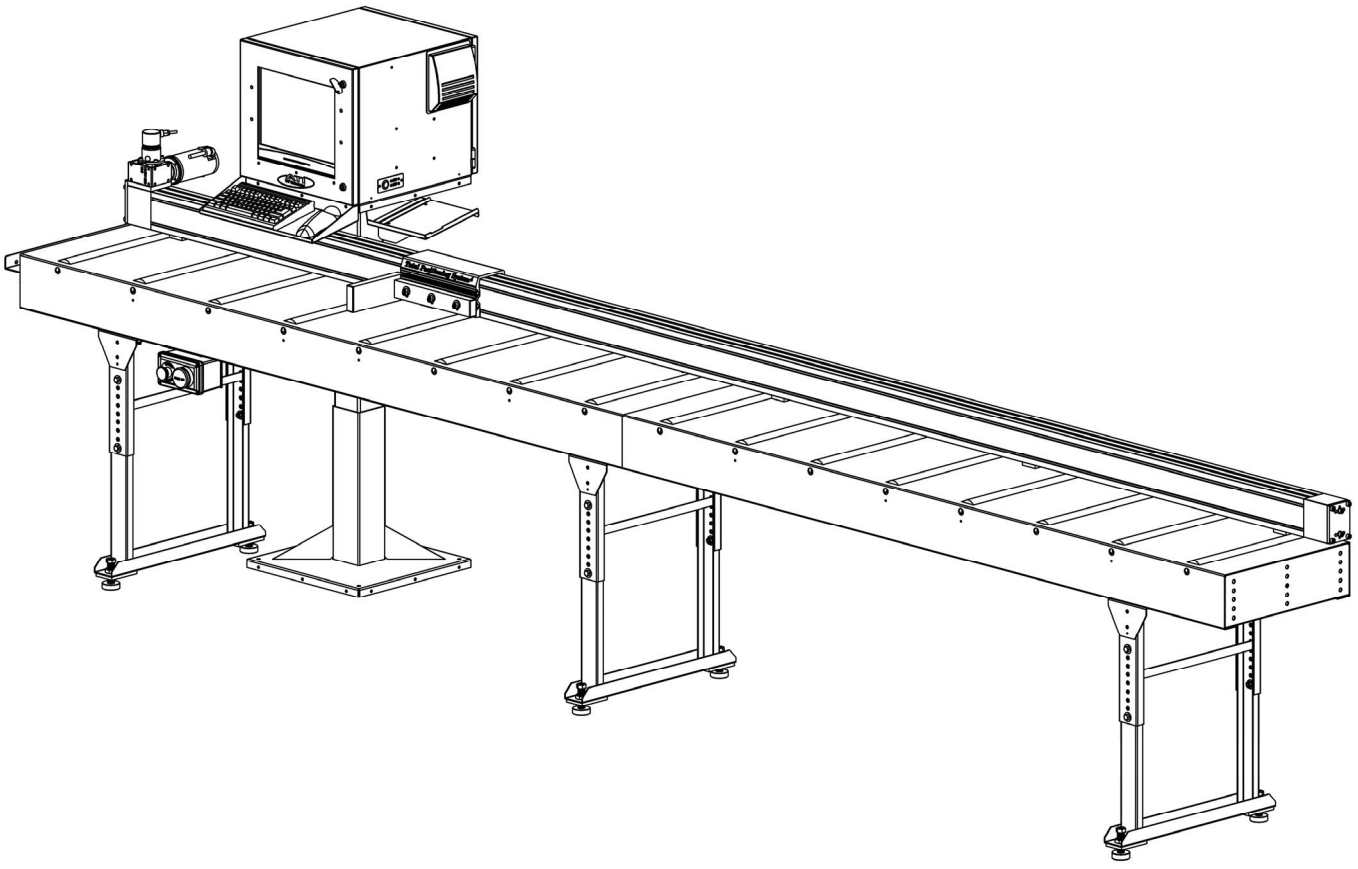
TPS-4

Installation Guide

Date: 05/30/2006
Revision: B



Advanced Technologies, Inc.
A member of the DeMichele Group

Table of Contents

Introduction

The Total Positioning System^4 (TPS^4) is the most complete package on the market today. Its ability to provide organization to a cutting operation results in unparalleled efficiencies. TPS^4 combines the sophistication of DeMichele's real time lineal optimizer and inventory control software with the repeatable accuracy of our automated saw stop. It's not just providing patterns or moving a saw stop; it's providing optimum yields based on stock and cutoff inventory on a real time basis and directing the throughput from this station back into production. The graphical displays guide the cutter, while the accuracy of our smart controlled saw stop ensures the quality of each cut.

Features:

Real time optimization - TPS^4 provides increased yields and productivity over any paper system because it reacts on the fly to damaged, missing or additional materials to be cut. TPS^4 maximizes product yields by taking advantage of not only the stock inventory but also the valuable cutoff inventory that is normally overlooked.

Multiple cuts - to increase productivity, TPS^4 groups multiple cuts together. This eliminates the repetitious cutting of common sizes. Once cut TPS^3 forwards the cut material into production and tracks the cutoffs for future use.

Cutoff inventory control - the dynamic cutoff inventory control automatically logs all cutoffs by stick type, color and size. This allows TPS^4 to direct the cutter to a specific piece of cutoff to be used in the production run.

Integration of sticks into production - TPS^4 assigns rack locations for the completed sticks to coordinate their return into the production cycle.

Performance Gains:

Based on feedback from our customers, TPS^4 has proven to provide dramatic results in the following areas:

Organizational improvements - *the structure and control that TPS^4 provides will increase the overall efficiencies of the cutting operation. This includes human resources as well as material.*

Increased yields - *the combined strengths of our real time optimizer and cutoff inventory controls, increases yields dramatically.*

Increased throughput - *the coordination, speed and accuracy provided by TPS^4 increases the potential volume of material cut per station.*

Reduced cutting errors - *the accuracy of the stop and direction provided to the cutter from the visual displays reduces the likelihood of cutting errors.*

Hardware Setup

Unpacking the *TPS-4* System

The TPS4 system is packaged in crates, pallets and boxes.

1. To unpack the MAIN RAIL open the top cover of the crate by removing the Phillips screws.
With the assistance of another person, lift the positioner out of the wood crate and place it on the ground to remove any access packaging material.
2. Unwrap all tables and legs from pallets and lay them out for assembly.
3. Unpack boxes with computer enclosure and controller.
4. Inspect all components for any damage that might have occurred during shipping.

If you happen to find any damaged parts, please call ATI & The DeMichele Group at (480) 985-4926 and a Customer Support Representative will resolve any problems.

Tools Needed for Assembly

The following is a list of tools that are typically required for the installation of the Total Positioning System 4. Based on your specific requirements, you may need additional tools.

1. Allen (Hex) Wrenches—Metric
2. Drill with a 5/15” or 3/8” bit
3. Flat Head and Phillips Screwdriver
4. Adjustable Wrench or Wrench Set
5. Razor knife

Parts List

The following is a list of the standard components shipped with the TPS4 System.

1. **TPS4 Rail Assembly with or without Flip Stop**

2. **Table Tops - Flat or Roller**

3. **Table Legs**

4. **Controller Enclosure Stand**

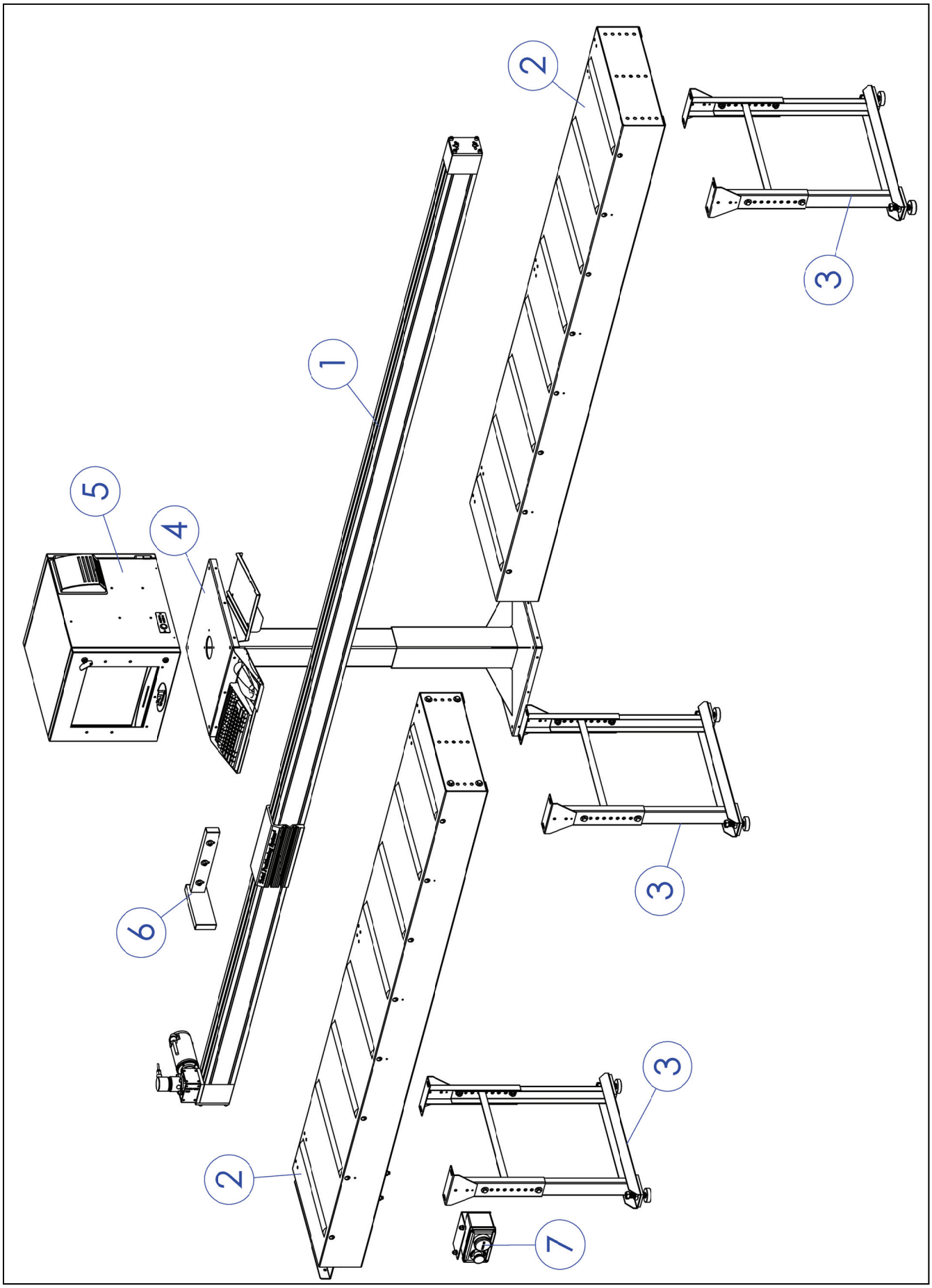
5. **Controller Enclosure**
   - Touch Screen Monitor
   - TPS4 Controller
   - Computer
   - Keyboard
   - Mouse
   - All necessary Cables

