

KWM Gutterman INC.

Half Round Seamless Rollformer OPERATING AND MAINTENANCE TROUBLE SHOOTING GUIDE

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TABLE OF CONTENTS

SECTION	PAGE #
1. Machine Specifications	pg. 3
2. Safety and General Maintenance	pg. 4
3. Mounting Machine	pg. 4
4. Gutter Talk	pg. 5
5. Half Round Gutter Machine Orientation	pg. 6
6. Electrical Controls	pg. 7
7. Electrical Cord Requirements	pg. 8
8. Wiring Diagram	pg. 8
9. Spool Assembly and Loading Coil	pg. 9
10. Spool/Upright Drawing	pg. 10
11. Entrance Guide System	pg. 11
12. Entrance Guide Assembly Drawing	pg. 12
13. Adjusting Entrance Guide System	pg. 12
14. Daily Operating Procedures	pg. 13
15. Polyurethane Drive System	pg. 14
16. Polyurethane Drive System Drawing	pg. 15
17. Forming Components and Assemblies	pg. 16
18. Adjusting Bar Assemblies – Entrance	pg. 17
19. Adjusting Bar Assemblies – Exit	pg. 18
20. Adjusting Large Diameter Bottom Forming Roller	pg. 19
21. Back Radius Final Assembly & Drawing	pg. 20
22. Exit Crimper Assembly & Drawing	pg. 21
23. Front Radius Final Assembly & Drawing	pg. 22
24. Return Lip Assembly & Drawing	pg. 23
25. Front Pull Guillotine	pg. 24
26. Front Pull Guillotine Drawing	pg. 25
27. Trouble Shooting	pg. 26
28. Machine Operation Recap and Summary	pg. 27
29. Gutter Profile	pg. 28

SECTION 1

HALF ROUND GUTTER MACHINE SPECIFICATIONS

POWER:

- 1 HP, FAN COOLED (T.E.F.C.) MOTOR
- SINGLE PHASE
- 110V
- 13.6 AMP

DIMENSIONS:

- LENGTH 162" (411.50 cm)
- HEIGHT 48" (127.0 cm)
- WIDTH 28" (61.0 cm)

WEIGHT:

- APPROX. 1300 LBS. (589.7 kg)

DRIVE:

- TOP AND BOTTOM POLYURETHANE ROLLERS
- VIA CHAINS & SPROCKETS

SHEAR

- FRONT PULL GUILLOTINE STYLE SHEAR

SPEED:

- APPROXIMATELY 35' PER MINUTE

CONTROLS:

- **ENTRANCE END**
 - o EMERGENCY STOP
 - o JOG PUSH BUTTON

- **EXIT END**
 - o EMERGENCY STOP
 - o FORWARD & REVERSE SWITCH
 - o RUN & JOG PUSH BUTTON

RECOMMEND MATERIALS:

- PAINTED STEEL (MAX: 26 GAUGE)
- GALVANIZED STEEL (MAX: 26 GAUGE)
- ALUMINUM STEEL (MAX: 26 GAUGE)
- TERNECOAT STEEL (MAX: 26 GAUGE)
- ALUMINUM (MAX: .032")
- COPPER (MAX: 16 OZ. 3/4" HARD)

SECTION 2

SAFETY AND GENERAL MAINTENANCE

1. Read the entire manual prior to operation of this machine.
2. Always keep covers and lids on during transportation, operation and storage. The covers are for the operator's safety. Not only will this protect the operator against injury, the covers protect the machine from outside elements.
3. Do not transport or store machine with gutter coil in the machine. The forming rollers have adequate spacing, which will not allow them to come in contact with each other. The polyurethane drive rollers do not need to be protected from each other.
4. Read all warning labels on machine.
5. Disconnect the machine from power source prior to cleaning, or performing any maintenance.
6. Perform a daily inspection for debris, loose nuts, and or bolts. With a clean machine you can expect longer life from your machine and a better-finished product.
7. Lubricate guillotine and chains weekly using a waterproof synthetic grease.
8. **OUTSIDE STORAGE.** If machine must be stored outside on an open trailer, tarp machine loosely providing good ventilation to prevent condensation.
9. Gear box oil level should be inspected annually. The gear oil level should be even with the bottom of the inspection hole.
10. **BE SURE** the operator is trained in the operating procedures of this equipment, and all local and national safety codes concerning the operation and the lifting of coils.

SECTION 3

MOUNTING MACHINE

Mounting machine in truck and or trailer.

1. When choosing a vehicle or trailer for your machine, consider the gross machine weight including coil.
2. Check mounting surface for its integrity and make any repairs necessary prior to installation.
3. Bolt machine to the bed of the vehicle using 3/8" dia. bolts grade 5 four places. **DO NOT DRAW MACHINE DOWN TO AN UN-FLAT SURFACE.** Shim as needed to insure four place mounting.

SECTION 4 **GUTTER TALK**

Common terms to describe the condition of the gutter.

INTO THE HOUSE

This term describes a condition where the ends of the gutter are closer to the fascia board than the center. Looking from the machine the gutter has a left hand curve.



AWAY FROM THE HOUSE

This term describes a condition where the center of the gutter is closer to the fascia board than the ends. Looking from the machine the gutter has a right hand curve.

AWAY FROM THE HOUSE



TOP LIP INTO THE HOUSE

This term describes a condition where the ends of the top lip are closer to the fascia board than the middle.

TOP LIP AWAY FROM THE HOUSE

This term describes a condition where the ends of the top lip are further away from the fascia than the middle.

SECTION 5

MACHINE ORIENTATION

Machine orientation is as follows: (For communication purposes in the manual.)

A. Entrance

The entrance is where the forming process begins, where the material is fed.

B. Exit

The exit is where the forming process is complete and the finished gutter exits the machine.

C. Right Side

The right side of the machine is determined when facing entrance end of the machine. This is where the LIP of the gutter is formed.

Components on Right Side:

1. Lip Side Guide Shoe (Right Shoe)
2. Lip Side Guide Bar Assembly
3. Lip Bar Assembly
4. Return Lip Assembly
5. Lip Support Assembly

D. Left Side

The left side of the machine is determined when facing the entrance end. This is where the HEM of the gutter is formed.

Components on Left Side:

6. Hem Side Guide Shoe
7. Hem Bar Assembly
8. Motor and Gear Box
9. Back Support Assembly
10. Crimper Support Assembly

E. Center of Machine

The center of machine forms bottom section of gutter and is the drive assembly.

Components in Center of Machine:

11. Entrance Guide Assembly
12. Center Skate Assembly
13. Small Diameter Roller Assembly
14. Large Diameter Roller Assembly
15. Guillotine Cut Off

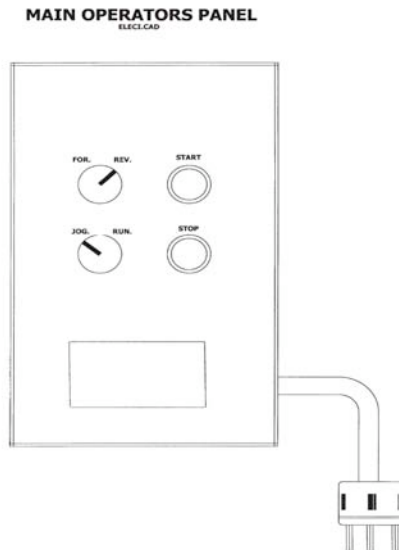
SECTION 6

ELECTRICAL SYSTEM AND CONTROL LOCATIONS

1E. **MAIN OPERATORS PANEL** (located on the lip side of the machine at the exit end)

The main operators panel consists of:

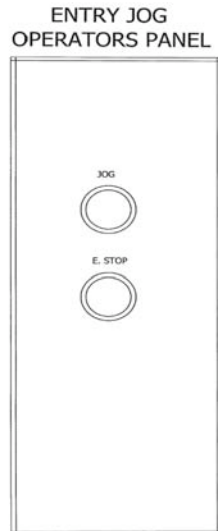
- (2) Selector switch. (JOG/RUN & FORWARD/REVERSE)
- (2) Push button. (START & STOP)
- (1) Duplex receptacle. (ACCESSORY POWER SUPPLY)



2E. **ENTRY OPERATORS PANEL** (located on the lip side of the machine at the entrance end)

The entry operator's panel consists of:

- (1) Jog button (push button)
- (1) Emergency stop button. (power shut off)



3E. **POWER SOURCE PLUG** (lower portion of face plate on exit end)

SECTION 7

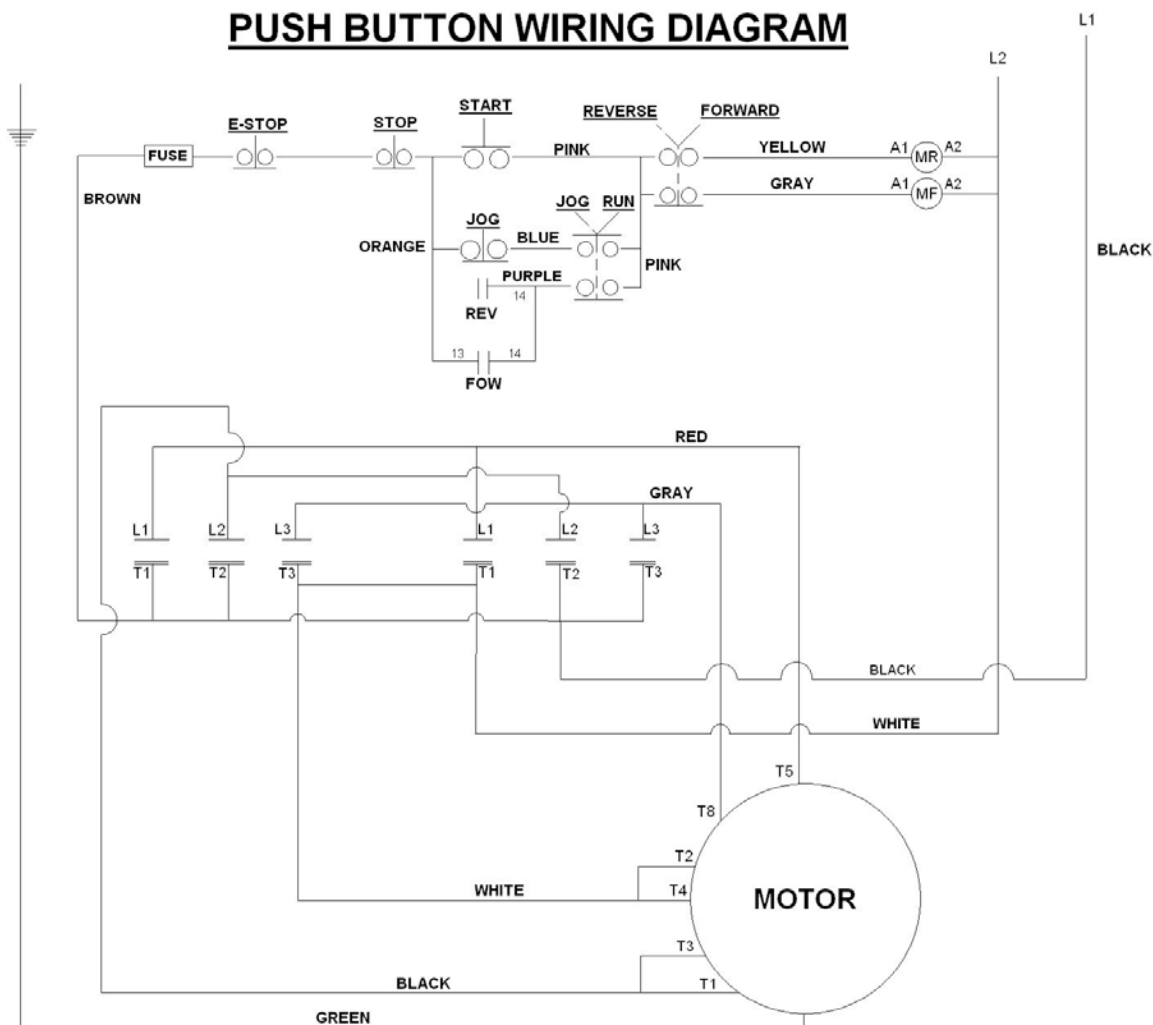
ELECTRICAL CORD REQUIREMENTS

It is important that the motor manufactures minimum wire gage be adhered to in order to maintain the warranty on motor.

<u>LENGTH</u>	<u>GAGE CORD</u>
0 – 25'	12 ga
25 – 50'	10 ga
50 – 100'	7 ga

SECTION 8

PUSH BUTTON WIRING DIAGRAM



SECTION 9

SPOOL ASSEMBLY AND LOADING COIL

SPOOL ASSEMBLY CONSISTS OF:

(SEE PAGE 10)

TURNSTILE UPRIGHT (1)	5/16" QUICK RELEASE PIN (2)
TURNSTILE LOCKING PIN (1)	TENSION BRAKE (2)
SPOOL SHAFT (1)	THUMB SCREW (2)
SPOOL HALF (2)	SAFTY PIN (2)

Spool & Coil Assembly Guide

Place the empty spool assembly on the ground or a flat surface.

Remove one of the 5/16" quick release pins.

Slide the spool half off of the 1" spool shaft.

Insert the spool shaft through the center of the coil.

Replace spool half on the spool shaft and reinstall the 5/16" quick release pin.

The spool assembly and coil is now ready to load onto the upright.

