

Installation Manual



MatchPoint PLANXTM

Servo-Driven Jigging System

Installation Manual

MatchPoint PLANX™

Servo-Driven Jigging System



U.S. and other patents pending.

Manual applies to U.S. and International equipment.

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Legal Notice

Patents

Made and sold under one or more of the following patents:

U.S. 37,797	U.S. 5,468,118
U.S. 5,553,375	U.S. 6,079,325
U.S. 6,145,684	U.S. 6,330,963
U.S. 6,405,916	U.S. 6,651,306
U.S. 6,807,903	Other Patents Pending

Return Goods Policy

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Reporting Errors and Recommending Improvements

To report errors or recommend improvements to this manual, please complete the Document Evaluation Form in the appendices. Mail or fax the form to:

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Your support in helping MiTek provide unsurpassed machinery and support is appreciated.

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Notice of Change

Use this page to record Service Bulletins and Notices that you receive to keep your manual updated.

MatchPoint PLANX™
Servo-Driven Jigging System

Service Bulletin or Notice #	Dated	Title

Safety (English)



Refiérase a la página 22 para español.

For safety information in Spanish, refer to page 22.

Safety Indicators: Signal Words

The following signal words and colors are used throughout this document to indicate safety hazards. Pay careful attention when you see them. The level of severity differs for each signal word and color.

Signal words are accompanied by graphics showing what personnel should or should not do. The graphics are called safety symbols and are defined on page 13, but more specific text is provided every time a graphic is used throughout the manual. Everyone near the machine must be trained on how to read these safety indicators.

Failure to comply with the instructions accompanying each signal word may result in property damage, personal injury, or even death. Personnel must follow all safety procedures and practices to ensure the safest possible operation of this equipment. However, at no time is this document a substitute for common sense. Personnel must ensure that the work environment is safe and free of distractions.

DANGER

Indicates an imminently hazardous situation which, if not avoided, is likely to result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.

CAUTION

When CAUTION is used **with** the safety alert symbol (yellow triangle), it indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

When CAUTION is used **without** the safety alert symbol, it indicates a potentially hazardous situation which may result in equipment damage.

NOTICE

Calls attention to information that is significant to understanding the operation at hand.

ENVIRONMENTAL

Applies to conditions that may affect the environment but do not have an immediate, direct effect on personnel or equipment.

General Equipment Safety Rules



Because it is impossible to anticipate every circumstance that might involve a hazard, the safety information provided in this equipment manual and on the machine is not all-inclusive. If this machine is operated or serviced using a procedure not specifically recommended by the manufacturer, the procedure shall be approved by a professional engineer to ensure it will not render the equipment unsafe. Use extreme caution and common sense at all times!

Know Your Equipment

- Read this manual completely before using or maintaining the equipment. Do not operate this machine unless you have a thorough knowledge of the controls, safety devices, emergency stops, and operating procedures outlined in this manual.
- Read and follow all safety notes. Failure to comply with these instructions may result in economic loss, property damage, and/or personal injury including death.
- Refer to the lockout/tagout guidelines on the following pages to safely perform maintenance and troubleshooting of this equipment.
- Observe and obey all safety labels. Replace worn labels immediately.
- Use this equipment solely for the purpose described in this manual.
- Only qualified personnel should attempt to operate or perform maintenance on this equipment. “Qualified personnel” is defined as:

...a person or persons who, by possession of a recognized degree or certificate of professional training, or who, by extensive knowledge, training, or experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work—ANSI B30.2-1983

...one who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved—NEC 2002 Handbook

Personal Safety

- Always wear safety glasses and hearing protection in an industrial environment.
- Utilize a filtering face piece (dust mask) when working near sawdust.
- Wear proper clothing and appropriate personal protective equipment (e.g., safety glasses and hearing protection.) Do not wear loose clothing or jewelry. Confine long hair by tying it back.
- Use caution when lifting heavy parts or material.

Installing the Equipment

- Follow installation instructions completely.
- This equipment is not for use in a residential area.



Lockout/Tagout

- Before performing maintenance on the pneumatic or hydraulic systems, bleed the lines to eliminate pressure.
- Lockout/tagout all energized systems before performing maintenance on them. Refer to the *Lockout/Tagout Guidelines* section on page 5.

Keeping a Safe Environment

- Keep children away. All visitors should be kept a safe distance from the work area. Hazards may not be apparent to individuals unfamiliar with the machine.
- Keep work areas well lit.
- Keep the work area clean and free of any trip or slip hazards.
- Do not use the equipment in damp or wet locations, or expose it to rain or snow.
- Minimize dust clouds and protect your equipment by cleaning dust in this manner:
 - Vacuum dust prior to blowing with air
 - Shut down electrical power and sources of ignition
 - If using compressed air, it should be a low compression (no more than 15 psi)
 - Powered cleaning equipment such as vacuums must be consistent with local governmental codes for use in dusty conditions.

Operating and Maintaining the Equipment

- Ensure that all people, tools, and foreign objects are clear of the restricted zones before operating this equipment. The restricted zones are shown on page 11.
- Perform safety tests to ensure all E-stops are working properly before operating the equipment at the initial startup, after performing any maintenance, and in accordance with the maintenance schedule.
- In case of machine malfunction, stop the machine immediately using an E-stop and report the malfunction to a supervisor.
- Never leave the machine running unattended. Turn the power off! Do not leave the machine until all parts have come to a complete stop and all electrical power has been shut off.
- Check for worn or damaged parts regularly. Repair or replace them immediately.
- Keep the hydraulic, pneumatic, and electrical systems in good working order at all times. Repair leaks and loose connections immediately. Never exceed the recommended pressure or electrical power.



- Check that all safety devices are in working order before each shift starts. All protective guards and safety devices must be in place before and during use of the machine. Never disconnect or bypass any safety device or electrical interlock.
- Only qualified maintenance personnel shall remove or install safety devices.
- Periodically inspect the quality of the finished product.

Electrical Safety

- Do not use any liquids in the interior of electrical cabinets.
- When using solvents on and around the machine, remove power to the machine to eliminate the chance of sparking, resulting in explosion or fire. Wear a respirator approved for use with solvents. Wear protective clothing, gloves, and safety glasses.

Lockout/Tagout

Lockout/Tagout Guidelines

All lockout/tagout guidelines must be met according to OSHA 29 CFR 1910.147. A specific procedure should be included in your company's energy control program. This manual is not intended to replace your company's de-energizing or lockout/tagout procedure required by OSHA, but merely to provide general guidance.

The term "lockout," as used in this manual, means placing a lockout device on any and all energy sources to ensure that the energy isolating device and the equipment being controlled cannot be re-energized or operated until the lockout device is removed. The photos on the next page show where the electrical disconnects are located for this machine.



- Energy sources include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- In the case of electrical energy sources, the main power and control power to the machinery must be turned off and physically locked in the "off" position.
- A lockout device is usually a keyed padlock.
- If more than one person is working in a restricted zone, use a group lockout device that will allow each person to use a lock that can be removed only by the person performing the maintenance.

"Tagout" means that a prominent warning is securely fastened to an energy-isolating device to indicate that the equipment shall not be operated.

Whenever you see this symbol, lockout/tagout!



Electrical Lockout/Tagout Procedures





When Working on a Machine Outside the Machine’s Main Electrical Enclosure



If working on the electrical transmission line to the machine, follow the procedure on page 8.