6. **Gang Stop or Pusher Arm**

7. **Emergency & Continue Switch Box**

All necessary Hardware and Instruction Manuals

SYSTEM CONTENT



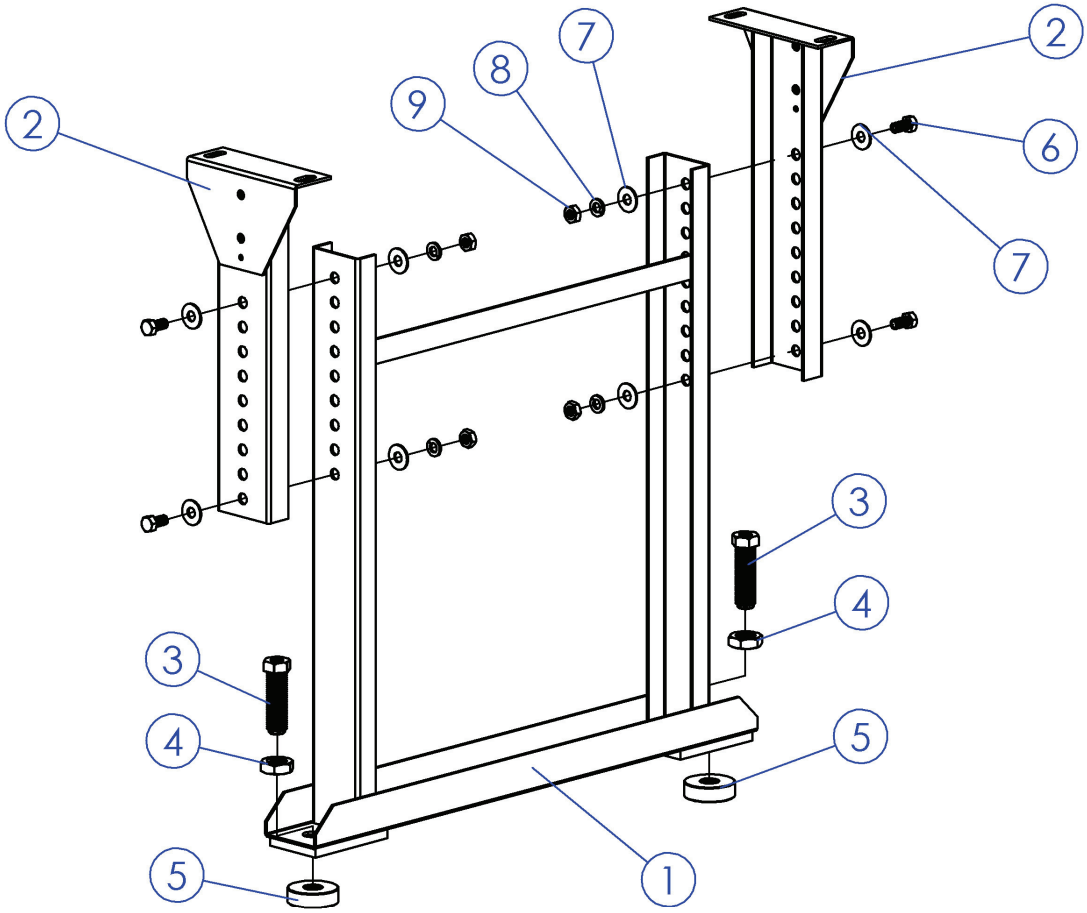
1. Table Leg Assembly

First select the proper height of the Leg Assembly and than bolt together as shown in “Figure: 1.1”.

Insert the micro adjust Leveling Bolts and Hex Nut as shown in “Figure: 1.1”.

Adjust height after legs are assembled to table top..

Figure: 1.1



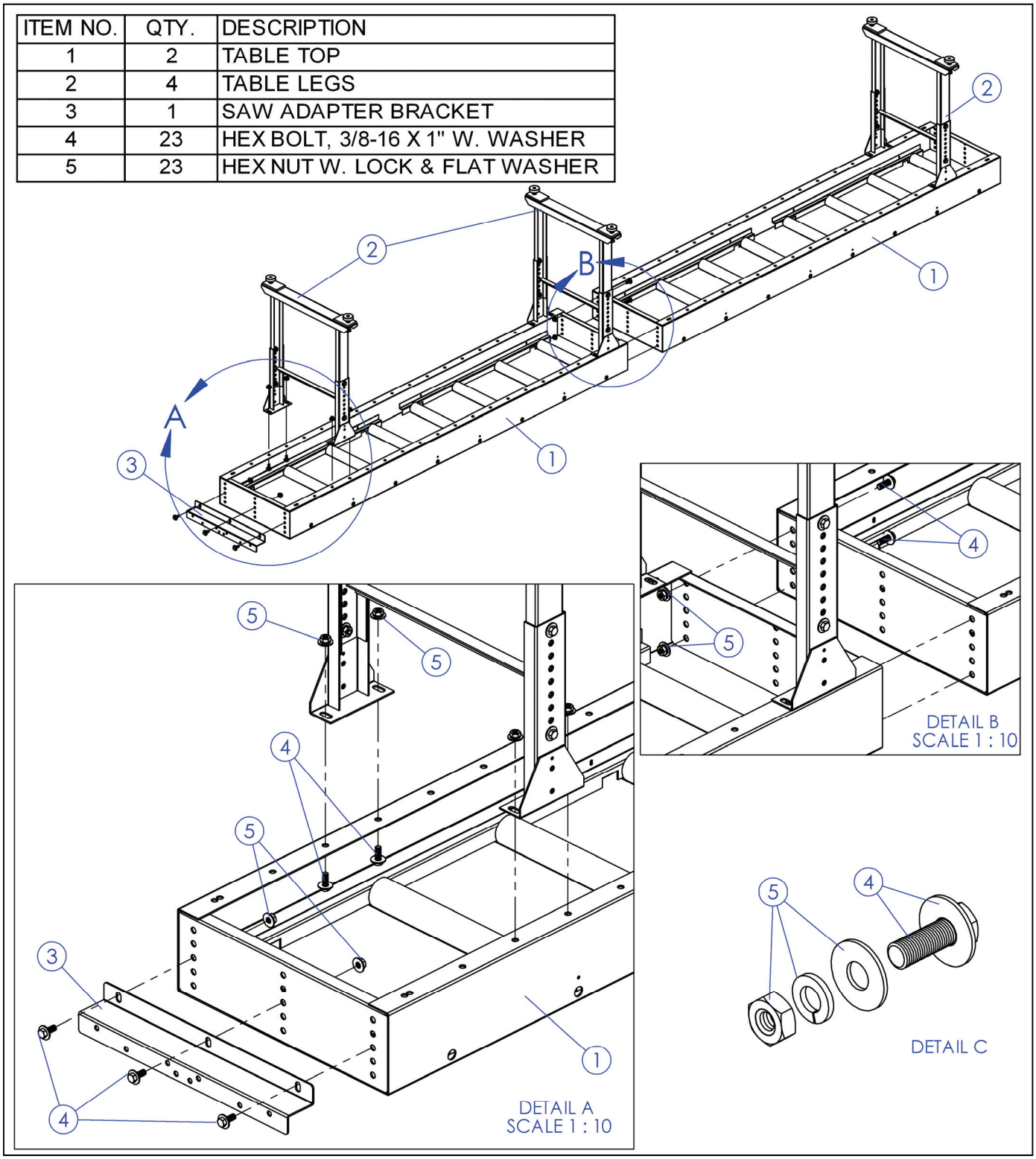
ITEM NO.	QTY.	DESCRIPTION
1	1	BASE FRAME
2	2	UPPER FRAME
3	2	LEVELING BOLTS, M20
4	2	LEVELING PADS FOR M20
5	2	HEX NUTS FOR M20
6	4	HEX BOLT, 3/8-16 X 1"
7	8	WASHER FLAT, 3/8"
8	4	LOCK WASHER, 3/8"
9	4	HEX NUT, 3/8-16

2. Table Assembly

Bolt Table Tops (1) together as shown in “Figure 2.1”. Bolt Legs (2) to Table Top (1) as shown in “Figure 2.1”. Space Legs evenly depending on length of tables. Attach Saw Adapter Bracket (3) as shown in “Figure 2.1”.

Figure: 2.1

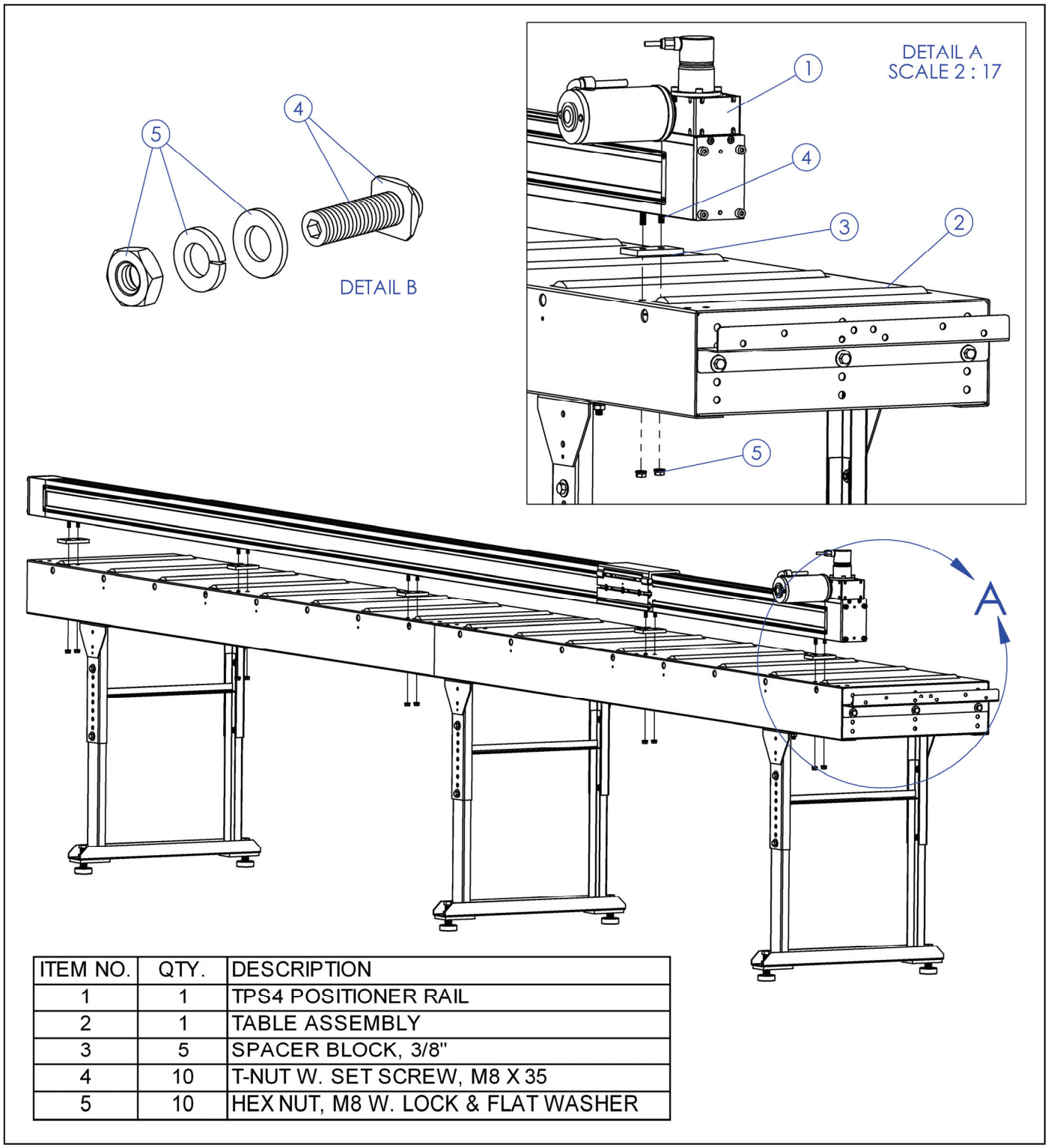
ITEM NO.	QTY.	DESCRIPTION
1	2	TABLE TOP
2	4	TABLE LEGS
3	1	SAW ADAPTER BRACKET
4	23	HEX BOLT, 3/8-16 X 1" W. WASHER
5	23	HEX NUT W. LOCK & FLAT WASHER



3. Main Rail Mounting

ATI Flat and Roller Tables (2) are predrilled for mounting the rail (1). Use the T-Nuts and M8 x 35mm Screws (4) located in the bottom of the rail to mount the rail to the table as shown in “Figure 3.1”. Use Spacer Plate (3) only for Roller Tables. Use supplied Flat Washer, Lock washer and Hex Nut (5) to fasten the Rail (1) to Table (2).

