

Operating Instructions

Vantis™ Pendant Controller

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Visit the Motion Control Systems web page at jrclancy.com for more information.

Note: Please read and understand these instructions before working with the equipment.
Note: If you need additional information, contact Wenger Corporation using the information below.

Important User Information

General

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In no event will Wenger Corporation be liable for technical or editorial omissions made herein, nor for direct, indirect, special, incidental, or consequential damages resulting from the use or defect of these instructions. The manufacturer reserves the right to change this product at any time.

The information in this document is not intended to cover all possible conditions and situations that might occur. The end user must exercise caution and common sense when assembling or installing Wenger Corporation products. If any questions or problems arise, call Wenger Corporation - Syracuse Operations at (800) 836-1885 or +1-315-451-3440 worldwide.

Manufacturer

The Vantis™ Pendant Controller is manufactured by:

Wenger Corporation - Syracuse Operations
7041 Interstate Island Road, Syracuse, NY 13209
(800) 836-1885 • +1 (315) 451-3440 • jrclancy.com

Product Use Requirements

- Installation of this equipment must comply with local building codes.
- Equipment must be installed according to manufacturer's installation drawings. Individual component information is listed in the bill of materials of these drawings.
- Motorized hoists must be inspected by qualified personnel every year, or more frequently depending on patterns of use as well as local, state, and federal laws. Do not install in locations that prohibit access to the machinery or prevents removal of any machine covers.
- J.R. Clancy hoists are designed for indoor use only in buildings with temperatures between 50° and 100° F (10°- 38°C).
- Do not expose machines to rain, extreme humidity or condensing moisture
- The recommended working load and duty cycle of each machine is marked on the identification label on the controls enclosure. Do not exceed.
- The hoist machinery must be protected from oil, dust and other contaminants.
- Installation of J.R. Clancy hoists must be coordinated with the location of loft blocks as well as electrical power and control devices. Installation must be designed by a qualified person.
- J.R. Clancy hoists are pre-programmed at the factory with set and channel numbers. These numbers are marked on the machine and marked at the power and control receptacles. Machines must be installed so that the channel and set numbers on the hoist match the channel and set numbers on the receptacle. These are also shown on the installation drawings.
- Proof of inspection is required to activate and maintain the warranty period for this product.

Warranty

Warranty information is available at jrclancy.com.

NOTICE

In accordance with OSHA Standard 29 CFR 1926.550, ANSI/ESTA Standard E 1.47-2020 (where applicable), and the terms of Wenger Corporation's warranty, a qualified rigging firm must perform yearly inspections and correct any deficiencies discovered. These firms have personnel who are trained to spot present hazards and many "potential" hazards.

A routine maintenance and inspection schedule must be established and followed, with appropriate records maintained. Routine maintenance prolongs the useful life of equipment and keeps it operating at peak efficiency for the easiest and quietest possible operation.

Safety Overview

Anyone entering a building with public access has reason to expect that he or she is safe from harm by the building itself and by the equipment and activities within the building. It is the legal responsibility of the owner and designated manager to ensure that this expectation is met.

It is the responsibility of the owner to hire and train competent people. A competent person is defined as one who can identify existing and predictable hazards in the workplace and who has the authority to take prompt corrective action to eliminate those hazards. It is the further responsibility of the owner and designated manager to provide a safe working environment for all employees, including proper equipment, training on the use of equipment, and written procedures for its use and maintenance. It is also important to keep all unauthorized and/or untrained personnel from the working areas of the stage.

Before operating any stage equipment, operators must be given the necessary training and must then work only under the direction of qualified supervisors. Operators of the equipment must:

- Learn the feel, sound, and smell of equipment to immediately sense when something is not correct.
- Study the capacities and capabilities of each system and its components.
- Thoroughly learn and practice the proper operating procedures.
- Ask questions about the current condition of equipment which may affect proper operation, or which could be affected by its operation before attempting to run the system.

For example, is anything fouling the equipment or in the path of its intended travel?

Any problem noticed during setup or operation of the stage equipment should be corrected immediately.

⚠ WARNING

***Improper use of rigging equipment can result in serious injury.
Do not operate without proper training and authorization.
Do not use rigging equipment for lifting people.***

Safety Precautions

Throughout this document you may find cautions and warnings which are defined as follows:

- **DANGER:** Failure to follow the instruction will result in death, or serious injury, or damage to property.
- **WARNING:** Failure to follow the instruction could result in death, or serious injury, or damage to property.
- **CAUTION:** Failure to follow the instruction could result in minor injury or damage to property.
- **NOTICE:** Indicates information that is considered important but not hazard related.