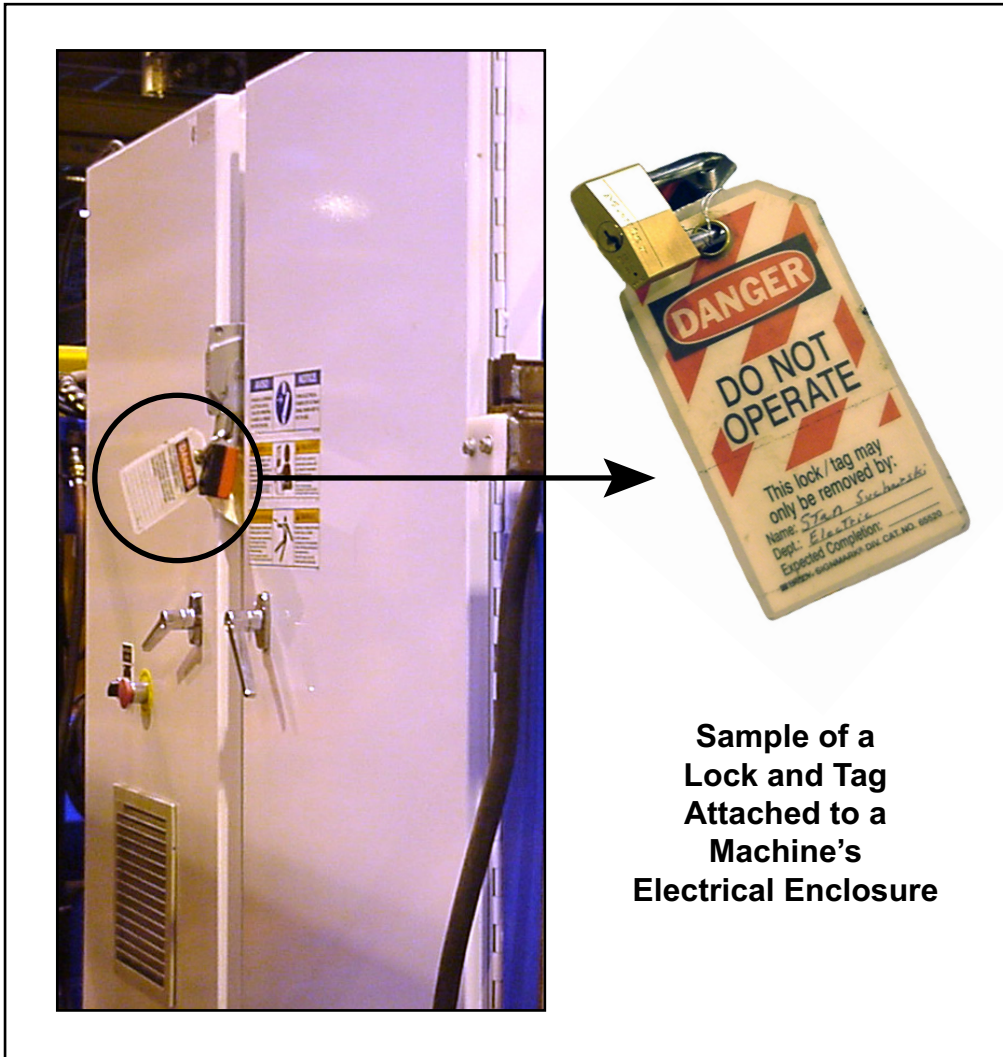
Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine’s main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company’s approved lockout/tagout procedures which should include, but are not limited to the steps here.

1. Engage an E-stop on the machine.
2. Turn the disconnect switch handle to the “off” position. See Figure SAFETY-1.

 WARNING	
	<p>ELECTROCUTION HAZARD.</p> <p>When the disconnect switch is off, there is still live power within the disconnect switch’s enclosure. Always turn off power at the building’s power source to the equipment before opening this electrical enclosure!</p>

3. Attach a lock and tag that meet OSHA requirements for lockout/tagout.
4. Restrain or de-energize all pneumatic components, hydraulic components, and other parts that could have live or stored power.

Figure SAFETY-1: Sample of a Lockout/Tagout Mechanism on an Electrical Enclosure





When Working on a Machine Inside the Machine's Main Electrical Enclosure or in the Electrical Transmission Line to the Machine

Before opening the main electrical enclosure, or attempting to repair or replace an electrical transmission line to the machine, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures which should include, but are not limited to the steps here.

1. Engage an E-stop on the machine.
2. Shut the power to the machine off at the machine's power source which is usually an electrical service entry panel on the facility wall. One example of a locked-out power source panel is shown in Figure SAFETY-2.
3. Attach a lock and tag that meets OSHA requirements for lockout/tagout.
4. Open the door to the enclosure in which you need access, and using a multimeter, verify that the power is off.

Figure SAFETY-2: Sample of a Lockout/Tagout Mechanism on a Power Source Panel



Pneumatic System Lockout/Tagout Procedure

When Lockout/Tagout is Not Required

If working on components other than the pneumatic system, but that requires you to be near the vicinity of movable pneumatic components, you must, at a minimum, physically restrain the pneumatic components from moving. If this is not possible, lockout/tagout the entire pneumatic system.



When Lockout/Tagout is Required

Before attempting repair or maintenance on a pneumatic line or component, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures.

Troubleshooting With an Energized Machine

Only a qualified electrician, using the personal protective equipment and following the procedures recommended in NFPA 70E should ever attempt service or repair of or near an energized area or component of the machine.



Whenever maintenance is performed while the equipment is electrically energized, there is a potential electric arc flash hazard. Refer to NFPA 70E for the personal protective equipment required when working with electrically energized components. Pneumatic and hydraulic components may move unexpectedly if not de-energized. Physically restrain any components capable of movement when working on or near those components.

Safety Test

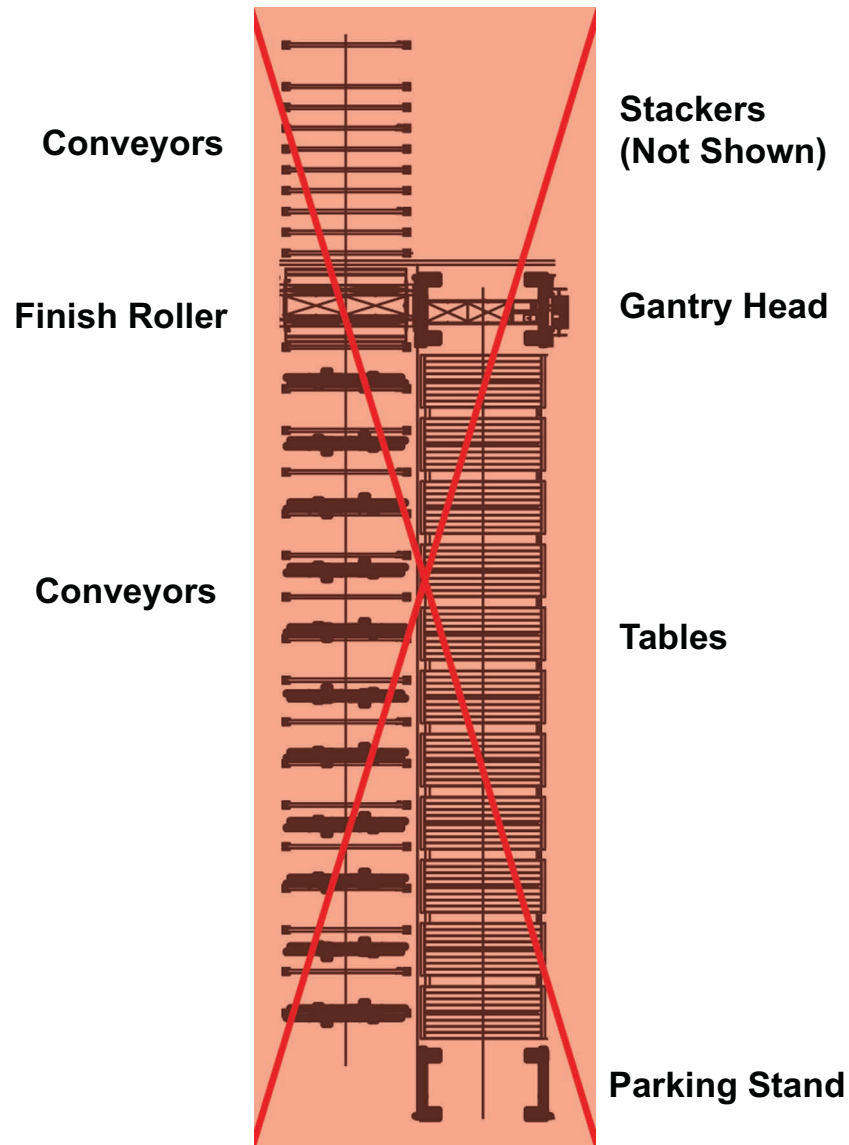
This test procedure **MUST** be performed by qualified personnel at startup and after ANY maintenance, adjustment, or modification. Testing ensures that the safety system and machine control system work together to properly stop the machine.

1. Start the system.
2. Test that the E-stop circuit prevents movement:
 - a) While jiggling a truss automatically, push the red E-stop button on the operator control station. All PLANX should stop immediately.
 - b) Attempt to manually run the pucks on the first PLANX assembly by pressing the FWD/REV button located on the control box for that PLANX assembly.
 - c) The pucks should not move! Repair the electrical system if the puck moves while the E-stop is actuated.
 - d) Repeat for all other PLANX assemblies.
 - e) Reset the E-stop circuit after testing by pulling straight out on the red Estop button, then pressing the RESET button.
3. Lockout/tagout.
4. Check that all guards and safety devices are in place and secure.
5. Inspect the timing belts (2 per PLANX) for excessive wear.
6. Inspect the Acme screws and nuts for excessive wear. Rotate the Acme screw to check the back side of crew.
7. Remove any foreign objects that may have fallen into the PLANX slot.
8. Ensure that the Acme screws are lubricated. See the Maintenance Checklist.
9. Remove the lockout/tagout devices.

Restricted Zone

	 DANGER
	<p>Stay out of the restricted zone when equipment is in use. Serious injury or death may result if personnel are in the restricted zone.</p> <p>Always look for personnel in the restricted zone before operating equipment.</p>

Know the Restricted Zone





Marking the Restricted Zone







The restricted zone must be marked so everyone near the equipment can clearly see the area where danger may exist.





