PANDUIT

PES400

PORTABLE EMBOSSING SYSTEM
OPERATION MANUAL

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Table of contents

NOTE: In the interest of higher quality and value, Panduit products are continually being improved and updated.
Consequently, pictures may vary from the enclosed product.

1. SETUP and INSTALLATION GUIDE
1.1 Unpacking

⚠	CAUTION

⚠ 🔵	**CAUTION! HEAVY OBJECT** **FOUR PERSON LIFT REQUIRED** **THE MACHINE & CRATE WEIGHS 210 lbs. (95 Kg).** **The Dimensions are: 33" (830 mm) X 29" (730 mm) X 24" (600 mm).** **All movement of the machine and crate should be done by a forklift; or by at least four persons, as the gross weight is approx. 210 lbs. (95 Kg).**

- The PES400 system is delivered in a wooden case.
- Insure that facility doors, lifts, hoists, etc. are adequately sized to handle the crate and machine when selecting an installation site.

Dismantle the case, with the following procedure:

• Unscrew the side upper screws to remove the top cover.		• Remove the accessories: cables, documentation, etc. • Remove the top polyurethane shell.	
• Unscrew the bottom screws to remove the side cover.		• Extract the machine from the bottom polyurethane shell (using at least **four** persons). • Remove the plastic wrap from machine.	

⚠ It is advisable to keep the box, the pallet and the protective materials for possible reuse.
NOTE: In addition to the machine, the components shown and listed below are included with the PES400.

1.2 Checking the Accessories
Before installing the machine, check that all the accessories are present and that none have been damaged during transport. If any single element has been damaged the general operation of the machine can be compromised. The following items are supplied with the Embosser:

ACCESSORIES (ITEMS INCLUDED WITH EMBOSSER)			
#	**DESCRIPTION**	**#**	**DESCRIPTION**
1	1 SOFT SIDED CASE	10	1 USB FLASH DRIVE WITH EASY-MARK PLUS SOFTWARE AND OPERATION MANUAL
2	1 EXTERNAL HOPPER WITH MULTIPLE WIDTH INSERT; AND SMALL PLATE INSERTS	11	2 KEYS FOR TECHNICAL SERVICE USE
3	1 SERIAL CABLE, 9-25 PIN	12	3 COMBINATION WRENCHES (13mm, 7mm & 5mm)
4	2 SHORT PLATE WEIGHTS 1 EXTRA WIDE PLATE WEIGHT	13	SHORT AND LONG LOADER TOP CLAMP
5	SHORT AND LONG PLATE SUPPORT BLOCKS	14	1 WIDE PLATE WEIGHT 1 MEDIUM PLATE WEIGHT 1 NARROW PLATE WEIGHT
6	GATE HEIGHT GAUGE SET	15	1 RS232 TO USB ADAPTER SERIAL PORT CABLE
7	1 ALLEN WRENCH (2.5mm)	16	TEST PLATES
8	2 MACHINE COVER KEYS	17	POWER CORD FOR 220V
9	POWER CORD FOR 110V	18	3 GUIDE RAIL SIZING BLOCKS: 1 FOR WIDE PLATES, 1 FOR MEDIUM PLATES 1 FOR NARROW PLATES

1.3 Connecting Communication Cables
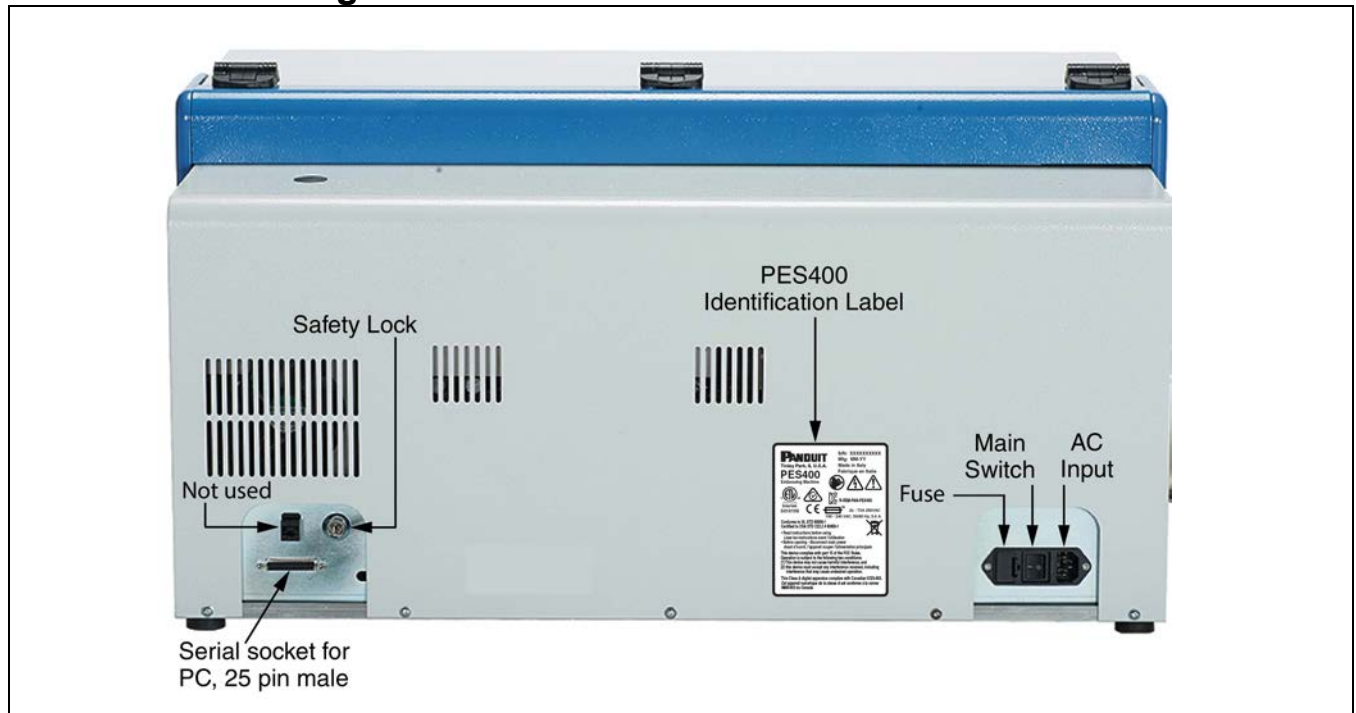
1. Safety Lock
    Safety Lock is only to be used when the machine is being serviced by a qualified professional. Machine is defaulted to protective mode disabling operation when front cover is open.
2. Serial Cable
    Connect the Serial Cable between the machine and the computer serial port (no driver needed) or USB to serial cable. Connection is limited to 9.8 feet (3 meters) max. in length.
3. USB/Serial Cable
    Connect between Serial Cable and computer USB port. Driver needed for USB to serial port.
4. AC
    Connect the AC cable to the rear input of the machine and to the proper AC source. Be sure to verify the power required.

WARNINGS AND ADVICE DURING INSTALLATION

⚠	**WARNING! To avoid electric shock the power plate protective grounding conductor must be connected to a ground circuit that conforms to the National Standard.**
	AVERTISSEMENT! Pour éviter les risques de décharge électrique, le conducteur de protection de la plaque d'alimentation doit être connecté à un circuit de mise à la terre conforme à la norme nationale.
	WARNING! Remember to connect the serial cable to the machine while it is switched off to avoid damaging the circuits.
	AVERTISSEMENT! Il est important d'éteindre la machine avant d'y connecter le câble série afin d'éviter d'endommager les circuits.

- The Identification Label attached to the rear panel contains information about the serial number, the type of machine, the necessary power supply and maximum current.
- Before switching the machine on, be sure that all the cables have been connected correctly and that the local power supply corresponds to that stated on the label.

- The label layout is as follows:

Model: PES400	
Type: Embossing Machine	
Volt: 100 – 240 VAC	
Hz: 50/60	
Imax: 5.6 A	
S/N: Serial Number	
Mfg.: Manufacture Date	
Fuse rating: 2x – T5A 250VAC	

1.4   Install Software for the USB to Serial Adapter

1.4.1 System Requirements

- Windows 10, Windows 8, Windows 7, Vista, Windows 2000 SP4 or Windows XP SP2.
- USB to Serial DB9 adapter
- Computer with available USB ports

1.4.2 Install Software for the USB to Serial Adapter (XP, Vista, 2000)

a. Insert the Flash Drive that came with the PES400 into the USB port on the target computer.
b. If the auto start runs the installation go to Step 6, if not continue.
c. Click on the My Computer icon, either on the desktop or click Start and then My Computer.
d. Double-click on the icon for the Flash Drive to display the files.
e. Find the Autorun.exe or Setup.exe file and double-click on it.
f. Select the option to install the USB to Serial Adapter you have with the Windows version you are running.
g. Connect the USB to serial cable to serial cable from embosser and USB port on computer. Reboot if prompted to reboot.

1.4.3 Windows 7, 8 and 10

    a.   Connect the USB to serial cable to serial cable from embosser and USB port on computer.

    b.   Operating system will automatically download the driver.

1.5   Install External Hopper

1. Use the 2 screws provided to mount external hopper. Place the screw heads to the outside, nuts and washers to the inside of the embosser.
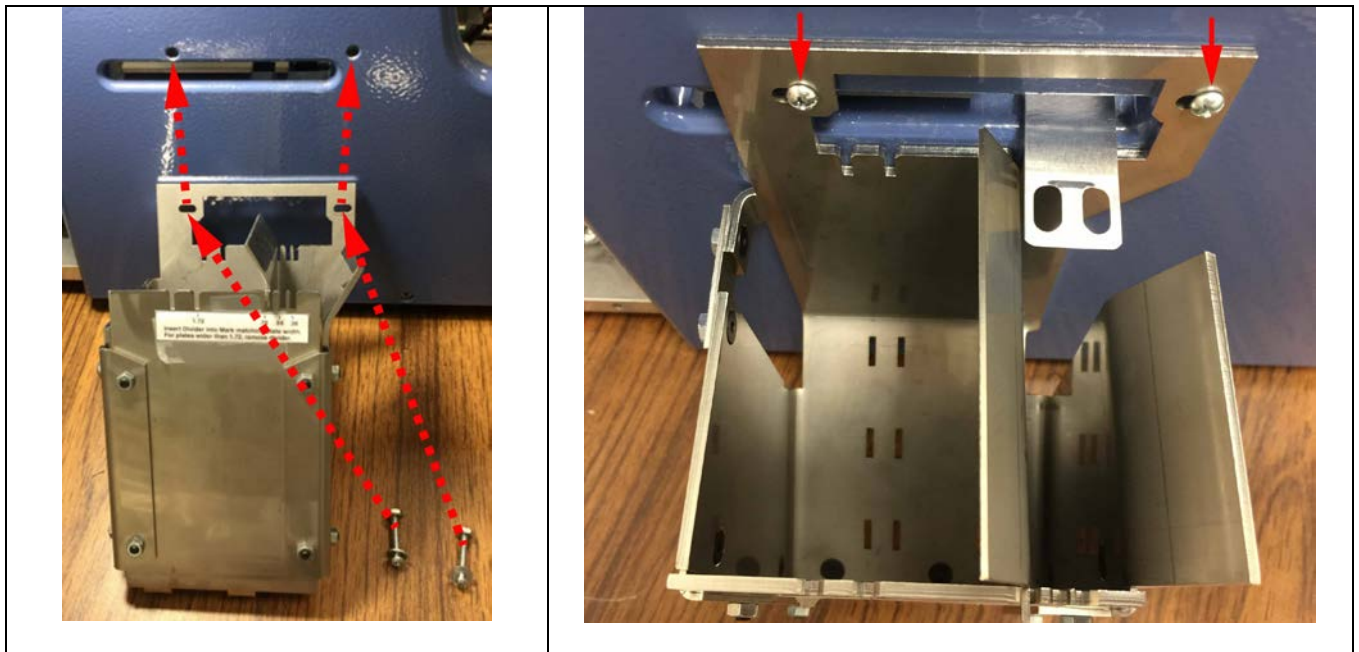
2. Slide hopper back and forth on screws to line up divider in 0.75" (19mm) slot, see [**Figure 24**], with side eject guide plate @ 0.75" (19mm) see [**Figure 23**].
3. Tighten screws to lock hopper position.

1.6   Easy-Mark Plus™ Software Installation

Version 1.2 or higher is required to operate the PES400 Embossing System
SYSTEM REQUIREMENTS:

-    **Windows XP, Vista, 7, 8, 9, or 10**
-    **32 or 64 bit operating systems**
-    **Microsoft .NET Framework 4.0 or higher**
-    **300MB of hard drive space and 2 GB of Memory**
-    **USB port**
-    **Mouse or compatible pointing device**
-    **Keyboard**

Perform the following steps to install the Easy-Mark Plus™ labeling software:

1. Insert the provided USB Flash Drive into an available USB port on the destination PC. NOTE: DO NOT remove the label from USB drive.

2. Using Windows Explorer, navigate to the folder "Removable Disk X:\Easy-Mark Plus" (substituting the "X" with the assigned letter of the USB drive).
3. In the folder, double-click on the program *Easy-Mark Plus_setup.exe*.
4. When prompted, select your preferred language for installation instructions, and click 'OK' to proceed.

5. Follow the prompts in the on-screen installation guide, to finish the installation.

When the installation is completed you will see the Easy-Mark Plus™ icon on your desktop and the new Panduit "Easy-Mark Plus" folder in the **Start-Programs** list.

NOTE: *Save the Flash Drive packaging, as it contains the Serial number, which will be required for activation.*