Important Safety Information

- Read all of these safety instructions before using the equipment.
- The procedures in this manual are for use by qualified personnel only. See the other product manuals for user serviceable parts and procedures.
- Read this manual carefully before installing or using this product. Failure to do so can result in injury or death.
- An identification label is attached to controls enclosure on each unit and contains important model number, speed, and capacity information that is necessary for safe installation and use.
- User must be warned of these hazards. Deliver a copy of this manual to the user along with all other product documentation for future reference.

WARNING

A competent person must be present and available whenever any operation or maintenance procedures are performed on any system.

A "competent person" is defined as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

WARNING

Improper installation or maintenance can cause the load to fall.

- **Hoisting machines impose significant loads on the structure to which they are attached. The installer is responsible for verifying that an engineer or other qualified person has determined that this structure can withstand the loads.**
- **Equipment must be installed by qualified personnel.**
- **Do not substitute or modify components provided with this equipment.**
- **Do not exceed the total capacity of the hoist. It varies by model and is marked plainly on the identification label.**
- **Do not exceed 500 lb (228 kg) on any one wire rope.**
- **Do not lift or support people or animals with hoists.**

WARNING

Moving parts can cut or crush.

- **Keep body parts away from machinery in motion.**
- **Remove power source before working on machinery.**
- **Machines with moving parts within 106" (2692 mm) vertically from the floor and less than 60" (1524 mm) horizontally from a safety barrier must be fitted with machine covers.**

DANGER

Electrocution Hazard.

- **Remove power source before opening electrical panels.**
- **Electrical equipment must be installed by qualified electricians.**

Introduction

Welcome to your new Vantis Motorized Rigging Control System. The Vantis Pendant Controller offers 8 machine control capability for fixed or variable speed hoists and travelers in a compact handheld unit with a touchscreen operator interface, variable speed wheel, hold to run button, and an emergency stop (E-Stop). The Vantis Pendant Controller also offers 4 user defined targets.

System Overview

The system includes a touch-screen control pendant, fixed-speed and/or variable-speed motorized hoists/travelers and other motorized equipment. In addition to moving equipment, the system permits the operator to record and recall targeted positions. In variable-speed applications, the operator may also control the unit's speed.

The motor for each unit is connected to electronic motor controls. These connections may include wiring to the motor, motor brake, limit switches, and encoder. The electronic motor controls for each machine may be housed in an individual starter cabinet or grouped together in larger cabinets called motor control cabinets (MCCs). For more information on your unique motorized system please refer to the project specific drawings for your space.

The electronic motor controls are connected through network wiring to an automated rigging control (ARC) cabinet which houses a central programmable logic controller (PLC). The PLC is a dedicated-purpose industrial computer. The PLC gathers data from the electronic motor controls and issues commands to them. The ARC cabinet also contains power supply for the system power and Emergency Stop (E-Stop) system. In wall-mount systems, the system control panel is located on the face of the logic cabinet. Control pendant receptacles may be located on the ARC cabinet or at a remote location.

Hardware Identification— Vantis Pendant Controller



1. Emergency Stop (E-Stop) Operator

When pressed, engages the E-Stop System which stops all current machine motion and disables further initiation of motion. When engaged, the E-Stop Operator will illuminate red and flash on and off consistently. When any E-Stop Operator is engaged in the system all other E-Stop Operators will illuminate red and remain illuminated without flashing. If there is a different system-wide alert the E-Stop Operators will flash an alert code.

To release, turn as indicated by the arrows on the face of the operator and allow it to pop out.

2. "GO" Button / Hold To Run

Used to send the GO command. Requires the user to hold the button down to continue motion (i.e. Hold To Run).

- **Green** – Indicates system is in a "ready" state and the E-Stop system is not engaged.
- **Red** – Indicates the E-Stop System is engaged.
- **Yellow** – Indicates a main system alert. This will flash the appropriate system-wide alert code.

3. Screen

- Display touch screen of the unit.
- Used to select machines, direction, targets and options.
- Press and hold on certain buttons for additional capabilities.

4. Wheel

- Used to adjust speed of a variable speed machine.
- In the setup menu the wheel can be used to navigate/select items on the touch screen. Pressing the wheel down allows selection of an item.

