



# HORIZONTAL PRESS HP20T

## SAFETY INSTRUCTIONS MANUAL



## 1 GENERAL

Operator and Supervisor Information

Signal Word Definition

Signal Word Panel

## 2 SHOP PRESS SIGNAL WORD PANEL

## 4 SIGNAL WORDS

Danger Panel

Warning Panel

Notice Panel

## 5 OPERATIONS

Safe Operations

## OPERATOR AND SUPERVISOR INFORMATION

This is one of four manuals supplied with your machine.

- **Installation Manual**
- **Safety Instructions Manual**
- **Operations Manual**
- **Maintenance Manual**

**READ ALL MANUALS BEFORE OPERATING MACHINERY.** Operating machinery before reading and understanding the contents of all four manuals greatly increases the risk of injury.

Each of the four machine manuals describes 'best practices' in handling, installing, operating and maintaining your machine. The contents of each manual is subject to change without notice due to improvements in the machinery or changes in National or International standards.

All rights reserved. Reproduction of this manual in any form, in whole or in part, is not permitted without the written consent of Edwards Manufacturing Company.

Keep all manuals close to the machine to allow for easy reference when necessary.

Provide operators with sufficient training and education in the basic functions of the machine prior to machine operation.

Do not allow for operation of the machine by unqualified personnel. Edwards Manufacturing Company is not liable for accidents arising from unskilled, untrained operation.

Do not modify or change the machine without written authorization from Edwards Manufacturing Company. Unauthorized modification to a machine may result in serious operator injury, machine damage and will void your machine warranty.

Never leave a powered machine unattended. Turn machinery **OFF** before walking away.

This machine is manufactured for use by able bodied and able minded operators only. Never operate machinery when tired or under the influence of drugs or alcohol.

Do not resell, relocate or export to a destination other than to the original point of sale. Edwards has designed this machine to meet the standards of the original receiving country and is not liable for meeting any governing body or performance standards beyond those of the original receiving country.

## SIGNAL WORD DEFINITION

### **DANGER**

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

### **WARNING**

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

### **CAUTION**

Indicates a hazardous situation that, if not avoided, could result in mild or moderate injury.

### **NOTICE**

Indicates information considered important, but not hazard related.



**WARNING:** This product can expose you to chemicals including Methyl Isobutyl Ketone which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <http://www.p65warnings.ca.gov>.



**WARNING:** Some dust, fumes and gases created by power sanding, sawing, grinding, drilling, welding and other construction activities contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead based paint
- crystalline silica from bricks, cement and other masonry products
- arsenic and chromium from chemically treated lumber

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as dust masks that are specifically designed to filter out microscopic particles. For more information go to <http://www.p65warnings.ca.gov/> and <http://www.p65warnings.ca.gov/> wood.

## SIGNAL WORD PANEL ON MACHINE










### **DANGER**

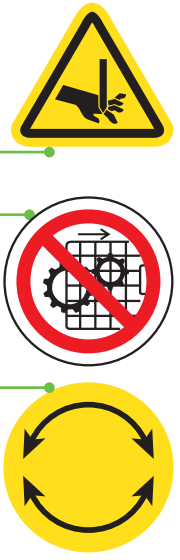
Critical machine safety information is identified on signal word labels. Labels are attached adjacent to the potentially hazardous locations of the machine. Reference the Safety Instruction Manual for additional information regarding the potentially hazardous condition identified on the label.

**Review ALL labels on the machinery, reference the operational precautions and safe operations sections within this manual before any operation activity is initiated.**

***Failure to read and understand the signal word labels affixed to the machinery may result in operator death or injury.***

# HORIZONTAL PRESS • SIGNAL WORD PANEL

<b>⚠ DANGER</b>	
	Hydraulic accessory controls powered by Ironworker/Porta-Power.
	Lockout power at Ironworker/Porta-Power before servicing.
<b>⚠ WARNING</b>	
	Shear/Crush Hazard Moving parts can cut and crush.
	Fluid Injection Hazard Hydraulic fluid is under pressure. Hydraulic fluid powers moving parts.
	Keep guards in place
<b>NOTICE</b>	
	Read, understand, and follow all labels shown on the machine and described in the: • Safety Instructions Manual • Installation Manual • Operations Manual • Maintenance Manual
	Keep all manuals close for easy reference.
	Trained and authorized personnel are to install, operate and service this machinery. Do not allow for operation of the machine by unqualified personnel.
	Personal protective equipment must be worn at all times during machinery operation.





# DANGER PANEL

## **DANGER**



### **Electrical Hazard**

This is the electrical hazard symbol. It indicates there are dangerous high voltages present inside the enclosure of this product. **ONLY** qualified, authorized, maintenance, service or Certified Electricians should gain access to electrical panel.



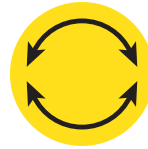
### **Lockout Power**

Danger circuits are live. Lockout/Tagout the upstream power source.

Lockout / Tagout machinery according to Employer procedures.

# CAUTION PANEL

## **CAUTION**



### **Hand Crank**

Hand Crank activates measuring system and tooling lock.

# WARNING PANEL

## **WARNING**



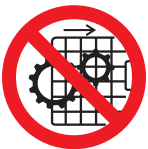
### **Shear/Crush Hazard**

Moving parts can cut and crush. Keep hands clear while operating. Lockout power before servicing. Immediately replace guards after adjustment, repair or service.