Placing Spool & Coil in the Upright

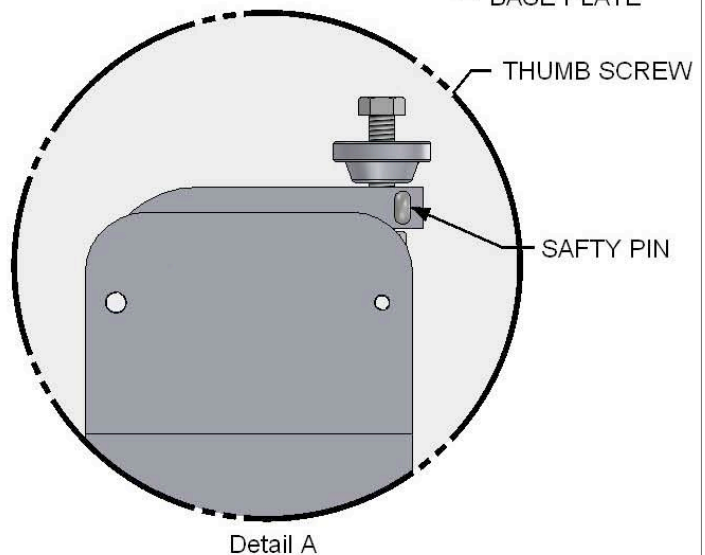
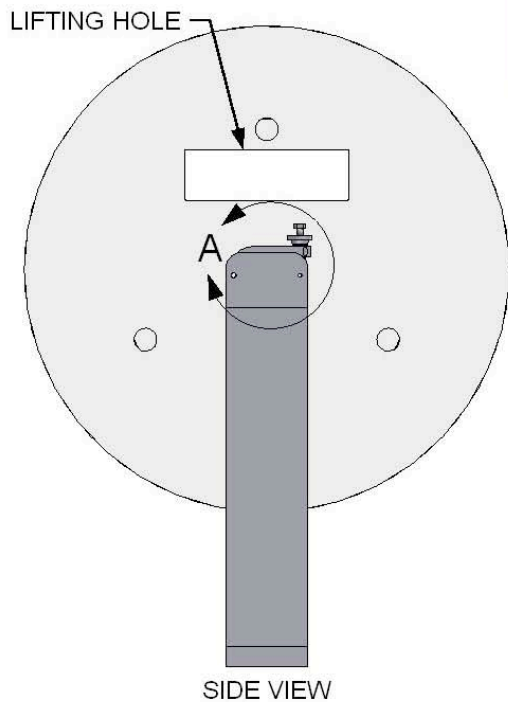
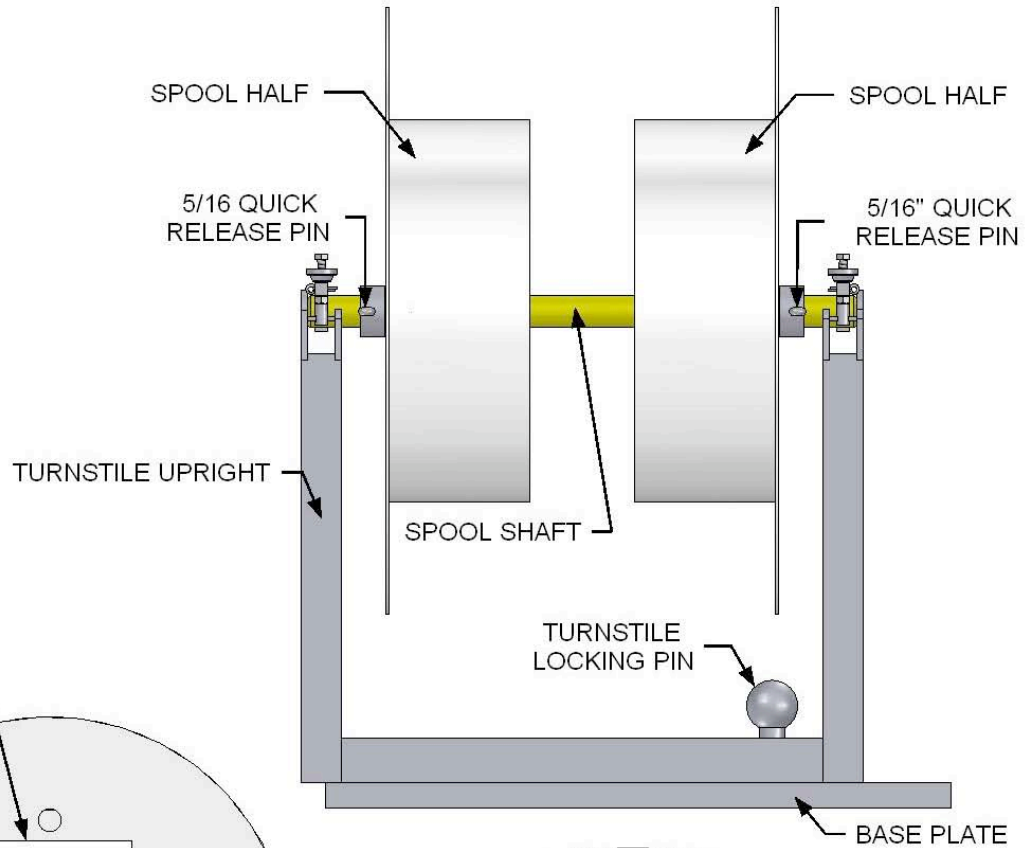
Use an approved lifting device in the designated spool lifting area to position the spool assembly into the turnstile upright. **(IMPORTANT!! - Please Read Precautions)**

Precautions:

- a. Make sure loading area is clean and clear of debris.
- b. Make sure Turnstile locking pin is securely installed.
- c. Always wear protective footwear when handling coil.
- d. Never load coil with the brake in closed position.
- e. Never operate machine without first checking brake & pin positions.
- f. Never transport machine without locking brake in close position

SECTION 10

SPOOL & UPRIGHT ASSEMBLY



SECTION 11

ENTRANCE GUIDE SYSTEM

1. Entrance guide consists of: (SEE PAGE 12)

- | | |
|--------------------------------|--|
| A. Right Aluminum Guide Roller | F. Top Rubber Drive Roller |
| B. Left Aluminum Guide Roller. | G. Bottom Rubber Drive Roller |
| C. Right Locking Set Screw. | H. Bottom Rubber Drive locking Collars |
| D. Center Locking Set Screw | I. Plastic Rollers. |
| E. Left Locking Set Screw. | |

2. Purpose and precautions of the entrance guide system.

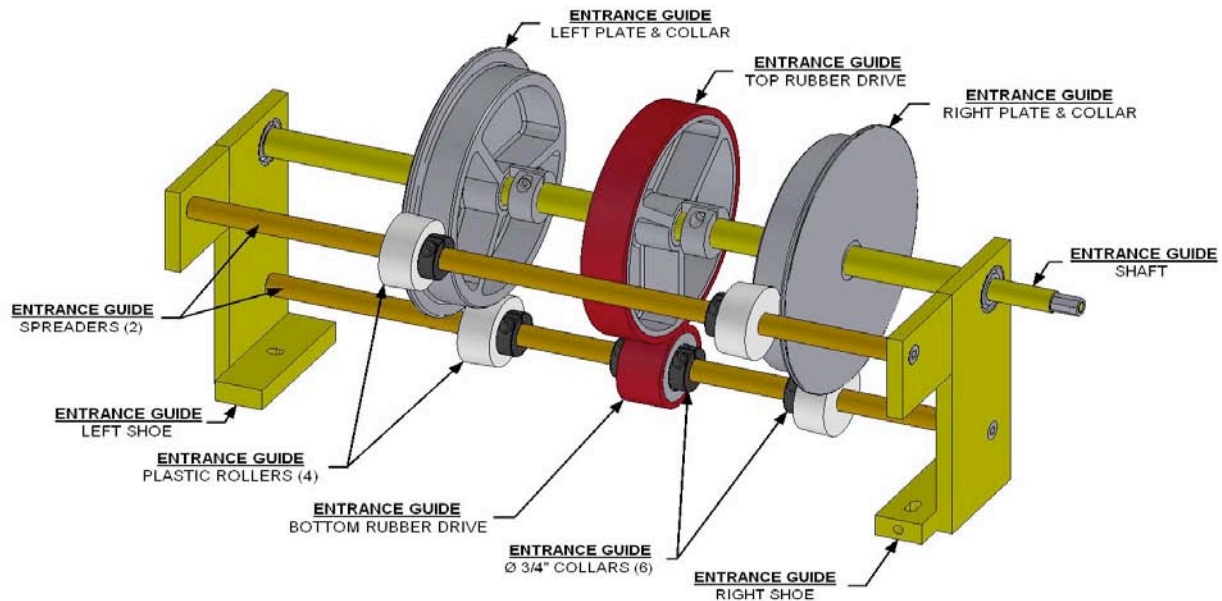
The entrance guide system is a very important part of this machine. Not only is it used to position material being fed into the machine, it also controls the lateral relationship of the material to the forming stations.

3. Entry Guide Operation.

When feeding material from the spools on the top of the machine or from a remote station. Feed the material straight into the entry guides and between the entrance rubber drives. Use handle to feed material to first chain driven rubber drive. **DO NOT FORCE**. Continue pushing material into the machine until it stops. The material can now be jogged through the machine. If the drive roller does not pull the material into the machine, give the material a little push from the entry end while continuing to jog the material into the machine.