5. Strap

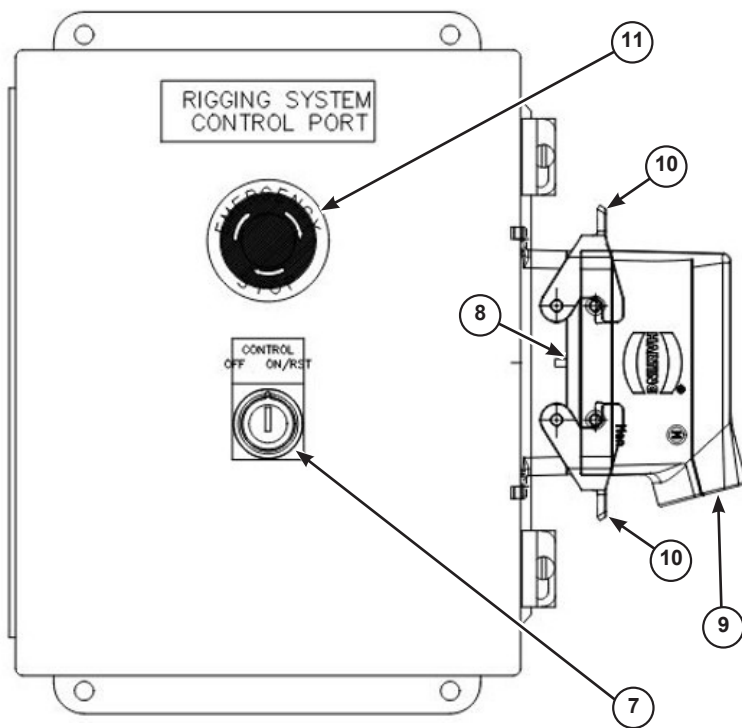
- Used to secure pendant to the user's hand.
- The strap is removable so a user can change the position for use with either hand.
- To remove strap, press the spring-loaded buttons securing the strap at the top and bottom of the pendant (5a) then secure strap in place on the desired side.

6. Vantis Pendant Controller Plug

- Mates with the Vantis receptacle. Contains the power, network, E-Stop and control signals.

Vantis Pendant Controller

Hardware Identification—Vantis Control Port



Vantis Control Port

7. Key Switch

- Turning the key clockwise will turn on the ARC cabinet as well as the Vantis Pendant Controller.
- Turning the key clockwise, after the system is on, sends a fault reset request to the E-Stop System and all machines.
- Turning the key counterclockwise shuts down the system.
- The key switch is spring loaded and will return to center when released.

8. Receptacle

- Mates with the Vantis Pendant controller plug. Contains the power, network, E-Stop and control signals.
- Accepts control port shunt plug when a Vantis controller or console is not plugged into the port. A control port receptacle without a Vantis console, controller, or shunt plug will appear to the system as a pressed E-Stop Operator and will engage the E-Stop System.

9. Shunt Plug

- A shunt plug is supplied with each control port and is usually tethered to the receptacle via a 12" lanyard so as not to be lost. Per above, it is to be utilized when a control port is not actively in use by a Vantis controller or console.

10. Retaining Latches

- Engage the plug retaining latches so the plug does not accidentally pull out of the control port.

11. Emergency Stop (E-Stop) Operator

When pressed, engages the E-Stop System which stops all current machine motion and disables further initiation of motion.

When engaged, the E-Stop Operator will illuminate red and flash on and off consistently. When any E-Stop Operator is engaged in the system all other E-Stop Operators will illuminate red and remain illuminated without flashing.

If there is a different system-wide alert the E-Stop Operators will flash an alert code.

Additional System Components

Automated Rigging Control (ARC) Cabinet

The system ARC cabinet contains the Emergency Stop System and system PLC. The PLC is an industrial-grade dedicated-purpose computer whose task is to gather and store system critical data and service requests from the console touchscreen and other control devices. The PLC communicates with the machine controllers via PROFINET, a high-speed data communication system developed to provide reliable and accurate control of factory automation systems.

The ARC cabinet includes the system low voltage power supply, associated fusing and switching. The control port is wired back to the ARC cabinet.

Emergency Stop (E-Stop) System

The Emergency Stop (E-Stop) system is operated through latching mushroom-head E-Stop Operators in the control system which are located, as required, throughout the venue. The E-Stop buttons are part of an overall safety system; pushing any of the buttons will engage the E-Stop System.

Pressing an E-Stop Operator engages the E-Stop System which stops all current motion and disables further initiation of motion. In all fixed speed machines, motor power is removed in each starter cabinet or MCC and the brakes are immediately applied. Variable-speed machines will initiate a controlled rapid deceleration, apply brakes, and are then placed in a safe state using their integral safety system. Pressing the E-Stop Operator will also signal the PLC that an E-Stop condition exists. The E-Stop Operator that is pressed will flash, while the rest of the E-Stop Operators will illuminate continuously. The E-Stop Operators latch when pressed. To release, turn as indicated by the arrows on the face of the operator and allow it to pop out.

Motor Starters

Each machine includes a starter which contains circuit protection and electronic motor control devices. In variable-speed units, each starter includes a variable frequency drive. Each starter takes in data from an encoder and limit switches, provides motor power and brake release signals, and communicates with the PLC. The variable frequency drives incorporate motor protection functions, including overload sensing, and provide fault status information. Fixed-speed starters include a PLC and a reversing contactor/starter with circuit and motor overload protection.