### **Fluid Injection Hazard**

Hydraulic hoses and cylinders are under pressure. Pressurized fluid can pierce skin and cause severe injury. To avoid physical hazard, always wear personal protective equipment. Keep hands clear while operating. Lockout power before servicing. Immediately replace guards after adjustment, repair or service.



### **Do Not Operate With Guard Removed**

Physical barriers and guards have been designed and installed to protect the Operator from moving parts that can pinch, cut and crush. Keep hands clear while operating. Lockout power before servicing. Immediately replace guards after adjustment, repair or service to moving parts.

# NOTICE PANEL

## **NOTICE**



### **Refer to All Manuals**

Each manual that comes with this machine contains critical instructions regarding proper operations, safety, installation and maintenance procedures. Understand the contents of each manual thoroughly. Failure to follow proper procedures may result in serious operator injury, machine damage and will void your machine warranty. Keep the manuals close to the machine for easy reference.



### **Wear Personal Protective Equipment**

To avoid physical hazard, always wear personal protective equipment. Wear protective eyewear, clothing, gloves, footwear, head-gear and hearing protection while operating or servicing this machinery.

# OPERATIONS



## DANGER

### Safe Operation

Observe the following guidelines when performing Press operations.

- **Operator safety / Safe work zone** Applying pressure to parts or assemblies can cause failure of the part being worked, a part adjacent to the work or the pressing tool. Failed parts can become airborne projectiles with deadly force. Protect yourself with appropriate personal protective equipment when operating the press. Protect others by defining a safe work zone for press use and limiting access to the press operator.
- **Press Inspection** Press operations may generate concussive failure to mechanical parts. Although Edwards press machinery is fabricated with both bolted and welded construction, concussive failure is a possibility over time or with extreme use. Prior to any press operation, visually check all bolted and welded connections for failure. All bolts must be tight and welds intact. Failure to verify the structural integrity of the machinery may result in workpiece shift, part ejection, operator injury or machinery damage.
- **Workpiece Inspection** Workpiece failure is the most common source of injury during press operations. Take time to thoroughly understand the workpiece. Never apply pressure to unstable material, objects, round shapes, balls, springs or any item with elastic, spring-back tendencies. Confirm the material properties of the workpiece will withstand the pressure to be exerted by the press. Confirm that workpiece items are stripped down to their simplest form. Many components contain unseen items that could fail during the press operation. Remove all sub components known to the workpiece prior to a pressing operation. Workpiece must be clean and free of substances at the pressing surface that would allow the pressing surfaces to slip under load.
- **Workpiece Support** Workpiece failure may be a result of improper or inadequate workpiece support. Adequate support for the workpiece must be present through the entirety of the press operation. Understand your workpiece and confirm that the workpiece support system you employ will withstand the pressure being exerted through the press operation.
- **Safe use of tooling** Edwards Mfg. Co. provides standard tooling supplied with the HP20T. This tooling is designed to be safely used with the arbor support. Custom tooling is available for special applications. Care must be taken when selecting press tooling. Select tooling that is designed and rated for the specific application. Press with the shortest, most compact, tool length available. Confirm that press tooling and workpiece are aligned and follows a direct press path. Misaligned loads may fail the press tooling or workpiece and cause operator injury or damage to the machinery.
- **Special Fits** Not all parts were designed and engineered to be removed or applied with a press. When inspecting your workpiece, confirm any press tolerances, environmental, heating, cooling or fixative requirements that require special care prior to initiating the press operation. Do not proceed with a press operation without acknowledgement that the workpiece is pressable.
- **Do not force press** Consider the rating of the press and the work at hand. Gradually build pressure being applied to the workpiece. Carefully observe the workpiece to avoid tooling misalignment or workpiece failure. Observe the press as it reacts under load. Do not overload the press. Take care to avoid parts falling from the workpiece.



# IRONWORKERS

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# HORIZONTAL PRESS HP20T

## INSTALLATION MANUAL



## 1 GENERAL

- Operator and Supervisor Information
- Signal Word Definition
- Signal Word Panel

## 2 INSTALLING THE HORIZONTAL PRESS

- Environmental Requirements at Work Station
- Receiving the Horizontal Press
- Unpacking/Moving the Horizontal Press
- Installing the Horizontal Press

## 3 HYDRAULIC POWER SOURCES

- Powering With an Edwards Ironworker
- Powering With an Edwards Porta-Power

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## SIGNAL WORD PANEL ON MACHINE

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# HORIZONTAL PRESS INSTALLATION

This manual provides installation requirements for the Edwards Horizontal Press.

All Edwards Hydraulic Accessory Tools are powered by an Edwards Ironworker outfitted with a Hydraulic Accessory Pack or an Edwards Porta Power, portable hydraulic power unit.

Refer to Safety, Installation, Operations and Maintenance manuals for the Edwards power-plant you are using to operate your Edwards Hydraulic Accessory Tool.

## Environmental Requirements at Work Station

### NOTICE

The work station environment for your Edwards Horizontal Press must meet the following minimum requirements:

- **Ambient temperature:** 7.2°C - 43.3°C [45°F - 110°F]
- **Relative humidity:** No greater than 90% relative humidity.
- **Floor area:** Assure that the machinery work area provides for a stable, adequately sized and load rated floor area for material movement to and from the machinery work stations.
- **Shelter:** Protect your Ironworking machinery from water, salts and corrosive elements.
- **Lighting:** 500LUX (50 footcandles) minimum.

## Receiving the Horizontal Press

### WARNING

Edwards Hydraulic Accessory Tools are fully assembled and are shipped either by palletized custom wooden crate or by shrink-wrapped wooden pallet for ease of transport and receiving.

