

USER'S MANUAL
REVISION 8:

990-887
JUNE 2016



INSTALLATION MANUAL

FOR THE

DELTA MARKER WORKSTATION

w/ PNEUMATIC DOOR



General

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Revision Record

Revision	EO	Date	Basis of Revision
1	N/A	11/09	Engineering Release
2	N/A	12/14	Revised per System
3	N/A	05/15	Update Logo, Add Appendix D

FOREWORD

Thank you for purchasing the Delta Marker Workstation. If you have any questions about the contents of this manual, or find any errors or omissions, please notify Amada Miyachi America at:

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Warning

This instruction manual describes how to perform procedures on lasers. These procedures **MUST** be performed as detailed by QUALIFIED and TRAINED personnel.

Procedures not performed as prescribed in this manual may expose personnel to laser radiation hazards.

Be sure to wear protective goggles having an optical density of at least 6 at a wavelength of 1064 nanometers.

CDRH Compliance Statement

The Amada Miyachi America laser workstation is certified to be fully compliant with all applicable standards and regulations as set forth by the United States of America's Health and Human Services (HHS), Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH), standard 21 CFR 1040.10 for Class I laser devices.

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Workstation Specifications

Item		DELTA MARKER WORKSTATION
Width	3426	33.78 in. (85.80 cm)
	4026	39.78 in. (101.04 cm)
Height*	w/BASE	74.70 in. (189.74 cm)
Depth	3426	25.5 in. (64.77 cm)
	4026	27.0 in. (68.58 cm)
Weight**	w/BASE	425 lbs. (192.78 Kg)
	wo/BASE	335 lbs. (151.95 Kg)
Viewing window		Optical density greater than 5 at 1064 nm wavelength
Exhaust port		3 in. (7.62 cm) port (when applicable). Two on back panel (Optional)

*Height measured with standard base support.

See Appendix B for optional base support.

See Appendix C for additional height options.

** Approximate weight (excluding Laser).

Laser Safety Labels (See Figures Included and Appendix A)

The following safety labels are mounted on the workstation as shown:

- 2** **DANGER** VISIBLE AND/OR INVISIBLE LASER RADIATION WHEN OPEN. AVOID EYE AND SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION.
- 3** **DANGER** VISIBLE and/or INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID EYE AND SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION
- 4, 5, 6** Standard laser safety symbols. Label 4 is the smallest; label 6 is the largest.
- 7** **CAUTION** TO PREVENT SHOCK HAZARD, DISCONNECT POWER SUPPLY CORD AND WAIT FIVE MINUTES BEFORE REMOVING COVER.

NOTE: The same laser safety labels shown mounted on the right-hand side of the workstation are also mounted on the left-hand side.

User Maintenance

WARNING: The Delta Marker Workstation has been manufactured and tested to meet standard CDRH, 21 CFR 1040.10, Class I accessible emission limits. If you suspect a light leak, DO NOT use the workstation until you have consulted with Miyachi America Lasers. If necessary, we will have you return your unit to us, or send one of our technicians to your site.

DELTA MARKER WORKSTATION

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Section I. General Description

Description

The standard floor standing Delta Marker Workstation is approximately (48-1-AEM 33.80") (48-1-BEM 39.80") wide x 25.5" deep x 74.7" high (*Door Closed*) (*Additional 20" with Optional Light Tree*) with workstation support base. It is a heavy duty aluminum CDRH Class I laser-safe enclosure with a pneumatic access door, recessed electronic bay drawer, large Nd: YAG safety window, safety interlocks, interior lighting and fume extraction port. The electronic bay drawer includes the control wiring distribution, PLC control system, control panel, and rear connection panel.

