



OPERATION MANUAL

AUTOSET PLUS (ASP)

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WARNING

ALL OPERATORS SHOULD READ AND FULLY UNDERSTAND THIS MANUAL, BEFORE THE USE OF THIS ITEM OF EQUIPMENT.



If the operator believes this machine is in an unsafe condition or it is unsafe to use, you are under no obligation to use this equipment.
Please report such conditions of this equipment to your employer.

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1. MANUAL REGISTER














I confirm that I have read and understood the contents of this operation manual.

[illegible]

2. SAFE OPERATING CONDITIONS

Read the following safety information before using this equipment.

 WARNING	 CAUTION	 NOTICE	 NOTICE
Indicates a hazardous situation that, if not avoided, will result in death or serious injury.	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.	Operator's important practices and failure to follow the instruction may result in damage to the equipment.	Important installation, operation, or maintenance information.

	Caution: Be sure that all operators who are to use the machine have familiarised themselves with this manual and fully understand the operation of the machine prior to starting it. To reduce the possibility of injury, pay special attention to and follow all safety precautions mentioned in this manual.
	Be alert and aware of any human movement around the machine. Know where your co-workers are when operating the machine.
	Wear clothes which are not loose fitting; your machine has moving components which may snag any loose-fitting clothing resulting in possible injury. Keep hands away from moving parts.
	When shutting down the machine after each shift, remove any foreign objects such as tools and wood scraps from the machine area.
	Do not leave the machine running when unattended. Turn the power off at the main isolator when not in use.
	Long hair should not be worn around moving machinery. Wear a hat or net which will contain cover loose hair in compliance with OHS regulations.
	Hearing protection & safety glasses should be worn.
	<p>Before starting the machine at the beginning of each shift:</p> <p>Do a general overall machine inspection for loose fittings, fasteners.</p> <p>Ensure that the machine is not running at excessive speed or is vibrating.</p> <p>Check that safety control equipment is working properly.</p> <p>Report all faults immediately and ensure repairs of any faults that are found are completed before starting work.</p>
	Only trained personnel should operate the machine.
	Never perform any maintenance on the machine while it is running.
	Observe and obey all warning decals.
	Do not adjust nailplates while the machine is operating.
	Ensure that all personnel are outside the safety area of the machine when it is working.

2. SAFE OPERATING CONDITIONS

When locating the machine within the factory production area, due attention should be given to a clear working area around the machine and the movement of completed trusses from the work area.

The operation of the machine should be confined to competent trained personnel only, who are responsible for the safe operation of the machine and its environment. These operators are to be responsible for a routine inspection of components and ensuring that the machine is not operated in an unsafe condition.

 NOTE	IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PROVIDE THIS INFORMATION TO THE OPERATOR OF THE EQUIPMENT. CALL PRYDA'S EQUIPMENT SERVICE TEAM IF YOU NEED ANY FURTHER INFORMATION.
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3. SAFETY AND HAZARD ANALYSIS

The purpose of the equipment is to press nailplates into timber evenly and quickly in a uniform and repeatable manner. The gantry press is mounted on a full length table that has supporting legs throughout. The gantry head is supported on rails along the full length of the table and travels using the main powered roller from one end to the other.

The operator is required to control the functions of the press including travel, safety stopping and commencing travel from the operator's platform. This roller process is continuous therefore eliminating the normal cycling over each joint. When the nailplates on the roof truss are pressed by the gantry roller, it is removed by the table ejector function and transferred to the outfeed roller system prior to full plate embedment via the finish roller.

The following is a summary of the hazards and risks identified on AutoSet Plus system. A full plant hazard identification, risk assessment and controls measures are listed below.

HAZARD	HOW SEVERE	HOW LIKELY	RISK REDUCTION
Fall/Trip hazard	Severe injury	Unlikely	Operator training to educate on hazards. Caution should be used when getting on and off the table. Furthermore, caution shall be used when walking on top of the table. Machine pucks and building materials can cause an employee to trip.
Electrical shock caused by power cable failure	If cable can be allowed to drag and snag rubbish, cable breach could leave cable live causing electrocution	Very Unlikely	Operator to be responsible to ensure the area under press and tables are always clear. Installation electrician is to ensure appropriate safety switches and all parts (especially cable) earthed correctly.
The machine has a 415 Volts power supply	Unauthorised access to electrical controls could result in death by electrocution	Very Unlikely	Ensure all power cabinets are locked and key removed. Use warning decals to warn of danger.
Tools left under roller press causing debris to fly out	Could cause eye damage and laceration	Possible	Train staff in clean work practices. Ensure operators wear safety glasses.
Roller press crushing operator hand/appendage	Severe crushing	Unlikely	Operator training to educate hazard. Place warning stickers on moving platen. Ensure safety scanners and light curtains are correctly operating before operation.
Bodily Injury	Severe crushing	Unlikely	Operator training to educate hazard. Operators should not put fingers in the puck slots.

Systems of work consist of timber being brought up to the table on trolleys, forklifts or direct delivery systems, which introduce hazards of falling timber and forklifts operating in the area. The timber is loaded manually onto the table and nailplates are located in position. There is a hazard of minor cuts from the sharp edges of the nailplates. The trusses are removed from the table by the truss ejector process without manual intervention.

3. SAFETY AND HAZARD ANALYSIS

The operator should be a mature and responsible person who should have substantial experience in all facets of truss making and be of sound body and mind and alert at all times. Operators who have medical (i.e. drug and alcohol problems) or other stress-related conditions that can cause the operator to lose concentration, should be avoided at all costs. The operator should also understand English and be trained in the basic daily maintenance of the machinery.

Before shipping, the system is to be inspected and results written by the Pryda test quality assurance system as detailed for the job. The system cannot be allowed to be removed from the manufacturing premises until all checks and tests have been completed and properly documented.

In the event of an emergency occurring, the equipment can be stopped instantaneously by breaching the system's safety scanners, light curtains or emergency stop buttons. Releasing travel control functions of the press will also stop the travel or ejector function.

In the case of personnel being injured, the equipment should be isolated, have the power isolated and should not be restarted until a full report and investigation has been carried out. In the event of minor or severe mechanical failure, the equipment should be isolated and tagged off until the appropriate repair personnel can safely and competently repair the machinery and re-commission it.

4. INTRODUCTION

The Australian designed and manufactured AutoSet Plus provides a method of assembling timber components and metal nailplates to build a timber roof truss frame, whereby, through the whole process, only the individual pieces are handled by people. The finished product is then transferred via truss ejector and outfeed roller to the final pressing stage.

Here's how it works:

- Truss designs are downloaded to the system. When a specific truss is selected, the jig pucks automatically moves into position on the assembly table, accurately forming the perimeter of the truss.
- The assembly crew places the chords, webs and nailplates into position so the gantry can embed the plates.
- When a truss run is complete and ejected, the AutoSet Plus sets up for the next truss in less than 25 seconds.
- Automated pucks lead to higher accuracy, productivity, and reduced employee fatigue, allowing production workers to keep a consistent pace throughout their shift. Fast, consistent assembly translates to lower labour costs and quicker turnarounds.



5. STANDARD MACHINE SPECIFICATIONS

5.1 GENERAL SPECIFICATIONS

EQUIPMENT SPECIFICATIONS (FIGURE 1)	
Gantry roller	4.45 m
Gantry overall	5.66 m
Gantry travel	3.55 m/min
Trestle length (individual units)	2.16 m
Table width (B)	4.34 m
Maximum distance between top and bottom automated pucks	3.8 m
Truss jiggling setups/groups	1 to 4 groups per system
Air requirement	2 CFM per Ejector at 100 PSI (When activated, not a constant draw)
Operating temperature	0° to 40°C

5.2 ELECTRICAL SPECIFICATIONS

EQUIPMENT	VOLTAGE	PHASE	AMPS
Conveyor	415	Three (neutral & earth)	15A
Gantry	415 (Standard)		

AutoSet Plus amperage requirements

- 30 Amp per Gantry
- 20 Amp for the Controller Box
- 20 Amp per 16 Automated Axis (typically 4 tables)

	NOTE	CUSTOMER MUST PROVIDE TRANSFORMER IF OTHER THAN 400 V-3PH.
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5. STANDARD MACHINE SPECIFICATIONS

5.3 AUTOSET PLUS SPACING OPTIONS

OPTION 1	OPTION 2
4 Automated axis per table & 4 manual axis per table	8 Automated axis per table
O.C. spacing between two automated axis is 539.75 mm. Each manual axis is centered between two automated axis.	O.C. spacing between two automated axis is 266.7 mm.

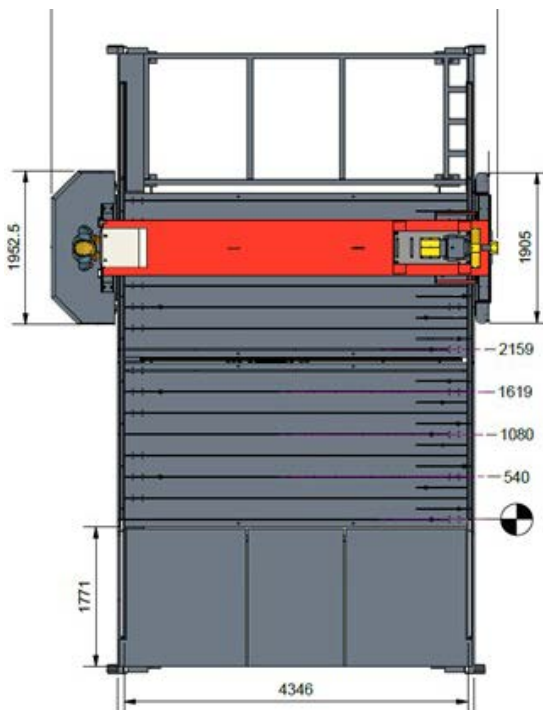


FIGURE 1

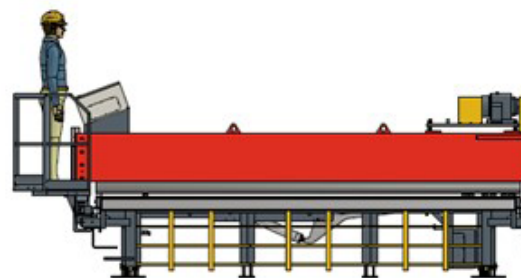


FIGURE 2

6. AUTOSSET PLUS MACHINE COMPONENTS

6.1 JIGGING SYSTEM OVERVIEW

Each table consists of manual and automated pucks. The manual pucks are set in position and adjusted as needed using a suitable socket to loosen/tighten the pucks. The automated pucks are directly driven to position using servo motors and lead screws. The automated pucks move to positions identified by the software.

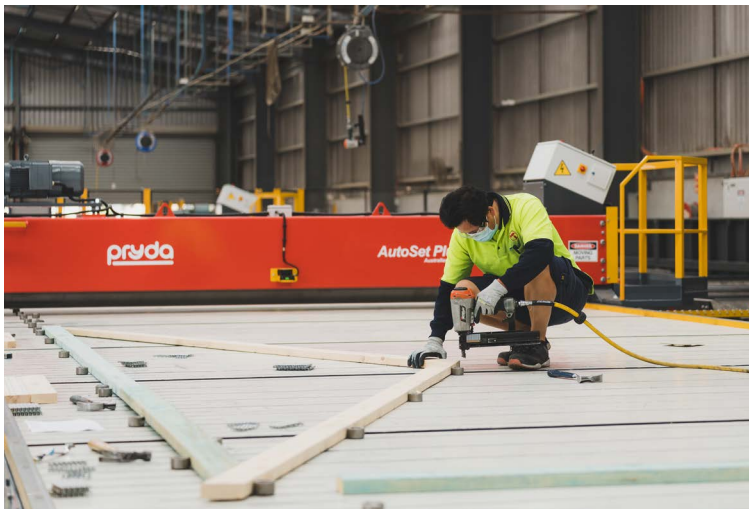


FIGURE 3

6.1.1 MANUAL PUCK ASSEMBLY

The manual puck assembly includes the following items which are identified by number in Figure 4

NUMBER	ITEM
1	Manual Plain Steel Puck
2	Plain Steel T-Bolt

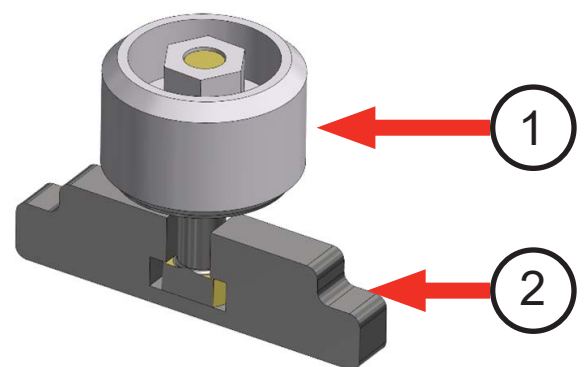


FIGURE 4



NOTE

MANUAL PUCKS CAN ONLY BE USED ON THE MANUAL SLOTS.
MANUAL PUCKS MUST NOT BE USED ON AN AUTOMATED AXIS.

