



OPERATION AND MAINTENANCE MANUAL

SSR MULTI-PRO JR.



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**Chapter 1**

**MultiPro Jr.™ Specifications**

<b>DIMENSIONS:</b>	Length-150"	(3810.0 mm)
	Width-46"	(1168.4 mm)
	Height-49.5"	(1257.3 mm)
<b>WEIGHT:</b>	Approx. 2200lbs.	(997.4 kilograms)
<b>POWER:</b>	1½ hp, 110v, 60hz, single phase electric motor	
<b>DRIVE:</b>	Polyurethane rollers driven via chain and sprocket	
<b>FORMING ROLLERS:</b>	Free floating, hardened stainless steel	
<b>SHEAR:</b>	Forward pulling manual rack and gear w/ hardened tool steel dies	
<b>SPEED:</b>	Approximately 30 ft. per minute	
<b>CONTROLS:</b>	Push button entry and exit end manual controls with "JOG" feature and power interruption safety wiring.	
<b>MATERIALS FORMED:</b>	<b>Coil Width:</b>	15" to 20"
	<b>Max:</b> Aluminum:	.032
	Steel:	24 gauge
	Copper:	16 or 20 oz. ½ or ¾ hard

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**Chapter 2**

**PRECAUTIONS**

1. **READ THIS ENTIRE MANUAL BEFORE ATTEMPTING TO OPERATE THIS PIECE OF EQUIPMENT.**
2. **ALWAYS** keep covers, guards, and lids on during machine operation and storage.
3. **OBSERVE** and obey all safety and warning signs affixed to machine.
4. **STOP** the machine and disconnect the power supply before attempting to make any adjustments, do any maintenance or perform any changeover procedures.
5. **ALWAYS** have a trained person operating the machine that has read this manual in its entirety prior to attempting to operate this equipment.
6. **DO NOT** wear loose clothing, jewelry, etc. that could become entangled in the moving parts of the machine while in operation.
7. **ALWAYS** adhere to and follow all local and national safety codes concerning the operation of loading and unloading of reeled coils. Always use a properly rated device for lifting reeled coils into or out of the reel rack.

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**Chapter 3**

**GENERAL MAINTENANCE**

**DO'S**

1. **DO** keep your machine clean and free of debris and foreign matter. A clean machine will provide a clean end product.
2. **DO** visually inspect machine each day prior to operating.
3. **DO** lubricate shear daily with waterproof lube.
4. **DO** clean and lubricate tooling Carriage Rods monthly with waterproof lube
5. **DO** re-tension and lubricate chains at least twice a year with waterproof lube.
6. **DO** store machine indoors whenever possible.

**DON'TS**

1. **DO NOT** store or transport your machine with material loaded in the drive and forming tools. This only collects water, dirt, and debris that can cause damage.
2. **DO NOT** over tighten the chains. Keep chains tensioned correctly, and lubed with dry type chain lube for long life. Chains should be just snug.
3. **DO NOT** store machine uncovered and exposed to the elements outdoors for long periods of time. Cover over with a tarp, and provide good ventilation to help prevent condensation and rust.

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**Chapter 4**

**MACHINE ORIENTATION**

**1. MACHINE ORIENTATION** (Fig. 1, Pg. 5)

The Multi-Pro Jr. machine components are identified according to which side of the machine they are on and where they are relative to the entry end of the machine. The left and right sides of the machine are identified when looking from the entry end of the machine toward the exit end of the machine. The rails, drives, tooling stations, etc. are numbered beginning from the entry end of the machine.

**2. MOUNTING FOOT DETAIL** (Fig. 2, Pg. 6)

The Multi-Pro Jr. can be ordered with an optional trailer that is configured to locate the machine for proper hitch/axle loading. Should a non-NTM trailer be used to transport the Multi-Pro Jr., the dimensions on Figure 2 can be used to locate the anchor holes.

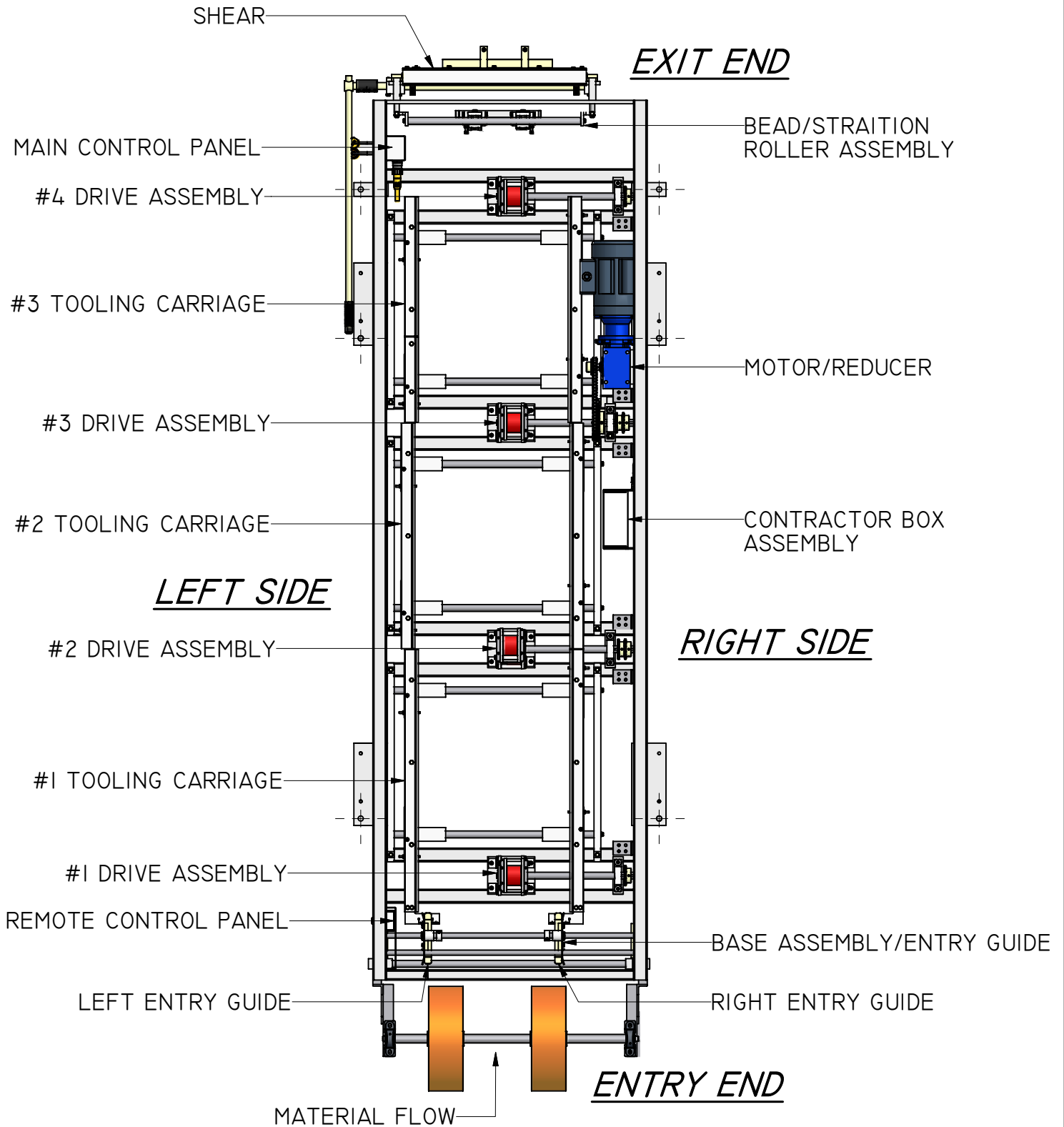
NTM assumes no responsibility for proper trailer/hitch loading for a non-NTM supplied trailer.

Past experience has shown that the Multi-Pro Jr. and the NTM supplied trailer can be towed with most ¾-Ton pickup trucks although a 1-Ton pickup may be required in some instances. It is the responsibility of the machine owner to consult with the motor vehicle manufacture to insure the proper trailer/vehicle combination.

**3. PROFILE DRAWINGS** (Fig. 3, Pg. 7)

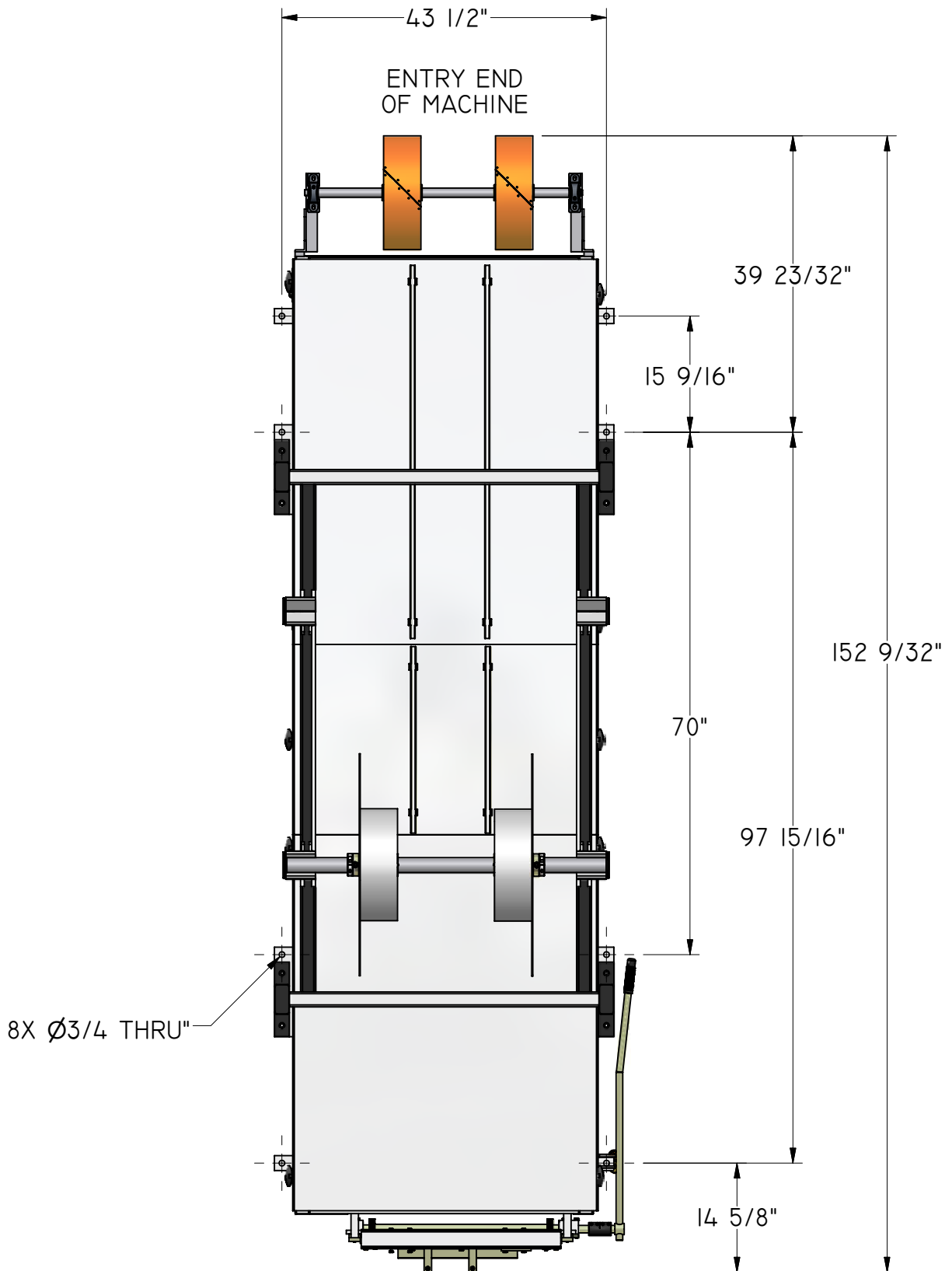
You should refer to Figure 3 for the finished panel dimensions on the profiles that can be installed in the Multi-Pro Jr.

CHAPTER 4  
FIG. 1  
MACHINE ORIENTATION



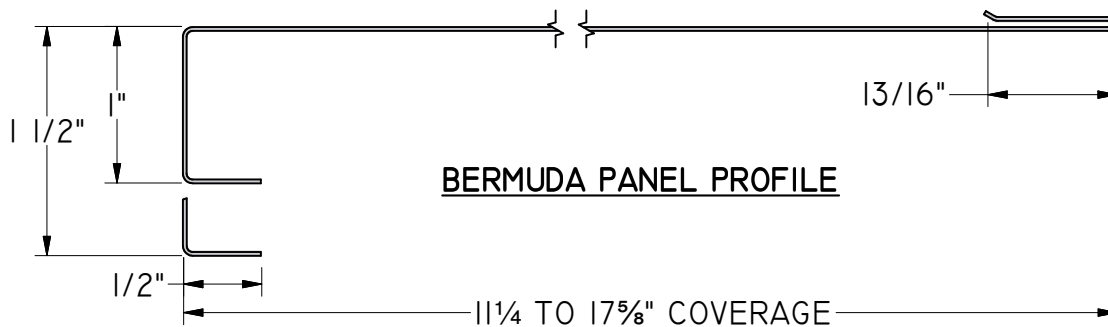
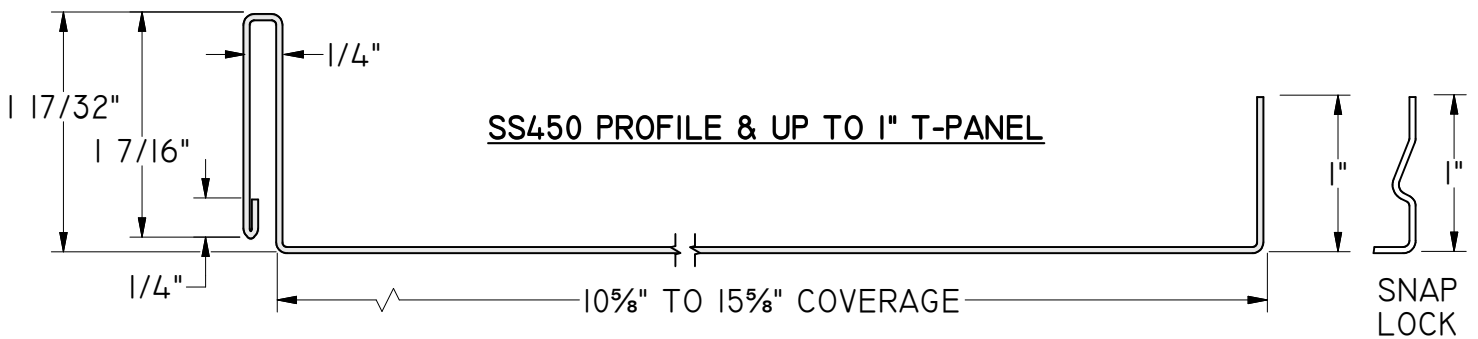
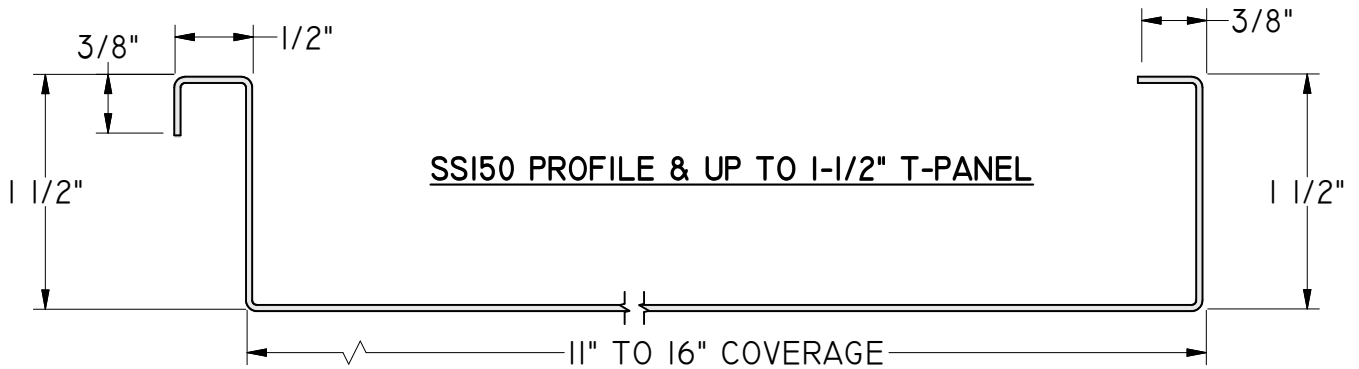
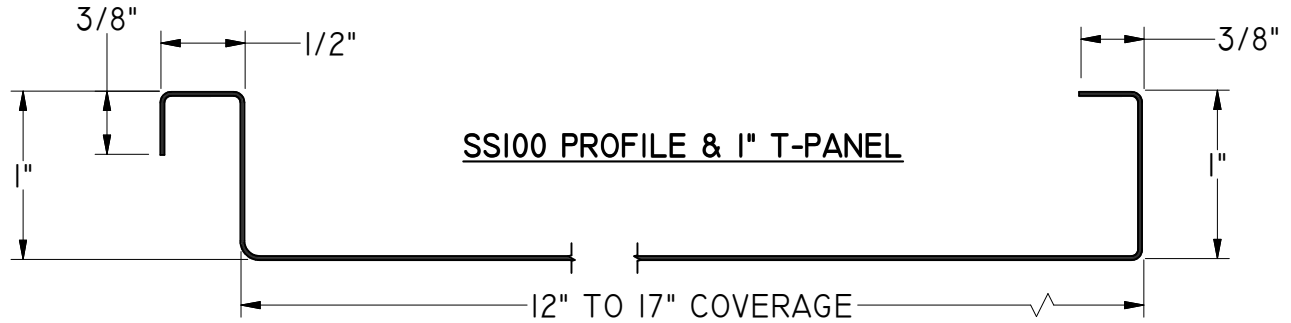
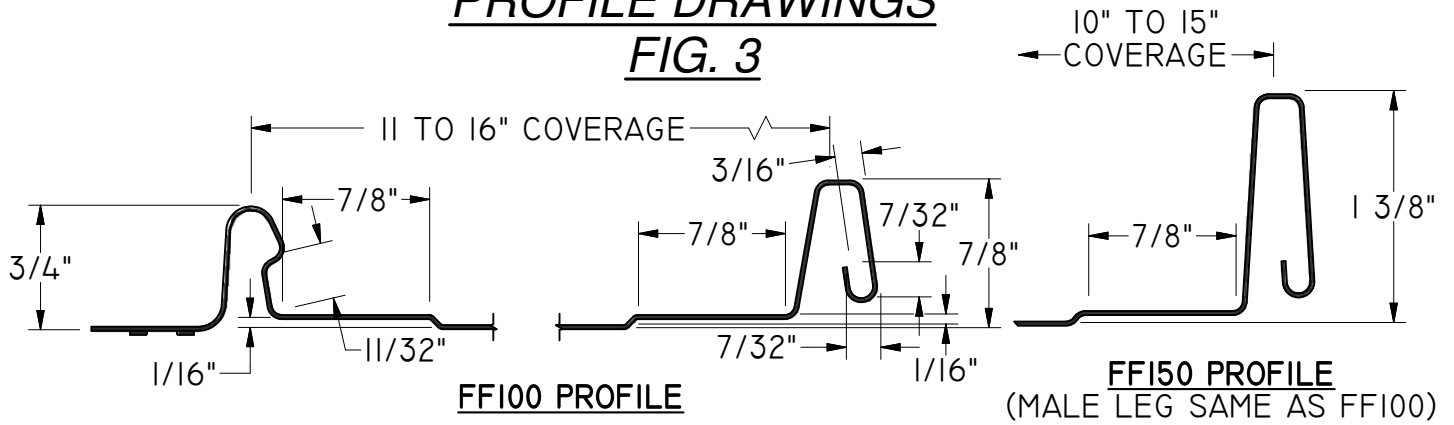