2. INTRODUCTION

The Panduit PES400 is an automatic embossing system for metal marker plates.
It is computer operated and runs with Panduit Easy-Mark Plus™ software. (e.g.: PC compatible).
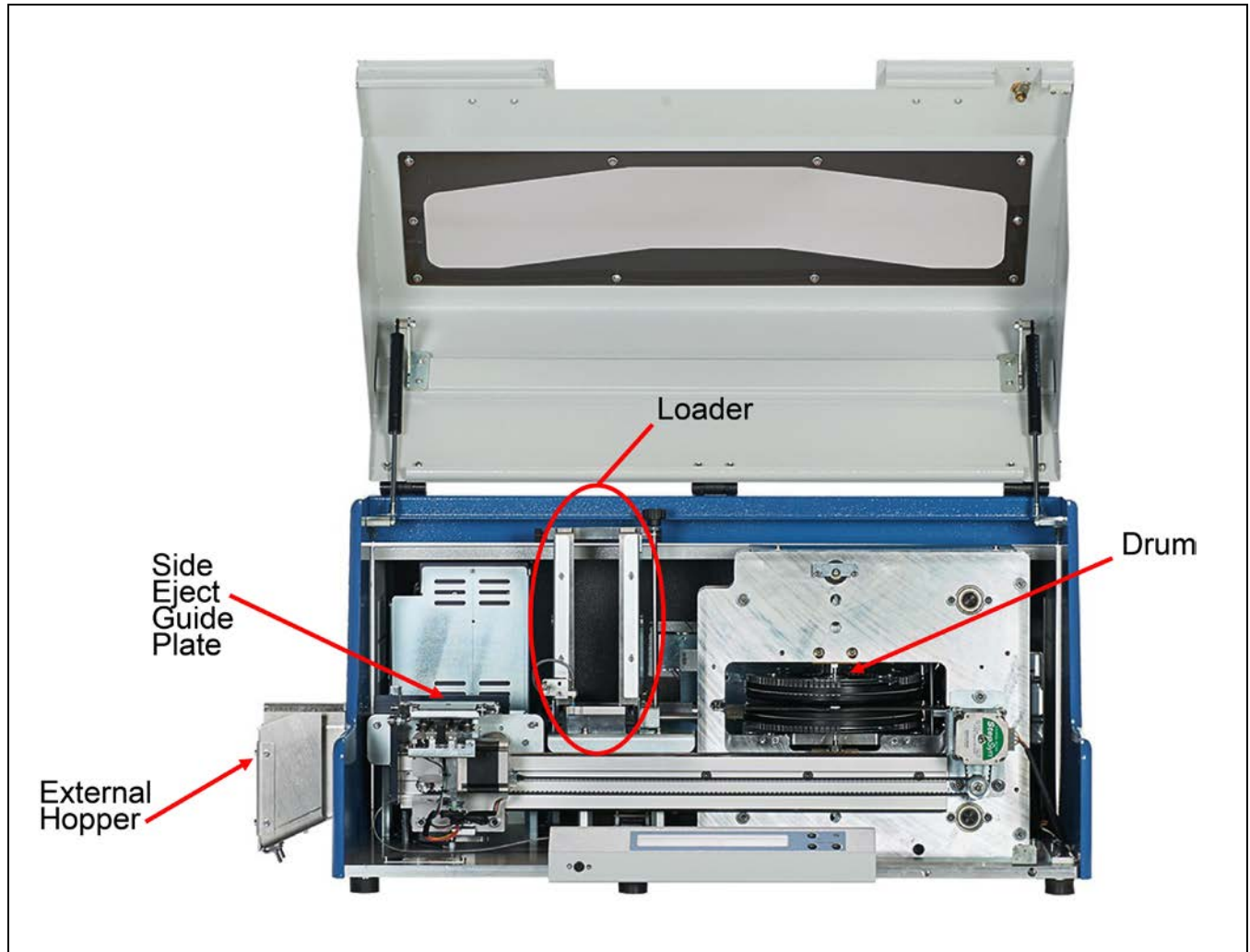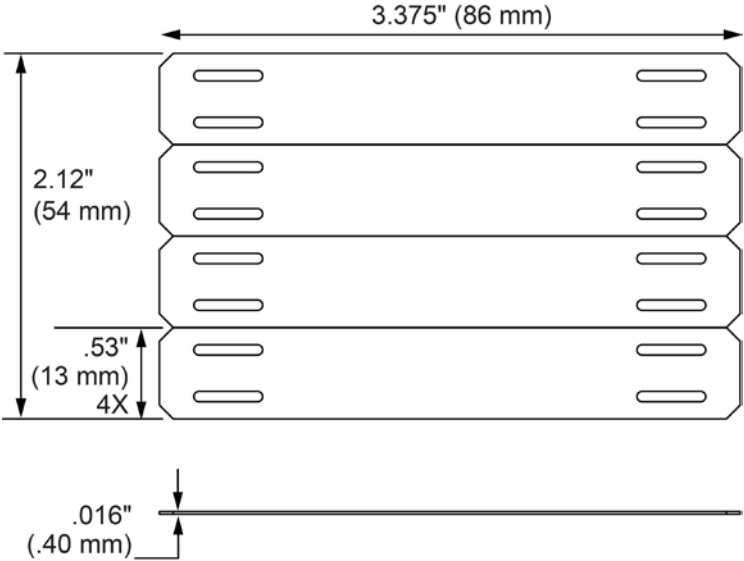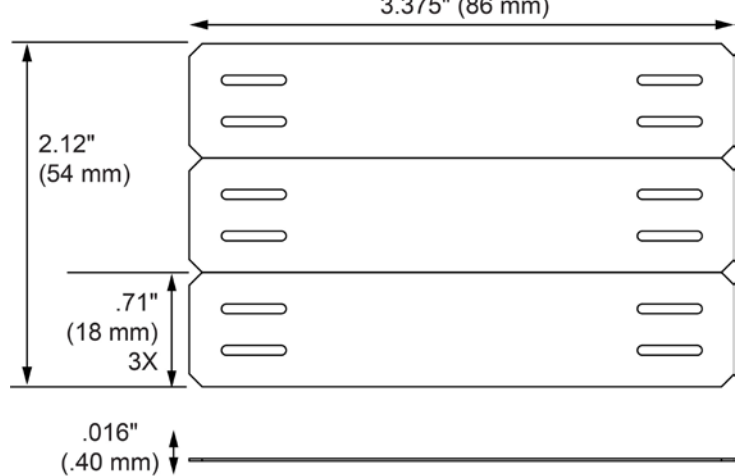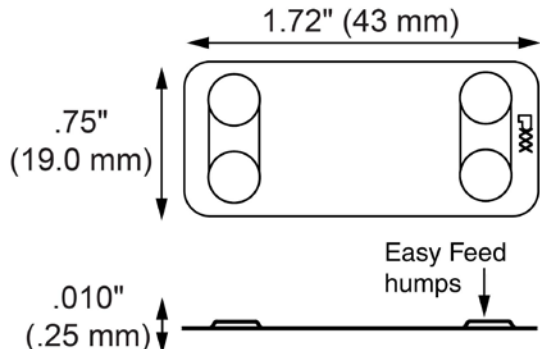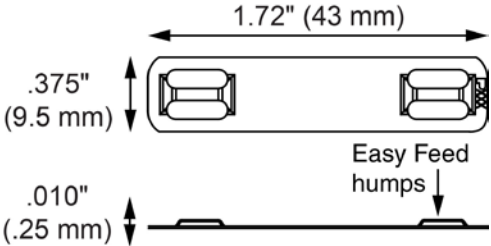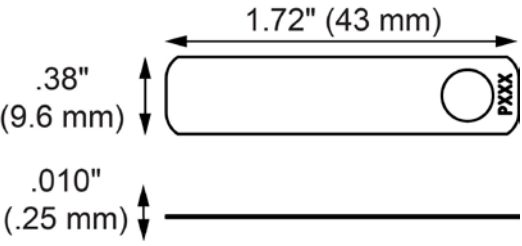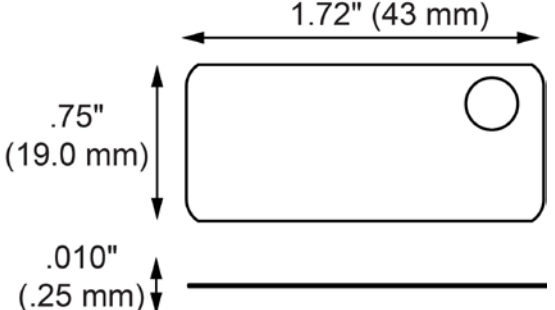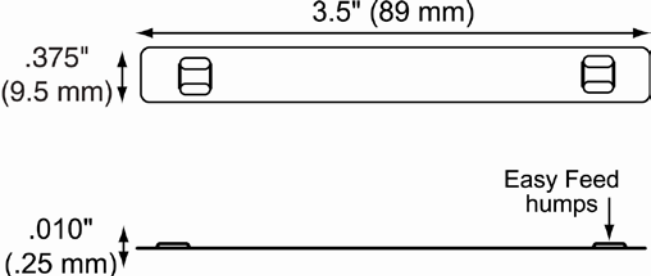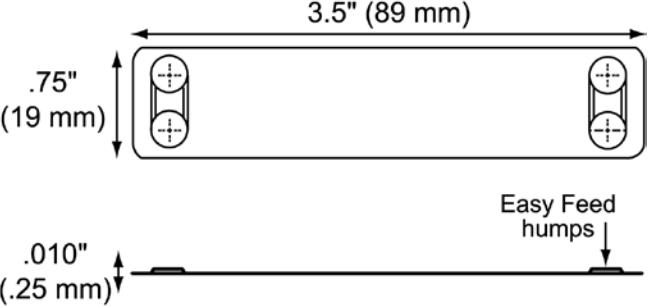
The PES400 has the following characters available in two sizes (3mm and 5mm font):
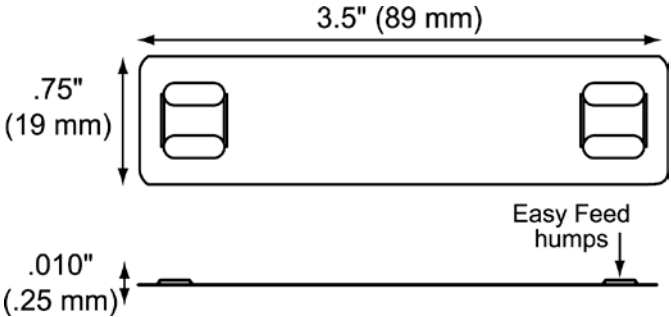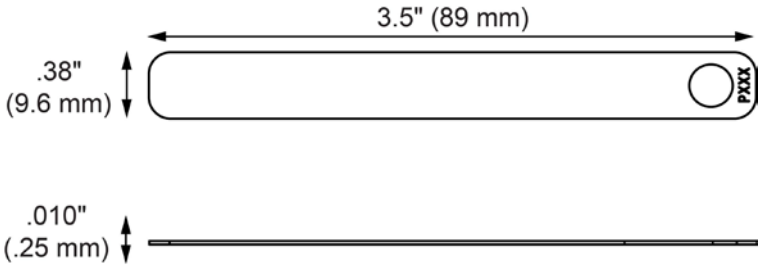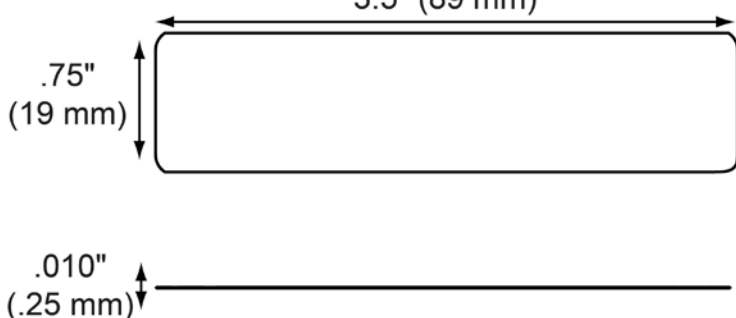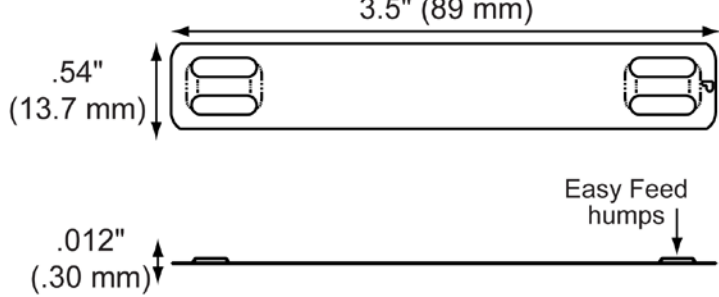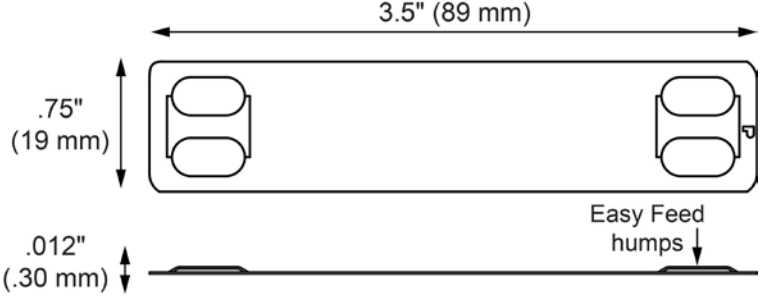
A through Z, numbers 0 through 9, and special characters:

@ # % & * ( ) - + : , . / '
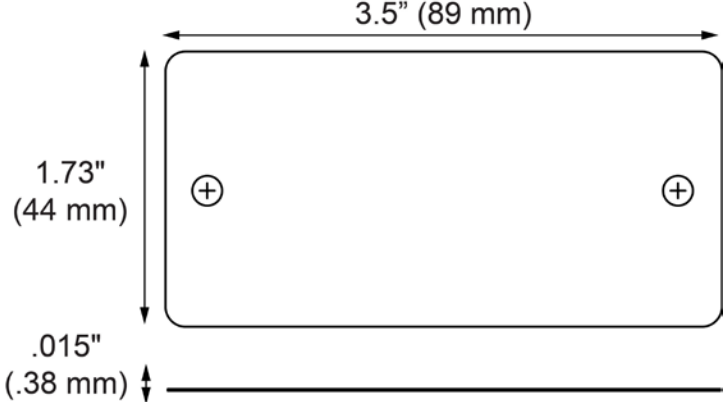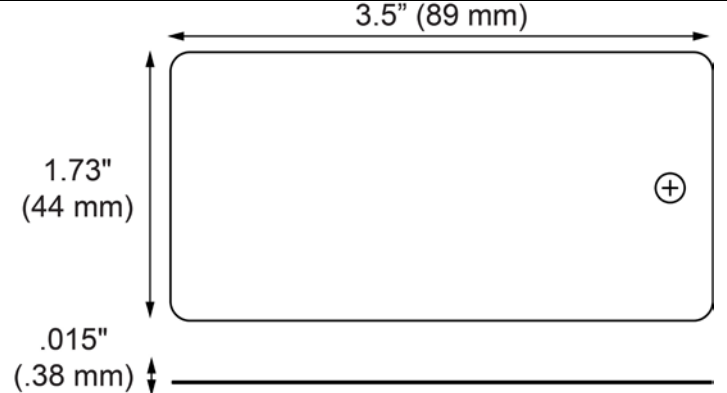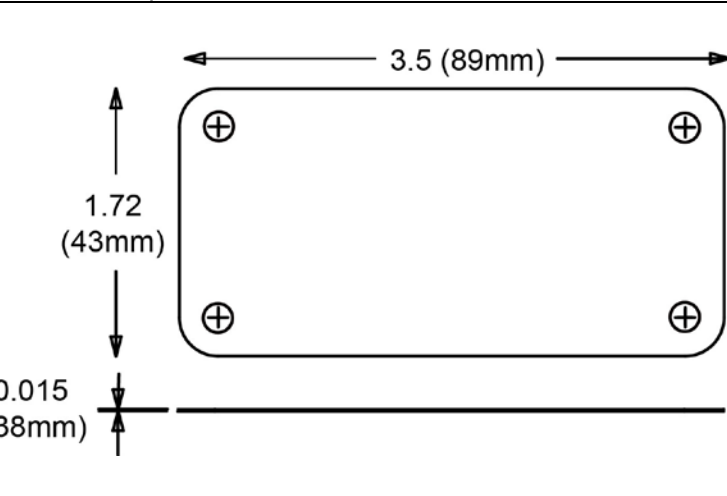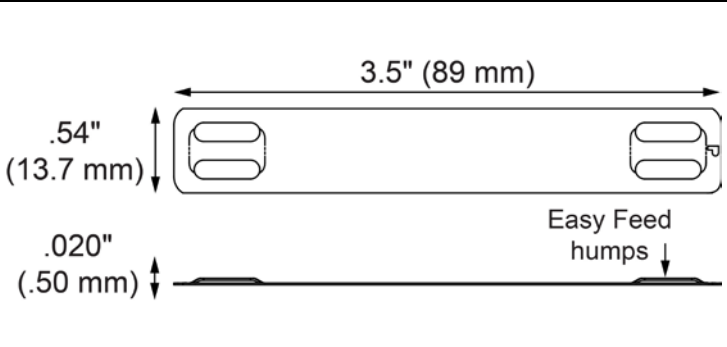
The Panduit PES400 machine stamps exclusively the Panduit Metal Marker Plates and Tags shown below. *Visit www.panduit.com for the latest information.*

MMP337W53-MAL-4 3mm Font: 20 Characters Max. per line, 8 lines max. 5mm Font: 14 Characters Max. per line, 8 lines max. Plate Thickness: .015" - .016" (.38mm-.40mm) Material: ALUM	3.375" (86 mm) 2.12" (54 mm) .53" (13 mm) 4X .016" (.40 mm)
MMP337W71-MAL-3 3mm Font: 20 Characters Max. per line, 9 lines max. 5mm Font: 14 Characters Max. per line, 9 lines max. Plate Thickness: .015"-.016" (.38mm-.40mm) Material: ALUM	3.375" (86 mm) 2.12" (54 mm) .71" (18 mm) 3X .016" (.40 mm)
MMP172-M / M316 3mm Font: 12 Characters Max. per line, 3 lines max. 5mm Font: 8 Characters Max. per line, 3 lines max. Plate Thickness: .010" (.25mm) Material: 304 / 316	1.72" (43 mm) .75" (19.0 mm) Easy Feed humps .010" (.25 mm)

MMP172W38-M / M316 3mm Font: 8 Characters Max. per line, 1 line max. 5mm Font: 6 Characters Max. per line, 1 line max. Plate Thickness: .010" (.25mm) Material: 304 / 316	1.72" (43 mm) .375" (9.5 mm) .010" (.25 mm) Easy Feed humps
MT172W38-M 3mm Font: 12 Characters Max. per line, 1 line max. 5mm Font: 8 Characters Max. per line, 1 line max. Plate Thickness: .010" (.25mm) Material: 304	1.72" (43 mm) .38" (9.6 mm) .010" (.25 mm) PXXX
MT172-M / M316 3mm Font: 12 Characters Max. per line, 3 lines max. 5mm Font: 8 Characters Max. per line, 3 lines max. Plate Thickness: .010" (.25mm) Material: 304 / 316	1.72" (43 mm) .75" (19.0 mm) .010" (.25 mm)
MMP350W38-M / M316 3mm Font: 25 Characters Max. per line, 3 lines max. 5mm Font: 18 Characters Max. per line, 1 line max. Plate Thickness: .010" (.25mm) Material: 304 / 316	3.5" (89 mm) .375" (9.5 mm) .010" (.25 mm) Easy Feed humps
MMP350-M / M316 3mm Font: 25 Characters Max. per line, 3 lines max. 5mm Font: 18 Characters Max. per line, 3 lines max. Plate Thickness: .010" (.25mm) Material: 304 / 316	3.5" (89 mm) .75" (19 mm) .010" (.25 mm) Easy Feed humps