MiTek offers Restricted Zone Tape that is easy to apply and has text in English and Spanish. Some equipment comes with restricted zone tape. If your machine did not come with restricted zone tape, you may order it from MiTek Machinery Division Customer Service.












Instructions for where and how to apply restricted zone tape can be found in the gantry manual that came with your system or by obtaining Service Bulletin 181 from the MiTek Machinery Web site.









Safety Symbol Definitions





The safety symbols shown in this section can be found throughout the manual to indicate hazards that are related to this equipment. All personnel expected to operate or maintain this equipment should become familiar with these safety symbols and what they mean.





	<p>This is the Electrical Hazard Symbol. It indicates that there are dangerous high voltages present inside the enclosure of this product and/or that a power source is present. To reduce the risk of fire or electric shock, do not attempt to open the enclosure or gain access to areas where you are not instructed to do so. Refer servicing to qualified service personnel only.</p> <p>This product should be operated only from the type of source indicated on the manufacturer's identification label. Installation should be in compliance with applicable sections of the national electric code. Consult your local building code before installing.</p>
	<p>This is the user caution symbol. It indicates a condition where damage to the equipment resulting in injury to the operator could occur if operational procedures are not followed. To reduce the risk of damage or injury, refer to accompanying documents, follow all steps or procedures as instructed.</p>
	<p>Operation of this equipment may result in flying debris and excessive noise. To reduce the risk of injury, wear only approved PPE.</p>
 	<p>Crush hazard! Keep hands clear.</p>
	<p>Keep hands away from moving parts.</p>

	<p>Do not use sling equipment rated for less than ___ lbs/___ kgs when lifting this equipment.</p>
	<p>Crush hazard from above</p>
	<p>Trip hazard! Pay attention when walking in this area.</p>
	<p>Keep hands and body clear.</p>
	<p>WARNING! ___ MAN LIFT REQUIRED TO SAFELY MOVE THIS EQUIPMENT. REFER TO INSTALLATION MANUAL.</p>

	<p>The operation of this equipment requires the use of PPE. Do not operate without wearing required protective clothing.</p>
	   
	
	
	
	
	

 	<p>Refer to manual- After installation, read the user's guide carefully before operating. Follow all operating and other instructions carefully.</p>
	<p>Circuits are live -lockout/tagout the upstream disconnecting means prior to opening for service.</p>
	<p>Lockout in a de-energized state</p>
  	<p>Lift Point - In order to reduce the likelihood of damage to the equipment, use only the lift points indicated in the manual.</p>
	<p>Use of lift equipment is mandatory.</p>

	<p>Consult material safety data sheet.</p>
	<p>Read all safety warnings and instructions before proceeding.</p>
	<p>Unplug equipment before servicing.</p>
	<p>Hazardous moving parts are located behind this access panel. Do not operate this equipment without all guards and covers in place.</p>
 	<p>Do not place containers with liquids such as coffee, water, sodas, etc. on this unit.</p> <p>Do not operate this equipment in a wet environment.</p> <p>Do not expose to water</p>
	<p>Use of fork lift equipment when moving this equipment will result in serious equipment damage. Refer to installation procedures.</p>

	<p>Do not use non-approved lubricants in this machine.</p>
	<p>Do not operate without guards and covers in place</p>
	<p>Do not weld</p>
	<p>Do not discard into municipal waste stream</p>
	<p>oil drop</p>

Declarations of Conformity for CE Compliance



EU DECLARATION OF CONFORMITY WITH COUNCIL DIRECTIVE 2006/42/EC CE DECLARATION DE CONFORMITE AVEC DIRECTIVE 2006/42/EC	
Date of Issue:	30 OCT 2009
Directive:	Machinery Safety Directive, 2006/42/EC
Conforming Machinery:	Servo Planx™ S/N: As Stamped on Nameplate
Manufacturer:	MiTek Industries, Inc. 301 Fountain Lakes Industrial Drive St. Charles, MO 63301 USA
Authorized Representative	Syd Griffiths Managing Director Europe MiTek Industries Limited MiTek House Grazebrook Industrial Park Peartree Lane Dudley, West Midlands DY2 0XW England Ph: (44) 1384 451400
Harmonised Standards Referenced or Applied:	BS EN 12100-1:2003, BS EN 12100-2:2003, BS EN 13857:2008, BS EN ISO 13850:2008, BS EN 60204-1:2006, BS EN ISO 14121-1:2007, BS EN 349:1993+A1:2008, BS EN 953:1997 +A1:2009, BS EN 1037:1995+A1:2008, BS EN 60529:1992. BS EN 614-1:2006+A1:2009
Specifications with which Conformity is Declared:	Essential Health and Safety Requirements of Annex 1 of the Machinery Directive
We hereby certify that the machinery described above conforms with the essential health and safety requirements of Council Directive 2006/42/EC on the approximation of the laws of the Member States relating to the safety of machinery.	
Signed:	
Signatory:	Printed Name Manish Kanjee Title Engineering Manager Company Name MiTek Industries, Inc.
Technical File Reference Number	SF10753A1.MII



Notes Concerning Harmonized Standards Referenced or applied:

BS EN ISO 12100-1:2003	Safety of machinery. Basic concepts, general principles for design.
BS EN ISO 12100-2:2003	Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles - /A1
BS EN 60204-1:2006	Safety of machinery. Electrical equipment of machines. General requirements.
BS EN ISO 13857:2008	Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.
BS EN 349:1993+A1:2008	Safety of machinery. Minimum gaps to avoid crushing of parts of the human body.
BS EN 953:1997 +A1:2009	Safety of machinery. Guards. General requirements for the design and construction of fixed and movable guards.
BS EN 1037:1995+A1:2008	Safety of machinery. Prevention of unexpected start-up
EN ISO 13850:2007	Safety of machinery — Emergency stop — Principles for design.
BS EN 60529:1992	Specification for degrees of protection provided by Enclosures (IP Code).
BS EN ISO 14121-1:2007	Safety of Machinery – Risk Assessment – Part 1: Principles
BS EN 614-1:2006+A1:2009	Safety of machinery — Ergonomic design principles —. Part 1: Terminology and general principles

Declaration of Noise Emissions



Declaration of Noise Emission

The MiTek[®] Industries, Inc. Model Servo Planx[™] noise emission levels per ISO EN 11202 are as follows:

Electronics Console Work place noise level (Work Cycle)	79.0 dB (A)
Servo Planx [™] Work place noise level (Work Cycle)	82.6 dB (A)
Ambient Correction Factor K3A calculated according to ISO EN 11204 Appendix A.	4 dB (A)

Measurements were made at a height of 1.5 m and 1 m from the machine.

The difference between the extraneous noise level and the sound intensity level at each measuring point is > 6 dB (A)

The figures quoted are emission levels and are not necessarily safe working levels. While there is a correlation between the emission and exposure levels this cannot be used reliably to determine whether or not further precautions are required.

Factors that influence the actual level of exposure of the workforce include characteristics of the work room, the other sources of noise, etc. such as the number of machines and other adjacent processes. Also, the permissible level of exposure can vary from country to country.

This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.



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Seguridad (Español)

**Sea cuidadoso.
Protéjase.**



Indicadores de seguridad: Palabras de aviso

Las siguientes palabras y colores de aviso se utilizan a lo largo de este documento para indicar riesgos de seguridad. Preste suma atención cuando los vea. El nivel de gravedad es diferente por cada palabra o color de aviso.

Las palabras de aviso van acompañadas por gráficos que muestran al personal lo que deben y no deben hacer. Los gráficos se llaman símbolos de seguridad y se definen en la página 13, pero se proporciona un texto más específico cada vez que se utiliza un gráfico por todo el manual. Todas las personas que estén cerca de una máquina tienen que ser capacitadas en cómo leer estos indicadores de seguridad.

No cumplir las instrucciones que acompañan cada palabra de aviso puede producir daños a la propiedad, lesiones personales e incluso la muerte. El personal debe seguir todos los procedimientos y prácticas de seguridad establecidos para asegurar el uso más seguro posible de este equipo. No obstante, en ningún caso este documento reemplaza el sentido común. El personal debe asegurarse de que el entorno de trabajo sea seguro y esté libre de distracciones.

PELIGRO

Indica una situación potencialmente peligrosa que, si no se evita, podría producir la muerte o lesiones graves.

ADVERTENCIA

Indica una situación potencialmente peligrosa que, si no se evita, podría producir la muerte o lesiones graves.

PRECAUCIÓN

Indica una situación potencialmente peligrosa que, si no se evita, puede producir lesiones menores o moderadas.

AVISO

Llama la atención a información importante para entender la operación que se desea realizar.

AMBIENTAL

Se aplica a condiciones que pueden afectar el entorno pero que no tienen un efecto inmediato o directo sobre el personal o el equipo.

