

Installation Instructions - V2100 & geoliner 630

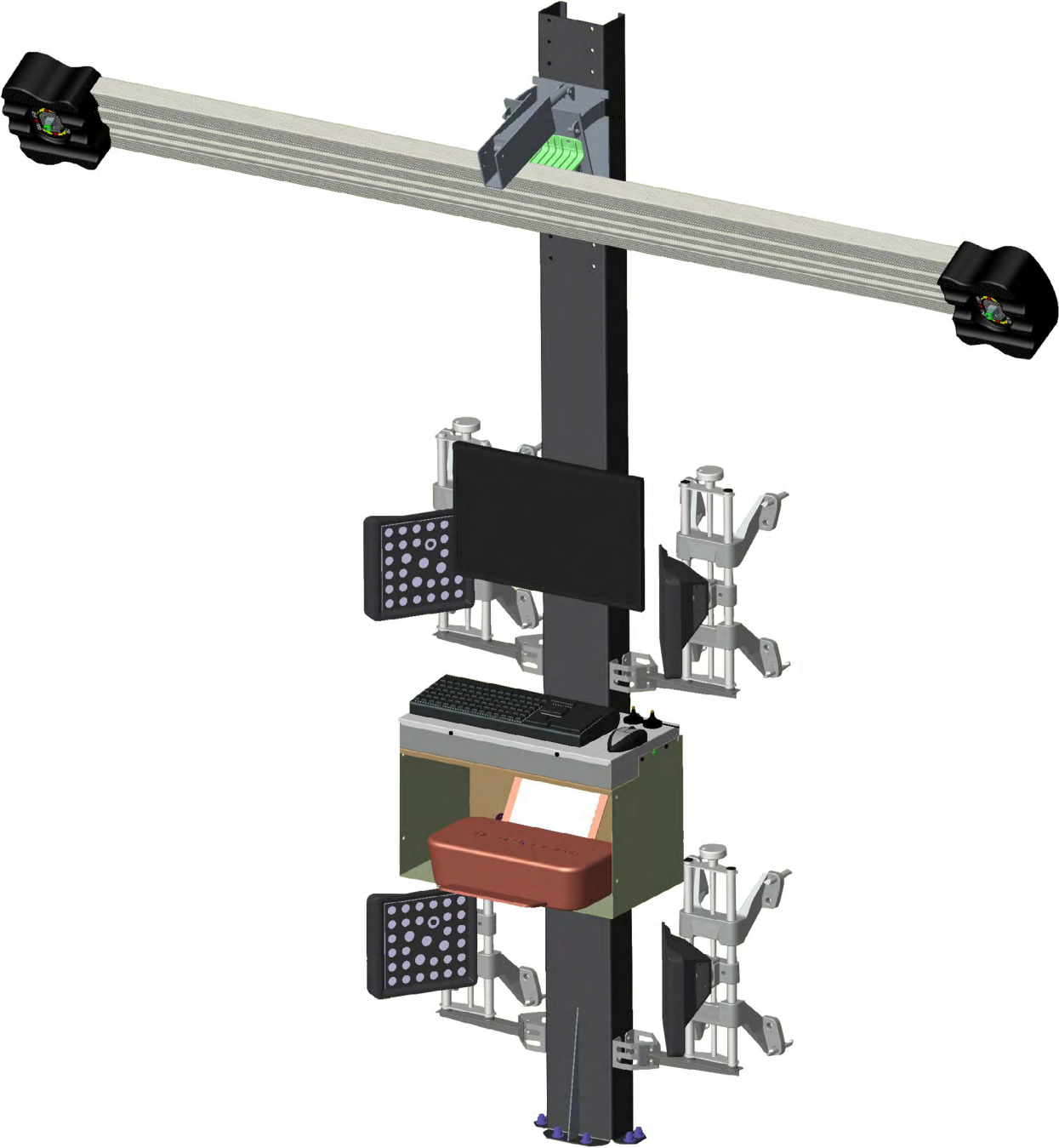


Illustration above shown with optional EAK0289J79A Mounting Kit

All information contained or disclosed in this document is considered confidential and proprietary by Snap-on. All manufacturing, use, reproduction, and sales rights are reserved by Snap-on and the information contained herein shall not be used in whole or in part without the express written consent of Snap-on.

Table of Contents

SAFETY INFORMATION.....	1
INTRODUCTION.....	2
QUALIFY THE SITE FOR INSTALLATION	3
RACK INTEGRITY	3
FLOOR INTEGRITY	3
ENVIRONMENTAL CONCERNS	3
SPACE REQUIREMENTS.....	3
ADJACENT POWER NOISE.....	3
ERGONOMICS.....	3
ASSEMBLY AND SETUP OF THE ALIGNER	4
INSTALLING ON A FLAT WORK SURFACE:	4
INSTALLING ON A WALL:.....	4
MOUNTING THE FLAT PANEL MONITOR:.....	5
MOUNTING MONITOR.....	5
VESA BRACKET MOUNTING.....	5
OTHER PERIPHERALS.....	5
PRINTER.....	5
INSTALLATION BASELINE LAYOUT.....	6
DETERMINE THE <u>LIFT CENTERLINE</u>	6
DETERMINE THE <u>TURNTABLE CENTERLINE</u>	6
DETERMINE THE <u>TURNTABLE HEIGHT</u> (the normal operating height of the rack).	6
DETERMINE THE <u>INSTALLATION BASELINE</u>	6
INSTALLATION DISTANCES CHART	9
SYSTEM STARTUP	10
CABLE CONNECTION.....	10
SYSTEM START-UP AND CAMERA AIM.....	11
SYSTEM TRAINING.....	12
SOFTWARE INSTALLATION / ACTIVATION	13

SAFETY INFORMATION

For your safety, read this manual thoroughly before operating the equipment.

The Aligner is intended for use by properly trained skilled automotive technicians. The safety messages presented in this section and throughout the manual are reminders to the operator to exercise extreme care when performing wheel alignments with this product.