6. AUTOSSET PLUS MACHINE COMPONENTS

6.1.2 AUTOMATED AXIS ASSEMBLY

The automated axis assembly includes the following items which are identified by number in Figures 5 to 7:

NO	ITEM	DESCRIPTION
1	Glide block assembly	Assembly includes Glide block, Glide Block Set Collar, ACME Nut & Stainless Rod
2	Automated puck	
3	ACME Rod with Nut	Lead screw used to position puck
4	Schneider Servo Motor	
5	Servo Motor Coupling	
6	Rod-Bearing assembly	Support for the end of the shaft

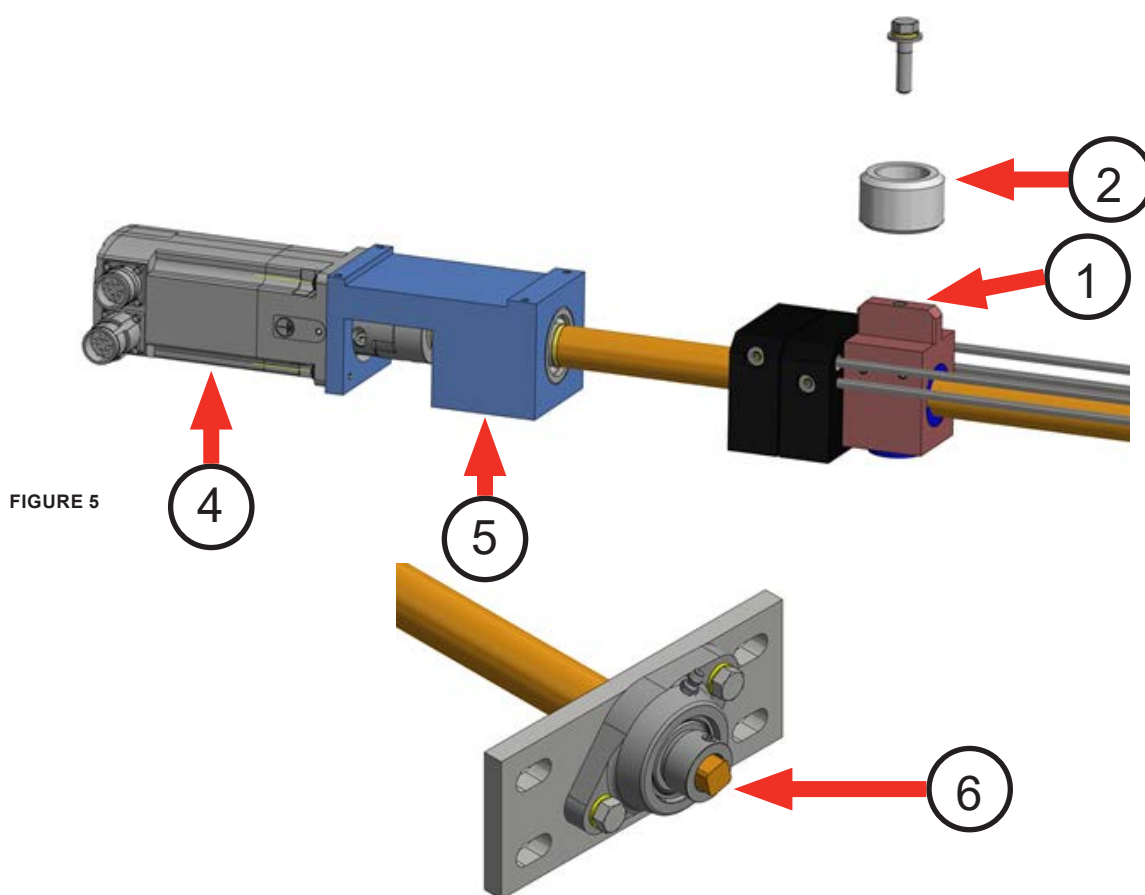


FIGURE 5

FIGURE 6

6. AUTOSET PLUS MACHINE COMPONENTS

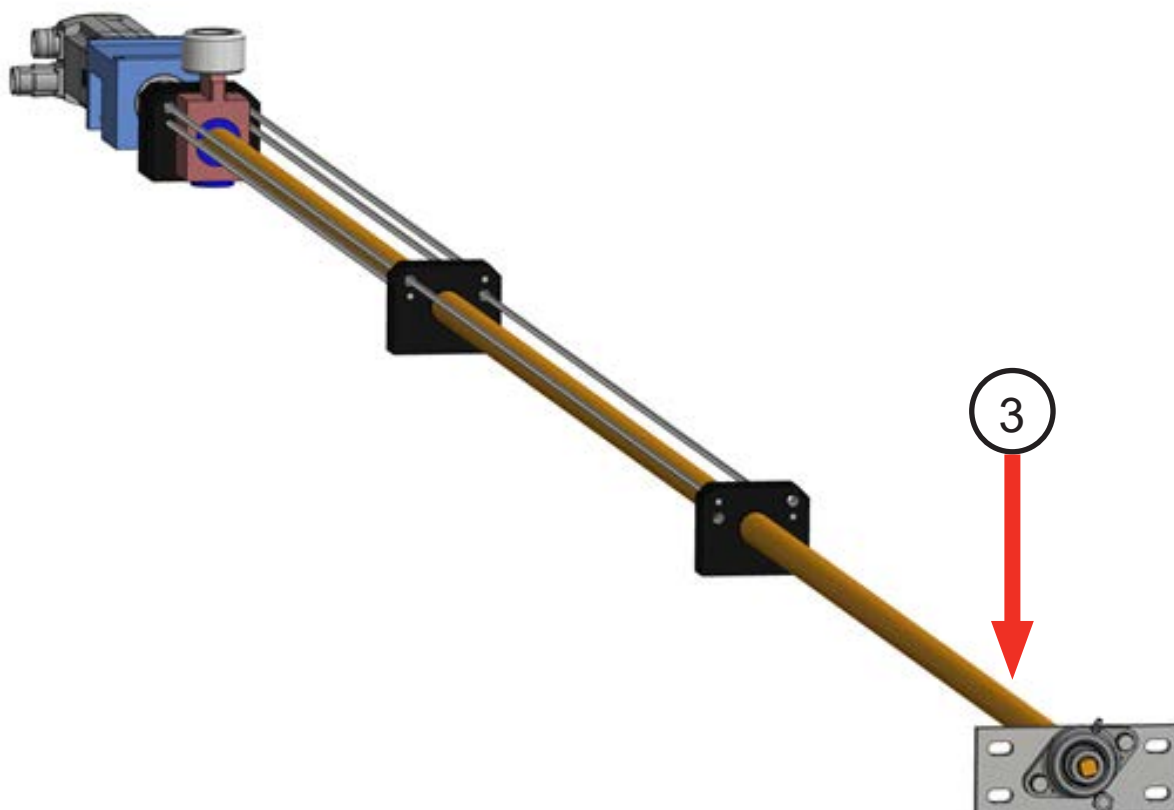


FIGURE 7

6. AUTOSSET PLUS MACHINE COMPONENTS

6.2 GANTRY SYSTEM OVERVIEW

The following items are identified by numbers in Figures 8 to 10

NO	ITEM	DESCRIPTION
1	Gantry Motor & gearbox	10 HP motor/gearbox assembly used to move the Gantry Press along the table
2	Chain Guard	Covers the drive chain
3	E-Stop Reset	Push-button used to reset the Safety emergency stops once it has been tripped
4	Bearing Cover	Metal cover used to protect the bearing
5	Guide Wheels	Urethane wheels used to keep the Gantry press squared on the track
6	Step	Step that can be used to safely access the tabletop and Gantry operator platform
7	Safety Scanner	Safety device used to stop the Gantry Head movement when triggered
8	Light Curtain (front of table)	Safety device used to pause the ejector process when triggered
9	Operator Control Panel	Panel on which the Gantry Press movement and ejector controls are located
10	Operator Platform	Operation station for Gantry Press and ejector controls
11	Ejector Selector	Toggle switch used to select the required Group ejectors
12	Joystick	Control used to raise and lower the ejectors and travel the Gantry Press
13	Lockout Tagout (Gantry Press)	Electrical Lockout point located on the side of the Operator Control Panel

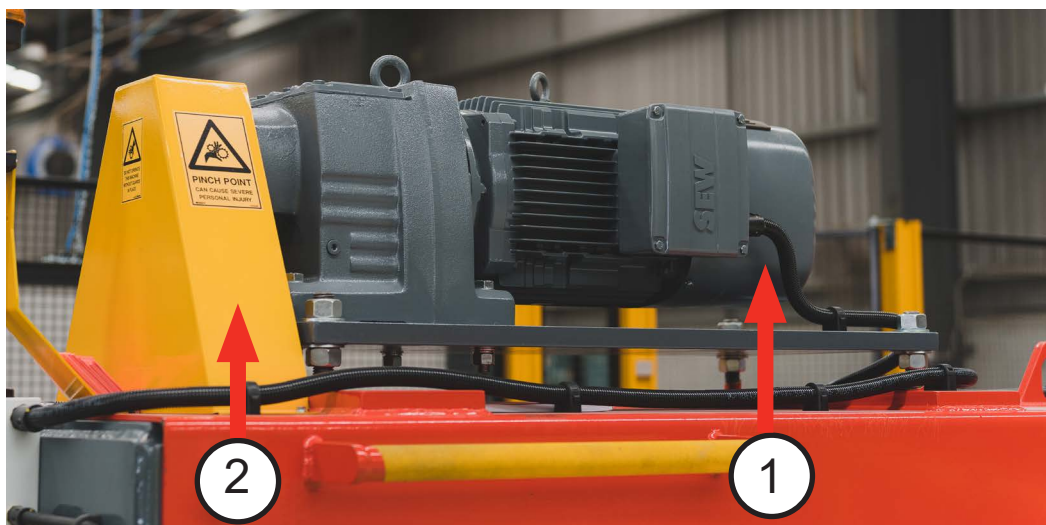


FIGURE 8

6. AUTOSSET PLUS MACHINE COMPONENTS



FIGURE 9

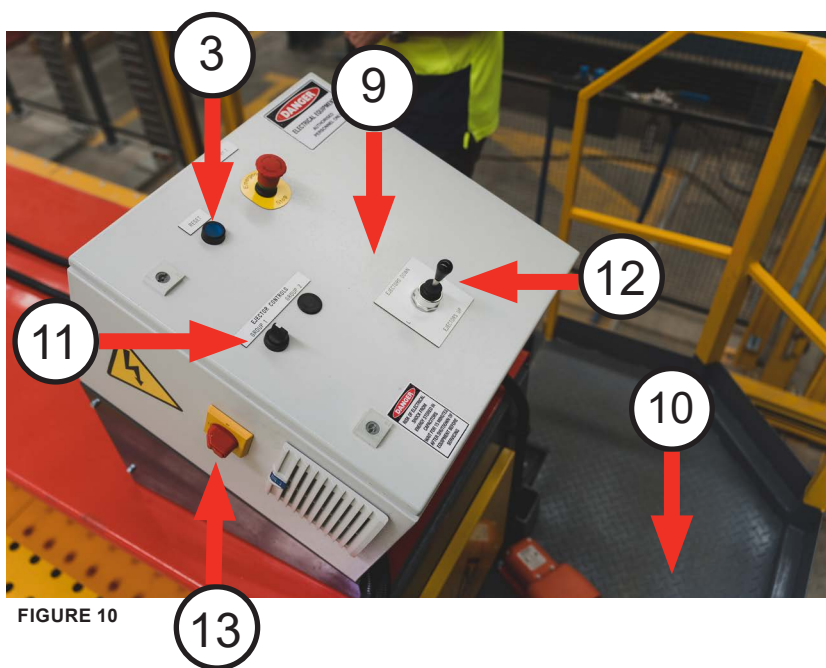


FIGURE 10

6. AUTOSSET PLUS MACHINE COMPONENTS

6.3 EJECTORS

The AutoSet Plus utilises sloped Ejectors. Each Ejector is located on the side of each trestle to assist in moving the truss off the table to a receiver system. These Ejectors use an air powered cylinder actuated by a lift out solenoid. The speed at which the cylinder moves is adjustable using two flow control valves.

The following items are identified by number on Figures 11 and 12

NO	ITEM	DESCRIPTION
1	Ejector Assembly	Includes: Short Ejector Arm Long Ejector Arm Skate Bar.
2	Flow Control Valve	Controls the air flow
3	Pivot pins and split pins	Used for Ejector adjustment

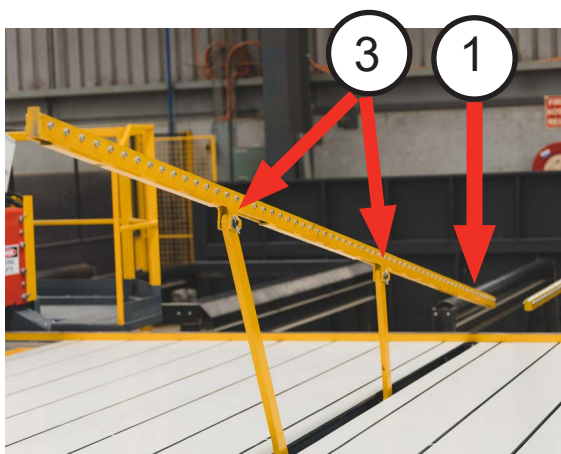


FIGURE 11

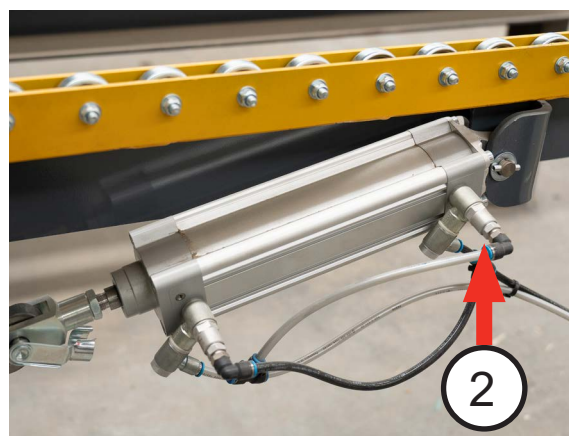


FIGURE 12

6.4 EJECTOR PROTECTION SYSTEM

On the AutoSet Plus, the equipment is fitted with an Ejector protection system. The system is designed to prevent the gantry operator from accidentally running into Ejectors.

The Ejector system consists of a pair of detecting scanners (Figure 13) that sense when an obstruction (eg. ejector or operator) is in the way of the gantry movement. There are two scanners: one on each side of the gantry. These scanners have 2m range during movement and when they see an obstruction in the gantry path, they pause the gantry and motion until the obstruction is cleared. For the gantry to resume movement, a reset button mounted on the operator panel must be pushed.



NOTE

THE EJECTOR PROTECTION SYSTEM IS NOT A SAFETY RATED SYSTEM. IT IS SOLELY DESIGNED TO PROTECT THE EJECTORS.

6. AUTOSET PLUS MACHINE COMPONENTS

6.5 EJECTOR SAFETY SYSTEM

The system is fitted with a safety feature to protect the operators along the bottom edge of the table (i.e. front of the table where product is moved onto the table for assembly). Light curtains are fitted to provide an exclusion area for a width of 1.5m from the table during the ejector raising or lowering.

In the instance that this exclusion area is breached, the ejectors will automatically halt until the area is clear.

This function is muted during all other parts of the process.

6.6 POWER DISTRIBUTION (INCOMING POWER)

The Power Distribution box (incoming power) includes the following items which are shown in Figures 14 and 15:

NO	ITEM	DESCRIPTION
1	Main Power Distribution Panel	Electrical enclosure.
2	Circuit Breakers	Each circuit breaker is labeled with one of the following: Gantry Motor - 400VAC, 3 phase Table Circuits – 400VAC, 3 phase Controller Box – 400VAC, 3 phase
3	Incoming Power	Customer to supply incoming power by a qualified electrician.
4	E-Stop	Button on front of power distribution panel (Puck and Ejector Controls)
5	Ground Terminal	Grounding location for power wires.