Figure: 3.1

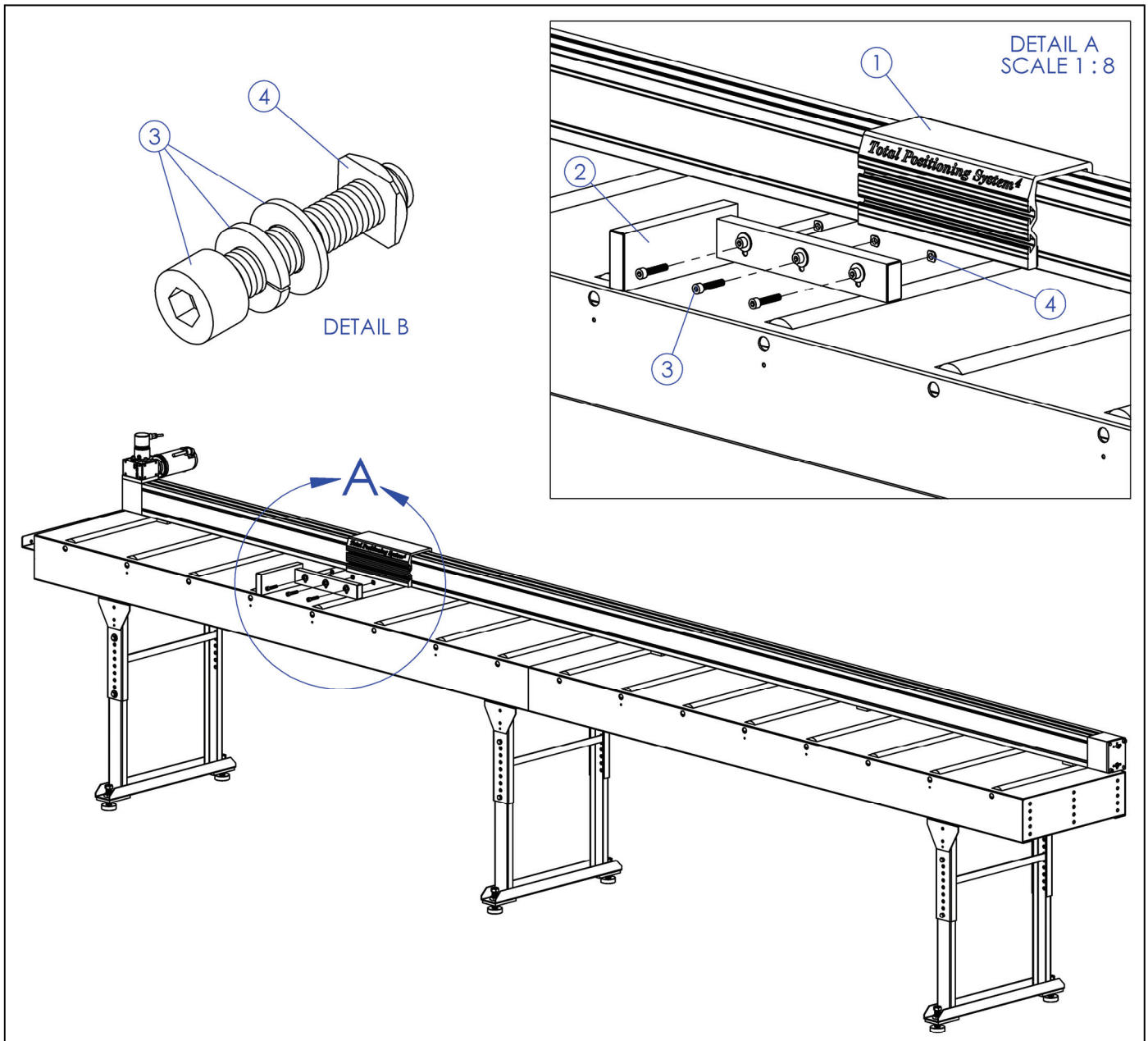


ITEM NO.	QTY.	DESCRIPTION
1	1	TPS4 POSITIONER RAIL
2	1	TABLE ASSEMBLY
3	5	SPACER BLOCK, 3/8"
4	10	T-NUT W. SET SCREW, M8 X 35
5	10	HEX NUT, M8 W. LOCK & FLAT WASHER

4. Gang Stop/Pusher Arm Assembly

Bolt Gang Stop/Pusher Arm to (2) Flip Stop Plate (1) by sliding the T-Nuts (4) into bottom track of Flip Stop (1) and Fastener (3) as shown in “Figure 4.1”. Make sure the Gang Stop/Pusher Arm is square to the rail and table. Standard Gang Stop/Pusher Arm Lengths are 12.0”, 18.0” & 24.0”

Figure: 4.1

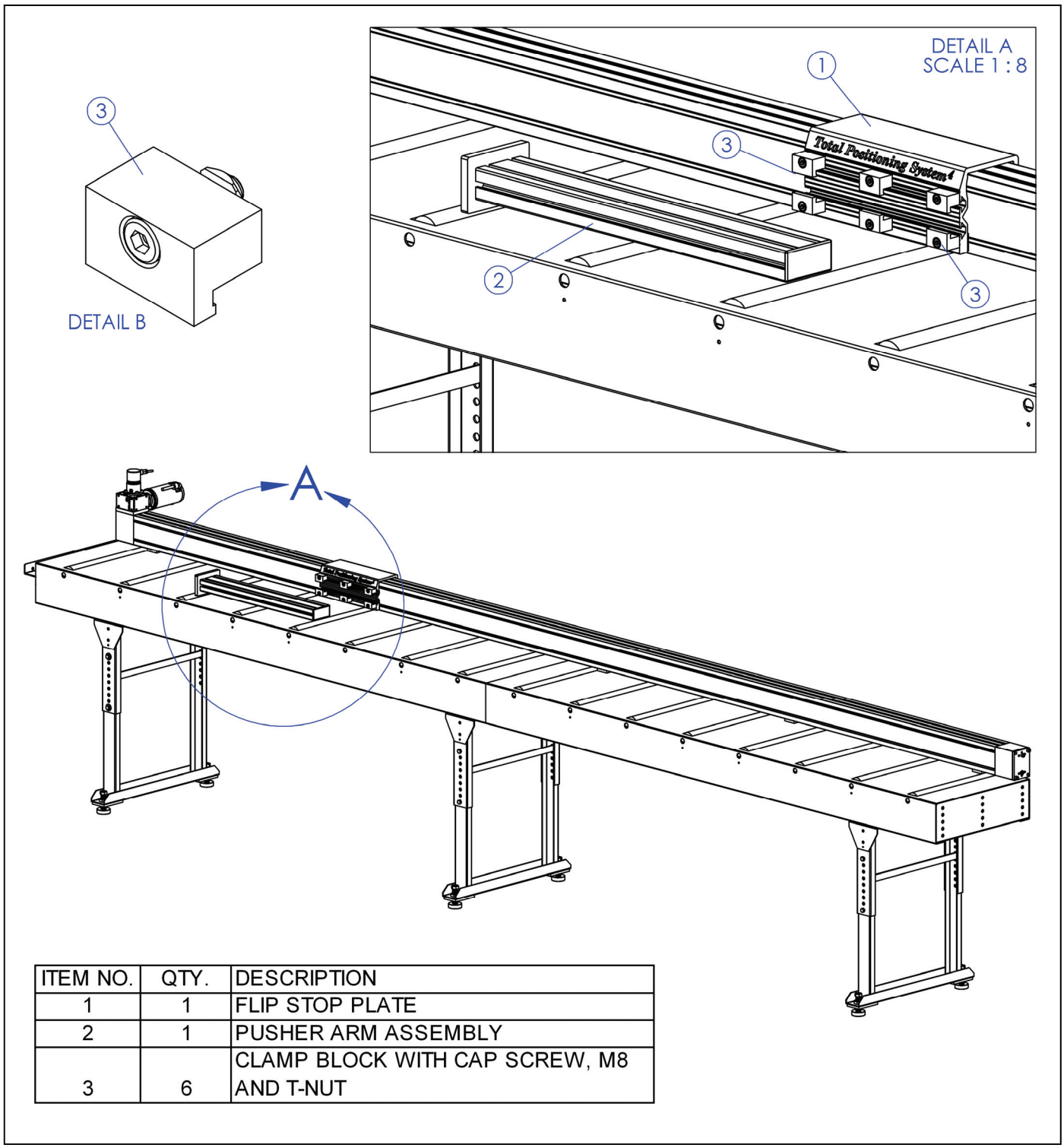


ITEM NO.	QTY.	DESCRIPTION
1	1	FLIP STOP
2	1	GANG STOP ASSEMBLY
3	3	SOCKET HEAD CAP SCREW, M8 X 40 WITH LOCK & FLAT WASHER
4	3	T-NUT, M8

5. Optional Pusher Arm Assembly

Bolt Pusher Arm Assembly to (2) Flip Stop Plate (1) by loosening all the Clamp Blocks (3) and sliding the Pusher Arm (2) onto the Clamps (3) and tighten the Clamp Screws as shown in “Figure 5.1”. Make sure the Gang Stop Arm is square to the rail and table.

Figure: 5.1

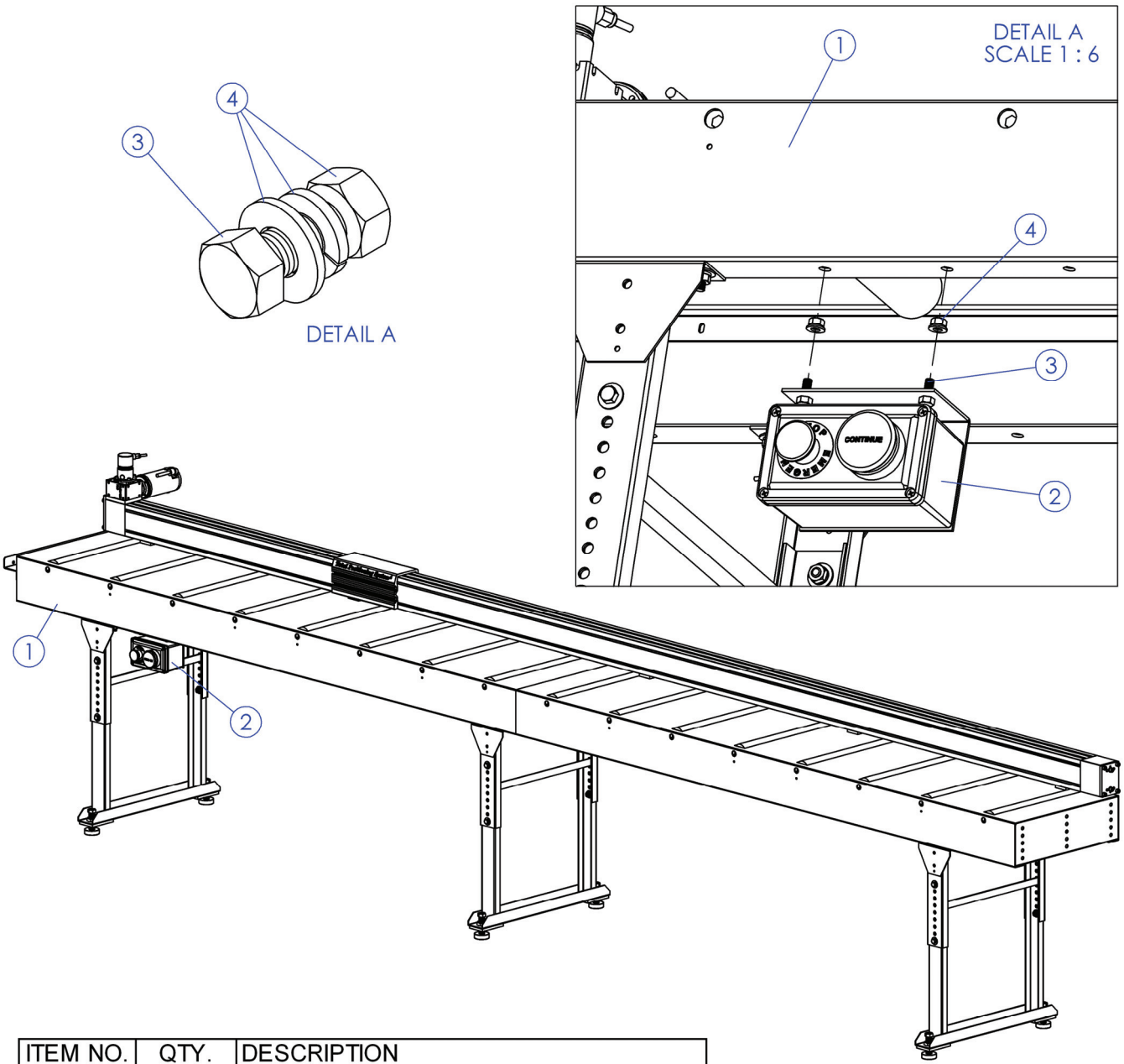


ITEM NO.	QTY.	DESCRIPTION
1	1	FLIP STOP PLATE
2	1	PUSHER ARM ASSEMBLY
3	6	CLAMP BLOCK WITH CAP SCREW, M8 AND T-NUT

6. Emergency & Continue Switch Box

Install E-Stop Box with supplied mounting bracket (2) to under side of table beam (1) as shown in "Figure 6.1" with supplied Mounting Screws (3) and Hex Nuts & washers (4). Mount E-Stop Box (2) in convenient place for operator.