*MULTI-PRO JR.*  
*MOUNTING FOOT DETAIL*  
*FIG. 2*



# PROFILE DRAWINGS

## FIG. 3



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Chapter 5

**ELECTRICAL CONTROLS AND OPERATION**

**2. 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 you are using is marked properly. Do not assume that because an extension cord looks heavy enough that it is the right gauge. **Always** make sure the cord has a factory mark of 10/3. **Use of the wrong gauge extension cord will void the warranty on motor and electrical controls.**

Your MultiPro Jr.<sup>TM</sup> machine comes equipped with a 100 ft. long 10 gauge 3 wire 20 amp cord. The power cord should be plugged into a 20-amp circuit to avoid tripping breakers. Replacement cords should be of the same gauge and rating as the one supplied with your machine.

**2. CONTROL PANEL OPERATION:** (Fig. 4, Pg. 9)

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 panel through the machine.

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

B. Jog-Run Switch

This selector switch allows you to run the machine 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 dies. Select run after material has cleared the shear, and you are ready to run panel.

**NOTE: Limit switch must be plugged in to run continuously.**

C. Green Start Button (Entry and Exit End)

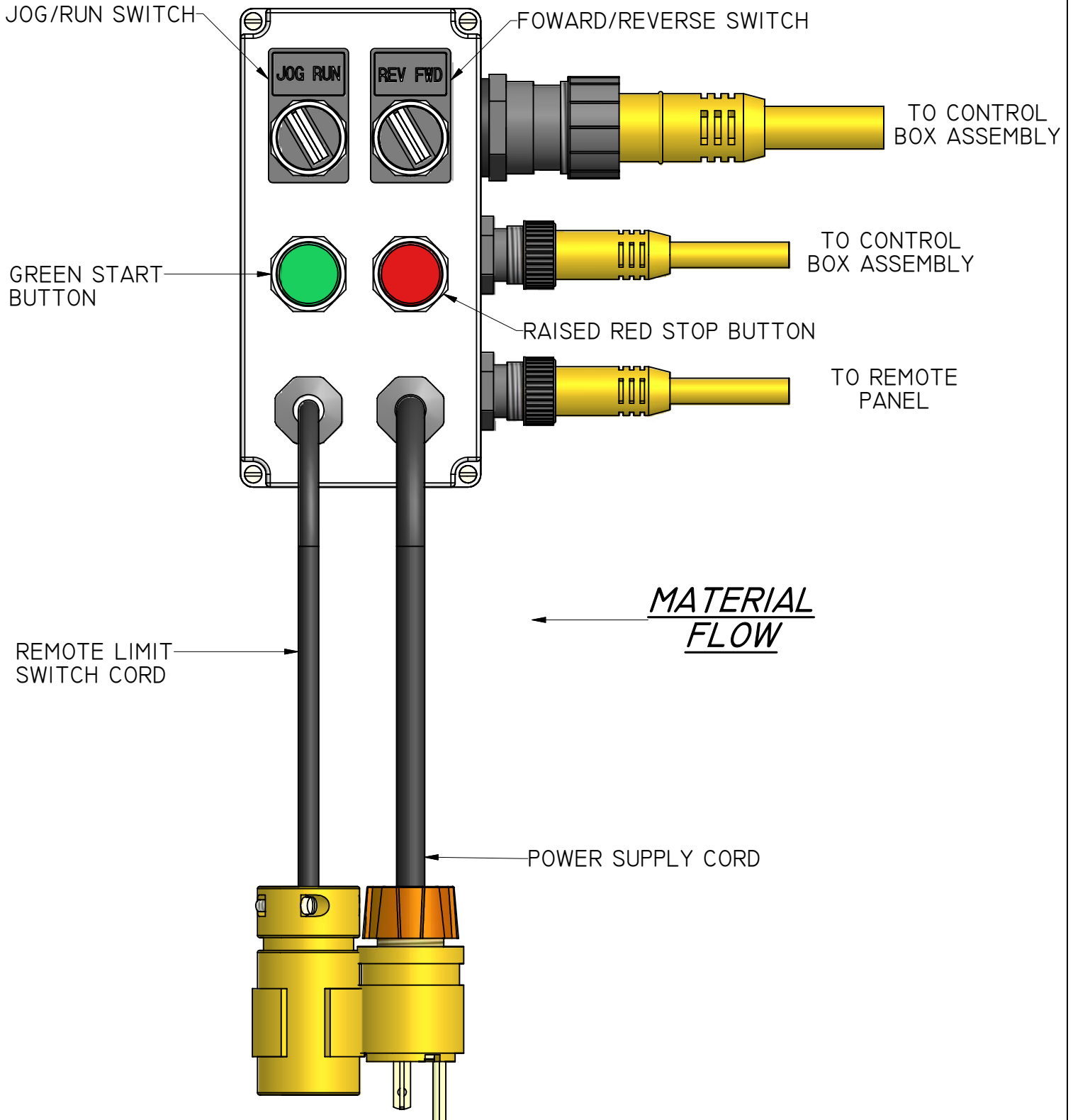
This button is used to activate the drive system of the machine.

D. Raised Red Stop Button (Entry and Exit End)

This button acts as an emergency stop, and pressing either the entry or exit button will stop the drive system of the machine in case of an emergency.

**NOTE:** For operator safety the machine is designed to JOG only in reverse regardless of the position of the RUN- JOG switch.

CHAPTER 5  
FIG. 4  
CONTROL PANEL OPERATION



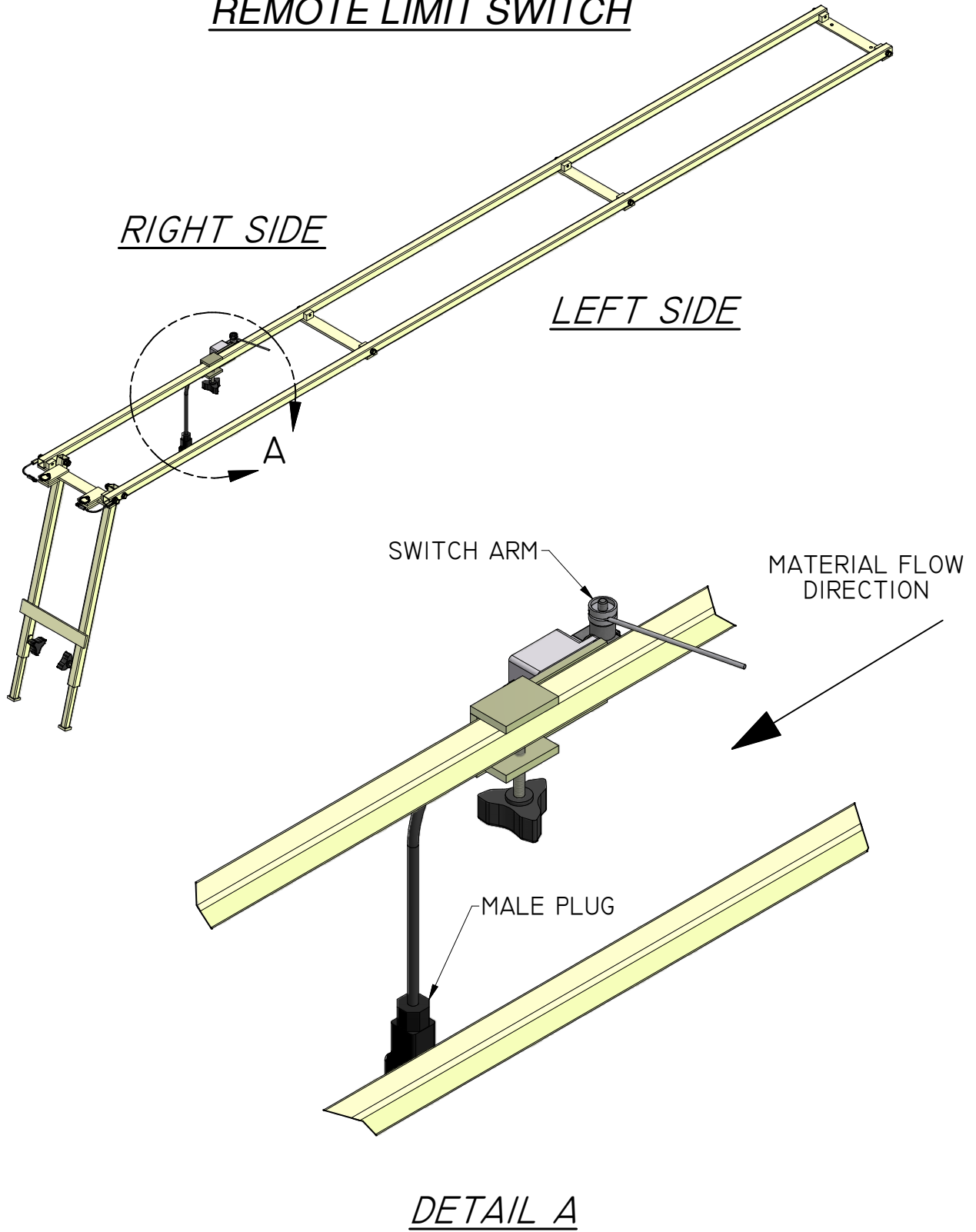
3. **REMOTE LIMIT SWITCH** (Fig. 5, Pg. 11)

**Note:** Your machine will not run continuously in the forward direction unless the REMOTE LIMIT SWITCH is plugged into the machine. The Remote Limit Switch is used for panel length control. It is designed to attach to the right side of the optional RUN OUT TABLES available for your machine. Plug the female end of a 3-wire 14-gage extension cord into the limit switch, and the male end into the female plug of the machine. The length of the panel you intend to run determines length of the extension cord needed. Run out a panel to the desired length and stop the machine. Slide the Remote Limit Switch onto the tube on the right side of the run out table so that the ARM of the switch is against the end of the panel. Pull the limit switch back toward the shear until you hear a click in the Limit Switch Head and secure the limit switch at this location. Cut and remove the set up panel from the table. Push the start button and run the next panel allowing the limit switch to stop the machine. Measure this second panel, and make any necessary adjustment to the limit switch to obtain the desired length. Repeat as necessary.

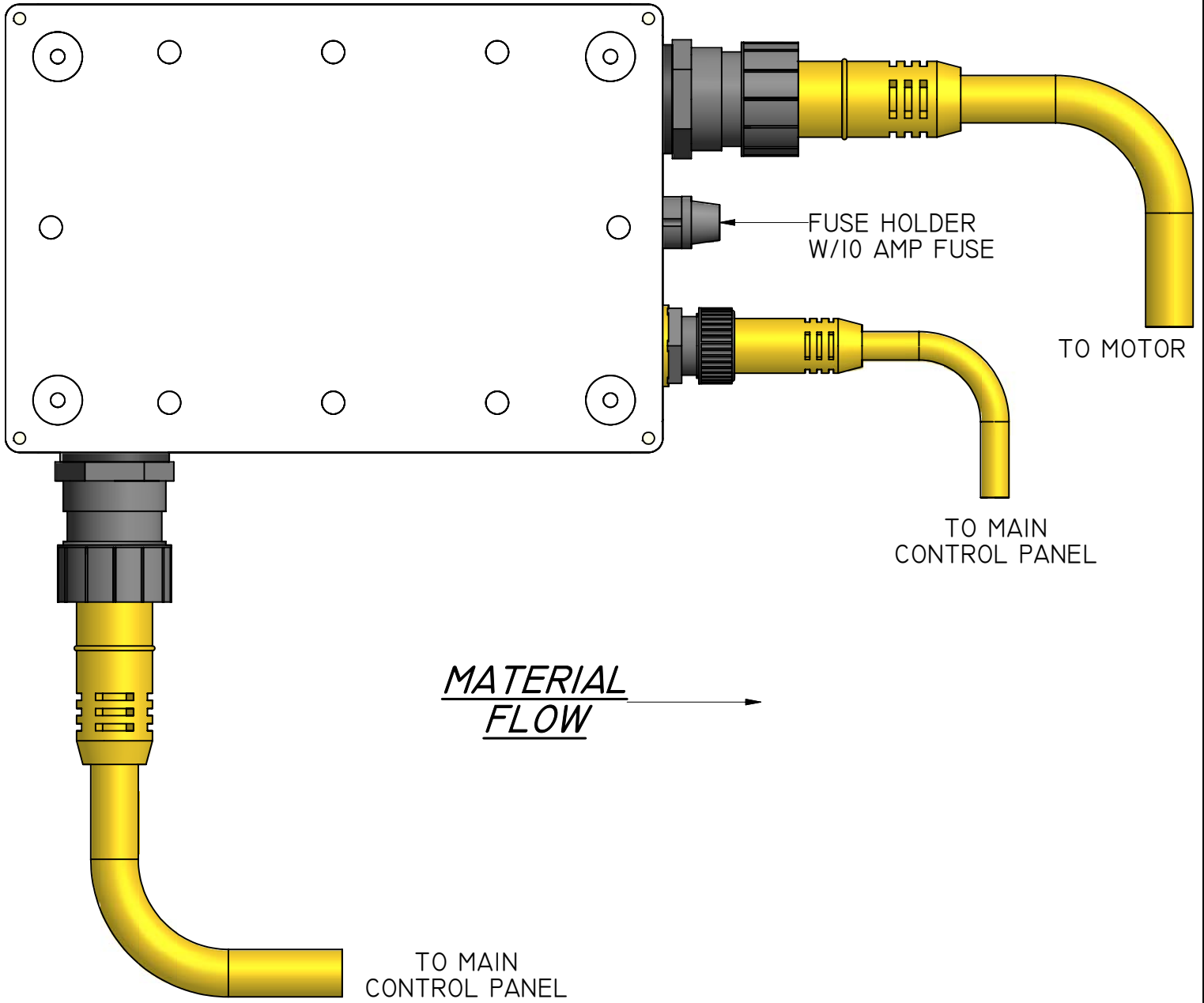
4. **FUSE** (Fig. 6, Pg. 12)

A 10-amp time delay fuse protects the electrical logic circuit of this machine. This fuse holder is located in the side of the control box located approximately mid machine on the right side. Access can be gained by removing the center top cover.

