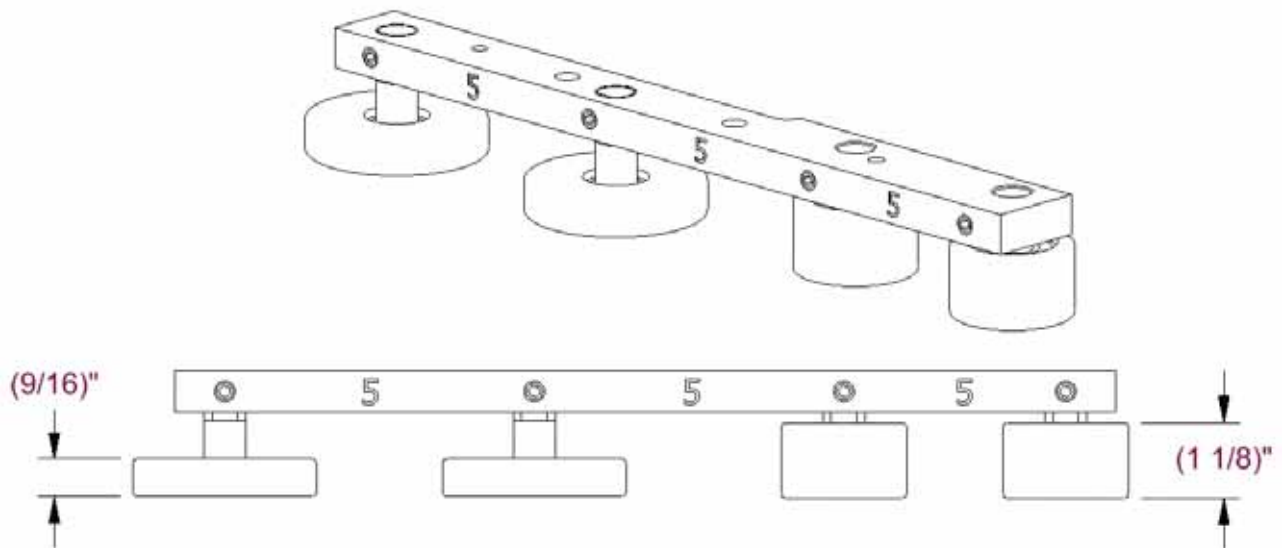
**Figure 65: Combo Box Assembly**

**COMBO 6" TO 5" CHANGEOVER PROCEDURE****Figure 66: Combo Box Assembly Positions****15. INSTALL THE 5" INSIDE BOX ROLLER BAR**

(Figure 67)

Remove the replacement inside box roller bar from the storage location and install. The tall rollers locate in the station #1, and #2 positions while the short rollers locate in the station #3, and #4 positions. Re-install the 2 (two) **red** marked screws "B" and tighten (Figure 65).

**NOTE:** Do not over tighten red screws "B"

**Figure 67: 5" Roller Bar**

CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**

**16. STORE THE 6" INSIDE BOX ROLLER BAR**

(Figure 68)

Store the unused roller bar assembly.



**Figure 68: Unused Inside Box Roller Stored**

**17. MOVE BOX ASSEMBLY**

(Figure 65 and Figure 66)

Loosen the two (2) bolts “C” and the two (2) bolts “D” (**White** station). Move box down and towards the skate for the 5” position. Retighten “C” & “D” bolts.

**18. REPLACE COVERS**

(Figure 55)

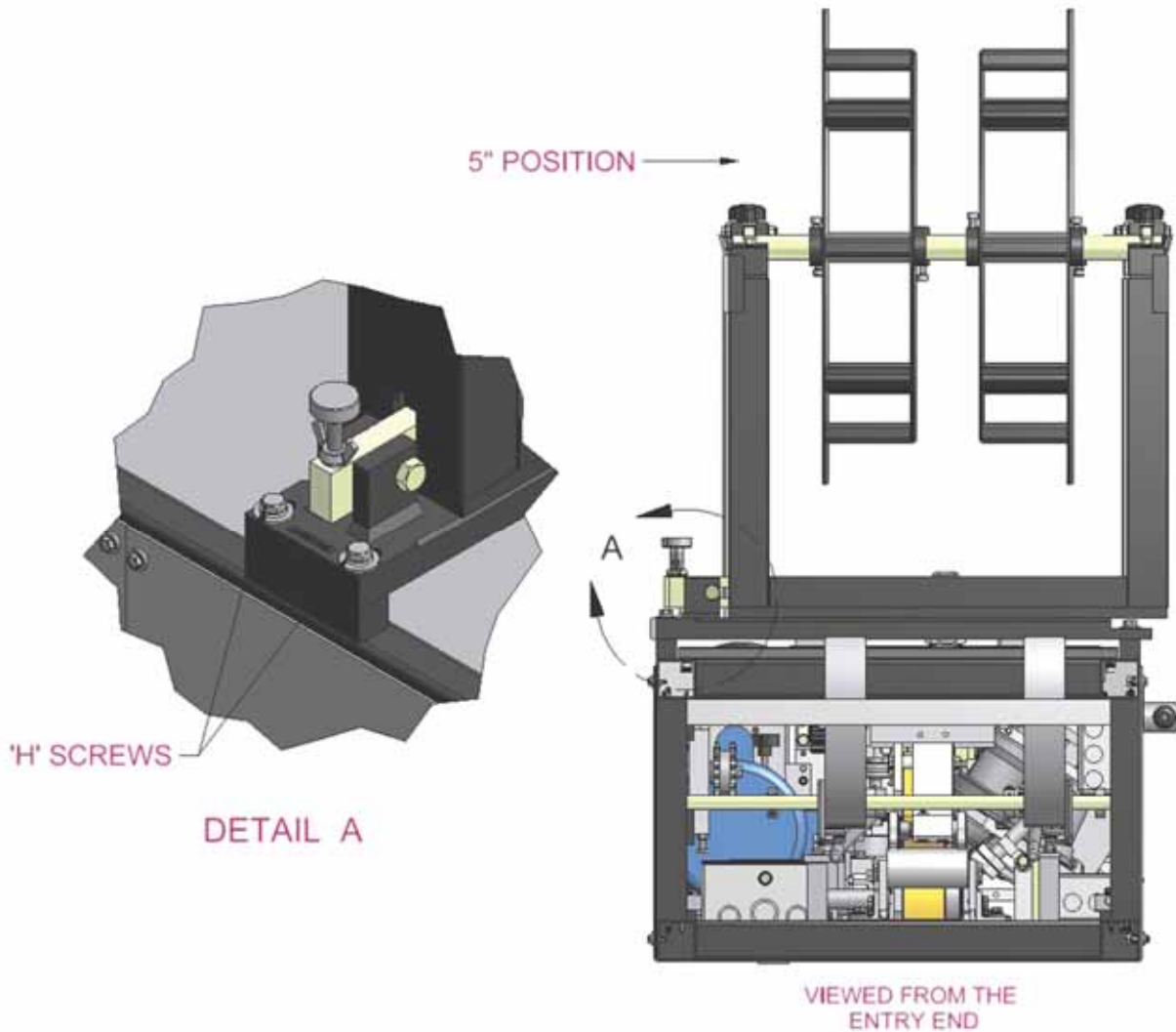
Replace the covers “A”, “B”, and “C” on the top of the machine. Replace the side cover “D”. To refasten, turn the cover screws one quarter turn clockwise.

**19. POSITION REEL RACK ASSEMBLY (If equipped)**

(Figure 53)

If the machine is equipped with Reels, loosen the (4) “H” screws. Slide the reel rack assembly away from the face side of the gutter machine. Retighten the screws “H”.

CHAPTER 17  
**COMBO 6" TO 5" CHANGEOVER PROCEDURE**



**Figure 69: Reel Stand - 5" Position**

**20. CONFIGURE CRADLE ASSEMBLY** (If equipped)

(Figure 8 and Figure 9)

If the machine is equipped with Cradles, loosen the four (4) changeover bolts "A". Move the slides on the cradle inward for the 5" position. Retighten screws "A".

**21. STORE 6" SHEAR**

Store the unused shear on the side of the machine.

**22. INSTALL 5" SHEAR**

**CAUTION: BE SURE THE SAFETY PIN IS PROPERLY INSERTED INTO THE SHEAR BEFORE REMOVING THE SHEAR FROM THE MACHINE. (Figure 56)**

Install the shear on the frame with the four (4) bolts "B" (Figure 27). The shear is preset and should not need any adjustment.



## CHAPTER 18

# HOOK ASSEMBLY

### HOOK ASSEMBLY (OPTIONAL)

The Hook Assembly is a self-contained assembly which can be added to a gutter machine. The New Tech machine is capable of running a straight back (with a bead) or hook type gutter profile from the same machine. The hook assembly and bead roller assembly can be moved in or out of position depending on the type of gutter desired.

#### 5" Gutter Machine

#### ENGAGING OR DISENGAGING THE HOOK

(Figure 70)

Before changing profiles, empty material from the forming area of the machine. To engage or disengage the hook assembly, simply loosen both "B" screws. Slide the hook assembly toward the center of the machine to make a straight back profile or toward the back guide rod to make a hook profile. Retighten the "B" screws