SECTION 12

ENTRANCE GUIDE DRAWING



SECTION 13

ADJUSTING ENTRANCE GUIDE SYSTEM

***THE LOCATIONS OF THE ENTRANCE GUIDE ROLLERS ARE
FACTORY SET AND SHOULD NOT BE ALTERED
UNLESS AUTHORIZED – PLEASE CALL***

To INCREASE THE AMOUNT OF LIP TURNED UNDER;
Move the guides toward the right side (face side) of the machine.

To DECREASE THE AMOUNT OF LIP TURNED UNDER;
Move the guides toward the left side (back side) of the machine.

TO MOVE GUIDES

- 1.) Loosen the set screws on left collars.
- 2.) Side rollers towards the direction.
- 3.) Check width between the guide rollers.
- 4.) Move the plastic rollers accordingly.
- 5.) Tighten set screws.

SECTION 14

Daily operation

Feeding Machine

1. Position selector switch to jog. (see pg.7)
2. Position selector switch to forward position. (see pg.7)
3. Remove spool retaining pins (see pg.10)
4. Trim corners of coil 3" X 3"
5. Standing at entrance of machine, position material in the center of the entrance guides and hand feed to material between the rubber drives. (see pg.12)
6. Use handle on lip side to feed material to 1st chain drive
7. Activate jog button using your right hand at the same time using your left hand to drive material with handle so as to engage with #1 drive assembly, Jog material approximately two feet. Release jog button. (see pg.7)
8. Position selector switch to the run position.
9. Jog material thru guillotine using start push button.

SECTION 15

POLYURETHANE DRIVE SYSTEM

The drive train of this machine is in most circumstances maintenance free. If a material traction problem arises or a roller is replaced, the top roller is adjustable up and down.

CLEANING DRIVE ROLLERS

Use soap and water to remove any dirt or debris from the polyurethane roller.

ADJUSTING DRIVE SYSTEM: (see drawing - pg. 15)

To add traction, start with top #1 drive assembly.

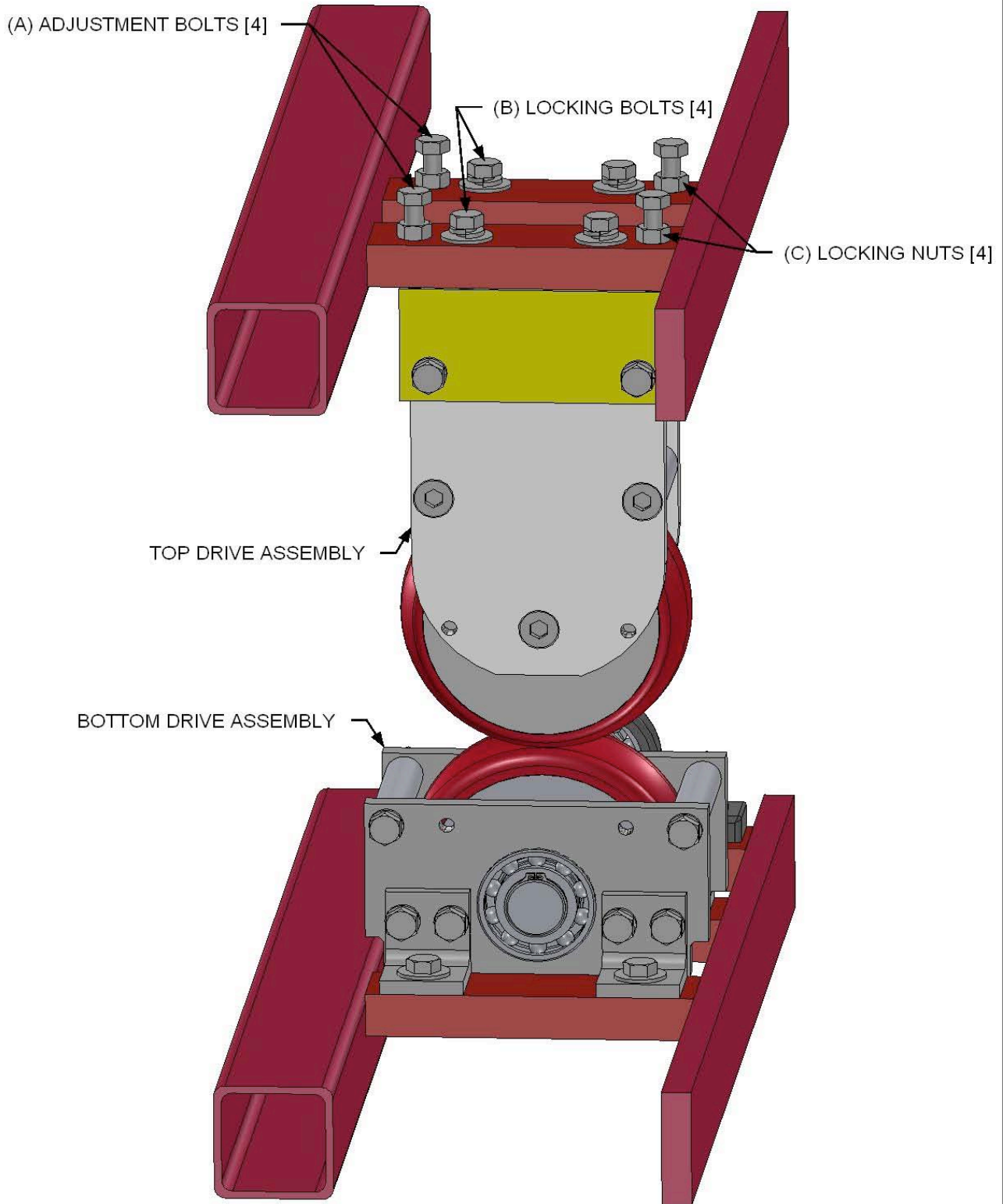
- 1.) Turn locking nuts (C) counter clockwise; loosening the locking bolt (A) at all four places.
- 2.) Turn locking bolt (B) counter clockwise a 1/4 turn to loosen all four bolts. Only turn the bolts just enough to break them free.
- 3.) Turn adjustment bolts (A) clockwise 1/16 of a turn.
- 4.) Tighten locking bolts (B) 4 places.
- 5.) Tighten locking nuts (C).
- 6.) Run machine forward if more traction is needed; repeat the above procedure on top #2 drive assembly. Run the machine forward if more traction is needed, repeat above procedure on both #1 and #2 drive assemblies.

CAUTION: DO NOT OVER TIGHTEN DRIVE ROLLERS.

The factory setting for the rollers is 1/4 turn past the point of contact.
Maximum amount of drive pressure recommended is 1/4 turn past factory setting.

SECTION 16

POLYURETHANE DRIVE SYSTEM



SECTION 17

FORMING COMPONENTS AND ASSEMBLIES

GUIDE BAR COMPONENTS.

The guide bars are in a fixed position relative to the forming stations. The guide bars are not adjustable components on the half round machine.

MAINTENANCE:

Check guide bars for any marks, burrs, or build up that could cause a mark or scratch on the gutter. Cleaning guide bars, lightly sand guide bar with a fine grit emery cloth, then polish out any remaining marks with Scotch Brite.

LIP BAR ASSEMBLY.

This assembly consists of 12 forming stations, #1 being the entrance and #12 being the exit. This assembly's sole purpose is forming the lip of the gutter and it does not do any driving of material. The unique design of this assembly requires no adjustment for alignment of rollers. The spacing of the roller and the position of the assembly are factory set and should not be altered.

MAINTENANCE:

The forming rollers are machined from stainless steel to eliminate corrosion. Check rollers for marks, burrs or build up, if a roller becomes marked use fine grit emery cloth to remove the mark. Then polish out any remaining marks or scratches with Scotch Brite.

HEM BAR ASSEMBLY.

This assembly consists of 8 forming stations, #1 being the entrance and #8 being the exit. This assembly's sole purpose is forming the hem of the gutter and it does not do any driving of material. The unique design of this assembly requires no adjustment for alignment of rollers. The spacing of the roller and the position of the assembly are factory set and should not be altered.