Marker Workstation includes: LMF Fiber Laser Marker, power supply, marker head, (may include, PC, LCD Screen, w/ WinLase Software). *See separate Manual for Operation and Specification.*

Marker Workstation with motion will also include: Motion Control Power Supply, motors, motor communication cable, motor power cable. *See separate Manual for Operation and Specification.*

Optional Optical Focusing Aide: Kit includes +5V power supply, switch box, and LD laser. *See separate Manual for Operation and Specification.*

(Standard Delta Marker Workstation Shown)



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Installation and Electrical Requirements

Delta Marker Workstation Dimensions (Figure 1)

(Standard Workstation Shown. Height and width may vary)



Workstation Facility Requirements

- Electrical:** The workstation requires 115 VAC, 12 Amps or 230 VAC 6 Amps. A power cable is supplied to connect the system to facility power.
- Air:** 80-100 PSI filtered air supply line supplied by customer. (1/4\" dia. quick-connect hose connection)

Section II. Components and Figures

Workstation Components

- Viewing Window:** Window provides safe viewing of the marking operation while the laser beam is turned on.
WARNING: The window is specially treated (See Specifications). Do not replace the window with one having a lower optical density specification. Excessive viewing of the laser marking area is not recommended even when viewing through the protective glass. Never stare directly into Laser Beam.
- Interlock Switches:** Two shutter interlock switches are wired in series. The laser will automatically be disabled if the interlock switches fail to close and laser operation is activated. When door is open and the safety interlock system is connected to the laser, the laser cannot be operated.
WARNING: Do not attempt to override these switches. Exposure to laser beam radiation can cause severe injury.
- EMO Button:** Pressing this button will disable the laser system and terminate motion. The laser will not operate again until the system is reset.
- Cycle Start:** This Switch provides marking start signal to laser.
- Emission Indicator:** Indicates laser can emit radiation.
- Guide Beam:** Allows previewing surface location of mark. Also provides location assist to marking location.
Note: While Guide Beam is active marker cannot fire.
- Door Switch:** This switch cycles pneumatic door to open and close.
- Fault Reset:** This resets a fault and restores power to the drives following an emergency stop.
- Height Adjustment:** Leveler feet with swivel pads. (Optional)
- Lights:** One or two fluorescent lights provides illumination of the interior work area.
- Power Strip:** An external 115 VAC power strip is supplied with the enclosure. It is provided for auxiliary workstation components. (Optional)
- Light Tower:** Three lights provide safety status of the Workstation. (*Optional*)
Red: Laser Emission ON
Yellow: System Ready
Green: Process completed
- Optical Focus Aide:** Helps operator measure and set proper marking distance visually rather than physically. (*Optional*)

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Workstation Front View (Figure 2)

(Shown standard workstation with standard options. Locations of components may vary.)