MMP350H-M / M316 3mm Font: 22 Characters Max. per line, 3 lines max. 5mm Font: 16 Characters Max. per line, 3 lines max. Plate Thickness: .010" (.25mm) Material: 304 / 316	3.5" (89 mm) .75" (19 mm) Easy Feed humps .010" (.25 mm)
MT350W38-M316 3mm Font: 29 Characters Max. per line, 1 line max. 5mm Font: 20 Characters Max. per line, 1 line max. Plate Thickness: .010" (.25mm) Material: 316	3.5" (89 mm) .38" (9.6 mm) PXXX .010" (.25 mm)
MT350-M / M316 3mm Font: 29 Characters Max. per line, 3 lines max. 5mm Font: 20 Characters Max. per line, 3 lines max. Plate Thickness: .010" (.25mm) Material: 304 / 316	3.5" (89 mm) .75" (19 mm) .010" (.25 mm)
MMP350HW54-MAL 3mm Font: 22 Characters Max. per line, 2 lines max. 5mm Font: 16 Characters Max. per line, 2 lines max. Plate Thickness: .012" (.30mm) Material: ALUM	3.5" (89 mm) .54" (13.7 mm) Easy Feed humps .012" (.30 mm)
MMP350H-MAL 3mm Font: 22 Characters Max. per line, 3 lines max. 5mm Font: 16 Characters Max. per line, 3 lines max. Plate Thickness: .012" (.30mm) Material: ALUM	3.5" (89 mm) .75" (19 mm) Easy Feed humps .012" (.30 mm)

MMP350W17-M 3mm Font: 25 Characters Max. per line, 7 lines max. 5mm Font: 18 Characters Max. per line, 7 lines max. Plate Thickness: .015"-.016" (.38mm-.40mm) Material: 304	3.5" (89 mm) 1.73" (44 mm) .015" (.38 mm)
MT350W17-M 3mm Font: 29 Characters Max. per line, 7 lines max. 5mm Font: 20 Characters Max. per line, 7 lines max. Plate Thickness: .015"-.016" (.38mm-.40mm) Material: 304	3.5" (89 mm) 1.73" (44 mm) .015" (.38 mm)
MT350W17-D-4HL 3mm Font: 25 Characters Max. per line, 7 lines max. 5mm Font: 18 Characters Max. per line, 7 lines max. Plate Thickness: .015"-.016" (.38mm-.40mm) Material: 304	3.5 (89mm) 1.72 (43mm) 0.015 (.38mm)
NCMP350W54T20-AL 3mm Font: 22 Characters Max. per line, 2 lines max. 5mm Font: 16 Characters Max. per line, 2 lines max. Plate Thickness: .020" (.50mm) Material: ALUM	3.5" (89 mm) .54" (13.7 mm) .020" (.50 mm) Easy Feed humps

3. SYSTEM SPECIFICATIONS

3.1 Electrical Specification

	PES400
Power Supply	100-240 VAC 50/60Hz
	5.6 A max.
Use only properly rated supplied cords by Panduit. Install only per National Regional Electrical Codes and Standards.	

3.1.1 Equipment Classification and Standard Reference

CISPR 32:2015 COR 1:2016, Class A
AS/NZS CISPR 32:2015, Class A - Electromagnetic Compatibility Of Multimedia Equipment - Emission Requirements
FCC 47 CFR, Part 15:2017, §15.107 and §15.109, Class A, test method: ANSI C63.4-2014 - Radio Frequency Devices
ICES-003, Issue 6:2016 - Information Technology Equipment (Including Digital Apparatus) – Limits and Methods of Measurement

KN 61000-6-4:2012
KN 61000-6-2:2012
KN 61000-3-3:2014
KN 61000-3-2:2012

IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
UL STD 60950-1:2007 Ed.2 +R:14Oct2014 - Information Technology Equipment Safety - Part 1: General Requirements
CSA STD C22.2#60950-1-07:2007 Ed.2 - Information Technology Equipment Safety - Part 1: General Requirements (R2016)

3.1.2 Working Condition

	PES400 Listings in ( ) are metric.
Operating Temperature	+50° to +104° F (+10° to +40° C)
Relative Humidity	20% to 85%
Storing Temperature	+32° to +122° F (0° to +50° C)

3.1.3 Dimensions and Weight

	PES400 Listings in ( ) are metric.
Height	16.5" (42cm)
Width	35.8" (91cm)
Depth	23.6" (60cm)
Weight [Net]	155 lbs. (70 Kg)

3.1.4 Production Capacity

	PES400
Loader Capacity	Capacity 200 Plates (0.5mm Plate Thickness)
External Hopper Capacity	Capacity 100 Plates
Plate Production Rate	350 Plates per hour, 40 Character Plate

3.2   Safety Regulations and Operating Precautions

⚠️	• The machine should be used in a closed room protected from dust and excessive humidity. The machine should be positioned in such a way that its distance from the walls, doors, windows, other machines or working positions guarantees immediate access in case of emergency, maintenance or repairs. • *La machine doit être installée dans un local fermé, à l'abri de la poussière et de l'humidité excessive. Elle doit être suffisamment éloignée des murs, des portes, des fenêtres, des autres machines et des postes de travail pour assurer un accès immédiat en cas d'urgence, d'entretien ou de réparation.*
	• Do not install this machine in the neighborhood of other operating machines which produce dust since dust can deposit itself inside the machine and cause damage to the internal electrical parts • *Ne pas installer cette machine à proximité d'autres machines en fonction qui produisent de la poussière : celle-ci peut se déposer à l'intérieur de la machine et endommager les pièces électriques internes.*
⚠️	• The machine is furnished with special safety guards which protect the operator from coming into contact with the mechanical and electrical parts inside the machine. Only those persons who are specialized in repairs and maintenance and who have been authorized should have access to the above mentioned parts. Simple general maintenance can be safely performed by the operator so long as the machine has been stopped and the electrical power supply has been disconnected. • *La machine est équipée de dispositifs de sécurité spéciaux qui empêchent l'opérateur d'entrer en contact avec les pièces mécaniques et électriques à l'intérieur de la machine. Ces pièces ne doivent être accessibles qu'aux personnes autorisées et spécialisées en réparation et en entretien. L'opérateur peut effectuer l'entretien général en toute sécurité si la machine est éteinte et que l'alimentation électrique est coupée.*
⚠️	• The machine has been made with fire resistant materials thus diminishing the risk of fire. Short circuit protection has been implemented so that the power supply is immediately isolated thus avoiding unwanted current absorption from the external power line. • *La machine est fabriquée en matériaux résistants au feu afin de réduire les risques d'incendie. Elle est dotée d'une protection coupant immédiatement l'alimentation électrique en cas de courts-circuits afin d'éviter l'absorption indésirable de courant provenant de la ligne électrique extérieure.*
	• Do **Not** place liquids on the machine cover since it is not waterproof. It is particularly important to avoid high humidity conditions which would add to the wear and corrosion of the mechanical parts. • ***Ne pas*** *placer de liquides sur le couvercle de la machine, car il n'est pas étanche. Il est essentiel d'éviter les conditions d'humidité élevée qui pourraient contribuer à l'usure et à la corrosion des pièces mécaniques.*

The machine has labels that indicate any danger areas. **The meanings of these labels are explained below.** *La machine est munie d'étiquettes identifiant toutes les zones de risque.* *L'explication de ces étiquettes se trouve ci-dessous.*

Panduit cannot be held responsible for the consequences of not abiding **by these safety rules when using the machine.** **Therefore, in the case of breakdown, please call for Technical Assistance.** *Panduit ne saurait être tenu responsable des conséquences du non-respect* *de ces règles de sécurité lors de l'utilisation de la machine.* *Il est préférable, en cas de panne, de communiquer avec l'assistance technique.*

UNDER NO CIRCUMSTANCES REMOVE OR MODIFY THE INTERNAL COMPONENTS.		
NE RETIRER NI MODIFIER EN AUCUN CAS LES COMPOSANTS INTERNES.		

|		
	DO NOT REMOVE SAFETY GUARD These safety guards should be removed only by specialized and authorized technical persons who take care to adopt all security measures to avoid any risk of danger and injury. ***NE PAS ENLEVER LES DISPOSITIFS DE SÉCURITÉ*** *Les dispositifs de sécurité ne doivent être retirés que par des techniciens autorisés et spécialisés qui s'appliquent à adopter toutes les mesures de sécurité afin d'éviter tout risque et toute blessure.*	
		CAUTION: BE CAREFUL OF YOUR HANDS! **RISK OF BEING CRUSHED OR STRUCK** The machine, plus the wooden crate weighs 210 lbs. (95 Kg) and the net weight is 155 lbs. (70 Kg); therefore, all lifting should be done with **four** persons present. ***MISE EN GARDE : PRENDRE GARDE À SES MAINS!*** ***RISQUE DE S'ÉCRASER OU SE COINCER LES DOIGTS*** *La machine et sa caisse en bois ont un poids total de 95 kg (210 lb) et la machine elle-même pèse 70 kg (155 lb); elle doit donc être déplacée par quatre personnes.*
	DANGER! HIGH VOLTAGE Do not perform any maintenance work while the machine is connected to the power supply. To replace a fuse or do internal maintenance, disconnect the power supply. ***DANGER! HAUTE TENSION*** *Ne pas effectuer de travaux d'entretien lorsque la machine est connectée à l'alimentation électrique. Pour remplacer un fusible ou effectuer un entretien à l'intérieur, couper l'alimentation.*	
	ATTENTION! MOVING MACHINE COMPONENTS If any maintenance work has to be done the technician must disconnect the power supply and work on the machine only when it has been stopped. ***ATTENTION! COMPOSANTS DE MACHINE EN MOUVEMENT*** *Le technicien doit éteindre la machine et couper l'alimentation électrique avant d'effectuer des travaux d'entretien.*	
	ATTENTION! DANGER The machine when at work has several moving units. Do not work on the inside of the machine. Do not remove the cover or guards except for the front cover which is used to load the plates. ***ATTENTION! DANGER*** *Lorsqu'elle est en fonction, la machine comprend plusieurs unités en mouvement.* *Ne pas travailler à l'intérieur de la machine.* *Ne pas retirer le couvercle ou les dispositifs de sécurité, excepté le couvercle frontal pour charger les plaques.*	
	GROUNDED (EARTHED) CABLES This symbol indicates that all the connected cables have been grounded (earthed). ***CÂBLES MIS À LA TERRE*** *Ce symbole indique que tous les câbles connectés sont reliés à la terre.*	

4. MACHINE SETUP FOR PRODUCING PLATES

*Easy-Mark Plus™ version 1.2 or higher, also located on the provided USB Drive, is required to operate the PES400 Embossing System.

4.1 Quick Start Steps for Changing Plate Sizes and Embossing

☐ Unlock cover with cover key and open machine cover.

☐ Remove the top clamp by loosening both thumbscrews. see [**Figure 1**] on [**Page 18**].

☐ Remove the top weight(s) [**Figure 1**]. *(For 1.72" (43mm) wide plates, complete Step 4.2.4 on* [**Page 18**] *first.)*

☐ Remove any remaining plates. *(For 1.72" (43mm) wide plates, complete Step 4.2.4 on* [**Page 18**] *first.)*

☐ Loosen the right-hand side knob and slide the right-hand side wall to open the loader. [**Figure 1** and **Figure 5**]

☐ Change the Plate Support Block if needed, Step 4.2.5 on [**Page 19**] to determine correct plate support block.

☐ Put correct top clamp on and tighten.

☐ Adjust the Gate Height [**Page 23**].

☐ Remove top clamp.

☐ Position Guide Rails [**Page 26**].

☐ Load the plates [**Page 28**] with Easy Feed Humps up.

☐ Put the top weight on [**Figure 20**].

☐ Put the top clamp back on and tighten.

☐ Align the ***back edge*** of Side Eject Guide Plate [**Page 28**].

☐ Close machine cover.

☐ Adjust the insert of the external hopper to corresponding slot or use corresponding insert [**Figure 24**] on [**Page 30**].

☐ Turn on PES400 [**Page 31**].

☐ Run Easy-Mark Plus [**Page 31**]. ******Version 1.2 or higher required******

☐ Emboss one plate [**Page 34**] to review if embossing force adjustment [**Page 35**] is needed.

☐ If any error happens, check the Error Codes on [**Page 38**] to debug the issue.

Table 1   Accessories Table

NOTE: Dimensions in parentheses ( ) are mm.

Plates	Plate Height (in)	Guide Rail Size Block (Figure 16)	Plate Width (in)	Plate Support Block & Top Clamp	Top Weight (Figure 20)	Hopper Divider Position and Inserts
MMMP350W38-M, MMP350W38-M316, MT350W38-M316	.38" (9.6)	Narrow	3.5" (89)	Long	Narrow	.38" (9.6)
MMP172W38, MT172W38-M			1.72" (43)	Short	Short	Divider @ .75" (19), using Insert .38" x 1.72" (9.6 x 43)
MMP350HW54-MAL, NCMP35W54T20-AL	.54" (13.7)	Medium	3.5" (89)	Long	Medium	.54" (13.7)
MMP350-M, MMP350-M316, MMP350H-M, MMP350H-M316, MMP350H-MAL, MT350-M	.75" (19)	Wide	3.5" (89)	Long	Wide	.75" (19)
MMP172-M, MT172-M,			1.72" (43)	Short	2 Short	Use Insert .75" x 1.72" (19 x 43)
MMP350W17-M, MT350W17-M, MT350W17-D-4HL	1.72" (43)	None 1/16" (1.6mm) clearance	3.5" (89)	Long	Extra-Wide	1.72" (43)
MMP337W53-MAL-4, MMP337W71-MAL-3	2.12" (54)		3.37" (86)	Long	Extra-Wide	Not Needed

Plate Width

Plate Height
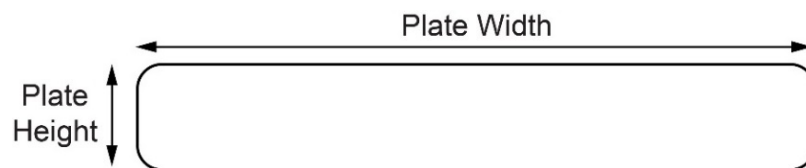
4.2 Detailed Setup Instructions