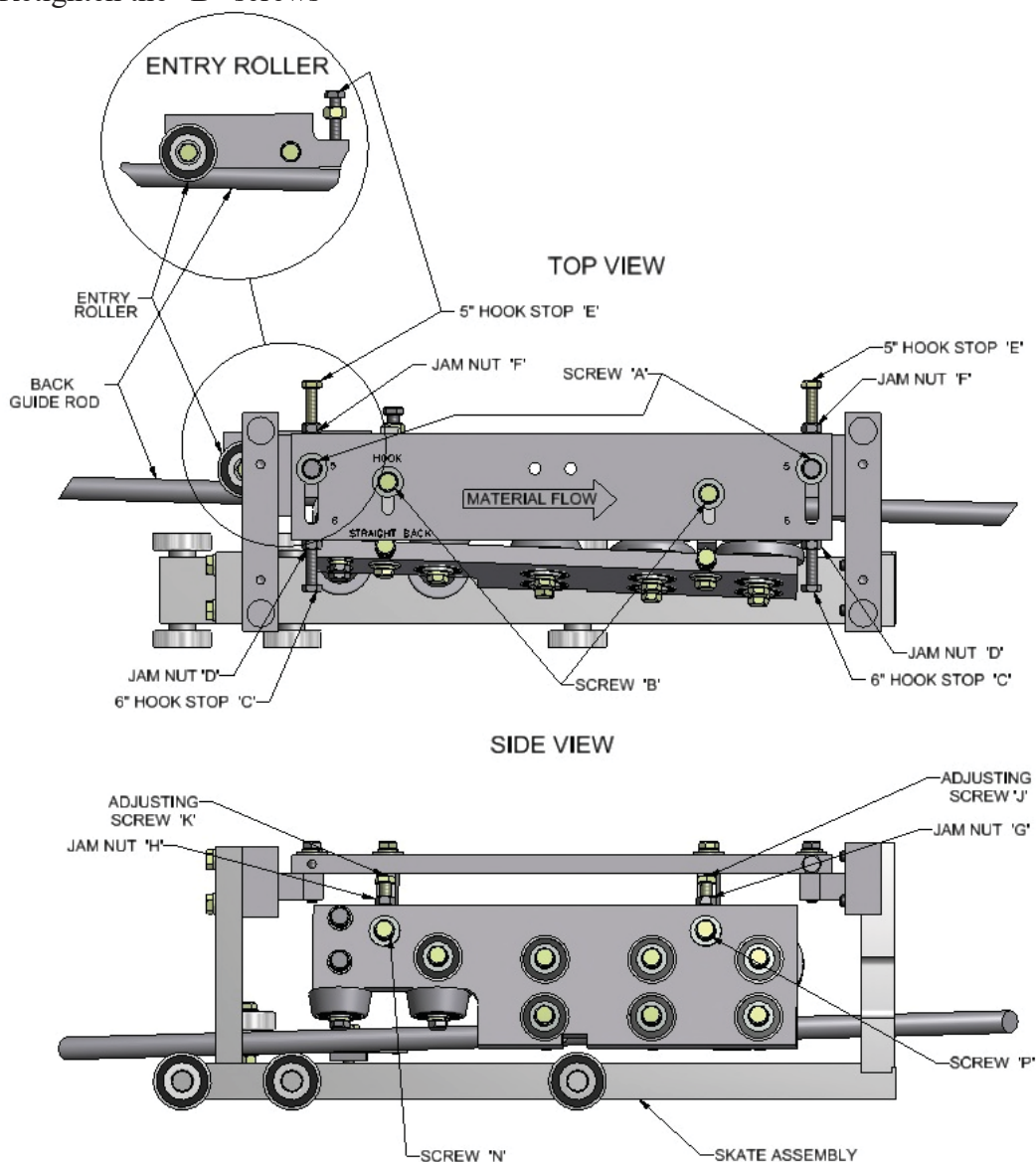


Figure 70: 5" Hook Assembly

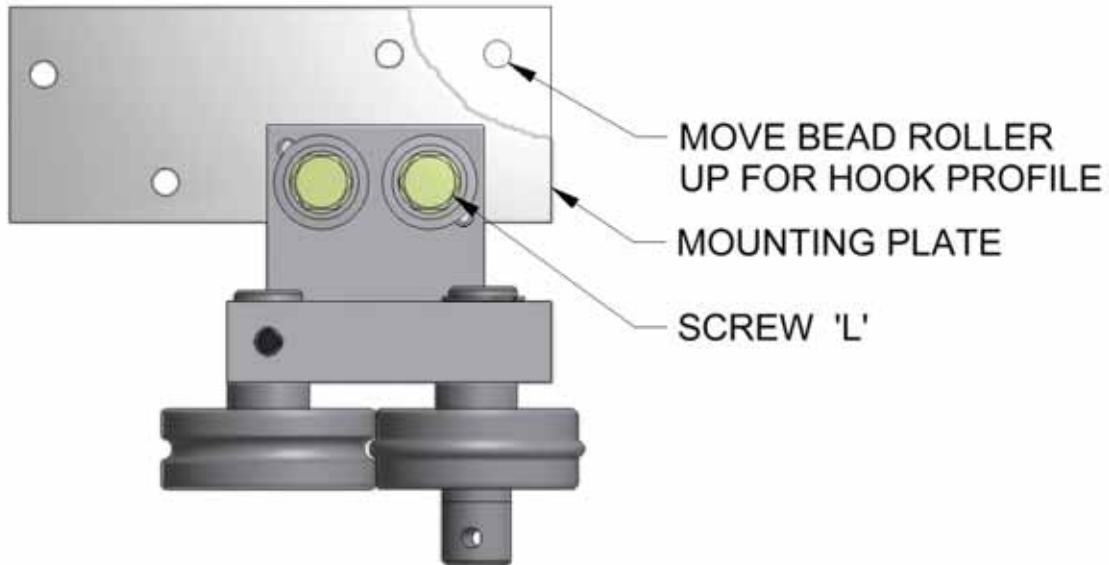
CHAPTER 18

## **HOOK ASSEMBLY**

### **MOVE THE BEAD ROLLER – MG5**

(Figure 71)

The bead roller assembly must be moved up and out of the way for the hook profile on the mounting plate for a straight back profile. To move the bead roller assembly, remove both “L” screws and move the assembly up when running the hook profile and down when running the straight back profile. Re-install the “L” screws.



**Figure 71: Bead Roller Assembly - MG5**

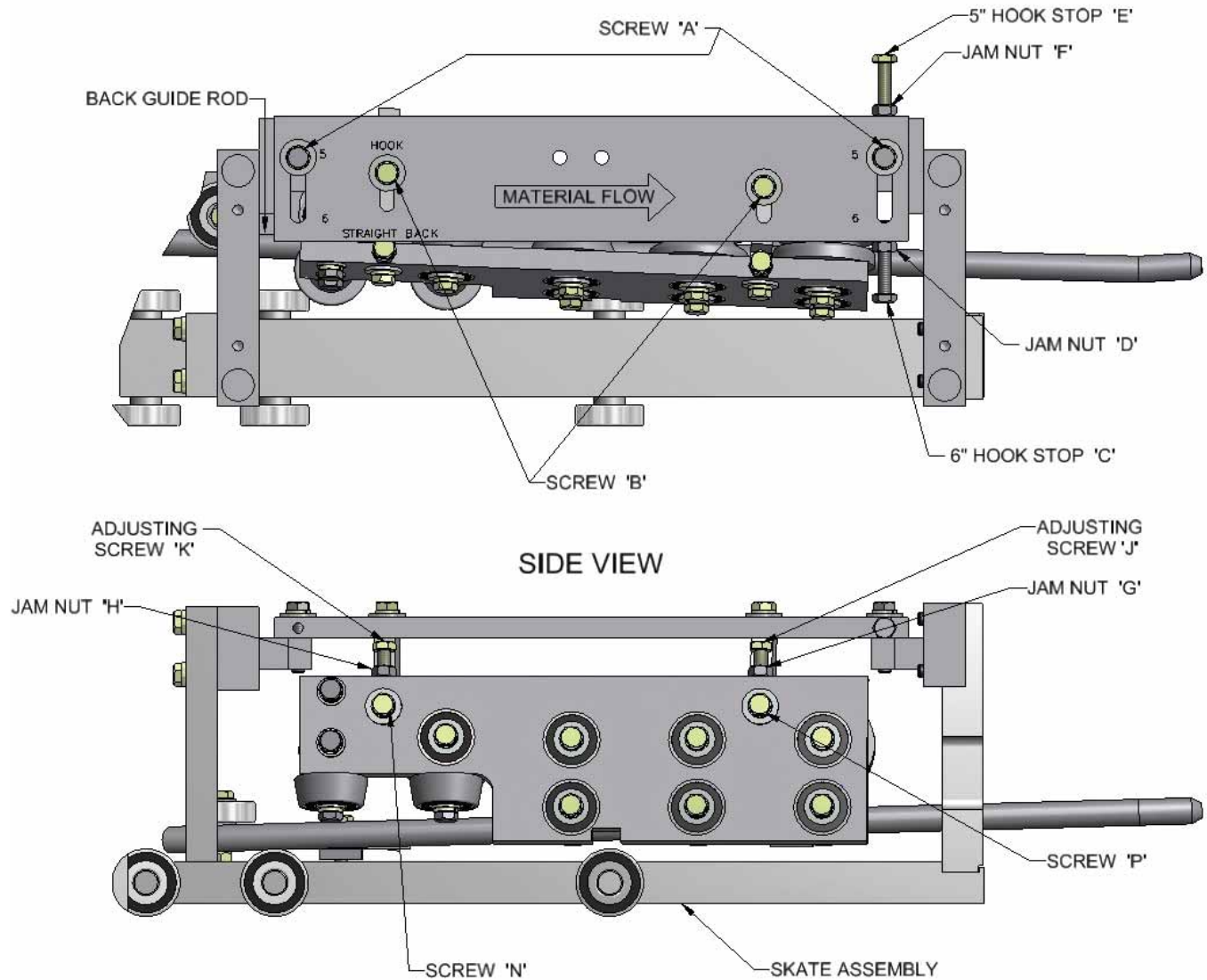
CHAPTER 18  
**HOOK ASSEMBLY**

6" Gutter Machine

**ENGAGING OR DISENGAGING THE HOOK**

(Figure 72)

Before changing profiles, empty the forming area of the machine. To engage or disengage the hook assembly, simply loosen both "B" screws. Slide the hook assembly toward the center of the machine to make a straight back profile or toward the back guide rod to make a hook profile. Retighten the "B" screws.



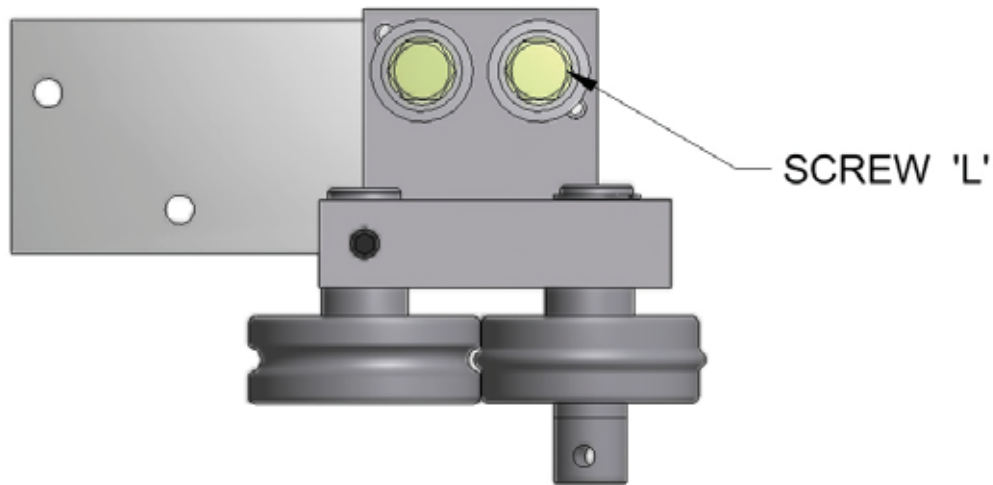
**Figure 72: 6" Hook Assembly**

CHAPTER 18  
**HOOK ASSEMBLY**

**MOVE THE BEAD ROLLER – MG6**

(Figure 73 & Figure 76)

The bead roller assembly must be removed and stowed away on the Hook Assembly as shown in Figure 76 for the hook profile or aligned with the scribed marks on the mounting plate for a straight back profile. To remove the bead roller assembly, remove both “L” screws and bead roller assembly and stow it away on the hook assembly. After the bead roller is stowed as shown, retighten the “L” screws.