CHAPTER 5  
FIG. 5  
REMOTE LIMIT SWITCH



CHAPTER 5  
FIG. 6  
FUSE LOCATION



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## Chapter 6

### REEL & REEL STAND ASSEMBLY

**CAUTION:** Always use properly rated lifting devices to load and unload coils.

**Maximum Capacity / Reel:** 3,000 lbs.

**Total Capacity for Reel Stand:** 6,000 lbs.

1. The reel axles must rest in the cradles on the reel rack. Keep the cradles lubricated with synthetic lube to minimize wear. (Fig. 7, Pg. 14)
2. Use the Hold Down Brackets on each cradle to secure the coil and reel to the reel stand during both operation and transit of the machine. The Hold Down Bracket can be used to keep the coil from uncoiling to fast during the fabrication of panels. Apply just enough drag to keep coil tensioned. (Fig. 7, Pg. 14)  
**Caution: Do not over tighten Hold Down Brackets during machine operation.**  
This will cause excessive load on the drive and electrical systems and premature failure will result.  
**Do tighten Hold Down Brackets** tightly prior to transport of the machine.
3. If a Remote Decoiler is used it should be placed 8 to 10 feet behind the machine. Align it as close as possible to the Right Side Entry Guide line of fire, making the side of the coil and reel parallel to the machine. **NOTE:** The closer the Decoiler and reel are set to the machine, the more critical this alignment becomes.

### FIXED REEL SET UP

1. Using the Fixed Reel Set-Up Chart, (Fig. 8, Pg. 15), find the “A” dimension that corresponds to the profile you are using.
2. Slide the Right Reel to the left or right to get the correct “A” dimension measuring from the edge of the end of the shaft to the edge of the reel clamp collar. Tighten the reel clamp collar set screws.
3. Move the split clamp collar next to the reel clamp collar and tighten the screws.

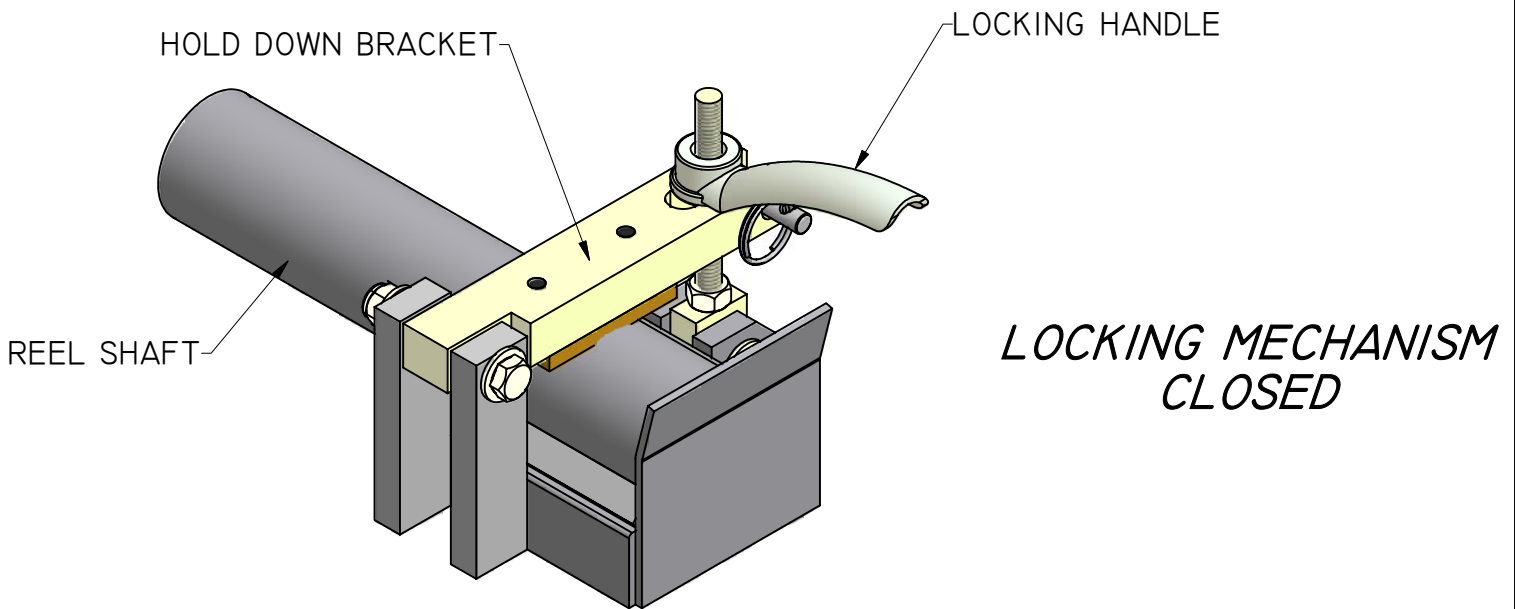
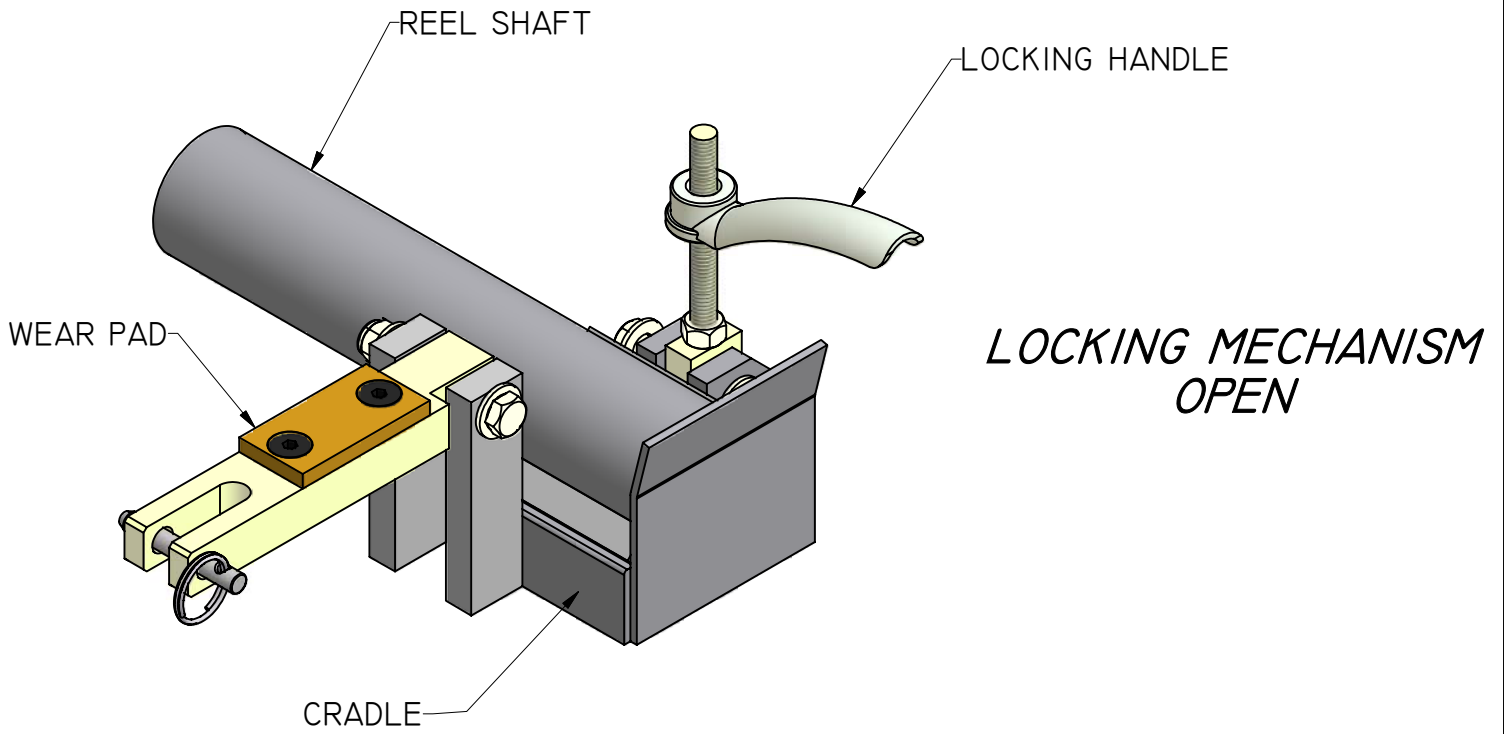
### LOADING COIL ON FIXED REEL

(Fig. 8, Pg. 15)

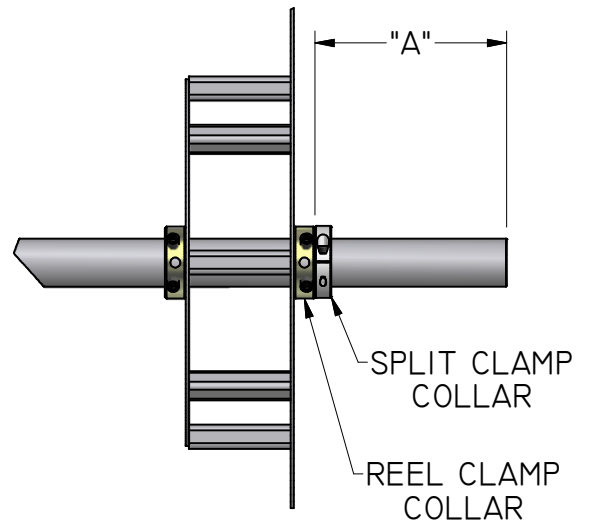
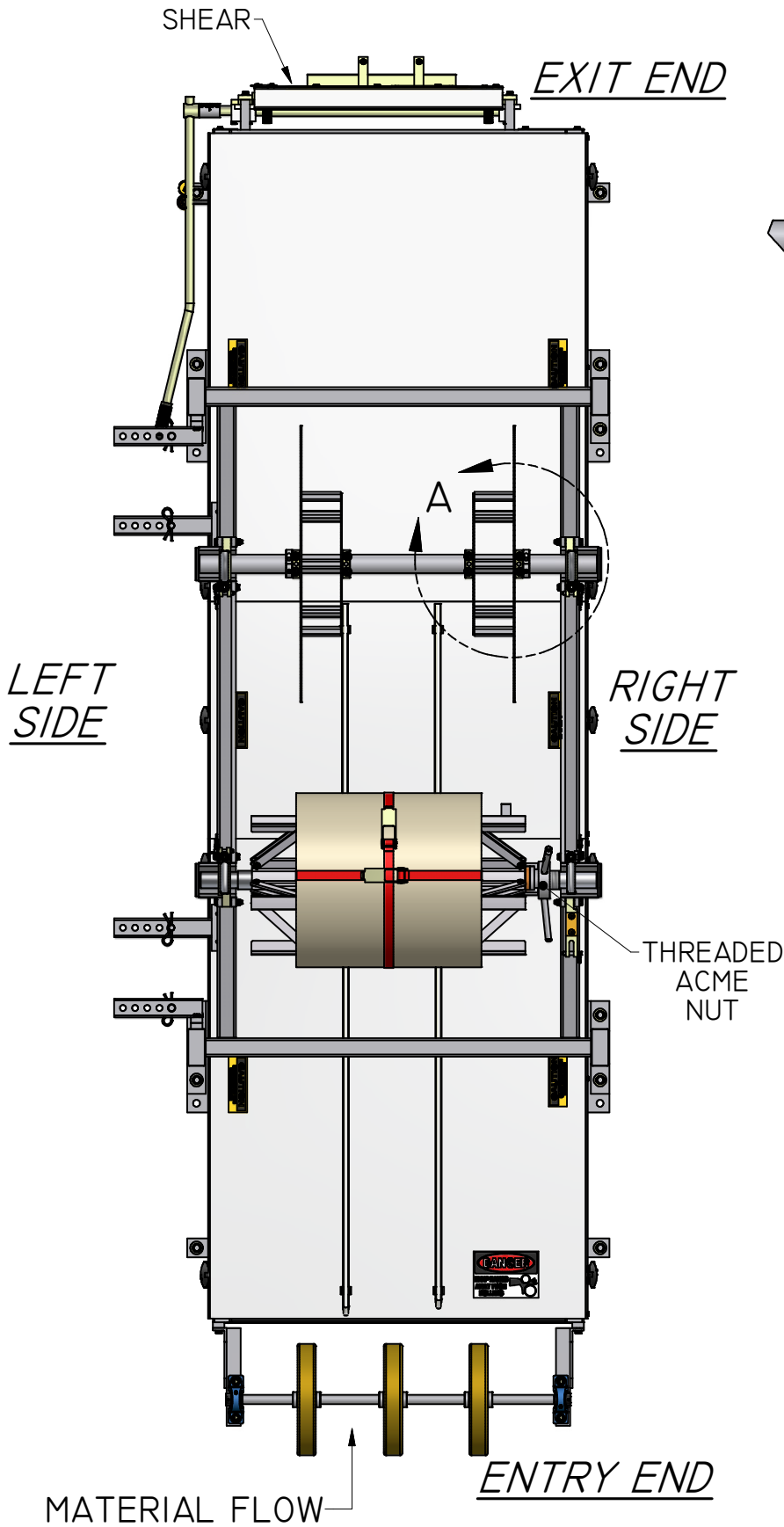
1. Slide the Fixed Reel Assembly into the inside diameter of the coil. Make sure the reel side is against the edge of the coil.
2. Slide the removable half of the reel onto the reel shaft until it is snug against the other side of the coil.
3. Align Lifting Holes in Removable Reel Assembly with the Lifting Holes in the Fixed Reel assembly and tighten reel clamp collar set screws securely. Move the split clamp collar next to the reel clamp collar and tighten the screws. Reeled coil is now ready for loading. (SEE LOADING REELED COIL Pg. 18)



CHAPTER 6  
FIG. 7  
REEL NEST



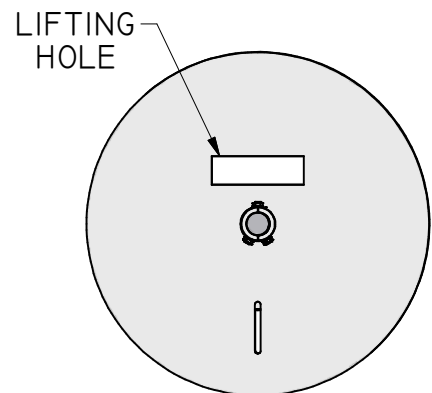
CHAPTER 6  
FIG. 8  
FIXED REEL SET-UP



DETAIL A

SET-UP CHART

PROFILE	"A"
FF100	12-7/16"
FF150	11-1/8"
SS100	12-1/16"
SS150	11-7/8"
SS450	10-5/8"



### **EXPANDABLE ARBOR**

(Fig. 9, Pg. 17)

The Expandable Arbor adjusts to accommodate coil with 16" to 20" inside diameters by expanding into the ID of the coil.

### **THREADED NUT**

The threaded nut is used to increase or decrease the outside diameter of the arbor. Turning the nut clockwise will increase the outside diameter of the arbor, and counter-clockwise rotation will decrease the arbor size.

### **END COLLAR**

The End Collar has two positions.

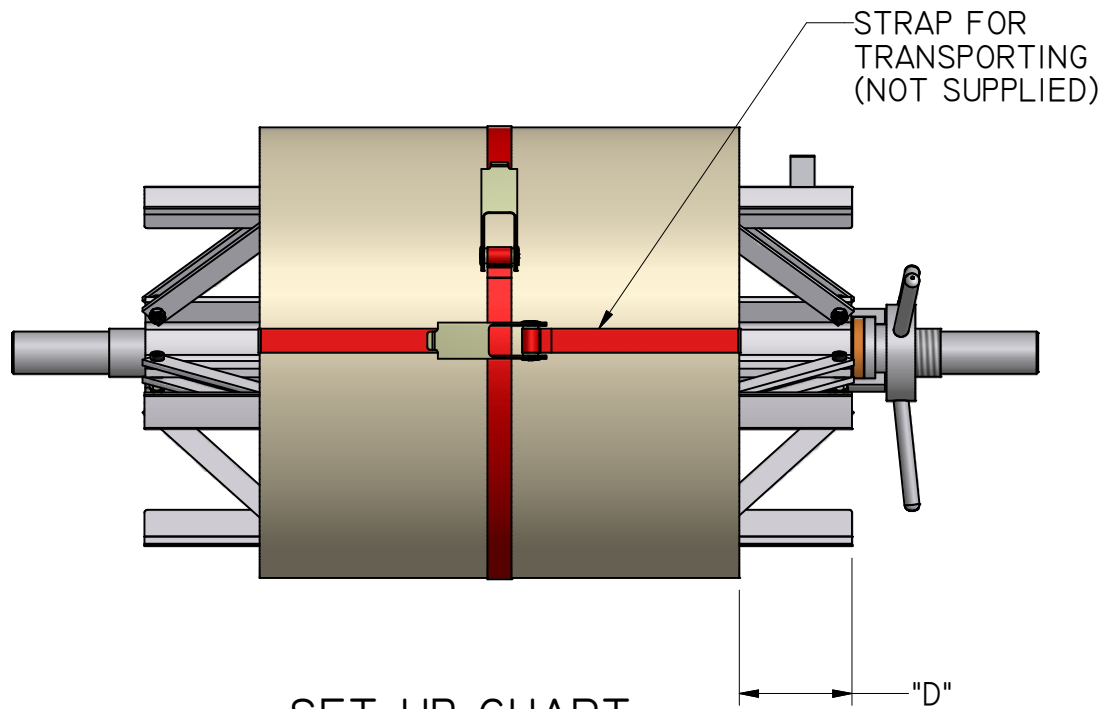
- A. Position "A" is used for coils with inside diameters of 16".
- B. Position "B" is used for coils with inside diameters of 20".