Figure: 6.1



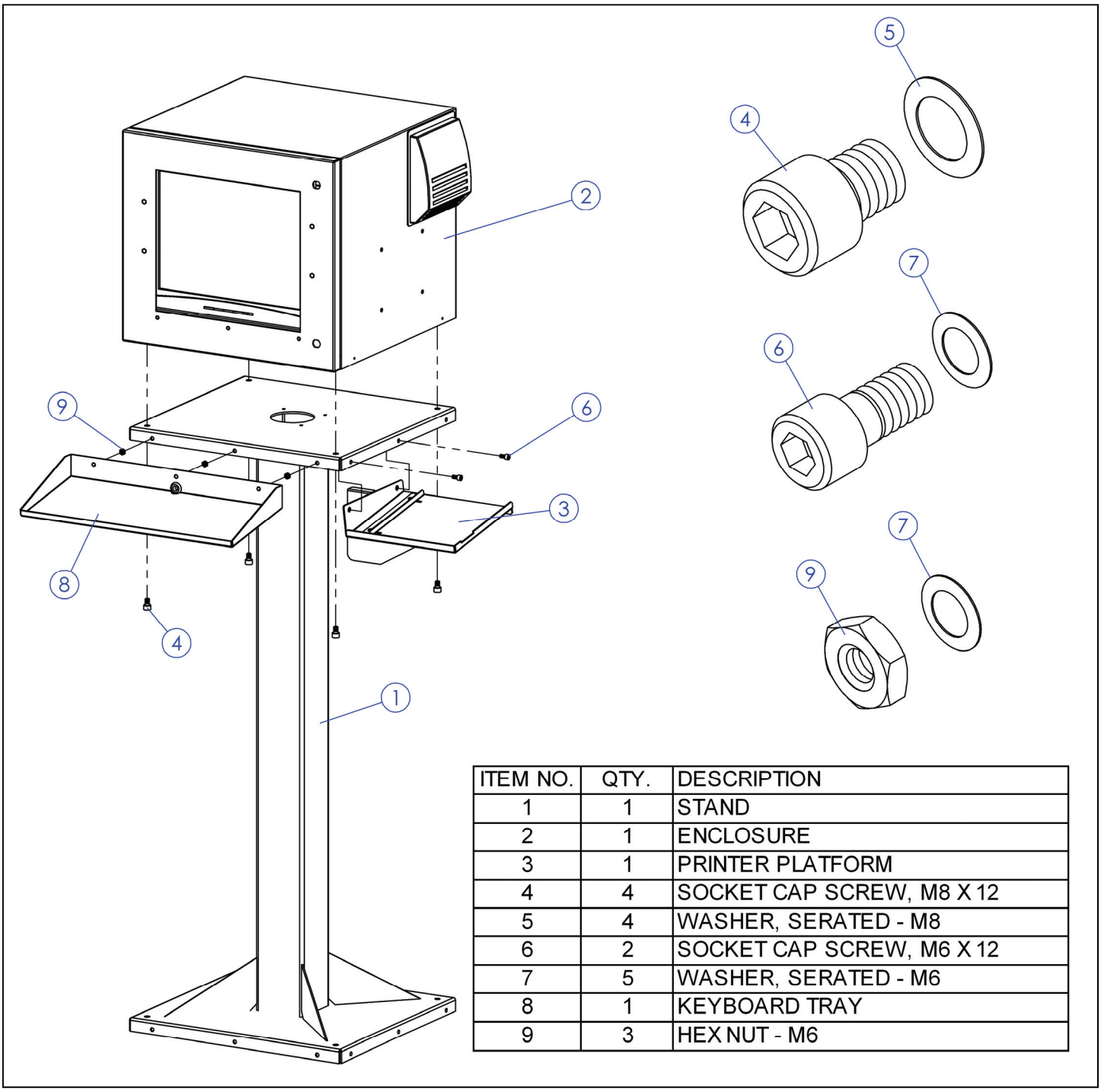
ITEM NO.	QTY.	DESCRIPTION
1	2	TABLE TOP
2	1	E-STOP BOX
3	2	HEX BOLT, 5/16-18 X 3/4"
4	2	HEX NUT, 5/16 WITH LOCK AND FLAT WASHER

7. Enclosure with Stand Assembly

Place Enclosure (2) and Printer platform (3) on top of Stand (1) and attach with hardware as shown in "Figure 7.1".

Note: Do not fully tighten screws until all screws have been inserted.

Figure: 7.1



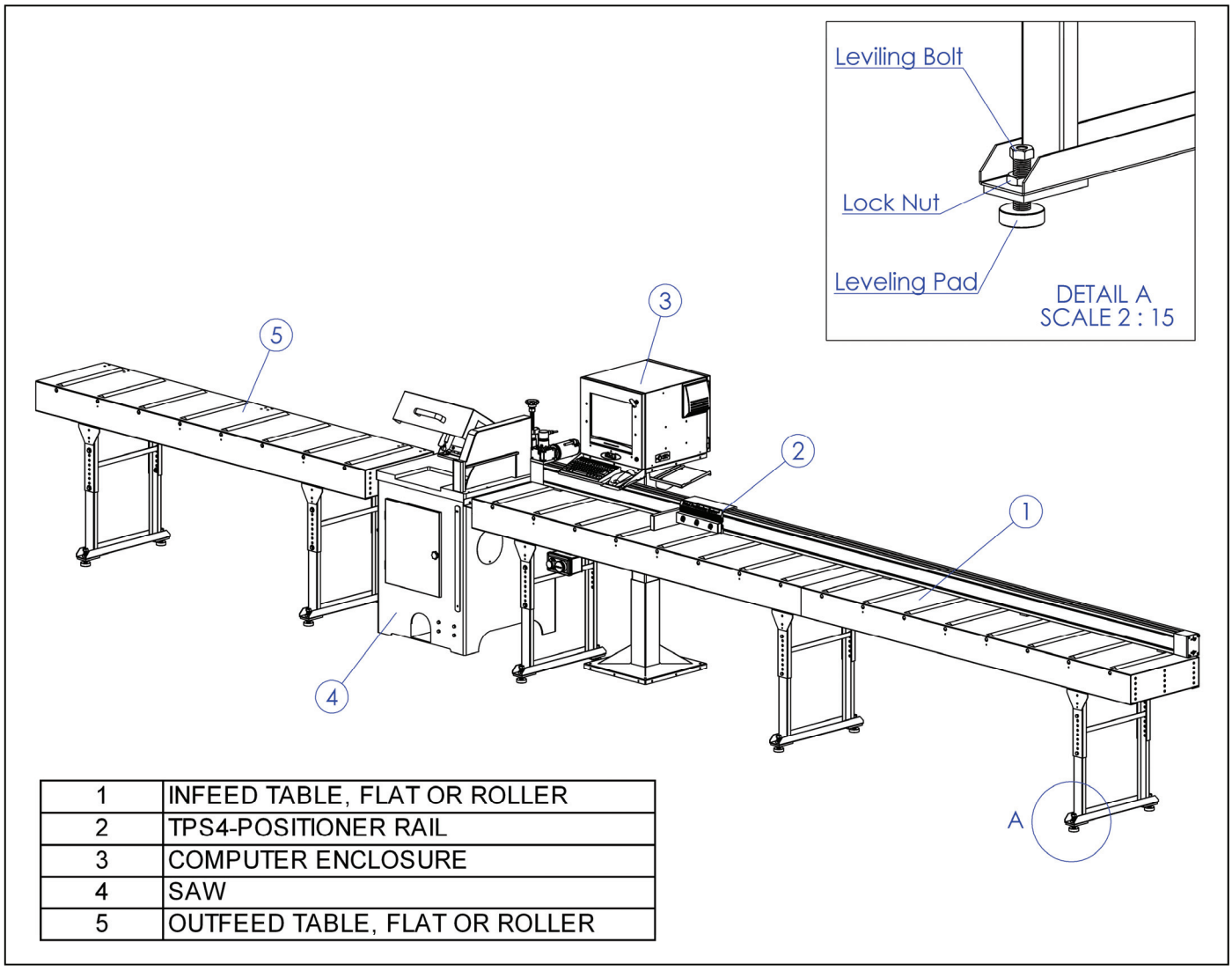
ITEM NO.	QTY.	DESCRIPTION
1	1	STAND
2	1	ENCLOSURE
3	1	PRINTER PLATFORM
4	4	SOCKET CAP SCREW, M8 X 12
5	4	WASHER, SERATED - M8
6	2	SOCKET CAP SCREW, M6 X 12
7	5	WASHER, SERATED - M6
8	1	KEYBOARD TRAY
9	3	HEX NUT - M6

8. System Assembly

Place all components as shown in “Figure: 7.1” for a typical layout.

1. Level Infeed & Outfeed Tables with Saw (4). Align the top of rollers or top of table if using a flat table with top of saw table by adjusting the Leveling Bolts as shown in “Figure: 7.1, Detail-A”.
2. Align back fence of saw (4) with front face of TPS4-Positioner Rail (2).
3. Bolt Infeed and Outfeed Tables to Saw with supplied Saw Adapter bracket (see page 9).
4. Anchor Tables and Saw to floor with concrete anchors.
5. Place Computer Enclosure in a convenient position for the operator and bolt to the floor.
6. Connect Motor, Encoder, E-Stop and Saw interface cables to controller in Computer Enclosure (3) as shown on page 16, 17, 18 & 19. Connect power cables to Saw (4) and Computer Enclosure (3).

Figure: 7.1



1	INFEED TABLE, FLAT OR ROLLER
2	TPS4-POSITIONER RAIL
3	COMPUTER ENCLOSURE
4	SAW
5	OUTFEED TABLE, FLAT OR ROLLER

9. Connecting the Controller

A. Serial Controller

B. The serial controller box contains the controller card normally in the PC. The controller box uses the Network Interface Card to transfer data to the PC. The connections for the Controller Box are shown in "Figure: 9.1", respectively.

C. Attach the 5-pin cable on the Emergency Stop Button Box to the Controller Box.

D. The notch on the male connector should be aligned with the corresponding groove on the female connector located on the controller box. Then push the connectors together.

E. The twist cap should be pushed in towards the box and twisted 1/2 a turn until it feels tight and is secured to the box.

F. Check to make sure the emergency stop (red) button is in the "up" (unlocked) position.

G. Connect the power cable to the Controller Box.

H. Make sure all wires and cables are attached securely to the table or stand to avoid damage or the possibility of being caught by moving parts.

Figure: 9.1

10. Setting up the Computer

1. Open the computer and monitor boxes and remove the contents.
2. Select a clean, but convenient place to install the Computer Enclosure, so the operator can easily work with the system.
3. The computer monitor is pre installed from the factory. Place the ATI-Controller and Computer as shown in picture below.
4. Connect all cables from Monitor including the Power, Video & Touch Screen cable.
5. Place Keyboard and Track Ball as shown in picture below. Rout cables through grommet hole of Keyboard Tray and feed cable through upper Cable Exit of Enclosure Stand into Enclosure and connect to the back of the Computer.