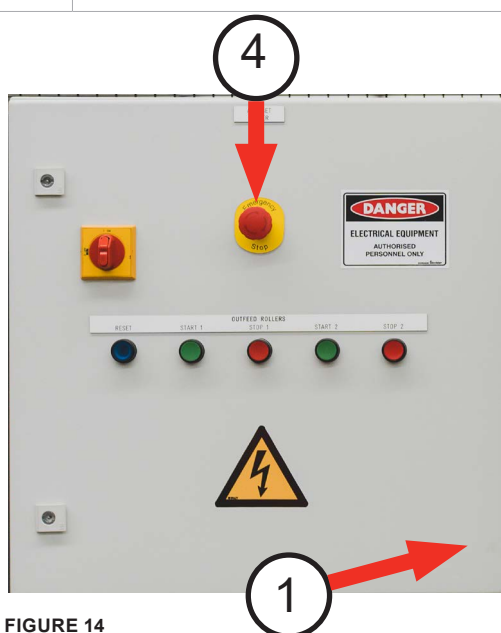


FIGURE 14

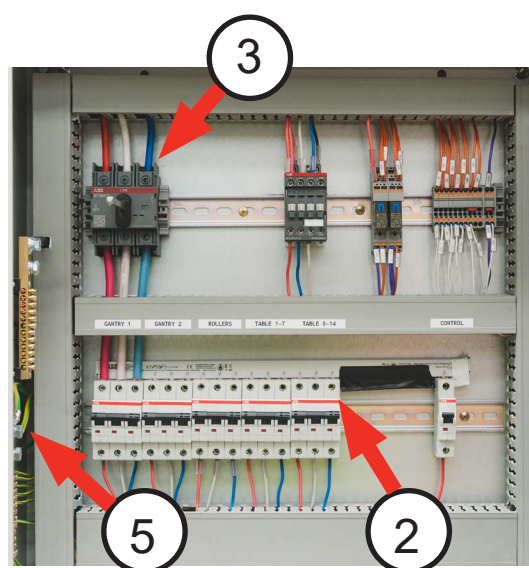


FIGURE 15

6. AUTOSSET PLUS MACHINE COMPONENTS

6.7 SERVO DRIVES CONTROL BOX

The Servo Drives Box includes the following items which are identified by number on Figure 16:

NO	ITEM	DESCRIPTION
1	Servo Drives Box	One for each 4 axis
2	Terminal Block	Incoming Power, 400 VAC, 3 Phase
3	Circuit Breaker	400 VAC, 3 pole, drive overcurrent protection
4	E-Stop relay	E-stop
5	Power Contactor	Power circuit
6	Circuit Breaker	400VAC, 2 pole, Power supply protection
7	Power Supply	24 VDC, 5 A, Control circuit power
8	Control wiring terminals	Input/Output wires to the drives
9	Schneider Servo Drive	Servo Drives, one for each axis for servo motor control
10	Communication	Network port on servo drive
11	Input/Output Cable	Input/output cable for servo drive
12	24 V Plug	24 VDC, drive keep alive circuit
13	Feedback Cable	Feedback for servo motor
14	Power Cable	Power Cable for servo motor
15	Incoming Power	Incoming Power for Drive (Toward back of drive)
16	Jog Switch	Manually operated switch for jogging the axis used for calibration and maintenance

6. AUTOSET PLUS MACHINE COMPONENTS

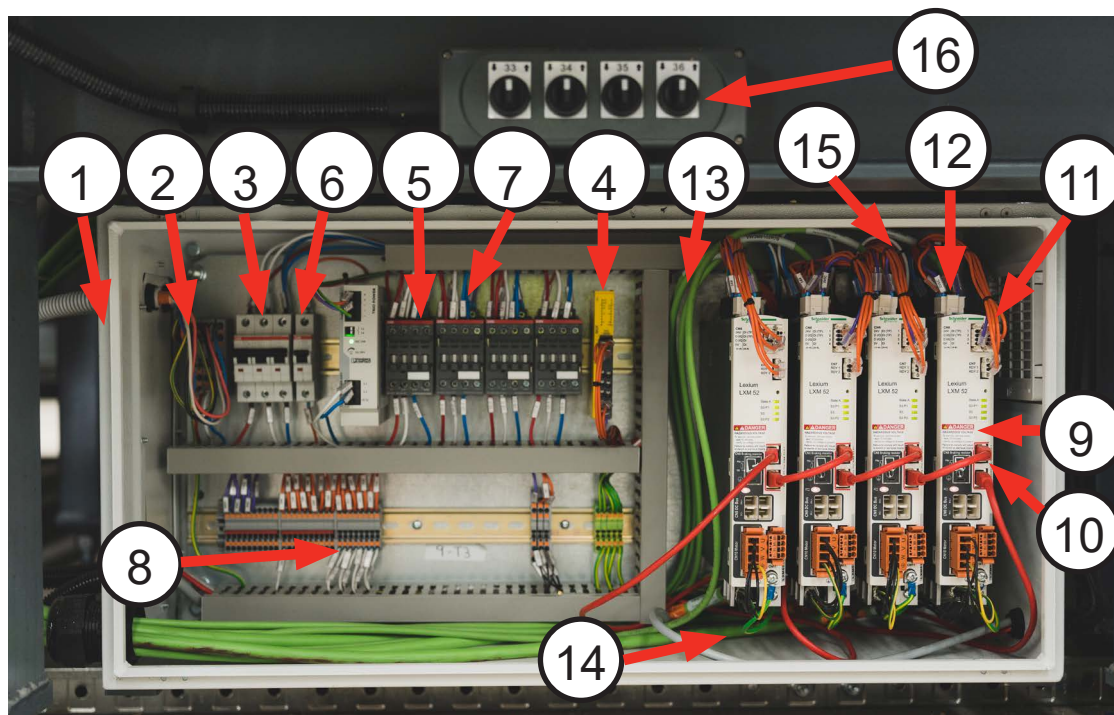


FIGURE 16

6. AUTOSET PLUS MACHINE COMPONENTS

6.8 CONTROLLER BOX

The Controller box includes the following items which are identified by number on Figures 17 and 18:

NO	ITEM	DESCRIPTION
1	Controller box	One box per system
2	Terminal Block	Incoming Power, 415VAC, 3 Phase
3	Circuit Breaker	400VAC, 2 Pole, Power supply protection
4	Circuit Breaker	400 VAC/24VDC, Power Supply
5	Power Supply	24 VDC, 10 A, Control circuit power
6	Safety Relay	24 VDC Safety Relay Module
7	Ethernet Switch	4 Port Ethernet Switch
8	Motion Controller	Main Controller
9	PLC Ejector Control 40 I/O	PLC that controls the ejector
10	PLC I/O Expansion module (16 outputs)	I/O expansion on the PLC for the ejector
11	Field control wiring	Terminal Blocks where Ejector Outputs and inputs are connected
12	Fan Thermostat	To control Fan speed
13	Cooling Fan	To provide cooling inside the controller box



FIGURE 17

6. AUTOSET PLUS MACHINE COMPONENTS

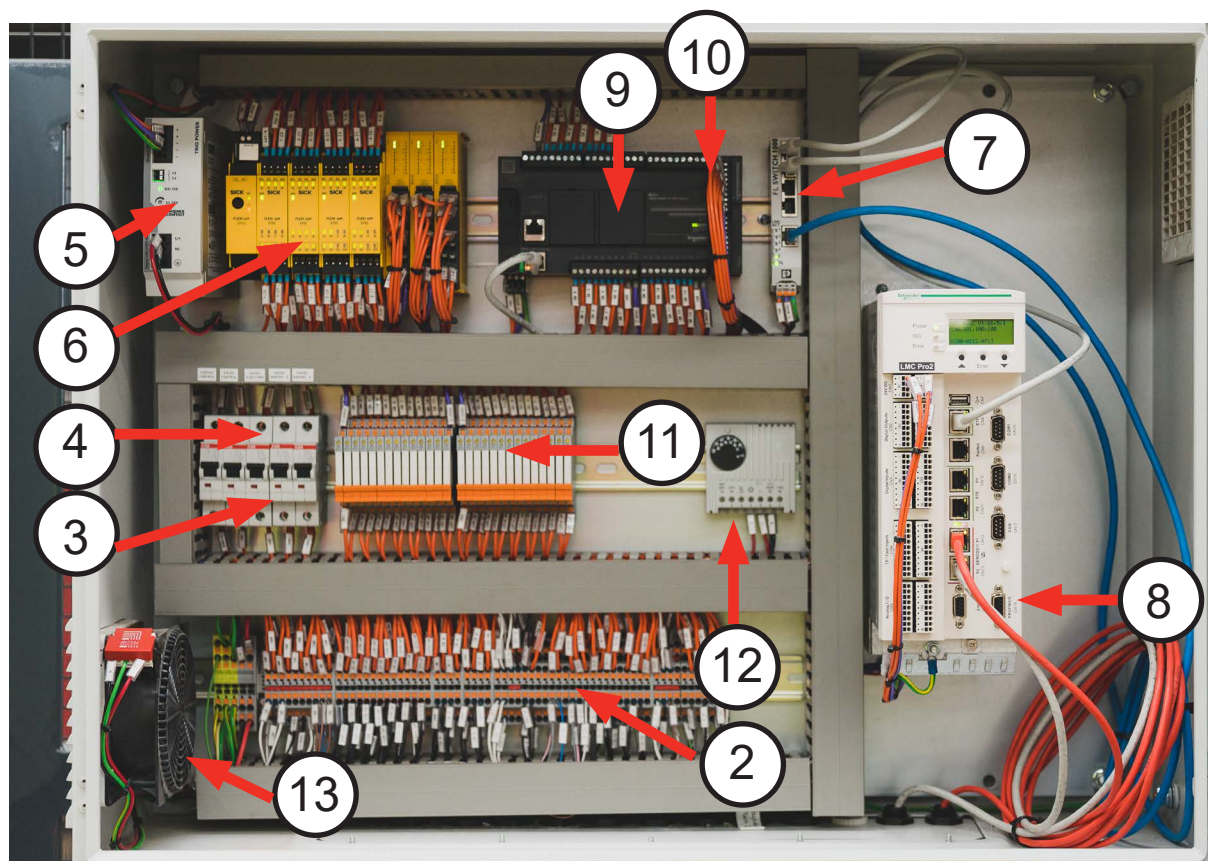


FIGURE 18

6. AUTOSSET PLUS MACHINE COMPONENTS

6.9 GETTING DATA TO THE AUTOSSET PLUS

Table setup information is generally in ASD file format. Most truss engineering software packages can develop these files automatically. Contact the software supplier for details. Pryda will supply the file specification for these files if necessary.

6.9.1 NETWORK

An Ethernet adapter card is provided with the computer inside the operator console. Pryda recommends connecting the network using a Cat 5 (or greater) Ethernet cable.

Except for its distance from the server, the table computer operates like other computers on the network. Distance can be an issue; Pryda recommends that the network cable is installed and connected by a network professional.

If ASD files are being sent to the AutoSet Plus over a network connection, it is mandatory that the table computer be able to write to the ASD files to the network. This is how completed setups can be recorded and fed back to management systems. The table will require certain network rights. If the network administrator has questions, have them contact Pryda's Equipment Support for more information.

To receive live support, the AutoSet Plus computer must have internet access. This will allow for remote access by Pryda Equipment Support for troubleshooting and diagnostic evaluation.

6.9.2 USB DEVICE

Sometimes called "jump drives" or "thumb drives", these devices are necessary if the AutoSet Plus is not connected to a network. The AutoSet Plus has a dustproof USB port mounted on the front panel of the operator's console for these devices. The AutoSet Plus program communicates with these devices in the same manner as it would to a hard drive or network connection.

6.10 HMI

NO	ITEM	DESCRIPTION
1	Monitor	Standard or Touch Screen
2	Power/Reset Button	Push Button that resets system after E-stop
3	Keyboard	
4	Emergency Stop	Safety E-stop push button (stops all axis motion)
5	Mouse	
6	USB Port	Inside computer monitor panel

6. AUTOSSET PLUS MACHINE COMPONENTS

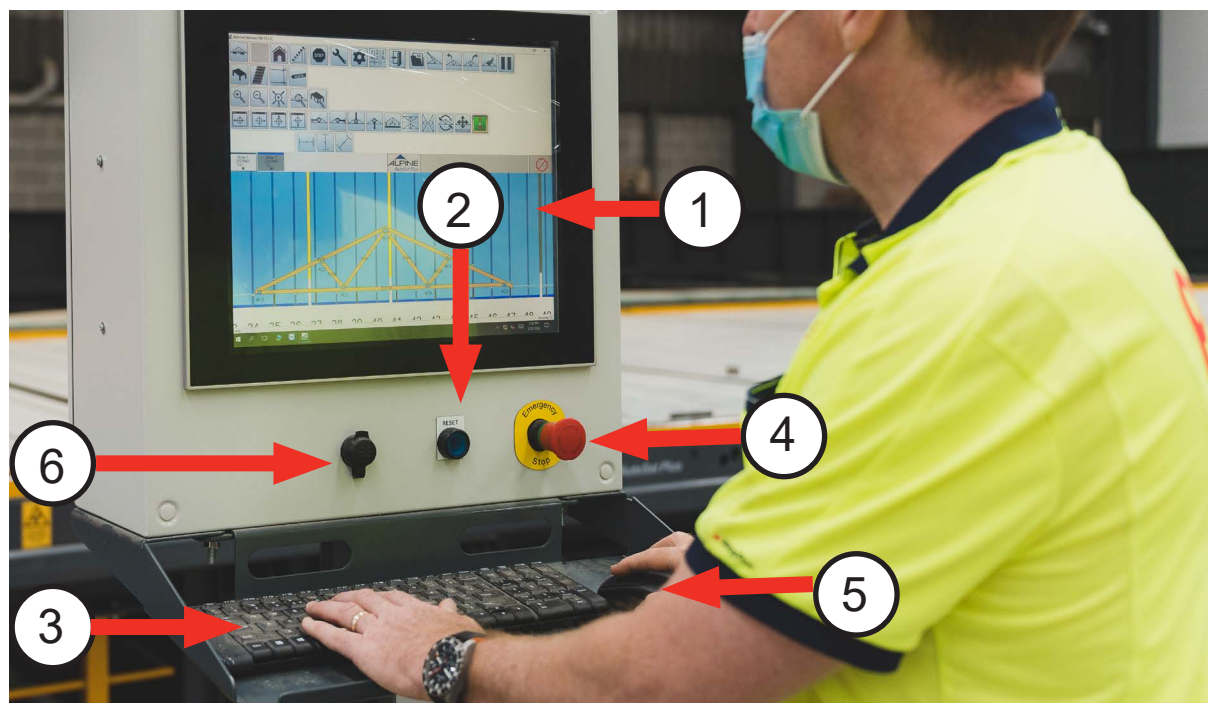


FIGURE 19

7. AUTOSSET PLUS SOFTWARE



WARNING
MAKE SURE THE TABLETOP IS CLEAR
BEFORE MOVING THE PUCKS



7.1 COMPUTER

The AutoSet Plus system is equipped with an industrial computer running Windows Embedded Standard. It utilises an externally accessible CFast SSD card for the primary hard drive. The CFast card gives the advantage of a quick start up time as well as inexpensive and easily replaceable backup copies.