To adjust from one position to the other, remove 2 screws "C" until end collar is free to slide. Slide it to the inside position for 20" ID or outside position for 16" ID coil. Align it to the respective threaded holes in the reel shaft. Re-insert and tighten "C" screws to lock the end collar to the shaft.

### **LOADING EXPANDABLE ARBORS WITH COIL**

1. Using the Threaded Nut, collapse the arbor small enough to fit into the inside diameter of the coil.
2. Slide the Expandable Arbor into the center of the coil.
3. Turn the Threaded Nut clockwise until the Support Bars on the arbor are just snug against the inside of the coil.
4. Using the Reel Set Up Chart, (Fig. 9, Pg. 17), find the "D" dimension that corresponds to the profile you are using.
5. Slide the arbor left or right to get the correct "D" dimension measuring from the edge of the coil to the end of the Support Bar on the Threaded Nut side.
6. Finish by rotating the Threaded Nut clockwise until the Support Bars are very tight against the inside of the coil. Verify that dimension "D" is correct, and re-adjust if necessary. The Coil and Arbor are now ready for loading. (SEE LOADING REELED COIL PG. 18)

CHAPTER 6  
FIG. 9  
EXPANDABLE ARBOR SET-UP

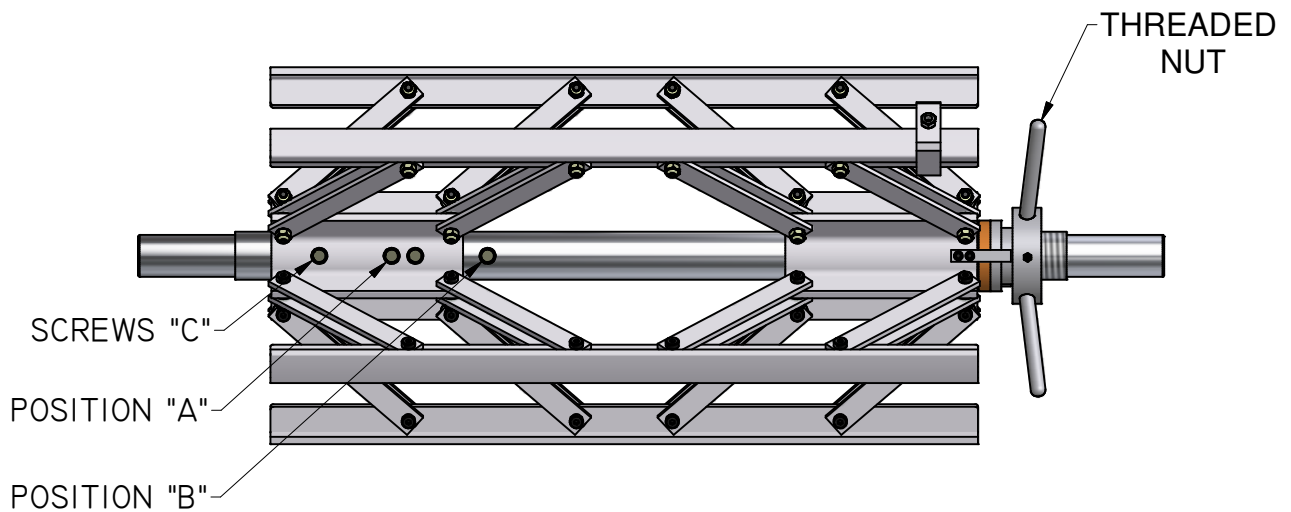


SET-UP CHART

LEFT SIDE

PROFILE	"D"
FF100	6-1/32"
FF150	4-23/32"
SSI00	5-21/32"
SSI50	6-3/32"
SS450	4-27/32"

RIGHT SIDE



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### **LOADING REELED COIL**

**Caution:**

**Always use a forklift or other approved lifting device to load or unload reels and coils. The Lifting Holes in the Reel sides are provided to make loading safer and easier. DO NOT use lifting straps through the lifting holes.**

1. Prepare the reel stand by making sure the Hold Down Brackets are in the unlocked and open Position. (Fig.7, Pg. 14)
2. Using an approved lifting device, lift the reeled coil into the cradles on the reel stand making sure that the tail of the coil is in the correct position for the profile you are running, then remove the lifting device.
3. Rotate the Hold Down Brackets (Fig. 7, Pg. 14) to the closed position and thread the handle onto the hold down bolt. If you are going to run panel from this coil, tighten the left and right handle just snug. Final adjustment of tension should be made while running a panel to keep reel from unwinding material to fast. As the coil becomes smaller, re-adjustment may need to be made. **Caution: DO NOT over tighten Hold Down Brackets. Drive and/ or Electrical System Failure may occur.**
4. If you are going to transport the machine after loading coil, tighten the Hold Down Brackets securely to keep coil from unwinding during transport, and secure the loose end of the material to the coil.
5. Before transporting the loaded Expandable Arbor, you should also secure the coil around the outside edges through the inside diameter using a strap, rope, etc to prevent the coil from telescoping (Fig.9, Pg.17).

**NOTE: Make sure Hold Down Brackets are tightened securely and coil is properly tied off before transporting machine.**

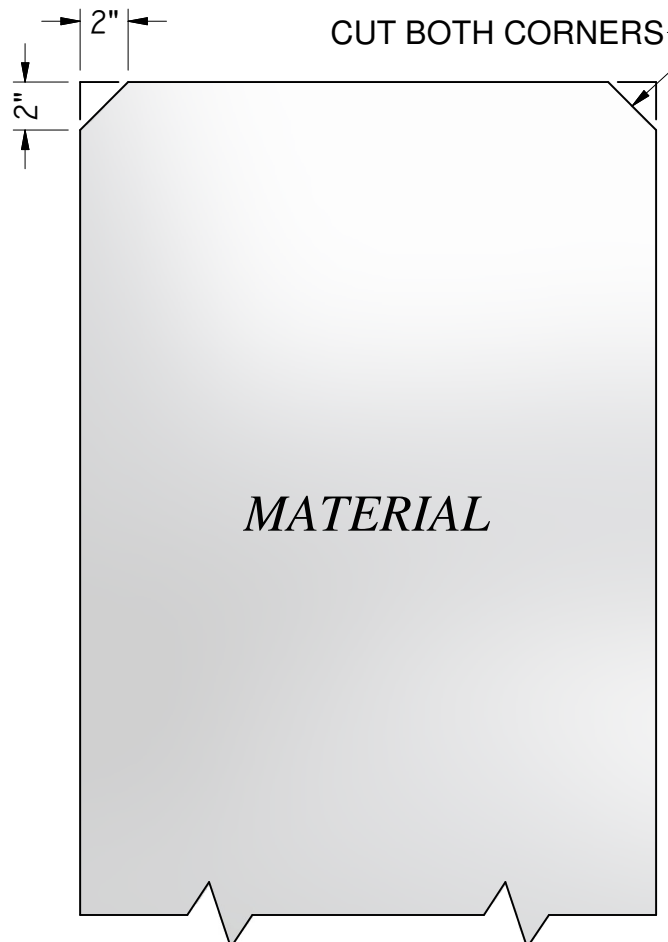
## Chapter 7

### ENTRY GUIDE ASSEMBLY

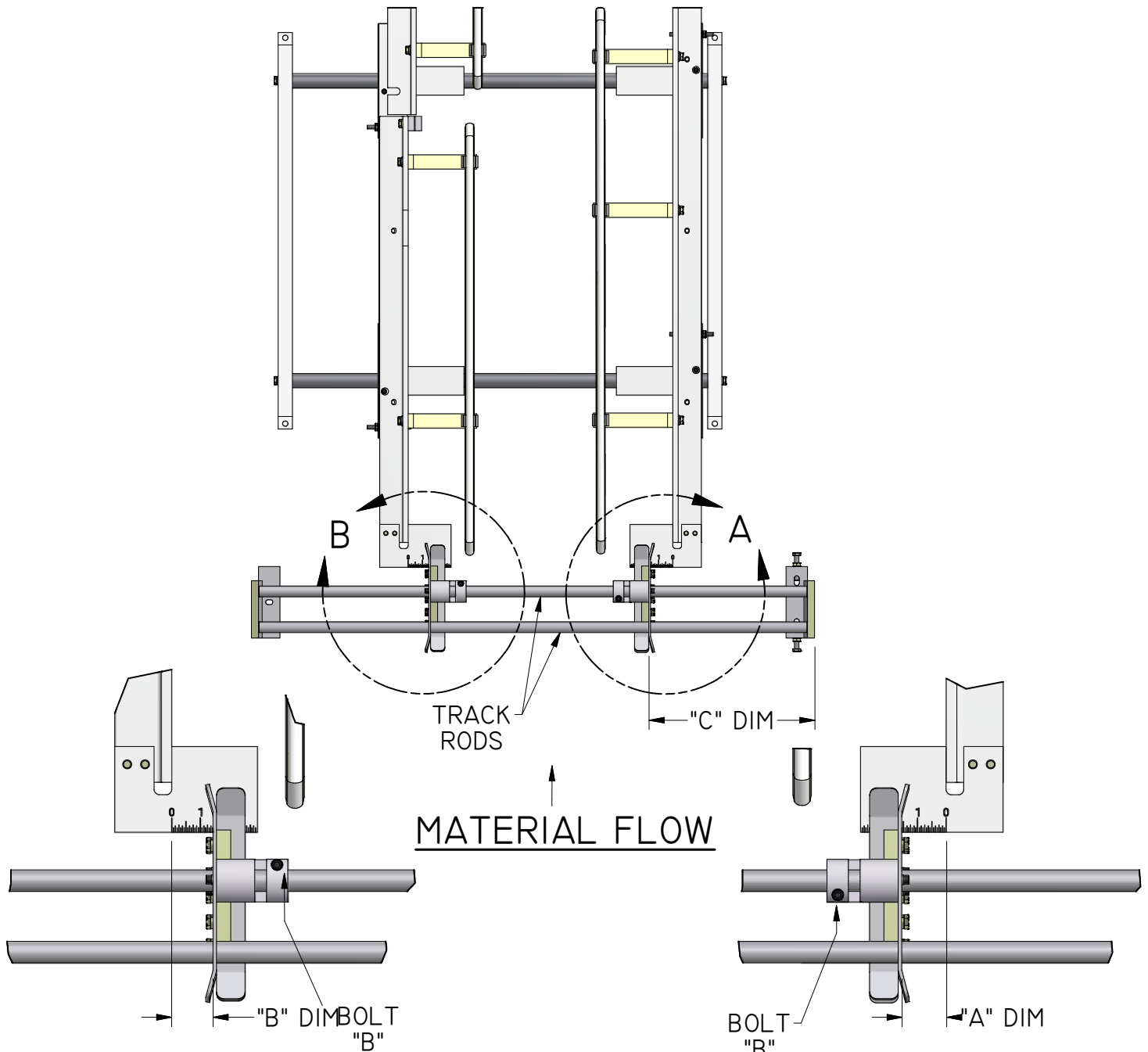
1. Both Left and Right Guides adjust in the same manner. They are used to guide the material into the machine in the correct lateral position, and keep it straight through the machine.
2. Cut corners of the leading edge of material you will be running as shown in FIG. 10 below.
3. Loosening bolt "B" on the Left or Right Entry Guide allows the assembly to slide left or right along the track rods to the required position. The Right Entry Guide must be set to the correct "A" dimension, (FIG. 11, Pg 20) for the profile to be formed.
4. Loosen the "B" bolt on the Left Entry Guide, and slide it to the right capturing the coil between the Right and Left Entry Guides. Tighten bolts "B".

**Note: Width changes are accomplished by adjusting the LEFT ENTRY GUIDE to the new coil width, and re-aligning the LEFT TOOLING RAIL ASSEMBLIES to the correct marker plate setting. (FIG. 11, Pg 20)**

FIG. 10



CHAPTER 7  
FIG. II  
ENTRY GUIDE ASSEMBLY



*DETAIL B*  
*LEFT GUIDE*

**TOOLING RAIL SET-UP CHART**

PROFILE	"A"	"B"	"C"
FF100	1"	1"	11-15/16"
FF150	1"	1"	10-9/16"
SS100	1-9/16"	1-1/2"	11-9/16"
SS150	1-1/16"	1-3/4"	11-15/16"
SS450	1"	2-3/16"	11-15/16"
SSRBP	1-3/4"	1-1/2"	13-1/4"

*DETAIL A*  
*RIGHT GUIDE*

NOTE: FOR MORE INFORMATION SEE THE ADJUSTMENT INSTRUCTIONS STARTING ON PAGE 32

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## Chapter 8

### SHEAR ASSEMBLY

#### OPERATION

The shear is a double rack and gear style. It is engaged by manually rotating the Shear Handle approximately 190 degrees as shown in (Fig. 12, Pg. 23).

#### SHEAR ADJUSTMENTS

##### BOTTOM SHEAR DIES (Fig.13, Pg. 24, Detail A)

1. Bottom dies should be adjusted 1/32" to 3/32" below the bottom of the panel. Loosen the (4) "A" bolts on the Adjustment Mount Brackets and loosen the (2) Lock Nuts on Height Adjustment Bolts "B".
2. Tightening bolts "B" will lower the shear, and loosening them will raise it. Adjust each side as needed to properly set the bottom dies to the correct spacing from the bottom of the panel.
3. After adjustment has been made, tighten (4) "A" bolts on Adjustment Mount Brackets and (2) Lock Nuts on Height Adjustment Bolts "B".

##### ENTRY AND EXIT SHEAR DIES (Fig. 14, Pg. 25)

1. The Male and Female Entry and Exit Shear Dies must be adjusted to the proper clearance between legs of the panel.
2. Each Shear Die Holder is held in position by (2) "C" bolts through slotted holes at the bottom edge of the holder.
3. Visually sight thru Male and Female Dies and rough align them to the forming tool "line of fire" by moving them side-to-side. If necessary, remove bolts "C" and slide the Die Holders along until you find the two mounting holes needed for proper alignment, then re-install bolts "C" just enough to hold them in position. **Do not tighten at this time.**
4. Jog the material through the machine and stop about 2 inches from the Entry Shear Dies. Now re-sight the alignment of the Male and Female Dies to the actual legs of the panel and move them accordingly to assure the panel will pass through without hanging up. Carefully jog material through the shear dies. Final adjust Entry and Exit Dies as follows: Dies should be approximately 1/32" away from the vertical leg of the panel. The Male and Female Exit Dies should be adjusted slightly to the outside of the entry dies so that the cut edge of the panel clears the dies without interference. Once alignment of the dies is achieved, tighten all "C" bolts.



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### **TOP SHEAR BLADE ADJUSTMENT**

(Fig. 13, Pg. 24 and Fig. 14, Pg. 25)

The Top Shear Blades are bolted to the Blade Adjustment Bar. This bar is bolted to the Top Blade Holder, and can be moved from left to right to align the blades to the Die Holders.

1. Loosen the 8 “D” bolts in the slots at the top entry side of the shear so that the Blade Adjustment Bar will move from side to side. (Fig 13, Pg. 24)
2. The point of the Top #1 Blade should always be inboard of the female vertical leg of the panel, and should not pierce the top horizontal leg of the profile (Fig. 14, Pg. 25). The rake or angle of the blade should cut in a scissor action outward against the leg. The #2 Top Blade must be adjusted simultaneously in the same manner for the male leg. You should be able to find a position that works for both Male and Female legs. Once the Blade Adjustment Bar is in the correct location, tighten all “D” bolts.
3. Jog the panel out approximately 12” and make the first cut. Check the piece to make sure the cut is acceptable. Carefully jog the material through the shear dies making sure the panel does not get caught on the Male or Female Exit Dies. If the panel gets caught on the exit dies, fine tune the adjustment of the dies to correct the problem following the procedures above.