Warning - Make sure to keep the computer and monitor clear of debris. Excess debris can cause the system to malfunction.

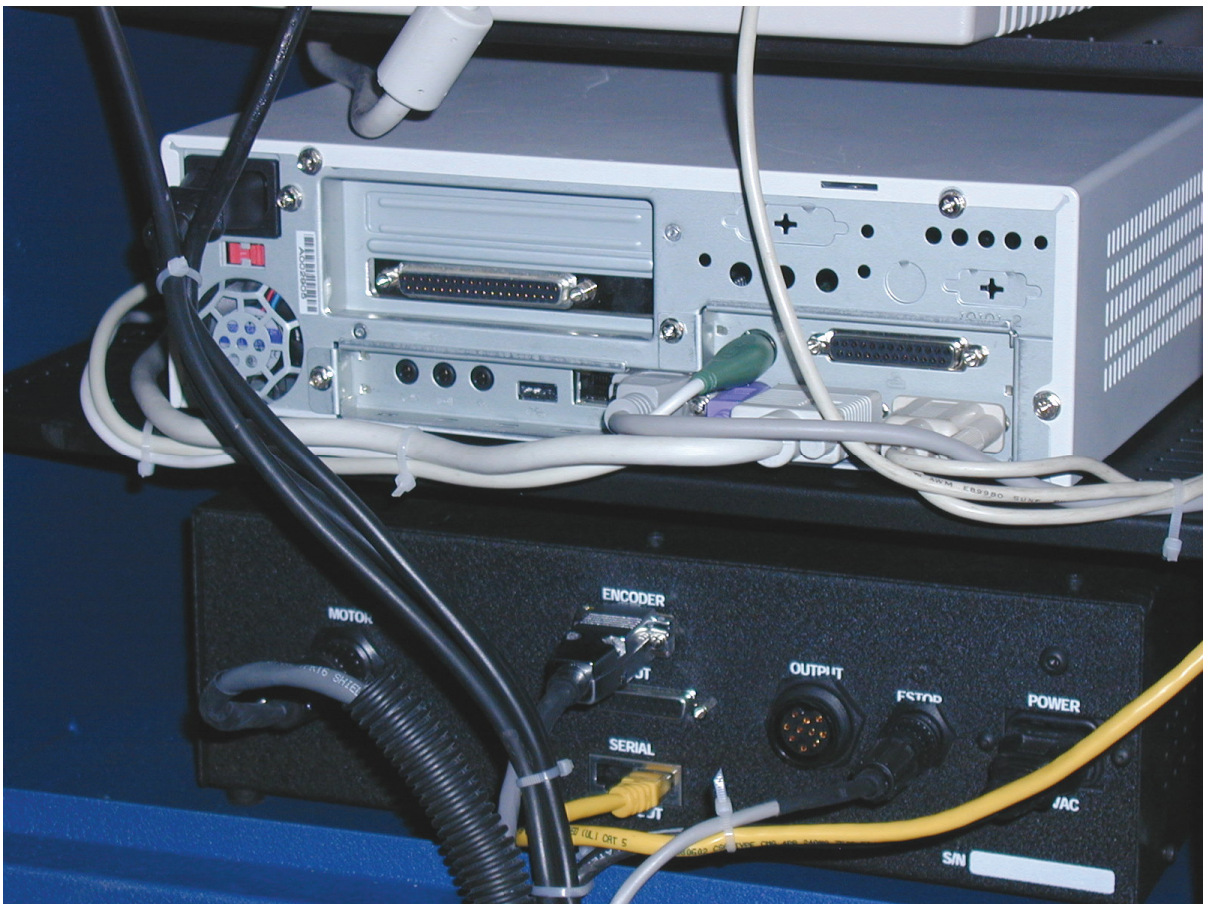
Figure: 10.1

11. Connecting the Cables

1. Plug the enclosed power cords into the monitor and computer unit, but do not connect them to an outlet at this time.
2. Connect the keyboard cord to the back of the computer unit.
3. Connect the RJ45 Connector of the Communication Cable in to the **IN-Port** on back of ATI-Serial Controller.
4. Connect the Serial (9 Pin) Connector of the Communication Cable in to **COM-1** on the back of the computer.
5. Plug the monitor cable into the back of the computer.
6. Connect all power cords into an available outlet.
7. Check all power cords, cables, and connections on the Controller Box a final time before turning the units on.

It is strongly recommended that the computer, monitor, and *Controller Box* be connected to an outlet with a surge protector and/or an uninterruptible power supply (UPS). This will ensure any unwanted power surges or Brownouts will not damage or otherwise adversely affect the positioning unit and computer equipment. Contact ATI & DeMichele Systems, Inc. for more information on purchasing a UPS at (480) 985-4926.

Figure: 11.1



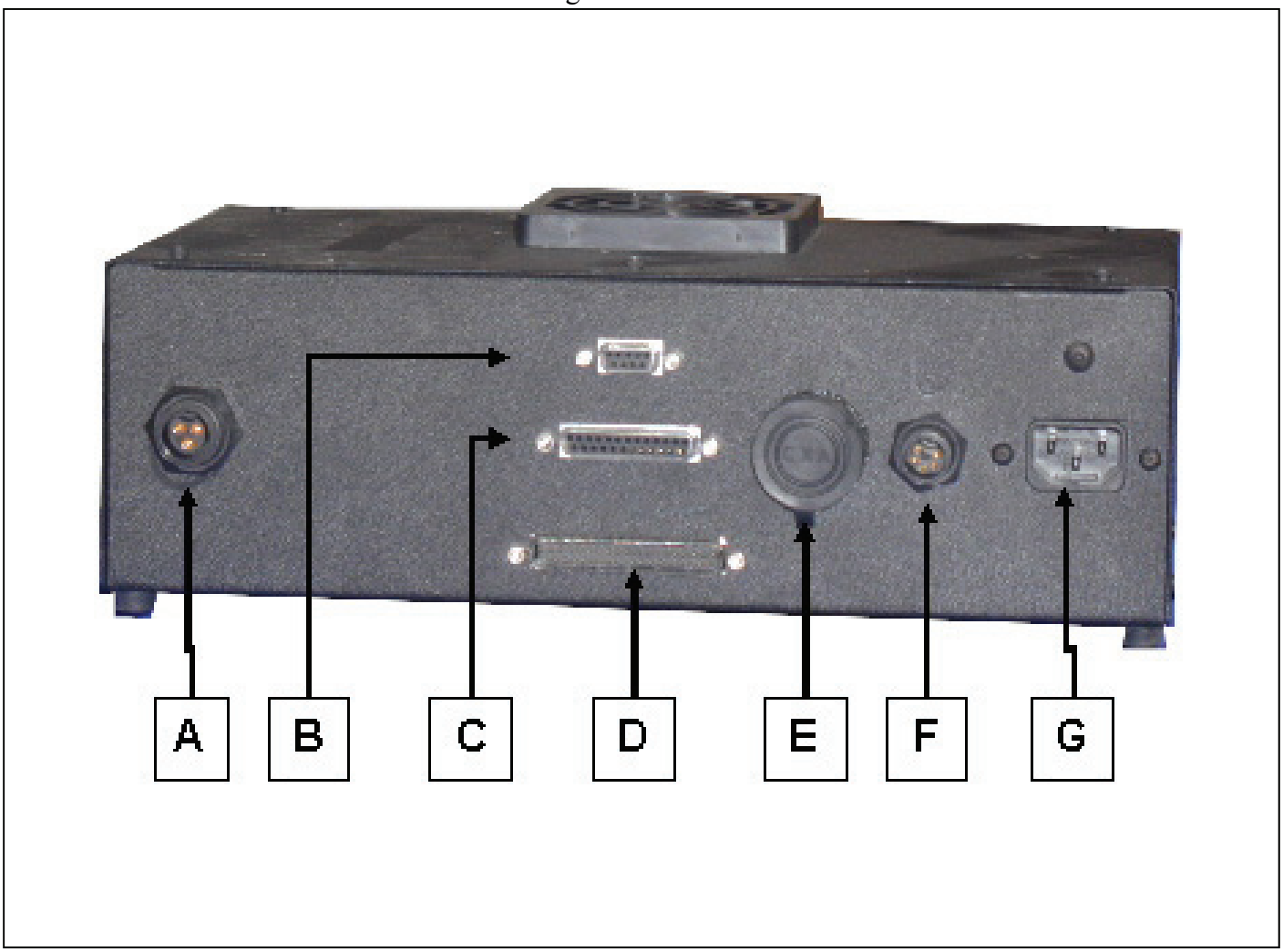
Discontinued Controller

Connecting the Controller

A. Standard Controller

1. The system controller box varies depending on the positioner model ordered. The controller box either will be mounted on the rail or will be packaged as an independent unit. Both controllers perform the same function, but the exact configuration varies depending on customer needs. The connections for the Controller Box are shown in “Figure: 8.1”, respectively.
2. Attach the 5-pin cable on the Emergency Stop Button Box to the Controller Box marked as F.
3. The notch on the male connector should be aligned with the corresponding groove on the female connector located on the controller box. Then push the connectors together.
4. The twist cap should be pushed in towards the box and twisted 1/2 a turn until it feels tight and is secured to the box.
5. Check to make sure the emergency stop (red) button is in the “up” (unlocked) position.
6. Attach the male end of the 37-pin cable to the Controller Box marked as D.
7. Connect the power cable to the Controller Box marked as G.
8. Make sure all wires and cables are attached securely to the table or stand to avoid damage or the possibility of being caught by moving parts.

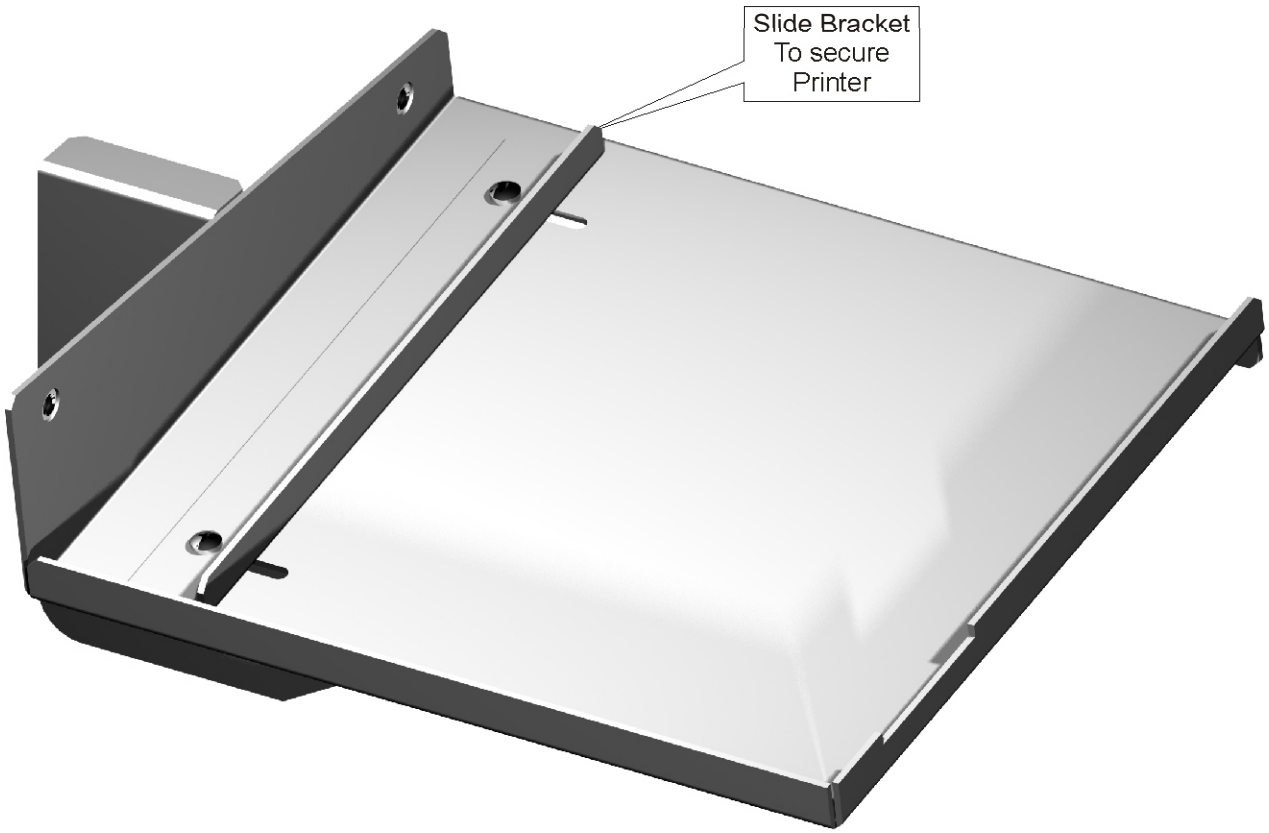
Figure: 8.1



PM-400 Printer Stand

Model: PM-400

PM-400 Printer Stand



- Heavy Duty 16 Gauge Steel
- Durable Powder Coating Finish
- Adapts to All ATI-Enclosure Stands
- Attaches to Right Side of Enclosure
- Printer Platform Size: 7.3” x 8.5”