7.1.1 INDUSTRIAL COMPUTER

Connections on the top of the computer (Figure 20) and connections on the bottom of the computer (Figure 21):

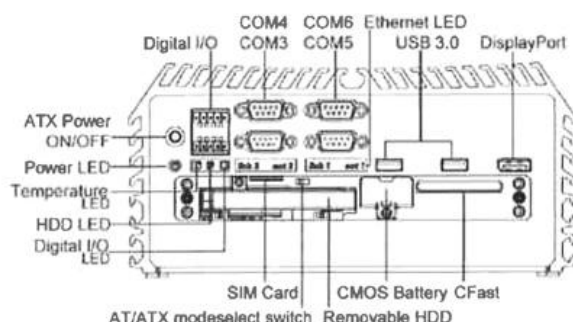


FIGURE 20

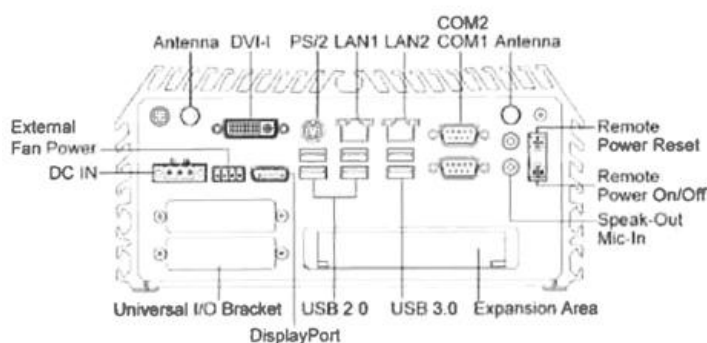


FIGURE 21

Addition of a second monitor to display HMI visuals at a second location:

1. Purchase a USB 3.0 to HDMI graphics adapter. 2- Run an HDMI cable from the monitor to inside the HMI cabinet.
2. Attach the adapter between the HDMI cable and any available USB port.
3. Load the driver for the adapter.
4. Microsoft operating system: In the Control Panel, select the Display program, then Change display settings, then detect the second monitor and select duplicate (Multiple displays:) to have the same visuals on both monitors. Please contact Pryda Equipment Support if you have any questions or issues.

7. AUTOSSET PLUS SOFTWARE

7.2 MAIN SCREEN

The Main screen buttons are organised by groups based on their functionality. The user can arrange the location of any group by right clicking on the group edge and dragging it to the desired location.

The function of each button on the main screen can be read from the status bar on the left bottom corner of the screen by placing the mouse over the icon. The function description is always available in 3 languages: English, Spanish, and French. (Figure 22):

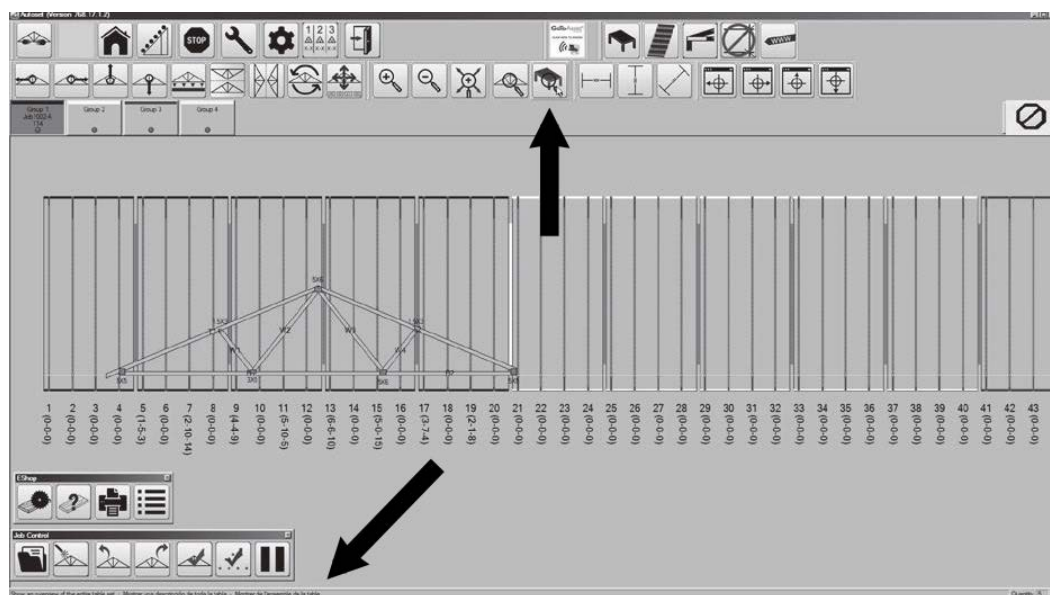


FIGURE 22

The table that follows defines each button using its corresponding icon which can be identified on Figure 23:

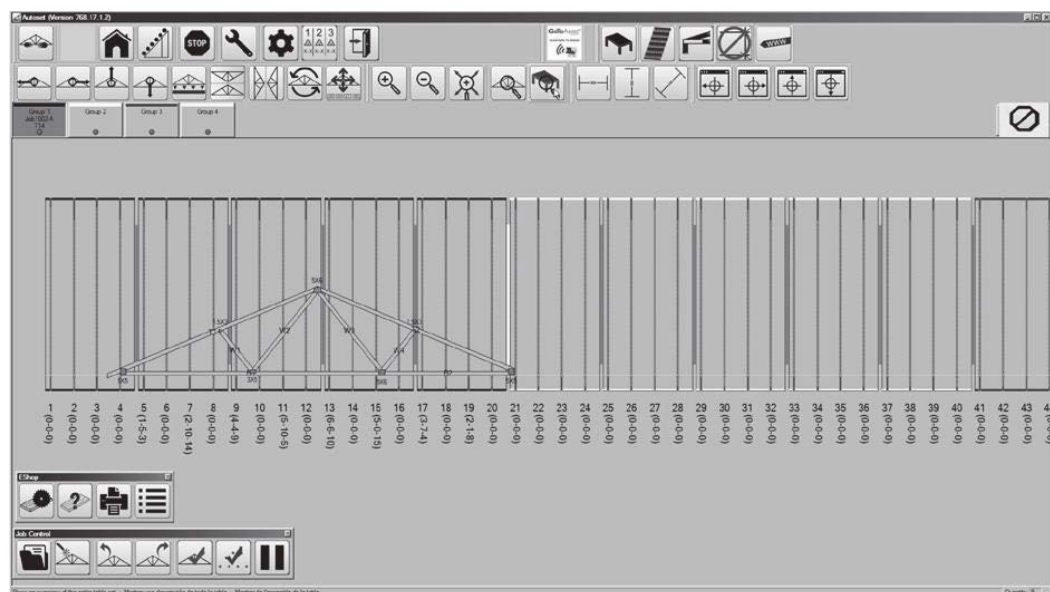


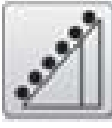









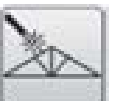












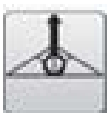




FIGURE 23










7. AUTOSET PLUS SOFTWARE

TITLE	ICON	DESCRIPTION
Home		Click to Home the pucks of the selected group. Group can be selected by clicking of the group button.
Setup		Click to Setup the truss using the pucks in the selected group.
Toggle		Click Toggle to move all the pucks to the Top Chord side. Click Toggle again to return to alternating the pucks between the top and bottom of the chord.
Stop		Click Stop to stop puck movement.
Tools		Click to open the Maintenance and Tools Screen (Section 3.6).
Exit		Click Exit to close the AutoSet Plus Program.
Toolbars		Click to list all available Toolbars. From the list select which Toolbars to display on the Main Menu
Adjust Groups		Click to temporarily adjust group size (Section 3.6)
Horizontal Dimension		Click to activate Horizontal Dimension then click two points in the horizontal direction to display the dimension.

TITLE	ICON	DESCRIPTION
Vertical Dimension		Click to activate Vertical Dimension then click two points in the Vertical direction to display the dimension.
Diagonal Dimension		Click to activate Diagonal Dimension then click two points in the diagonal direction to display the dimension.
Open Job		Click to Open the Job Select Menu (Section 3.2)
Open Truss		Select a group then click an Open Truss to setup a truss on the group from the Select Truss Screen (Section 3.3)
Previous Truss		Click to go back one truss in the job.
Next Truss		Click to advance to the next truss in the job.
Mark Done		Click to mark the truss complete in the job file.
E-Stop		The ESTOP tile will flashing RED when the E-Stop button is pressed.
Zoom In		Click to Zoom the view in.

7. AUTOSET PLUS SOFTWARE

TITLE	ICON	DESCRIPTION
Zoom Out		Click to Zoom the view out.
Zoom to Truss		Click to Resize the window to view the entire truss.
Zoom to Table System		Click to Resize the window to view the entire table system.
Jog Truss Left		Click to shift the truss setup left by one rod.
Jog Truss Right		Click to shift the truss setup right by one rod.
Jog Truss Up		Click to move the truss up 3 inches on the table.
Jog Truss Down		Click to move the truss down 3 inches on the table.
Flip Truss Horizontally		Click to flip the truss horizontally.
Rotate Truss		Click to rotate the truss based on a user-defined angle and direction (Section 3.4.2).
Move Truss		Click to Opens Move Truss Screen (Section 3.4.1)

TITLE	ICON	DESCRIPTION
Pan Window Left		Click to pan the window to the left.
Pan Window Right		Click to pan the window to the right.
Pan Window Up		Click to pan the window up.
Pan Window Down		Click to pan the window down.
Toggle Table		Click to Toggle the Table view On/Off.
Toggle Plates		Click to Toggle the Plate view On/Off.
Toggle Dims		Click to Toggle the Dimension view On/Off.
Toggle Web Information		Click to Toggle the Web information On/Off.
Pause		Click to pause job – This pause time for break.

7. AUTOSSET PLUS SOFTWARE

7.3 JOB SELECT SCREEN

Click Open Job from the Main screen and to open the Job Select screen (Figure 24).

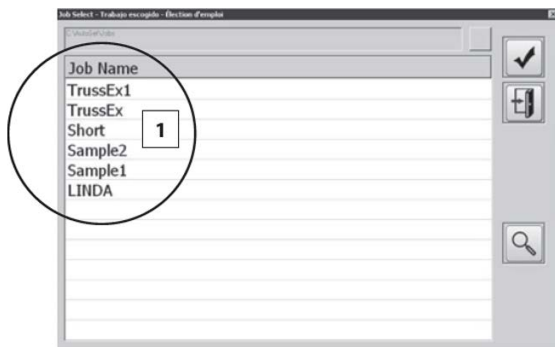


FIGURE 24

The Job Select screen includes the following items which are identified by number on Figure 25:

1. Select job list – Select a job from the list
2. Select Job Icon – Click on select icon to load the selected job
3. Exit Icon – Click on exit icon to return to the Main Screen
4. Search Icon – Click on to search for a job by name
5. A popup window will appear to enter job name to search (Figure 25)
6. Click the Select Job icon (Figure 26) to see if the job is found (Figure 26)

NOTE: Job name is not case sensitive, but it requires the operator to enter complete job name.

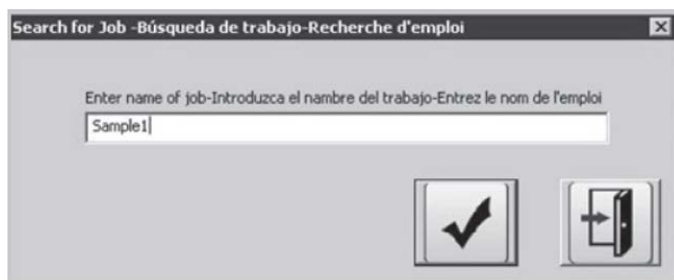


FIGURE 25

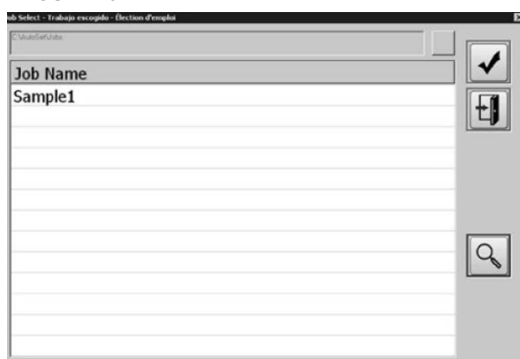


FIGURE 26

7. AUTOSSET PLUS SOFTWARE

7.4 SELECT TRUSS SCREEN

Once the job is loaded from the Job Select screen the Select Truss screen appears (Figure 27). From the truss menu, click on the truss name that needs to be setup on the table and then click the check button (2).

A green check mark on the truss indicates that the truss is completed.

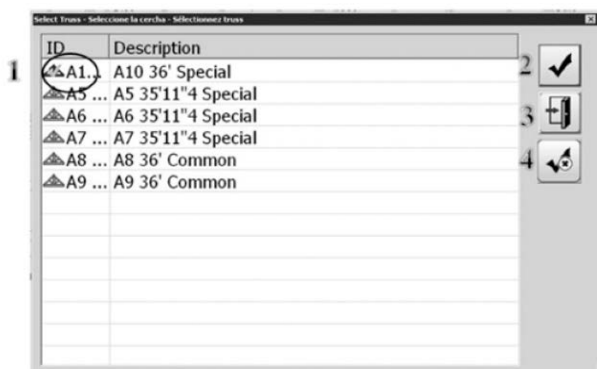


FIGURE 27

The Truss Select screen includes the following items which are identified by number on

- Green Check Mark – The green check indicates the truss had been marked complete.
- Select Truss Icon – After highlighting a truss, click on check icon to advance to the Truss Setup Screen (Main Screen) (Section 7.3).
- Exit Icon – Click Exit icon to return to the Main Screen.
- Uncheck – Select a completed truss (with a check mark) then click on uncheck icon to return the truss to an incomplete status.

7.5 TRUSS SETUP SCREEN (MAIN SCREEN WITH A TRUSS LOADED)

Once a truss is selected from the Select Truss screen, the software will advance to the Truss Setup Screen (Main screen with truss loaded) (Figure 28).