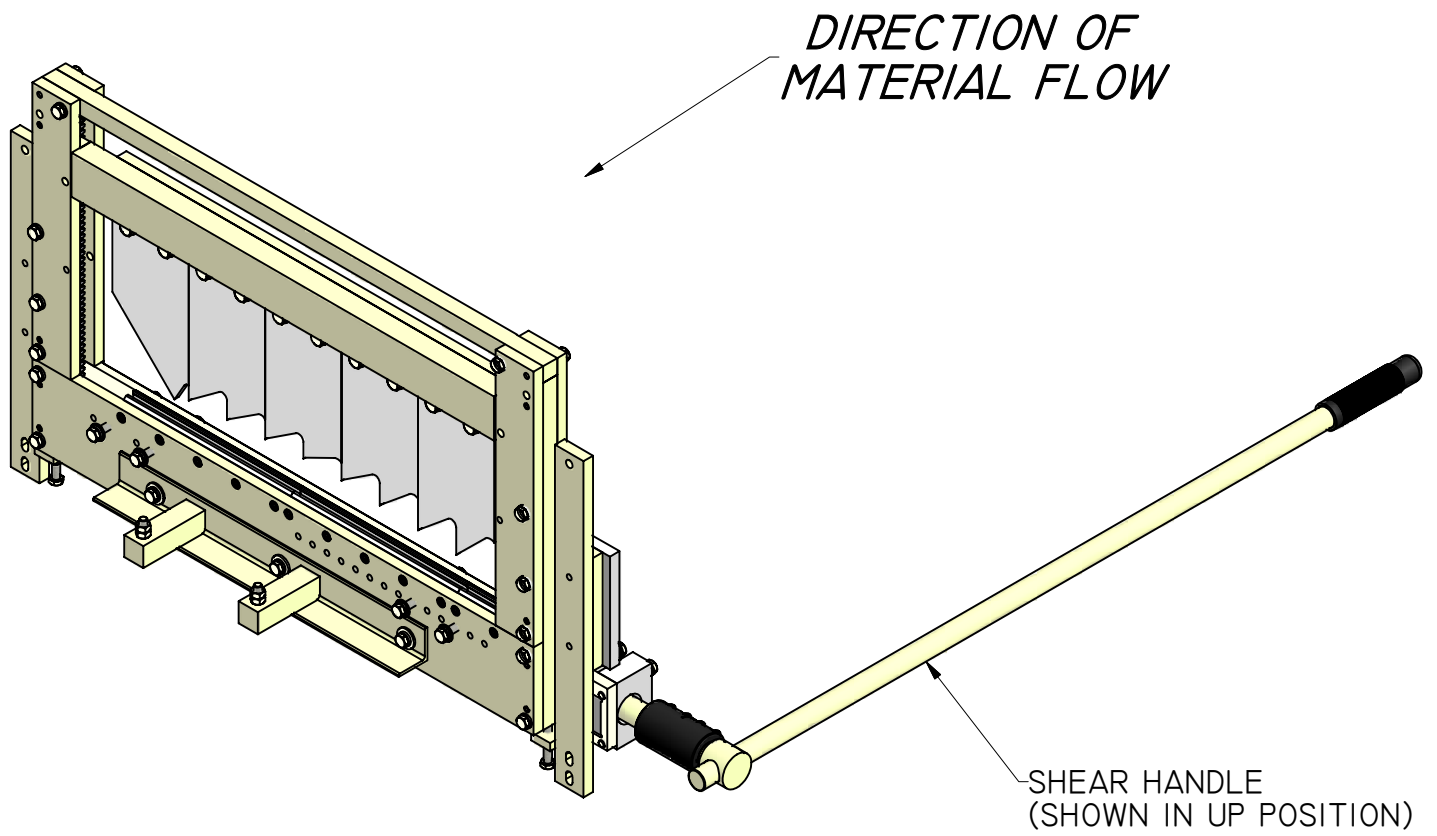
### **MAINTENANCE**

1. Clean and lubricate the Top Blades, Bottom Dies, and Male/ Female Dies at least once a day during normal use, or whenever cutting surfaces look dry. Proper lubrication is essential to clean cuts, rust prevention and longevity.

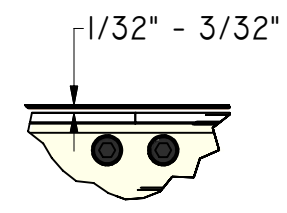
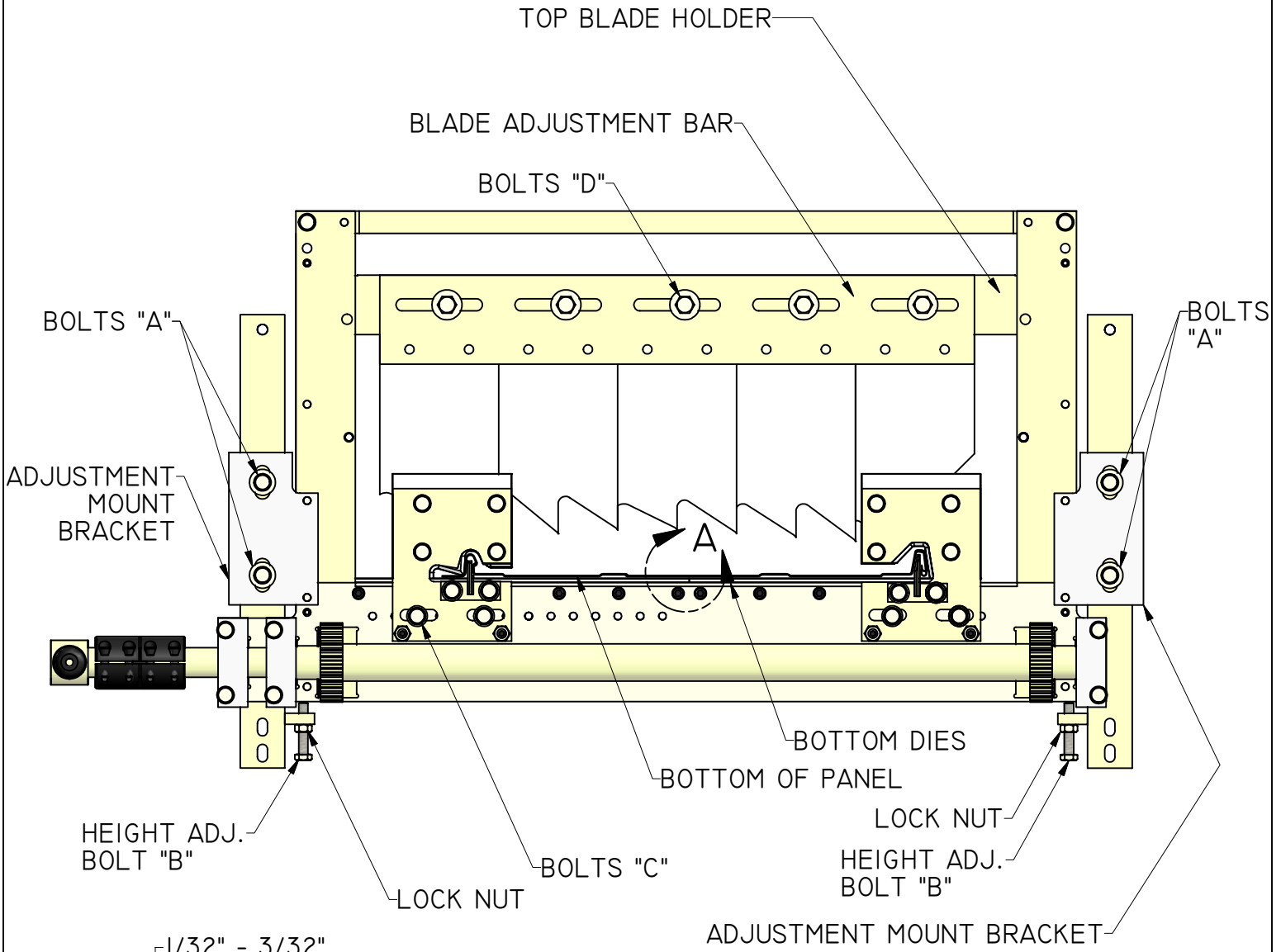
Recommended lubricant: Super Lube-A Loctite™ product  
11 oz. Aerosol Can

Available from: MSC Supply at 1-800-645-7270  
Catalog Item #00257048

CHAPTER 8  
FIG. 12  
SHEAR & HANDLE



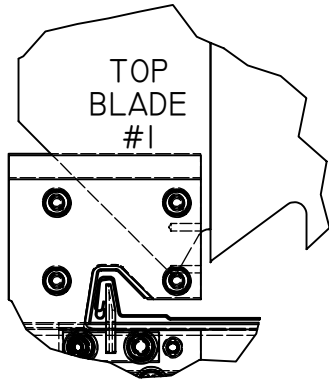
CHAPTER 8  
FIG. 13  
SHEAR DIAGRAM



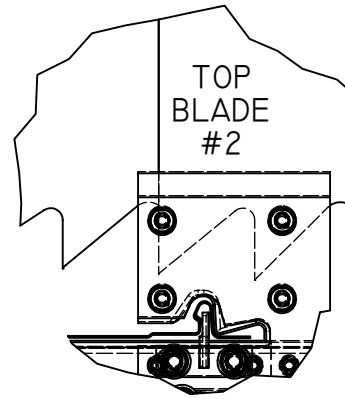
DETAIL A

ENTRY VIEW

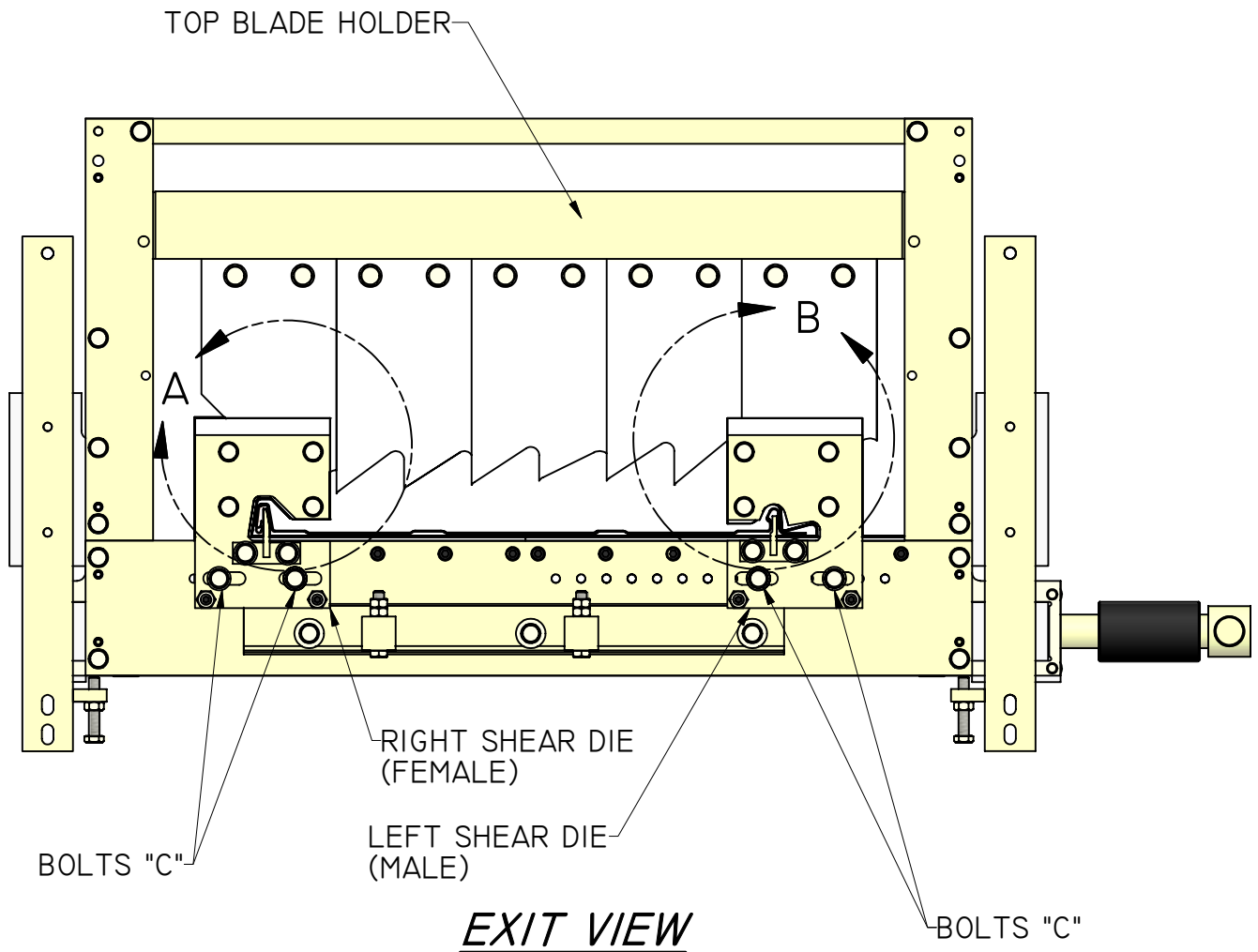
CHAPTER 8  
FIG. 14  
SHEAR DIAGRAM



*DETAIL A*  
FEMALE DIES



*DETAIL B*  
MALE DIES



*EXIT VIEW*

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## Chapter 9

### DRIVE SYSTEM

1. There are four drive assemblies powered by chains and sprockets (Fig. 15, Pg. 28). The pressure between the top and bottom rollers has been factory set at 1½ turns past the point of contact of the rollers.

Should adjustment become necessary due to slippage.

- A. Loosen locknuts on (2) jack bolts "A".
  - B. Unscrew (2) lockdown bolts "B" ¼ turn each.
  - C. Tighten (2) jack bolts "A" ¼ turn each.
  - D. Loosen locknuts on jack bolts "C".
  - E. Unscrew lockdown bolts "D" ¼ turn each.
  - F. Tighten jack bolts "C" ¼ turn each.
  - G. Tighten all four locknuts on jack bolts "A & C".
2. Repeat this sequence for each drive station.
  3. Try running panel to see if the slippage has stopped.
  4. If the drive still slips check.
    1. Set up dimensions for tooling rails.
    2. Alignment of tooling rails from one to the next.
    3. Shear die to panel leg clearance.

Misalignments can cause slippage.

5. **DO NOT ADD** more than ½ turn of pressure past factory setting of 1-½ turns.

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**Drive System Cleaning and Lubrication**

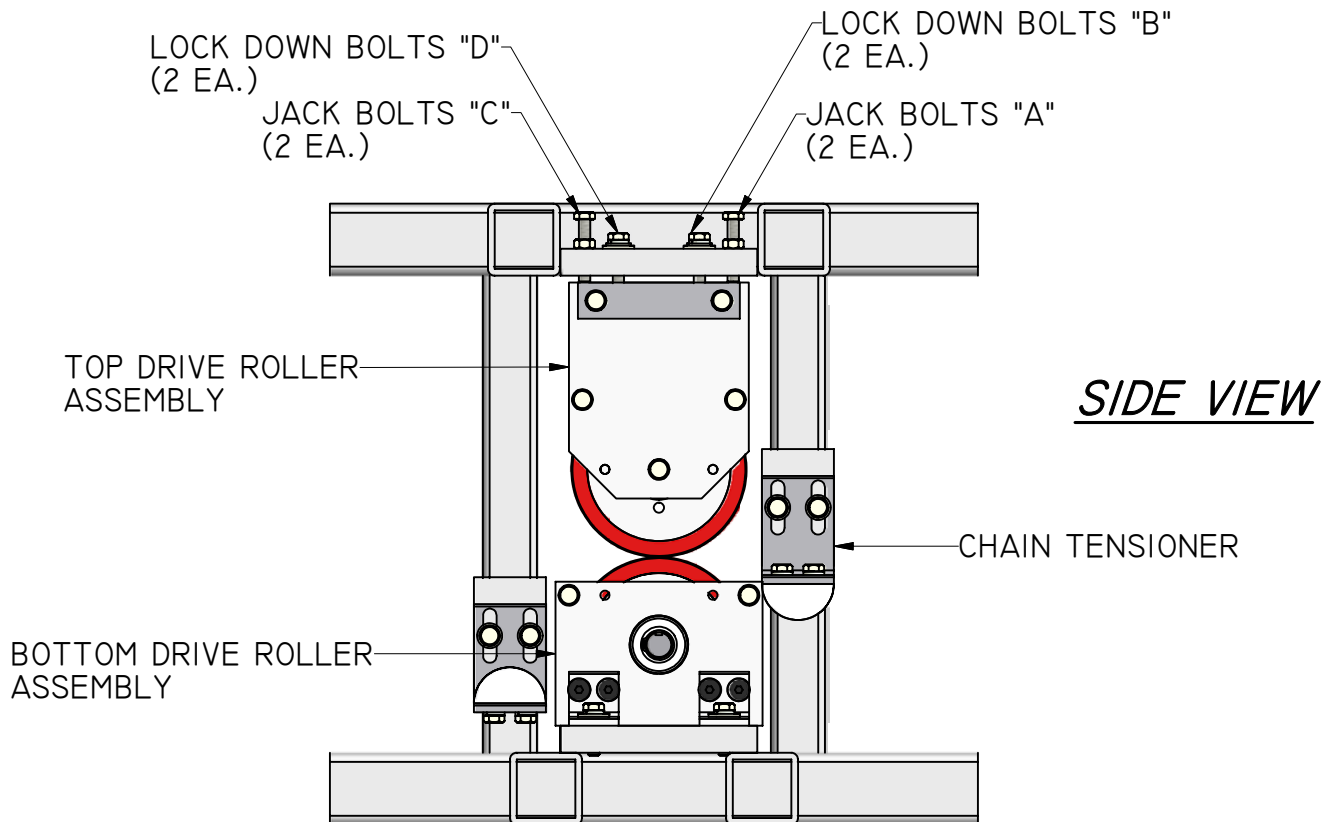
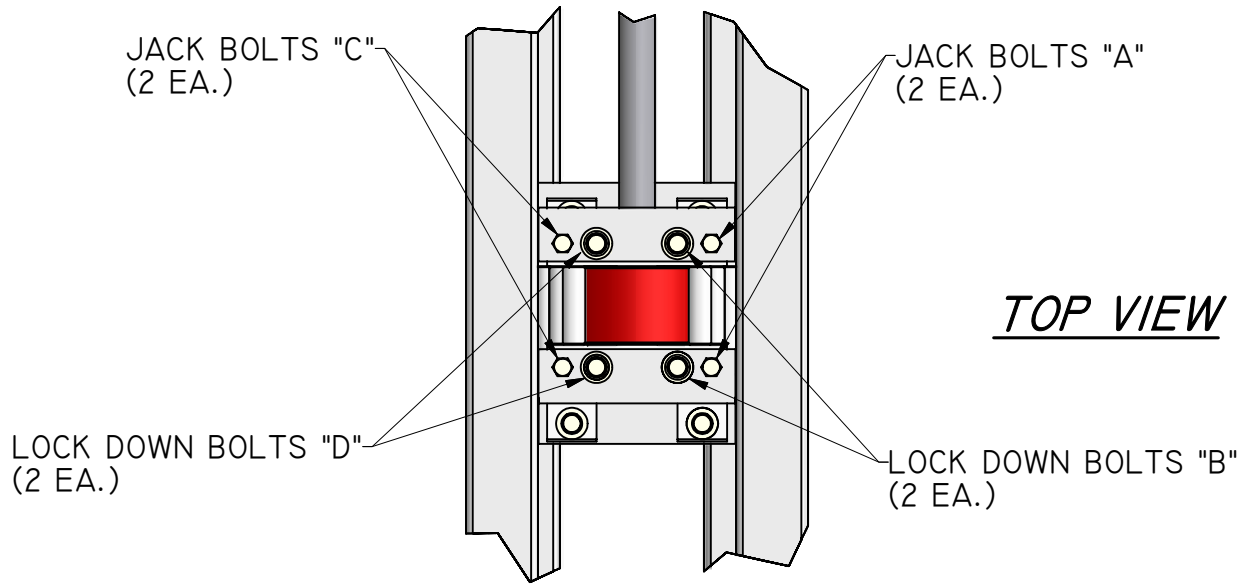
1. **DO NOT** use solvents such as paint thinners, acetone etc. to clean drive rollers. Use of a cleaner such as 409 or mild soap and water is recommended.
2. Check tension of chain and adjust as necessary at least twice a year. Chains should have a minimum of 1/16" of play. Tighten loose chains using chain tensioners.