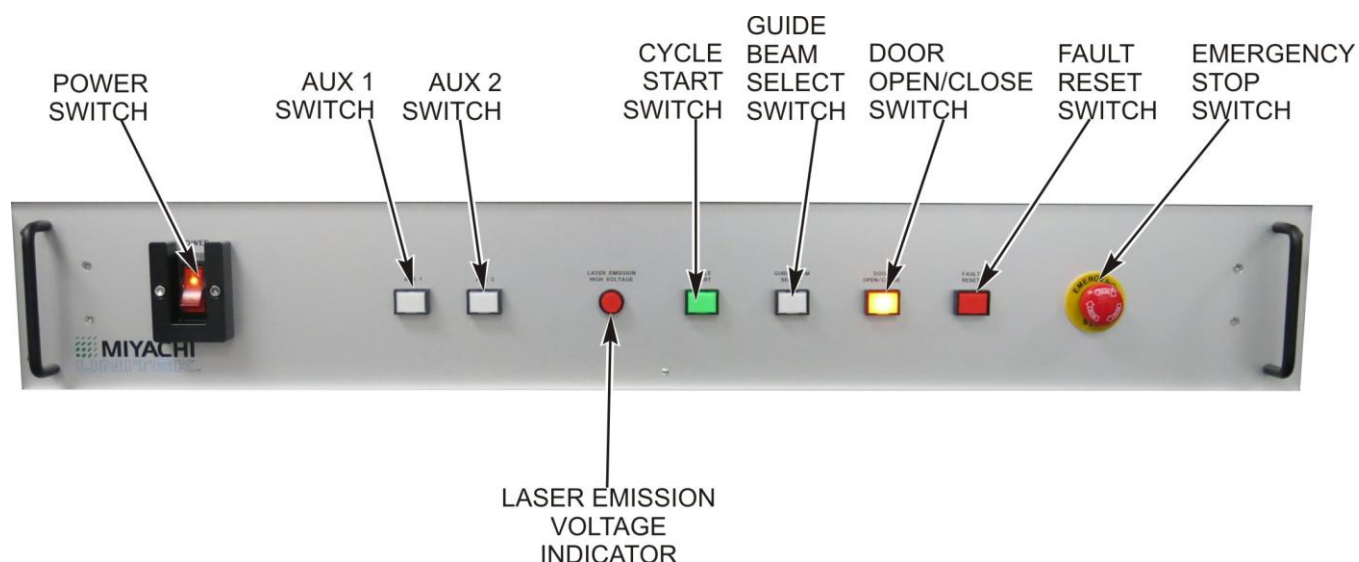


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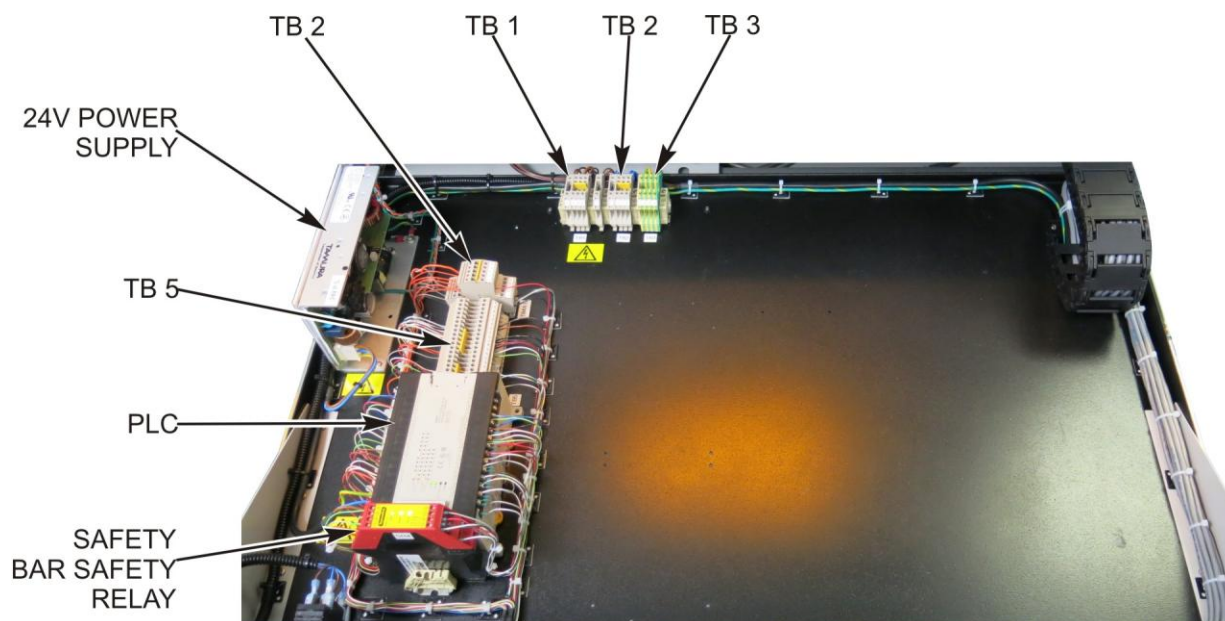
Workstation Control Panel (Figure 3)

All switches vary in functionality depending on customer options.