Limit Switches

End-of-Travel Limits

Each machine is equipped with end-of-travel limit switches. End-of-travel limits are classified by their function, either as normal limits or overtravel limits. The normal limits stop motion in one direction but permit motion in the opposite direction. Each normal limit is paired with an overtravel limit; striking an overtravel limit will cut control power to the starter, preventing all motion of the machine.

This is not a normal situation!

A careful inspection of the machine must be conducted to determine the reason an overtravel limit switch was activated. A specific maintenance procedure is required to clear this condition.

Both normal limits and overtravel limits are tied into the system control in all modes of operation, whether operating from the Vantis Control System or from any maintenance controls on the motor control or starter cabinet.

Limit Switch Types

Limit switch functions can be accomplished with either rotary or direct-struck limit switches. Rotary limit switches are mechanically coupled to the drive mechanism of a machine. Each rotary limit switch has four elements (up overtravel, up, down, and down overtravel) that rotate in unison, utilizing a cam to engage a switch. Direct-struck limit switches are struck by a component of the driven mechanism (e.g., a moving drum flange, a striker mounted to the counterweight arbor, cable clew or lift guide).

System Operation

Plugging In the Vantis Pendant Controller

The Vantis Pendant Controller plugs into the Control Port by way of a robust single connector. The plug and receptacle have alignment tabs built in to assist with alignment. Make sure the plug is fully inserted into the receptacle and locked in place before energizing/ turning on the system.

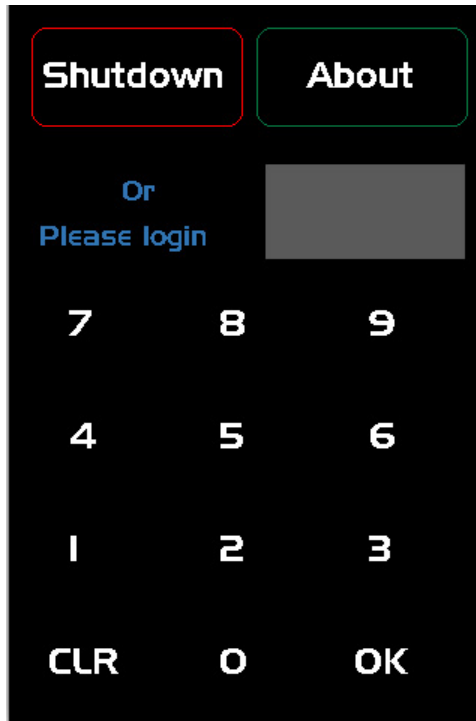
Turning the Vantis System On/Off

The Vantis system is turned on and off by a spring-loaded key switch on the face of any control port. Turning the key clockwise will turn on the ARC cabinet as well as the Vantis Pendant Controller. Turning the key clockwise, after the system is on, sends a fault reset request to the E-Stop System and all machines. Turning the key counterclockwise will initiate a shutdown of all components. While the system is performing a shutdown, all E-Stop Operators will flash rapidly five times in a second, pause for a second and then repeat. The system shutdown commonly takes approximately 12 seconds. This allows time for all computers to cleanly shutdown. After the flashing pattern has stopped, it is safe to unplug the pendant, or restart the system if so desired.

Signing In

When the system is fully loaded the sign on screen will appear with tiles for Shutdown, numbers 0-9, a CLR tile for deleting entered Personal Identification Number (PIN) digits, and an OK tile for entering the completed PIN.

Here the operator can enter their 5 digit PIN. The Operator Levels are as follows.



Sign-In Screen—Nothing Selected

System Operation (continued)

Operator Levels and Default PINs

Operator — (default PIN: 11111) — The Operator level is the most limited in access and can only run machines to TARGET or in JOG mode.

Rigger — (default PIN: 22222) — The Rigger level has some advanced access over the User. In addition to the same access as the User level, the Rigger can also record targets and perform the load learn function.

Admin — (default PIN: 33333) — The Admin is the highest level of end-user access. The Admin can perform all functions of the Rigger as well as change PINs, enable or disable machines, and rename axes.

Creating PINs

It is recommended that the owner/operator create user specific PINs for their system. This prevents other operators with similar systems to gain access to user profiles they should avoid.