DeMichele Group

www.demichelegroup.com

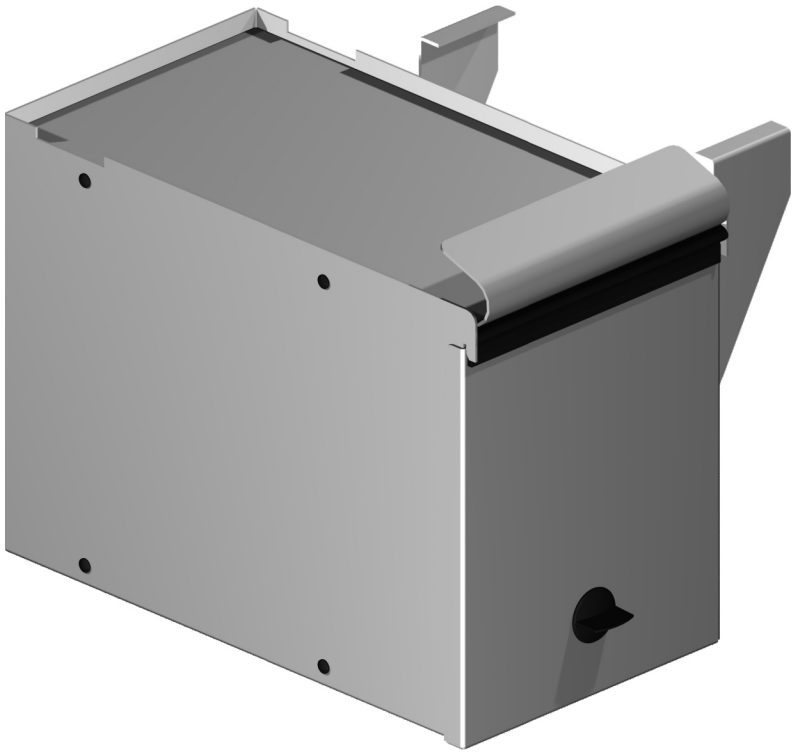
Complete Solutions for the Fenestration Industry!

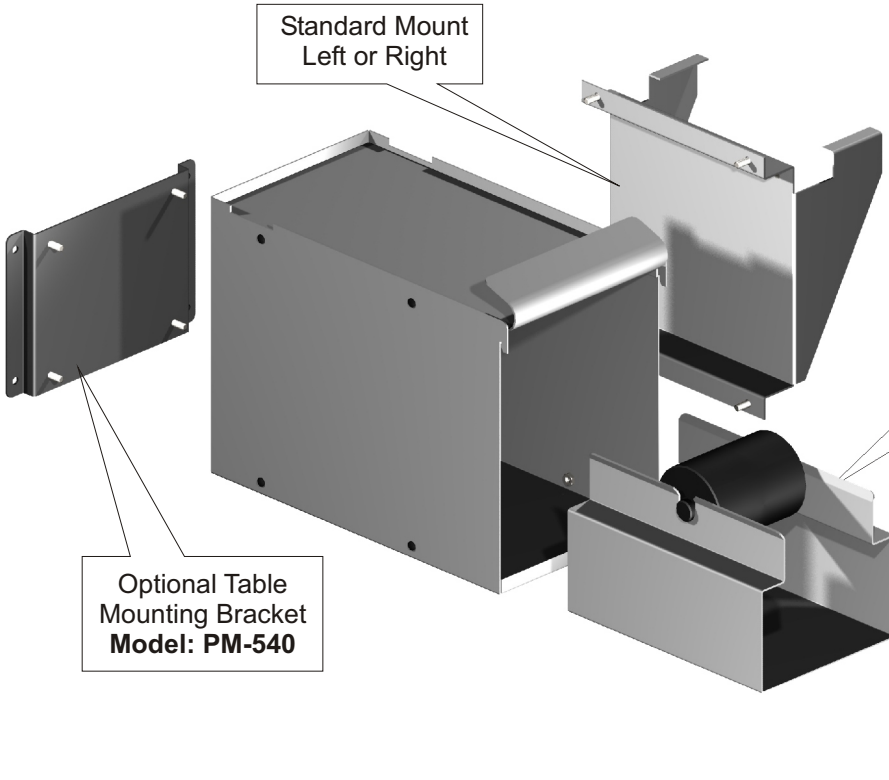
PM-500 Printer Stand

PM-500 Printer Stand

Model: PM-500

- **Heavy Duty 16 Gauge Steel Enclosure**
- **For use with Fan-Fold or Optional Roll Labels**
- **Fan-Fold Label Size: W=4.0", D=12.0", H=10.0"**
- **Adapts to All ATI-Enclosure Stands**
- **Optional Table Mount Available**
- **Can be mounted on Left or Right Side**
- **Sealed, Easy Access Door for Loading**
- **Printer Platform Size: 7.3" x 12.0"**





OPTIONAL SPOOL HOLDER

Model: PM-550-40
Spool Holder for 4 inch wide Label Rolls
Maximum Roll Diameter: 9 inch
Standard Spool Size: 3 inch
Other Spool Diameters available
Slides in and out of Enclosure

6432 E. McDowell Rd. Mesa, AZ 85215, Tel: 480.985.4926 Fax: 480.985.3000
E-Mail: sales@demichelegroup.com, Web: www.demichelegroup.com

DeMichele Group

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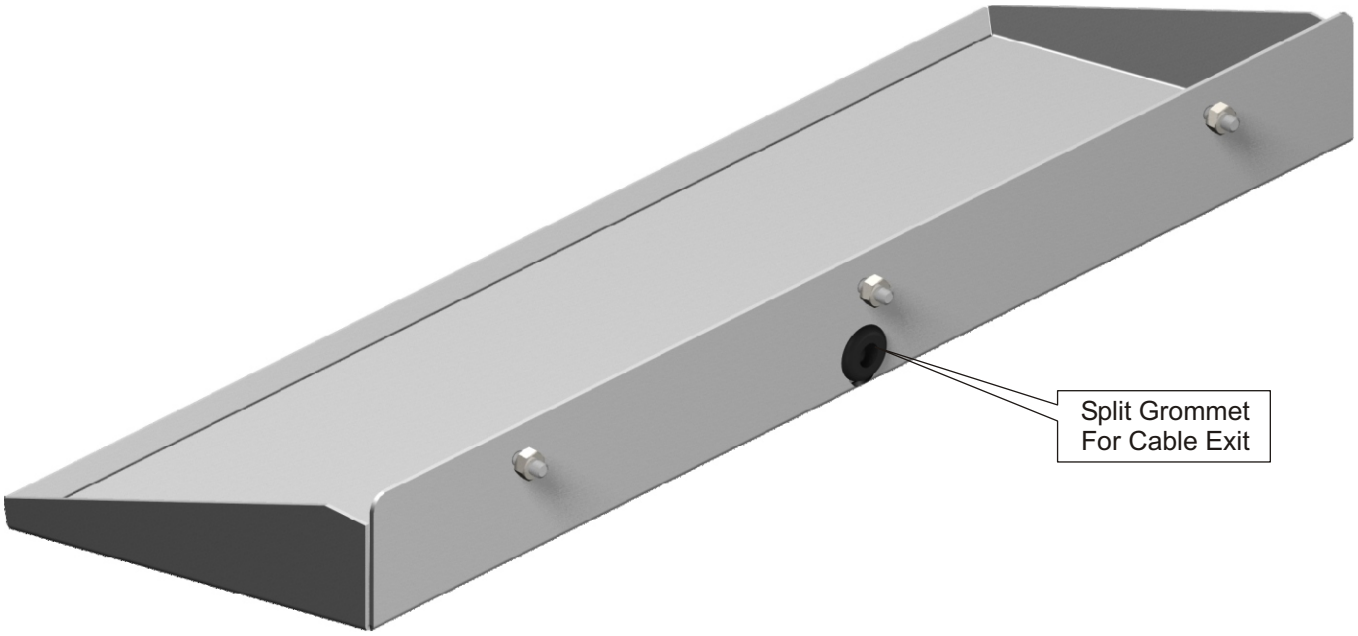
Complete Solutions for the Fenestration Industry!

ECS-1220 Keyboard Tray

Model: ECS-1220-1

ECS-1220 Keyboard Tray



- External Keyboard Tray to eliminate the opening of front door
- Heavy Duty 14 Gauge Steel Construction
- Durable Powder Coating Finish
- Adapts to All ATI-Enclosure Stands
- Attaches to existing mounting holes
- Accommodates small Keyboard and Track Ball or Full Size Keyboard with integrated Track Ball
- Keyboard Tray Size: W = 19.8”, D = 7.3”

6432 E. McDowell Rd. Mesa, AZ 85215, Tel: 480.985.4926 Fax: 480.985.3000
E-Mail: sales@demichelegroup.com, Web: www.demichelegroup.com

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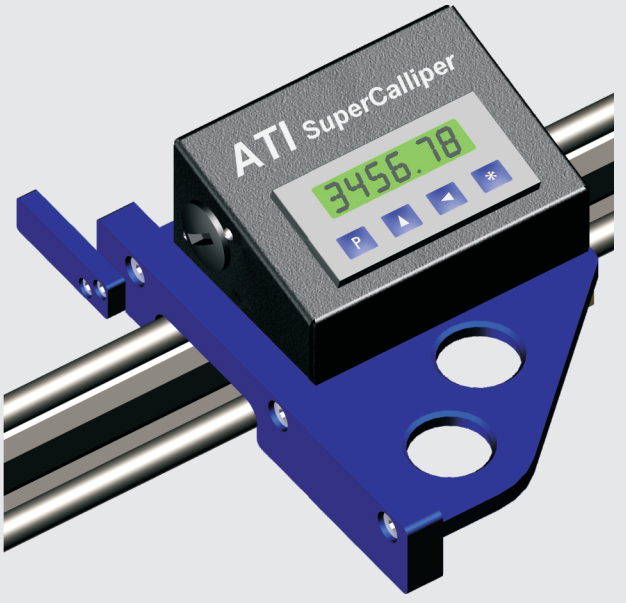
SuperCaliper

Digital Length Measuring Device

- Sturdy aluminum guide profile with machined aluminum parts
- Display resolution to 3 decimal places for inch readout, 2 decimal place for metric readout
- Measuring length from 1 to 4 meters (3 to 13 ft)
- Internal & External Measuring with Lock
- 6 month battery life with 1 “AA” cell
- Decimal and fractional display mode
- Large, easy to read LCD display
- Custom lengths available

MA504 DISPLAY

Decimal and fractional display mode
1/64” display resolution in fractional
0.001” display resolution in decimal inch
0.01mm display resolution in metric
User replaceable battery



Model #	Measuring Length	Weight in LBS	Price
SC-1.0-MA504	1m (40")	4.5	$1,600.00
SC-1.5-MA504	1.5m (60")	5.6	$1,700.00
SC-2.0-MA504	2m (79")	6.7	$1,800.00
SC-2.5-MA504	2.5m (98")	7.8	$1,900.00
SC-3.0-MA504	3m (118")	8.9	$2,100.00
SC-3.5-MA504	3.5m (138")	9.9	$2,300.00
SC-4.0-MA504	4m (157")	11.0	$2,500.00