**Figure 73: Bead Roller Assembly – MG6**

## CHAPTER 18

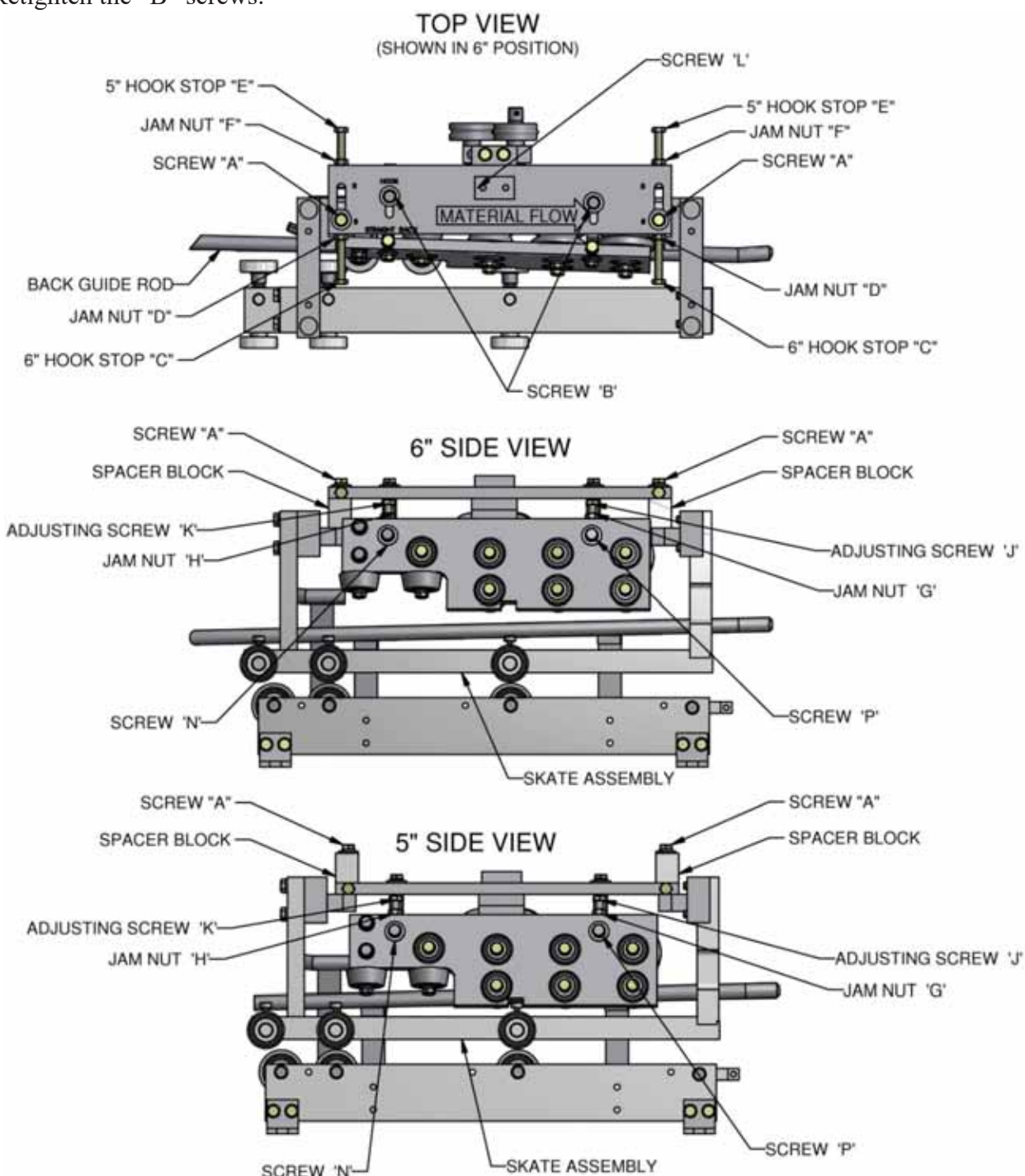
# HOOK ASSEMBLY

### Combo Gutter Machine

#### MOVE THE HOOK ASSEMBLY – M56

(Figure 74)

Before changing profiles, empty the forming area of the machine. To engage or disengage the hook assembly, simply loosen both “B” screws. Slide the hook assembly toward the center of the machine to make a straight back profile or toward the back guide rod to make a hook profile. Retighten the “B” screws.



**Figure 74: Combo Machine Hook Assembly**

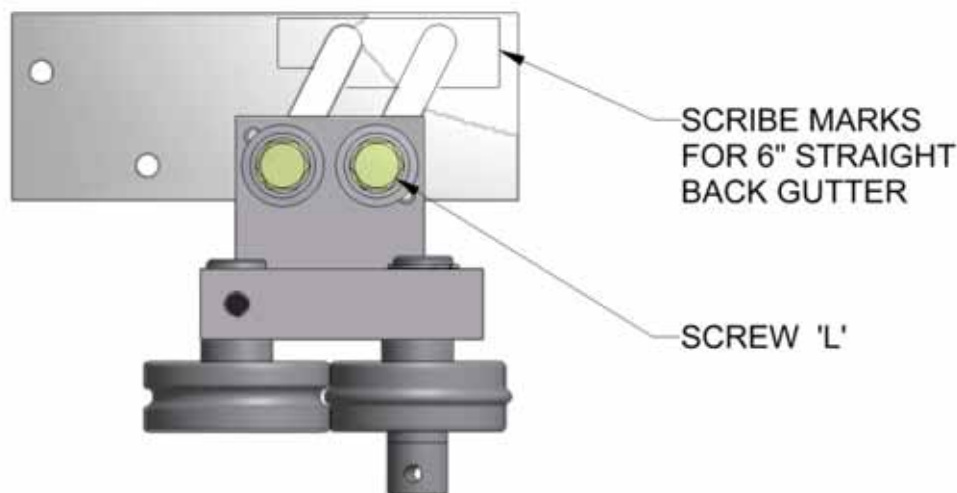
## CHAPTER 18

# HOOK ASSEMBLY

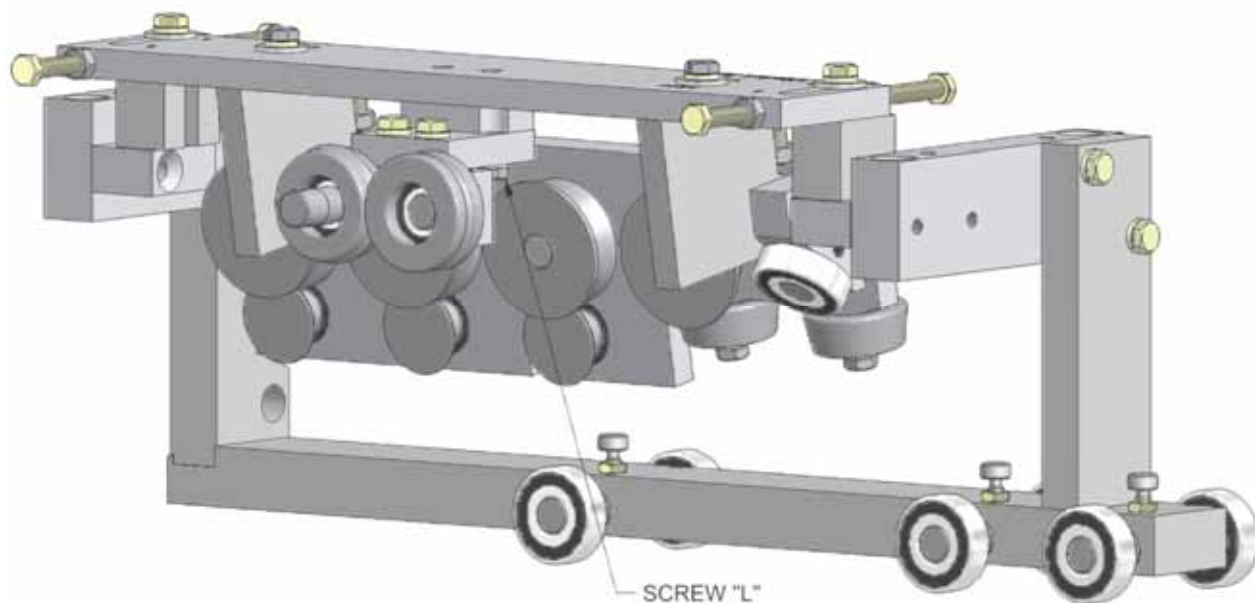
### MOVE THE BEAD ROLLER – M56

(Figure 75 & Figure 76)

The bead roller assembly must be in the proper position to run the straight back gutter. Move the bead roller assembly up for 6" straight back gutter and down for 5" straight back gutter. To form the hook profile gutter, the bead roller assembly must be stowed away on the Hook Assembly. To remove the bead roller, loosen and remove both screws "L" along with the retainer plate and the bead roller assembly. Using the same screws "L" re-mount the bead roller assembly under the hook assembly with the retainer plate on top of the hook assembly.



**Figure 75: Bead Roller Assembly – M56 (Shown in 5" Position)**



**Figure 76: Bead Assembly Stored**

**NOTE:** The scribe marks on the bead roller assembly mounting plate shown in Figure 75 are factory settings for 11 7/8" wide material for 5" gutter and 15" wide material for 6" gutter. Adjust the height accordingly for other widths.



## CHAPTER 18

# **HOOK ASSEMBLY**

### **CHANGING FROM 5" TO 6" HOOK GUTTER PROFILE**

(Figure 74)

Loosen the screws "A" and remove the spacer blocks located under the screws. Relocate the spacers to the 6" hook position below the top plate. Push the hook assembly against the 6" hook stop "C" and tighten screws "A". **Note:** Two different spacers have been provided with your hook assembly. Use the spacers engraved "11-3/4" if your 5" coil is 11-3/4" wide, and use the spacers engraved "11-7/8" if your 5" coil is 11-7/8" wide.

### **CHANGING FROM 6" TO 5" HOOK GUTTER PROFILE**

(Figure 74)

Loosen the screws "A" and remove the spacers located under the screws. Relocate the spacers to the 5" hook position above the top plate. Push the hook assembly against the 5" hook stop "D" and tighten screws "A".

### **Adjustment for Hook Assembly**

There are four (4) adjustment locations for the hook assembly. The "C" or "E" adjusting screws and the top screws "A" are to align the hook with the pass line of the gutter profile. The "D" or "F" jam nut and the "C" or "E" adjusting screw are **FACTORY SET** and changing the "C" or "E" adjusting screw can result in improper operation of the hook assembly.

Adjustment screws "K" and "J" affect:

- The size of the Hook lip.
- The up and down hill of the back bottom corner of the gutter.

#### **1. ADJUST FOR HEM**

Before making any adjustments, clear the gutter coil out of the forming area of the machine. To increase or decrease the hem, loosen both jam nuts "G" and "H" and loosen the screws "N" and "P". Turn both screws "J" and "K" evenly to raise or lower the entire hook assembly. Raising the assembly will decrease the hem size and lowering will increase the hem size.

To raise the hook assembly, turn both screws clockwise and to lower turn both screws counterclockwise. Retighten all screws and jam nuts before running gutter coil through the machine.

#### **2. TO CORRECT UP OR DOWN HILL OF THE BACK BOTTOM CORNER**

**NOTE:** Do not turn adjusting screws more than 1/8 of a turn at a time for uphill or downhill correction.

Before making any adjustments, clear the gutter coil out of the forming area of the machine. To adjust for uphill or downhill, loosen jam nut "G" and screw "P". To correct uphill in the back of the gutter, turn screw "J" clockwise. To correct downhill in the back of the gutter, turn screw "P" counterclockwise. Be sure the assembly is seated down on the adjusting screw "J" before retightening the "P" screw. Retighten all screws before running gutter coil through the machine.