Inspect the packaging for damage and follow shipping/receiving instructions as listed on the packaging prior to receiving the tool into your facility.

When receiving your Hydraulic Accessory Tool, be prepared to safely move your machinery with a fork-lift rated for the following equipment weights:

#### Minimum Machinery Weights

Horizontal Press 612.34kg/1350lb

**Utilize best practices for fork-lift operation.** Handle material as close to the drive surface as possible with the widest spread and deepest penetration of forks effective to service the pallet. Forks should be adjusted and locked into the safety detent closest to the maximum available fork spread.

## Unpacking/Moving the Horizontal Press

Your Edwards Horizontal Press includes surface and remotely mounted electrical cabling and hydraulic lines. Exercise caution when removing the factory supplied packaging. Do not cut electrical wires or hydraulic hoses.

1. Carefully remove packaging.
2. Carefully remove the lagbolts and washers attaching the HP20T to the shipping pallet.
3. Locate the fork-lift areas at the bottom of the machinery
4. Carefully insert forks through the fork lift assembly. Confirm that forks penetrate through the assembly and allow for clamps to restrain Horizontal Press from sliding off forks. Install clamps (not included) to forks so that the press is stable while moving and lift the press from the pallet.
5. Locate your HP20T Horizontal Press directly adjacent to the Edwards Ironworker or Porta Power. Ensure that power controls of the Ironworker or Porta Power are within arms-reach of the Horizontal Press.

## Installing the Horizontal Press

### WARNING

1. The HP20T Horizontal Press is designed to mount on a dedicated, weight rated flooring system. **DO NOT MOUNT ON CASTERS.** The floor rating should be a minimum multiplier of 2.5 times the weight of the Press plus the weight of any tooling being used within the Press, plus the material being pressed.

**( HP20T weight (1350 lb.) + Tooling weight + Material weight ) x 2.5 = Dedicated, weight rated floor system**

2. Locate leveling pads installed on the bottom of the machine. Unscrew pads to allow for a minimum of 1" working space and the installation of anchoring hardware (not provided). With a level placed on the work surface, check the machinery for level. Adjust machine for level by rotating pads clockwise or counterclockwise and mark drill locations within leveling pad surface. Drill for and install four 1/2" wedge anchor bolts to secure HP20T to floor. Lower machine onto anchor bolts, install washers, and tighten nuts to complete floor installation.

## Hydraulic Power



Your Edwards Horizontal Press is factory assembled and tested for optimum performance when powered by Edwards Manufacturing Company rated hydraulic power supplies.

The Horizontal Press is powered by either an Edwards Ironworker with the factory installed Hydraulic Accessory Control Package or an Edwards Porta-Power, 5hp, 3000psi, portable power unit.

### **ALTERNATE POWER SOURCES ARE NOT RECOMMENDED AND MAY COMPROMISE MACHINE OPERATION, MACHINE HYDRAULIC WARRANTY AND OPERATOR SAFETY.**

Follow electrical connection installation instructions for power supply as set forth within the Installation Manual of the Edwards Ironworker or Porta-Power.

## Powering with an Edwards Ironworker

Power selection controls are located adjacent to the starter on the feed side of the machine. Hydraulic quick connections and accessory controls are located on the drop-off side or end cap of the machine.

With the Ironworker power off, install Horizontal Press hoses, power and control. **Assure your M12 connections are seated properly. Align M12 male and female fittings so that keyed surfaces align. Misalignment of surfaces will prohibit correct operation.**

- Install the Horizontal Press male and female accessory hydraulic hoses to the ironworker male and female quick-connect hydraulic fittings. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Horizontal Press hand control male mil. spec. control cable to the female mil. spec. accessory control port at your Ironworkers Hydraulic Accessory package. Attach the yellow limit switch cable to the limit switch port of the ironworker. Attach the yellow Auxiliary cable to the Aux Light port on the ironworker.

**With all Ironworker and Horizontal Press stations clear of hands, tools, tooling, material or debris, power up the Ironworker by depressing the green button on the starter box.**

With the power on, your Ironworker machine will return to a neutral position.

Turn the 3-position switch on the front of the machine case to the Accessory position. This operation disables the Ironworker and switches control to the accessory hand control.

Test the Horizontal Press operation by depressing the OUT control button. Once depressed, the cylinder will extend. Releasing pressure on the OUT control button will stop the cylinder. Test the Horizontal Press operation by depressing the IN control button. Once depressed, the cylinder

will be retracted back into the cylinder enclosure. Releasing pressure on the IN control button will stop the cylinder.

Test the digital encoder and limit switches by rotating the scale hand crank.

Depress the red e-stop button to kill power at the Ironworker. To reset power, twist the e-stop button and push start button at the Ironworker.

When disconnecting your Horizontal press, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Ironworker.**

## Powering with an Edwards Porta-Power

Your Edwards Porta-Power 5hp / 3000psi / Portable Power Unit will power all your Edwards Hydraulic Accessories.

Follow electrical connection installation instructions as set forth within these sections of the Installation Manual:

With the Edwards Porta-Power off, install accessory hoses, power and control. **Assure your M12 connections are seated properly. Align M12 male and female fittings so that keyed surfaces align. Misalignment of surfaces will prohibit correct operation.**

- Install the male and female Horizontal Press hydraulic hoses to the Porta-Power male and female quick connect hydraulic fittings adjacent to the starterbox. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Horizontal Press hand control, male mil. spec. control cable to the female mil. spec. accessory push button port on the Porta-Power case. Attach the yellow limit switch cable to the limit switch port of the Porta-Power. Attach the yellow Auxiliary cable to the 24V port on the Porta-Power.