MAINTENANCE:

See Lip Bar Maintenance.

SECTION 18

ADJUSTING BAR ASSEMBLIES - ENTRANCE

THE LOCATIONS OF THE LIP BAR AND THE HEM BAR ARE FACTORY SET AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED – PLEASE CALL

To raise the bar – vertical

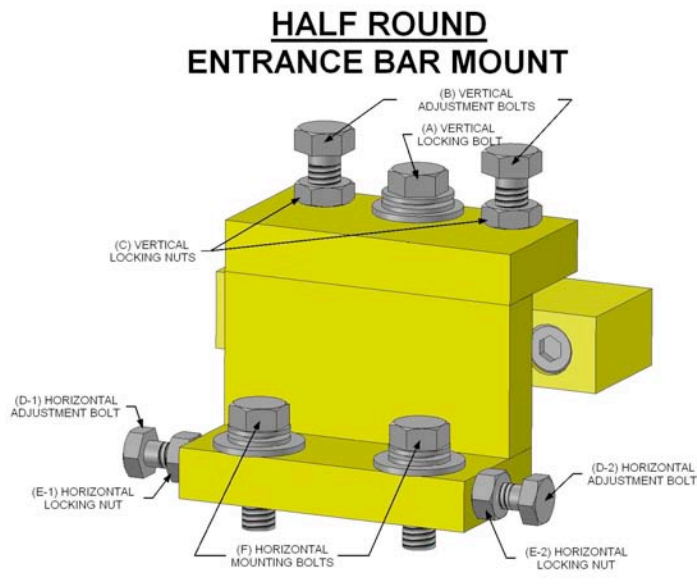
1. Loosen locking nuts (C) on adjustment bolts (B).
2. Turn locking bolt (A) counter clockwise.
3. Turn adjustment bolts (B) clockwise equally to desired height.
4. Tighten locking bolt (A) and locking nuts (C)

To lower the bar - vertical

1. Loosen locking nuts (C) on adjustment bolts (B).
2. Turn locking bolt (A) counter clockwise.
3. Turn adjustment bolts (B) counter clockwise equally to desired height.
4. Tighten locking bolt (A) and locking bolts (B).

To move the bar side to side – lateral

1. Loosen locking nuts (E) on adjustment bolts (D)
2. Turn adjustment bolt (D1) clockwise to move the bar to the right.
3. Turn adjustment bolt (D2) clockwise to move the bar to the left.
4. Tighten locking nuts (E)



PRECAUTION:

THE FORMING BARS ARE A CRITICAL PART OF THIS MACHINE WHEN ADJUSTING IN THIS AREA MOVE ADJUSTMENTS INCREMENTALLY 1/8 OF A TURN AT A TIME. ALWAYS RETURN TO ORIGINAL POSITION BEFORE TRYING A DIFFERENT ADJUSTMENT. DO NOT OVER ADJUST THIS ASSEMBLY.

SECTION 19

ADJUSTING BAR ASSEMBLIES – EXIT

**THE LOCATIONS OF THE LIP BAR AND THE HEM BAR ARE FACTORY SET
AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED - PLEASE CALL**

To raise the bar – vertical

1. Loosen locking nut (I) on adjustment bolt (J).
2. Loosen locking bolts (G) 2 places.
3. Turn adjustment bolts (J) clockwise equally to desired height.
4. Tighten locking bolts (G) and locking nut (I).

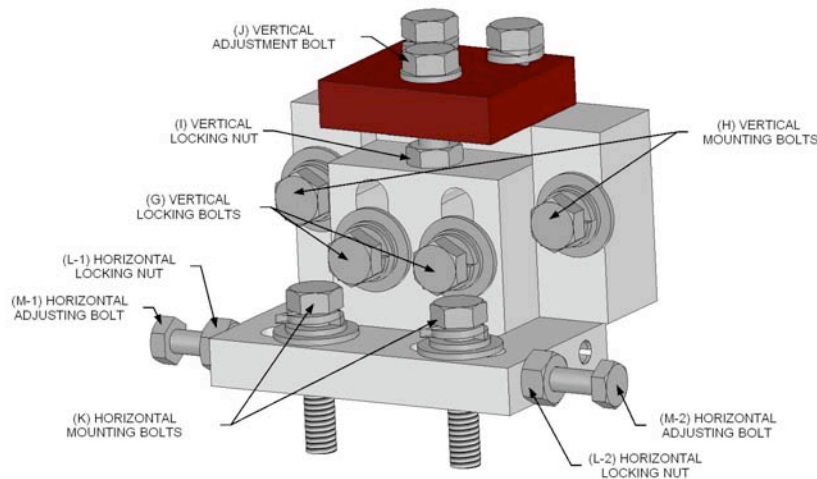
To lower the bar – vertical

1. Loosen locking nut (I) on adjustment bolt (J).
2. Loosen locking bolts (G) 2 places.
3. Turn adjustment bolts (J) counter clockwise to desired height.
4. Tighten locking bolts (G) and locking nut (I).

To move the bar side to side – lateral

1. Loosen locking nuts (L) on adjustment bolts (M)
2. Turn adjustment bolt (M1) clockwise to move the bar to the right.
3. Turn adjustment bolt (M2) clockwise to move the bar to the left.
4. Tighten locking nuts. (L)

HALF ROUND EXIT BAR MOUNT



PRECAUTION:

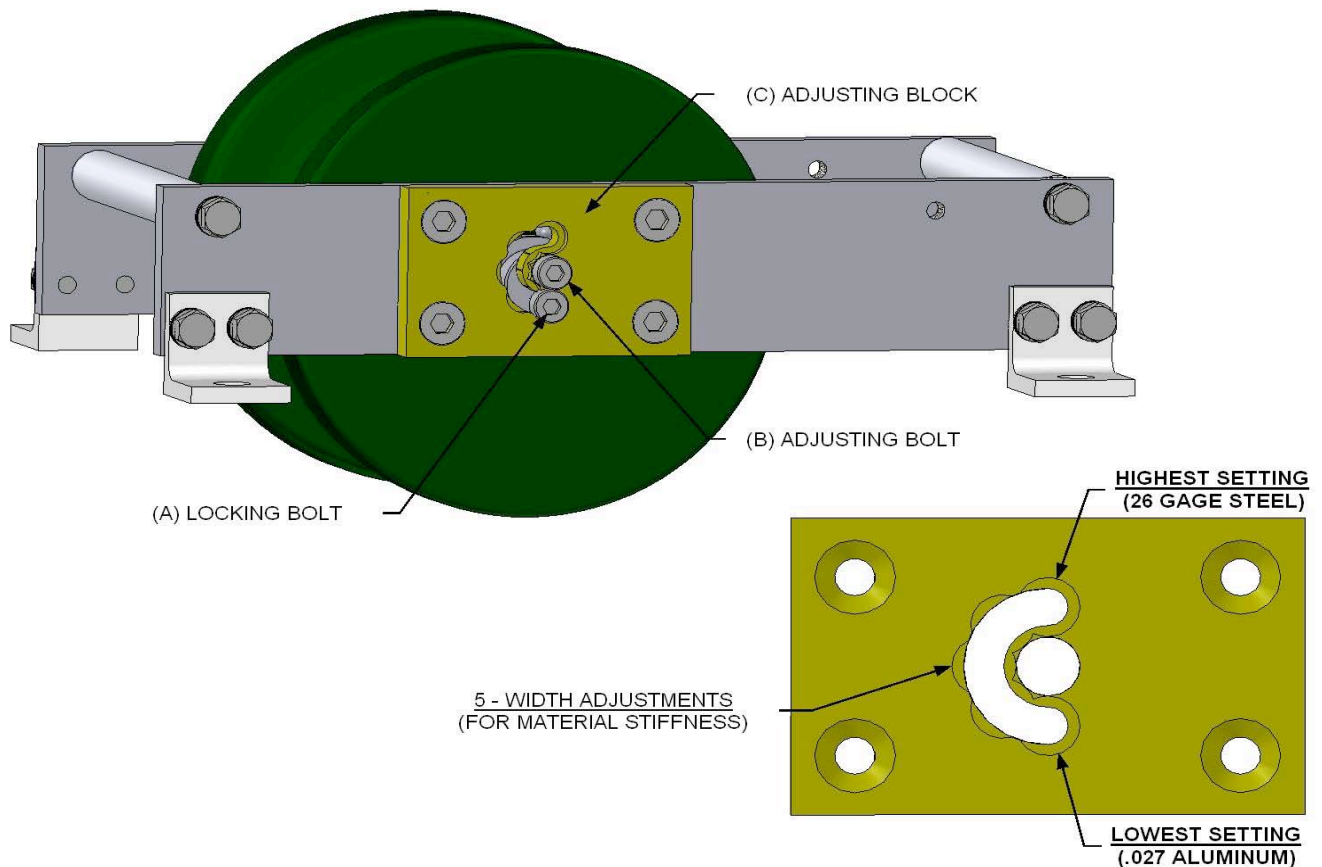
THE FORMING BARS ARE A CRITICAL PART OF THIS MACHINE WHEN ADJUSTING IN THIS AREA MOVE ADJUSTMENTS INCREMENTALLY 1/8 OF A TURN AT A TIME. ALWAYS RETURN TO ORIGINAL POSITION BEFORE TRYING A DIFFERENT ADJUSTMENT. DO NOT OVER ADJUST THIS ASSEMBLY.