CHAPTER 19

## **BOTTOM BEAD ROLLER**

### BOTTOM BEAD ROLLER (OPTIONAL)

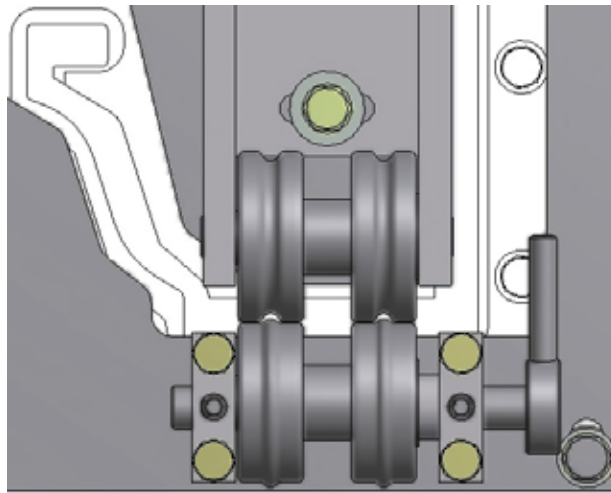
(Figure 77, Figure 78 and Figure 79)

The bottom bead roller set is an optional add-on to the gutter machine to create a unique look to the bottom of the gutter.

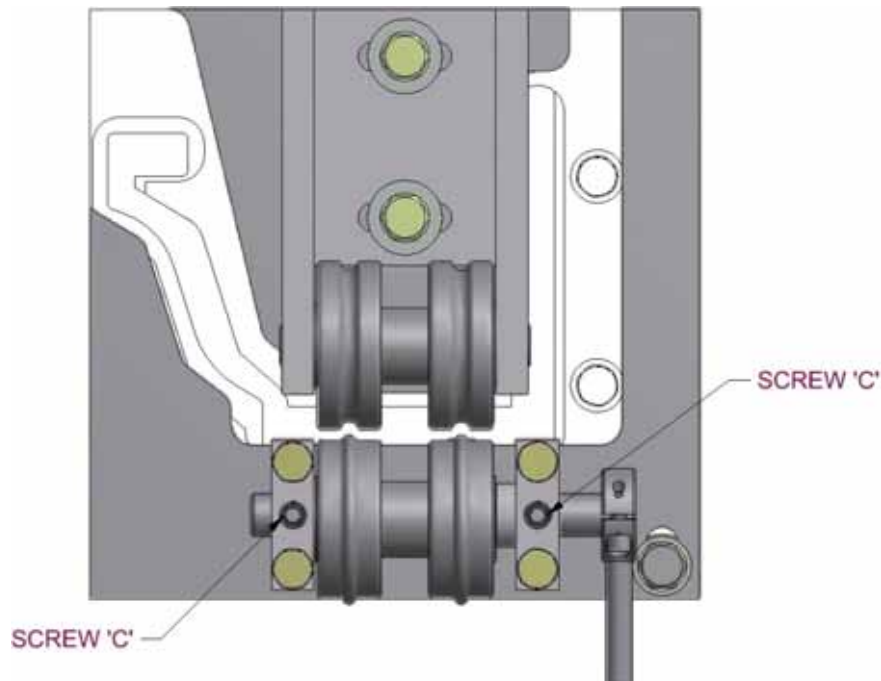
#### **ENGAGING/DISENGAGING BEAD ROLLER**

The bottom bead roller assembly can easily be engaged or disengaged by the following:

1. Loosen screws “C”
2. Rotate engagement lever clockwise to the UP position to engage the bead roller or counter clockwise to the DOWN position to disengage the bead roller.
3. Re-tighten screws “C”.



**Figure 77: Bottom Bead Roller - Engaged**



**Figure 78: Bottom Bead Roller - Disengaged**

## CHAPTER 19

# **BOTTOM BEAD ROLLER**

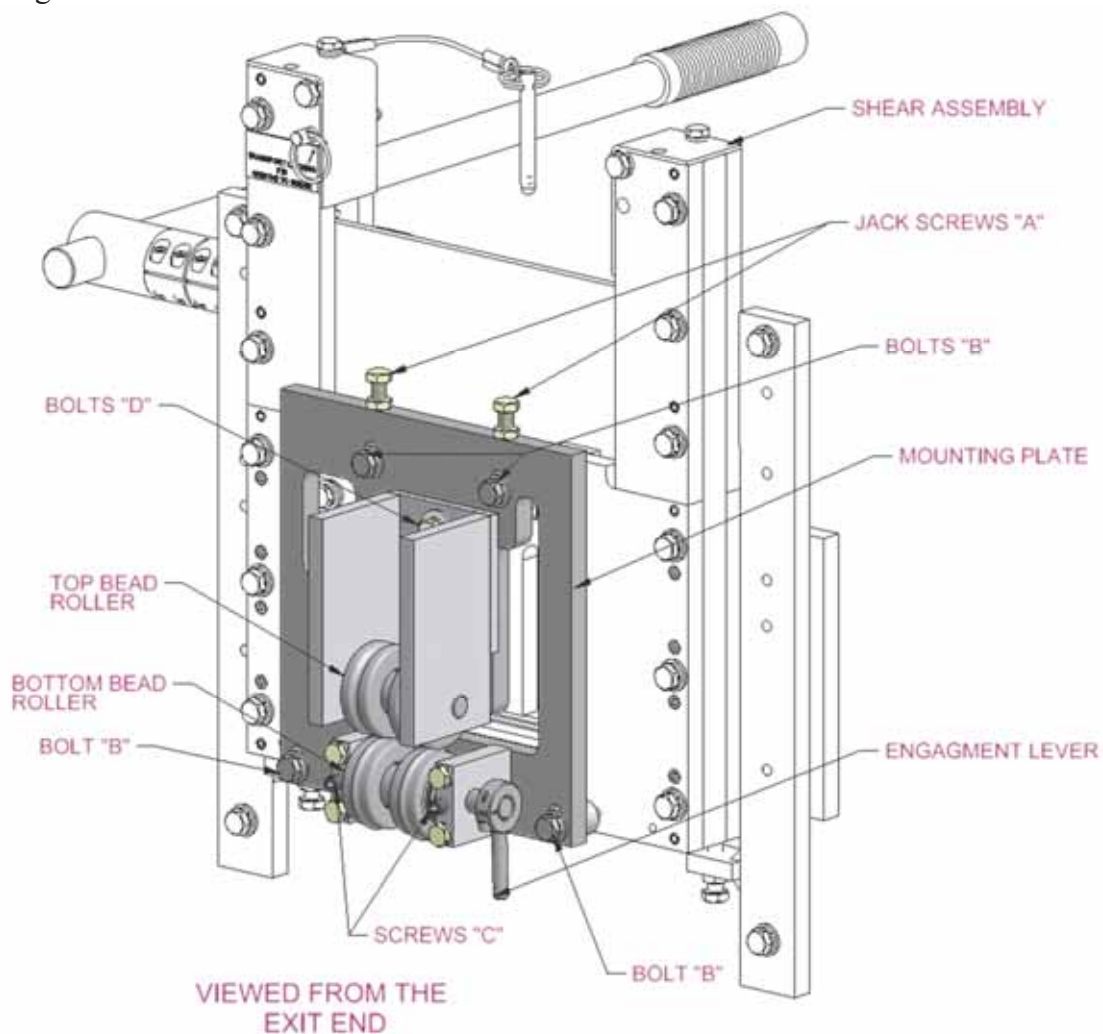
### **ADJUSTING ASSEMBLY LOCATION**

The bottom bead roller assembly must be in the correct location in relation to the formed gutter exiting the machine. The top rolls on the bottom bead roller assembly should just contact the gutter material without pressure.

**NOTE:** If the bottom bead roller is too high, too low, or not aligned correctly, the gutter may be deformed by running through the bead roller.

To adjust the location of the bead roller assembly:

1. Slightly loosen (4) bolts “B”.
2. Loosen the locking nuts on jackscrews “A”
3. Turn jackscrews “A” clockwise to raise the bottom bead roller assembly UP and turn jackscrews “A” counter clockwise to lower the assembly. Ensure that the rollers are horizontal with the bottom tray of the gutter so that one side does not engage higher than the other.
4. Lock down the nuts on jackscrews “A” and tighten bolts “B”
5. Loosen screws “D” and bring the upper rollers down to the same height as the gutter exiting the shear. Be sure that the upper rollers are in proper alignment with the bottom rollers.
6. Tighten screws “D”



**Figure 79: Bottom Bead Roller Assembly**

CHAPTER 20

## **TRANSFER RACK ASSEMBLY**

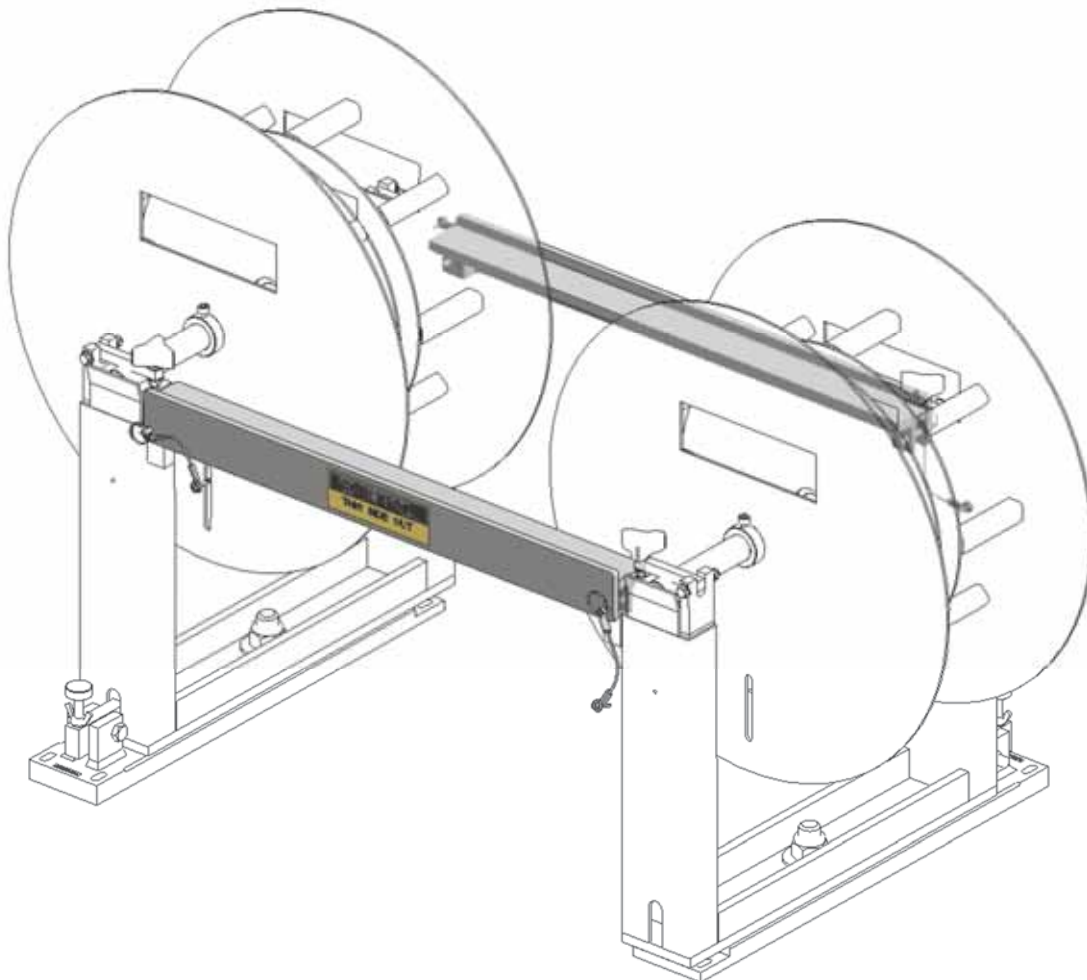
### TRANSFER RACK ASSEMBLY (OPTIONAL)

(Figure 80)

The transfer rack is used to move a coil from one reel rack to another. The rack can remain in place while the machine is in use. Removal of the racks is required only to rotate a turnstile reel rack in order to change direction of the coil.