**With all Ironworker and Horizontal Press stations clear of hands, tools, tooling, material or debris, power up the Porta-Power by depressing the green button on the starter box.**

With the power on, your Horizontal Press is in a neutral position.

Test the Horizontal Press operation by depressing the OUT control button. Once depressed, the cylinder will extend. Releasing pressure on the OUT control button will stop the cylinder. Test the Horizontal Press operation by depressing the IN control button. Once depressed, the cylinder will be retracted back into the cylinder enclosure. Releasing pressure on the IN control button will stop the cylinder.

Test the digital encoder and limit switches by rotating the scale crank.

Depress the red e-stop button on the hand control to kill power at the Porta Power. To reset power, twist the e-stop button and push start button at Porta Power.

When disconnecting your Horizontal press, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Porta Power.**



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# HORIZONTAL PRESS HP20T

## OPERATIONS MANUAL

SERIAL NUMBER: \_\_\_\_\_



## **1 GENERAL**

Company Profile

Warranty

Machine Identification

Operator and Supervisor Information

Signal Word Definition

Signal Word Panel

Operational Precautions

Machine Operations

## **4 HYDRAULIC POWER SOURCES**

Powering with an Edwards Ironworker

Powering with an Edwards Porta-Power

## **6 OPERATIONS DIAGRAM**

## **7 SETUP**

## **8 PRESS OPERATION**

## **10 TROUBLESHOOTING**



# COMPANY PROFILE



Edwards Manufacturing Company manufactures a full line of high quality, low maintenance hydraulic ironworking machines, associated tooling and accessories that are used in the steel fabrication industry. With proper operation, care, and maintenance, your Edwards Ironworker or Hydraulic Accessory

Tool will provide consistent, long-term service. Please take time to study this Operator's Manual carefully to fully understand Ironworker and Hydraulic Accessory Tool safety procedures, set-up, operation, care, maintenance, troubleshooting and warranty coverage prior to putting the machine into production. Any questions not answered within this manual can be directed to your local Edwards Ironworker dealer or factory representative.

## Contact the factory:

### EDWARDS MANUFACTURING COMPANY

1107 Sykes Street

Albert Lea, MN 56007

507 373 8206 PHONE

507 373 9433 FAX

[www.edwardsironworkers.com](http://www.edwardsironworkers.com)

*General Questions:*

[sales@edwardsmfg.us](mailto:sales@edwardsmfg.us)

*Service Questions:*

[service@edwardsmfg.us](mailto:service@edwardsmfg.us)

## Contact your dealer:

## WARRANTY

Edwards Manufacturing Company will, within one (1) year of date of original purchase (proof of purchase required), replace F.O.B. the factory, any goods, excluding punches, dies and shear blades, which are defective in materials or workmanship provided that the buyer return the defective goods, freight pre-paid, to the seller, which shall be the buyer's sole and exclusive remedy for the defective goods. Hydraulic components are subject to their manufacturer's warranty.

Edwards Manufacturing Company will, within thirty (30) days of date of original purchase (proof of purchase required), replace F.O.B. the factory, any punches, dies and/or shear blades, which are defective in materials or workmanship.

This warranty does not apply to machines and/or components which have been altered, changed or modified in any way, or subjected to abusive and abnormal use, inadequate maintenance and lubrication, or subjected to use beyond seller recommended capacities and specifications. Edwards Manufacturing Company shall not be liable for labor costs expended on such goods or consequential damages. Edwards Manufacturing Company shall not be liable to the purchaser or any other person for loss, down-time, or damage directly or indirectly arising from the use of the goods or from any other cause. No officer, employee, or agent of Edwards Manufacturing Company is authorized to make any oral representations or warranty of fitness or to waive any of the foregoing terms and none shall be binding on Edwards Manufacturing Company.

NOTE: Edwards Manufacturing is a division of JPW Industries, Inc. References in this document to Edwards also apply to JPW Industries, Inc., or any of its successors in interest to the Edwards brand.

## MACHINE IDENTIFICATION

Your Edwards HP20T Horizontal Press has been serialized for quality control, product traceability and warranty enforcement. Please refer to the aluminum identification tag with engraved serial number, electrical and power specifications when ordering parts or filing a warranty claim.

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## OPERATIONAL PRECAUTIONS



Reasonable, common sense safety precautions should be observed when operating the Ironworker or Hydraulic Accessory Tool. The following precautions are described in order of their hazard.

### Electrical Hazard

Dangerous high voltages are present inside the electrical enclosure of this product. Only qualified, authorized, maintenance or service personnel should gain access to the electrical panel.

### Lockout Power

Danger, circuits are live. Lockout / tagout upstream power source before any maintenance activity is performed.

### Shear / Crush Hazard

Moving parts can cut and crush. Keep hands clear when servicing and maintaining the Ironworker or Hydraulic Accessory Tool.

### Hydraulic Fluid Hazard

Hydraulic hoses are under pressure. Pressurized fluid can pierce skin and cause severe injury. To avoid physical hazard, always wear personal protective equipment when servicing / maintaining the Ironworker or Hydraulic Accessory Tool.

### Do Not Operate With Guard Removed

Physical barriers and guards have been designed and installed to protect operator and maintenance personnel from moving parts that can pinch, cut and crush. If it is necessary to remove guarding when servicing your Hydraulic Accessory Tool, immediately replace guards after service and prior to power being restored to the machinery.