Reglas de seguridad para el equipo de general



Debido a la imposibilidad de anticipar todas las circunstancias que podrían constituir un riesgo, la información de seguridad suministrada en este manual del equipo y sobre la máquina no es exhaustiva. Si se utiliza o realiza el mantenimiento de esta máquina utilizando un procedimiento no recomendado específicamente por el fabricante, el procedimiento deberá ser aprobado por un ingeniero profesional para asegurarse de que no afecte la seguridad del equipo. ¡Manéjese siempre con suma precaución y sentido común!

Conozca su equipo

- Lea este manual en su totalidad antes de utilizar o mantener el equipo. No utilice esta máquina a menos que esté perfectamente familiarizado con los controles, los dispositivos de seguridad, los frenos de emergencia y los procedimientos operativos que se describen en este manual.
- Lea y siga todas las notas de seguridad. El no cumplimiento de estas instrucciones podría producir pérdidas económicas, daños a la propiedad y lesiones personales, incluida la muerte.
- Refiérase a las pautas de bloqueo/etiquetado proporcionadas en las siguientes páginas para realizar el mantenimiento y solucionar problemas de este equipo en forma segura.
- Observe y cumpla con todas las etiquetas de seguridad. Cambie las etiquetas gastadas inmediatamente.
- Utilice este equipo únicamente para el propósito que se describe en este manual.
- Sólo personal calificado debe intentar utilizar o realizar el mantenimiento de este equipo. Por "personal calificado" se entiende:

...una persona o personas que, por el hecho de poseer un título o certificado de capacitación profesional reconocido o que, por sus amplios conocimientos o experiencia, han demostrado con éxito estar capacitados para resolver problemas relacionados con el tema y el trabajo en cuestión—ANSI B30.2-1983

...una persona que posee habilidades y conocimientos relacionados con la construcción y uso de equipos e instalaciones eléctricas y que ha recibido capacitación en seguridad sobre los riesgos posibles—NEC 2002 Handbook

Seguridad personal

- Use siempre lentes de seguridad y protección auditiva en un entorno industrial.
- Utilice una máscara protectora cuando trabaje cerca de aserrín.
- Utilice ropa adecuada y equipo de protección personal apropiado (por ejemplo, lentes de seguridad y protección auditiva.) No use ropa suelta ni joyas. Si tiene el cabello largo, áteselo para atrás.
- Proceda con precaución cuando levante piezas o materiales pesados.

Instalación del equipo

- Siga las instrucciones de instalación al pie de la letra.
- No utilizar este equipo en zonas residenciales.



Procedimientos de Bloqueo/Etiquetado

- Antes de realizar el mantenimiento de los sistemas neumáticos o hidráulicos, purgue las líneas para eliminar la presión.
- Bloquee y etiquete todos los sistemas energizados antes de realizar tareas de mantenimiento en ellos. Refiérase a la sección *Pautas de bloqueo/etiquetado* en la página 27.

Cómo mantener un entorno seguro

- Mantenga alejados a los niños. Todos los visitantes deben mantenerse a una distancia segura del área de trabajo. Los riesgos pueden no ser evidentes a las personas no familiarizadas con la máquina.
- Mantenga las áreas de trabajo bien iluminadas.
- Mantenga el área de trabajo limpia y libre de cualquier riesgo de tropiezo o resbalamiento.
- No utilice el equipo en lugares húmedos o mojados y no lo exponga a la lluvia o a la nieve.
- Minimice las nubes de polvo y proteja su equipo quitando el polvo de la siguiente manera:
 - Aspire el polvo antes de soplarlo con aire
 - Apague la alimentación eléctrica y todas las fuentes de ignición
 - Si usa aire comprimido, debe ser a compresión baja (no más de 15 psi)
 - El equipo eléctrico de limpieza como las aspiradoras debe cumplir con los códigos del gobierno local para uso en condiciones polvorientas.

Uso y mantenimiento del equipo

- Asegúrese de que no haya personas, herramientas y objetos extraños en las zonas restringidas antes de utilizar este equipo. Las zonas restringidas se indican en la página 33.
- Realice pruebas de seguridad para verificar que todos los frenos de emergencia funcionen adecuadamente antes de utilizar el equipo por primera vez, después de realizar cualquier tarea de mantenimiento y según la frecuencia de mantenimiento establecida.
- En caso de que la máquina no funcione correctamente, deténgala inmediatamente utilizando un freno de emergencia e informe el problema a un supervisor.



- No deje nunca la máquina encendida si no está junto a ella. ¡Apáguela! No la abandone hasta que todas las piezas se detengan completamente y hasta que se haya apagado la alimentación eléctrica.
- Verifique periódicamente que no haya piezas gastadas o dañadas. Repárelas o cámbielas inmediatamente.
- Mantenga los sistemas hidráulicos, neumáticos y eléctricos en buen funcionamiento en todo momento. Repare las fugas y las conexiones sueltas inmediatamente. No exceda nunca la presión ni potencia eléctrica recomendadas.
- Verifique que todos los dispositivos de seguridad estén en buen funcionamiento antes de comenzar de cada turno. Todos los dispositivos protectores y de seguridad deben estar en su lugar antes y durante el uso de la máquina. No desconecte ni evite nunca ningún dispositivo de seguridad ni interbloqueo eléctrico.
- Solo el personal de mantenimiento calificado puede quitar o instalar los dispositivos de seguridad.
- Inspeccione periódicamente la calidad del producto terminado.

Seguridad eléctrica

- No utilice líquidos en el interior de los gabinetes eléctricos.
- Cuando utilice disolventes sobre o alrededor de la máquina, desconecte la alimentación para eliminar las probabilidades de chispas, que pueden producir una explosión o incendio. Use un respirador aprobado para el uso con disolventes. Use ropa protectora, guantes y lentes de seguridad.

Bloqueo/Etiquetado

Pautas de bloqueo/etiquetado

Deben cumplir con todas las pautas de bloqueo/etiquetado conforme a la norma OSHA 29 CFR 1910.147. El programa de control de energía de la compañía debe incluir un procedimiento específico. El objetivo de este manual no es reemplazar el procedimiento de desenergización o bloqueo/etiquetado requerido por la OSHA, sino proporcionar pautas orientativas generales.

El término "bloqueo", según se utiliza en este manual, se refiere a la colocación de un dispositivo de bloqueo en las fuentes de energía para asegurar que el dispositivo aislador de energía y el equipo controlado por éste no puedan reenergizarse o utilizarse hasta que se retire dicho dispositivo.

Las fotos de la página siguiente muestran los lugares en los que se encuentran los interruptores de desconexión eléctrica de esta máquina.



- Las fuentes de energía incluyen energía eléctrica, mecánica, hidráulica, neumática, química, térmica y otras.
- En el caso de fuentes de energía eléctrica, la alimentación principal y la alimentación de control a la maquinaria deben apagarse y bloquearse físicamente en la posición "off" (apagado).
- Por lo general, como dispositivo de bloqueo se utiliza un candado con llave.
- Si hay más de una persona trabajando en una zona restringida, utilice un dispositivo de bloqueo grupal que permita a cada persona utilizar un candado que sólo pueda ser retirado por la persona que realiza el mantenimiento.

"Etiquetado" significa que debe colocarse una advertencia fácil de ver en un dispositivo aislador de energía que indique que el equipo no debe utilizarse.

Siempre que vea este símbolo, ¡Bloquee/Etiqueta!



Procedimientos de bloqueo/etiquetado eléctricos

Cuando trabaja en una máquina fuera del gabinete eléctrico principal de la máquina



Si trabaja en la línea de transmisión eléctrica a la máquina, siga el procedimiento de la página 30.