**CAUTION: DO NOT OVER TIGHTEN CHAINS**

3. 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 Shear Maintenance lubrication call out, Pg.22 for details.

Recommended lubricant: Super Lube-A Loctite™ product  
11 oz. Aerosol Can  
Available from: MSC Supply at 1-800-645-7270  
Catalog Item #00257048

CHAPTER 9  
FIG. 15  
DRIVE SYSTEM



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## Chapter 10

### **PROFILE CHANGEOVER PROCEDURE**

The changeover procedure consists of removing the tooling assemblies and shear dies from the machine, replacing them with another set, and realigning the rails and shear dies. The following procedure will guide you through this process.

**CAUTION:** Unplug the power cord before attempting changeover procedure.

#### **COVER REMOVAL**

(Fig.16, Pg .30)

1. Disengage top cover latches on #1, #2, and #3 top covers. Remove and set aside.
2. Remove Shear Cover and set aside.

#### **TOOLING RAIL REMOVAL**

(Fig.17, Pg. 31)

1. Locate and remove the “A” bolts on the left tooling rail #1. Remove rail and set it aside.
2. Using the same procedure as above remove the remaining left and right tooling rails and set them aside for storage.

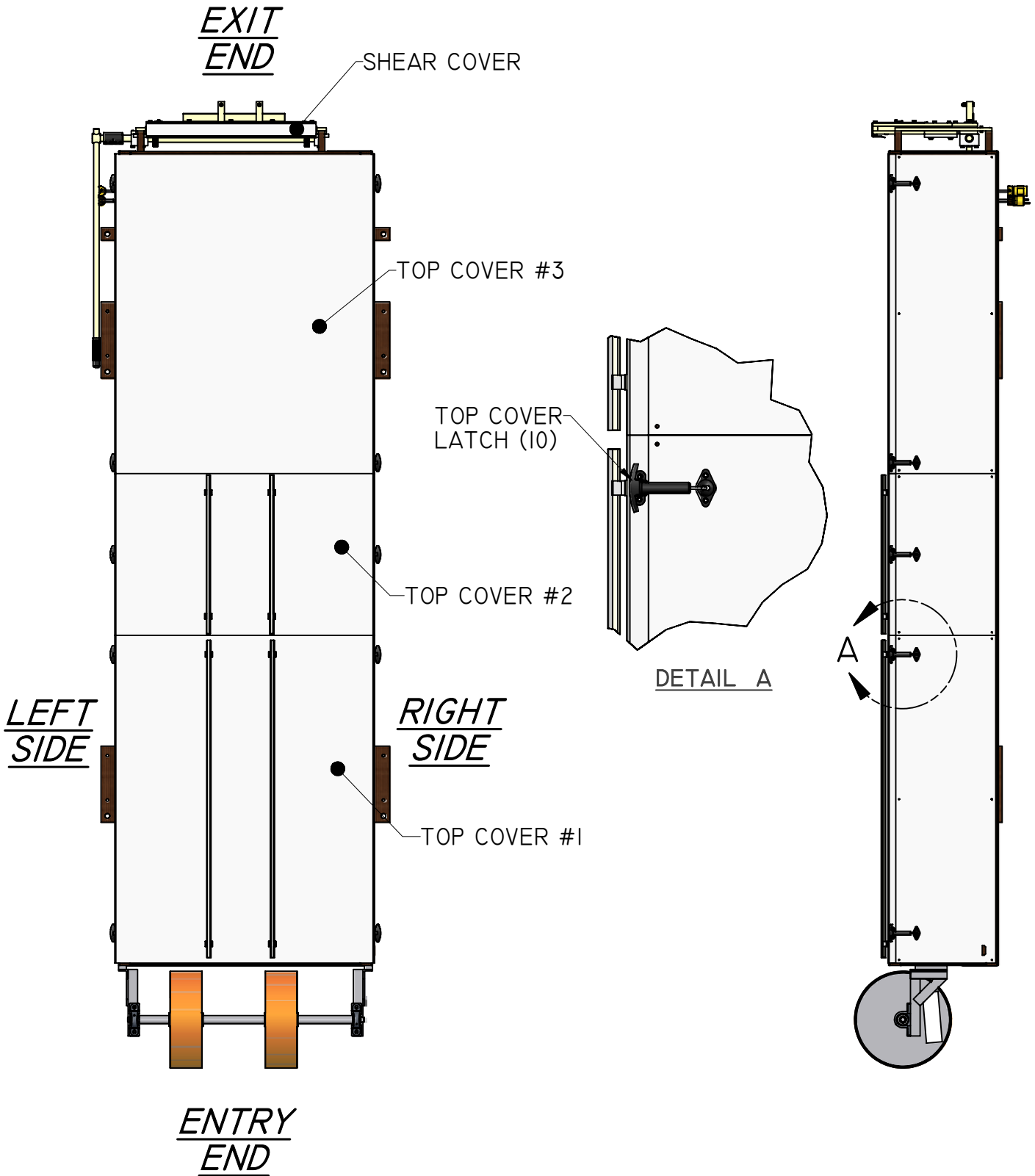
#### **TOOLING RAIL INSTALLATION**

Tooling rails are stamped with an “L” or “R” for installation on the left or right side, and with a profile number and sequence number. For example a rail stamped SS4-#1 R would be the number one right tooling rail for the SS450 profile.

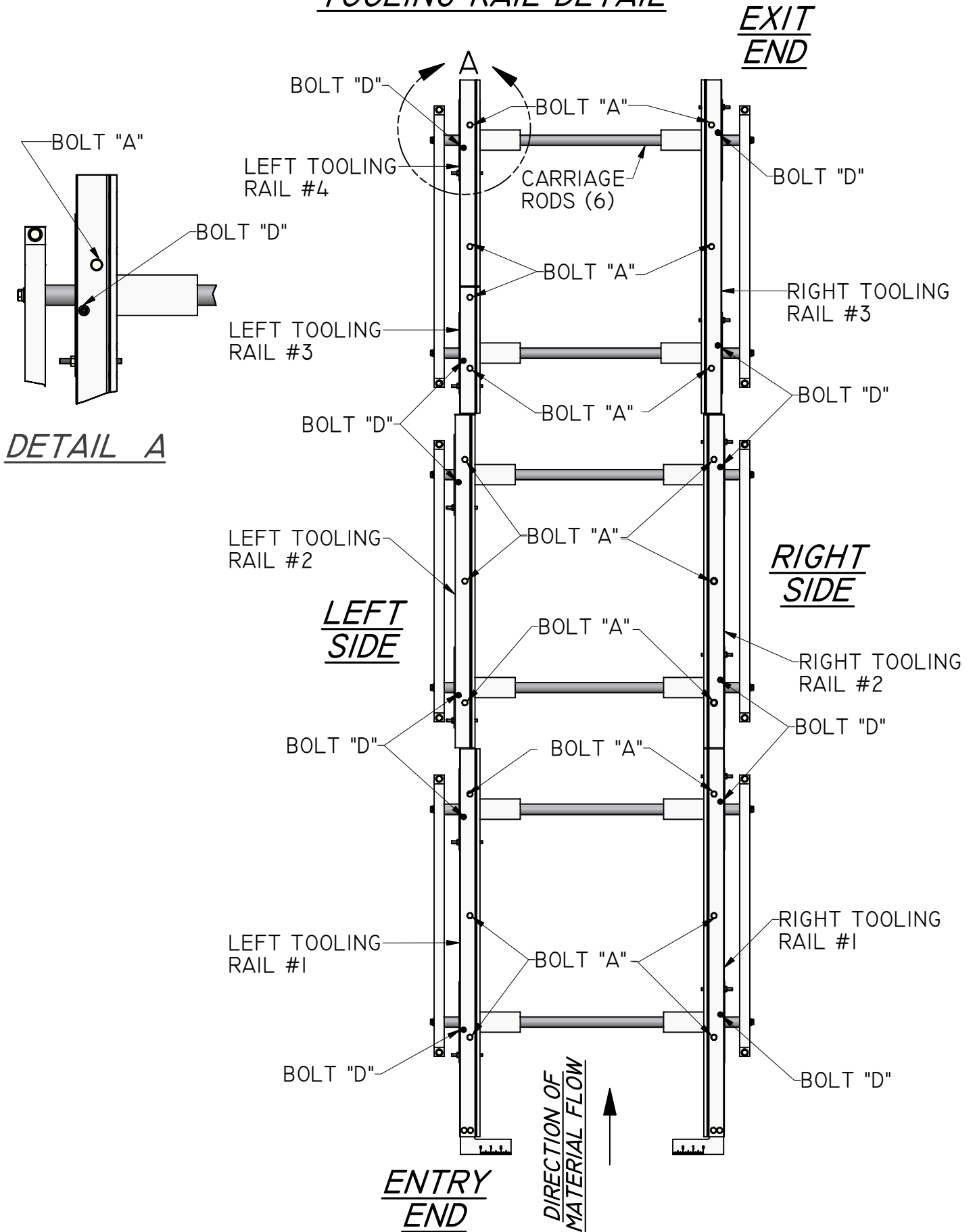
1. Locate #1 right tooling rail of the profile you are installing.
2. Carefully lower it into the machine and set it on the right carriage slide #1. Align the tooling mounting holes “A” and start one “A” bolt into threaded hole beneath. Snug this bolt enough to hold tooling in place but **DO NOT TIGHTEN**. Align second hole and start bolt into threaded hole beneath.
3. Tighten “A” bolts.
4. Locate remaining right tooling rails #2, #3 etc. and install in the same manner as above.
5. Repeat the above procedures on the left side of the machine until all tooling rails are installed.



CHAPTER 10  
FIG. 16  
COVER DETAIL



CHAPTER 10  
FIG. 17  
TOOLING RAIL DETAIL



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### **ENTRY GUIDE ADJUSTMENT**

(Chap. 7, Fig.11, Pg.20)

Refer to tooling rail set up chart corresponding to profile being installed for dimension "C".  
(Figures 18-22, Pgs. 33 thru 37)

1. Loosen bolt "B" on the right entry guide.
2. Set right guide to the correct "C" dimension.
3. Tighten bolt "B".
4. Loosen bolt "B" on the left entry guide.
5. Cut a 12" long piece of gage material from the coil you will be using, to set the left entry guide.
6. Slide gage material between the left and right entry guides.
7. Slide the left entry guide toward the right to capture the material snugly.
8. Tighten bolt "B" left on the entry guide.

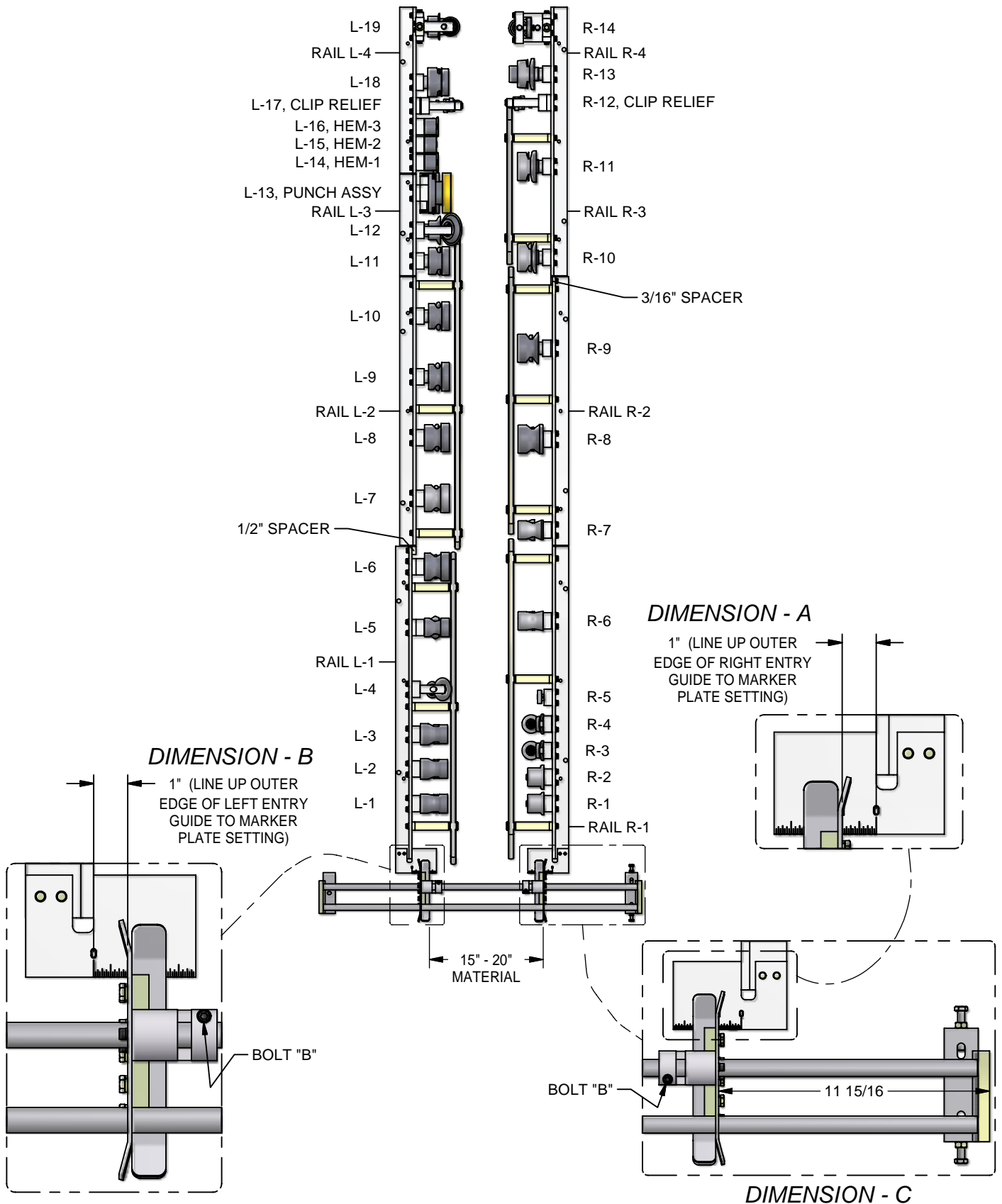
### **TOOLING RAIL TO ENTRY GUIDE ALIGNMENT**

(Refer to tooling rail set up sheet for entry guide dimensions. Figures 18-22, Pgs. 33 thru 37)

1. Loosen two slide lock bolts "D" on right carriage slide # 1. (Fig. 17, Pg. 31)
2. Move Right Carriage Slide # 1 into position using the side of the right entry guide and the scale on the marker plate to set the correct "A" dimension as shown on corresponding tooling rail set up chart.
3. Repeat the above procedure for the left carriage slide # 1 using the correct "B" dimension on tooling rail set up chart.
4. Align the # 2 and #3 Left and Right Carriage Slides by loosening the two "D" slide lock bolts on each rail. If there is a spacer bolted to the side of the previous rail, align the carriage rail flush to the spacer. If not, align the rails flush with each other.
5. Proceed with each rail in succession from #1 to # 2 to #3, right and left as stated above.