### Refer to Manuals

For safe installation, operation and maintenance of the machine, read:

- Installation Manual
- Safety Instructions Manual
- Operations Manual
- Maintenance Manual

### Wear Personal Protective Equipment

To avoid physical hazard wear protective eyewear, clothing, gloves, footwear, head-gear and hearing protection.

## MACHINE OPERATIONS



Edwards Hydraulic HP20T machinery is capable of many cold forming or pressing functions. This manual outlines the basic functions associated with typical Horizontal Press operations and is neither intended to create a comprehensive list of, nor describe every operation possible with this versatile tool. **Horizontal Press operations are dangerous and require extreme care and caution in the preparation of the material being worked, the press set-up and the pressing operation.** Please refer to the following setup, safe operation and press operation sections for an understanding of the potential hazards present in any horizontal pressing operation.

With 20 Tons of force, the Edwards HP20T features robust engineering and construction and is designed for years of heavy duty service when powered by an Edwards Ironworker or Porta Power portable hydraulic unit. Please refer to all Edwards power source manuals as well as the Safety, Installation, Operation and Maintenance Manuals of the HP20T prior to operation of the machinery.



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# HYDRAULIC POWER SOURCES



Hydraulic Accessory Tool Controls



Ironworker Hydraulic Accessory Package

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Your Edwards Horizontal Press is factory assembled and tested for optimum performance when powered by Edwards Manufacturing Company rated hydraulic power supplies.

The Horizontal Press is powered by either an Edwards Ironworker with the factory installed Hydraulic Accessory Control Package or an Edwards Porta-Power, 5hp, 3000psi, portable power unit.

**ALTERNATE POWER SOURCES ARE NOT RECOMMENDED AND MAY COMPROMISE MACHINE OPERATION, MACHINE HYDRAULIC WARRANTY AND OPERATOR SAFETY.**

Follow electrical connection installation instructions for power supply as set forth within the Installation Manual of the Edwards Ironworker or Porta-Power.

## Powering with an Edwards Ironworker

Power selection controls are located adjacent to the starter on the feed side of the machine. Hydraulic quick connections and accessory controls are located on the drop-off side or end cap of the machine.

With the Ironworker power off, install Horizontal Press hoses, power and control. **Assure your M12 connections are seated properly. Align M12 male and female fittings so that keyed surfaces align. Misalignment of surfaces will prohibit correct operation.**

- Install the Horizontal Press male and female accessory hydraulic hoses to the ironworker male and female quick-connect hydraulic fittings. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Horizontal Press hand control male mil. spec. control cable to the female mil. spec. accessory control port at your Ironworkers Hydraulic Accessory package. Attach the yellow limit switch cable to the limit switch port of the ironworker. Attach the yellow Auxiliary cable to the Aux Light port on the ironworker.

With all Ironworker and Horizontal Press stations clear of hands, tools, tooling, material or debris, power up the Ironworker by depressing the green button on the starter box.

With the power on, your Ironworker machine will return to a neutral position.

Turn the 3-position switch on the front of the machine case to the Accessory position. This operation disables the Ironworker and switches control to the accessory hand control.

Test the Horizontal Press operation by pressing the OUT control button. Once pressed, the cylinder will extend. Releasing pressure on the OUT control button will stop the cylinder. Test the Horizontal Press operation by pressing the IN control button. Once pressed, the cylinder will be retracted back into the cylinder enclosure. Releasing pressure on the IN control button will stop the cylinder.

Test the digital encoder and limit switches by rotating the scale hand crank.

Press the red e-stop button to kill power at the Ironworker. To reset power, twist the e-stop button and push start button at the Ironworker.

When disconnecting your Horizontal press, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Ironworker.**



Edwards Porta-Power

## Powering with an Edwards Porta-Power

Your Edwards Porta-Power 5hp / 3000psi / Portable Power Unit will power all your Edwards Hydraulic Accessories.

Follow electrical connection installation instructions as set forth within these sections of the Installation Manual:

With the Edwards Porta-Power off, install accessory hoses, power and control. **Assure your M12 connections are seated properly. Align M12 male and female fittings so that keyed surfaces align. Misalignment of surfaces will prohibit correct operation.**

- Install the male and female Horizontal Press hydraulic hoses to the Porta-Power male and female quick connect hydraulic fittings adjacent to the starterbox. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Horizontal Press hand control, male mil. spec. control cable to the female mil. spec. accessory push button port on the Porta-Power case. Attach the yellow limit switch cable to the limit switch port of the Porta-Power. Attach the yellow Auxiliary cable to the 24V port on the Porta-Power.

**With all Ironworker and Horizontal Press stations clear of hands, tools, tooling, material or debris, power up the Porta-Power by depressing the green button on the starter box.**

With the power on, your Horizontal Press is in a neutral position.

Test the Horizontal Press operation by pressing the OUT control button. Once pressed, the cylinder will extend. Releasing pressure on the OUT control button will stop the cylinder. Test the Horizontal Press operation by pressing the IN control button. Once pressed, the cylinder will be retracted back into the cylinder enclosure. Releasing pressure on the IN control button will stop the cylinder.

Test the digital encoder and limit switches by rotating the scale crank.