There are many variations in procedures, techniques, tools, and parts for servicing vehicles, as well as the skill of the individual doing the work. Because of the vast number of vehicle applications and potential uses of the product, the manufacturer cannot possibly anticipate or provide advice or safety messages to cover every situation. It is the automotive technician's responsibility to be knowledgeable of the vehicle to be aligned. It is essential to use proper service methods and perform wheel alignments in an appropriate and acceptable manner that does not endanger your safety, the safety of others in the work area or the equipment or vehicle being serviced.

It is assumed that, prior to using the Aligner, the operator has a thorough understanding of the vehicle systems being serviced. In addition, it is assumed he has a thorough knowledge of the operation and safety features of the alignment rack or lift, and has the proper hand and power tools necessary to perform wheel alignments.

When using your garage equipment, basic safety precautions should always be followed, including:

1. Read all instructions.
2. Care must be taken as burns can occur from touching hot parts.
3. The socket-outlet (wall outlet) shall be located near the equipment and shall be easily accessible.
4. Do not operate power tools or equipment with a damaged power cord or if the equipment has been dropped or damaged until it has been examined by a qualified serviceman.
5. Do not let cord hang over edge of table, bench or counter or come in contact with hot manifolds or moving fan blades.
6. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
7. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
8. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
9. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids, such as gasoline.
10. Adequate ventilation should be provided when working on operating internal combustion engines.
11. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
12. To reduce the risk of electrical shock, do not use on wet surfaces or expose to rain.
13. Use only as described in this manual. Use only manufacturer's recommended attachments.
14. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
15. Know and understand the proper operating procedures for all power tools used.
16. *Caution:* Risk of explosion if any battery is replaced by an incorrect type. Dispose of used batteries according to local and state government regulations.

**IMPORTANT!! SAVE THESE INSTRUCTIONS
DO NOT DISCARD!!**

INTRODUCTION

The Aligner kit contains the required components for basic alignment system. A monitor, keyboard & printer for control, a camera beam and targets with wheel clamps to affix to the vehicle under test. The basic aligner components gives the user a broad variety of installation methods. In all installations this form must be referred to for determining the proper location of the camera beam relative to the alignment rack.

Possible mounting methods for the cabinet and camera beam include but are not limited to the following:

- Wall mount
- User supplied support
- *Optional rigid support with tilt mechanism - EAK0289J79A*
- *Optional fixed post - EAA0321J01A*
- *Optional Clamp Hanger Kit is also available - part number EAK0289J71A*

The Aligner shipment contains the following components:

- Camera Beam Assembly
- PC with Console Shelf
- Keyboard and Mouse
- Four Universal Wheel Clamps with Targets
- Flat Panel Monitor with VESA Mounting Bracket
- Brake Pedal Depressor
- Steering Wheel Clamp
- 2 Rubber Wheel Chocks
- Power Cords
- Installation Instructions

Follow these instructions carefully for a successful installation.

The aligner does not require any calibration at installation. The camera beam is pre-assembled and is factory calibrated and can be placed into service after installation and setup.

These instructions cover the main topics of aligner installation:

- Preparing for installation
- Qualifying the site for installation
- Controller Assembly and Shelf assembly
- Camera Beam mounting procedures
- Cable Connection
- Start-up of the Aligner.

QUALIFY THE SITE FOR INSTALLATION

The Pre-Installation checklist was created primarily with sales personnel in mind, however it can be used as a tool to verify bay conformance to requirements. Below are some key issues to consider for a successful installation.

POWER SOURCE

115 volts AC, 15 amp 1 phz (NA) or 230 volts AC, 10 amp 1 phz, noise free dedicated service. Assure a good ground is coming from the electrical panel.

RACK INTEGRITY

Is the rack/lift safe, are the lock mechanisms secure?

Check for runway coplanar at all heights (within 1mm)

Is rack/floor relatively level for ease of rollback (within 1mm)

Check turntable condition - free from binding, do they exhibit good rotational stability

Rollback requirements - is a kit required - acquire if necessary

Is the field of view conducive with imaging alignment (no obstructions)

FLOOR INTEGRITY

Will the floor adequately support the rack, has a core test been performed?

Is the concrete properly cured?, New flooring should be cured at least 28 days

Are there any pipes, or wiring under the floor that could be drilled into?

Will the floor flex, crumble, are there expansion joints?

ENVIRONMENTAL CONCERNS

Inspect the area for heaters (thermal gradients), light reflections, adjacent machinery, fans, excessive ambient light, RFI etc.

SPACE REQUIREMENTS

Can the **Camera support** be positioned from the **Turntable** a minimum distance 68.5 inches (1740mm) but no further than 120 inches (3048mm) when measured from the **rear** of the camera beam mounting bracket to center of turntable. See table on page 9 for distance and offset chart.

ADJACENT POWER NOISE

Look for motor noise/hash, shared processors, RFI

ERGONOMICS

Can the operator move about freely to work safely and view the Monitor?

Will the camera beam tilt option be utilized in the installation?

IMPORTANT - Before attempting installation, read these instructions thoroughly and understand the tasks involved. Review all requirements of installation to avoid oversights resulting in lost revenue, and lost customer confidence. Procure the necessary tools to do a quality job and last and most important, perform the installation safely by observing all precautions associated with the task at hand.

Some minor assembly is required for installation. Refer to the illustrations for a complete console-shelf assembly.

Installation personnel will be required to install the camera beam and the computer peripherals must be placed and connected together. The Electrical Shelf **MUST** be located a minimum of 18 inches above grade level to comply with most electrical codes.

ASSEMBLY AND SETUP OF THE ALIGNER

The aligner shelf assembly can be mounted or placed on any convenient flat surface such as a desk or tool box or mounted to a wall or other *optional* support structure. Follow these instructions for the desired configuration.