SECTION 20

ADJUSTING LARGE DIAMETER BOTTOM FORMING ROLLER

The large diameter forming roller is factory set to run .027 Aluminum material at the lowest setting on the adjustment block.

LARGE DIAMETER FORMING ROLLER BOTTOM ASSEMBLY



LARGE DIAMETER BOTTOM ADJUSTMENT

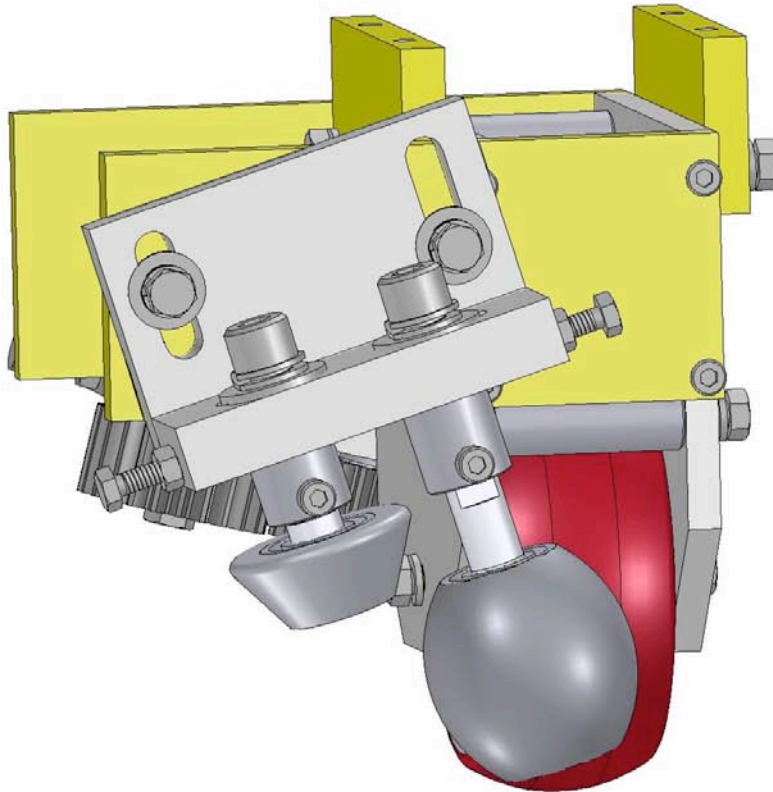
If your material is running wide due to material properties, adjust the high of the roller by loosening locking bolt (A) and turning adjustable bolt (B) to the desired height, then tighten locking bolt (A).

SECTION 21

BACK RADIUS FINAL ASSEMBLY & DRAWING

**THE LOCATIONS OF EXIT HEM SUPPORT ASSEMBLY ARE FACTORY SET
*AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED – PLEASE CALL***

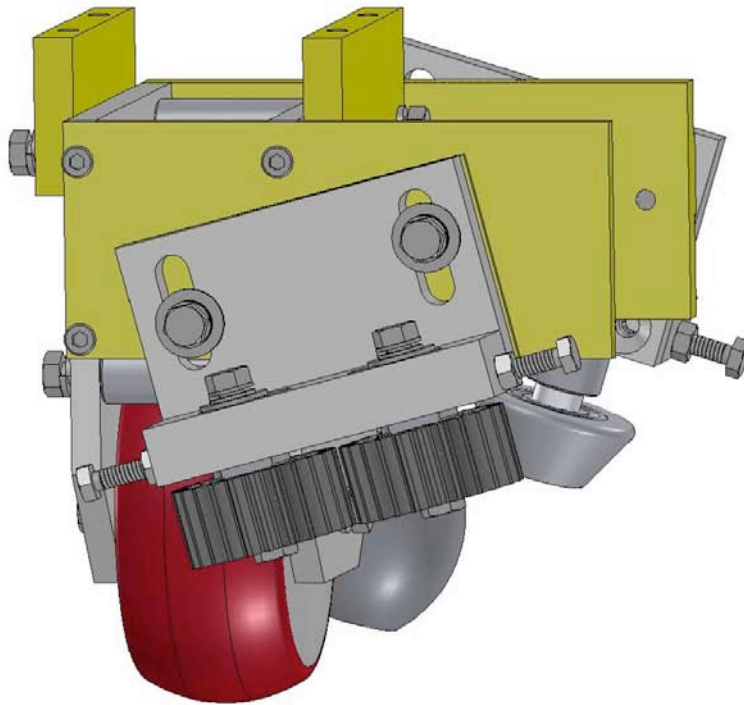
BACK RADIUS FINAL ASSEMBLY



SECTION 22
EXIT CRIMPER ASSEMBLY & DRAWING

**THE LOCATIONS OF CRIMPER ASSEMBLY ARE FACTORY SET
*AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED – PLEASE CALL***