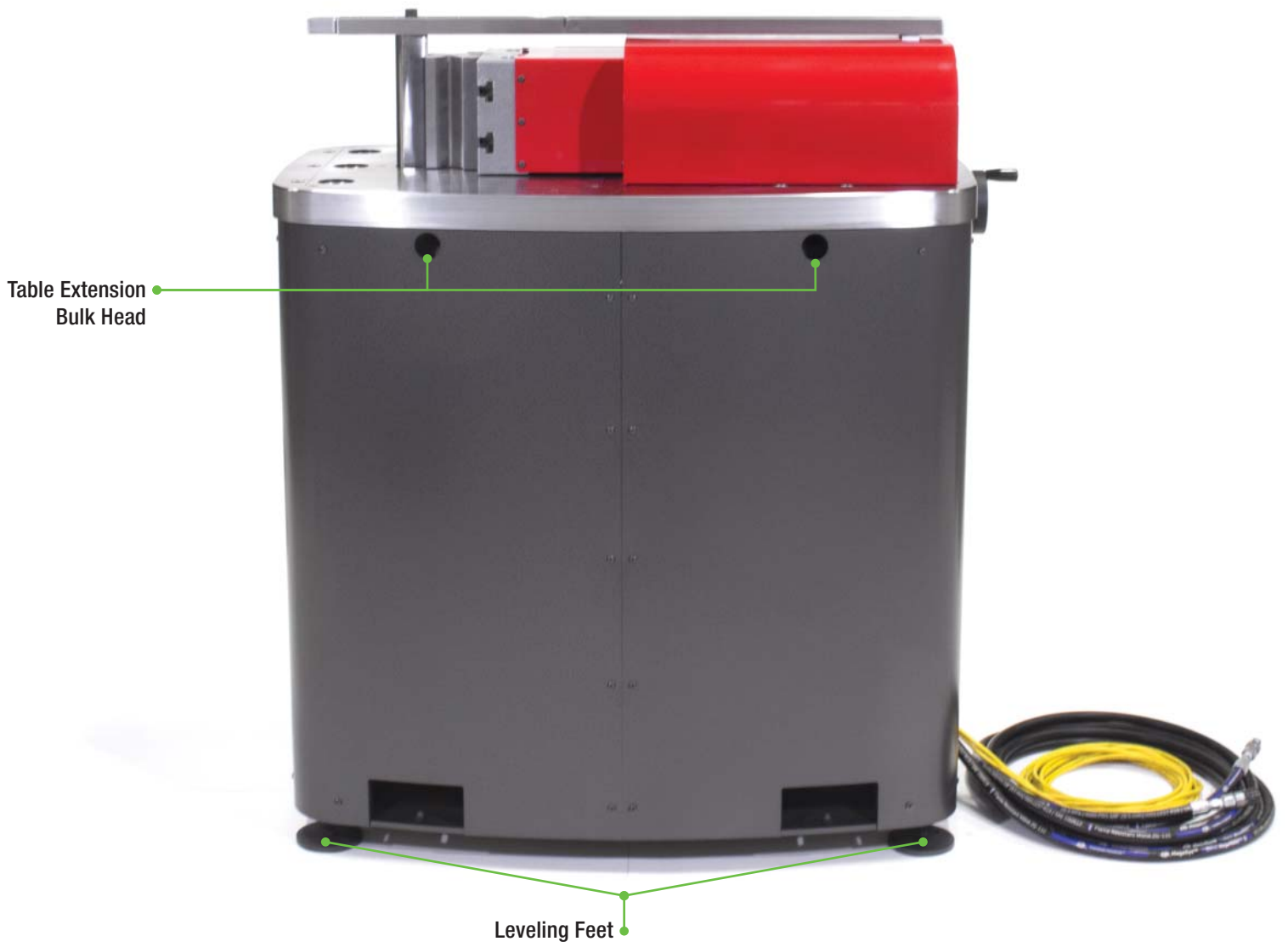


Press the red e-stop button on the hand control to kill power at the Porta Power. To reset power, twist the e-stop button and push start button at Porta Power.

When disconnecting your Horizontal press, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Porta Power.**

# HORIZONTAL PRESS OPERATIONS DIAGRAM





# SETUP

## **WARNING**

Your HP20T has been factory tested and setup to immediately “plug and play” with your Edwards Ironworker Hydraulic Accessory Pack or Porta Power, portable hydraulic unit.

The Press is constructed of six basic assemblies: the base cabinet, the table, the hydraulic cylinder enclosure, measuring system, tooling block and arbor support.

### Base cabinet

Beyond providing tooling storage, the base cabinet of the HP20T accommodates leveling and height adjustment of up to 2". Adjust for additional table height by rotating the leveling feet clockwise or counterclockwise and following instructions for hard-mounting the machinery to the floor. The base cabinet also houses the digital encoder / auto-stop adjustment, tool squaring function and extension table bulkheads.

### Table

The HP20T working surface is a solid plate of machined A36 steel. The surface is ground and machined to allow for the installation of the 20 ton hydraulic ram, measuring hardware, hardened bushings and the tooling steel wear plate. The wear plate is S7 tool steel and has been ground flush with the prime table surface. Both the prime table and wear plate are protected with a surface applied rust inhibitor which will require maintenance over time to prevent rust and corrosion. The 24" x 42" table may be enlarged by adding table extensions to the table bulkheads located in the base cabinet.



### Hydraulic Cylinder

The HP20T is powered by either your Edwards Ironworker or Edwards Porta Power, 3000psi portable hydraulic power source. The 20' umbilical hosing and quick connect hardware supply hydraulic power to the hydraulic cylinder within the HP20T. The HP20T cylinder features a 2.25" ram for tooling stability, 20 tons of pressure and a 10" maximum stroke. Cylinder stroke is manipulated with a simple hand-wheel and measured with a roller encoder and digital readout at the table surface accurate to 0.01".