FIG. 18

MPJ - FF100 TOOLING RAIL SET-UP SHEET



CHAPTER 10

FIG. 19

MPJ - FF150 TOOLING RAIL SET-UP SHEET

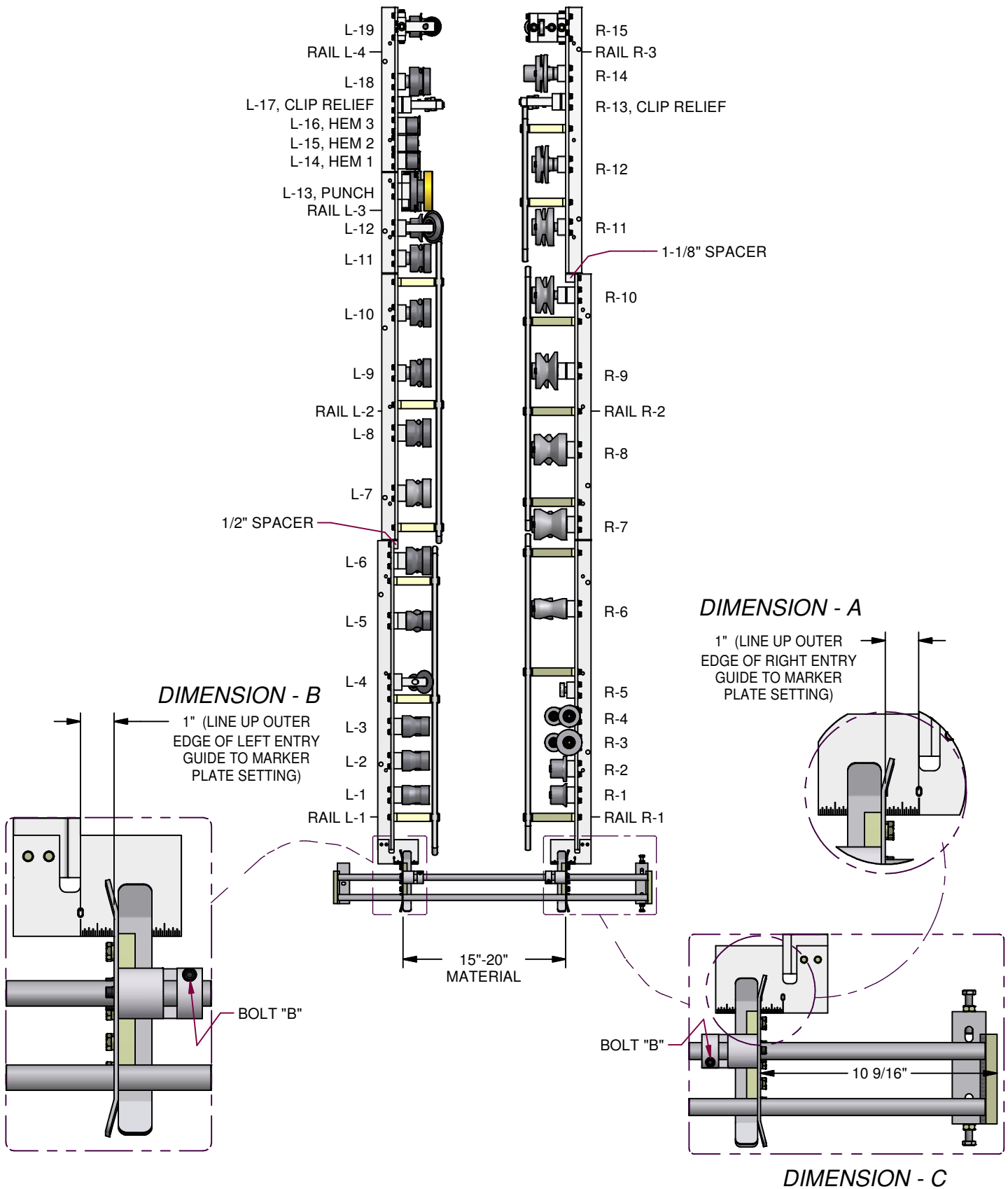
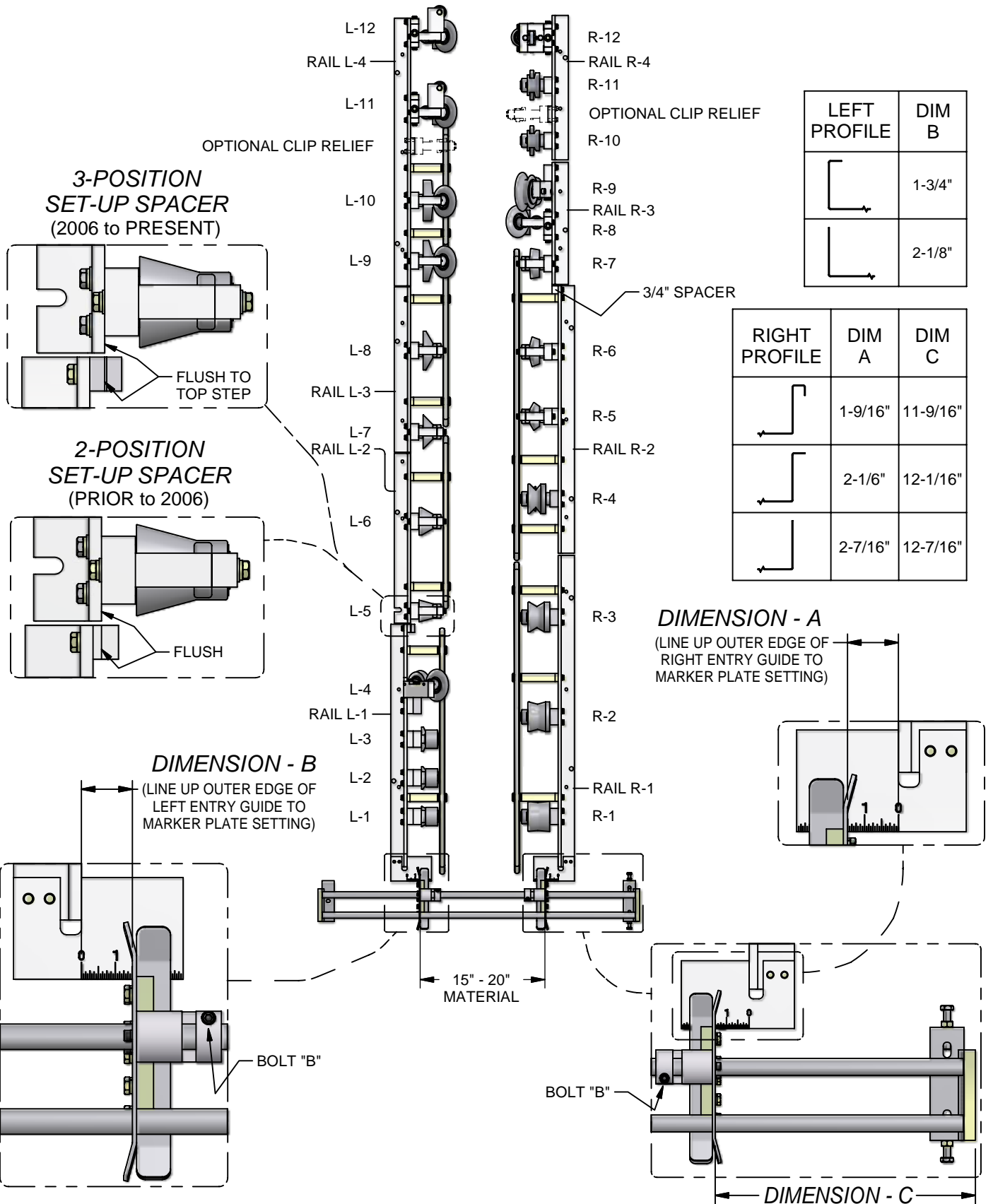


FIG. 20

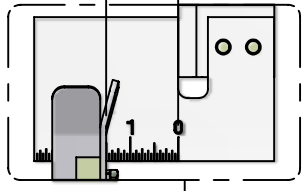
MPJ - SS100 TOOLING RAIL SET-UP SHEET



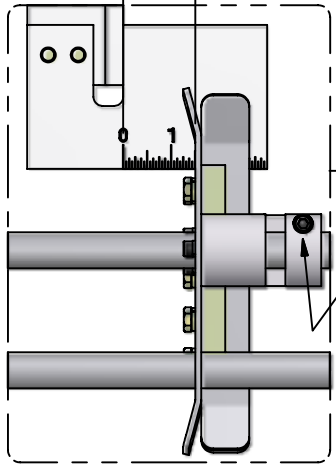
LEFT PROFILE	DIM B
	1-3/4"
	2-1/8"

RIGHT PROFILE	DIM A	DIM C
	1-9/16"	11-9/16"
	2-1/6"	12-1/16"
	2-7/16"	12-7/16"

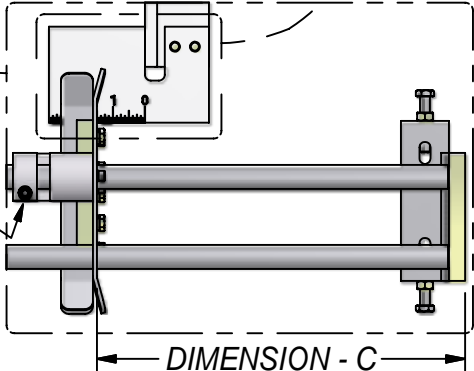
**DIMENSION - A**  
 (LINE UP OUTER EDGE OF RIGHT ENTRY GUIDE TO MARKER PLATE SETTING)



**DIMENSION - B**  
 (LINE UP OUTER EDGE OF LEFT ENTRY GUIDE TO MARKER PLATE SETTING)



15" - 20" MATERIAL



DIMENSION - C

FIG. 21

MPJ - SS150 TOOLING RAIL SET-UP SHEET

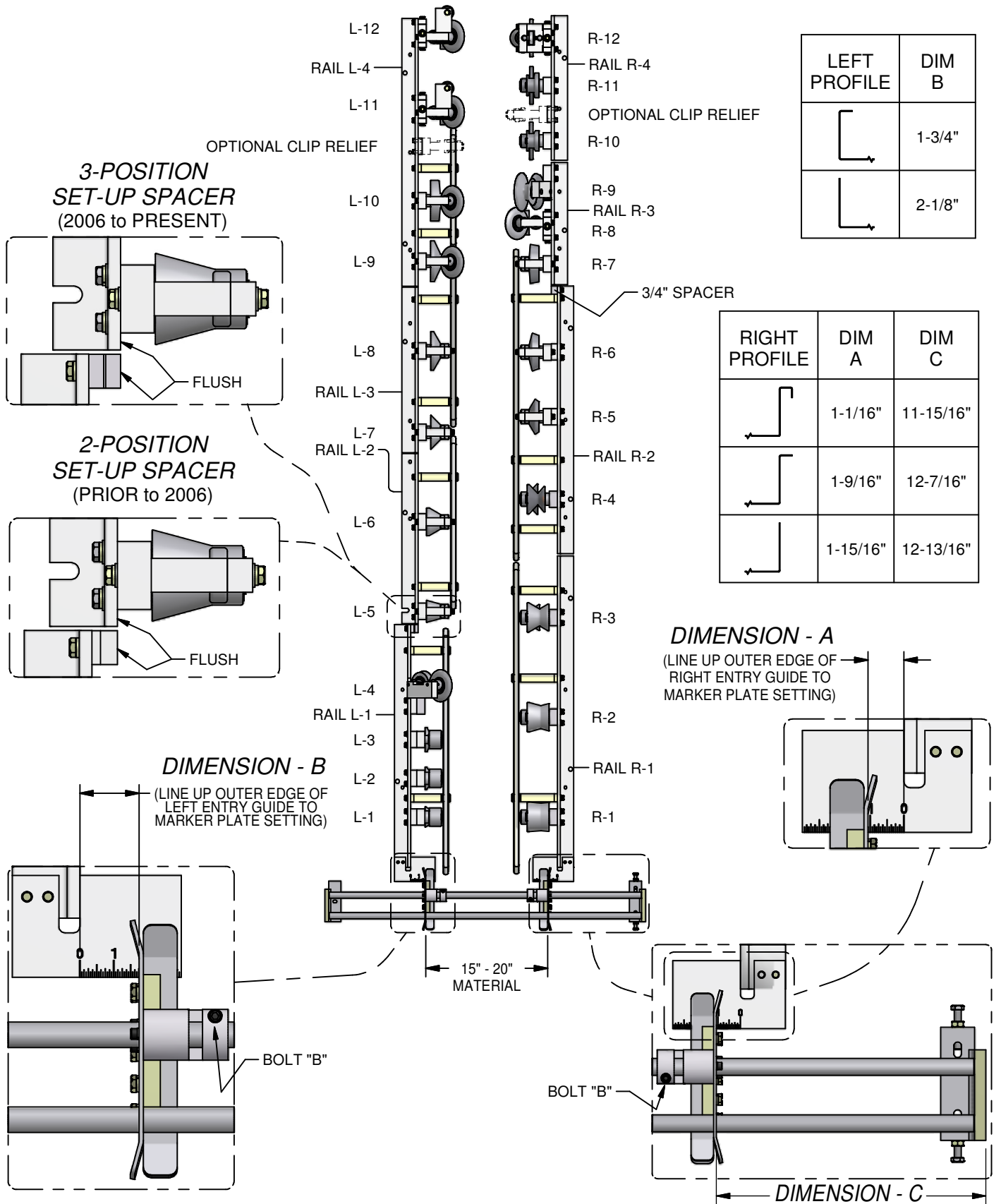
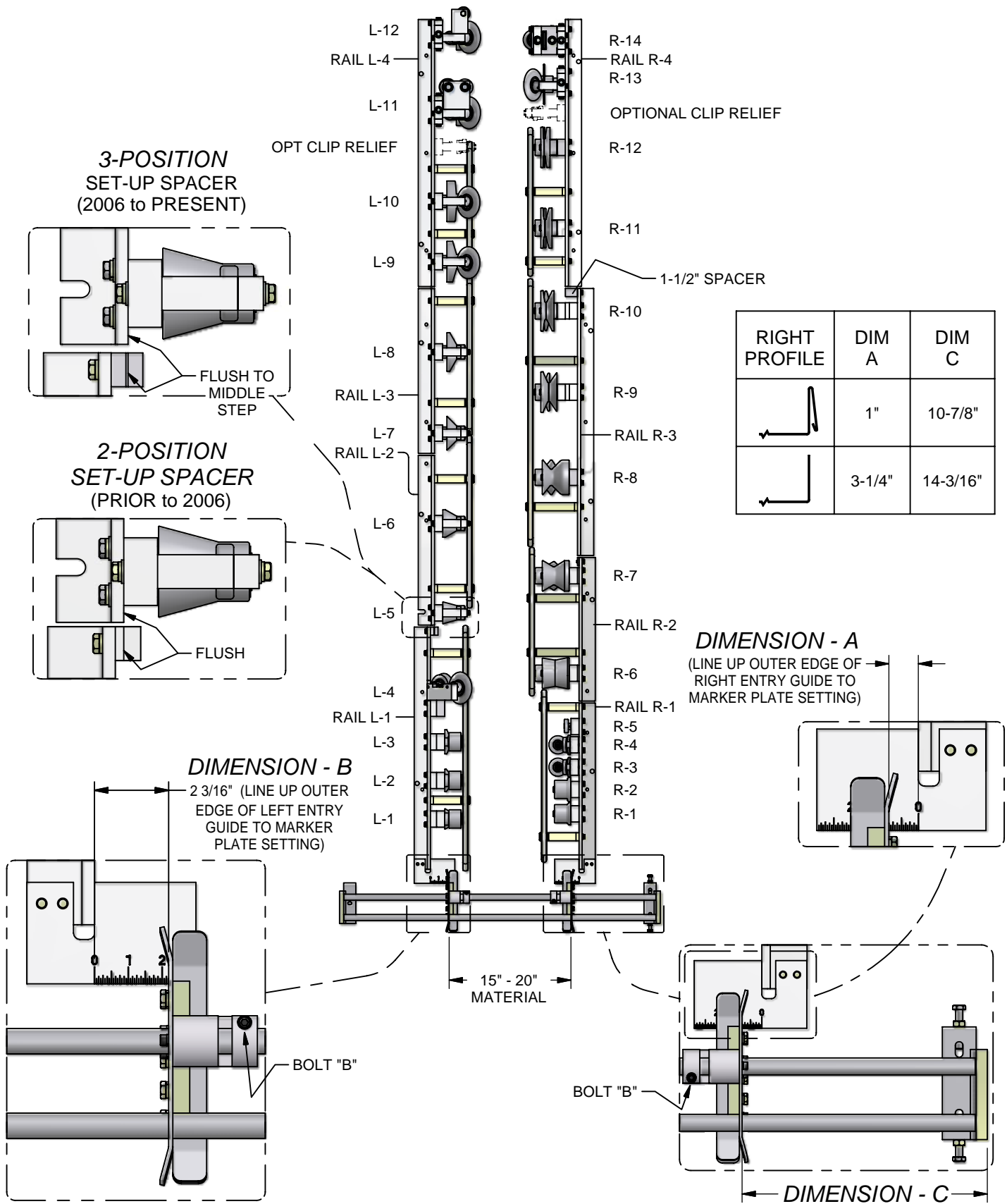


FIG. 22

MPJ - SS450 TOOLING RAIL SET-UP SHEET





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### **SHEAR DIE HOLDER REMOVAL**

(See shear adjustment Fig. 14, Pg.25)

There are four shear die holders (female entry and exit and male entry and exit). The dies must be removed, replaced and re-aligned utilizing the shear dies for the new profile.