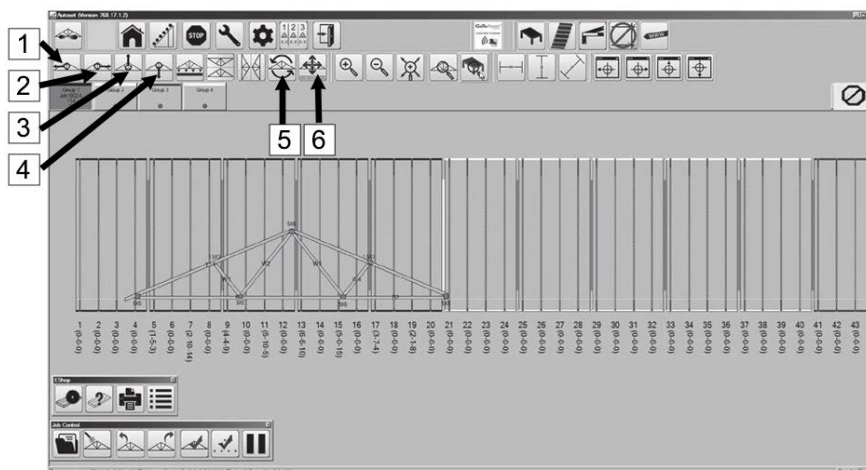


FIGURE 28

7. AUTOSET PLUS SOFTWARE

The Truss Setup screen displays the truss exactly how it will be setup on the table. If the selected truss will not fit on the table or requires a puck to move past its limit, the following popup appears "Truss exceeds physical limitations of the table. Reposition truss and set up again." The axis that is unable to setup will be displayed in red (Figure 29).

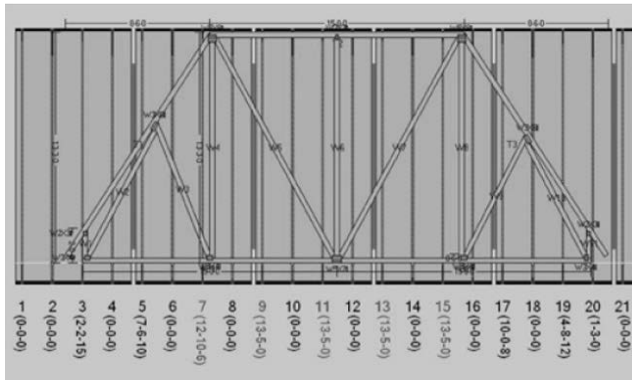


FIGURE 29

To re-position the truss, use the buttons below which can be found on the Main screen (Figure 31)

1. Jog Truss Left 5.
2. Jog Truss Right
3. Jog Truss Up
4. Jog Truss Down
5. Rotate Truss (Section 7.5.1)
6. Move Truss (Section 7.5.2)
7. Adjust the truss location until all axis are colored black, indicating they are able to setup.

7.5.1 ROTATE TRUSS

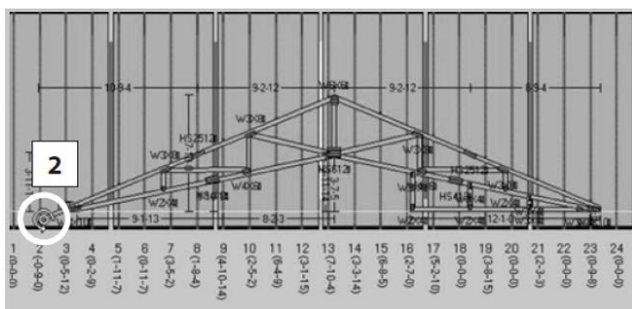


FIGURE 30

1. Click Rotate Truss icon form the Truss Setup Screen (Figure 28)
2. Click to select the center of rotation point (Figure 30)

7. AUTOSSET PLUS SOFTWARE

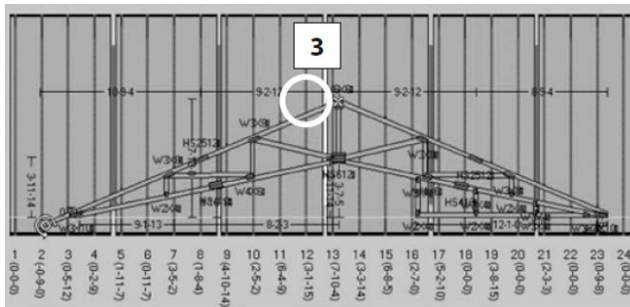


FIGURE 31

- Click to select the reference point (rotate from) (Figure 31)

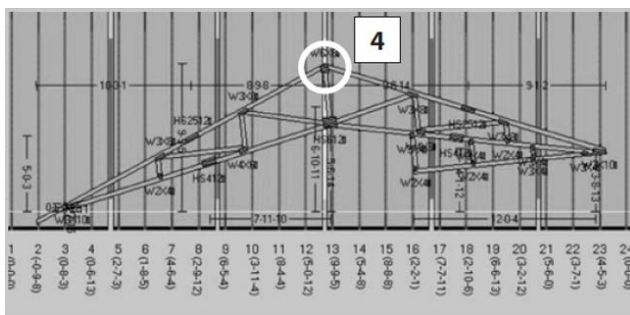


FIGURE 32

- Click a point to rotate the reference point to (Figure 32)

7.5.2 MOVE TRUSS SCREEN

If jogging the truss does not resolve the setup error, click the Move Truss button (Section 7.2) on the Truss Setup Screen (Figure 33) to open Move Truss screen (Figure 33).

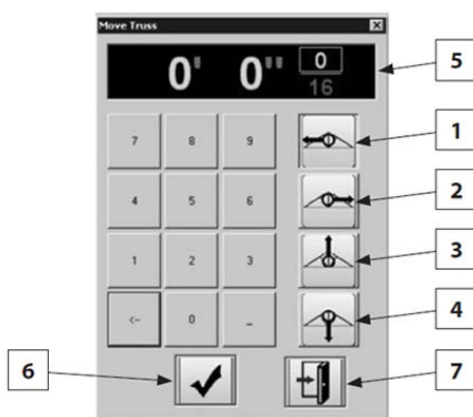


FIGURE 33

To move a truss to an exact location using Move Truss screen follow the steps below referring to Figure 33

- Select the direction of the movement:
- Move truss left
- Move truss right
- Move truss up
- Move truss down Then
- Enter the dimension to move in feet, inches, sixteenths
- Click OK to move truss
- Click Exit to exit the Move Truss screen and return to the Truss Setup Screen

7. AUTOSSET PLUS SOFTWARE

7.5.3 EJECTOR ACTIVATION

When a truss is setup on a group, the Ejectors of that group will automatically be activated. When the gantry operator lifts a truss all the activated Ejectors of the group will operate (See section 8.2 for gantry operation).

The AutoSet Plus software allows the operator to deactivate or activate any Ejector from the control screen by clicking on the individual Ejector.

For example, when setup a truss on Group 1, all Group 1 Ejectors will automatically be activated. Clicking on any Ejector of Group 1 will deactivate it. Another click on the same Ejector will activate it again.

7.6 ZOOM FUNCTION

The AutoSet Plus software provides the following zooming functionalities (Figure 34):

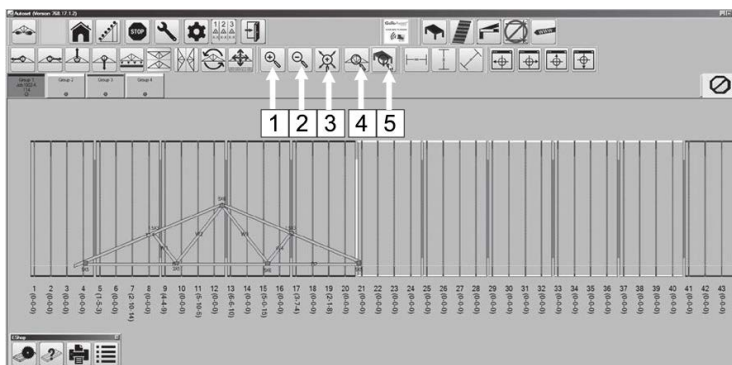


FIGURE 34



FIGURE 35



FIGURE 36

1. Zoom In: Enlarge current view by 10% per click
2. Zoom Out: Reduce current view by 10% per click
3. Zoom to an area on the screen: to zoom any area of a truss, click on zoom button (3) then:
4. Click on the top/left Conner of the zoom area (Figure 35)
5. Click on the bottom/right Conner of zoom area (Figure 36)

7. AUTOSSET PLUS SOFTWARE

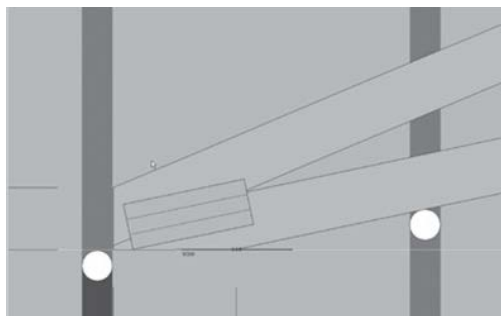


FIGURE 37

6. The selected area will be displayed in a zoom mode (Figure 37)



FIGURE 38

7. Zoom to select truss: select a group then click on icon (4) to display the truss on the selected group (Figure 38).

8. Zoom to show an overview of entire system: Click to view entire system (Figure 39).

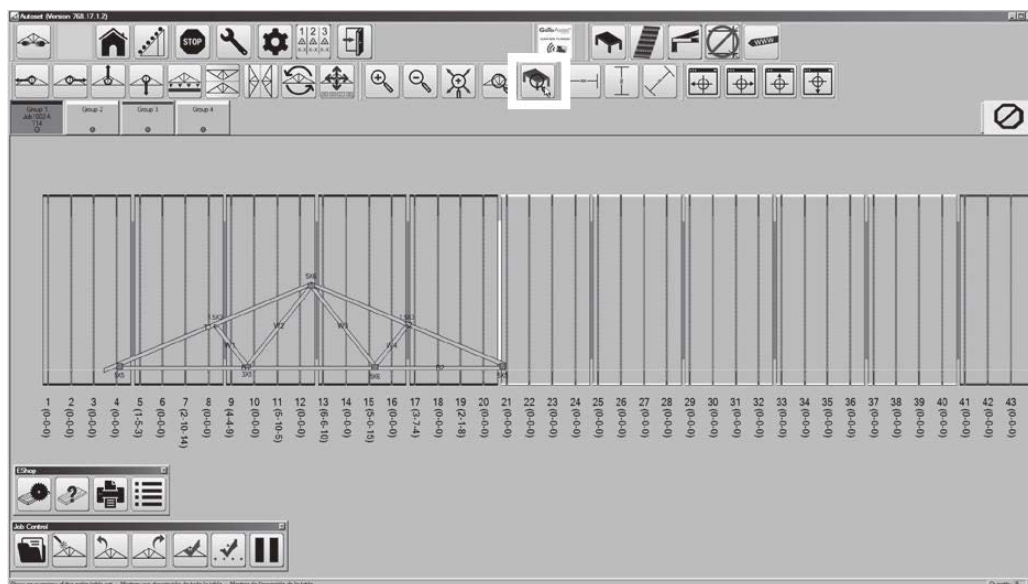


FIGURE 39

7. AUTOSSET PLUS SOFTWARE

7.7 CUSTOM DIMENSION

The AutoSet Plus provides tools to create custom dimensions by snapping between any two points. There are three different types of dimensions that can be created using the dimension icons on the main screen (Figure 40):

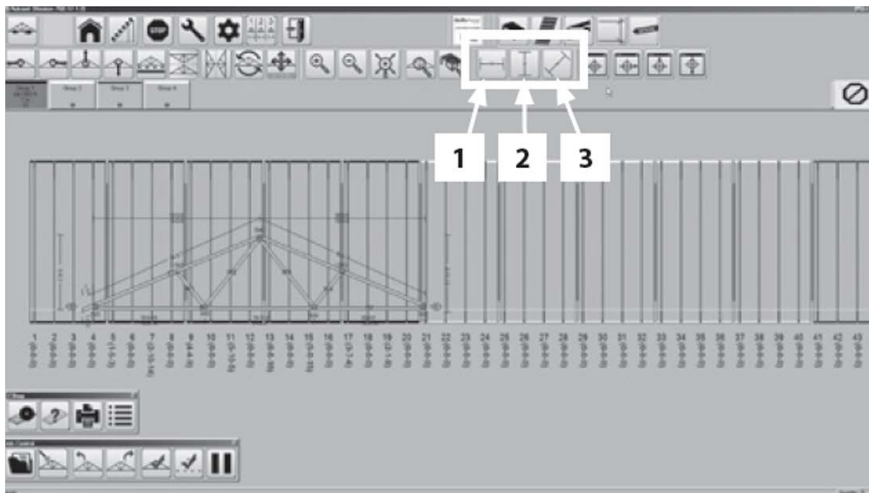


FIGURE 40

7.7.1 HORIZONTAL DIMENSION

To create horizontal dimension, click on the horizontal dimension icon (Figure 41) then follow the steps below:

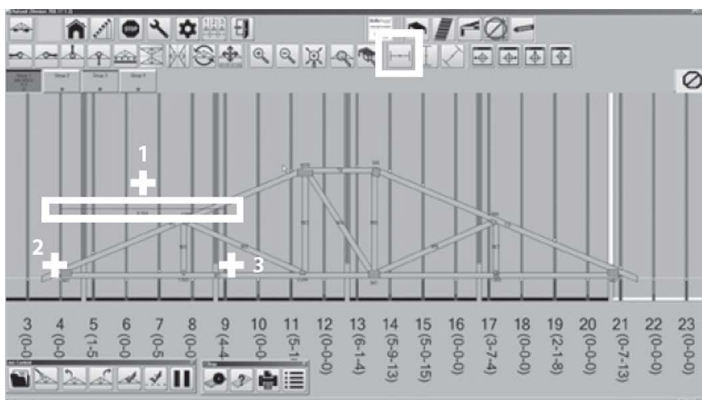


FIGURE 41

1. Click on a desired location to display the horizontal dimension.
2. Click on first point.
3. Click on second point.

7. AUTOSSET PLUS SOFTWARE

7.7.2 VERTICAL DIMENSION

To create vertical dimension, click on the vertical dimension icon (Figure 42) then follow the steps below:

1. Click on a desired location to display the vertical dimension.
2. Click on first point.
3. Click on second point.

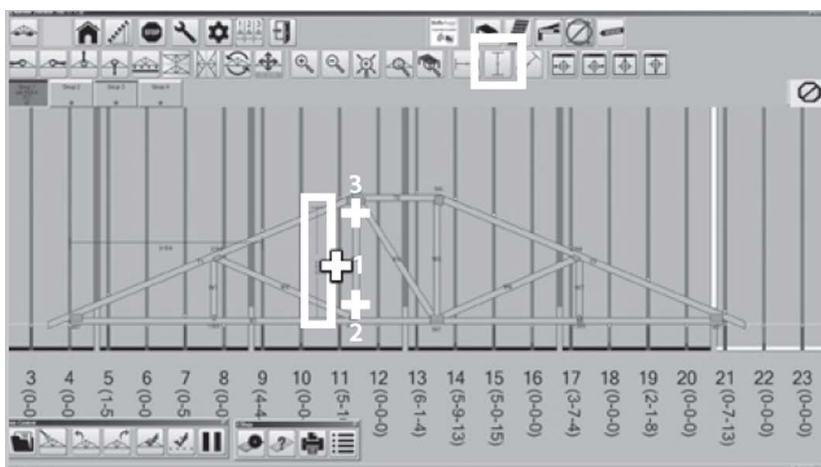


FIGURE 42

7.7.3 DIAGONAL DIMENSION

To create diagonal dimension, click on the diagonal dimension icon (Figure 43) then follow the steps below:

1. Click on a desired location to display the diagonal dimension.
2. Click on first point.
3. Click on second point.

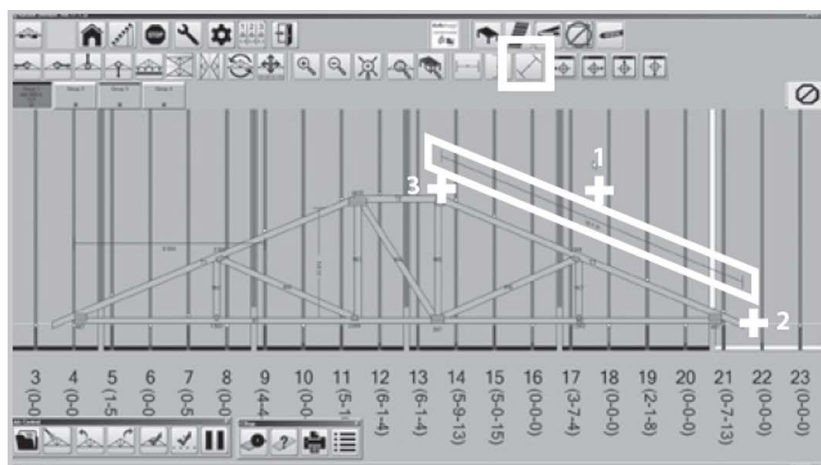


FIGURE 43

7. AUTOSSET PLUS SOFTWARE

7.8 MOVE INDIVIDUAL PUCK

All pucks are assigned a location on the outside profile of the truss. Occasionally, it is useful to move a puck to another location on a board inside the truss. To move an individual puck, follow the steps below:

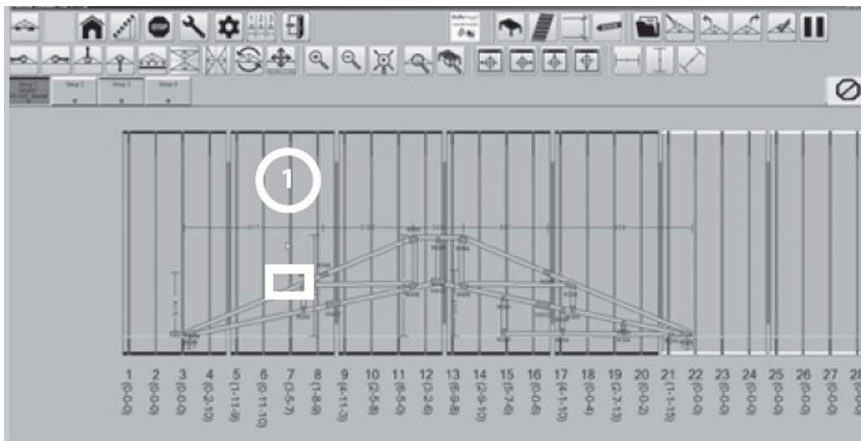


FIGURE 44

1. Select a puck to move by clicking on its axis, the axis will turn red (Figure 44)

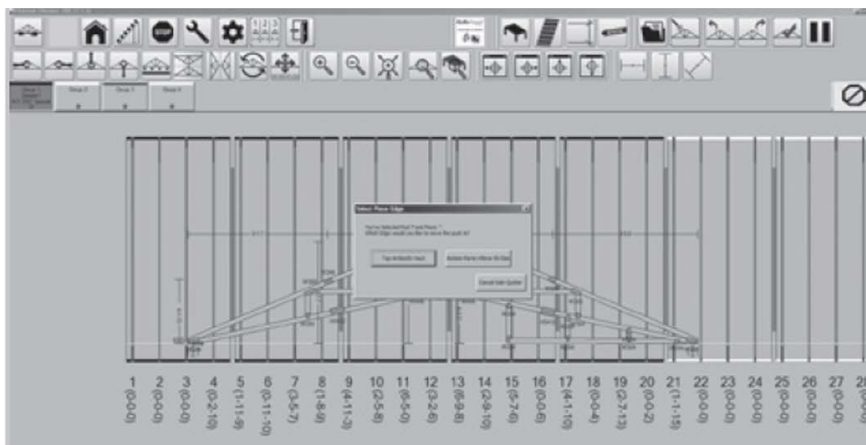


FIGURE 45

2. Click on the board that you want the puck to brace.
3. A pop-up box appears with two options: Top or Bottom edge (Figure 45)
4. Select to the location where you want to locate the puck.

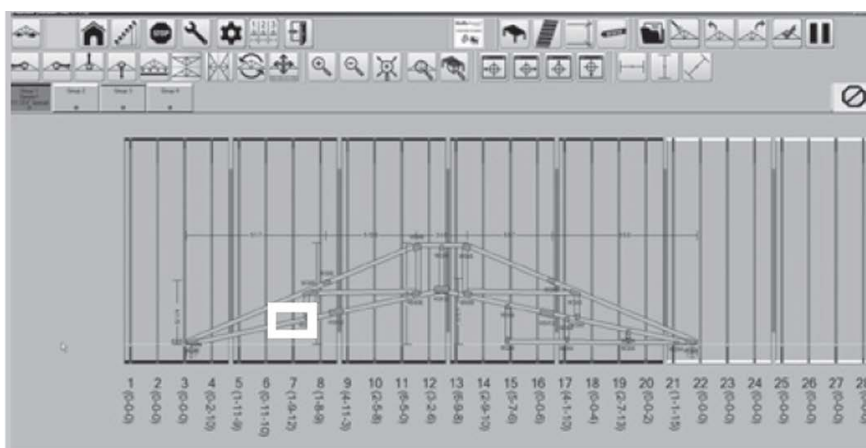


FIGURE 46

5. For example, in Figure 46, the puck number 7 was moved from the top edge of the top chord to the top edge of the bottom chord.

7. AUTOSET PLUS SOFTWARE

7.9 MAINTENANCE AND TOOLS SCREEN

On the Main Screen (Section 7.2.) click on Tools to open the Maintenance and Tools Screen (Figure 47).

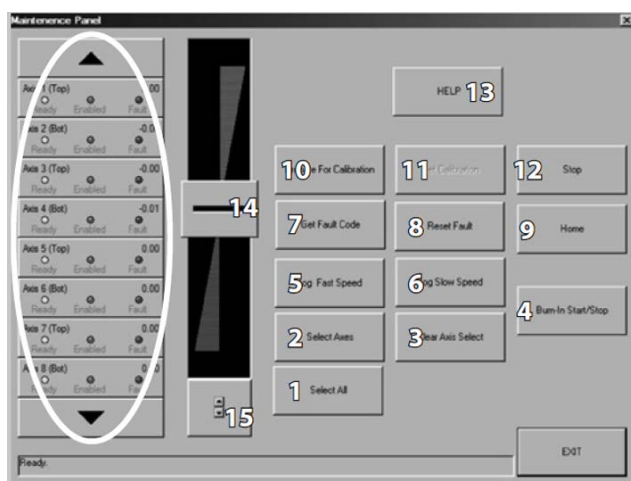


FIGURE 47

The following operations can be performed from the Maintenance screen (Figure 50):

1. Select All – Click to select all axis.
2. Select Axis – Use the axis list on the left to highlight axis then click on Select Axis icon to confirm selections.
3. Clear Axis Select – Click to clear all selected axis.
4. Burn-In Start/Stop – Click to run burn in (selected pucks will move to top and bottom with a fixed distance), click again to stop the burn in. This is used to check if the selected axis move without any problem such as jamming.
5. Jog Fast Speed – Click to Jog the selected axis at high speed.
6. Jog Low Speed – Click to the selected axis Jog at lower speed.
7. Get Fault Code – Click to get fault code on faulted axis.
8. Reset fault– Click to reset fault on all axis. This reset restarts the controller, it might not be the solution for the error. Check Advanced Diagnosing section (Section 11.11) for full diagnostic procedure.
9. Home – click to move all pucks to base line.
10. Prepare for calibration – Click to prepare the selected axis for calibration (selected puck will move in super slow speed when jog switch is activated). This allows puck to move to very short distance.
11. Set Calibration – Click to mark the current puck position as homed position (only for the selected axis)
12. Stop – Click to stop all axis movements
13. HELP – Click to launch troubleshooting panel (Figure 48)– See Trouble Shooting Section (Section 11.11)

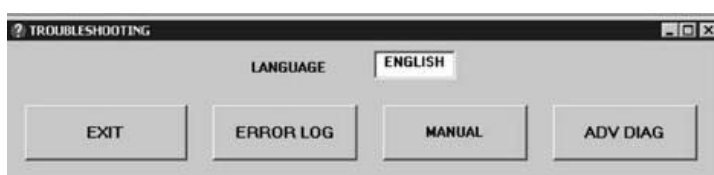


FIGURE 48

7. AUTOSSET PLUS SOFTWARE

14. Jog (Momentary mode)– Click and hold the button then slide up or down (direction) to jog, axis will continue jogging as long as button is pressed. Un-hold button to stop jogging
15. Change Jog mode – Click to change jog function to “Latching” mode (Figure 51)
16. Jog (Latching mode)- Click the button then slide up or down to jog, axis will continue jogging even button is not pressed (Latch). Click button again to stop (Figure 49)
17. Change Jog mode – click to change jog function to “Momentary” mode (Figure 49)

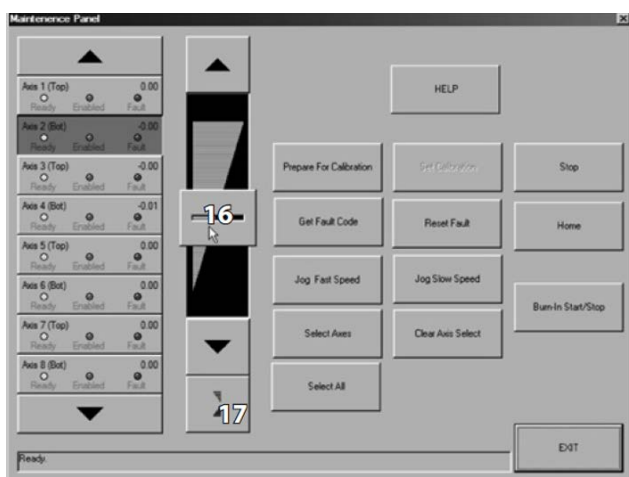


FIGURE 49

7.10 ADJUST GROUPS

The AutoSet Plus software allows temporary adjustment to the group sizes. Group size is determined by the number of automated pucks in the group. Adjusting group size may be useful for very large or very small truss setups.

To adjust a group size temporarily, for follow the steps below

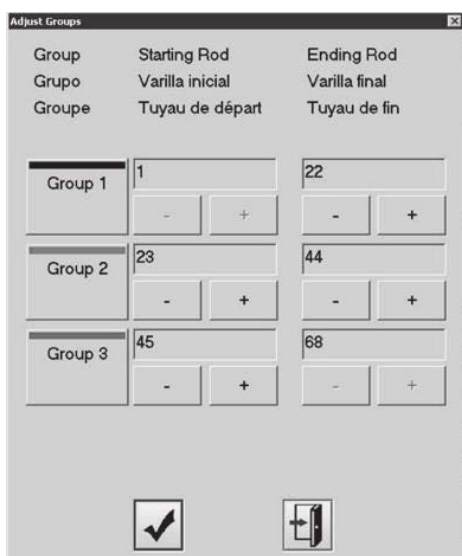



FIGURE 50

1. On the Main screen (Section 7.2), click Adjust Group to open Adjust Group Screen (Figure 50).
2. To temporary adjust group size follow the steps below:
3. Use the (+) and (-) buttons to set how many axis are in each group. For example, in
4. Figure 40, Group 1 starts from axis 1 and ends at axis 22.
5. To accept the changes, click OK icon (1).
6. To cancel and return to the Main Menu, click Exit icon (2).

7. AUTOSSET PLUS SOFTWARE

 NOTE	<ol style="list-style-type: none"> 1. All ejectors will be deactivated after any change to the group size. Activating the ejectors require the operator to run setup or to activate each ejector from the control screen 2. Once the special job is complete, table groups must be re-set. Failing to do so will cause the ejectors to function incorrectly. 3. ANY TIME THE AUTOSSET PLUS PROGRAM IS RESTARTED THE GROUP SETTINGS WILL RETURN TO THE DEFAULT VALUES SET AT THE TIME OF THE SYSTEM INSTALLATION
---	--

7.11 TIMER AND COUNTER

The Timer screen launches as a separate window every time the AutoSet Plus software launches the screen includes the following (Figure 51).