4.2.1 Remove Top Clamp
Loosen thumbscrews at both ends of top clamp and slide clamp off loader.

4.2.2 Remove Top Weights
a. Lift the top weight out of the loader.
b. For 1.72" (43mm) wide plates the weight is not accessible. Remove the weight after moving the RH side wall in Step 4.2.4 [**Figure 5**]. Note that 1.72" x 0.75" (43mm x 19mm) will have 2 identical weights.
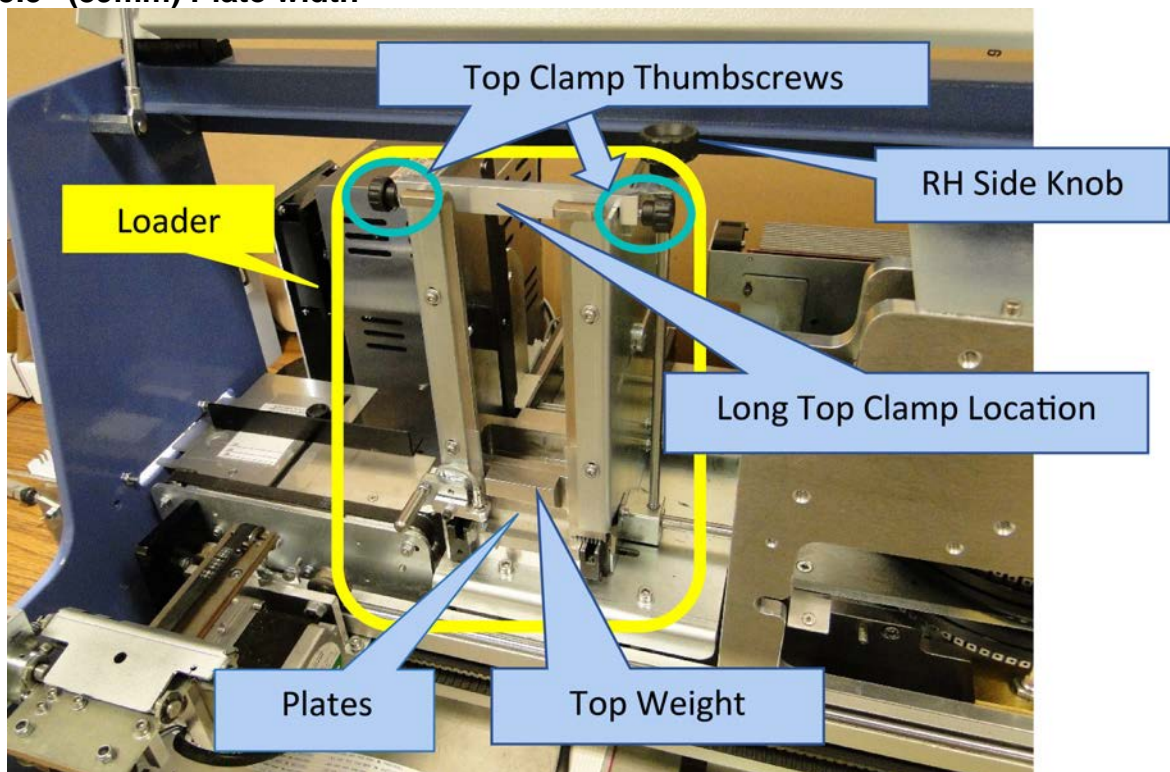
4.2.3 Remove Plates
a. Remove any plates remaining in the loader and place in original packaging to prevent damage. *(For 1.72" (43mm) wide plates, complete Step 4.2.4 first)*
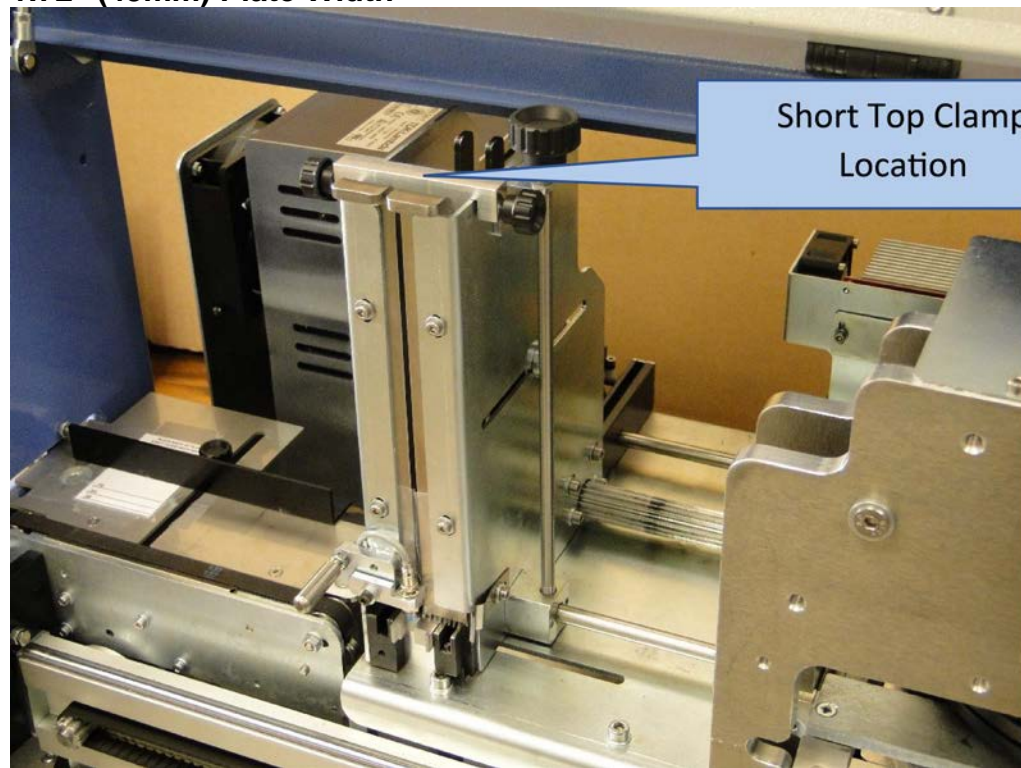
4.2.4 Move RH Side Wall
a. Loosen RH Side Knob [**Figure 1**] and move right hand side wall out of the way [**Figure 5**] by pushing on the bottom of the wall assembly.
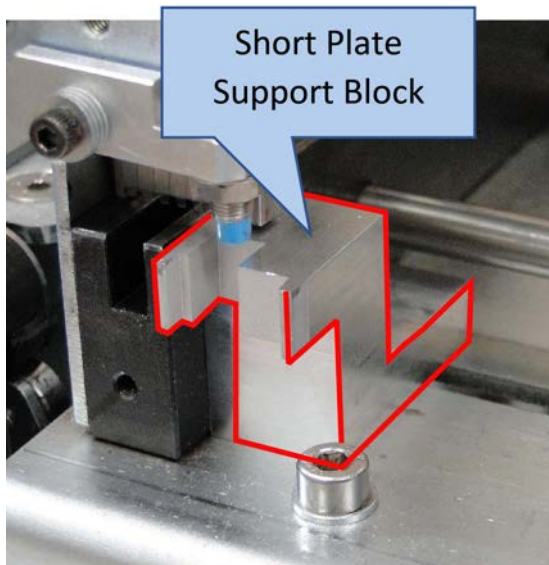
Figure 1
3.5" (89mm) Plate width
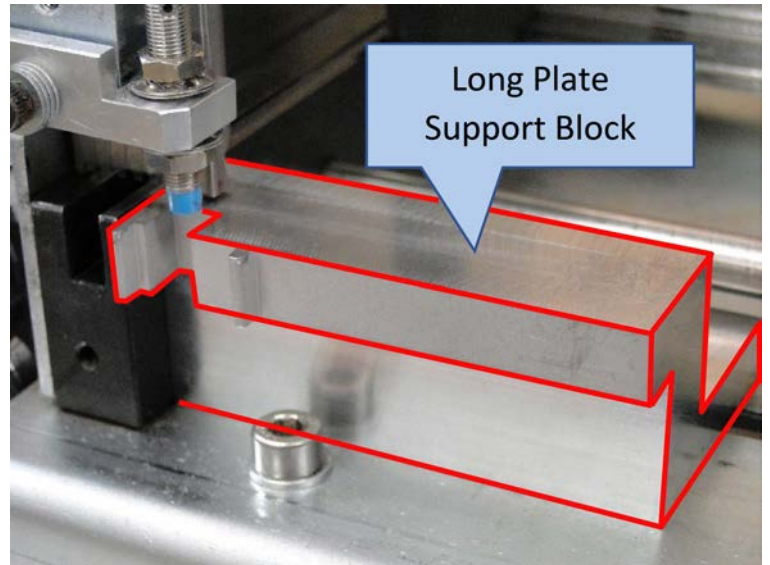
Figure 2
1.72" (43mm) Plate Width

4.2.5 *Plate Support Block Changeover*

    a. Find the correct Plate Support Block from [**Table 1**], [**Figure 3**] and [**Figure 4**], for the embossed marker plate.

    b. Loosen RH Side Knob [**Figure 1**] and move right hand side wall out of the way [**Figure 5**] by pushing on the bottom of the wall assembly.

    c. Loosen thumbscrew underneath plate support block reaching through side eject plate [**Figure 6**].

    d. For easier access, slide the plate support block right (from top side), then remove thumbscrew with washer and Plate Support Block.

    e. Remove thumbscrew(s) from Plate Support Block to be inserted.

    f. Hold a thumbscrew in slot and align plate support block to the right of the guide slot [**Figure 7**]. Insert thumbscrew into the bottom of the block, but do not tighten fully [**Figure 8**].

    g. Slide the block until snug against left gate, then tighten fully.

    h. Slide right hand side wall until it is snug against the support block and tighten RH Side Knob.

    i. Ensure top of plate support block is level with side supports. [**Figure 9**] and [**Figure 10**]

Figure 3
Short Plate Support Block Installed

Figure 4
Long Plate Support Block Installed

Figure 5
RH Side Wall moved out of the way
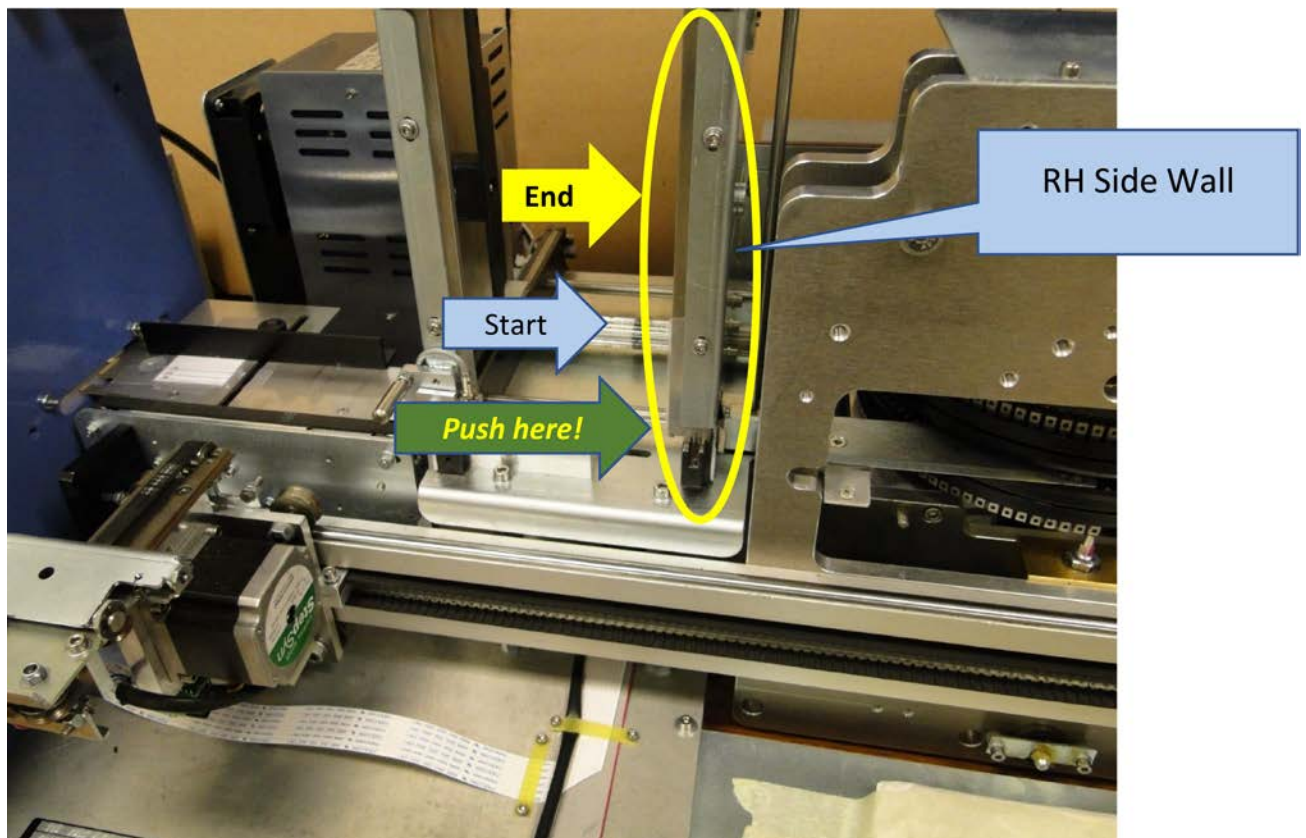
Figure 6
Reaching under loader to reach Long Plate Support Block thumbscrews

Figure 7
Placing Thumbscrew

Figure 8
Aligning Plate Support Block

Figure 9
Top surfaces of Short Support Plate and Side Rails aligned

Figure 10
Top Surfaces of Long Support Plate and Side Rails aligned
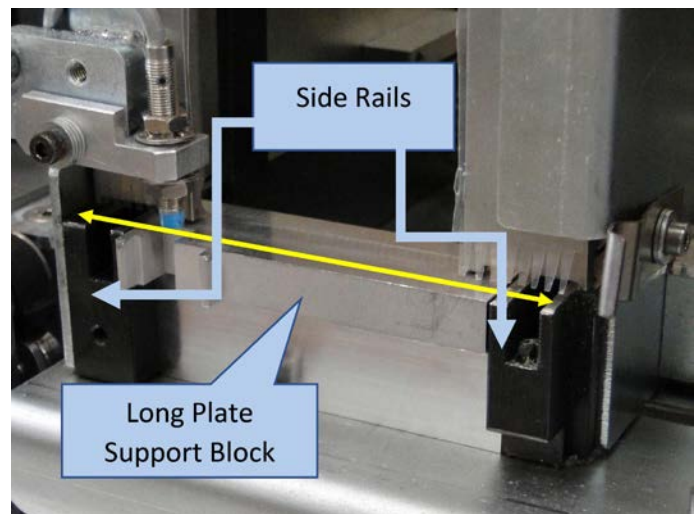
4.2.6 Install Top Clamp

a. Install top clamp between gates and Plate Height Guide Rails. See **Figure 11** below.

Figure 11
Top Clamp Placement
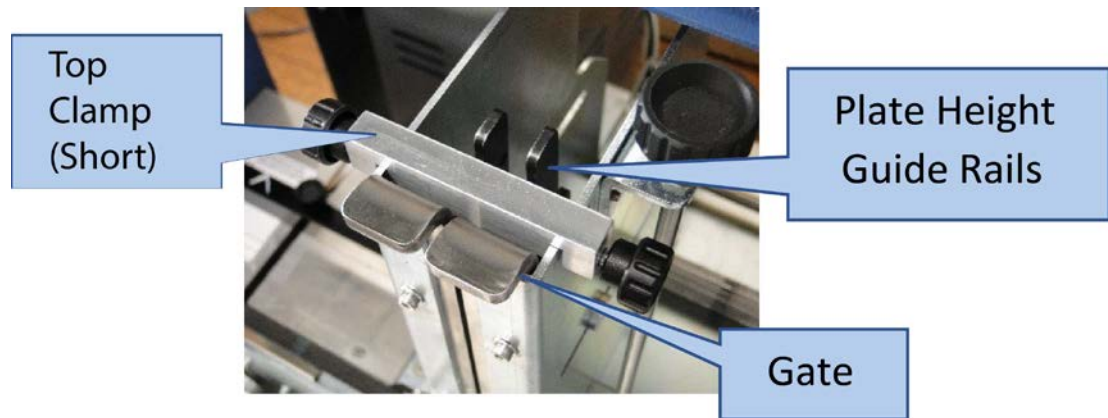
4.2.7. Gate Height Adjustment