EXIT CRIMPER ASSEMBLY

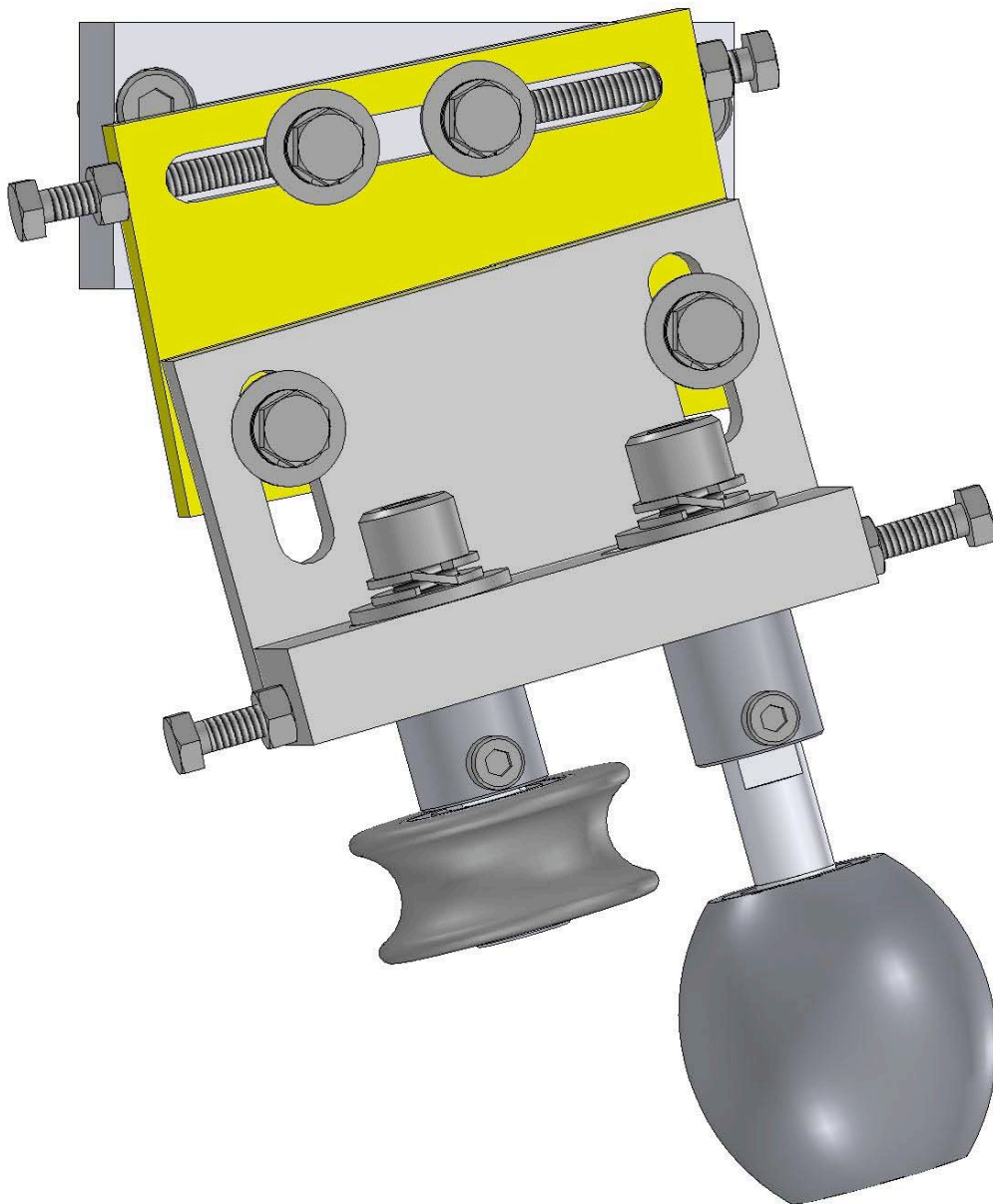


SECTION 23

FRONT RADIUS FINAL ASSEMBLY & DRAWING

**THE LOCATIONS OF LIP SUPPORT ASSEMBLY ARE FACTORY SET
AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED – PLEASE CALL**

FRONT RADIUS FINAL ASSEMBLY



SECTION 24

LIP RETURN/SWING SHAFT ASSEMBLY & DRAWING

**THE LOCATIONS OF LIP RETURN ASSEMBLY ARE FACTORY SET
AND SHOULD NOT BE ALTERED UNLESS AUTHORIZED – PLEASE CALL**

ADJUSTING SWING SHAFT

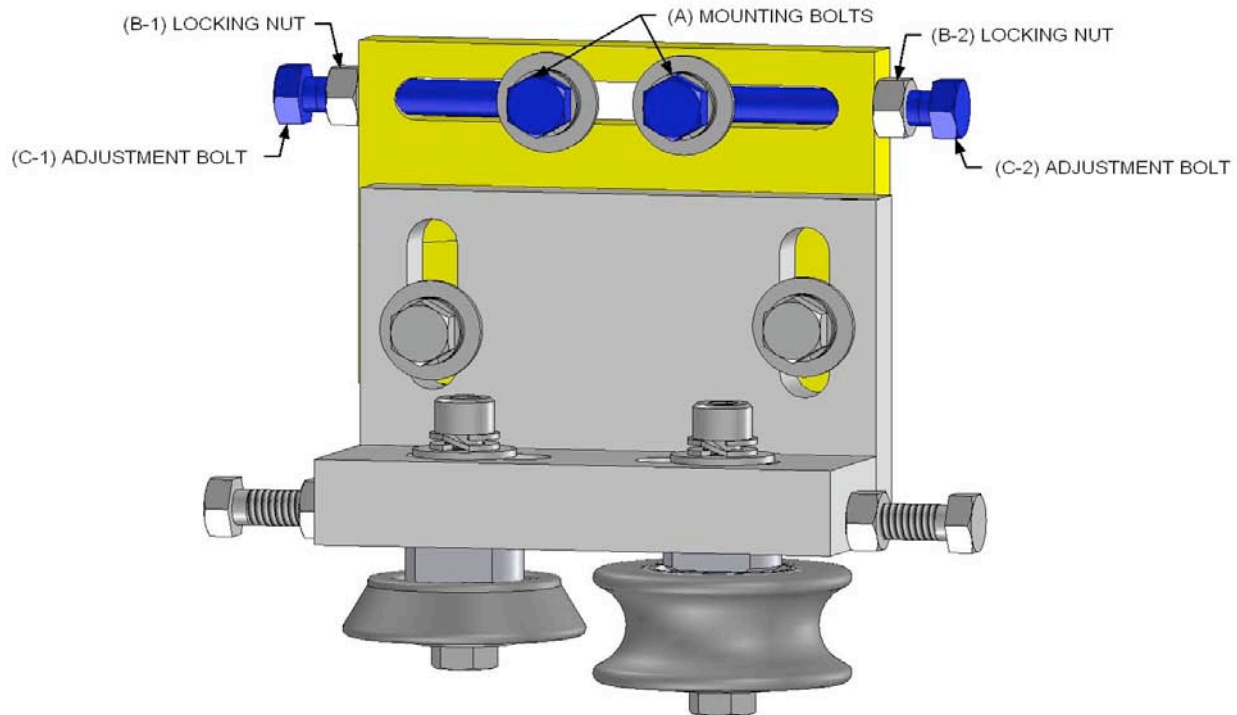
LIP RUNNING AWAY FROM THE HOUSE

1. LOOSEN LOCKING NUTS (B-1 & B-2)
2. LOOSEN ADJUSTMENT BOLT (C-1)
3. TIGHTEN ADJUSTMENT BOLT (C-2)
4. TIGHTEN LOCKING NUTS (B-1 & B-2)

LIP RUNNING INTO THE HOUSE

1. LOOSEN LOCKING NUTS (B-1 & B-2)
2. LOOSEN ADJUSTMENT BOLT (C-2)
3. TIGHTEN ADJUSTMENT BOLT (C-1)
4. TIGHTEN LOCKING NUTS (B-1 & B-2)

LIP RETURN/SWING SHAFT ASSEMBLY



SECTION 25

GUILLOTINE AND FACE PLATE ASSEMBLY

The guillotine assembly is machined to very tight tolerance, requiring that it be maintained on a regular basis. If the guillotine assembly is kept clean, lubricated and all hardware tight, you can expect trouble free performance for years to come.

DAILY MAINTENANCE:

Lubricate GUILLOTINE blade using 20 or 30 weight oil.

ADJUSTING GUILLOTINE POSITION. (see pg. 25)

The guillotine is moveable in all directions.

To Raise Guillotine

1. Loosen locking bolts (C) - 6 places
2. Loosen locking nuts (A) on adjustment bolts (B) - 2 places
3. Turn adjustment bolts (B) - 2 places clockwise
4. After desired position is acquired, tighten locking bolts (C) 6 places
5. Tighten locking nuts (A) on adjustment bolts (B) 2 places.