**NOTE:** The rack must be installed with the FLANGE facing in toward the coil and the “caution” label on the transfer rack facing out. Always be sure that the safety pins are fully secured in position before using the rack.

**CAUTION:** Never transport the machine with coil resting on the transfer rack. The coils must be secure in the reel rack before transporting. See Turnstile Reel Stand section on page 17



**Figure 80: Transfer Rack**

## CHAPTER 21

# CE INFORMATION

## CE INFORMATION

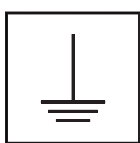
The following information only pertains to CE Certified machines. Refer to Figure 88 for the MG230-50CE wiring diagram.

### SYMBOLS

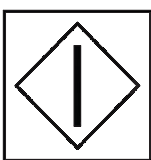
The following information and warning symbols are used on CE Certified machines:



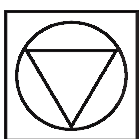
Protective Earth (Ground)



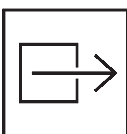
Earth (Ground)



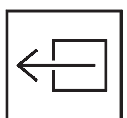
Start (of action)



Stop (of action)



Output (Forward)



Output (Reverse)



Warning: "FINGER CUTTING HAZARD"



"READ ACCOMPANYING DOCUMENTS" before operating the equipment.

CHAPTER 21  
**CE INFORMATION**

**TECHNICAL SPECIFICATIONS**

- The machine is suitable for indoor or outdoor use.
- Enclosure Protection: IP52 (Protected against dust limited ingress (no harmful deposit) and Protection against direct sprays of water up to 15° from the vertical)
- Class I Equipment (Grounded Type).
- The machine shall be connected to a grounded outlet.
- Electrical Rating: 230V~ 50Hz 10A
- The mains supply voltage fluctuations are not to exceed  $\pm 10\%$  of the nominal supply voltage.
- Operating temperature range: 0-50°C
- Sound Pressure Level emitted by the machine does not exceed 70dBA.
- Machine is suitable for continuous operation.

**SERVICE**

Contact a European Agent or New Tech Machinery should machine repair be required.



## CHAPTER 22

# **TROUBLESHOOTING**

## TROUBLESHOOTING

This machine will run most materials without adjustments, however, minor adjustments may be necessary. The following are the most commonly encountered conditions that will be experienced with the machine. In order to address the various conditions, some common terms are used as follows:

### Common Terms

#### **Into the House**

The term “**Into the House**” means that with the gutter placed against the house, both ends will come in contact with the house first. This means that the gutter is bowing in toward the house.

#### **Away From the House**

The term “**Away From the House**” means that, with the gutter placed against the house, neither end will come in contact with the house. This means that the gutter is bowing out and away from the house.

#### **Uphill**

The term “**Uphill**” means that the ends of the gutter are bowing toward the sky.

#### **Downhill**

The term “**Downhill**” means that the ends of the gutter are bowing towards the ground.

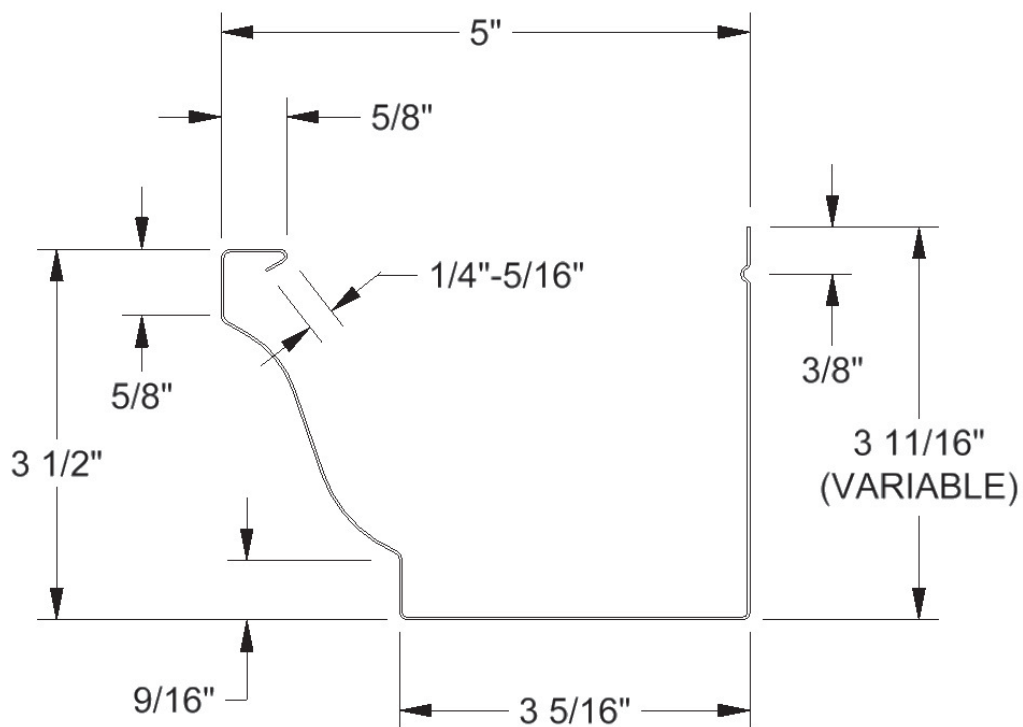
#### **Head of Gutter Up and Into the House**

This term means that when viewing down what would otherwise be considered a straight piece of gutter, the head of the gutter (Points A, B, C, D) goes up and into the house.

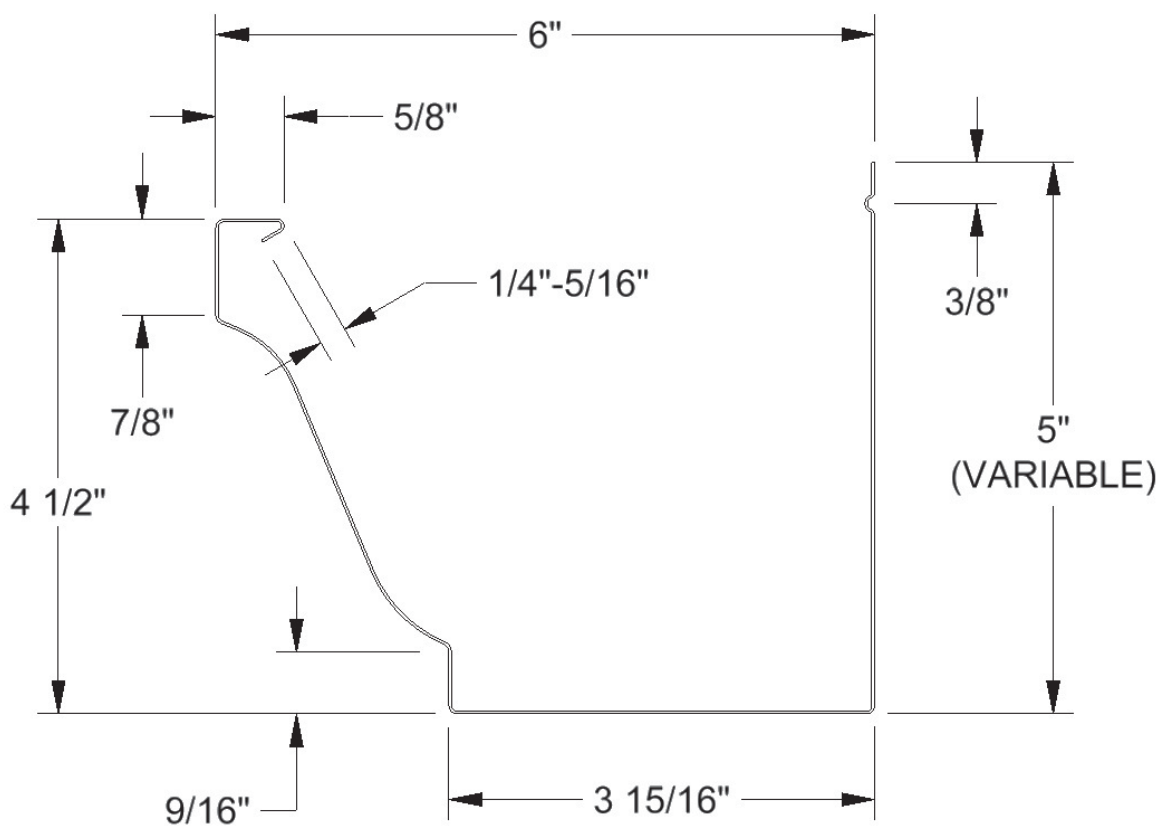
#### **Head of Gutter Down and Away From the House**

This term means that when viewing down what would otherwise be considered a straight piece of gutter, the head of the gutter (Points A, B, C, D) goes down and away from the house.