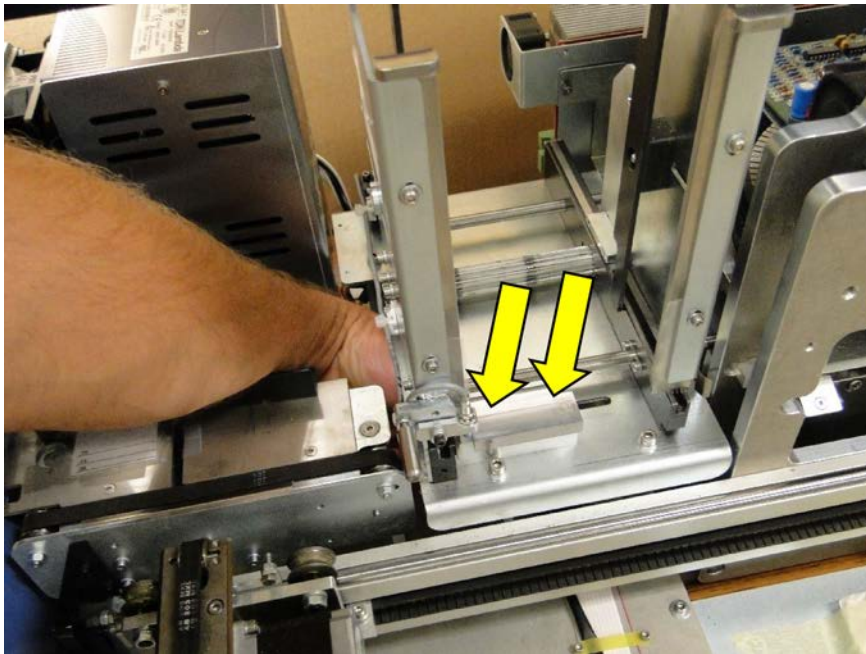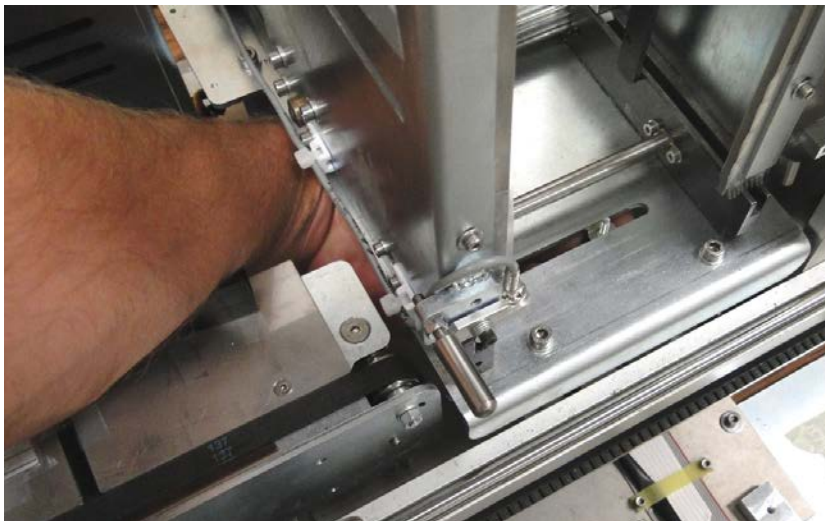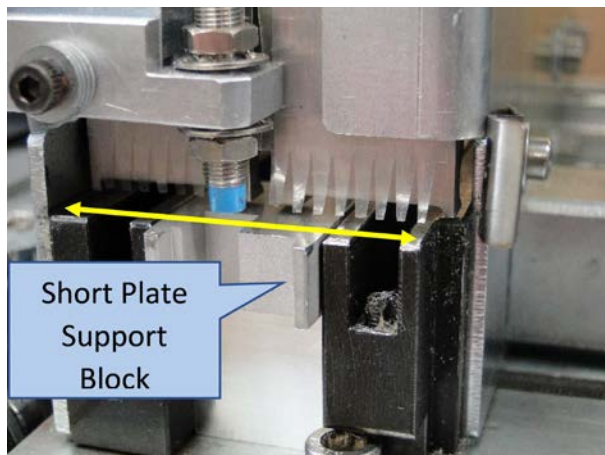a. Loosen the 4 gate screws by 3/4 turn (or until gate moves freely up and down). Use 2.5 mm Allen wrench. [**Figure 15**]
b. Insert feeler gauge matching recommended plate gate height, see [Table 2]; under both feet of gate [**Figure 12**], [**Figure 13**] and [**Figure 14**].
c. Firmly press gate down onto gauge so both feet are level [**Figure 15**] while tightening gate screws to snug (15 in-lbs).
d. Ensure gate brush is in proper location. The bottom of the gate brush should lightly touch the top of the side rails.
e. Check correct gate height by re-inserting the gauge under both feet. The gauge used should go in.
f. Then attempt to insert the gauge .001" (.025mm) larger than maximum of working range. The larger gauge should not fit.
g. Repeat with the other gate.

Table 2 – Plate List

NOTE: Dimensions in parentheses ( ) are mm.

Plates	Plate Thickness	Gate Height	
		Recommended Setting	**Working Range**
MMP172W38-M, MMP172-M, MMP350W38-M, MMP350W38-M316, MMP350-M, MMP350-M316, MMP350H-M, MMP350H-M316, MT172W38-M, MT172-M, MT350W38-M316, MT350-M	0.010" (.25)	0.014" (.35)	0.013" ~ 0.015" (.33 ~ .38)
MMP350HW54-MAL, MMP350H-MAL	0.012" (.30)	0.016" (.40)	0.015" ~ 0.018" (.38 ~ .46)
MMP337W53-MAL-4, MMP337W71-MAL-3, MMP350W17-M, MT350W17-M, MT350W17-D-4HL	0.015" ~ 0.016" (.38 ~ .40)	0.020" (.50)	0.019" ~ 0.022" (.48 ~ .56)
NCMP35W54T20-AL	0.020" (.50)	0.030" (.76)	0.028" ~ 0.034" (.71 ~ .86)

Figure 12
Feeler Gage placement under RH gate
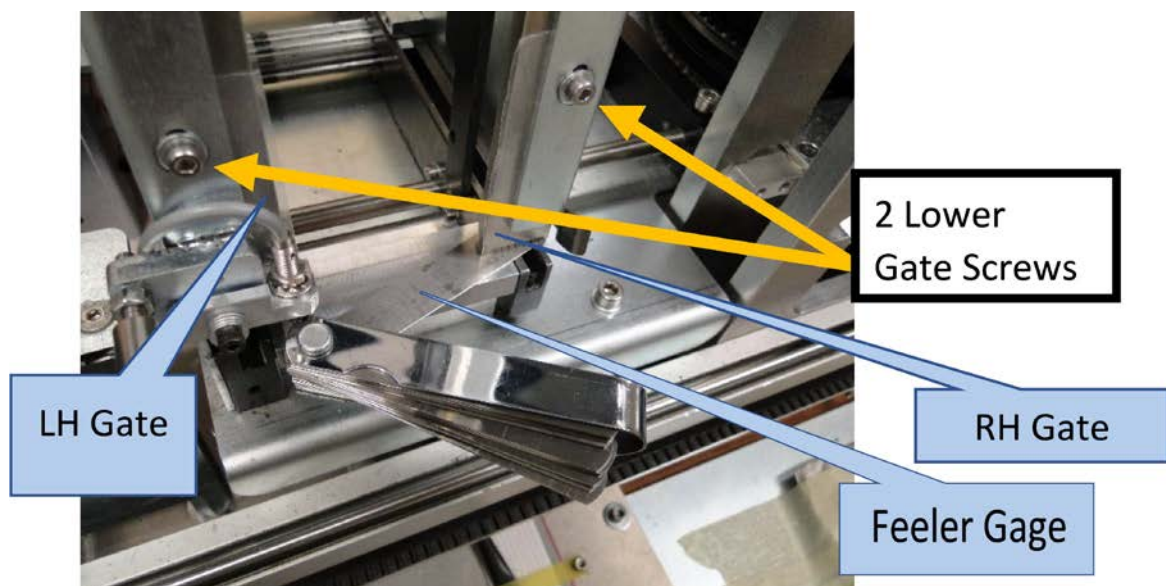
Figure 13
Feeler Gage placement under LH gate

Feeler Gage

Figure 14
Location of Feet on Gates

Gate 'Feet' behind brush
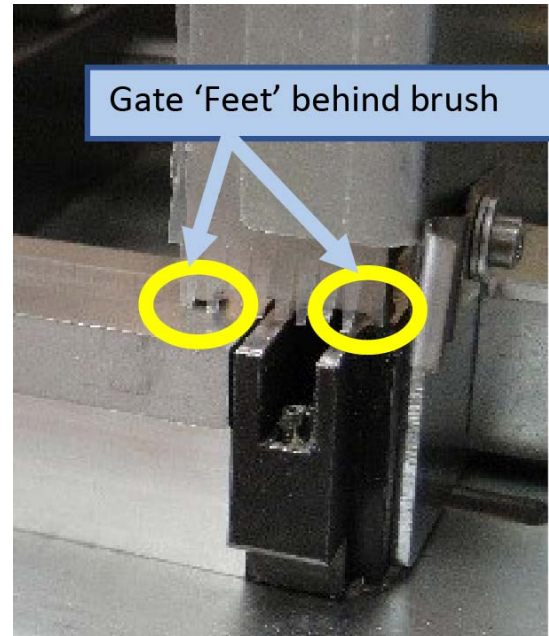
Figure 15
Adjusting Gate Height

LH Gate

Feeler Gage under both 'feet' on gate

Gate Screws
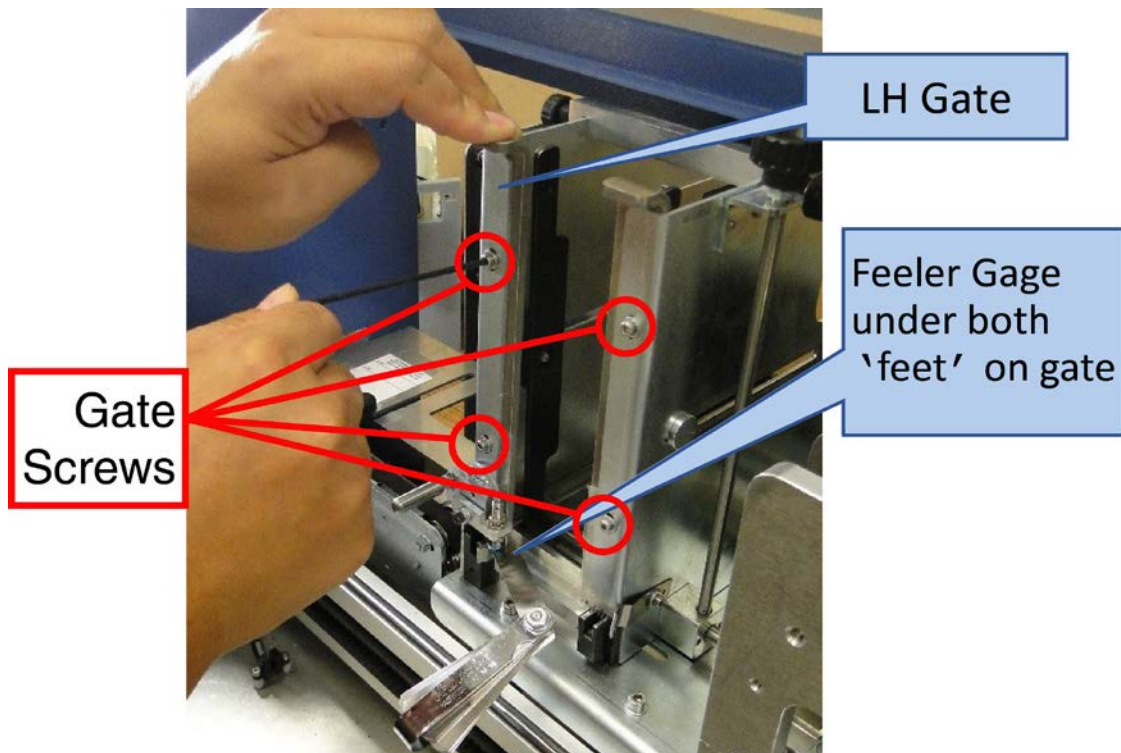
4.2.8. Guide Rail Adjustment

Plate Width	Plate Height	Instructions
3.5" (89mm)	Greater than ¾" (19mm)	Remove Top Clamp. Fully open guide rails, insert plates, and position guide rails snug against the plates, then back up approximately 1/16" (1.6 mm).
3.5" (89mm)	¾" or less (19mm)	Remove Top Clamp. Insert the correct guide rail sizing block. Position guide rails snug against the back of the guide rail sizing block. Tighten RH Side Wall Knob to lock in place. Remove guide rail sizing block. See [**Figure 16** and **Figure 17**]
1.72" (43mm)	Any	Remove Top Clamp. Slide the right-hand gate to the right and fit the guide rail sizing block to both sides. See [**Figure 18**] and [**Figure 19**].

Figure 16

Guide Rail Sizing Blocks

3/8" (9.5 mm) Narrow
Or
1/2" (13.7 mm) Medium
Or
3/4" (19 mm) Wide

RH Side Wall Knob

Figure 17

Plate Height Guide Rails
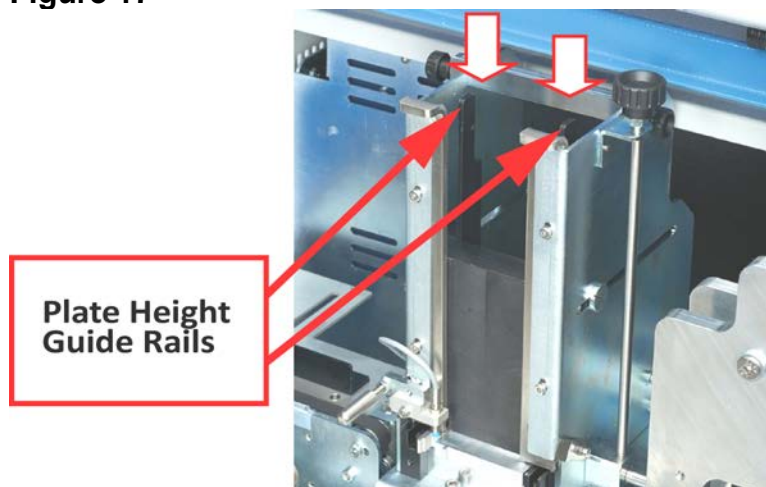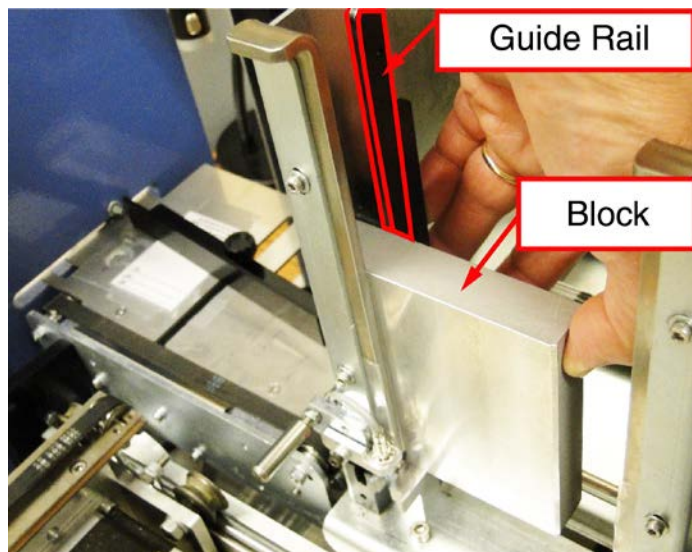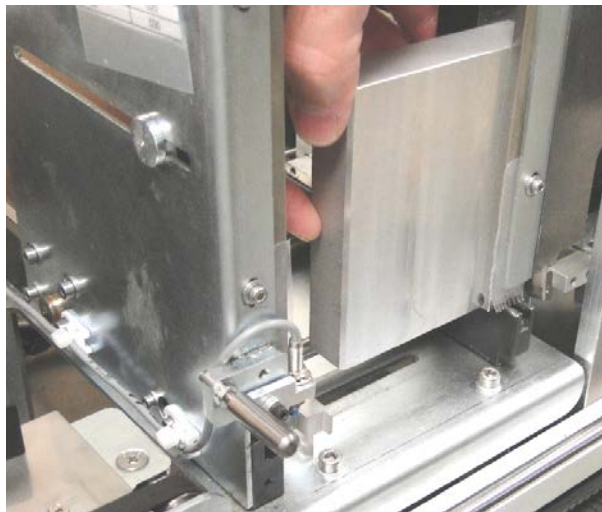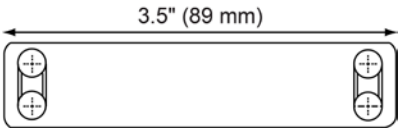
Figure 18

Figure 19

Figure 20
Top Weights - (top row): Medium, Wide & Extra Wide;
(front row): Short (2) & Narrow
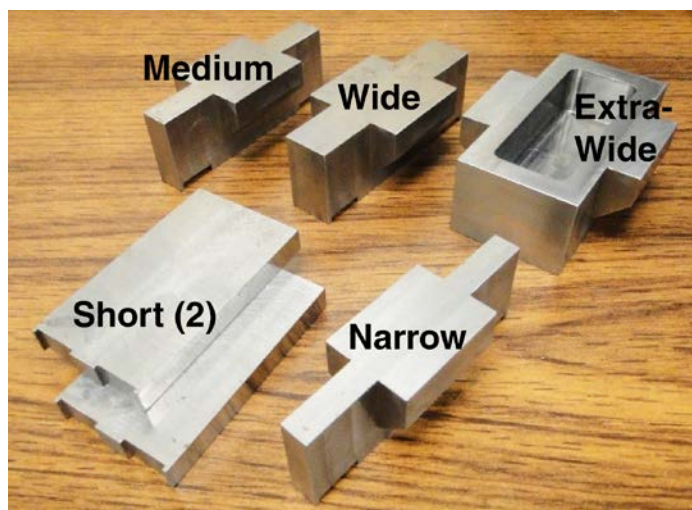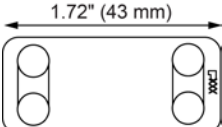
4.2.9 Loading Marker Plates
3.375" (86mm) or 3.5" (89mm) Plate Width