### Measuring System

The HP20T features a roller encoder driven measuring system. Hand crank activated, the measuring system moves a proximity switch and marker along a graduated scale. The proximity switch controls cylinder stroke and can be located anywhere along the graduated scale allowing for up to 10" of stroke travel. The digital readout provides for fine adjustment to 0.01".



When the machine is first received the limit scale will be set to 0, this will stop the ram from extending. To extend the cylinder rotate the scale hand crank. The cylinder will extend as far as the pointer and scale indicate. The digital readout can help with seeing precise measurements, and can also be reset with a face button.



# PRESS OPERATION

## **WARNING**

### Tooling Block

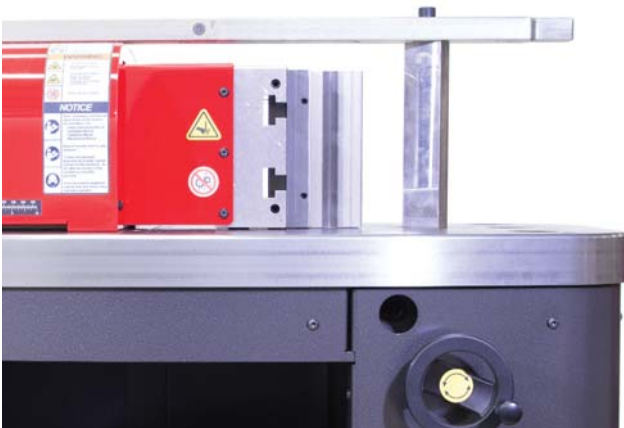
The tooling block of the HP20T is fixed to the ram of the cylinder. The machined surface features horizontal T-slots for custom tooling applications and a vertical slot for standard 6" brake tooling. Tooling fixes to the vertical slot with 4 set-screws. The tooling block slides on two, adjustable gib-pins recessed into the machined surface. The gib-pins provide leveling and bearing surfaces that will wear over time. Periodically adjust the gib-pins to ensure the ram is parallel to the table surface.



- For Operator safety, wear personal protective equipment, clear the work zone of any tooling or debris prior to powering the machinery on.
- Perform press inspection.
- Perform workpiece inspection.
- Turn power source on.
- Retract ram, install press tooling.
- Adjust tooling as necessary to achieve the shortest ram travel.
- Safely load, position and support workpiece.
- Align and secure tooling to the tooling block.
- Carefully, slowly, extend ram and tooling to meet press site. Preload the workpiece and observe workpiece support and tooling alignment. Observe the preloaded condition from multiple angles to assure that the press tooling is in alignment with the ram and workpiece. If unstable, reverse ram, reset workpiece and re-align press tooling.
- Gradually build pressure to complete the press operation.
- Retract the ram to relieve hydraulic pressure following the press operation.

### Arbor Support

The arbor support is a hinged steel bar that, when attached to the tooling arbor, rigidly supports the arbor and eliminates a potential cantilever tooling failure. THE ARBOR SUPPORT STRUCTURE IS REQUIRED TO BE ENGAGED IN ALL STANDARD PRESSING OPERATIONS.



# TROUBLESHOOTING

## **WARNING**

Quality parts are dependent upon conscientious setup, operation and maintenance of your Horizontal Press. Physically review your Horizontal Press prior to any operation. Confirm all static components are tight in the assembly. Confirm all moving components are free of obstruction. Confirm all tooling and assemblies are properly seated within the assembly.

### **Problem**

### **Solution**

#### **Horizontal Press Inoperable**

Check accessory control switch  
Check shop press male 4-pin power cable is connected to female limit switch port.  
Check hand control Mil Spec male power cable is connected to female Mil Spec control port

Note: Auto Cut port will NOT power the Horizontal Press accessory.

#### **Rough cylinder operation**

Check Hydraulic fluid levels of power source.  
Check hoses for correct installation.



# IRONWORKERS



# HORIZONTAL PRESS HP20T

## MAINTENANCE MANUAL



## 1 GENERAL

Operator and Supervisor Information

Signal Word Definition

Signal Word Panel

Maintenance Precautions

## 2 MAINTENANCE SCHEDULE

Daily/Shift Change Visual Observation

General Maintenance - Daily

## OPERATOR AND SUPERVISOR INFORMATION

This is one of four manuals supplied with your machine.

- **Installation Manual**
- **Safety Instructions Manual**
- **Operations Manual**
- **Maintenance Manual**

Each of the four machine manuals describes 'best practices' in handling, installing, operating and maintaining your machine. The contents of each manual is subject to change without notice due to improvements in the machinery or changes in National or International standards.

All rights reserved. Reproduction of this manual in any form, in whole or in part, is not permitted without the written consent of Edwards Manufacturing Company.

Understand the contents of each manual thoroughly. Keep all manuals close to the machine to allow for easy reference when necessary.

Provide operators with sufficient training and education in the basic functions of the machine prior to machine operation.

Do not allow for operation of the machine by unqualified personnel. Edwards Manufacturing Company is not liable for accidents arising from unskilled, untrained operation.

Do not modify or change the machine without written authorization from Edwards Manufacturing Company. Unauthorized modification to a machine may result in serious operator injury, machine damage and will void your machine warranty.

This machine is manufactured for use by able bodied and able minded operators only. Never operate machinery when tired or under the influence of drugs or alcohol.