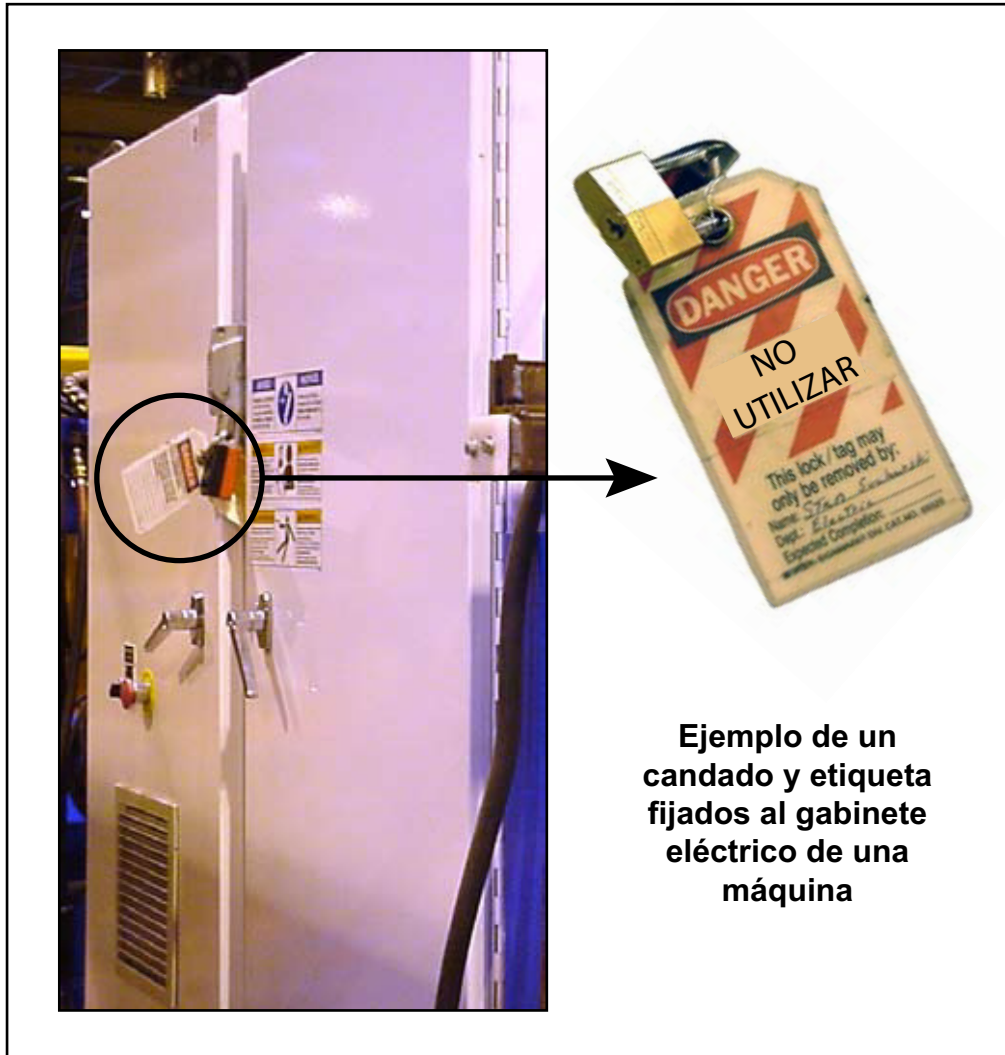
Antes de realizar el mantenimiento de cualquier máquina con alimentación eléctrica, bloquee y etiquete la máquina de forma adecuada. Cuando trabaje en una máquina fuera del gabinete eléctrico principal de la máquina, salvo en el caso de trabajos en la línea de transmisión eléctrica a la máquina, siga los procedimientos de bloqueo/etiquetado aprobados por la compañía, los cuales deberían incluir, entre otros, los pasos aquí indicados.

1. Coloque un freno de emergencia sobre la máquina.
2. Coloque el mango del interruptor con fusibles en la posición "apagado/apagada"..

	 ADVERTENCIA
	<p>RIESGO DE ELECTROCUCIÓN.</p> <p>Cuando el interruptor con fusibles está apagado, sigue habiendo energía dentro del gabinete del interruptor. ¡Apague siempre la alimentación en la fuente de alimentación del edificio antes de abrir este gabinete eléctrico!</p>

3. Coloque un candado y una etiqueta que cumplan con los requisitos de bloqueo/etiquetado de la OSHA.
4. Trabe o desenergice todos los componente neumáticos, componentes hidráulicos y otras piezas que tengan alimentación directa o almacenada.

Figura SEGURIDAD-1: Ejemplo de un mecanismo de Bloqueo/Etiquetado en un gabinete eléctrico





Cuando trabaje en una máquina dentro del gabinete eléctrico principal de la máquina o en la línea de transmisión eléctrica a la máquina

Antes de abrir el gabinete eléctrico principal o intentar reparar o reemplazar una línea de transmisión eléctrica a la máquina, bloquee y etiquete la máquina en forma adecuada. Siga los procedimientos de bloqueo/etiquetado aprobados por la compañía, los cuales deberían incluir, entre otros, los pasos aquí indicados.

1. Coloque un freno de emergencia sobre la máquina.
2. Apague la alimentación a la máquina en la fuente de alimentación, que, por lo general, es un panel de entrada de suministro eléctrico que se encuentra en una pared de las instalaciones. En la Figura SEGURIDAD 2 se muestra un ejemplo de panel de fuente de alimentación bloqueado.
3. Coloque un candado y una etiqueta que cumplan con los requisitos de bloqueo/etiquetado de la OSHA.
4. Abra la puerta del gabinete al que necesita acceder y usando un multímetro verifique que la alimentación esté apagada.

Figura SEGURIDAD-2: Ejemplo de un mecanismo de Bloqueo/Etiquetado en un panel de fuente de alimentación



Solución de problemas con una máquina energizada

Sólo un electricista calificado que utilice el equipo de protección personal y siga los procedimientos recomendados en la norma NFPA 70E debe intentar realizar tareas de reparación o mantenimiento en un área o componente energizados de la máquina o en su proximidad.



Cada vez que se realizan tareas de mantenimiento mientras el equipo está eléctricamente energizado, existe un riesgo potencial de formación de un arco eléctrico. Consulte en la norma NFPA 70E el equipo de protección personal requerido para trabajar con componentes eléctricamente energizados. Los componentes neumáticos e hidráulicos pueden moverse de manera imprevista si no se desenergizan. Trabe físicamente cualquier componente que pueda moverse cuando deba trabajar en ellos o en su proximidad.

Prueba de seguridad

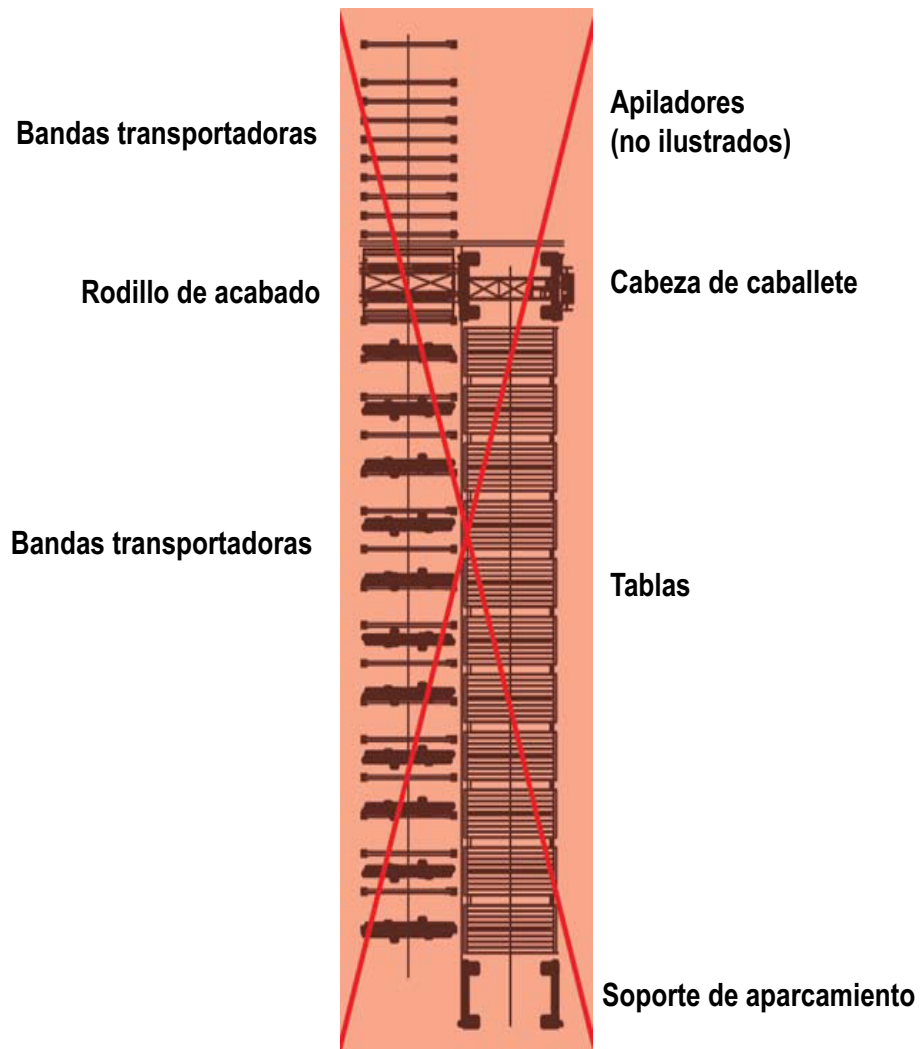
Este procedimiento de prueba DEBE ser realizado por personal calificado durante la puesta en marcha y después de CUALQUIER tarea de mantenimiento, ajuste o modificación. La prueba permite comprobar si el sistema de seguridad y el sistema de control de la máquina funcionan juntos y detienen la máquina de manera adecuada.