Workstation Electrical Bay (Figure 4) Front Access

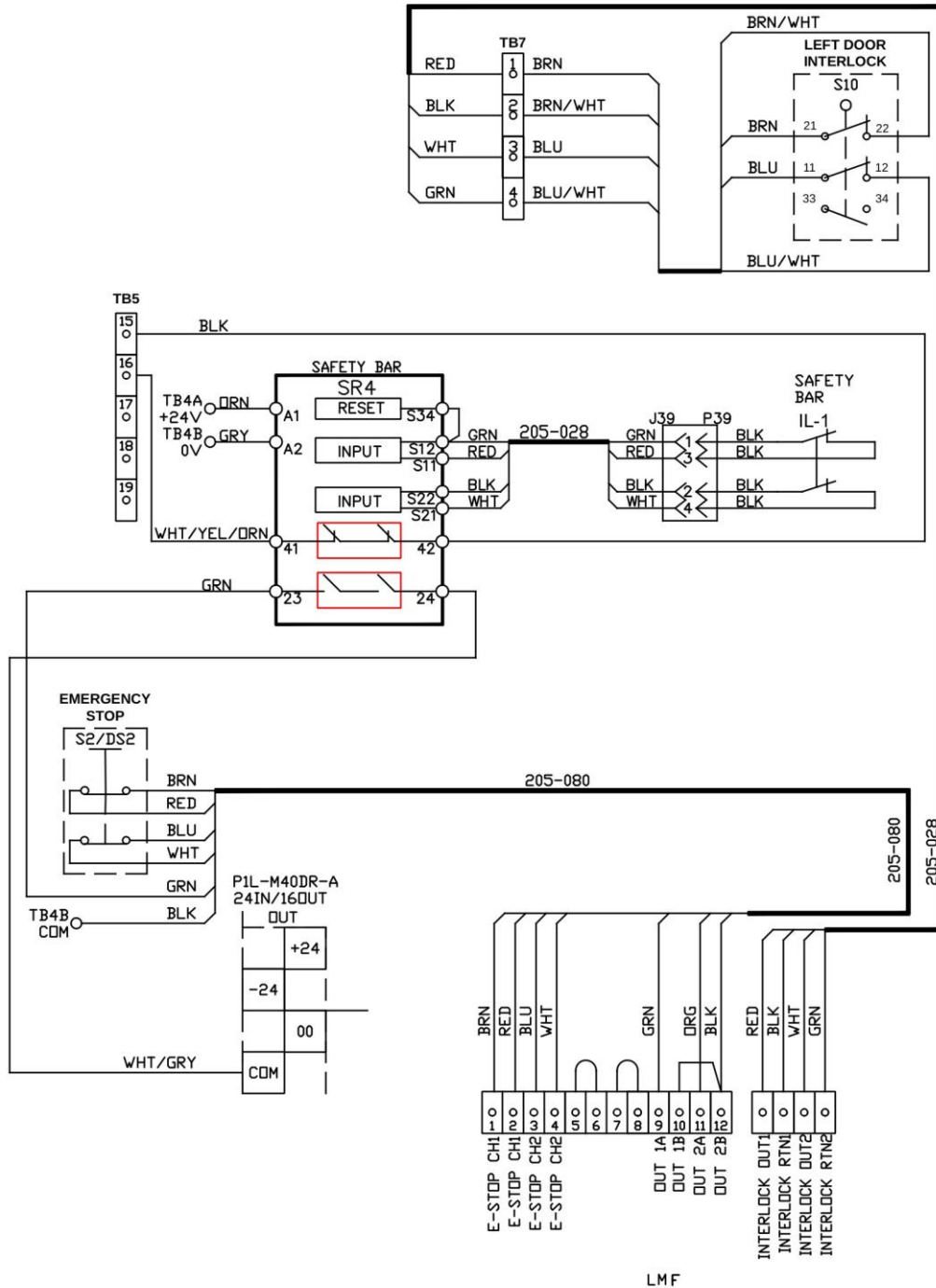
Configuration may vary depending on customer options.