INSTALLING ON A FLAT WORK SURFACE:

If placed on a work surface, the box will be mounted to the Shelf as shown with both front and rear surfaces of the box flush with the Shelf.

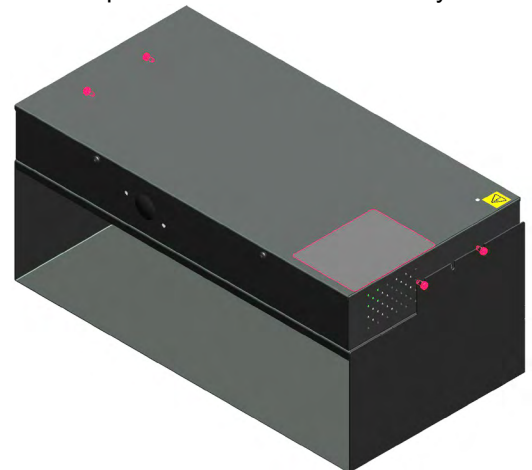
INSTALLING ON A WALL:

NOTE: BEFORE MOUNTING TO A WALL SURFACE, THE ARCHITECT OR ENGINEER OF RECORD FOR THE BUILDING MUST APPROVE. THE TOTAL WEIGHT TO BE ATTACHED TO THE WALL

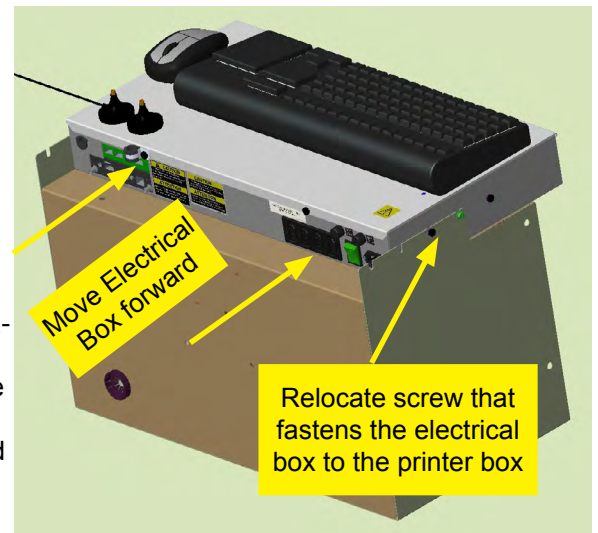
1. Electrical Kiosk weight 65lbs (29kg)
2. Camera Beam Assembly weight 40lbs (18kg)

The assembly is designed so it also can be wall mounted. If this installation is desired, the aligner box will need to be moved forward as shown. To relocate, remove the four screws attaching the box to the shelf. Slide the aligner Box forward and secure using the same screws removed earlier. This allows the box and control cables to be properly connected to the rear of the box without interference with the wall.

Screw the aligner Box/Shelf assembly to the wall at least 42 inches from grade level using the six holes located inside the Shelf box.



Front view - desk mount



Rear view of wall mount assembly

MOUNTING THE FLAT PANEL MONITOR:

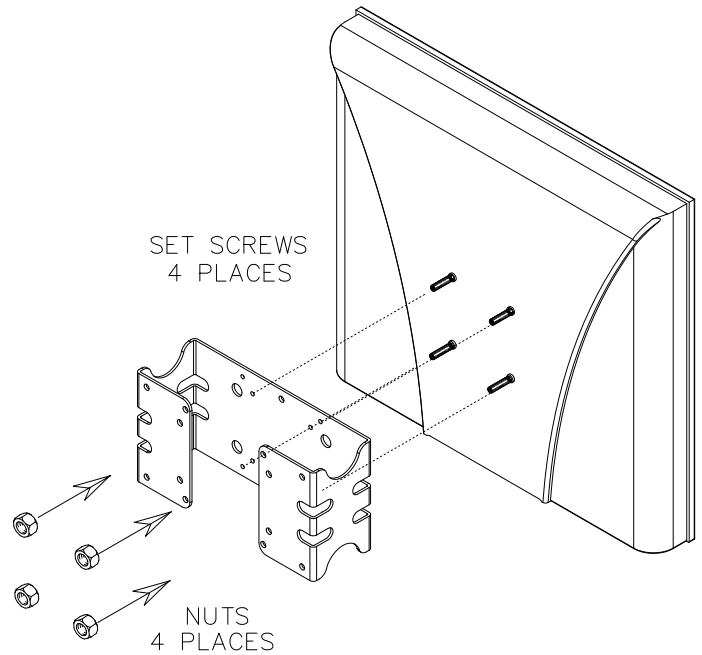
There are also two ways to mount the monitor, simply setting the monitor adjacent to the aligner Shelf **OR**, using the supplied VESA Bracket for mounting to a wall or other supporting structure.

MOUNTING MONITOR

- Place the monitor on a surface adjacent to the aligner shelf, typically 10 inches above.
- Securely connect the power cable, the video cable and audio cable if applicable to the monitor rear.
- Use the short supplied AC power adapter cable, plug the monitor to the IEC outlet located inside the shelf box.

VESA BRACKET MOUNTING

- Remove any back panels from the Flat Panel monitor.
- Remove the vendor supplied monitor base bracket from the monitor if installed.
- Mount the VESA bracket to the desired supporting structure, i.e. wall post etc.
- Mount the Monitor onto the VESA Bracket and secure with four (4) set screws & nuts supplied.
- Securely connect the power cable, the video cable and audio cable if applicable to the monitor rear.