1. Ponga en marcha el sistema.
2. Pruebe que el circuito del freno de emergencia o E-stop evite el movimiento:
 - a) Al mover automáticamente un armazón, presione el botón rojo del freno de emergencia en la estación de control del operador. Todos los PLANX deberán detenerse de inmediato.
 - b) Intente poner a funcionar manualmente los discos del primer montaje PLANX presionando el botón FWD/REV localizado en la caja de control del montaje PLANX.
 - c) ¡Los discos no deben moverse! Repare el sistema eléctrico si el disco se mueve estando activado el freno de emergencia.
 - d) Repita el procedimiento para todos los demás montajes PLANX.
 - e) Restablezca el circuito del freno de emergencia después de la prueba jalando hacia afuera el botón rojo E-stop y luego presionando el botón de RESET.
3. Procedimiento de bloqueo y etiquetado.
4. Compruebe que todos los protectores y dispositivos de seguridad estén en su lugar y asegurados.
5. Inspeccione que las bandas de encendido (2 por PLANX) no estén desgastadas.
6. Inspeccione los tornillos y las tuercas Acme para asegurarse de que no estén desgastados. Rote los tornillos Acme para revisar la parte posterior.
7. Elimine cualquier objeto extraño que haya podido caer en la ranura del PLANX.
8. Asegúrese de que los tornillos Acme estén lubricados. Consulte la Lista de comprobación de mantenimiento.
9. Quite los dispositivos de bloqueo/etiquetado.

Zona restringida

	 PELIGRO
	<p>Manténgase afuera de la zona restringida cuando el equipo esté en uso. Pueden producirse lesiones graves o incluso la muerte si el personal está en la zona restringida.</p> <p>Asegúrese que no haya personal en la zona restringida antes de operar el equipo.</p>

Conocer la zona restringida



Marcar la zona restringida

Deberá marcarse la zona restringida de manera que todas las personas cerca del equipo puedan ver claramente el área donde pueda existir peligro.

MiTek ofrece la cinta de zona restringida o “Restricted Zone Tape”, fácil de aplicar y con texto en inglés y en español. Algunos equipos traen la cinta de zona restringida. Si su máquina no trajo la cinta de zona restringida, puede pedirla a MiTek Machinery Division Customer Service (Servicio al cliente de la división de maquinaria de MiTek).

Puede encontrar las instrucciones sobre dónde y cómo aplicar la cinta de zona restringida en el manual de su mesa o pórtico incluido con su sistema o pedir el Service Bulletin Kit 181 en la página web de MiTek Machinery.



Información adicional

Definiciones de los símbolos de seguridad (<i>Safety Symbol Definitions</i>)	página 13
Declaraciones de Cumplimiento (<i>Declarations of Conformity for CE Compliance</i>)	página 19
Declaración de emisión de ruidos (<i>Declaration of Noise Emissions</i>)	página 21

Purpose of Chapter

This chapter explains how to navigate through the equipment manual and how to contact MiTek.

Introduction to the Manual

 WARNING	
	<p>Read this manual completely before using this equipment!</p> <p>Do not operate this machine until you have a thorough understanding of all controls, safety devices, emergency stops, and operating procedures outlined in this manual.</p> <p>All hazard instructions must be read and observed. Failure to do so may result in economic loss, property damage, and/or personal injury.</p> <p>This manual must always be available to personnel operating and maintaining this equipment.</p>

Purpose and Scope of This Manual

In order for this manual to be useful, it must be kept in a location where operators and maintenance personnel have easy access to it.

This manual addresses the most recent versions of the equipment as of the creation or revision date on the title page. For earlier revisions, contact MiTek Customer Service. The part number is listed on the title page, but the revision you require depends on the date your equipment was manufactured.

This manual can be a valuable training tool.

- The *General Information* chapter contains information on truss terminology and provides basic information about the equipment.
- The *Operation* chapter teaches operators how to efficiently operate the machine.
- The *Maintenance* chapter is written specifically for maintenance personnel.
- The appendices provide valuable technical information.



Understanding This Manual

This manual addresses the *MatchPoint PLANX* precision jigging system.

Separate manuals exist for the Finish Roller, tables, and for any gantry heads used along with the *MatchPoint PLANX*.

Review the table of contents to understand the structure of the chapters and appendices. The manual is part number 001098.

Screen Shots




A screen shot is a printed view of what is visible on the computer screen.

Most screen shots are from *MatchPoint* software version 1.2.11. Screens from other versions may differ slightly.

Navigation

The graphics in Table 1-1 are used throughout the manual to quickly communicate a specific type of information.

Table 1-1: Navigational Tools Used Throughout the Manual

Graphic	What It Communicates
	<p>Important safety note!</p> <p>When this graphic appears, you must lockout/tagout the equipment using approved methods described in OSHA 29 CFR 1910.147 before continuing with the procedure.</p>
	<p>Indicates tools required before beginning a procedure.</p>
	<p>A note that gives additional information to the steps or existing text.</p>
	<p>Refers reader to another section, table, graphic, or drawing to further explain something.</p>

Formatting Cues

To follow the procedures in this manual, you must first understand the formatting cues used. Table 1-2 describes how to read the cues provided in this text.

Table 1-2: How to Read the Formatting Cues

If Text Looks Like...	It Indicates...	Example in Text
All caps	Key on keyboard or button on screen	Press ENTER
Initial cap and italic	Menu or field or virtual button that you must find or select	Click on the <i>File</i> menu
Initial cap only, no italics	Menu or field or virtual button when simply referring to it	While in the Main Menu
Plus sign (+)	Hold buttons at the same time	CTRL+ALT+DELETE
Greater Than sign (>)	Next selection	<i>File>Open</i>

Additional Resources

Supplemental Documentation

In addition to the equipment manual, refer to the manufacturer's documentation for individual components. The supplemental documentation is provided at the time of installation, or it may be found inside an electrical enclosure. Refer to these documents when you need more detailed information on these components than the MiTek manual provides.

Web Site

Visit the MiTek Web site at www.omnisaw.com or the MiTek web site at www.mii.com for up-to-date information on all MiTek and MiTek equipment. On the MiTek Web site, view the latest revision of this manual and all Service Bulletins, or order parts on-line through our *eStore*.

Contacting Us

For technical assistance or to order parts, contact MiTek's Customer Service Department using one of the methods listed in Figure 1-1.

Figure 1-1: Contacting MiTek

<p>MiTek Machinery Division Customer Service Department 301 Fountain Lakes Industrial Drive St. Charles, MO 63301</p> <p>Parts Orders (with part number) E-mail: mitekparts@mii.com</p> <p>Technical Assistance Phone: 800-523-3380 Fax: 636-328-9218 machinerysupport@mii.com</p> <p>Web Site www.mitek-us.com</p>	 The MiTek logo, consisting of the letters 'MII' in a bold, black, sans-serif font with three horizontal blue lines passing through the letters.
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Purpose of Chapter

This chapter covers what you must consider or complete before this equipment can be installed.

MiTek's Responsibilities

Prior to Installation

MiTek will provide the following items and information prior to the installation date:

1. A Prior to Installation package that:
 - Outlines this chapter and requests your signature of agreement.
 - Gives dates to expect shipment, delivery, and installation.
 - Provides guidelines on providing an electrician, welder, and other specialists.
 - Describes payment information.
2. A layout showing how you have indicated that you wish the equipment to be arranged within your building.

During Installation

Upon request, a MiTek Customer Service Technician (CST) can be present to oversee the installation of your equipment.

Customer's Responsibilities

Before the installation of your equipment, the items and procedures in this chapter must be arranged, purchased, or assembled. Table 2-1 provides an overview of these items. Each topic listed in the table is explained in detail in the text following the table.

If these requirements are not satisfied before the scheduled installation date, it may be necessary to reschedule the installation. Any additional cost may be the customer's responsibility.

Table 2-1: Responsibilities of Customer at or Prior to Installation

Space Requirements	<p>This equipment requires enough space to allow for the machine dimensions plus additional working space for operation and maintenance.</p> <p>Space should have adequate lighting. See your layout for machine dimensions. See page IN-41 for space requirements for maintenance.</p>
Location Requirements	<p>Concrete, a minimum of 6" thick 3000 psi, is required under the weight of the tables and Stand-Alone Conveyors.</p> <p>The <i>MatchPoint PLANX</i> tables must be operated in a covered area without extreme temperature changes.</p>
Electrical Requirements	<p>The standard electrical requirements are shown in Table 2-2. Contact your MiTek representative immediately if custom power specifications need to be arranged.</p>
Shipping Weights	<p>See Table 2-3.</p>
Customer-Supplied Items Required	<p>The customer is responsible for having the supplies listed in Table 2-4 available at the time of installation.</p>
Local Codes: Power, Anchoring, etc.	<p>The customer must be familiar with all local codes that apply and ensure the equipment is installed in a way that meets these codes. See page IN-45 for more details.</p>



Space Requirements

Space must be allocated for the following:

- Physical dimensions of the *MatchPoint PLANX* system and all accessories.
- Space between components.
- Adequate space for safe operation and maintenance of the equipment.

Refer to the guidelines below when planning your space allocation.