To Lower Guillotine

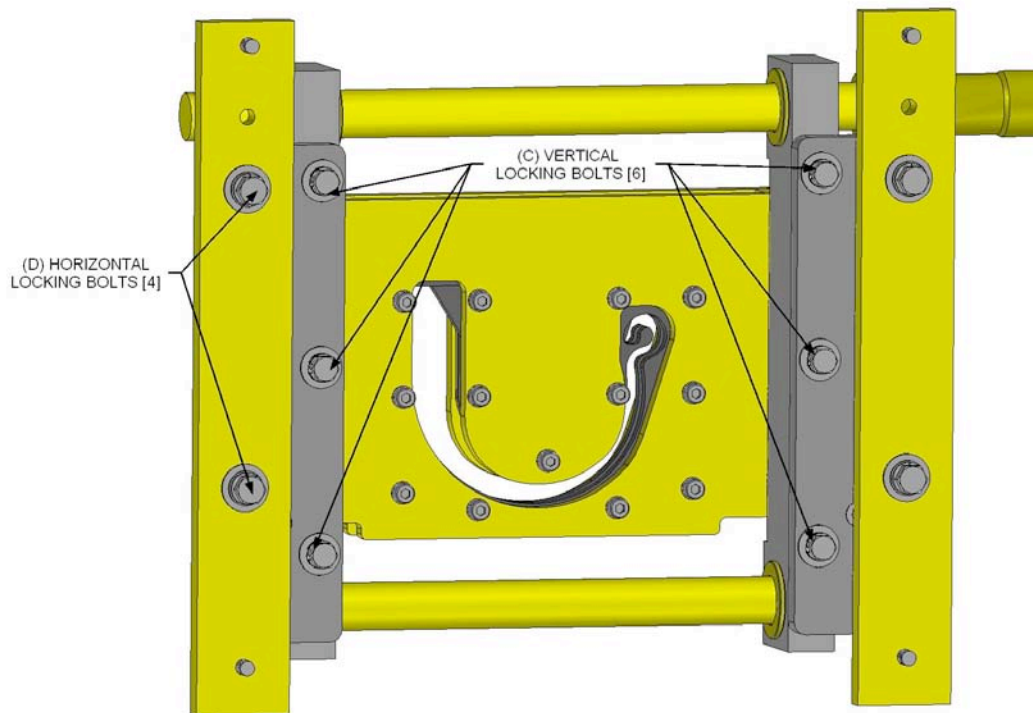
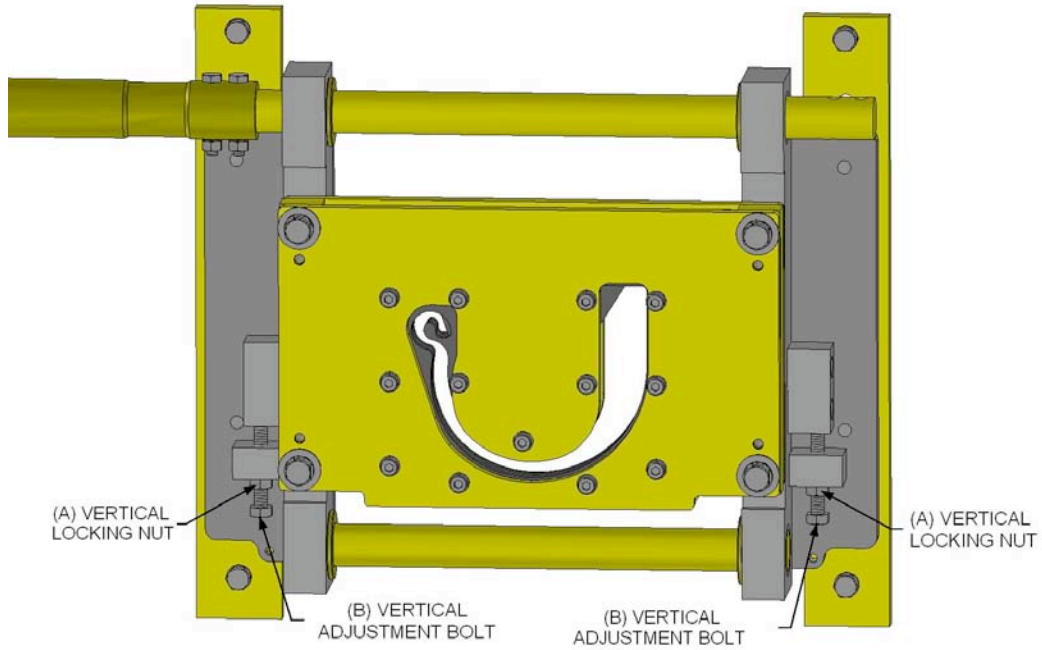
1. Loosen locking bolts (C) - 6 places
2. Loosen locking nuts (A) on adjustment bolts (B) - 2 places
3. Turn adjustment bolts (B) - 2 places counter clockwise
4. After desired position is acquired, tighten locking bolts (C) 6 places
5. Tighten locking nuts (A) on adjustment bolts (B) 2 places.

To move guillotine side to side

1. Loosen locking bolts (D) – 4 places.
2. After desired position is acquired, tighten locking bolts (D) – 4 places

SECTION 26

GUILLOTINE AND FACE PLATE ASSEMBLY DRAWINGS



SECTION 27 **TROUBLE SHOOTING**

GUTTER ADJUSTMENTS

ADJUSTING THE WIDTH OF THE GUTTER

SEE LARGE DIAMETER BOTTOM ADJUSTMENT (PAGE 19)

GUTTER RUNNING INTO/AWAY FROM THE HOUSE

SEE SWING SHAFT ADJUSTMENT (PAGE 23)

ADJUSTING TO INCREASE/DECREASE LIP MATERIAL

CALL FIRST SEE ENTRANCE GUIDE ADJUSTMENT (PAGE 13)

COMMON PROBLEMS

MACHINE NOT RUNNING

NO POWER – CHECK POWER SUPPLY (OUTLET, GENERATOR, POWER CORD)
EMERGENCY STOP BOTTON PUSH IN – RELEASE EMERGENCY STOP

BLACK MARKS ON GUTTER

DIRTY ROLLERS – SEE CLEANING ROLLERS (PAGE 14)
SLIPPING ROLLERS – SEE ADJUSTING DRIVE SYSTEM (PAGE 14)

SECTION 28

MACHINE OPERATION RECAP AND SUMMARY

This section is only a brief summary. Please read the entire manual prior to operating machine.

ORDER OF OPERATION

1. Connect the machine to the proper power source using the proper extension cord.
2. Position the selector switches to the jog position and the forward position.
3. Remove spool retaining pins from the spool you have selected to run.
4. Trim both corners of the coil at a 45 degree angle approximately 3" in from edges. Insert trimmed coil into the entrance guide system making sure coil is snug to both sides, with free front to back movement, push coil between entrance guide rubber drives.
5. Use crank handle to feed coil to first set of drive rollers.
6. With the material positioned, press the jog button with your right hand while turning crank handle with your left hand until it engages the #1 drive assembly. With the material moving forward under its own power release jog button.
7. Using the green start button at the main operators panel advance the material thru guillotine approximately 12" then cut off the 12" section of gutter.
8. The selector switches can be used for forward / reverse and jog / run operation of the machine once machine is fed. Set the selector switch to run mode. By depressing start button machine will continuously, depress red button to stop machine. Jog gutter to desired length and cut off using guillotine. Run out support stands must be used to support gutter after 8'.
9. Prior to the completion of the last piece of gutter being produced, cut the coil stock before the entrance guides to clear machine. The HALF ROUND MACHINE should be empty when transporting from job to job.

SECTION 29
GUTTER PROFILE