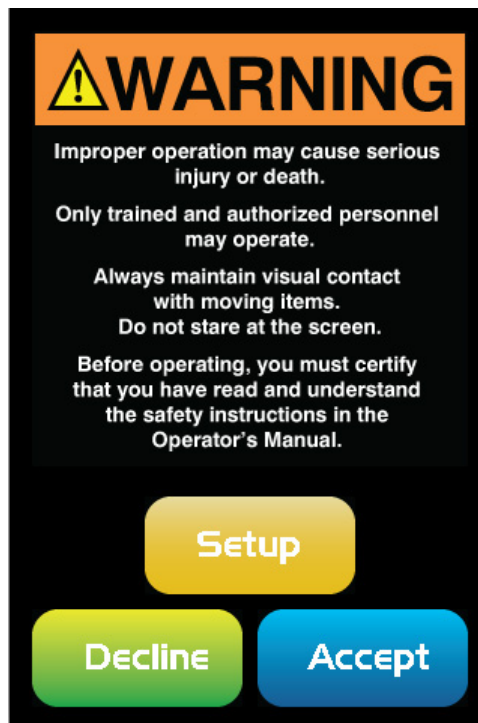
Setting up user specific PINs is referenced later in this document.

Please write new user specific PINs down in a secure place where they will not be lost. "User Specific PINs" on the final page of this manual can be utilized for this purpose.

Operator Responsibility Page

When a PIN is entered correctly a warning screen will show with the following message:

The Admin level includes an additional tile labeled Setup. This is discussed in greater detail later in this document.



Warning Screen—Nothing Selected

System Operation (continued)

Main Screen

The Main Screen is the first page displayed after logging in to the Vantis Control Pendant. At the top of the touchscreen are tiles for selecting/deselecting up to 8 individual machines arranged 1-4 in the top row and 5-8 in the second row. There are 3 tiles on the left-hand side of the screen: 2 for choosing direction, and the CLEAR/LOG OUT tile. The CLEAR/LOG OUT tile can be pressed to deselect all axes and targets or held to log out of the current operator profile. There are 4 target tiles on the right-hand side of the screen. In the center of the screen is the status window. This window displays an overview of faults, if applicable, and fault details of a selected machine. The status window also displays a machine's name when a single machine is selected and a speed indicator if it is a variable speed machine.

Below, Machines 3 through 8 are displaying "at-target" indicators. These signify that these machines are currently at a recorded target location. Machine 3 is at its Software-Upper-Limit (SUL) and Machine 4, its Software-Lower-Limit (SLL).



Main Screen—Target Indicators

System Operation (continued)

Machine Selection

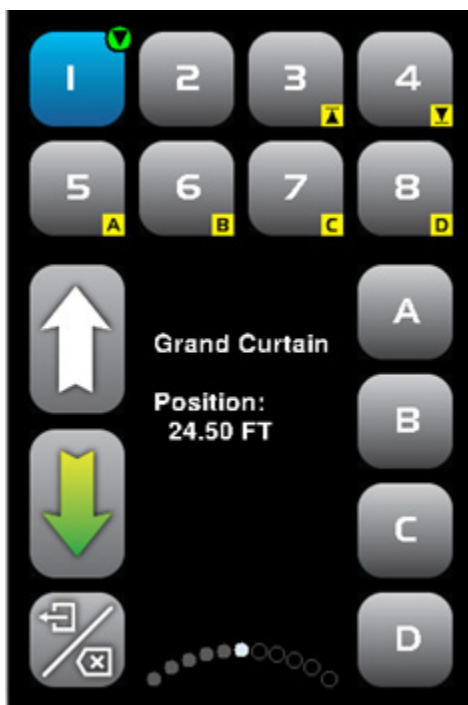
When a machine is selected on the touch screen it will turn blue to signify that it has been selected. A machine can be deselected by touching it again or touching the CLEAR tile. When a single machine is selected, its name will be displayed at the bottom of the status window. If the selected machine is a traveler, the direction tiles will change from up/down to open/close. Multiple machines may be selected by pressing multiple machine tiles in sequence. Selected machines will change color to blue but with multiple machines selected, the individual machine names will not be displayed in the status window.

Movement Selection

When a machine and movement are selected, an indicator will appear at the upper right corner of the machine's tile. The shape of the icon in the movement indicator reflects the motion that machine will perform.

In the figure below, Machine 1 is selected to jog move down. When the GO button is pressed, Machine 1 will travel down until either the GO button is released, or the motor reaches its Software-Lower-Limit (SLL). If the GO button is released before the SLL is reached, the machine will stop. If the GO button is pressed and held again, the machine will continue its move. While the machine is in motion, a yellow ring will appear around the movement indicator.

Multiple machines of the same type may be selected simultaneously. If a traveler is selected instead of a hoist, the movement tile icons will change from up and down arrows to open and close. See below for examples of the open and close tiles and movement indicators.



Machine 1 Selected to Move Down



Open and Close Movement
Tiles and Indicators

System Operation (continued)

Targets

In addition to movement to the Upper and Lower Limits, a machine may have up to 4 recorded targets. These targets are designated A, B, C, D, and may be selected by use of the lettered tiles on the right side of the main screen. Similar to a machine that is at a software limit and showing the Limit At-Target indicator, a machine at a letter target will display the appropriate letter At-Target indicator.