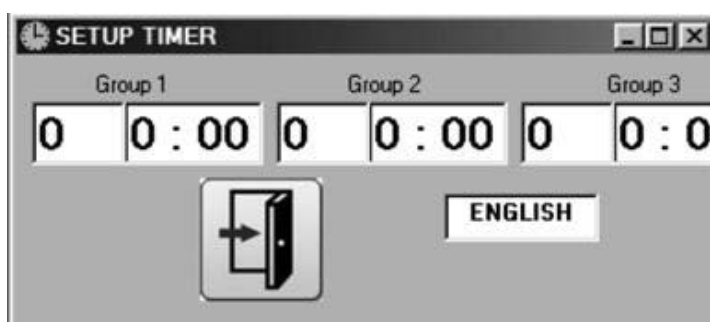
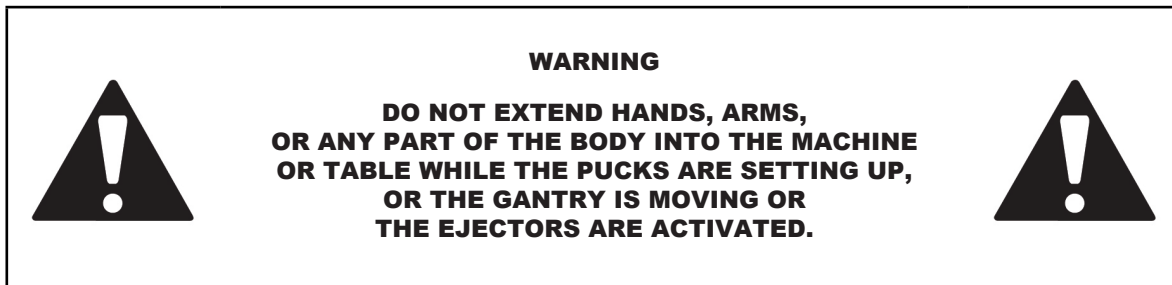


FIGURE 51

1. Duration Timer: indicates the time it takes to build each truss
2. Timer starts when a setup of a truss is completed (pucks in their positions)
3. Timer resets every time lift-out activated
4. Truss Counter: Indicates how many trusses have been built in the current setup.
5. Counter resets every time new truss is set up.
6. Counter increases every time lift-outs are activated.
7. Language box: Click on the language box to switch the language of Timer screen button labels between English, Spanish and French.

 NOTE	<p>A MINIMUM 20 SECOND GAP BETWEEN EJECTORS IS REQUIRED FOR TRUSS COUNTER TO ADVANCE.</p>
---	--

8. OPERATION



8.1 SETUP

- Step 1. Remove any debris from the table surface (tools, timber, etc.).
- Step 2. Setup table using the AutoSet Plus Software (Section 7).
- Step 3. Once the automated pucks have stopped moving, place timber, plates on the table.
- Step 4. Build the truss on the table.
- Step 5. Place plates on the top and bottom of timber connections per the engineering drawing.
- Step 6. Set plates using a hammer on the leading edge of the plate.
- Step 7. Remove any tools or loose objects from the table surface.
- Step 8. Run the EasyRider Gantry across the truss (Section 8.2).
- Step 9. Raise ejector to eject the truss (Section 8.2).

8. OPERATION

8.2 GANTRY AND EJECTOR

	<p>WARNING</p> <p>BODILY INJURY: OPERATOR SHALL ENSURE THAT NO PEOPLE ARE ON THE TABLE IN THE DIRECTION OF OPERATION OF THE GANTRY PRIOR TO MOVEMENT.</p> <p>NOT DOING SO CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	
	<p>WARNING</p> <p>BODILY INJURY: OPERATOR SHALL ENSURE THAT NO PEOPLE ARE NEAR THE GANTRY IN THE DIRECTION OF OPERATION TO AVOID HITTING EMPLOYEES STANDING NEAR THE GANTRY.</p> <p>NOT DOING SO CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	
	NOTE	<p>THE GANTRY PRESS IS RESPONSIBLE FOR PARTIAL EMBEDMENT OF TRUSS PLATES. IT SHOULD ALWAYS BE USED IN CONJUNCTION WITH A FINISH ROLLER.</p>

The Gantry is operated from the operator platform (Figure 52). The joystick is used to control the ejector, and gantry movement (Figure 10).

After the truss plates have been laid in the correct locations and secured in place with a hammer, use the joystick to move the gantry over the truss and press the plates. Move the joystick to the right to move the gantry right or to the left to move the gantry left.

After the plates have been partially imbedded into the truss by the gantry, use the ejector to move the truss to the conveyor rollers that will take it to the finish press to fully embed the plates.

The Ejector sections are determined by the group selection on the gantry operator console (Figure 10).

ALL TRAVEL AND EJECTION FUNCTIONS REQUIRE THE ACTIVATION OF THE “DEADMAN” FOOT PEDAL AT THE SAME TIME AS THE JOYSTICK CONTROL.




FIGURE 52

8. OPERATION

FIRST TURN THE SWITCH OF THE TARGET GROUP, THEN PUSH THE JOYSTICK TO OPERATE THE EJECTOR OF THE SELECTED GROUP:

Ejector Up – Raise Ejector


Ejector Down – Lower Ejector

 NOTE	<ol style="list-style-type: none"> 1. IN CASE THE COMPUTER OR THE MOTION CONTROL SYSTEM IS DOWN, EJECTORS CAN STILL FUNCTION FROM THE GANTRY OPERATOR CONSOLE USING THE GROUP SELECTION SWITCHES AND THE JOYSTICK. 2. THE GROUP SELECT SWITCHES IDENTIFY GROUPS PER LAST ACTIVE SETUP. 3. ONLY ONE GROUP CAN ACTIVATE AN EJECTOR AT ANY GIVEN MOMENT. 4. ON SYSTEMS WITH MORE THAN ONE GANTRY PRESS, ONLY ONE OPERATOR MAY ACTIVATE EJECTORS AT ANY GIVEN TIME. COMMUNICATE WITH THE OTHER GANTRY OPERATOR SO THAT EJECTORS ARE NOT ACTIVATED SIMULTANEOUSLY.
---	---

9. CALIBRATION

Pryda strongly recommends consulting with our Equipment Support Team prior to any system recalibration. To calibrate an axis, follow the steps below:

- Step 1: Click Tools on the Main screen to open the Maintenance screen (Section 10.10)
- Step 2: Select the axis that needs calibration (Section 10.10)
- Step 3: Click Prepare for Calibration. (Figure 53).
- Step 4: Use the manual jog switch (Figure 54) of the selected axis to move the puck to the desired location.
Selected puck will move in super slow speed when jog switch is activated.
- Step 5: Click Set Calibrate on the Maintenance Screen.

 NOTICE	<p>NEVER USE A POWERED TOOL TO TURN THE BOLT AND ACME ROD. THE HIGH RPM GENERATED BY USING A POWER TOOL WILL CAUSE THE SERVO MOTOR TO GENERATE BACK CURRENT.</p> <p>THIS BACK CURRENT WILL CAUSE THE SERVO DRIVE TO FAIL.</p>
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NOTE: Scribe marks (Figure 55) are created during the installation after the initial calibration. These marks can be used to calibrate a puck to the initial calibration position if it loses calibration.

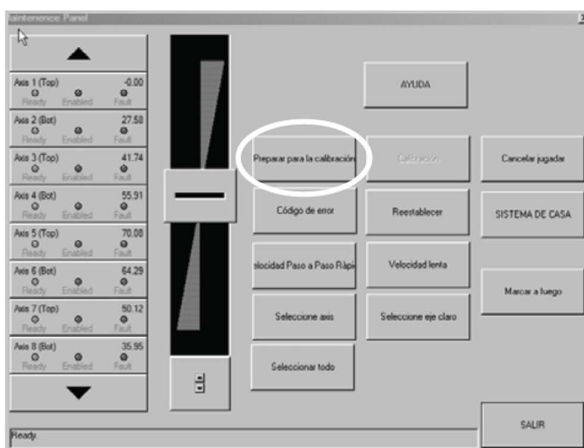


FIGURE 53

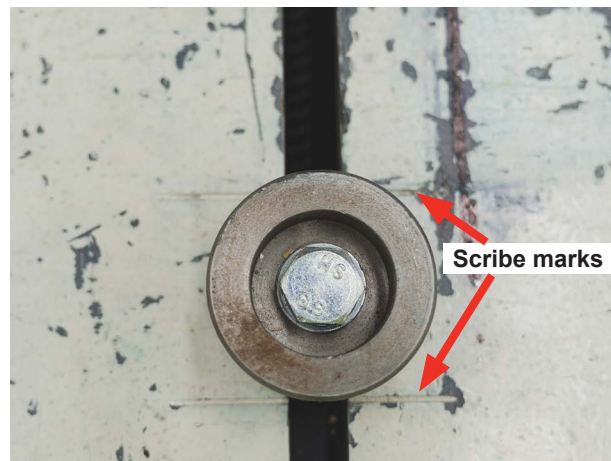


FIGURE 54





FIGURE 55



10. SHUT DOWN/ISOLATION

1. Inform employees that will be affected by the shutdown of the equipment.
2. Turn OFF the Isolator switch which is located on the side of the control cabinet and perform lockout/ tagout procedure.
3. If required, Electrical contractor to perform lockout/tagout procedure at the main distribution board.
4. Disconnect all air supply connected to the machine.

11. MAINTENANCE

	<p>WARNING</p> <p>ELECTRICITY CAN KILL. PRIOR TO PERFORMING ANY WORK ON THE AUTOSET PLUS, VERIFY THAT ALL POWER TO THE MACHINE HAS BEEN TURNED OFF FOLLOWING APPROVED LOCKOUT/TAGOUT PROCEDURES.</p>	
--	--	--

11.1 DAILY MAINTENANCE (SCHEDULE A)

	<p>WARNING</p> <p>BODILY INJURY: OPERATOR SHALL ENSURE THAT NO PEOPLE ARE ON THE TABLE IN THE DIRECTION OF OPERATION OF THE GANTRY PRIOR TO MOVEMENT.</p> <p>NOT DOING SO CAN RESULT IN SERIOUS INJURY OR DEATH.</p>	
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11. MAINTENANCE

11.1 DAILY MAINTENANCE (SCHEDULE A)

Service Technician Name:

Date:

DAILY CHECKLIST		
Safety Electrical/ Pneumatic	Check light curtain function	
	Check e-stop function	
	Check for damaged wires/plugs/conduit	
	Check functionality of the gantry scanners	
	Clean down scanners and light curtains with a clean microfiber cloth	
	Check all electrical cabinets are closed correctly	
	Drain water from the coalescer on the filter regulator	
	Inspect the Energy Chain for loose or damaged links	
Safety Guarding	Check fence guard's underneath table	
	Check truss roller guards	
	Check all guards on gantries	
	Check bearing/motor guards on table	
Gantry	Check thrust wheel damage	
	Check cat track tray is free of debris	
	Check correct operation of brake	
	Inspect gearbox for leaks	

PLEASE MAKE PHOTOCOPIES OF THIS FORM FOR LOGGING MAINTENANCE

11. MAINTENANCE

11.2 WEEKLY MAINTENANCE (SCHEDULE A)

Service Technician Name:

Date:

WEEKLY CHECKLIST		
Safety Pneumatic	Inspect all air lines and solenoid valves to make sure there is no air leaking	
Safety Guarding	Check fence guard's underneath table	
	Check truss roller guards	
	Check all guards on gantries	
	Check bearing/motor guards on table	
Gantry	Inspect guide wheels for even wear indicating they are positioned properly	
	Check that the gap between all the guide wheels and the table frame are less than 1mm	
	Grease the guide wheels	
	Visually inspect the AutoSet Plus motor coupling to verify it is not separating from the motor.	
	Visually inspect the gantry gearbox for leaks. If the gearbox is leaking contact Pryda Equipment Support	
	Visually inspect the AutoSet Plus motor and motor mount to verify all the hardware has remained tight. If loose, remove the screws, apply a medium strength thread-locker, and replace the screws	
Table	Using compressed air, blow out the slots containing the acme rods on which the AutoSet Plus pucks travel.	
	Visually inspect guide assemblies for damage. If the guides appear damaged contact Pryda Equipment Support.	
	Check and fill lubricator with pneumatic oil	

PLEASE MAKE PHOTOCOPIES OF THIS FORM FOR LOGGING MAINTENANCE

11. MAINTENANCE

11.3 MONTHLY MAINTENANCE (SCHEDULE A)

Service Technician Name:

Date:

MONTHLY CHECKLIST		
Safety Pneumatic	Inspect all air lines and solenoid valves to make sure there is no air leaking	
Safety Guarding	Check fence guard's underneath table	
	Check truss roller guards	
	Check all guards on gantries	
	Check bearing/motor guards on table	
	Remove any nailplates or staples from underneath C4 table	
Gantry	Inspect guide wheels for even wear indicating they are positioned properly	
	Check that the gap between all the guide wheels and the table frame are less than 1mm	
	Grease the guide wheels	
	Visually inspect the AutoSet Plus motor coupling to verify it is not separating from the motor.	
	Visually inspect the gantry gearbox for leaks. If the gearbox is leaking contact Pryda Equipment Support	
	Visually inspect the AutoSet Plus motor and motor mount to verify all the hardware has remained tight. If loose, remove the screws, apply a medium strength thread-locker, and replace the screws	
	Check the drive chain tension and lubrication. If the chain requires tension or lubrication contact Pryda Equipment Support	
Table	Using compressed air, blow out the slots containing the acme rods on which the AutoSet Plus pucks travel.	
	Lubricate the acme rods using a dry lube with PTFE that does not contain silicone or chlorinated solvents. (Once the acme rods have been lubricated, run the pucks the full length of the table. This will ensure even lubrication and will clean the acme rod)	
	Visually inspect guide assemblies for damage. If the guides appear damaged contact Pryda Equipment Support	
Pryda	Pryda service completed	
PC	Blow out P/C cabinet	
	Delete or archive old jobs off P/C	

NOTE: ENVIRONMENTAL FACTORS MAY REQUIRE MORE FREQUENT LUBRICATION.