OTHER PERIPHERALS

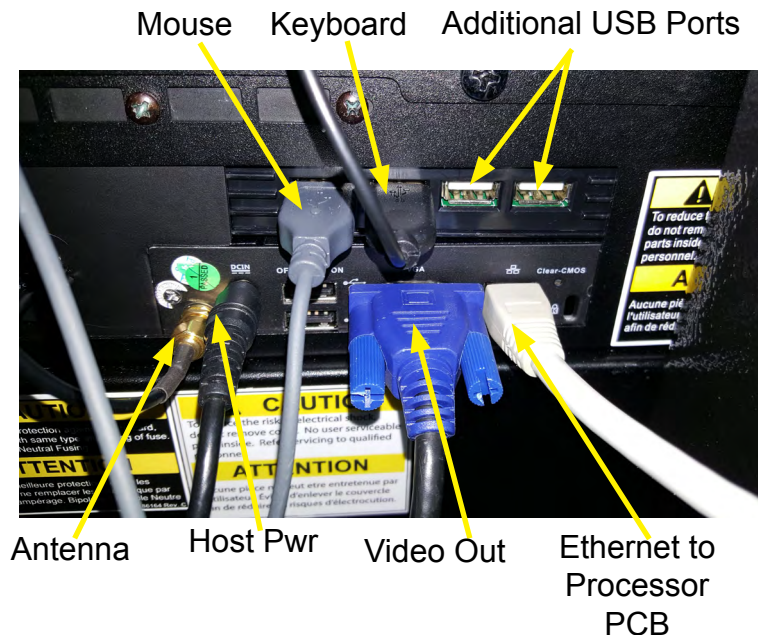
- Place the keyboard and the mouse on the console shelf. Use the hook and loop material to attach the keyboard to the top of the shelf.
- Neatly bundle all cables behind the shelf box.
- Secure cables with plastic cable ties.

PRINTER

- Install printer toner cartridges and paper.
- Connect the printer USB cable to the rear of the aligner box in an open USB port.
- Connect printer power to IEC outlet

NOTE: CHECK INTERCONNECT HARNESSSES AND CABLES BEFORE APPLYING POWERING TO ALIGNER.

Once the Console is assembled, the aligner can be booted and software configuration finalized. Verify proper aligner operation before continuing aligner installation.



INSTALLATION BASELINE LAYOUT

These instructions assume a lift or rack is being used as the alignment surface. If the floor is to be used, identify the spot where the turntables will rest, and base measurements from that spot.

DETERMINE THE LIFT CENTERLINE.

1. Measure between runways front and rear and mark midpoints on both. A mark can be made forward of the lift by placing one end of a string at a spot on one side of the lift, placing a marker on the other end of a string, and scribing an arc forward of the lift across the centerline. Repeat scribing an arc from the same spot on the other side of the lift. The intersection of the two arcs is the lift centerline. Use a chalk line to snap a centerline between the marks, and project out as far in front of the rack as required, or to the shop wall if closer.

DETERMINE THE TURNTABLE CENTERLINE

2. Raise the lift to the predetermined alignment height. Use a plumb-bob from the center of the turntable and mark a spot on the floor next to each turntable. Snap a chalk line through the marks to establish the centerline. Use the plumb bob on the outside of the turntables to mark a center spot on the floor on the outside of each runway.

DETERMINE THE TURNTABLE HEIGHT (the normal operating height of the rack).

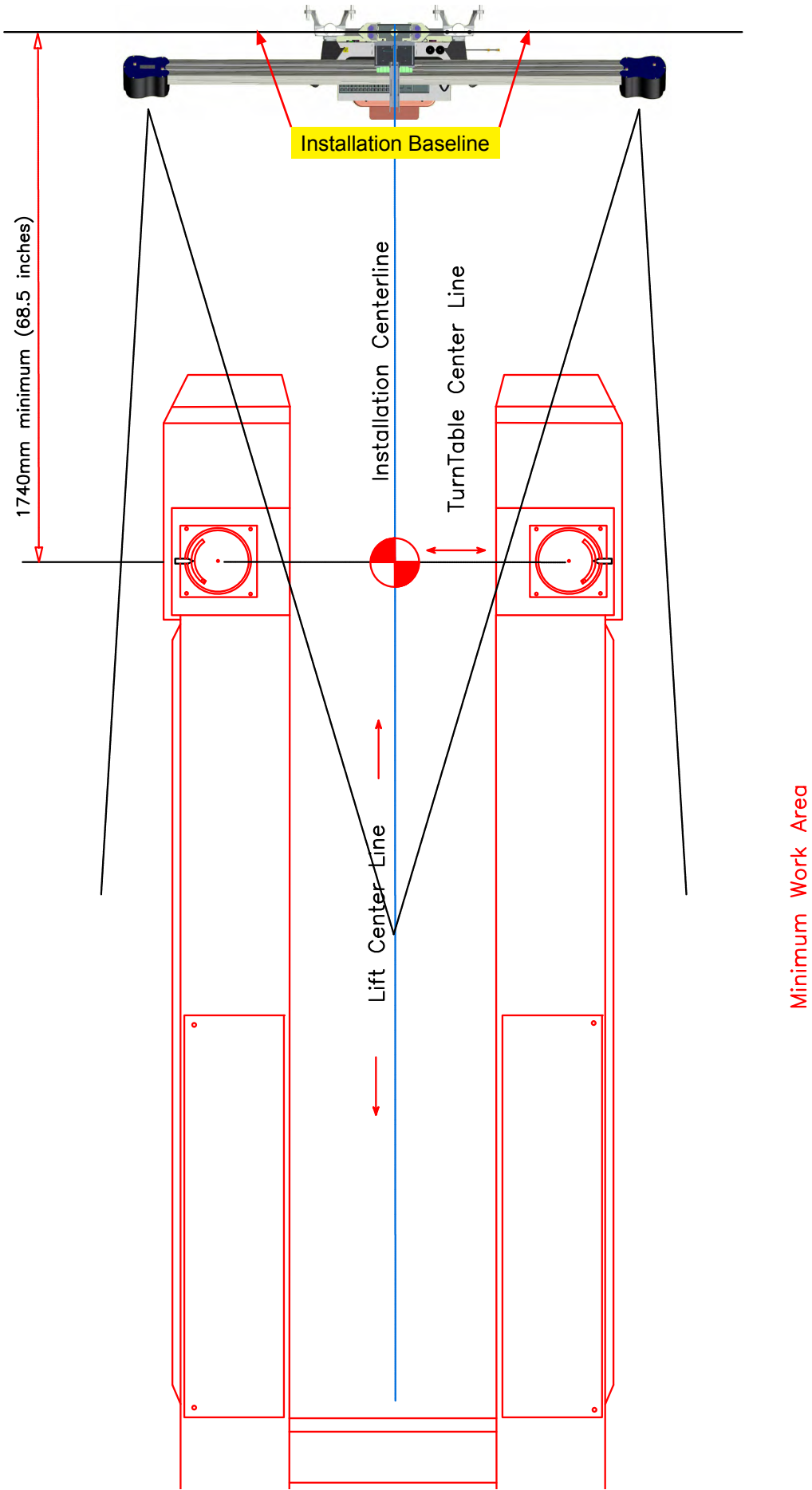
3. On a multilevel lift (i.e. parallelogram) put an average size car on the lift and raise it until the alignment technician feels comfortable performing wheel turns, rolling the vehicle back and forth, and making toe/camber adjustments from underneath. On other lifts/racks (such as a hoist rack) it is necessary to use the leveling leg height. Typical turntable height is from 30" to 36".