To record a target simply press and hold the TARGET letter you would like to record when the hoist is at the desired height. This will bring up a dialog in the STATUS SCREEN area asking for verification to record the target. Press OK to record or CANCEL. You may record multiple machines' targets at the same time by selecting more than one machine prior to recording.

Variable Speed Control

On machines capable of variable speed, speeds can only be adjusted from default when operating a Single Machine. The speed is adjusted using the WHEEL located under the touch screen. When a variable speed machine is first selected the variable speed graph will load at the bottom of the STATUS SCREEN in its default position. The variable speed graph goes from 0% on the left-hand side to 100% on the right-hand side with every circle equaling 10% and a half circle equaling 5% of total travel.

Load Learning

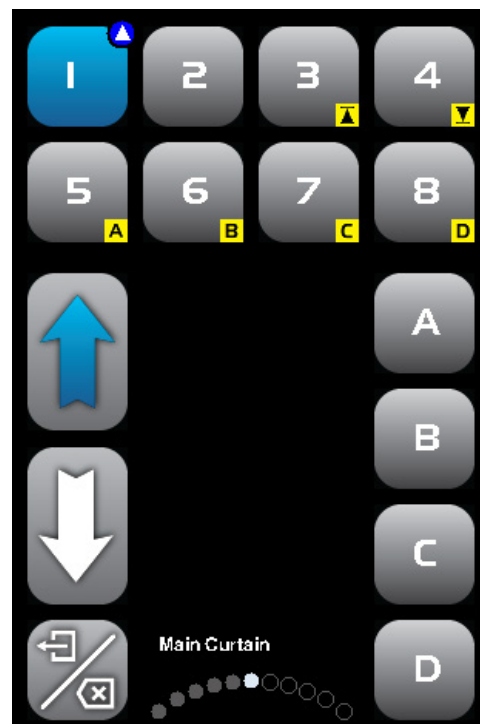
LOAD LEARNING is a programmable function that allows the operator to teach the controller the load of a machine throughout its travel, offering feedback for when the machine is out of weight or how much is currently loaded on the machine. The LOAD LEARNING function can be accessed by the Rigger and Admin levels and can be turned off by Admin level or above.

NOTICE

If signed in as Admin there will be an additional tile after the Load Learn for HOIST at the top of the page to toggle LOAD SENSING on/off. LOAD LEARN can only be performed on HOISTS with load sensing.

Prior to running LOAD LEARN, select and run the desired hoist to its Lowest Soft Limit.

1. Access LOAD LEARN by pressing and holding the number of the hoist on the top of the screen.

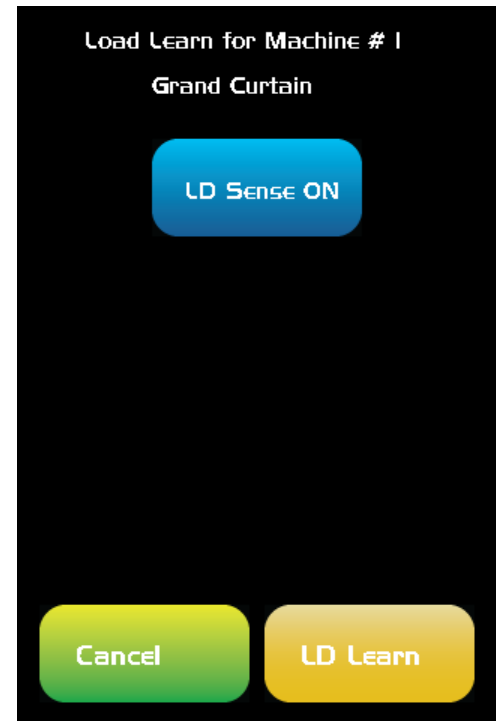


Main Screen

System Operation (continued)

Load Learning (continued)

2. Make sure Load Sensing is On and then select LD LEARN.
3. Press the GO button to begin its travel up. Release the button just before the upper soft limit is hit and press next.
4. Press the GO button again and the hoist will start its travel down. Release the button just before the lower soft limit is hit and press next.
5. Repeat step 3.
6. Press okay to complete LOAD LEARN.



Load Learn

Setup

The setup screen is only available to Admin users. After signing in with the ADMIN PIN, the warning screen will show an additional tile to access SETUP. Selecting this will take you to the SETUP screen, where you can NAME MACHINE, CHANGE PINS, ENABLE/DISABLE MACHINE, and SAVE PARAMETERS. There is also information about the HMI software version and build date that could help with future troubleshooting. At the bottom is an EXIT tile which will take you back to the warning screen.