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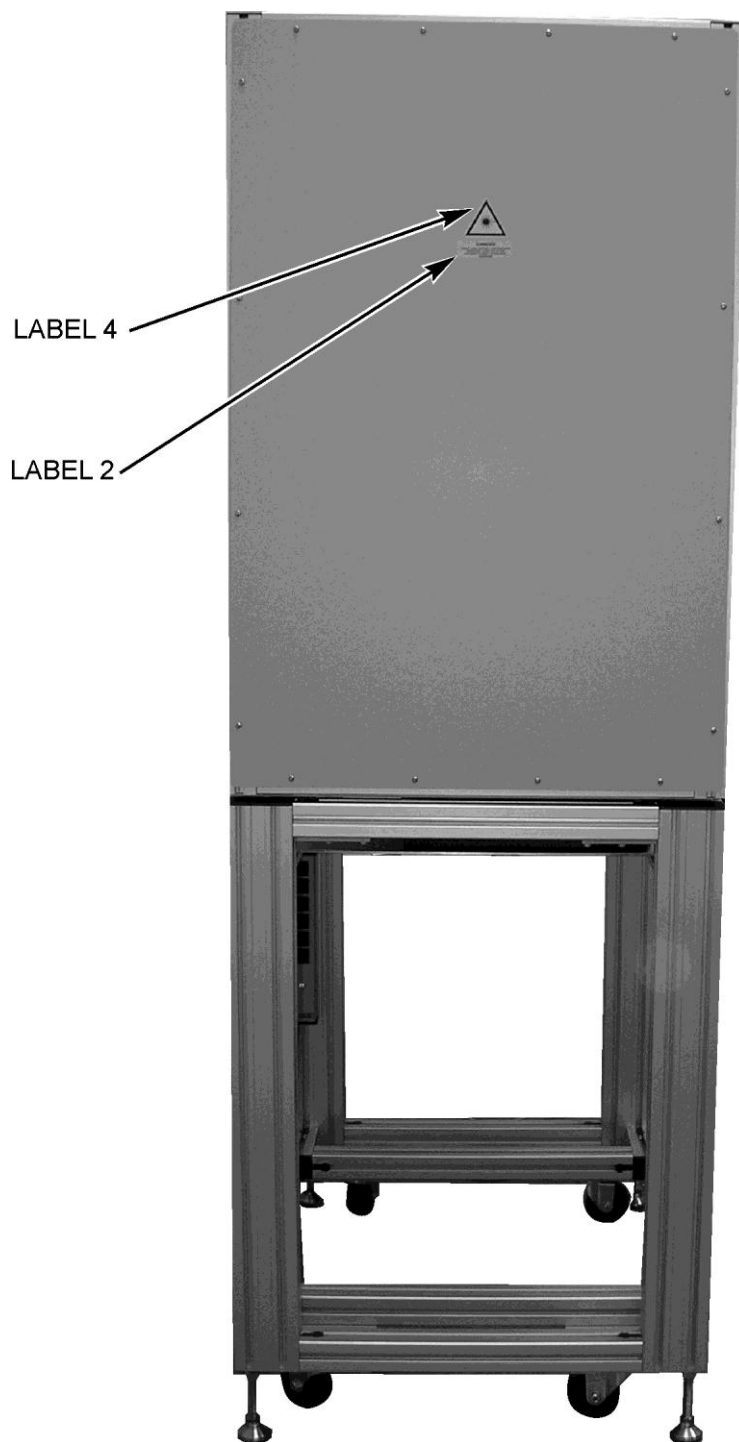
Emergency Stop and Door Safety Interlocks Circuit (Figure 5)