Do not resell, relocate or export to a destination other than to the original point of sale. Edwards has designed this machine to meet the standards of the original receiving country and is not liable for meeting any governing body or performance standards beyond those of the original receiving country.

## SIGNAL WORD DEFINITION

 **DANGER**

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 **WARNING**

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 **CAUTION**

Indicates a hazardous situation that, if not avoided, could result in mild or moderate injury.

**NOTICE**

Indicates information considered important, but not hazard related.

## SIGNAL WORD PANEL ON MACHINE

 **DANGER**

Critical machine safety information is identified on signal word labels. Labels are attached adjacent to the potentially hazardous locations of the machine. Reference the Safety Instruction Manual for additional information regarding the potentially hazardous condition identified on the label.

**Review ALL labels on the machinery, reference the operational precautions and safe operations sections within this manual before any operation activity is initiated.**

*Failure to read and understand the signal word labels affixed to the machinery may result in operator death or injury.*

## MAINTENANCE PRECAUTIONS

 **DANGER**

### Electrical Hazard

Dangerous high voltages are present inside the electrical enclosure of this product. Only qualified, authorized, maintenance or service personnel should gain access to the electrical panel.

### Lockout Power

Danger, circuits are live. Lockout / tagout upstream power source before any maintenance activity is performed.

### Shear / Crush Hazard

Moving parts can cut and crush. Keep hands clear when servicing and maintaining the Ironworker.

### Hydraulic Fluid Hazard

Hydraulic hoses are under pressure. Pressurized fluid can pierce skin and cause severe injury. To avoid physical hazard, always wear personal protective equipment when servicing / maintaining the Ironworker.

### Do Not Operate With Guard Removed

Physical barriers and guards have been designed and installed to protect maintenance personnel from moving parts that can pinch, cut and crush. If it is necessary to remove guarding when servicing the Ironworker, immediately replace guards after service and prior to power being restored to the machinery.


### Refer to Manuals


For safe installation, operation and maintenance of the machine, read:

- Installation Manual
- Safety Instructions Manual
- Operations Manual
- Maintenance Manual

### Wear Personal Protective Equipment

To avoid physical hazard wear protective eyewear, clothing, gloves, footwear, head-gear and hearing protection.

 **WARNING:** This product can expose you to chemicals including Methyl Isobutyl Ketone which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <http://www.p65warnings.ca.gov>.

 **WARNING:** Some dust, fumes and gases created by power sanding, sawing, grinding, drilling, welding and other construction activities contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead based paint
- crystalline silica from bricks, cement and other masonry products
- arsenic and chromium from chemically treated lumber

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as dust masks that are specifically designed to filter out microscopic particles. For more information go to <http://www.p65warnings.ca.gov/> and <http://www.p65warnings.ca.gov/wood>.

# MAINTENANCE SCHEDULE

## CAUTION

Your HP20T Horizontal Press will benefit from reasonable care and periodic maintenance. Reasonable care includes daily visual observation, as well as general maintenance procedures at daily intervals by operator/maintenance personnel. Perform inspections and maintenance of the electrical, hydraulic, and mechanical systems of the Edwards Hydraulic Accessory connected to the Ironworker or Porta-Power as follows:

### Daily/Shift Change Visual Observation

## CAUTION

#### Electrical System

Visually inspect controls and power cording to the Ironworker or Porta-Power for signs of damage. Cut, abraded or crushed electrical cords may present an electrical hazard to the Operator and/or damage the machinery.

#### Hydraulic System

Visually inspect exposed or surface mounted hydraulic hoses and fittings for signs of damage. Cut, abraded or crushed hydraulic hoses or leaking fittings may present a hydraulic fluid hazard to the Operator and/or damage the machinery.

#### Mechanical System

Visually inspect moving parts. Guards and material hold-downs must remain on the machine for safe operation. Clear any material obstructions at the work station prior to visually inspecting moving parts of the machine. Cycle the machine. Machine should operate smoothly in hydraulic extend and retract mode. Grease identified locations daily.

Failure of any element of the daily/shift change visual observation will require maintenance of the affected accessory componentry. Please follow the following maintenance procedures.

### General Maintenance - Daily

## WARNING

*Disconnect HP20T from power source.*

*Check wiring harness for loose connections or damaged control wiring.*

*Replace damaged control wiring as necessary. Order replacement control wiring assembly from your Edwards distributor or through Edwards Manufacturing Company.*

*Check hydraulic fittings and hoses for wear or damage. Replace damaged or worn hydraulic hoses and fittings as necessary. Order replacement hydraulic components from your Edwards distributor or through Edwards Manufacturing Company.*

*Check bolted connections and secure as necessary.*

*Check welded connections.*

*Check bearing surface quality.*

*Visually inspect die surfaces for chips or galling in the bearing surface.*

*Verify tooling is secure. Edwards tooling is manufactured from billet steel for enhanced strength and durability. These are wearing parts that will fail over time and will require replacement. Order additional tooling through your Edwards distributor or through Edwards Manufacturing Company. Install replacement parts according to the Operations Manual.*

*Clean your HP20T Horizontal Press daily. Disconnect the unit from its power source first. Do not use liquid cleaners, aerosols, abrasive pads, scouring powders or solvents such as benzene or alcohol. Clean your machine with a brush and soft cloth lightly moistened with a mild, water-based detergent solution. Remove filings, dirt, dust and grime from working surfaces. Ensure the surfaces are fully dry before reconnecting power.*



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