Name Machine

Selecting NAME MACHINE allows you to rename each individual machine. The machine naming screen has tiles for each machine at the top for you to choose which to rename, a text entry box, an EXIT tile to cancel and go back to SETUP, and an UPDATE tile for saving. When you have selected the machine you want to rename, the current name will show up in the text entry box in the middle of the screen. There will be a blue box around the first character in the name. You can move this blue box to other characters using the WHEEL. To change a character, press the WHEEL in and the blue box will turn red. Using the WHEEL, you can move through the entire collection of characters available.

Note: There is no space character to separate words. After renaming the machine hit the UPDATE tile to go back to the SETUP screen.

Change PIN

The CHANGE PIN tile takes you to a screen similar to the LOG IN screen. The different user levels can be toggled by selecting numbers 1-3 at the top of the touch screen (1-Operator, 2-Rigger, and 3-Admin). There is a similar set of numeric entry tiles that allow you to enter a new PIN for the user level selected. Once complete, you can save the new PIN using the UPDATE tile on the bottom right or cancel by selecting the CLR tile on the bottom left.

System Operation (continued)

Machine Configuration: Enable/Disable Machine

To ENABLE or DISABLE a machine, you need to select the MACH CNFG tile. This takes you to a screen with selection tiles for Machines 1-8 at the top and additional information below. As an Admin, you will only be able to change whether a machine is enabled or disabled by pushing the wheel in, scrolling to the proper selection, and then pushing the wheel in again. Once complete, you can save the newly ENABLED/DISABLED by selecting UPDATE or cancel by pressing EXIT.

On the HOME screen, if the machine is ENABLED it will display its typical grey tile and it will be selectable. If DISABLED, the tile will turn black and you will not be able to select it again until it has been ENABLED.

Logging Out

It is imperative that you logout when you are done operating the various machines in your system. This can be accomplished by holding the CLEAR/LOGOUT tile on the bottom left of the HOME screen. The STATUS SCREEN will ask you "Are you sure you want to Logout?" and a CANCEL tile and a YES tile will appear. If you hit CANCEL, you will be taken back to the HOME screen. If you hit YES, you will be returned to the SIGN IN screen. Here, if you wish to power off the system, turn the control port key switch to off. This will initiate a controlled shutdown which takes about 10 seconds. The E-Stop Operators in the system will display the shutdown alert (a repeating 5 quick flashes and a pause). When the alert has ceased, it is safe to unplug the Vantis Pendant Controller.

Glossary

Machine: A mechanically, electrically, or electronically operated device for performing a task.

Motor: A rotating machine that transforms electrical energy into mechanical energy.

Hoist: A machine used to raise or lower a suspended load.

Traveler: A machine used to pull or push a suspended load.

Encoder: A sensor that converts physical motion to an electrical signal that can be read by a control system. In a hoisting application, these are typically rotary encoders which are attached to a motor/drum shaft. Encoder systems are commonly employed to provide position data.

Limits

Software (Soft) Limit: A programmed reference position that prevents further movement in a particular direction of travel and commonly should be set to stop movement before the normal hard limit. In a hoisting application, these are commonly referred to as the Soft Upper Limit (SUL) for the out-trim, and Soft Lower Limit (SLL) for the in-trim. Note, as there exist machines that do not utilize position reporting, it is possible to have a machine that does not have soft limits. In this case the normal hard limits set the allowable travel.

Hard Limit: A physical switch or sensor that prevents further movement in a particular direction of travel.

- **Normal:** First of two typical pairs of hard limits set to the end of travel of the machine in a direction. When a normal limit is encountered, the machine is still allowed to travel in the opposite direction.
- **Overtravel:** Second of two typical pairs of hard limits set as a back-up in the event of failure of the normal limit. When a machine encounters an overtravel limit, the machine is disabled from movement in any direction and local action must be taken to determine why the machine failed to stop at both the soft and/or normal limits.

While most applications have pairs of normal and overtravel limits (one pair for up/out/open, and one pair for down/in/close), there are cases where no overtravel limits are present. On J.R. Clancy machines, instructions regarding the setting of its particular style of limits are included with the machine

Fault: The state of an item characterized by inability to perform a required function. Must be cleared in order to continue to run a machine.

Starter Cabinet: Control cabinet located within easy reach of the machine motor that contains any and all controls specific wiring for one machine.

Motor Control Cabinet (MCC): Control cabinet that contains a centralized group of controls specific wiring for multiple machines. Typically located within sight of all machines it contains.

Load Sensing: A function of a controls system that utilizes a sensor on a machine to measure how much weight the system is currently handling. Can be utilized to put the control system into a fault state if a machine is working outside of its capacity. Can also be utilized to learn specific loads to further ensure safe operation within the capacity of a hoist system.