3.5" (89 mm)	a. Stack plates with Easy Feed humps up [**Figure 21**].
	b. Place weight on top of marker Plates
	c. Wide end of weight goes up. Cutouts are to clear Easy Feed humps.
	d. Place and tighten Long Top Clamp

1.72" (43mm) Plate Width

1.72" (43 mm)	a. For plates heights of 1.72" (43mm), move the RH gate to the right.
	b. Insert plates for embossing in the loader on the left side of the machine [**Figure 22**] on support block.
	c. Place weight(s) on top of marker Plates. Cutouts are to clear Easy Feed humps.
	d. Close RH gate and tighten RH side wall knob.
	e. Place and tighten Short Top Clamp

Figure 21
Loading 3.5" (89mm) wide plates
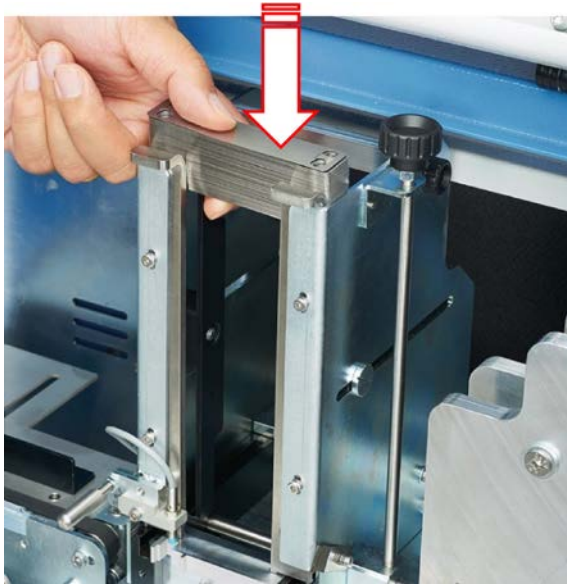
Figure 22
Loading 1.72" (43mm) Wide plates with RH gate moved to right
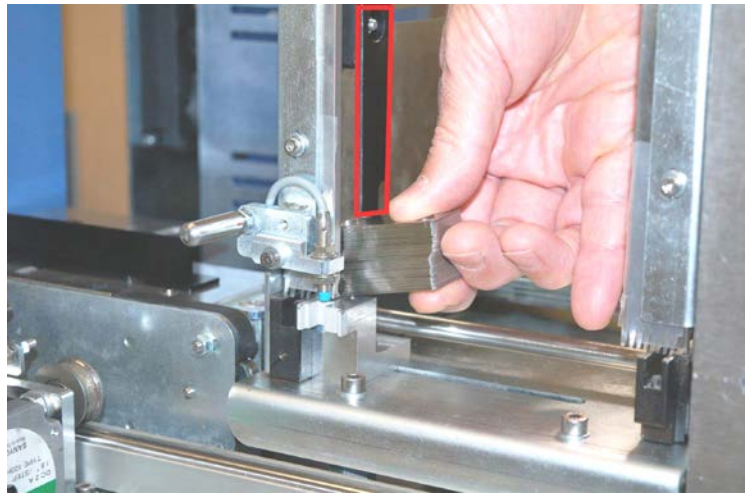
4.2.10 Side Eject Guide Plate Adjustment:
a.   Loosen side eject guide plate thumbscrew, slide guide plate until the *__arrows__* on the *__back of the guide plate__* line up with the appropriate plate height [**Figure 23**] on the positioning label.
b.   Ensure the guide plate is straight and tighten thumbscrew.
c.   Close embosser cover

Figure 23
(LOOKING DOWN INTO PES400)
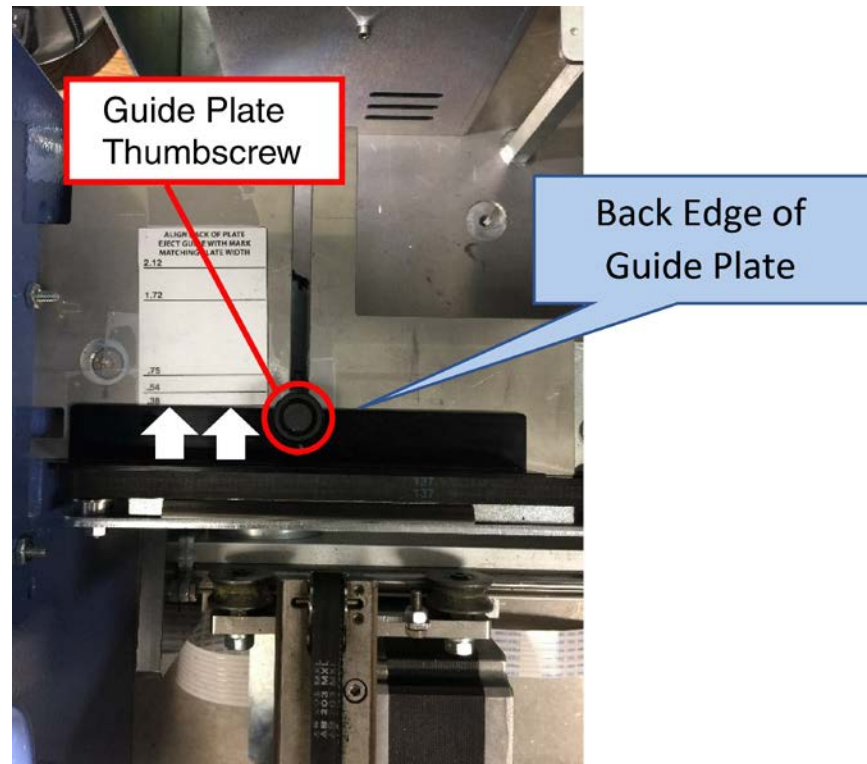
4.2.11 External Hopper Adjustment

a. See Table 1 for proper divider/insert combinations.
b. For plates with height 2.12" (54mm) or greater, remove divider.
c. For all plate widths longer than 1.72" (43mm), place the divider tabs into the slot matching the desired plates [**Figure 24**]. Ensure divider is vertical.
d. For short plate widths 1.72" (43mm), after divider placement, drop the matching short plate insert into the space between the divider and the hopper wall.

HOPPER INSERTS AND DIVIDER

Short:
0.38" X 1.72"
(9.6mm X
43mm)

Short:
0.75" X 1.72"
(19mm X 43mm)

Divider
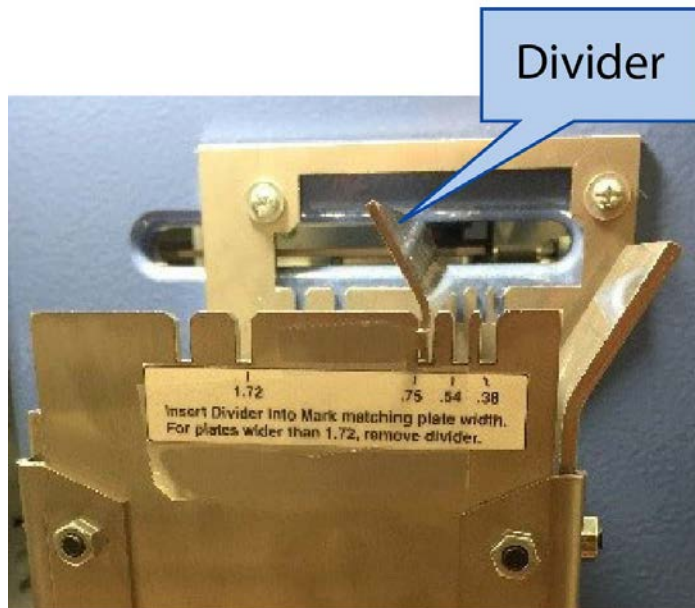
Figure 24	**Figure 25**
EXTERNAL HOPPER – Divider	**.38" x 1.72" (9.6mm x 43mm) Insert**
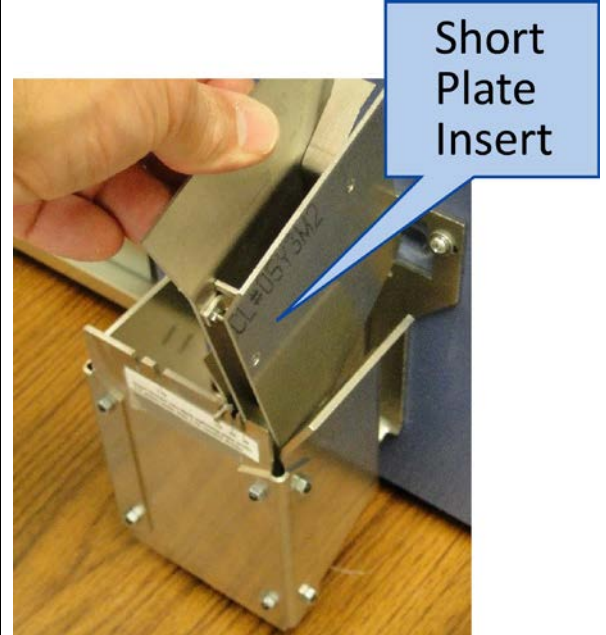
4.2.12 Turn on PES400

The machine can be switched on with the main switch (located in back of machine).

NOTE: Prior to switching "on", make sure cover is closed.

The display will appear with the message as shown below:

> **E001   POWER-ON   VER. MC-X.XX**
> **PRESS CLEAR or ESC TO CONTINUE**

Press the **CLEAR** key on right side of the front panel beside the display. This activates a general reset which, when completed, will leave another message on the display to indicate the Ready state of the machine.

> **PANDUIT EMBOSSING SYSTEM: PES400**
> **READY**

If the machine does not start, check that the power supply is correctly set and that the main fuse has not been shorted.

If error message appears, please refer to the "Error Code" section on [**Page 38**].

> **NOTE: If the display is turned on but nothing appears on the screen,**
> **switch the machine off and call for Technical Assistance.**
> **(see Regional Contact Information on Page 46)**

The machine is now ready to run.

4.2.13 Open and use Panduit Easy-Mark Plus™ software

a. Start Easy-Mark Plus™ with a double-click on the Easy-Mark Plus™ icon, which should be present on the Desktop.

b. Insert the serial number, if it is requested, and click "Activate" to start the first work session with Easy-Mark Plus™. The serial number is located on the Flash Drive packaging.

c. After the application completes its first launch (this could take a couple minutes), the Landing Page is presented, which helps with selection of the document formats.
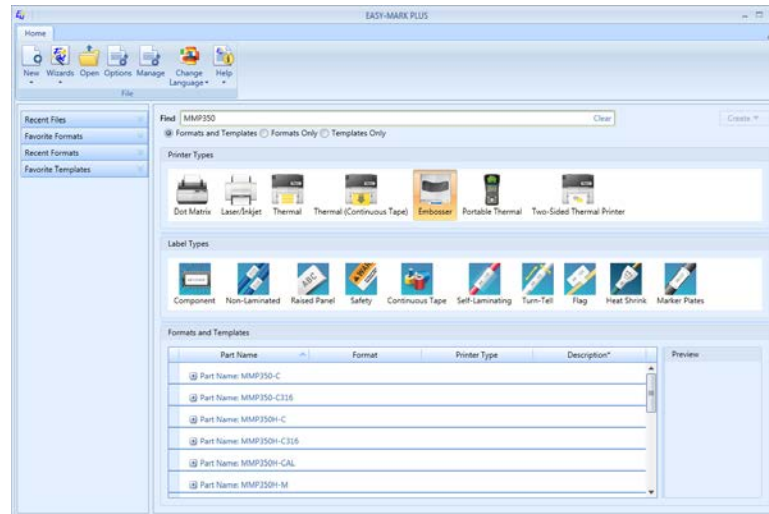
d.   In "Find" box, type in the part name of the plate that you would like to emboss, or click 'Embosser' in printer types. The 'Formats and Templates' list, at the bottom of the window, should be filtered as you type. If applicable part names are related to more than one format, the related formats are concealed within the part name grouping. To see the relevant formats, each part name group must be expanded by double-clicking or clicking on the '+' button, to the left of the Part Name.
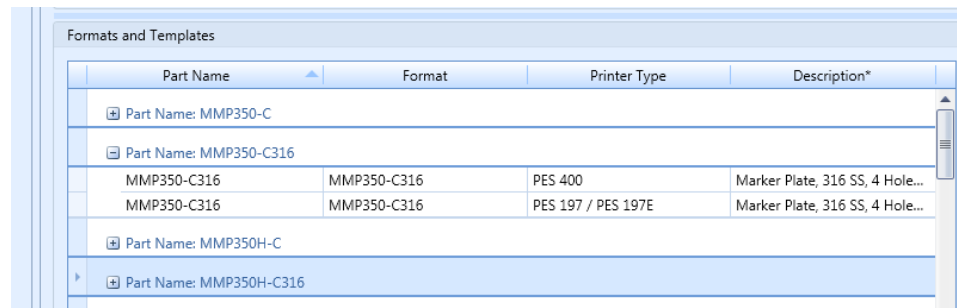
e.   After expanding any desired Part Names, only double-click on a format, which has 'PES400' listed in the 'Printer Type' column. NOTE: Failure to use PES400 printer formats will disable font selection and cause a printing error.

f.   When prompted with the 'Create file' dialog, click 'Yes'.
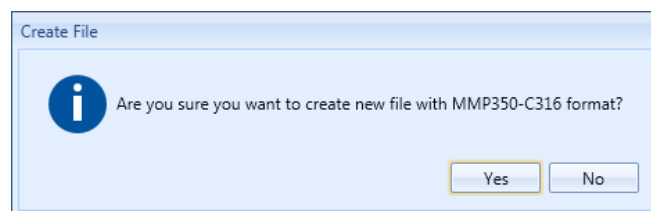
g.   After the new file is generated, with the requested document, click on the first 'label', to select it (red highlight).
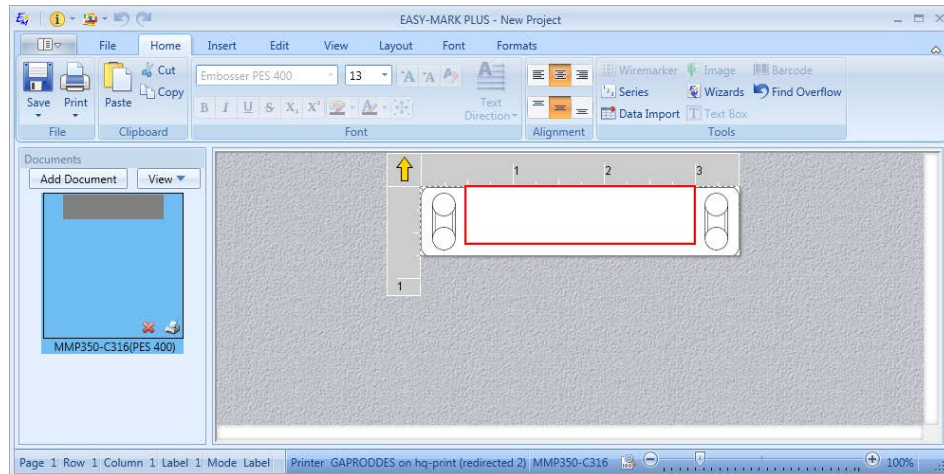
h. At this point, text can be added to the plate design, by typing or programmatic insertion ("Series" or "Data Import"). For simple text, type the desired information, into the marker plate. For detailed instructions on Series or Data Import, see the application's user guide, accessible through the "Help" icon at the top-left of the application window. Notice the plate(label) turns blue, when it is in edit-mode.
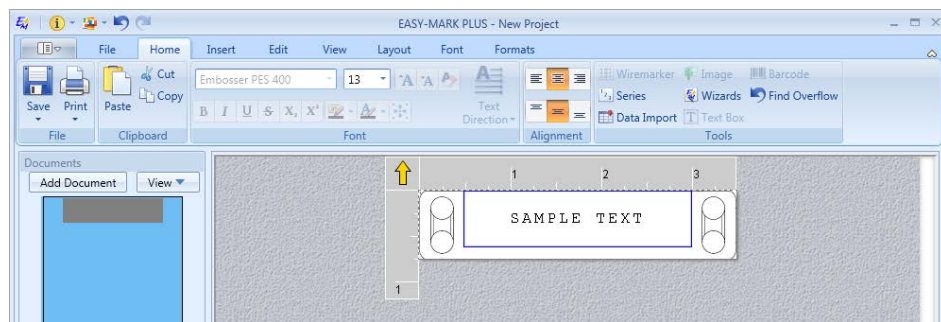
i. For the PES400, 2 different font sizes can be applied to the desired text. The font size can be applied to highlighted or future text, by using the font size selection field, on the 'Home' or 'Font' tabs.
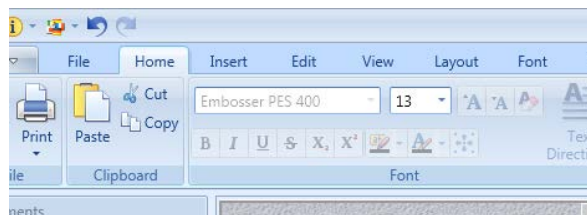
j. Once a plate design is complete, additional plates can be added to the document, by pressing the [Tab] key.
k. When ready to print, Click on Print, then click Print Document, on the ribbon (under Home and File tabs).
l. In the 'Embossing' dialog, select the communication port (COM Port) number, that the PES400 device is connected to. Check the communication port number by selecting Microsoft Start Button (lower left corner of screen).