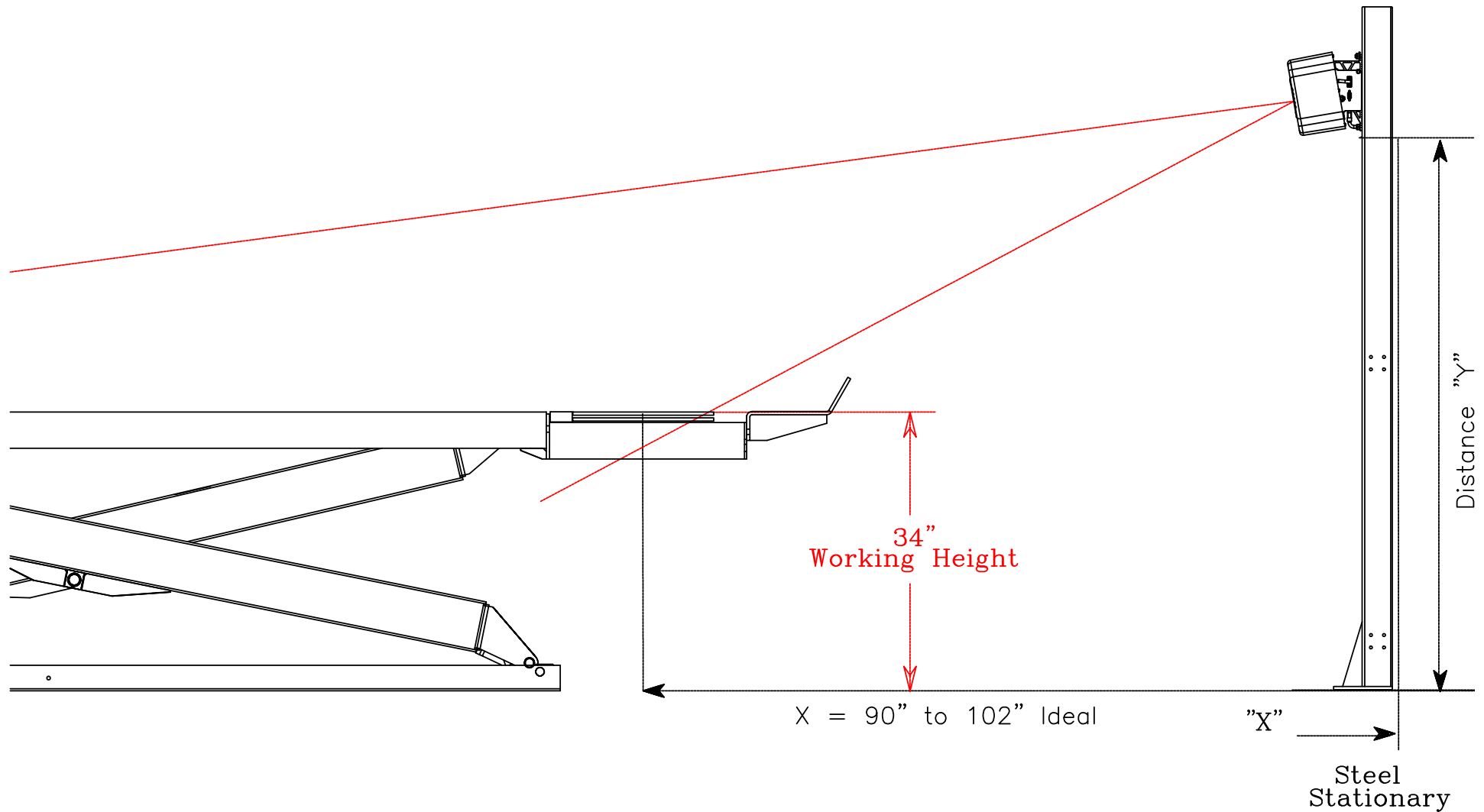
NOTE: REFER TO THE INSTALLATION DISTANCES CHART. THE EXAMPLE LIFT HEIGHT OF 34 INCHES USED AS AN REFERENCE. IF THE USER DESIRED LIFT HEIGHT IS OTHER THAN 34 INCHES, THE "Y" HEIGHT WILL NEED TO BE INCREASED OR DECREASED ACCORDINGLY.

DETERMINE THE INSTALLATION BASELINE

4. The camera beam can be installed a minimum of 1740mm (68.5 inches), and no greater than 3048mm (120 inches) from the center of the turntables to the rear of the camera support. Measure the distance desired within above parameters from the turntable centerline forward at two locations and mark these points. Snap a chalk line on the floor through these two points. This is the installation baseline used to locate the camera mounting.