Emergency Stop (E-Stop): Operator that immediately stops all fixed speed motors in the system by removing the motor power in each starter cabinet or MCC; variable-speed motors will initiate a controlled rapid deceleration and then are put in a safe state using their integral safety system. Pressing the E-Stop Operator will also signal the PLC that an E-Stop condition exists.

Appendix I: Troubleshooting

All troubleshooting information is obtained from the main screen. If there is a general, system wide fault, all movement will cease, all machines will be deselected, and the machine selection tiles will be replaced by a large red rectangle containing the text "System Fault". The detected fault will then be described in the status area (the center of the screen). See the chart below for the descriptions of faults.

If there is not a system wide fault, and a machine fails to operate, first check the machine's status by selecting it on the Main Screen. The status will show in the center of the screen, below the machine's name. These status messages are outlined in the table below.

System Status Messages

| Fault | Description | Resolution |
|------------|--|--|
| COMM FAULT | Pendant has lost communication with the ARC cabinet | Check network cabling for damage. |
| INTERLOCK | System has been restricted from movement by an interlock device | |
| E-Stop | Emergency Stop (E-Stop) System is engaged | Find and release the pressed E-Stop Operator. Verify that all unused control ports have their shunt-plug installed and latched. |
| COMM FAULT | Machine is offline | Check machine has power and network cable is connected/ undamaged. |
| LOCAL | Machine is in local mode/ under local control | Remove Maintenance Pendant from starter cabinet/ MCC or switch starter/mcc from local control mode. |
| DN LIMIT | Machine will not move down | Machine is on its lower soft or hard limit. |
| UP LIMIT | Machine will not move up | Machine is on its upper soft or hard limit. |
| OVR TRAV | Machine has struck an overtravel limit and will not move in either direction | Inspect unit, refer to machine's manual regarding recovering from an overtravel. |
| MTR FLT | Motor Controller Fault (Generic) | Attempt controller reset using the control port keyswitch. If the problem does not clear, or re-occurs, either refer to the machine's manual or record what was attempted and contact Wenger Corporation. |
| MTR FLT:XX | Motor Controller Fault (with code) | A more specific motor controller fault. Some motor controllers can return more specific information regarding their fault status. Make note of the fault number and attempt to resolve in the same fashion as the generic motor fault described above. |
| LD-U | Underload Fault | Machine detected a load value below what was experienced during a load learn. Downward movement is disabled. Press and hold the machine's selection tile to enter the load fault resolution wizard. |
| LD-O | Overload Fault | Machine detected a load value above what was experienced during a load learn. Upward movement is disabled. Press and hold the machine's selection tile to enter the load fault resolution wizard. |
| LD-C | Load Capacity Fault | Machine detected a load above the machine's rated capacity. Upward movement is disabled until the load on the machine is below capacity. |

Appendix I: Troubleshooting (continued)

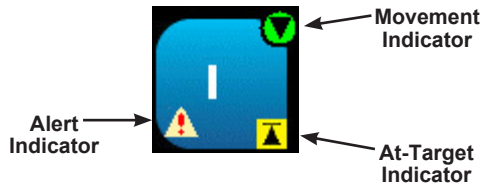
E-Stop Operator Flash Codes














| Lamp | Meaning |
|----------------------|--|
| Off | E-Stop System is not engaged |
| On — Steady | An E-Stop Operator is engaged |
| Flashing On-Off | This E-Stop Operator is engaged. |
| Flashing twice-pause | Communication lost between controller and system PLC |
| Flashing 5-pause | System is shutting down |

If an issue cannot be resolved using the steps outlined in either this manual or a machine's specific manual, contact Wenger Corporation using the information at the beginning of this document.

Appendix II: Icons and Symbols

Machine Selection Tile



| | |
|---|---|
| Movement Indicators | |
|  | Machine has a target selected and is prepared to move up |
|  | Machine has a target selected and is prepared to move down |
|  | Machine has a target selected and is prepared to open traveler |
|  | Machine has a target selected and is prepared to close traveler |
| At-Target Indicators | |
|  | Machine is at Upper Soft Limit |
|  | Machine is at Lower Soft Limit |
|  | Machine is at Open Soft Limit (Traveler) |
|  | Machine is at Closed Soft Limit (Traveler) |
|  | Machine is at recorded target A |
|  | Machine is at recorded target B |
|  | Machine is at recorded target C |
|  | Machine is at recorded target D |
| Alert Indicator | |
|  | Machine is experiencing a fault |

User Specific PINs

Wenger recommends the owner/operator create user specific PINs for their system. This prevents other operators from similar systems to gain access to user profiles they should not have access to.

Remove this page from this manual and store in a safe place.

In the event that PINs are lost and need to be reset, contact Wenger Corporation.

Operator — (default PIN: 11111) — NEW PIN.

Rigger — (default PIN: 22222) — NEW PIN.

Admin — (default PIN: 33333) — NEW PIN.