6432 E. McDowell Rd. Mesa, AZ 85215, Tel: 480.985.4926 Fax: 480.985.3000
E-Mail: sales@demichelegroup.com, Web: www.demichelegroup.com

DeMichele Group

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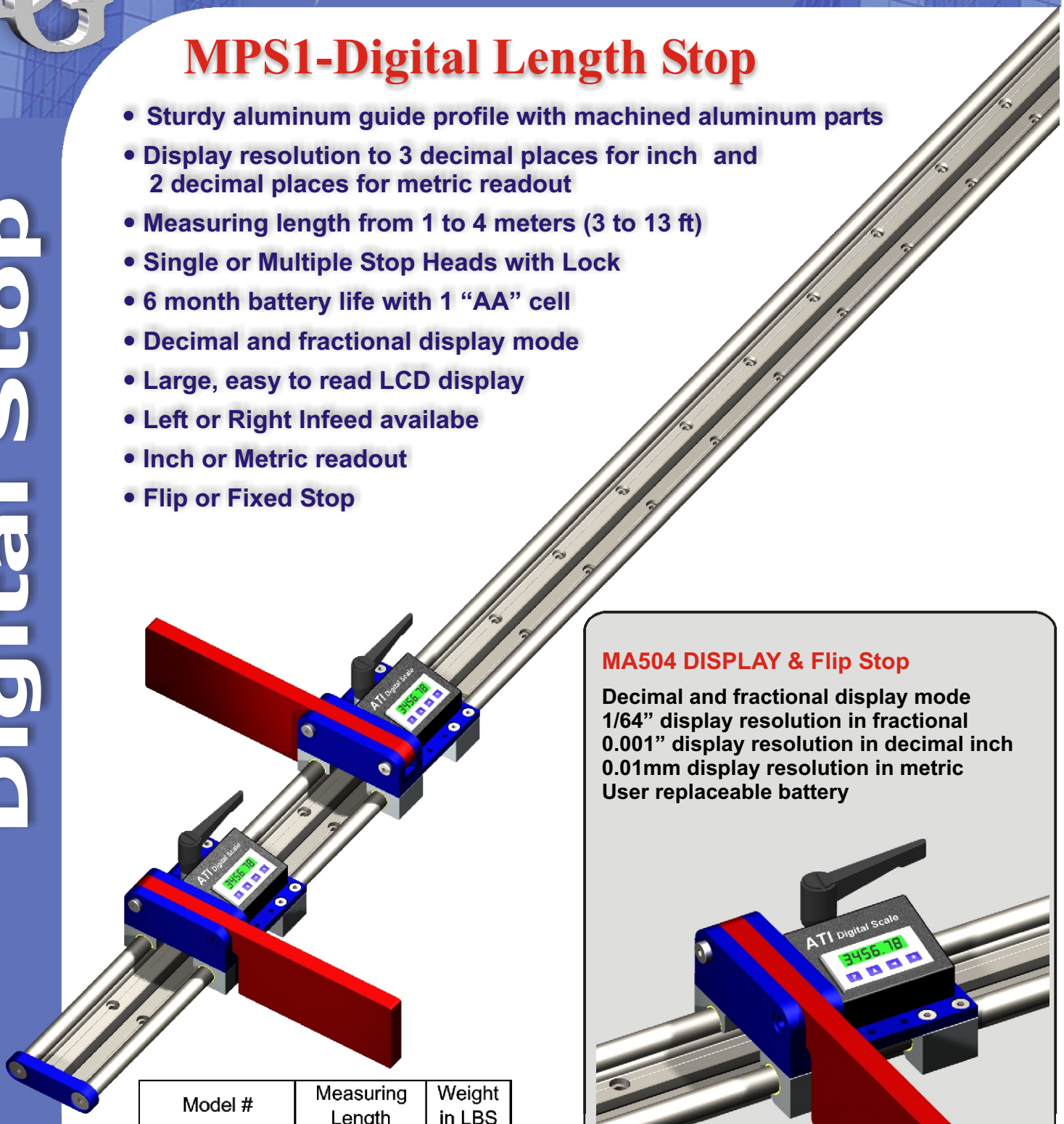
Complete Solutions for the Fenestration Industry!

Digital Stop

MPS1-Digital Length Stop

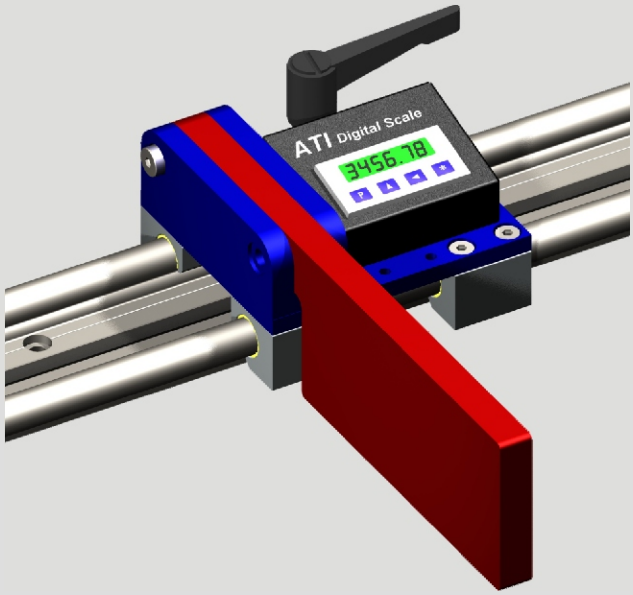
- Sturdy aluminum guide profile with machined aluminum parts
- Display resolution to 3 decimal places for inch and 2 decimal places for metric readout
- Measuring length from 1 to 4 meters (3 to 13 ft)
- Single or Multiple Stop Heads with Lock
- 6 month battery life with 1 “AA” cell
- Decimal and fractional display mode
- Large, easy to read LCD display
- Left or Right Infeed availabe
- Inch or Metric readout
- Flip or Fixed Stop



Model #	Measuring Length	Weight in LBS
MPS1-1.0-MA504	1m (40")	10.0
MPS1-1.5-MA504	1.5m (60")	13.9
MPS1-2.0-MA504	2m (79")	17.7
MPS1-2.5-MA504	2.5m (98")	21.6
MPS1-3.0-MA504	3m (118")	25.4
MPS1-3.5-MA504	3.5m (138")	29.3
MPS1-4.0-MA504	4m (157")	33.1

MA504 DISPLAY & Flip Stop

Decimal and fractional display mode
1/64” display resolution in fractional
0.001” display resolution in decimal inch
0.01mm display resolution in metric
User replaceable battery



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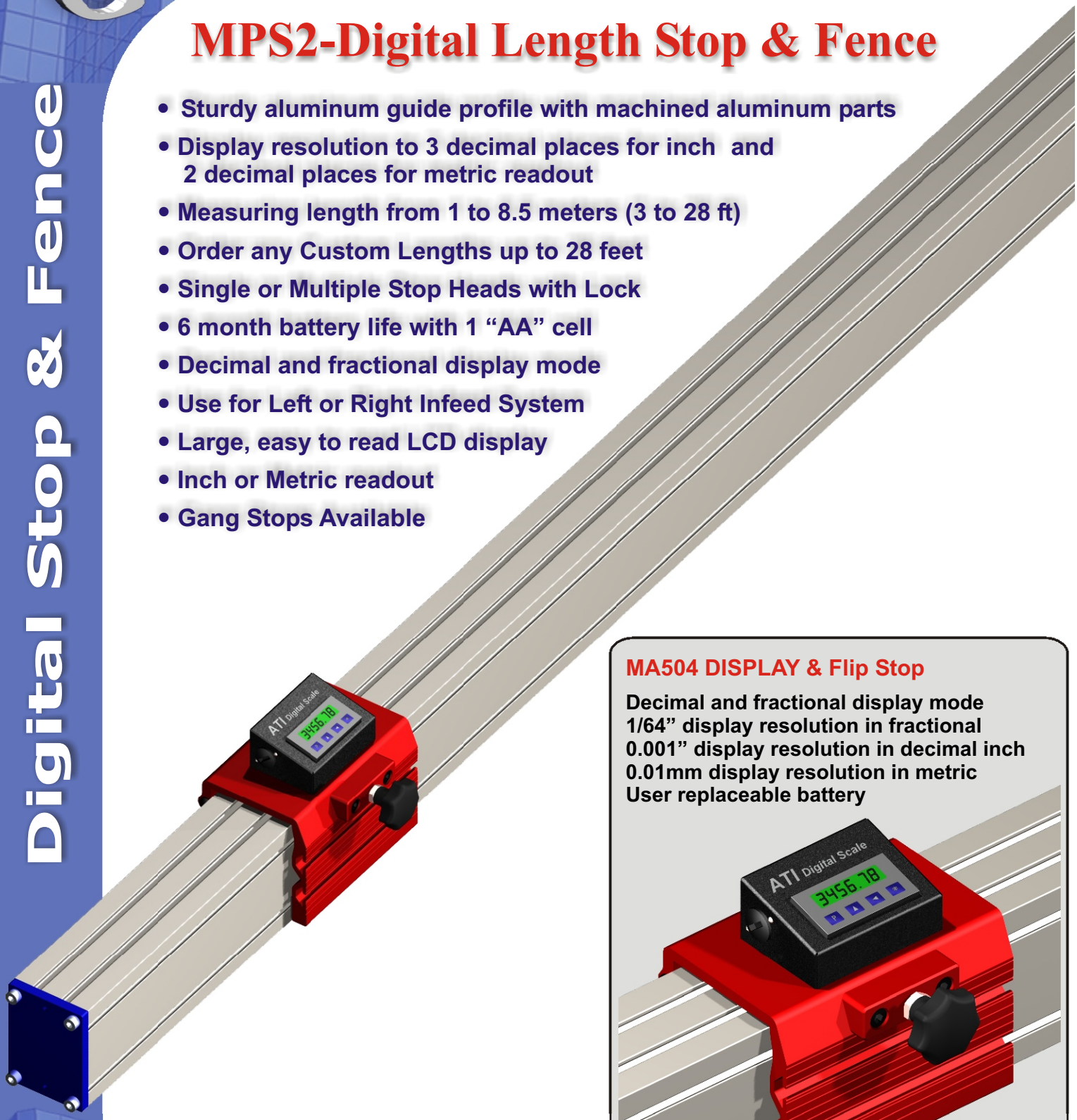
Complete Solutions for the Fenestration Industry!