CHAPTER 22  
**TROUBLESHOOTING**



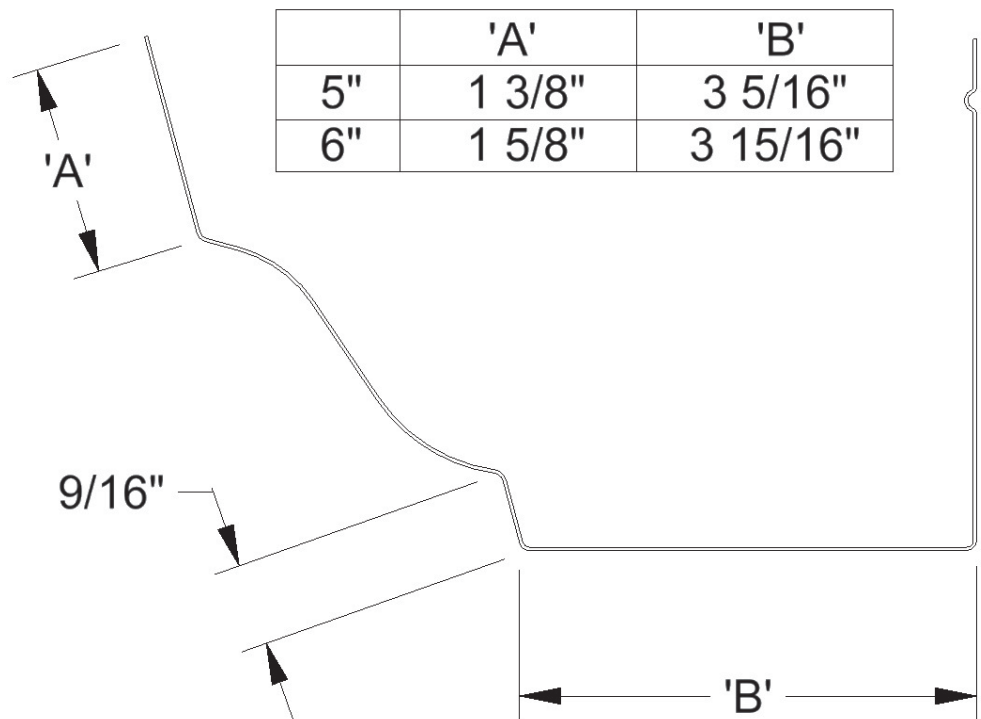
**Figure 81: 5" Gutter Profile**



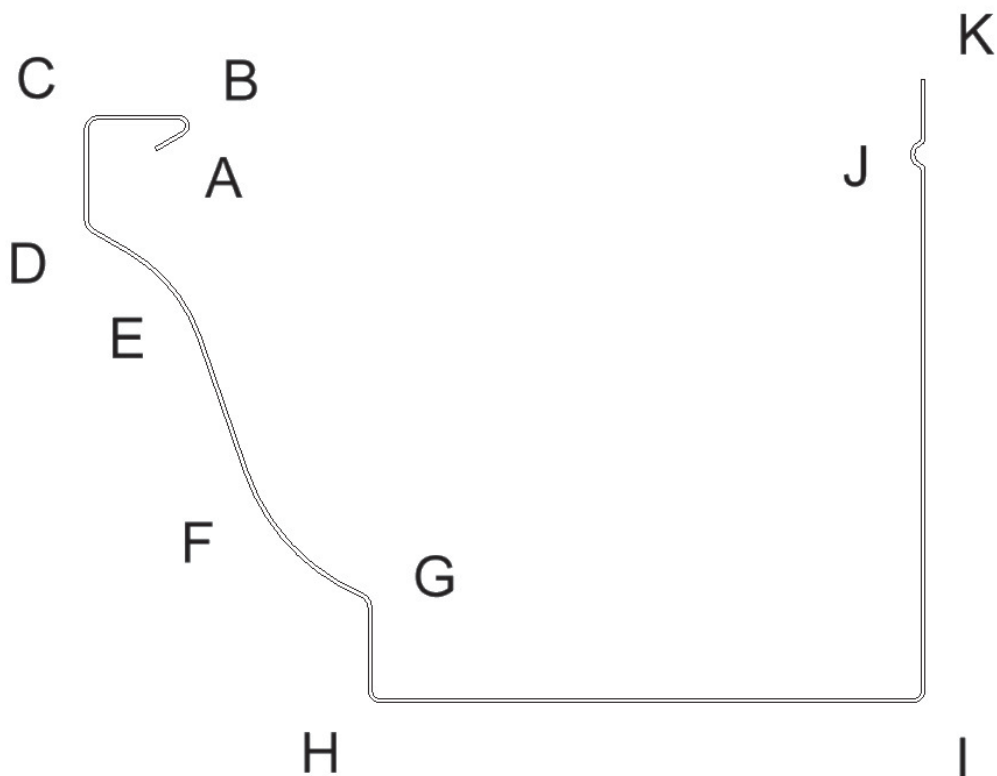
**Figure 82: 6" Gutter Profile**

CHAPTER 22

**TROUBLESHOOTING**



**Figure 83: Gutter Profile Between Face and Box Roller Assemblies**



**Figure 84: Points on Gutter Profile**

## CHAPTER 22

# TROUBLESHOOTING

### Analyzing the Gutter

Before analyzing the gutter run a piece of material at least as long as the machine so that it engages all the rollers in the machine.

#### STEP #1

- With the coil fully engaged in the machine, back up the material approximately 2 inches.
- Check the inside of the gutter at points “H”, “I” & “D” (Figure 84) for any double track cause by the skate forming rollers and face assembly.
- While viewing the gutter between the face rollers and the box, the dimension between point “A” & “D” is 1 3/8” for the 5” gutter and 1 5/8 for the 6” gutter as shown in Figure 83

#### STEP #2

- Run an eight (8) ft. length of gutter out of the machine. This piece will be used to determine what steps must be taken to correct the gutters appearance.
- Inspect the width of the gutter. This dimension should be 5” +/- 1/16” for the 5” gutter (Figure 81) and 6” +/- 1/16” for the 6” gutter (Figure 82).
- Check the back of the gutter at point “I” to be sure it is at approximately 90 degrees to the bottom of the gutter.
- Check the bottom face of the gutter at point “H” to be sure it is at approximately 90 degrees to the bottom of the gutter.
- Check gutter lip. This should be between 1/4” and 5/16” wide for both 5” and 6” gutter.
- Sight down gutter at point “D” and “H” and determine if they are parallel to each other and straight.

### Head Goes Up and Into the House OR Down and Away From the House

All conditions checked above are satisfied except “D” & “H” are not parallel and “H” appears to be straighter than point “D”. The swing shaft will be used to correct this problem. This is a common condition an operator will experience. While the bottom corner “H” will appear correct the top point “D” will appear to go **Up and Into the House** or **Down and Away From the House**. Either condition will require adjusting the swing shaft assembly and is color coded **Green**.

Refer to the Swing Shaft Adjustment Assembly section on page 33 for swing shaft adjustment procedure.

### Face Goes Up and Into the House OR Down and Away From the House

All conditions checked above are satisfied but the bottom corner “H” will appear parallel to point “D” and the whole gutter will appear to go either, **Up and Into the House** or **Down and Away From the House**. The Gutter Box Exit Mount Adjustment can fix this problem. Either condition will require adjusting the exit end of the box assembly and is color coded **Blue**.

Refer to the Exit Mount Adjustment Assembly section on page 33 for adjustment procedure. Refer to the EXIT DRIVE AND FORMING STATION section on page 35 combined with the Exit Mount Adjustment as an alternative method.

## CHAPTER 22

# **TROUBLESHOOTING**

### Drive Rollers Slip

If the gutter is slipping the following items should be checked first.

- Check the brakes on the reel stand to be sure they are not too tight. Adjust as necessary.
- Check to see if the material is just slipping as the end of the material is exiting the machine.

If the two (2) previous conditions do not exist then proceed to add pressure to the main top drive rollers. **DO NOT** adjust the exit top drive roller unless the material is slipping as the material exits the machine.

Refer to the DRIVE ROLLER ADJUSTMENT AND CLEANING section on page 31 for adjustment procedure.

**NOTE:** Do NOT over tighten the top drive roller assemblies. Do not go beyond ¼” turn past the factory setting. Call a distributor or factory representative for further diagnostics on this matter.

### Too Much or Too Little Lip

The entry guide assembly will be adjusted to increase or decrease the lip. The lip can be very critical for the following reasons:

- A lip that is too long or short can cause **Up and Into the House** or **Down and Away From the House**.
- The amount of lip can affect how fasteners fit into the gutter.

Refer to the Entry Guide Adjustment section on page 22 for adjustment procedure.

**NOTE:** This adjustment can affect the swing shaft adjustments or condition #1. Always check the straightness of the gutter after making an entry guide adjustment.

### Rippling or Indentation

Ripple on the bottom of the gutter is not an inherent condition on the New Tech Machinery gutter machines. Always check gutter coil to be sure it is not damaged

An indentation in the gutter on the face or bottom of the gutter that repeats itself can easily be found. It is either foreign material, such as tape, caulking, etc., stuck to a top or bottom roller, or an object has been run through the machine such as a zip screw, spike, ferrule, etc. gouging a roller.

Determine if the indentation is from the inside out, or the outside in. If the dent is from the inside then there is something stuck or damaged on a top drive roller, face inside roller, or skate bearing. An indentation from the outside means there is something stuck or damaged on a bottom drive roller, bottom keel roller, or outside face roller.

To correct this problem, locate the foreign material, or burr, and clean, file or remove with emery cloth as required to smooth out the roller.

### Scratches or Other Outside Marks

Inspect the gutter for any continuous scratches on the profile out of the entire gutter where paint is either marked or removed. There are generally two (2) places to look when trying to find where the scratch is occurring on the machine.

- The guide rod can scratch the gutter if the guide rod itself had been marked.
- If the gutter touches anywhere on the shear dies while moving through the shear.

Refer to the SHEAR ASSEMBLY section on page 40 for adjustment procedure.

CHAPTER 23  
**WIRING DIAGRAMS**

## WIRING DIAGRAMS

The MG5/MG6/M56 Mach II Gutter Machines are available with the following electrical configurations.

<u>Electrical Configuration</u>	<u>Wiring Diagram</u>
110VAC, 60Hz	MG5110-60/MG6110-60
110VAC, 50Hz	MG110-50
220VAC, 50Hz	MG220-50
230VAC, 50Hz CE	MG230-50CE
12VDC	MG12V

Refer to the electrical diagram that matches the machine electrical configuration.