See Electrical Schematic (4-73766) for Further Details



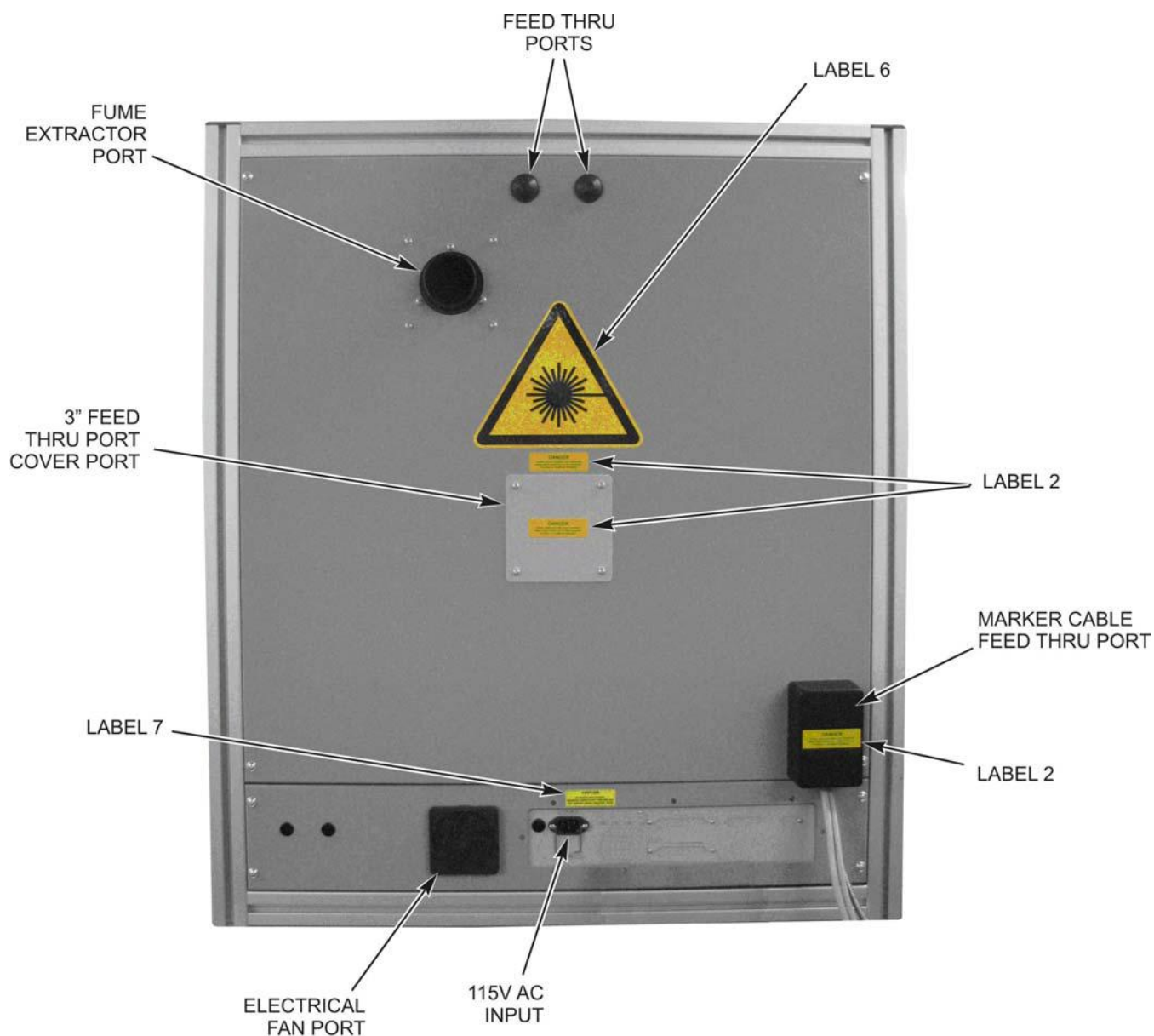
Workstation Side View (Figure 6)