NOTE: WHEN INSTALLING WITH A RIGID OR FIXED SUPPORT, THE PROCESS OF FINAL VERTICAL ADJUSTMENT OF THE CAMERA BEAM WILL BE AT THE COMPLETION OF INSTALLATION BY USING THE LIVE CAMERA VIEW UTILITY.





Installation Distances Chart		Steel Stationary Support	
Distance "X"	Distance "Y"	Vehicle Width Min.	Vehicle Width Max.
68.5" [1740mm] *	53.50" [1360mm]	52.0" [1321mm]	77.0" [1956mm]
80.0" [2032mm]	56.63" [1438mm]	48.0" [1219mm]	79.0" [2007mm]
90.0" [2286mm]	58.88" [1496mm]	42.00" [1067mm]	81.0" [2057mm]
100.0" [2540mm]	61.13" [1553mm]	34.0" [864mm]	83.0" [2108mm]
110.0" [2794mm]	63.38" [1610mm]	26.0" [660mm]	85.0" [2159mm]

INSTALLATION DISTANCES CHART

The above Installation Distances Chart lists the approximate camera beam offset for various Base Line Distances. Vehicle width minimums and maximums are listed for those distances for reference.

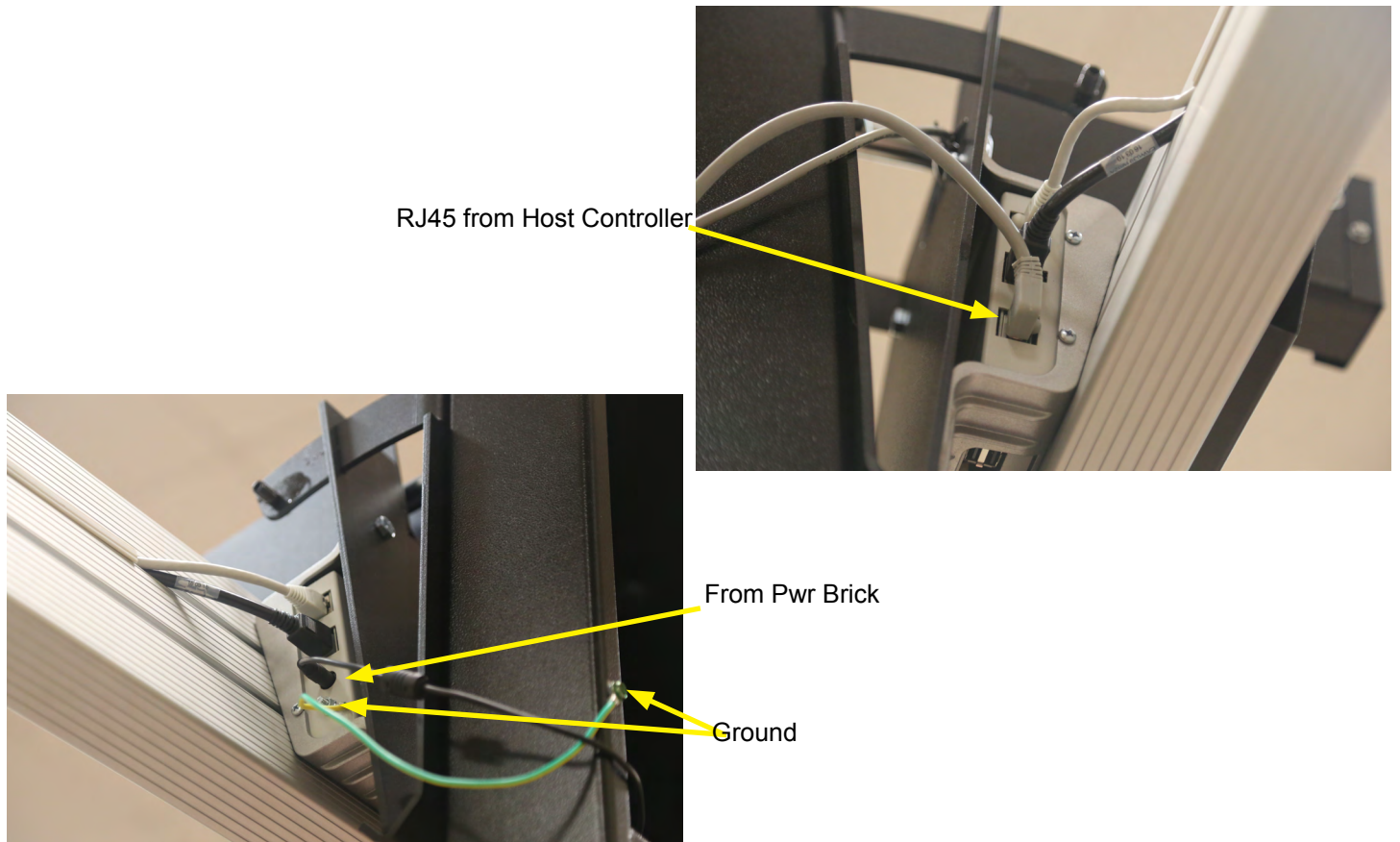
“Vehicle Width” is defined as the out side of the rim on one side to the outside of the rim on the other side of the front wheels.

NOTE: SHORTENED BAY INSTALLATIONS RESULT IN A LIMITED CAMERA VIEW. EXTRA CARE MUST BE TAKEN TO ENSURE THE SUPPORT AND CAMERA BEAM ARE CENTERED SYMMETRICALLY TO THE ALIGNMENT SURFACE.