# CHAPTER 23

## WIRING DIAGRAMS

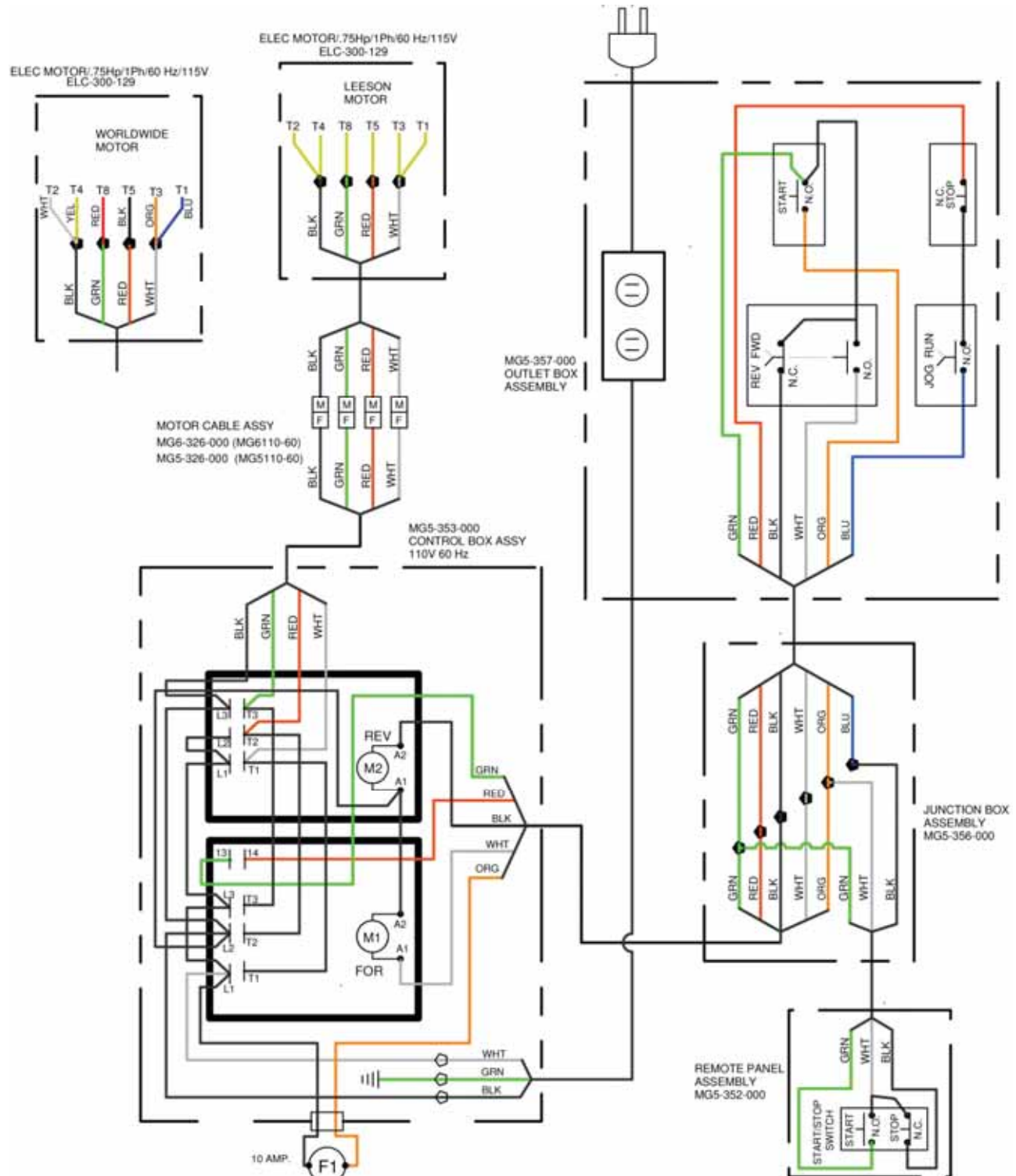


Figure 85: MG5110-60/MG6110-60 – 110VAC 60Hz Wiring Diagram

## CHAPTER 23

# WIRING DIAGRAMS

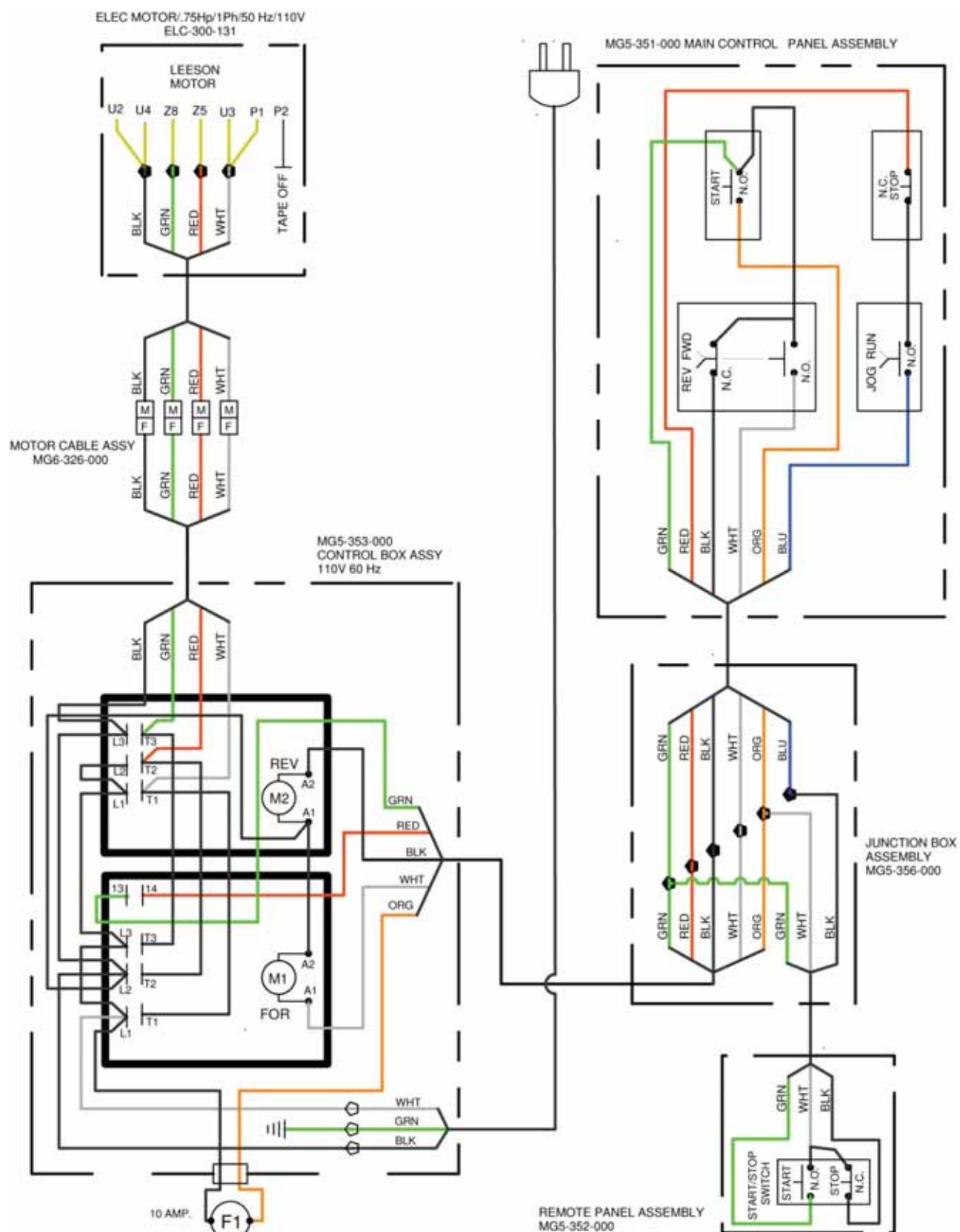


Figure 86: MG110-50 – 110VAC, 50Hz Wiring Diagram

## CHAPTER 23

# WIRING DIAGRAMS

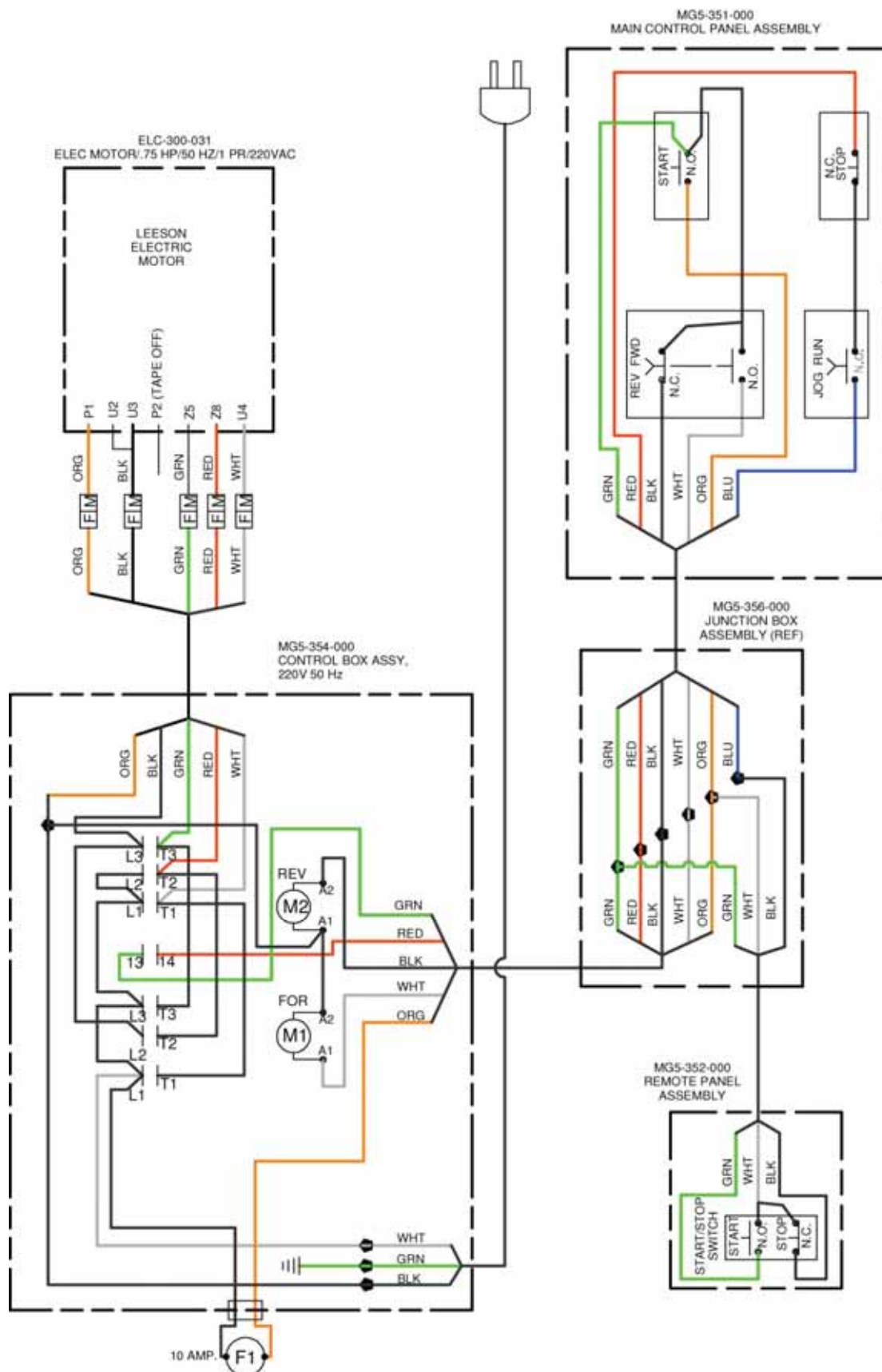


Figure 87: MG220-50 – 220VAC, 50Hz Wiring Diagram

## CHAPTER 23

# WIRING DIAGRAMS

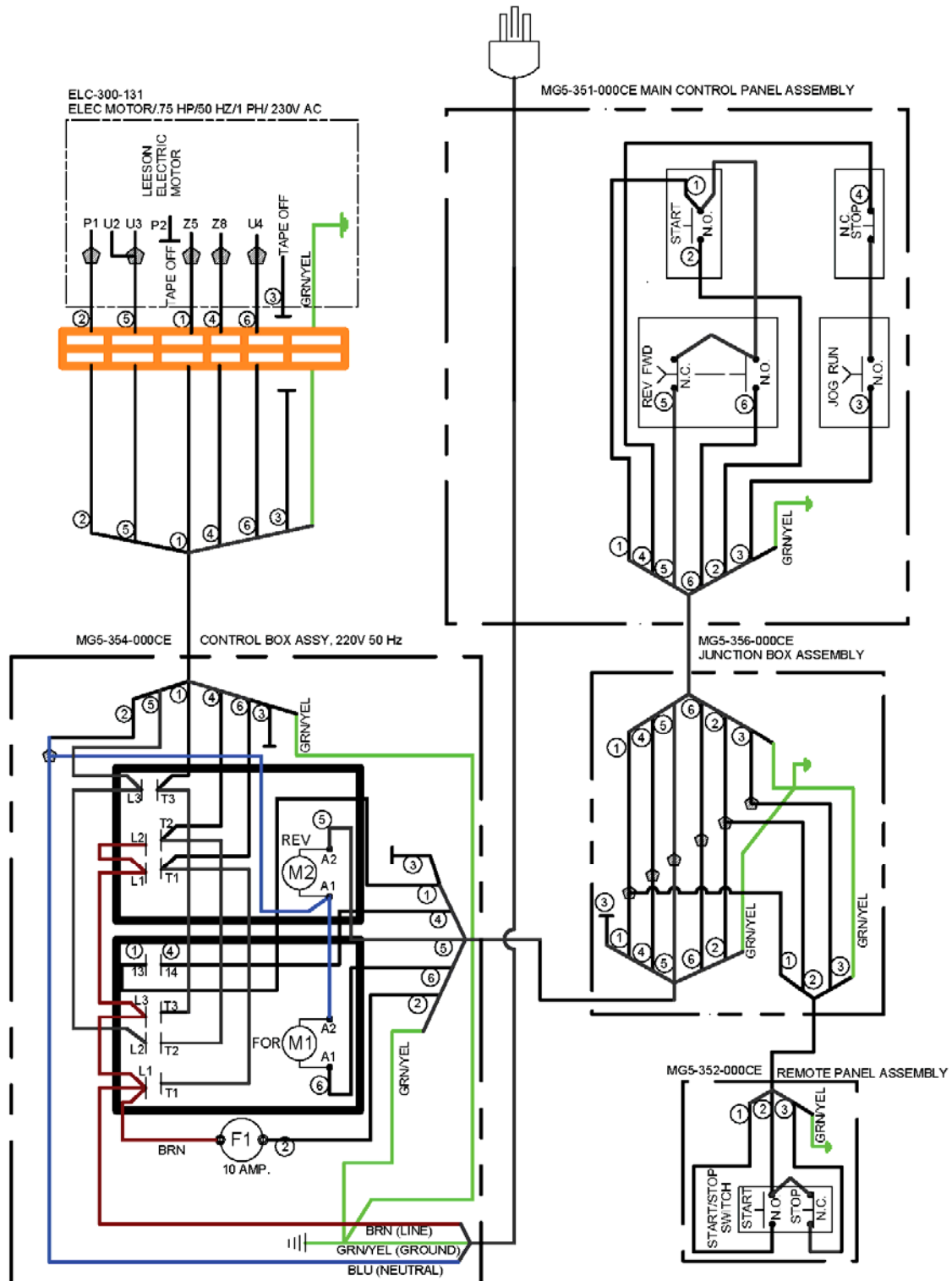


Figure 88: MG230-50CE – 230VAC, 50Hz CE Wiring Diagram

# CHAPTER 23

## WIRING DIAGRAMS

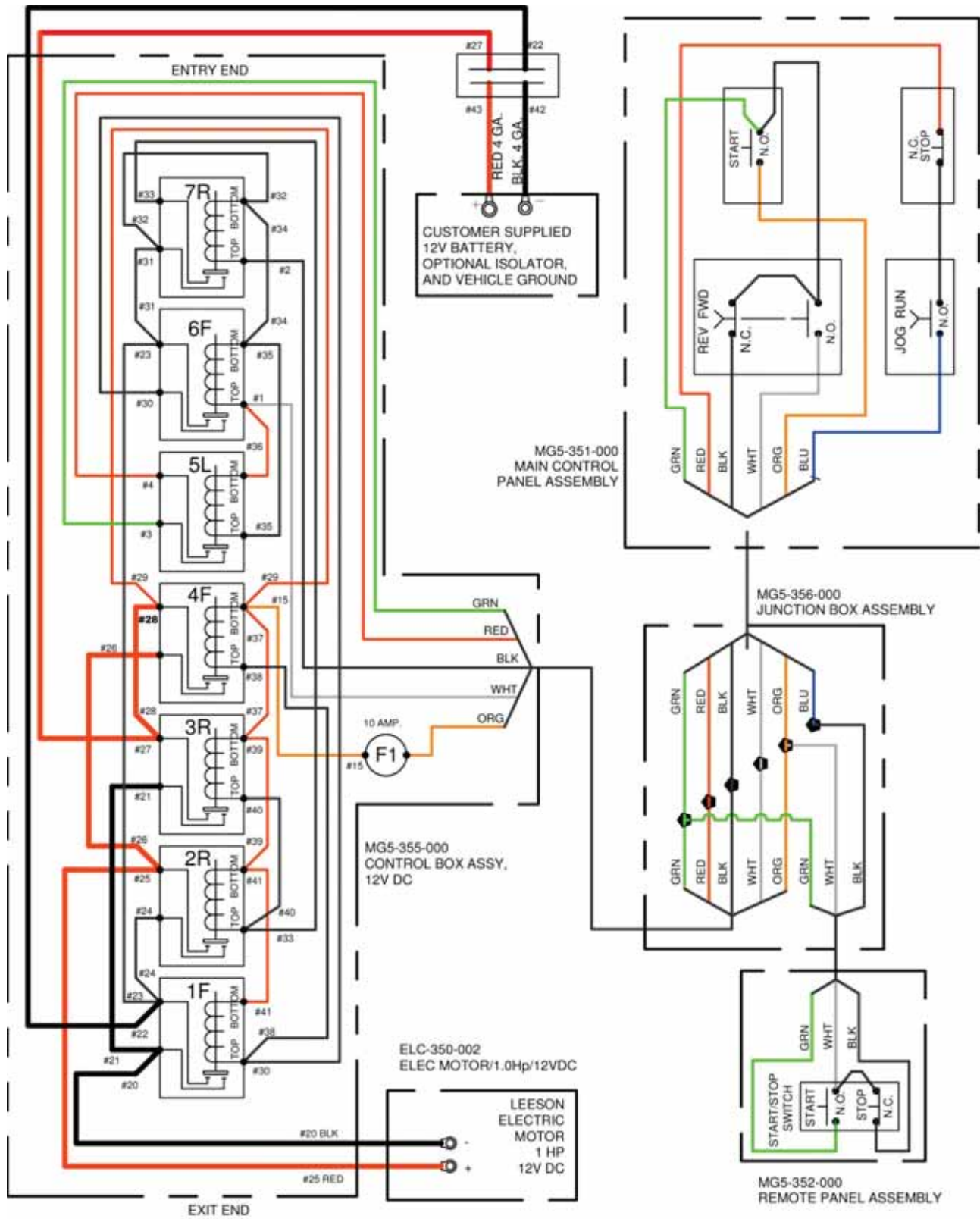


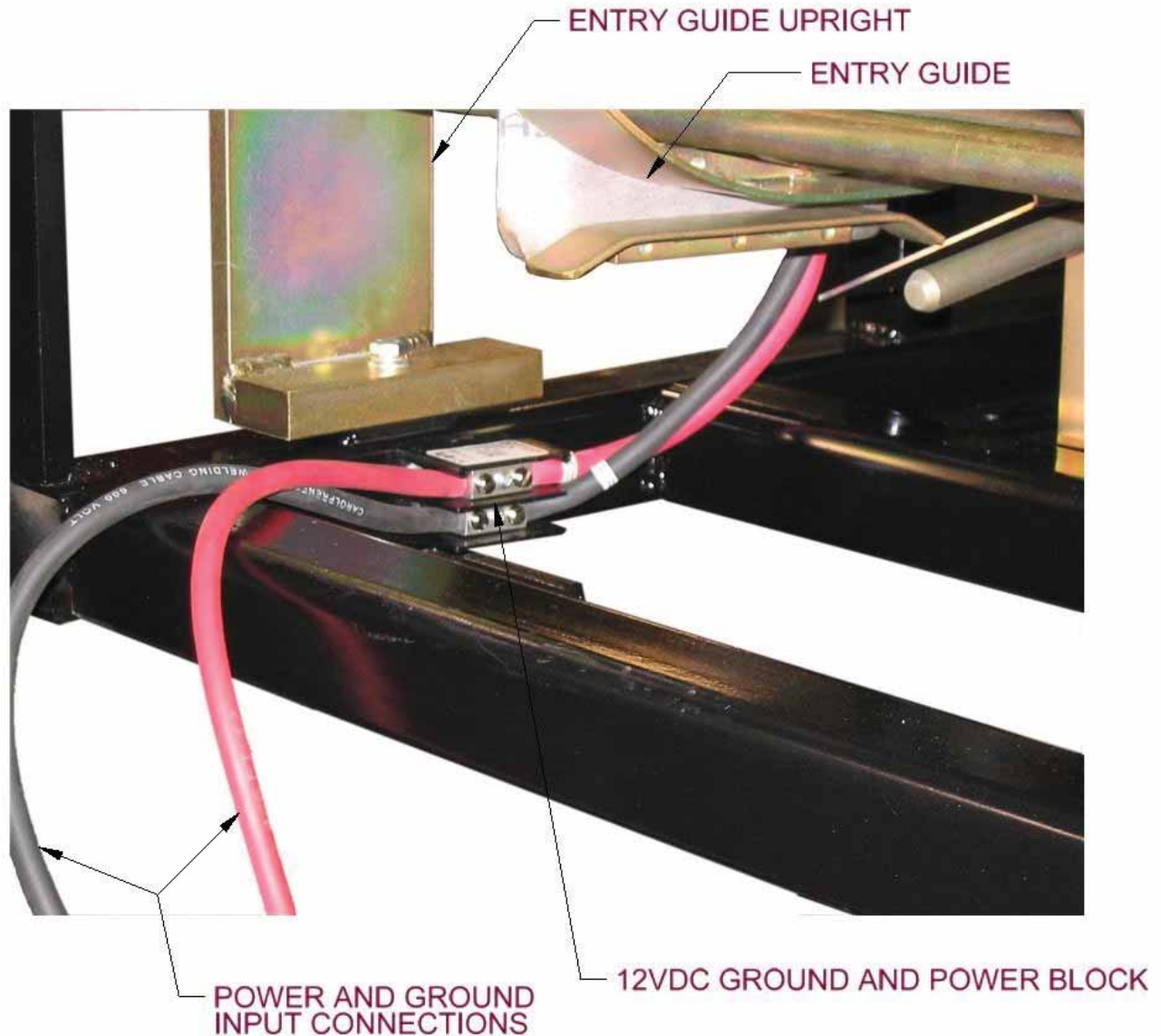
Figure 89: MG12V – 12VDC Wiring Diagram



## CHAPTER 23

# WIRING DIAGRAMS

The 12VDC powered machines are supplied with approximately 3' (.9m) of 4ga power and ground wire terminated with ring lugs. If the installation of the 12VDC machine requires longer cables, or different terminations, replace as necessary. Be sure the size of the wire is sufficient for the application.



### VIEW FROM ENTRY END

**Figure 90: 12VDC Power and Ground Connections**





**New Tech Machinery**  
A MAZZELLA COMPANY

16265 E. 33rd Dr. Ste 40 | Aurora, CO 80011

303-294-0538 | 800-574-1717 | Fax: 303-294-9407

[www.NewTechMachinery.com](http://www.NewTechMachinery.com)