PLEASE MAKE PHOTOCOPIES OF THIS FORM FOR LOGGING MAINTENANCE

11. MAINTENANCE

11.4 QUARTERLY MAINTENANCE

Service Technician Name:

Date:

QUARTERLY CHECKLIST		
Electrical	Inspect load runners on bottom track	
	Inspect the bottom of the track or load runner surface	
Gantry	Check that the gap between all the guide wheels and the table frame are less than 1mm	
Table	Lubricate the acme rods using a dry lube with PTFE that does not contain silicone or chlorinated solvents. (Once the acme rods have been lubricated, run the pucks the full length of the table. This will ensure even lubrication and will clean the acme rod)	
Pryda	Pryda service completed	

PLEASE MAKE PHOTOCOPIES OF THIS FORM FOR LOGGING MAINTENANCE


11. MAINTENANCE

11.5 YEARLY MAINTENANCE

Service Technician Name:

Date:

QUARTERLY CHECKLIST		
General	Check for loose or missing hardware	
Gantry	Check the gearbox fluid level. If the gearbox fluid level appears low contact Pryda Equipment Support	
Pryda	Pryda service completed	

 NOTICE	THE GEARBOX IS FILLED WITH OIL AND DOES NOT REQUIRE CHANGING. HOWEVER, THE OIL LEVEL SHOULD BE CHECKED YEARLY.
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 NOTE	THE GEARBOX IS FILLED WITH OIL AND DOES NOT REQUIRE CHANGING. HOWEVER, THE OIL LEVEL SHOULD BE CHECKED YEARLY.
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PLEASE MAKE PHOTOCOPIES OF THIS FORM FOR LOGGING MAINTENANCE

12. TROUBLESHOOTING

CONDITION	CAUSE	CHECK	CORRECTION
Gantry will not move	Circuit breaker tripped	Short circuit, excessive starting and stopping of Gantry head (duty cycle 3 starts/minute)	Reset circuit breaker in the power distribution panel. Call a qualified electrician to replace the breaker
	Overload tripped	Short circuit, excessive starting and stopping of Gantry head	Reset overload in Gantry operator panel Call qualified electrician to replace the overload
	Disconnect switch off	The electrical disconnect switch on the operator side of the gantry	Turn on the disconnect switch
	Limit switch tripped	Check for obstructions that could trip the switch	Clear any obstructions and press the reset button.
	Brake not releasing	Check the brake for binding and check the power going to the brake unit	Repair/replace defective parts. Call qualified electrician to diagnose and resolve the electrical issue.
	Coupler between motor and gearbox failed	Check coupler for damage, missing key stock	Replace the coupler
	Ejector Protection Sensors	Check area in front of the gantry to ensure it is clear of obstruction	Clear area of obstruction and push the reset button
		Check sensors to ensure they are clean	Clean debris and push the reset button
		Check wiring to ensure nothing come loose	Call qualified electrician to diagnose and resolve the electrical issue
Gantry head travels excessive distance after joystick is released	Drive chain is loose	Check the drive chain tension	Tighten drive chain to specifications (Section 6.1)
	The brake is not holding	Check the brake for worn friction plates, missing key stock, broken coupler	Adjust the brake (Call Pryda Technical Support)
Gantry strains going over connector plates or wood jumps out of the jig	Improper clearance between roller and table.	Plate embedment	Call Pryda Technical Support.
Plates fall off truss after Gantry has pressed the truss	Improper clearance between roller and table	Plate embedment	Call Pryda Equipment Support.
	Center support legs are not tight to the floor	Loose center support leg adjustment bolts	Loosen jam nut and tighten adjustment bolt tight to the floor. Tighten jam nut (Section 6.9)

12. TROUBLESHOOTING

CONDITION	CAUSE	CHECK	CORRECTION
Truss ejectors and receivers not operating (full group/table)	No/Low air pressure	Check air pressure gauge at filter/ regulator/lubricator	Adjust air pressure to 100 PSI
	Truss not set up in program (ejectors not highlighted)	Check computer screen for highlighted ejectors	Re-set up truss on the computer
	No signal getting to computer	Maintenance screen I/O diagnostic page for signals from switch and Joystick	Call qualified electrician to diagnose electrical issue. Contact Pryda Equipment Support
	Contactor in table electrical enclosure for ejector control is not pulled in	Check for E-Stop pushed in. Check if contactor is pulled in	Reset E-Stop. Call qualified electrician to diagnose electrical issues
	Motion drive for ejector control defective or needs to be reprogrammed		Call Pryda Equipment Support
Truss ejectors and receivers not operating (single)	No air pressure	Air-line connection into manifold.	Re-connect airline to manifold
	Defective solenoid valve	Check operation of solenoid valve manually	Repair/replace solenoid valve if it is inoperable
	No signal getting to solenoid coils	Check for broken/damaged wires.	Call a qualified electrician to diagnose electrical issues with the solenoid coils
		No signal to/from relay	
		Loose connections	
	Defective air cylinder	Blow by from cylinder seal	Repair/replace defective air cylinder
	Flow control shut off or defective	Air flow through the flow valve adjustment screw closed	Adjust flow control valve
Pucks not moving (full group/table)	Inactive in program Defective relay	Not highlighted on computer screen. Red LED illuminates for active relay	Activate in computer program Call a qualified electrician to replace the relay
	Breaker for pucks in the main distribution panel tripped	Shorts, Broken/damaged wiring	Call qualified electrician to check for shorts and wiring issues
	E-Stop pressed	Check E-Stop on HMI	Reset E-Stop
	No communication to section of tables	CAT5 communication cable jumper from table to table	Contact Pryda Equipment Support
	Contactor in table electrical cabinet not pulled in	Loose wires, defective contactor	Call qualified electrician to replace the contactor
	Motor failure	Call Pryda Technical Support	Replace defective motor
	Power cable failure	Call Pryda Technical Support	Replace defective power cable

12. TROUBLESHOOTING

CONDITION	CAUSE	CHECK	CORRECTION
Pucks not moving (Individual)	Motor failure	Call Pryda Technical Support	Call qualified electrician to install the replacement power cable
	Feedback cable failure	Call Pryda Technical Support	Replace feedback cable
	Drive failure	Call Pryda Technical Support	Replace faulty drive
	Feedback cable failure	Call Pryda Technical Support	Call qualified electrician for electrical repairs
	Drive programs corrupt	Call Pryda Technical Support	Call Pryda Equipment Support
	Puck is jammed	Physical debris jamming puck	Clear debris and/or unjam puck
	Puck disabled in program	Maintenance panel	Highlight axis and click on enable
	Motor to rod coupling loose	Check motor to rod coupling	Replace the motor coupling
Gantry continues to move with ejector in the path	Ejector Protection Sensors	Axis faulted out	Maintenance panel (axis has red fault light on) Highlight axis in maintenance panel, disable then enable the axis to clear the fault
		Confirm sensors lights are on	Push all reset Push buttons on the gantry head
		Check wiring to ensure it has not been bypassed	Call qualified electrician for electrical repairs
		Check sensing distance with a reflector on the side of the table where the ejector would be. Ensure they detect the ejector position	Loosen sensor's nut and rotate the sensor until the reflector can be detected. Allow 12" of stopping distance

12. TROUBLESHOOTING

12.1 MOTION CONTROL DIAGNOSTICS OR DIAGNOSTIC TOOL

AutoSet Plus software features an advanced motion control diagnostic tool, that allows the user to diagnose many issues and resolve the situation.

When the motion control detects an error, the software notifies the user with a pop-up screen. The screen contains an error code (Figure 56). The errors are tied to a specific set of issues and identify the areas to check when solving the problem.

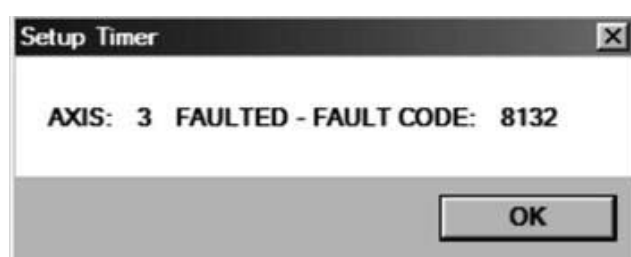


FIGURE 56

The motion control diagnostic tool records all the errors in an error log file and provides instructions on how to troubleshoot any error.

To troubleshoot an error, click on the Tools icon from the Main Screen to open the Maintenance Screen (Figure 57).

Then click on the HELP button to open the Troubleshooting screen (Figure 58).

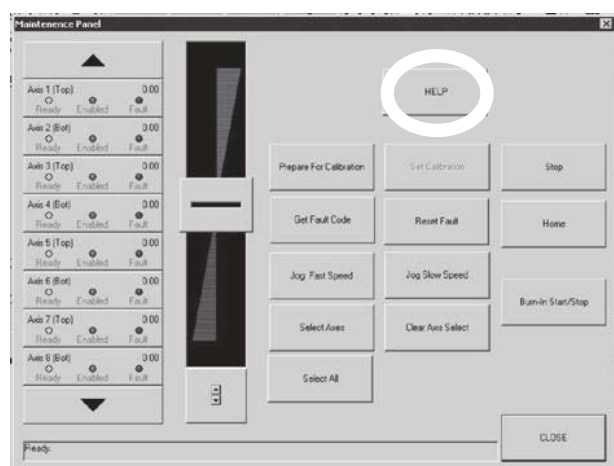


FIGURE 57



FIGURE 58

The following functions can be performed from the Troubleshooting screen:

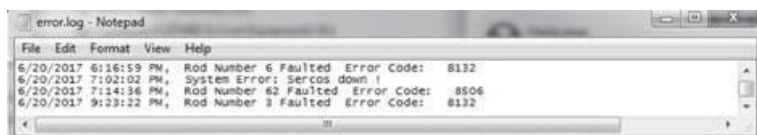
- Language box: Click on the language box to switch the language of Troubleshooting screen button labels between English, Spanish and French.
- Exit: Close the Troubleshoot screen
- Error Log: Click to open the error log file (Section 11.1.1)
- Manual: Click to open the System Diagnostic screen (Section 11.1.2)
- ADV DIAG: Click to open the Schneider Advanced Diagnostic Program (Section 11.1.3)

12. TROUBLESHOOTING

12.1.1 ERROR LOG

The error log is a useful and simple tool that provides the ability to know when the error occurred, where the error occurred, and the error code.

The Error Log button opens a Notepad window with a list of all errors that occurred on the system (Figure 59). The system can handle over 500+ error entries (500K word limit).



The error log displays:

- Date of error
- Time when error occurred
- Error location (e.g. Rod number 6)
- Error code if available

FIGURE 59

The error log screen is not an interactive screen, but it is a useful tool to track all the errors and includes the time and location of the occurrence. It is also useful to note an error code, enter it into the System Diagnostic screen and troubleshoot the error (Section 11.1.2)

12.1.2 MANUAL

The MANUAL button opens the System Diagnostic screen (Figure 60). The System Diagnostic is used to manually enter an error code and diagnose the problem. The error code can be read from the pop-up error messages (Figure 56) or from the Error Log (Figure 59).

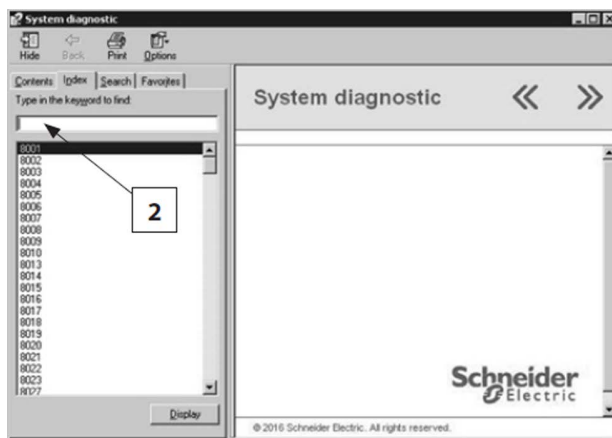


FIGURE 60

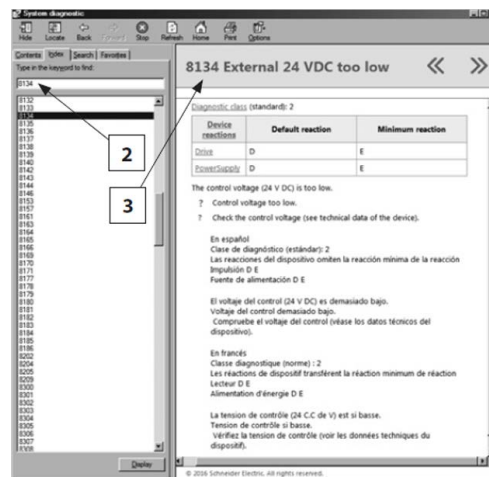


FIGURE 61

To diagnose an error, follow the steps below:

1. Note an error code from a pop-up message or from the Error Log
2. In the Index tab, type in the error code and click display (Figure 60).
3. The possible causes, checks and corrections will be explained in English, Spanish and French on the diagnostic panel to the right (Figure 61).

13. APPENDIX A – NON TRANSFERABLE WARRANTY

Pryda, a division of ITW Building Components Group Inc. (hereinafter referred to as “Pryda”) warrants the equipment to be free from defects in materials and workmanship for a period of one (1) year on parts, and 120 days on major labor (defined as labor required due to proprietary design or degree of difficulty, such that the customer would not be able to perform or hire a local source to perform using remote phone/ Internet support from Pryda) from the date of delivery of the equipment. This warranty is valid only for the benefit of the original buyer of the above named Pryda equipment and does not extend to the equipment if subsequently purchased from other than Pryda. This warranty does not include out of pocket expenses (i.e. transportation, room & board) incurred to install replacement parts, and such expenses will be billed to the customer. Pryda shall only be liable under this warranty if the equipment is used as specified in the Pryda instruction manual and only provided that defects are not caused by damage to the equipment, alteration of the equipment, misuse, or use of the equipment for a purpose other than that for which it was designed. The warranty does not cover the failure of parts caused by lack of or improper maintenance and/or service of the equipment as recommended in the maintenance section of the manual. Components or parts not manufactured by Pryda (e.g. motors, drive boards, computers, etc.) are subject to the manufacturer’s warranty and Pryda does not warrant these items. The warranty does not include normal wear and tear on the consumable items such as saw blades, belts, fuses, chains, etc.

The buyer must present warranty claims in writing within the warranty period, citing the unit’s serial number and equipment manufacturing date. Pryda may either repair or replace defective parts at its option. All allegedly defective equipment and parts are subject to inspection by Pryda, and no equipment or parts may be returned for warranty service without prior authorisation from Pryda. All parts or equipment returned for warranty consideration must be shipped prepaid. Parts ordered under Pryda warranty will be shipped within 2 days via ground freight. Additional costs for express freight are the responsibility of the customer.

If warranty service is required and booked by the buyer with Pryda, the buyer must provide notice of cancellation of the service order within 24 hours of booking. If buyer cancels after 24 hours has expired, buyer is responsible for any costs incurred by Pryda by such cancellation, including non-refundable airfare or any other non-refundable out of pocket expenses. Such expenses will be invoiced to buyer.

This warranty is valid only if the customer has complied with all the purchase contract terms,

including payment terms, and training requirements.

Except as set forth above, pryda makes no warranty or representation of any kind, express or implied (including no warranty of merchantability or fitness for any particular purpose).

Pryda will not be liable, and buyer waives all claims against pryda, for indirect, incidental, special, punitive or consequential damages, down time, lost profits or commercial losses, whether or not based upon pryda’s negligence or breach of warranty or strict liability in tort or any other cause of action. In no event will pryda’s liability exceed the purchase price of the specific products or services as to which the claim is made.

Buyer recognises that equipment can be dangerous if used by untrained personnel. Buyer agrees to properly train all persons, including employees, subcontractors, and transferees, who may use Pryda equipment. Buyer shall indemnify Pryda for all costs incurred with respect to claims for personal injuries and property damage in connection with use of equipment by any person without proper training. Pryda may provide buyer with training at time of equipment installation, provided, however, any training provided by Pryda will not affect Buyer’s obligations set forth above.