Space for the Equipment

It is the customer's responsibility to provide adequate space for the installation, operation, maintenance, and protection of the equipment. Refer to your layout to determine the physical dimensions of your equipment. Additional space is required for operation, maintenance, and optional equipment.

Space for Operation and Maintenance

Additional space must be allocated for operation and maintenance. Operation space should provide safety, freedom of movement, storage space, and free flow of raw and finished materials. There must also be adequate space for safe handling of the raw and finished materials throughout the process. Refer to your layout for recommended space required.

Electrical enclosures and distribution panels must have the required amount of space clear in front of them. In the United States, regulations usually require 3 ft, but check your local regulations.

The space required is dependent on your maintenance and operating processes. The largest truss the system can create must be easily removable from the tables. Each *PLANX* assembly must have the ability to be removed from the tables, either by overhead crane or forklift. The *PLANX* assembly lifts up and out off the tables.

Location Requirements

Floor Structure

A level and structurally sound concrete slab must be provided for the installation of the equipment. This slab should be designed and installed in accordance with local building code requirements and, if required, under supervision of a professional engineer. Concrete should be a minimum of 6 in. thick under the *MatchPoint PLANX* system. Three thousand (3000) psi concrete is recommended. Refer to your layout drawing.

The floor must be level within 3 in. to properly install a system. Equipment installed on a floor not level within 3 in. may require shim plate to be supplied by the customer.

Environment

The equipment must be used in dry conditions under a roofed area according to Type 1 electrical enclosure requirements. Under no circumstances should the electrical enclosures be sprayed with a hose.

Lighting should be adequate for safe operation and maintenance.

Electrical Requirements

The standard electrical requirements are shown in Table 2-2. Additional voltages can be supported through the use of optional transformers. Contact MiTek’s Sales Division if transformers are required.

The power supply must have a fused disconnect switch, separate from the power distribution panels. The power supply line must reach the power distribution panels.

You must indicate what voltage is available at the machine’s proposed location when placing the order. This information must be correct. Depending on the voltage available, revisions to the electrical system or a transformer may be necessary.

Table 2-2: Electrical Specifications

Horsepower	1/3 hp per motor (2 motors per <i>PLANX</i> , 1-4 <i>PLANX</i> per table)
Amperage	15 amps
Voltage	240 VAC per every 4 <i>PLANX</i> standard
Phases	3
Frequency	50-60 Hz

Shipping Information

When the equipment arrives, you must have the proper transport and lifting equipment available to remove it from the truck and place it in your facility. Table 2-3 lists the weight of the individual components of a typical *MatchPoint PLANX* system.



	 DANGER
	<p>Transport and lifting equipment such as forklifts, cranes, and straps must be designed and rated for the load and application. The weight of each major component is given in Table 2-3.</p> <p>Inadequate transport equipment may result in property damage, personal injury, or death.</p>



Table 2-3: Shipping Information

Contents of Shipment	Approximate Weight
PLANX assembly	600 lb each
STT 101 tables (with PLANX)	5500 lb each
STT 101 aisle cover (with PLANX)	1200 lb each

Customer-Supplied Parts

Summary of Parts Required

The customer must supply the parts shown in Table 2-4. Additional details are found in the text following the table when necessary. Some parts must be installed before installation occurs and some must be available for use at the time of installation.

Table 2-4: Customer-Supplied Parts

Item	Description
Electrical Equipment	Disconnect enclosure (see additional details)
	Strain relief (see additional details)
	Power strip and power cords to supply power to the computer, monitor, and DC power supply (see additional details).
	Electrical requirements for the tables include conduit and fittings. Consult the requirements for customer-supplied electrical parts on your electrical schematic, and speak to your Sales Representative for other electrical parts that must be available at the time of installation.
Transport Equipment	Forklift, chains, and spreader bars capable of lifting 6000 lb
Tools That May Need to be Rented	Transit with measuring stick Hydraulic jack
	Industrial hammer-drill Welding equipment and welder
General Tools	Tape measures (2) Deep well socket: 3/4"
	Steel tape measures (2) Sockets: 3/4" (2), 9/16"
	(longer than total length of tables) Long hex head wrench 3/4", 9/16"
	Adhesive tape Allen wrenches: 1/16", 1/8", 5/32", 3/16", 1/4", 5/16"
	1/4-20 tap (2)
	#7 (.201) drill bit (2) 3/8 drive ratchet with extension
	Contractor-grade string (longer than total length of tables) 3/4-20 eye hooks (2)
	Protective gloves

Disconnect Enclosure



The Purchaser must provide a Main Disconnect Switch as described here.

EU Requirements

- Switch-disconnect, with or without fuses, in accordance with IEC 60947-3, utilization category AC-23B.
- The handle must be lockable in the OFF (down) position and be located such that the operating handle is between 0.6-1.9m above floor, recommended < 1.7m.

US/Canada Requirements:

- Main Disconnect Switch: Shall be CSA certified or UL listed and suitable for the voltage, current, hp, & interrupting requirements.
- An External Disconnect Shall be Provided to be in Compliance With the US / Canadian Electrical Code.

 WARNING	
	<p>ELECTROCUTION HAZARD!</p> <p>Customer must provide an external disconnect that is suitable for the voltage and load of this machine and satisfies all regulations according to US and Canadian electrical codes.</p>

Strain Relief

A strain relief should be provided where the cordset enters the console and it should be sized for the cord size capable of pull force of 8N. Cabtite #KEL 32 with appropriate sized HDC KT series grommet is recommended.

Power Strip and Power Cord Details

It is the responsibility of the Installer or this equipment to supply a suitable length of medium heavy duty supply cordage. It should meet the following requirements:

- It must be approved for use in the country in which this equipment is installed.
- A suitable power strip with 15 amp integral overcurrent protection and grounding capability must be selected for connecting to the branch circuit and must comply with the National Electrical Code of the country in which it is installed.
- The power strip should be placed in and secured inside the operator console in an open area.
- The maximum length of the cordage should not exceed 98” (4.5 meters) or the values established by the National Electrical Code in the country where this equipment is installed.

- The cordage should be routed to the Control Panel in a manner that does not allow it to be stepped on, pinched, subject to abrasion, excessive bending, or other abuse.
- The cordset can provide emergency switching off (ESO) capability if needed. The power cord must be placed near an easily accessible, unobstructed socket outlet.
- A strain relief should be provided where the cordset enters the console and it should be sized for cord size capable of pull force of 8N. Cabtite #KEL 32 with appropriately sized HDC KT series grommet is recommended.

Local Codes and Regulations

The customer must be familiar with all local codes that apply and ensure the equipment is installed in a way that meets these codes. The following list identifies some, but not all, of the items that should be discussed with local authorities.

- Equipment should be stable under all conditions of use, including seismic events
- Fuse and disconnect regulations
- Grounding regulations
- Emissions regulations
- Space required
- Personal protective equipment required
- Inspections required

Training Provided

The MiTek representative trains your operators and maintenance personnel on the equipment's proper operation and maintenance. The representative explains the warranty policy, gives an overview of the equipment manual, and requests your signature to verify your understanding of everything discussed.

Refer to the *Training Checklist* on page MT78 for other training topics.

Purpose of Chapter

This chapter describes the entire installation process in detail. The instructions assume that the prior-to-installation requirements are satisfied.

Responsibilities During Installation

MiTek will provide installation supervision to ensure that the system is installed properly and operates correctly. We will also provide operating and maintenance training at the time the equipment is installed. The customer is responsible for providing all labor and equipment needed to complete the installation. These requirements are explained in the *Prior to Installation* chapter.



All customer responsibilities before and during installation are described in the *Prior to Installation* chapter!

Delivery


Checking for Damage

All shipments from MiTek are covered with tarps. When your shipment arrives, check to see that the tarps are in place. Displaced tarps may indicate a potential problem.

After removing the tarps, inspect the shipment for water/moisture, debris, and damage. Report any findings as required by the transport company. Document any findings by taking photographs or a video. Note any and all damage to the equipment on the bill of lading to ensure proper documentation for insurance claims. Without this note, any damage in transit is the responsibility of the customer to repair.

Notify MiTek Customer Service of any unacceptable findings discovered during the receipt inspection. Although your findings may not appear to be a problem, they may cause premature failure of components, poor performance, or erratic performance.

Unloading





Refer to...
Table 2-3 for the weight of each component

Equipment Needed

Refer to the *Prior to Installation* chapter for information regarding preparing for the delivery.



It is the customer's responsibility to provide equipment and labor for unloading, placement, and wiring of the equipment prior to the arrival of the MiTek representative.

A heavy-duty forklift is required to move the equipment during unloading and placement of the machine. If there are any questions regarding the unloading or placement process, please contact your MiTek representative.

 WARNING	
	<p>CRUSH HAZARD.</p> <p>Failure to lift the equipment in the prescribed manner may cause serious injury, including death, or equipment damage.</p> <p>Personnel not involved in the off-loading from the truck shall remain clear of the area.</p> <p>Transport and lifting equipment such as forklifts and cranes must be designed and rated for the load and application.</p>

Component weights are listed in Table 2-3 in the *Prior to Installation* chapter.