(Labels same on both sides)



Workstation Rear View (Figure 7)

(Standard Workstation Shown)



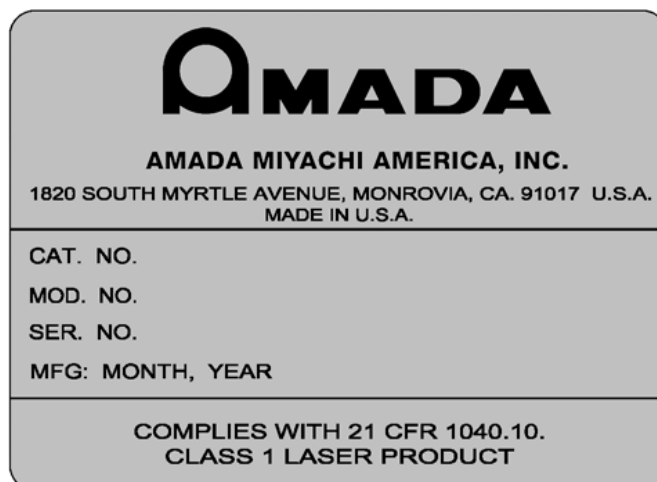
Exhaust Connections

3" dia. exhaust connection is available to port exhaust gases from the enclosure interior (at rear of enclosure).

Required Electrical Fan may vary.

Appendix A

Labels and Warnings



1



2



3



4-SMALL 5-MEDIUM 6 LARGE
INTERNATIONAL LASER WARNING
LABEL



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**VISIBLE AND/OR INVISIBLE LASER RADIATION
WHEN OPEN. AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION**

8

**VISIBLE and/or INVISIBLE LASER RADIATION
WHEN OPEN AND INTERLOCK FAILED OR
DEFEATED. AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION**

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Appendix B

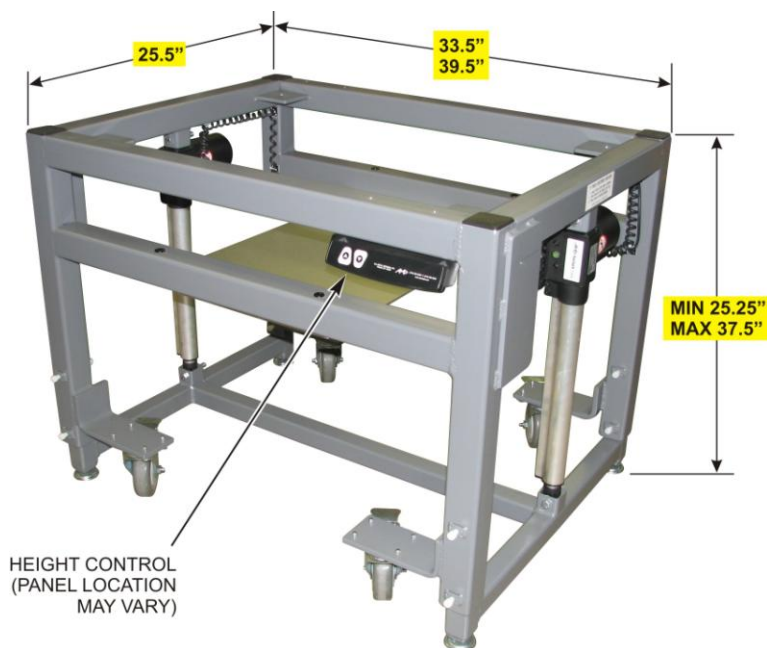
Base Options

(Note: for 3426 and 4026 only)