XP:

Win8:

Win10:

Figure 26 Microsoft Start Buttons

m.   Search for "Device Manager", then expand "Ports (COM & LPT) to see COM port assignments. [PES400 will be labeled as "Communication Port" or "USB to Serial Adapter Port" when USB to Serial Adapter Cable is used.]
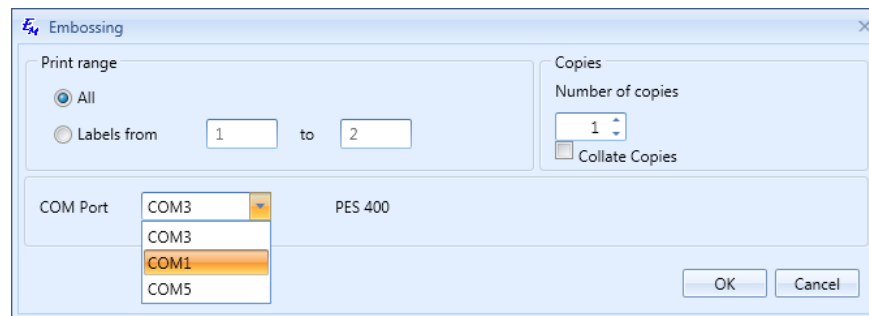
n.   Type in number of copies needed.
o.   After confirming the PES400 LCD screen is in "Ready" state and the appropriate plate parts are loaded into the Feeder, Click 'OK' to send the print job to the embosser.

4.2.14 Embossing Plates

a.   The production cycle finishes with the unloading of the plate on the left of the Embosser. If the cycle is error free, the Embosser returns to the initial READY state.
b.   If errors have occurred during the cycle, the machine will signal the error code on the display and will still unload the plate before stopping; the incorrect plate must be removed manually.
c.   Embosser will run one additional plate from print job after error is cleared.
d.   Please refer to the section on [**Error Codes**] for a description of the errors that can arise.
e.   Verify the embossing height is correct and plate is flat. To correct, see Embossing Force Adjustment, Sec. 4.3 below.

4.2.15 *Changing Plate Formats*
    a.   Select far left tab and return to Section 4.2.13, [**Easy-Mark Plus**], Step c.
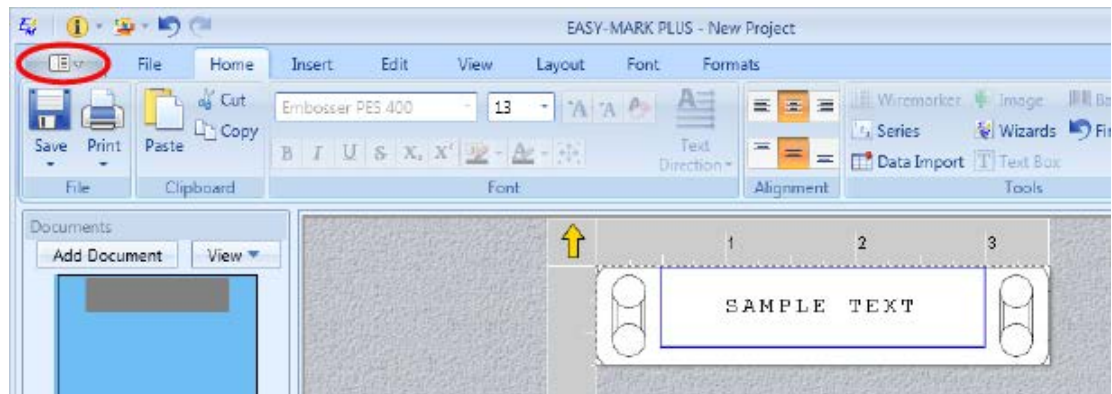
4.3   Embossing Force Adjustment

Embossing	Plate Condition	Top Hammer	Bottom Hammer
Too High	Not bent	Raise – CCW	Do not adjust
Too Low	Not bent	Lower – CW	Do not adjust
Too High	Ends bent down	Lower – CW	Lower – CW
Too High	Ends bent up	Raise – CCW	Raise – CCW
Too Low	Ends bent down	Lower – CW	Do not adjust
Too Low	Ends bent up	Raise – CCW	Do not adjust

CW = Clockwise   CCW = Counter Clockwise

1.   Adjust using one-eighth turn adjustments until desired pressure and plate condition is achieved.
2.   Loosen the Bottom Hammer Fixing Nut **[2]**. (See **Figure 27**)

Figure 27
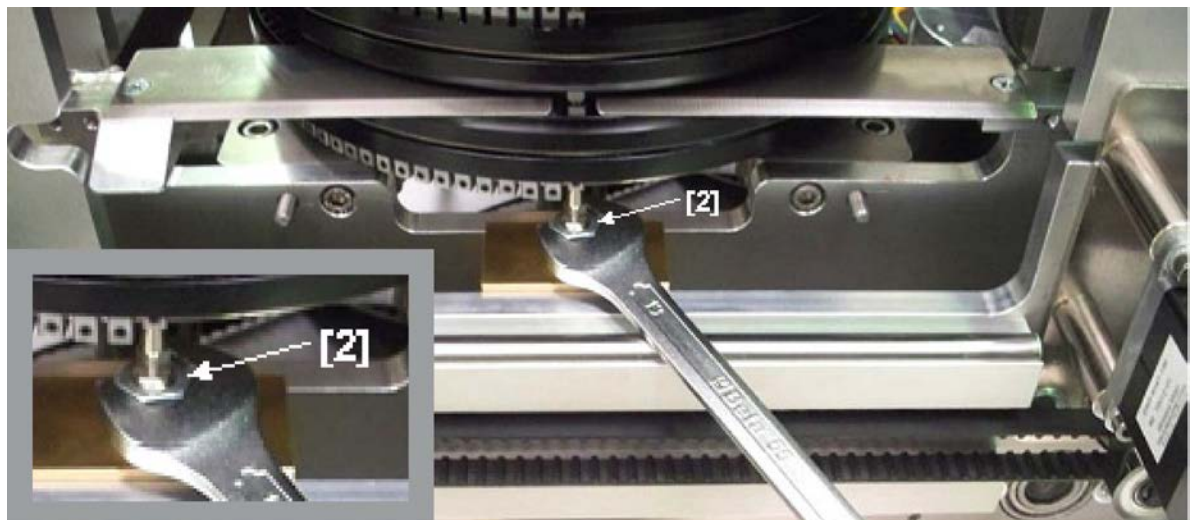
3.   While holding the <u>Bottom Hammer</u> Fixing Nut, turn the <u>Bottom Hammer</u> **[3]** clockwise to lower the Punch **[4],** counter-clockwise to raise Punch **[4];** then tighten the <u>Bottom Hammer</u> Fixing Nut **[2]** while holding the <u>Bottom Hammer</u>. (See **Figure 28**)

Figure 28
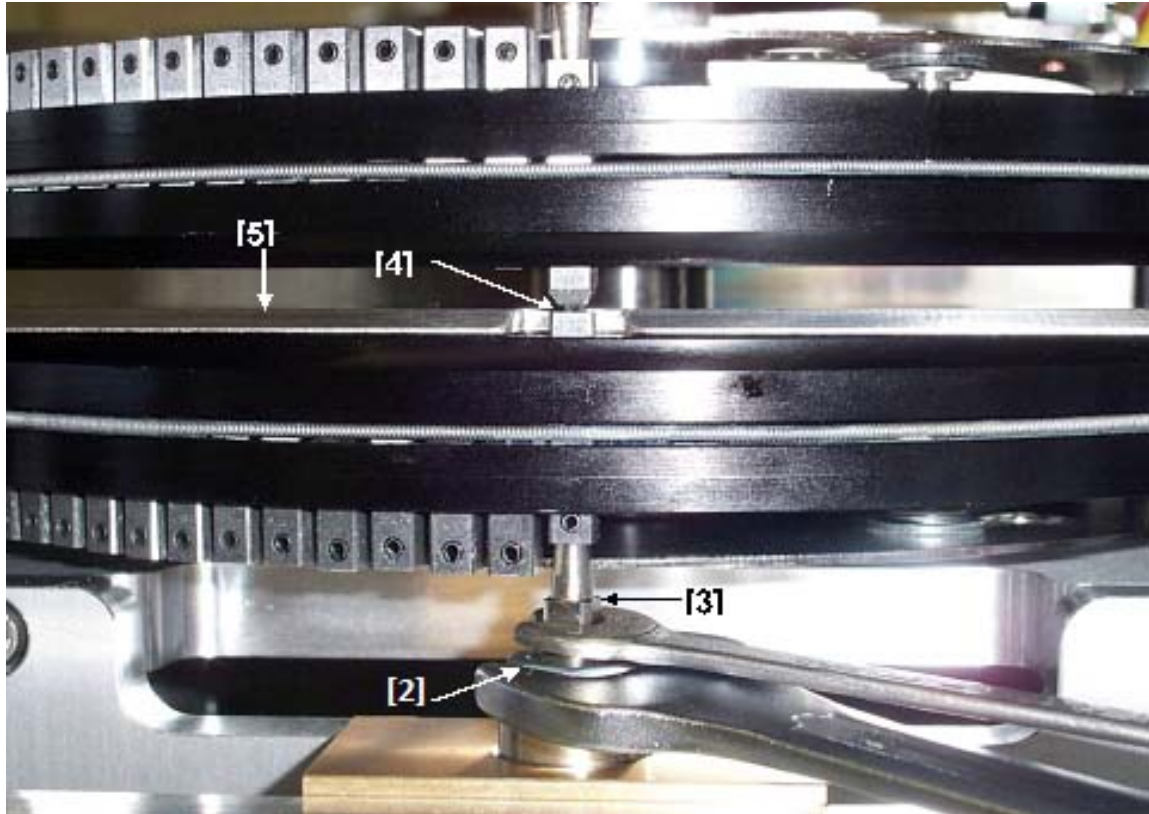
4.   Loosen the <u>Top Hammer</u> Fixing Nut **[7]**. (See **Figure 29**)

Figure 29
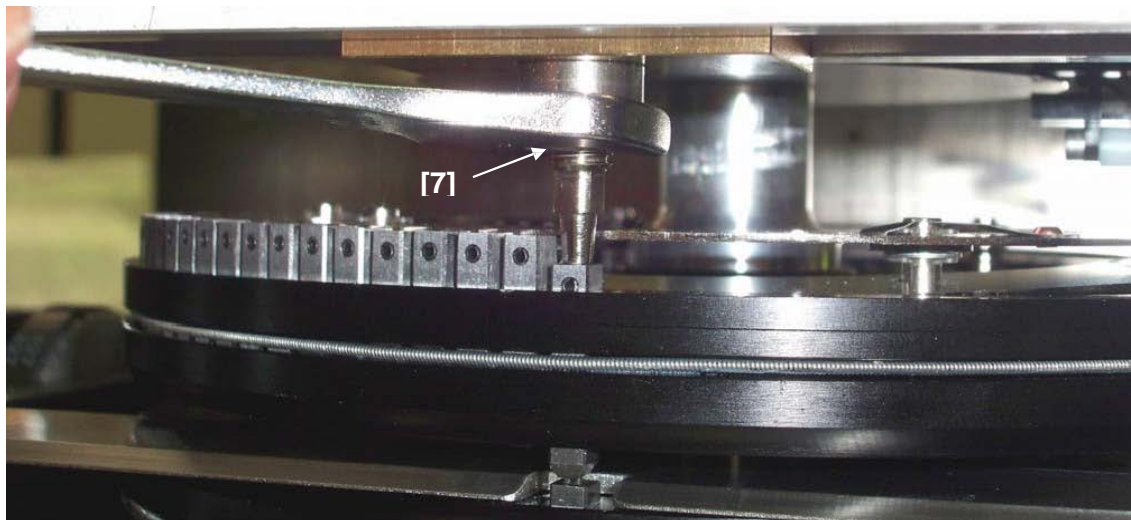
5. While holding the <u>Top Hammer</u> Fixing Nut, turn the <u>Top Hammer</u> **[8]** clockwise to lower Die **[9]**, counter-clockwise to raise the Die **[9]**; then tighten the <u>Top Hammer</u> Fixing Nut **[7]** while holding the <u>Top Hammer</u>. (See **Figure 30**)

Figure 30
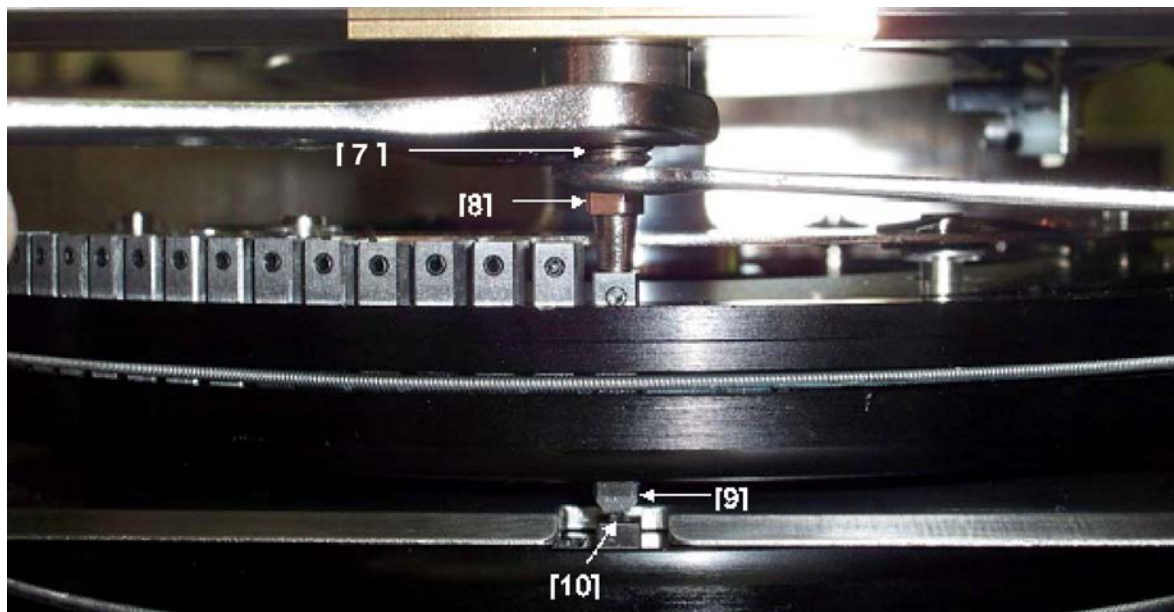
5. Error Codes

5.1 PES400 Display

In case of malfunction or operator error, the PES400 will show what caused the machine cycle interruption on the display and on the monitor.

Contact technical support if code is not listed in table.

When an error occurs, the LCD will show the messages listed below.

Apply the proper procedure to remove the error condition and then press CLEAR to continue (please read carefully the corrective actions).

ERROR#	ERROR TYPE	ERROR NAME	ERROR DESCRIPTION
E001	START	POWER-ON	At the power on the machine will show this message. Press CLEAR to continue.
E002	HARDWARE	CONFIGURATION LOST	**Hardware error:** the mechanical parameters of the machine are lost.
E003	HARDWARE	RAM ERROR	**Hardware error:** the RAM is defective. Power OFF and ON the machine again; if the error persists, it is necessary to change the logic board.
E004	HARDWARE	WORKING TIME LOST	**Hardware error:** the working time and counters are lost.
E005	HARDWARE	FORMAT AREA DATA LOST	**Hardware error:** the stored format is lost.
E006	HARDWARE	TOTAL CLEAR	The four DIP Switches of the Main Logic Board are in ON position; move them all to OFF position.
E101	FEEDER:	FEEDER EMPTY	No plate enters the magnetic module. If the hopper is empty add plates. If the hopper isn't empty, check if: a) Plates are stuck together; b) Plates are bowed; c) Mechanical impediments; d) Alignment between modules; e) The DC motor moves correctly; f) Check for correct connection of the motor on the board; g) Replace the motor.
E102	FEEDER:	FEED SENSOR HOME	Check the Feeder Home sensor.