SYSTEM STARTUP

CABLE CONNECTION

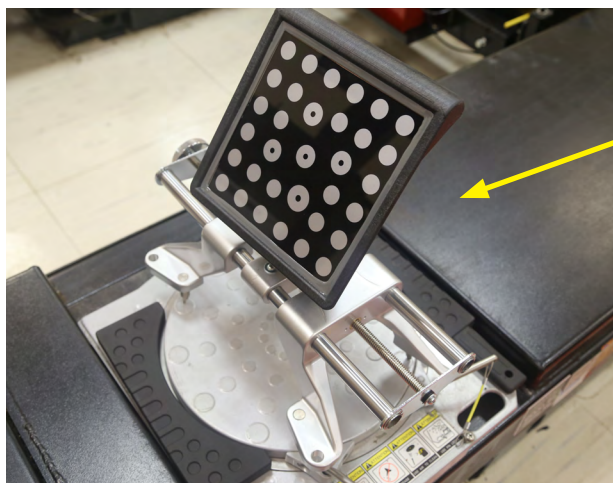
1. Attach the RCA connector from the power block to the receptacle located on the Hub PCB as shown below
2. Attach the RJ45 cat 6 wire from the back of the host controller to the Hub PCB as shown below.
3. Attach Ground Wire as shown



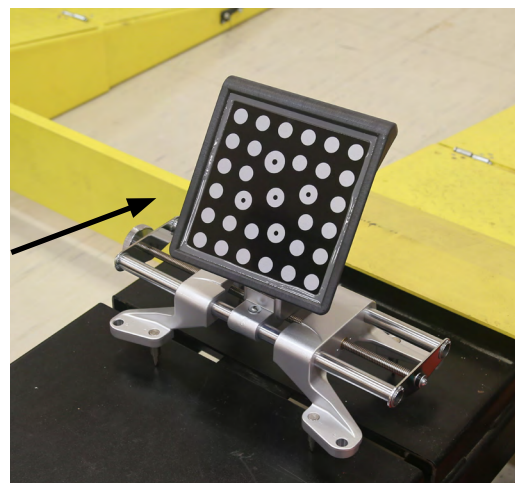
NOTE: RECHECK ALL CONNECTIONS FOR MECHANICAL AND ELECTRICAL INTEGRITY

SYSTEM START-UP AND CAMERA AIM

1. Power up the computer and monitor and follow directions for initial software setup if not already completed during console assembly. Software loading is performed at the factory and is not required.
2. Clamp the front targets to the turntables making sure they are centered on the turntable. Move the left turntable-target assembly out until a portion of the front target can be seen in the left camera view screen. Mount the right front target on the turntable and move the assembly out to the same distance from the rack center-line as the left turntable-target assembly.

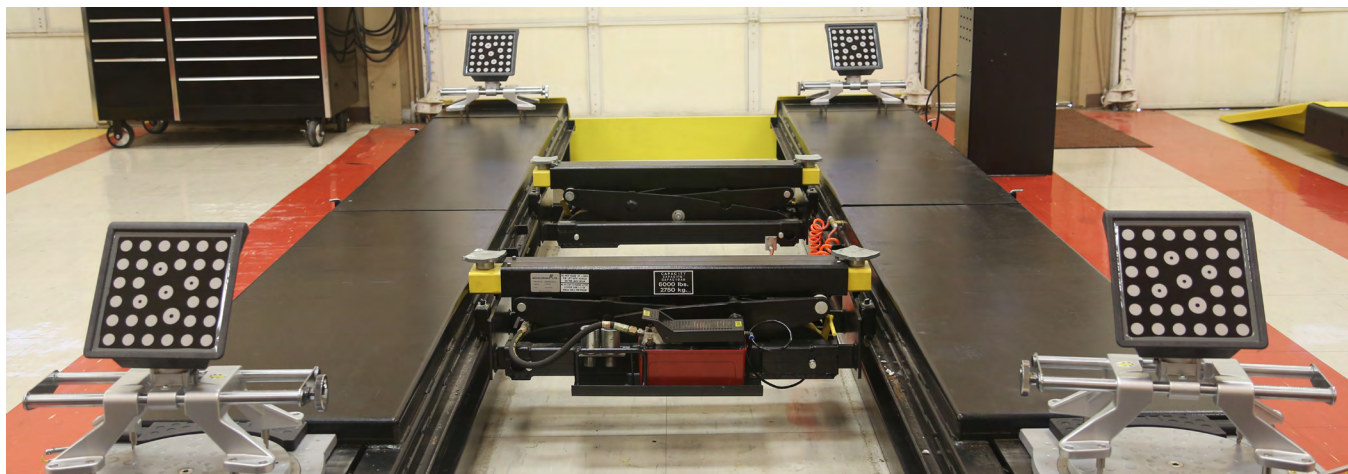


Front

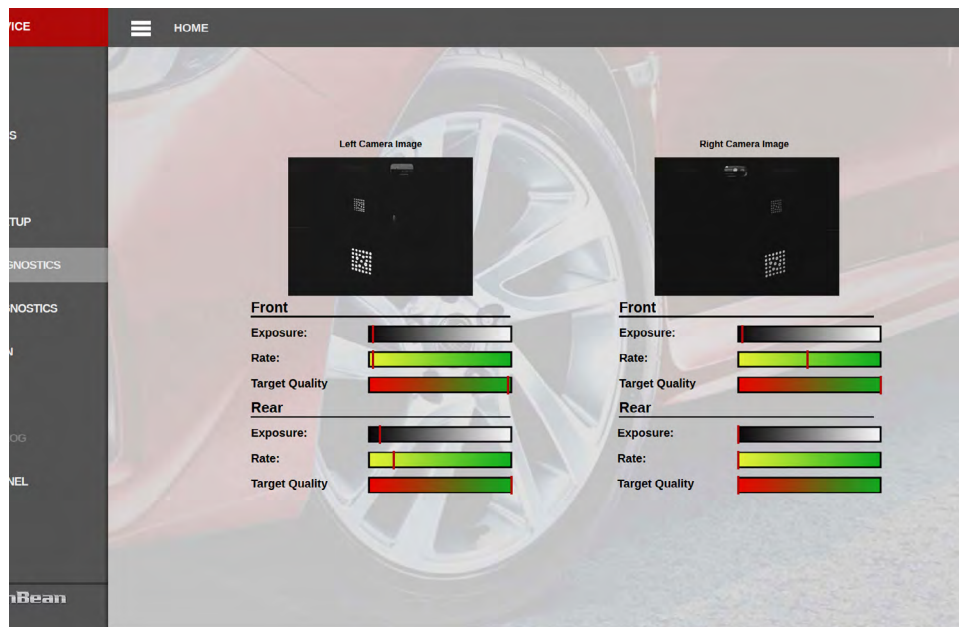


Rear

3. Set the rear targets as far back on the lift as is reasonable. Make sure they are equal distance from the lift center-line and the target clamps are square to the lift. The clamps should be spread equal distances and the rear targets should be equal distances from the front targets. Raise the lift to the user preferred alignment height.