Exercise extreme caution to avoid damage or misalignment during unloading. Do not apply pressure on any moving parts or fittings. If using a fork truck, the table should be lifted from the middle, with forks evenly spaced on both sides of the center table supports. The forks should reach the full width of the table. Figure 3-1 and Figure 3-2 show how to lift and move the equipment safely.

 CAUTION	
	<p>Use two people when manually lifting anything over 40 lb (18 Kg).</p> <p>The following items weigh over 40 lb (18 Kg):</p> <ul style="list-style-type: none"> • Operator's control panel • Power distribution box

Lift Points

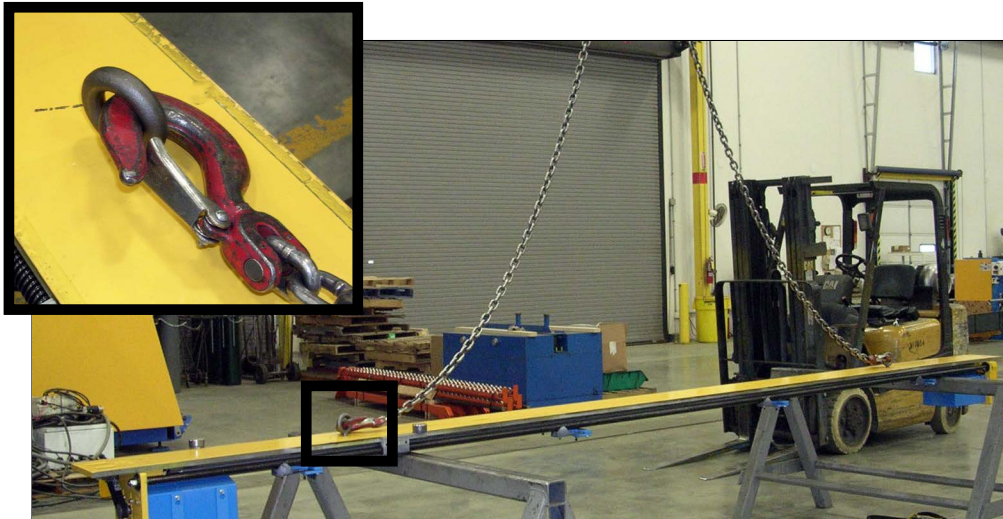


Lift the table or PLANX assembly as shown in Figure 3-1 and Figure 3-2 using lifting equipment rated appropriately for the weight.

Figure 3-1: Lift Points for Table



Figure 3-2: Lift Points for PLANX Assembly



If an overhead crane is not available, a forklift may be used to move the PLANX assembly if the following guidelines are met:

- Use a minimum of two (2) forklifts and strap the *PLANX* assembly to both forklifts.
- Do not put pressure on any parts other than a flat, smooth surface.

Unpacking

After successful unloading, remove the protective crating material from the pallets. Detach and set aside all loose parts. Move the equipment to the desired location using a forklift or crane appropriate to the weight of each unit. Lift the equipment to remove the pallet, and gently place each unit in its new location.

Returning Shipping Material


PLANX that are not shipped in tables are shipped using *PLANX* shipping stands. These shipping stands must be returned to MiTek’s Fountain Lakes facility.

A MiTek representative will contact you to schedule a return date, and will send you a return goods authorization (RGA). To return your shipping stands, fill out the RGA and bundle all the *PLANX* shipping stands on one skid. If you do not return the shipping stands, you will be billed for them.



Equipment Layout

Each component must be located in a specific location. Refer to your layout during installation. Your MiTek representative will provide your layout to you before the equipment is installed.

When *PLANX* are provided with MiTek tables, the tables will be shipped with *PLANX* installed. When *PLANX* are provided for other manufacturers’ tables, the *PLANX* will be installed on-site.

	 CAUTION
	<p>TRIP HAZARD!</p> <p>Secure or cover all hoses, power lines, and conduit so they are not trip hazards.</p>


Electrical System

	 WARNING
	<p>ELECTRICAL HAZARD!</p> <p>All electrical work must be performed by a licensed electrician.</p> <p>Follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147).</p>

Checking Existing Wiring

Heavy gauge wire can work loose during shipping and handling. Before power is connected to the machine, conduct a pull test on all pre-wired connections inside the electrical enclosures.

Connecting Power to the Equipment

	NOTICE
	<p>You must ensure proper grounding when leveling and welding the tables. When <i>PLANX</i> are installed, improper grounding could damage the circuit boards.</p> <p>Do not hook up power until all welding is complete. Welding on tables with electrical and communication lines hooked up could cause serious damage.</p>

All electrical work is the customer's responsibility and must be performed by a licensed electrician. The machine design addresses electrical components starting with the disconnect enclosure. Installation and maintenance of all electrical requirements up to the disconnect enclosure are the responsibility of the customer. Your MiTek representative can provide guidance regarding when the electrician will need to be available during the installation.



The customer must supply the disconnect enclosure.

 DANGER	
 	<p>DO NOT ATTEMPT TO START THE SYSTEM WITHOUT A MiTek REPRESENTATIVE PRESENT!</p> <p>Serious injury and/or equipment damage may result.</p>

Connecting Power to the *PLANX*

Connect power to the table enclosures by running wire from the distribution panel to all power distribution panels. Refer to your schematic and state and local codes for wire size.

Installing the Operator Console

 CAUTION	
	<p>Use two people when manually lifting anything over 40 lb (18 Kg).</p> <p>The following items weigh over 40 lb (18 Kg):</p> <ul style="list-style-type: none"> • Operator's control panel • Power distribution box

Connecting Power to the Operator Console

Connect power from the distribution panel to the operator console. The PC and display can operate at 120 or 240 VAC.

Connecting Communication Lines to the Table Enclosures

1. Run the RS485 communications line from the operator console to the first power distribution panel.
2. Connect the incoming RS485 communications line from the operator console as necessary to the communication card in the power distribution panel. Refer to your electrical schematic for proper wiring.
3. Connect the communication cable between the power distribution panels. A cable is supplied in each power distribution box with one end terminated. The other end

is to be terminated by your MiTek Customer Service Representative. Refer to your electrical schematic.



There is one power distribution panel for every four (4) *PLANX*.

Connecting Communication Lines Between Table Enclosures

Use 3/4-in. rigid metal conduit and CAT 5 stranded cable for communications between junction boxes.

1. Connect the CAT 5 stranded cable between the connections on each communications card.
2. Plug another patch cord from the second T-Tap into the T-Tap of the following table.
3. Continue until all *PLANX* are connected to the operator console.

Connecting the PC



For information on connecting your computer monitor, keyboard, and mouse, consult the documentation for the computer.

1. Connect the 9-pin serial port on the PC to the JSP console card at H2 using a serial communications cable.
2. Connect the 37-pin parallel input/output card on the PC to the JSP console card at H3 using a parallel input/output cable.



Installation Checklist

- Check equipment for damage
- Unload equipment
- Unpack equipment
- Check existing electrical wiring
- Connect power to the tables
- Install the operator console
- Install any remote consoles
- Connect communications lines between the table enclosures
- Connect the PC
- Secure or cover all hoses, power lines, and conduit.

Purpose of Chapter

This chapter describes the procedures required before operating your equipment.

Setting Up the *MatchPoint* Software

Software Logins

Logins can be set for Technicians and Administrators by selecting *Tools>Options*, then selecting the *Security* tab.

Certain functions of the software are only available if the operator is logged in as an Administrator. These functions include:

- All functions located under *Tools>Options*
- All functions located under *Tools>Admin*
- Diagnostics
- Calibration

To log in, select LOGON/OFF from the Actions menus at the bottom of the software screen.

Company Information

Before operating your *MatchPoint* software, you should fill in your company's information. This allows your software to be identified for support purposes.

1. Select *Tools>Company*.
2. Enter your company's information in the appropriate boxes.

Checking PLANX Addresses



Before operating the *MatchPoint PLANX*, verify that all *PLANX* pucks are addressed correctly and are successfully communicating with the console assembly.

1. Select *Diagnostics* from the menu.
2. Select the *Scan* tab.
3. Verify that each *PLANX* status reads “HomedAndReady” in the State column.
4. If *PLANX* status in any row does not read “HomedAndReady,” see *Replacing an Electrical Card* on page MT58 to correct the *PLANX* addresses.

Calibrating the PLANX

You must calibrate the machine before use. See *Calibrating the PLANX* on page MT47 for more information.

Safety Test

	 WARNING
	<p>CRUSH HAZARD.</p> <p>Perform the safety tests described before operating the equipment at the initial startup, after performing any maintenance, and in accordance with the maintenance schedule.</p>

See *Safety Test* on page MT10 for the proper test procedure.

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