Digital Stop & Fence

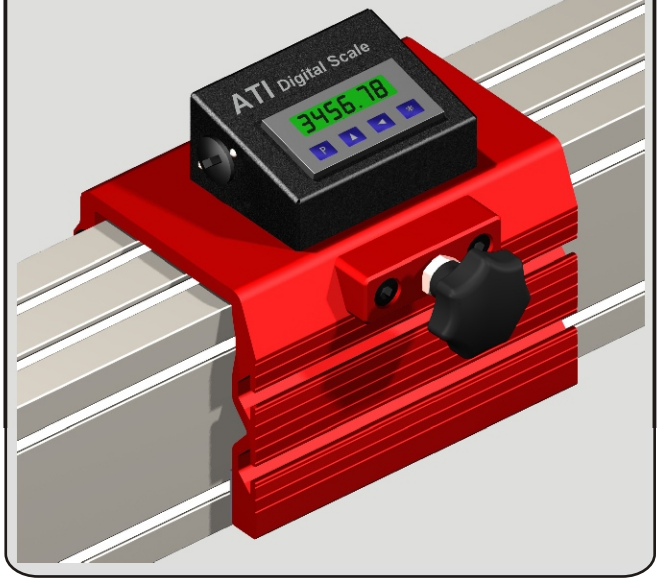
MPS2-Digital Length Stop & Fence

- Sturdy aluminum guide profile with machined aluminum parts
- Display resolution to 3 decimal places for inch and 2 decimal places for metric readout
- Measuring length from 1 to 8.5 meters (3 to 28 ft)
- Order any Custom Lengths up to 28 feet
- Single or Multiple Stop Heads with Lock
- 6 month battery life with 1 “AA” cell
- Decimal and fractional display mode
- Use for Left or Right Infeed System
- Large, easy to read LCD display
- Inch or Metric readout
- Gang Stops Available



MA504 DISPLAY & Flip Stop

Decimal and fractional display mode
1/64” display resolution in fractional
0.001” display resolution in decimal inch
0.01mm display resolution in metric
User replaceable battery



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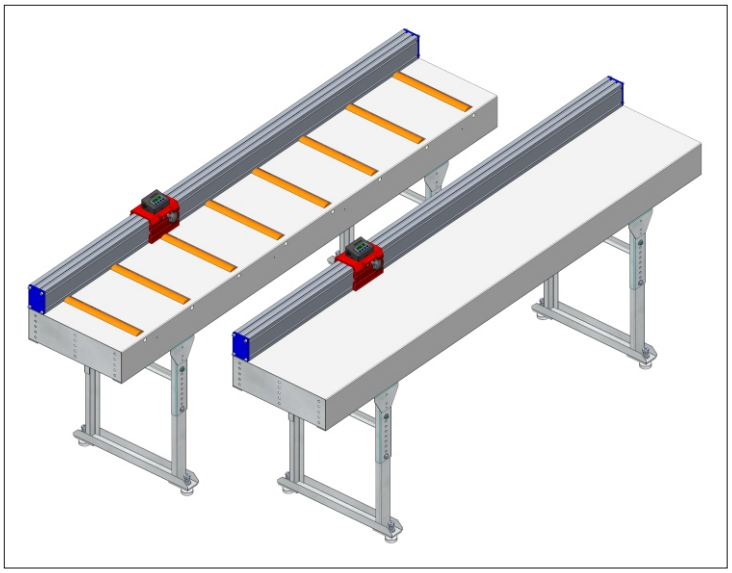
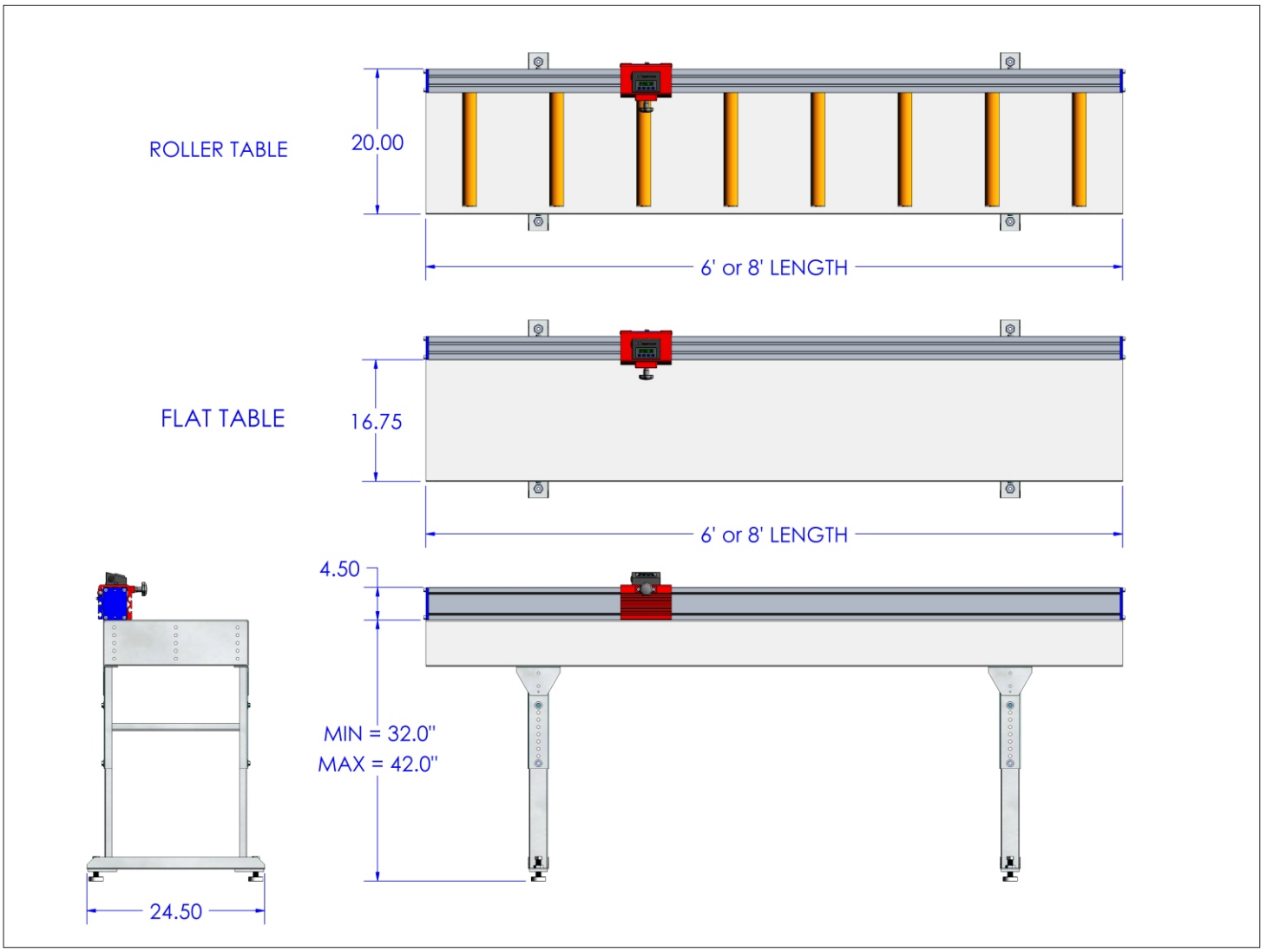
Technical Data

STOP SYSTEM WITH FLAT OR ROLLER TABLE

- Heavy Duty 12 Gauge Steel Construction
- Adjustable Height: 32 - 42 inch
- Micro Adjust Feet with Flour Anchoring
- Available Table Lengths: 6 & 8 Feet
- Combinations Available up to 28 Feet
- Roller Length: 18 inch
- Urethane Coded Rollers
- Durable Powder Coating
- Standard Colors: White & Green
- Custom Colors Available
- Saw Adapter Brackets Available





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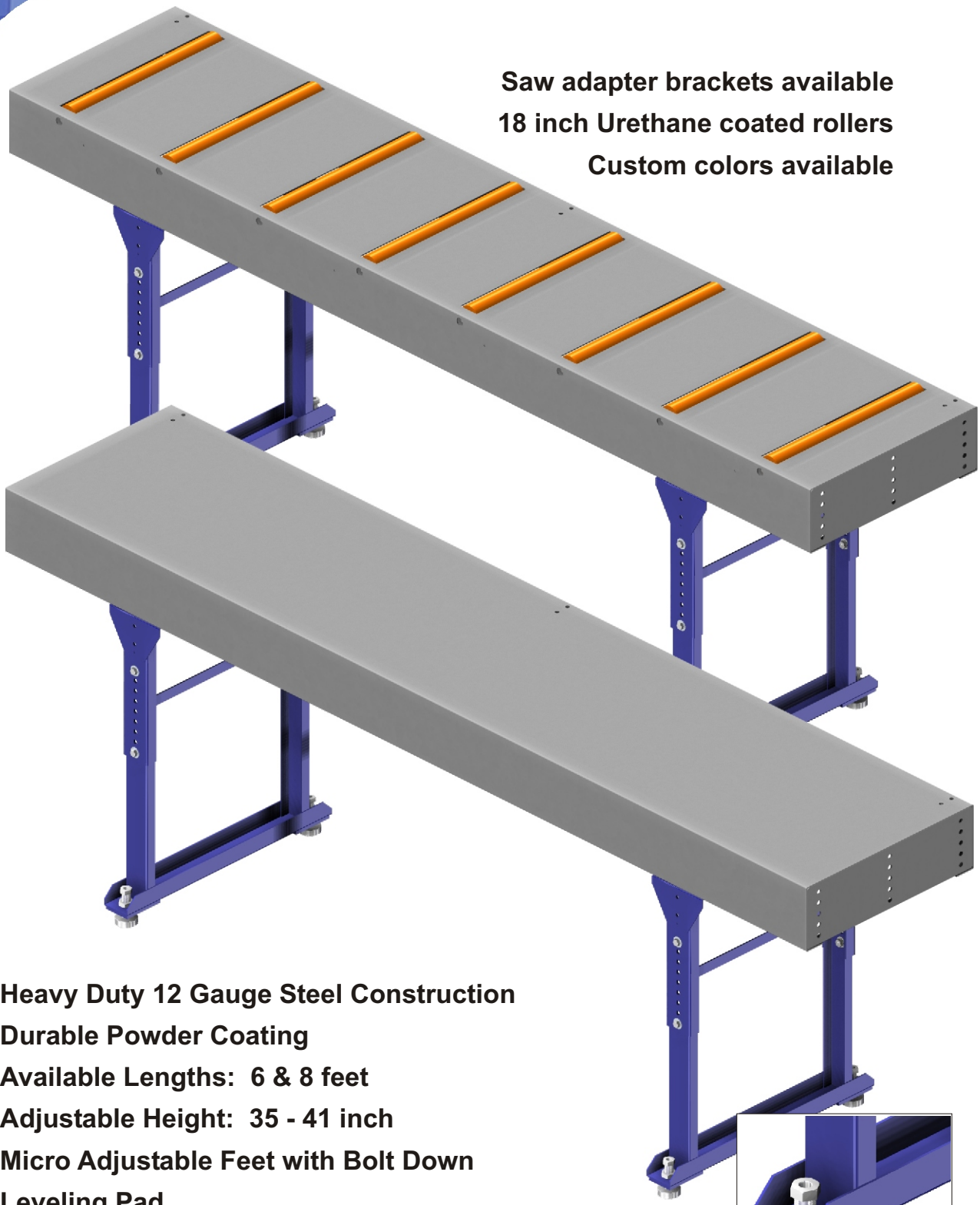
Complete Solutions for the Fenestration Industry!

Roller & Flat Tables



Saw adapter brackets available

18 inch Urethane coated rollers

Custom colors available

Heavy Duty 12 Gauge Steel Construction

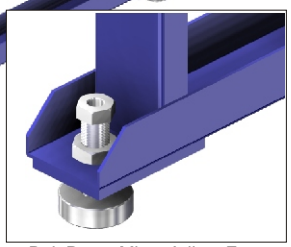
Durable Powder Coating

Available Lengths: 6 & 8 feet

Adjustable Height: 35 - 41 inch

Micro Adjustable Feet with Bolt Down Leveling Pad

Bolt together any combination of lengths



Bolt Down Micro Adjust Feet with Leveling Pads

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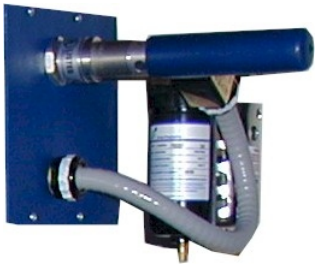
Accessories

Filter Fan Enclosure Cooler
Model: FF-018

- Provides optimum climate in enclosure
- Very low noise
- Airflow: 24 CFM
- Power Consumption: 15Watt
- User replaceable filter media



Vortex Cooler
Model: TCCK-4225

Includes water/oil filter and thermostat. The vortex cooler creates positive air pressure in the enclosure keeping dust and debris from entering air holes. The vortex cooler also emits cool air to protect your PC, controller and monitor from overheating. An electric thermostat allows the cooler to run only when the temperature exceeds a preset value to avoid wasting compressed air.

Thermal Label Printer
Model: 2742-DTLP

The optional direct thermal label printer allows the TPS^3 Positioner to print labels as the product is cut. This gives the operator quick identification of the products that are cut and the necessary information to prevent loss or mistakes at later assembly stations

Barcode Scanner
Model: SP-302/SP-370

Barcode scanner allows for quick pattern access in production environments. Also used at “Binsoft Workstations” to track products at various stages of assembly.
SP-302: with cable
SP-370: wireless

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