Standard Base



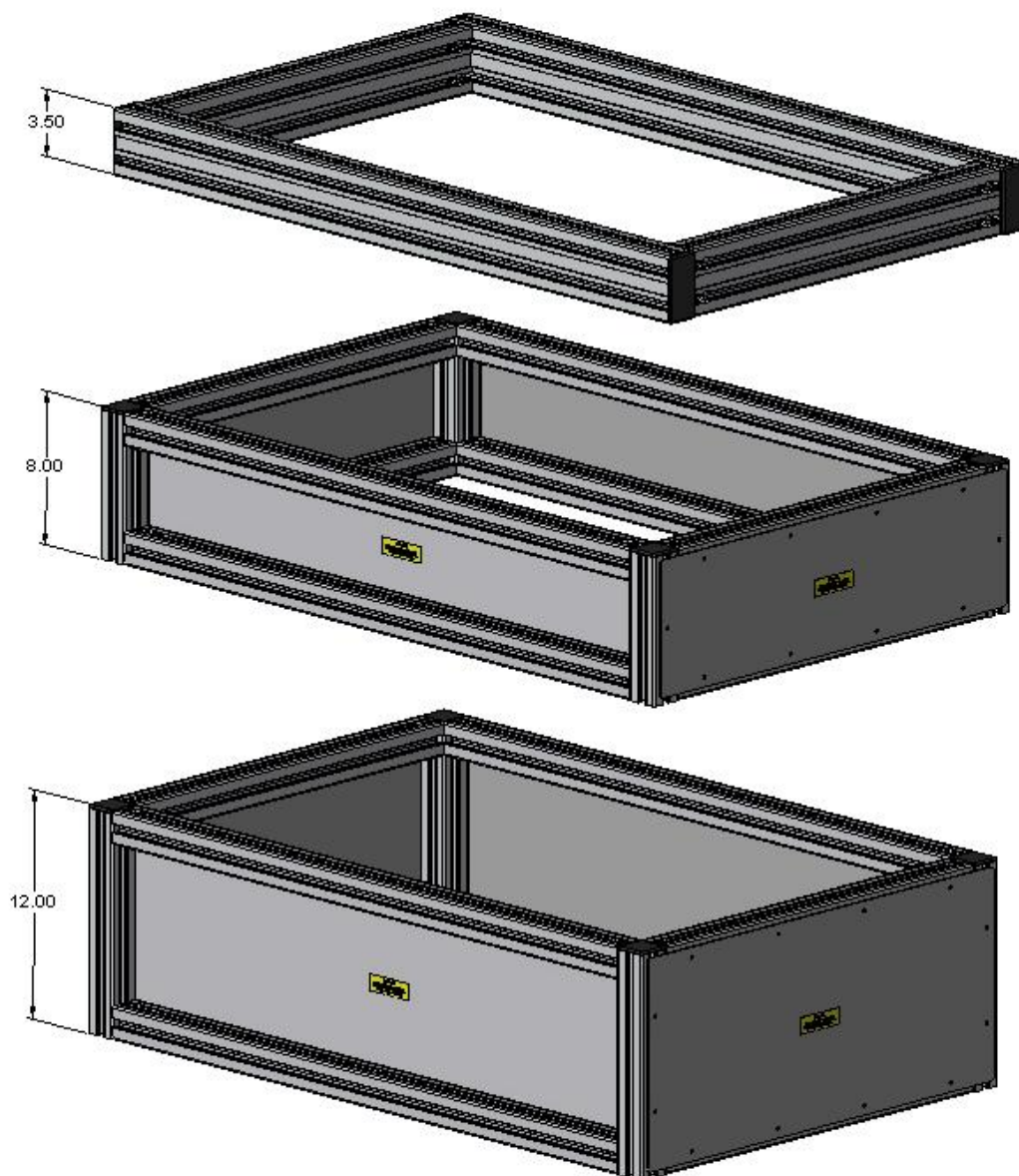
Adjustable Base



DELTA MARKER WORKSTATION

Appendix C

Additional Height Options



Appendix D

Shelf Options

(Optional Cable Guard Not Shown)