1. Locate and remove two “C” bolts on exit female die holder. Set die holder aside.
2. Repeat the above procedure for entry female die holder and male exit/ entry die holders. Set all four-die holders aside to storage.
3. Locate the four die holders corresponding to the profile you just installed into the machine.

### **DIE HOLDER INSTALLATION/ ALIGNMENT**

1. Entry and Exit Shear Die Adjustment. (Fig. 13, Pg. 24)
2. Top Shear Blade Adjustment. (Fig. 14, Pg. 25)
3. Jog material 6” past the shear dies and make the first cut. Check this piece for burr’s, scratches etc. If the cut looks good, carefully advance the panel through the shear dies to make sure the leading cut edge does not get caught on the exit dies.
4. If material gets caught on exit dies, re-adjust off set between entry and exit dies as described in **Entry and Exit Shear Dies** (Pg. 21).
5. Repeat this procedure as needed, until a cut can be made and the leading cut edge does not get caught on the exit shear dies.
6. Run an 8-foot long panel for inspection.
7. Check panel for scratches, double tracking, leg configuration dimensions and straightness.

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## Chapter 11

### **BEAD & STRIATION ROLLER ASSEMBLY**

1. The Bead & Striation Roller Assembly (Fig. 23, Pg. 40) is located behind the shear and is accessed by removing Top Cover #3. The rollers can be engaged or disengaged as needed and can also be moved left or right to accommodate different panel widths.
2. The bottom bead or striation forming roller should be set 1/32" above the drive roller to ensure proper entry into the shear. If adjustment is necessary, loosen the four frame mount bolts "B", and lock nuts on the two vertical adjustment screws "A". Raise or lower the roller assembly by using the vertical adjustment screws "A" to obtain the proper height. Then re-tighten the mount bolts and lock nuts on the two adjustment screws "A".
3. Next loosen the eccentric shaft lock down screw "C". Place a 3/16 Allen Wrench in the small hole at the end of the eccentric shaft, and rotate the top roller up until it clears the bottom roller. (Fig. 23, Pg. 40) Loosen the two top and two bottom slide lock down screws "D". Bring the panel material up to the rollers but not past them.

**SHUT OFF THE MACHINE AND DISCONNECT THE POWER BEFORE CONTINUING.**

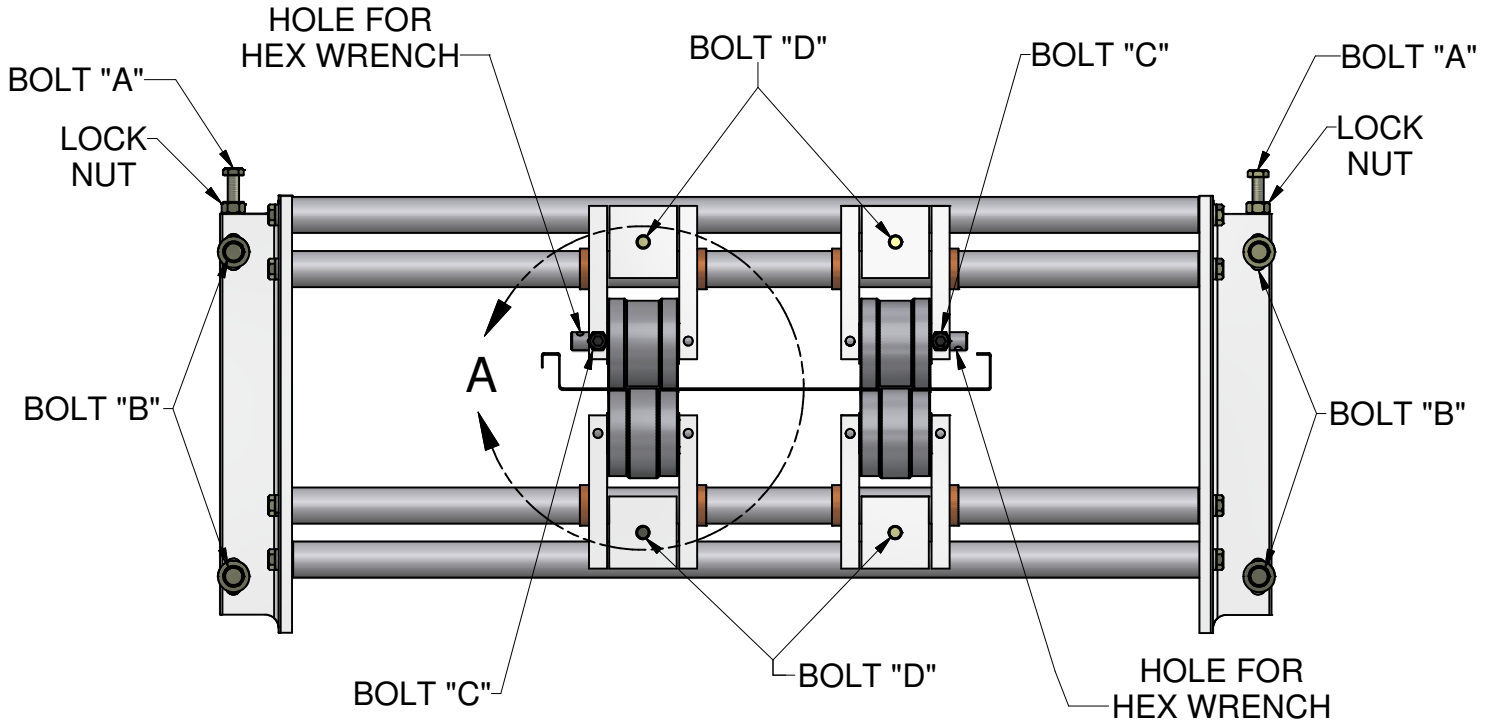
Locate the bottom rollers to the desired position by sliding the assembly on the bottom slide bars. Tighten the bottom slide lock-down screws "D". Restart the machine and back up the panel until you gain access to the top slide lock-down screws.

**AGAIN SHUT OFF THE MACHINE AND DISCONNECT THE POWER.**

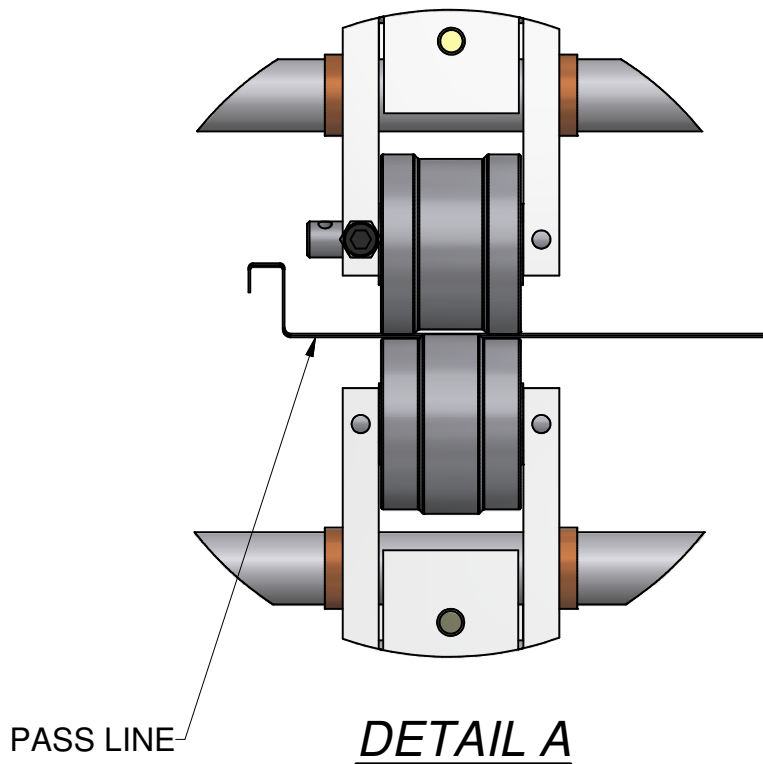
Loosen the top slide lock-down screws, and slide them into position so the top roller is directly over the bottom roller. Tighten the top slide lock-down screws "D". Next rotate the eccentric shaft down to the desired bead depth. **DO NOT** go below .045" minimum clearance; excessive bead depth will distort your panel. Re-tighten screws "C".

4. Keep slide bars lightly greased to allow bead or striation assemblies to slide smoothly.

CHAPTER 11  
FIG. 23  
BEAD ROLLER ASSEMBLY



EXIT END VIEW



DETAIL A

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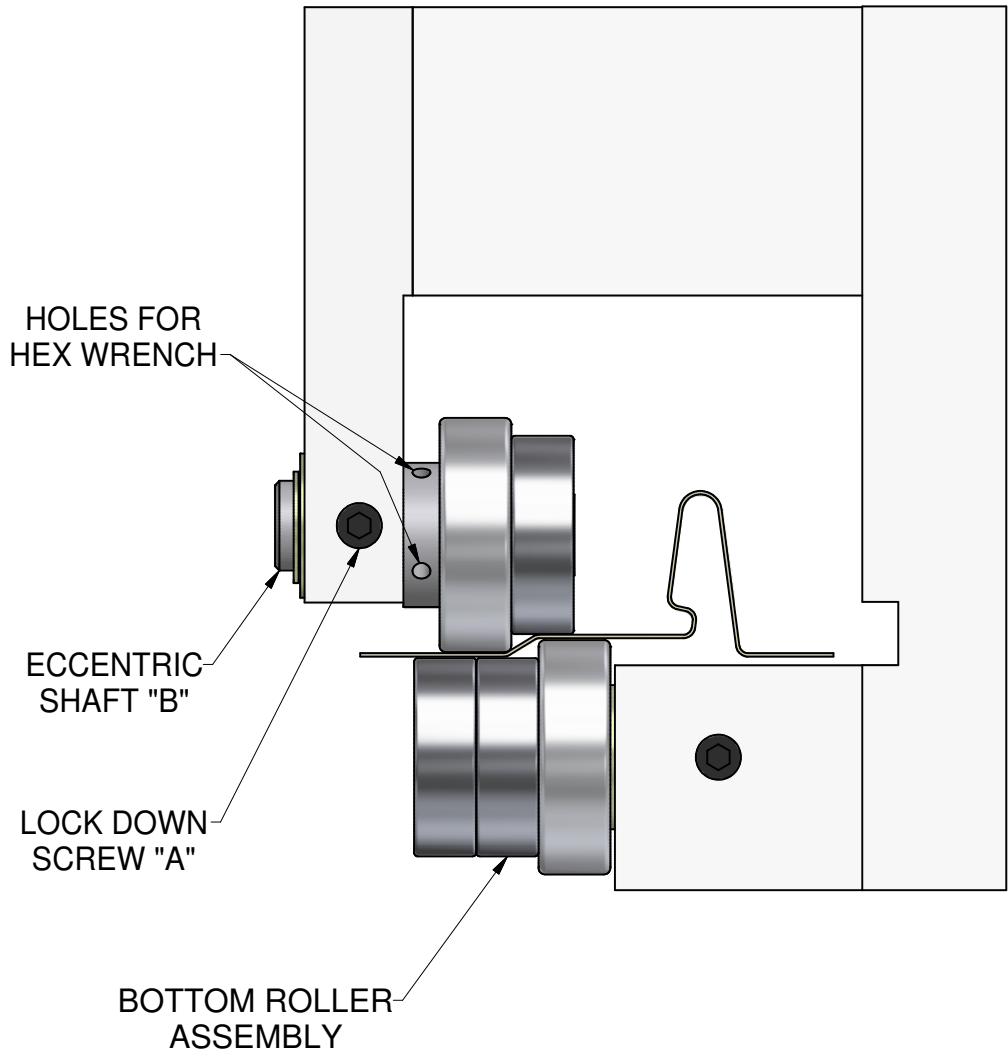
## Chapter 12

### CLIP RELIEF ASSEMBLY

1. Clip Relief Rollers (Fig. 24, Pg. 42) are optional and can be engaged or disengaged as required. They are standard on the FF100 and FF150 profiles and are optional for the SS100, SS150 and SS450 profiles.
2. To engage Clip Relief Rollers.
  - A. Refer to tooling rail setup sheet (Figures 18-22, Pages 33-37) that corresponds to the profile you are forming.
  - B. Note the location of clip relief assemblies on left and right rail, and locate them on your tooling set.
3. To engage the clip relief rollers loosen lock down screw "A" and insert a 3/16" allen wrench into either small hole on the upper eccentric shaft "B".
4. Rotate the eccentric shaft to engage or disengage the top roller assembly from the bottom roller assembly. Adjust both left and right bead assemblies to the desired depth.

**NOTE:** FF100 and FF150 clip reliefs must always be engaged for proper male/female lock to occur.

CHAPTER 12  
FIG. 24  
CLIP RELIEF STATION



SPACER CHART		
PANEL	L	R
FF100	5/8"	1/2"
FF150	5/8"	11/16"
SS100	1/2"	1/2"
SS150	1/2"	1/2"
SS450	1/2"	1/2"

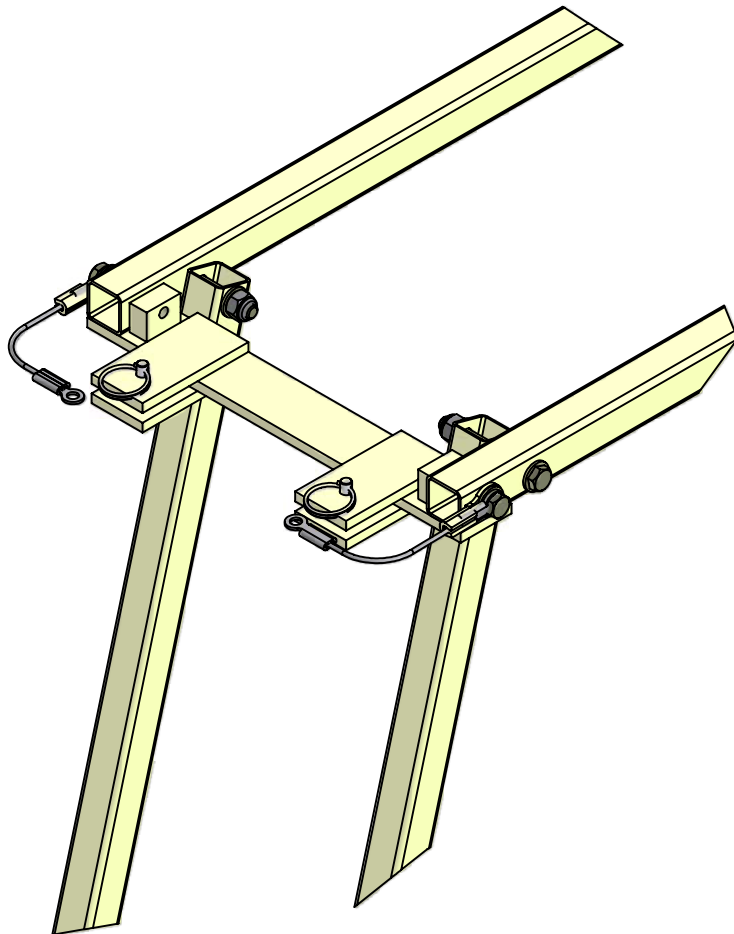
## Chapter 13

### RUN OUT TABLE

The Run Out Table (Fig. 26, Pg. 44) attaches to the Exit End of the Shear assembly, and is used to support the panel as it exits the machine. It is available in 10 ft. long sections that fasten together, and have adjustable legs so they can be set to the correct height. The Remote Limit Switch (Chap. 5, Pg.10) is designed to be used with the run out tables for controlling panel length.

1. Set the first Run Out Table on its side and in front of the machine with the leg assembly away from the shear.
2. Open the leg assembly and set it upright on the ground.
3. Lift the attachment end of the table and drop it over the 2 threaded bolts on the Shear Run Out Table Bracket.
4. Loosen the 2 tee-handles on the leg assembly and allow the legs to fall free. Sight the height of the table on the left and right side adjusting it level to the machine using the t-handles to lock the legs in place.
5. Repeat the above procedures for each succeeding table and attach it to the bracket on the end of the previous table.

**Figure 25**  
Run Out Table Connection



CHAPTER 13  
FIG. 26  
RUNOUT TABLE SETUP