ERROR#	ERROR TYPE	ERROR NAME	ERROR DESCRIPTION
E103	FEEDER:	FEED CARD JAM	Feeder card/plate error; manually remove the plate.
E104	FEEDER:	LOADED MOTOR ERROR	Check the Feeder Home sensor and the Feeder Motor.
E301	EMBOSSER:	X-HOME MOTOR ERROR	Check for X home sensor: a) X home sensor is dirty: clean it with compressed air or lint free cloth; b) X home sensor isn't connected correctly on the board. Check that all pulleys are fixed on the shaft. Check X motor connection. Check the belt's state.
E302	EMBOSSER:	Y MOTOR ERROR	Plate is embossed in a wrong way. Remove any impediments along the embossing Y travel.
E303	EMBOSSER:	X-END MOTOR ERROR	Plate is picked by embossing clamp and is taken to the embosser's exit. Check for X end sensor: a) X end sensor is dirty: clean it with compressed air or lint free cloth; b) X end sensor isn't connected correctly on the board; c) Remove any impediments along the X embossing travel; d) Check that all pulleys are fixed on the shaft; e) Check X motor connection; f) Check the belt's state.
E304	EMBOSSER:	DRUM MOTOR ERROR	The plate can even be picked or not by the embosser's clamp and the embossing sequence isn't completed correctly. If the clamp picks the plate but doesn't start punching and the drum keeps on moving: a) Check drum motor home sensor; b) Drum motor home sensor is dirty: clean it with compressed air or lint free cloth; c) Drum motor home sensor isn't connected correctly on the board. If the plate is picked, but it is embossed in a wrong way check: a) Belt tension; b) If pulleys are fixed on the shafts; c) If the motor is moving correctly or it stalls. If the plate is picked by the clamp but the drum doesn't move check: a) Drum motor connection on the board.

ERROR#	ERROR TYPE	ERROR NAME	ERROR DESCRIPTION
E305	EMBOSSER:	CARD LOST	Plate isn't present in the picker position: a) Card/Plate has been mistakenly removed; b) Card/Plate jams in the previous module.
E306	EMBOSSER:	CARD MISFEED-POSITION CARD	<u>The clamp holds the plate, but the embossing cycle doesn't start</u>. Check the entry sensor: a) Entry sensor is dirty: clean it with compressed air or lint free cloth; b) Entry sensor isn't connected correctly on the board. <u>The clamp moves straight to embossing area without a plate or after having made a bad noise</u>: a) Check for Y home sensor; b) Y home sensor is dirty: clean it with compressed air or lint free cloth; c) Y home sensor isn't connected correctly on the board; d) Check Y motor electrical connections; e) Check if the pulley is fixed on Y motor shaft; f) Check belt state.
E308	EMBOSSER:	PUNCH MOTOR ERROR	The embossing clamp picks the plate, but the embossing sequence isn't completed correctly. Check for any mechanical impediments along the embossing leverage. <u>If the plate is picked by the embosser's clamp but just one character is embossed</u>: a) Check punch motor home sensor; b) Punch motor home sensor is dirty: clean it with compressed air or lint free cloth; c) Punch motor home sensor isn't connected correctly on the board. <u>If the plate data isn't embossed correctly, check</u>: a) Belt status; b) All pulleys are fixed on the shaft correctly. <u>The plate is picked correctly by the embosser's clamp and it is placed correctly under the drum, but the embosser mechanism doesn't start, check</u>: a) If the embossing motor is connected correctly on the board; b) Replace the motor.
E311	EMBOSSER:	COVER OPEN	Machine cover is open.

ERROR#	ERROR TYPE	ERROR NAME	ERROR DESCRIPTION
E312	EMBOSSER:	DRUM MOTOR ERROR	Drum movement error.
E313	EMBOSSER:	Y MOTOR ERROR	Y-axis movement error.
E314	EMBOSSER:	X-END MOTOR ERROR	Movement error on the end sensor.
E315:	EMBOSSER:	CARD MISSING	The card/plate goes out from the previous module but doesn't reach the Embosser.
E316	EMBOSSER:	CARD LOST	Card/Plate correctly loaded and then lost by the Embosser plate guide.
E318	EMBOSSER:	CHANGE PLATE	The machine stops and waits for the plate to be loaded (only for manual feeder option).
E320	OUTPUT	UNLOAD NOT READY	The machine didn't unload the previous plate when the next plate needed to be loaded.

5.2 Easy-Mark Plus™ Errors

See Easy-Mark Plus™ software guide.

6. TROUBLE SHOOTING

Gate Adjustment:
See Gate Height Adjustment on [**Page 23**].

Also refer to Gate Height Adjustment section in Table 2 on [**Page 24**]**.**

Gate Adjustment Techniques:
General Tips
1)   **Start adjustments with the target thickness feeler gage. It is best to remove the feeler gages from the tool assembly to prevent the tool assembly from interfering in the adjustment process.**
2)   **Slide the appropriate feeler gage underneath one gate so that it is resting under both feet. Make sure the feeler gage is pressed all the way against the loader wall next to the small foot.**
3)   **Move the gate brush until it just barely touches the feeler gage, then move it down another ~0.020". The goal is for the gate brush to touch the surface of the slide channel when the gate is tight and the feeler gage is removed.**
4)   **Apply downward pressure to the gate when adjusting to ensure the gate is snug against the feeler gage. Apply pressure to the left or the right as needed to help get both bottom feet tight against the feeler gage.**
5)   **Before tightening, attempt to wiggle the feeler gage. Both sides of the feeler gage should resist movement from friction. If one side is loose, adjust pressure until both sides are tight.**
6)   **Once the correct height has been achieved, slowly alternate tightening the top and bottom screws, until the correct torque has been reached.**
7)   **Double-check the gate height. If the height is out of spec you will need to readjust. For thin plates, being close to the bounds of the tolerance could cause problems. For instance, when attempting 0.014 (range 0.013-0.015), a tight 0.013 or a loose 0.015 could cause problems.**
8)   **If one of the two feet is out of spec when the other is, you may need to use one of the techniques below to help obtain the correct adjustment.**

Technique 1: Floating Foot
Place the feeler gage under the foot that was in spec during the standard adjustment, but not the foot that was high. Even though the other foot is floating, its range is limited by the two screws; it will only be able to pivot relative to the other foot by so much. By leaving the other foot floating, you are ensuring that it will be as close to its surface as possible, while the other foot will be in-spec due to the feeler gage. You will need to apply pressure downwards and sideways such that the floating foot will be as low as possible. You can check if this will work by checking the height of the floating feeler gage while holding pressure, but before tightening. If the height is good, tighten and confirm. If not, you will need to try the next technique.

Technique 2: Double Feeler Gage
Place the correct feeler gage under the foot that was high. Then place the next largest feeler gage on the edge of the spec under the foot that was low. Apply pressure on top and to the side until both feet are tight on their gages, then tighten.

Gate Height:
If a single plate jams underneath the gate, or scrapes appear next to the Easy Feed humps, raise the gate height. If plates are jamming underneath the gates, lower the gate height. Check to make sure the Easy-Feed humps are facing up.

Embosser Pressure:
If plates are bent or text is difficult to read, refer to Embosser Force Adjustment, [**Page 35**].

If further assistance is needed, contact Panduit Technical Support.

7. GENERAL MAINTENANCE
The operator should make a habit of doing general maintenance on the Embosser so as to ensure a correct and long-lasting functioning of the system.

	ATTENTION! DANGER The machine when at work has several moving components. • Do not work on the inside of the machine. • Do not remove the cover or guards except for the front cover which is used to load the plates. The maintenance should be done with the machine switched off. *ATTENTION! DANGER* *Lorsqu'elle est en fonction, la machine comprend plusieurs composants en mouvement.* • *Ne pas travailler à l'intérieur de la machine.* • *Ne pas retirer le couvercle ou les dispositifs de sécurité, excepté le couvercle frontal pour charger les plaques.* *L'entretien doit être effectué lorsque la machine est éteinte.*

|	
	ATTENTION! DANGER **IMPORTANT:** Do not remove the cover and the guards that are present inside the embossing machine. *ATTENTION! DANGER* *IMPORTANT :Ne pas enlever le couvercle et les dispositifs de sécurité qui se trouvent à l'intérieur de la presse à estamper.*

8. CLEANING AND MAINTENANCE SCHEDULE FOR PES400

The following components should be cleaned and lubricated on a monthly basis assuming a standard factory environment running a single 8-hour shift. If the working environment contains a large amount of fine particulate dust, or extended working hours we recommend a more frequent cleaning schedule (Bi-Weekly to Weekly). As with all servicing and maintenance, the PES400 needs to be powered off during this process. Also, oiling components that contain metal to metal activity will not yield harmful result to operation or warranty. Specifically, for the items called out below please use the following recommendations:

|	
X & Y Axis Guides	Grease
Clamp	Grease
Strikers (Hammers)	Grease
Punch Lever System	Grease
Feeder Pushers	Oil
Characters	Oil
Machine Sensors	Alcohol Swab/Wipe
Panduit Part no.	
Grease	SPEC. ISOFLEX NBU 15 PE TUBE 50GR
Oil	Siraoil (Machine Oil)
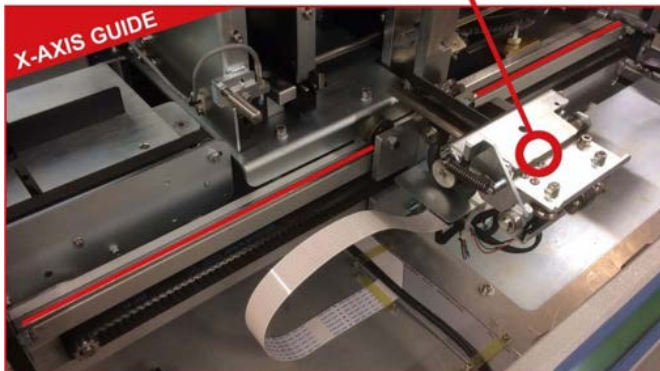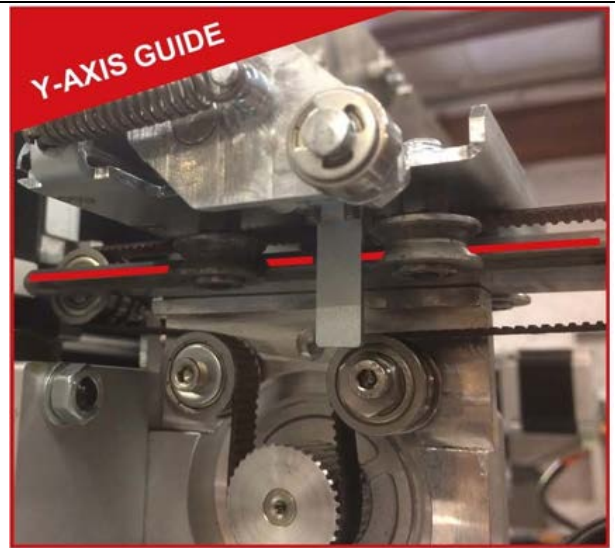
X & Y AXIS GUIDES & CLAMP

- The X & Y Guides vital to the consistent operation of the machine.
- Clean the **Red** highlighted rails; then spread a film of grease across the travel paths.
- After applying grease to the X & Y Guides, also apply grease to the back of the clamp.

FEEDER PUSHERS X2

- Cleaning should be done by removing the two securing plates in blue (use a 3mm Allen key) from the left, and right sides of the feeder.
- Wipe down the sides of the pusher rods, and then spread a thin film of oil.
- Inspect the teeth along the bottom & oil if needed.
- After, re-insert the pushers and make sure they are placed in parallel laterally in the machine.
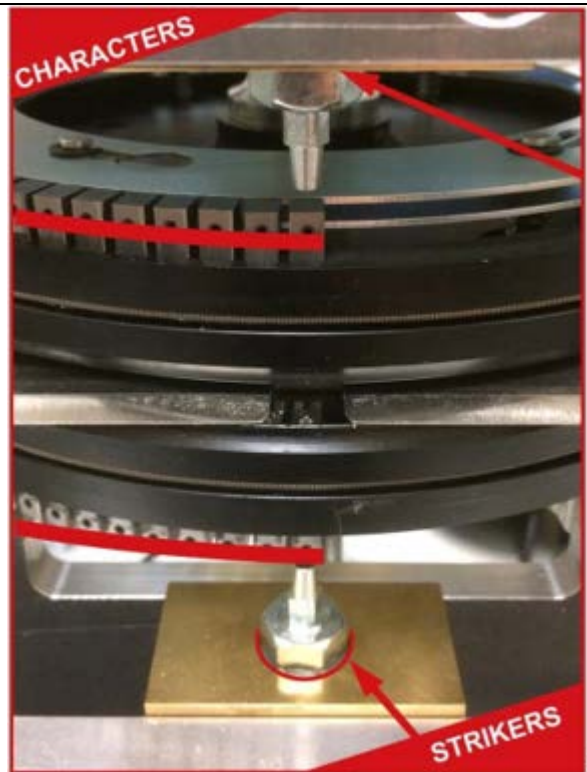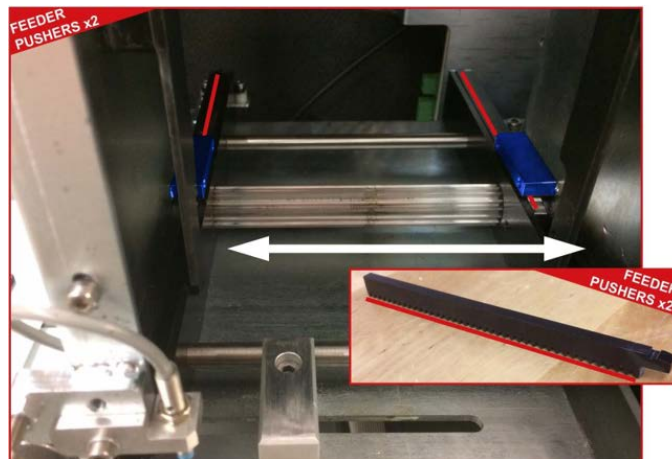
CHARACTERS & STRIKERS

- Characters should be oiled every 10K plates or weekly, whichever comes first.
- Character removal is not required unless an excessive amount of debris is visible. A simple wipe down is usually sufficient.
- The Strikers should be greased where the strikers extend out of the punching chassis.

SENSORS

Sensors should be cleaned with alcohol swabs. These are normally readily available, or you can provide your own. We recommend a 91% or higher concentration of Isopropyl Alcohol. Use a thicker cloth, or towel to reduce the amount of particulate left on sensors after cleaning
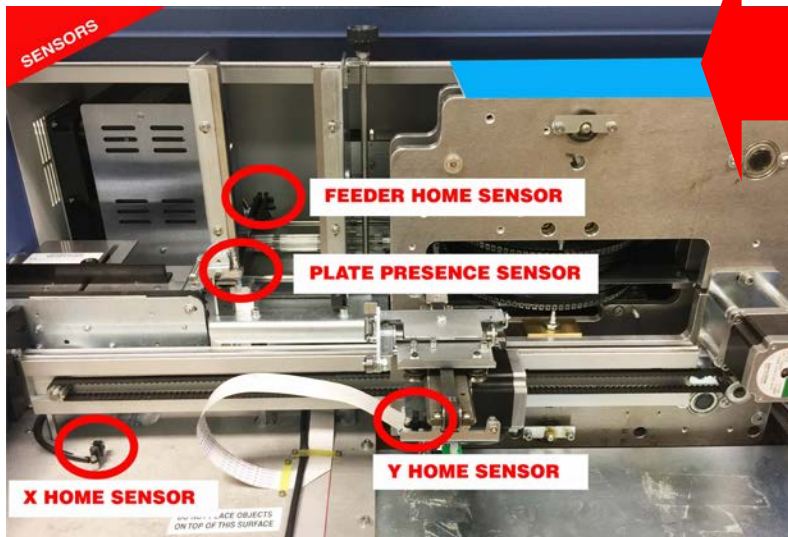
PUNCH LEVER

- To access the Punch Lever, you will need to remove the access plate in blue with a 3mm Hex/Allen key.
- After doing this an inspection should be done on the Lever mechanism. If excessive debris is present clean and re-grease component.
- Inspection should also be done on the Bottom Punch Lever as well.

After cleaning the PES400, it's recommended to run the machine anywhere from 25 to 100 full cycles to properly distribute lubricant.

9. CONTACT INFORMATION • For Technical Support:

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