4. Navigate to "SERVICE" "CAMERA DIAGNOSTIC".



5. Adjust the camera beam up or down or raise or lower rack so that the camera view distance from the top of the rear target to the top of the view window is the same as the distance from the bottom of the front target to the bottom of the view screen.
6. Adjust the beam position as required to center the images side to side. Make sure the vertical support if used and camera beam are level and square. Tighten 1 optional base anchors to approximately 50 ft lbs. (Other anchors will need to be set and tightened during installation/activation process)

NOTE: DO NOT MOVE OR ADJUST INDIVIDUAL CAMERA MOUNTING BRACKETS. IF A CAMERA VIEW REQUIRES ADJUSTMENT, THE VERTICAL SUPPORT SHOULD BE PIVOTED.

NOTE: RELATIVE CAMERA POSITION (RCP) AND END-OF-THE-LINE (EOL) IS FACTORY PERFORMED, NO FIELD CALIBRATION IS REQUIRED

SYSTEM TRAINING

Spend time with our new customer going over the software flow and operation of his new system. A few minutes here will save hours later for both you and the technician.

Things to cover are outlined but not limited to the items below:

- * System features and specifications
- * Proper system start-up and shut down
- * Software navigation
- * Setup, system interaction, preferences, features
- * Perform an alignment
- * Navigation of the V2100

SOFTWARE INSTALLATION / ACTIVATION

Before the aligner installation is complete it must be activated. The aligner displays the major components by part number, description, serial number and security identification. Note these numbers and secure with the aligner paperwork.

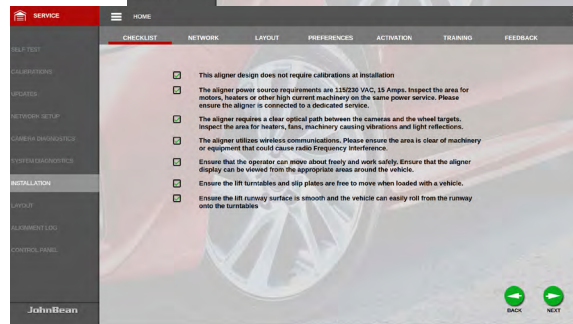
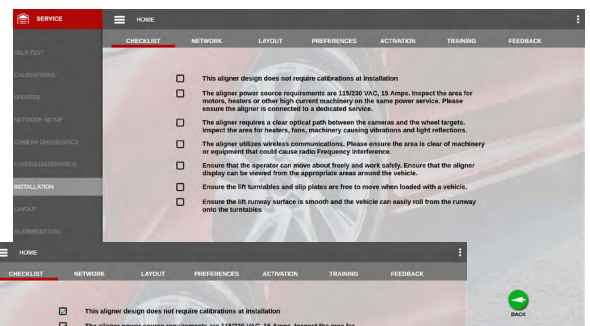
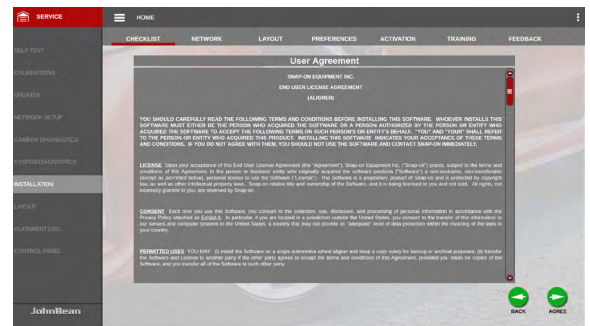
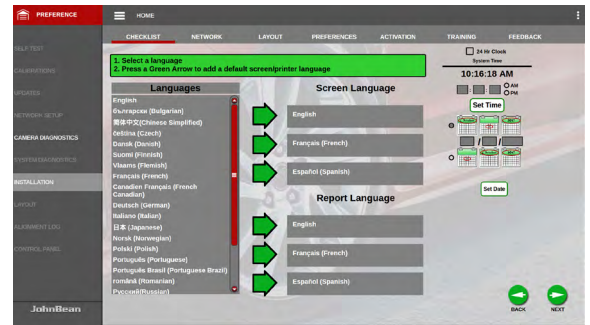
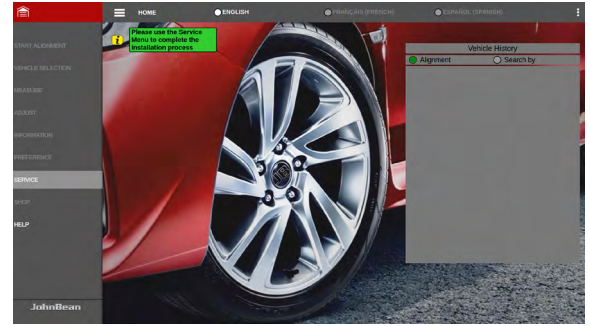
1. Click on “SERVICE” to continue the process, the status is displayed as the unit is being activated.

2. Click on the <INSTALLATION> process. Proceed through the Checklist. Highlight and select the shops preferred screen Language(s) from the Left and using the arrows select the Number 1, 2, and 3 languages.

3. Repeat the process for the reports (printer).

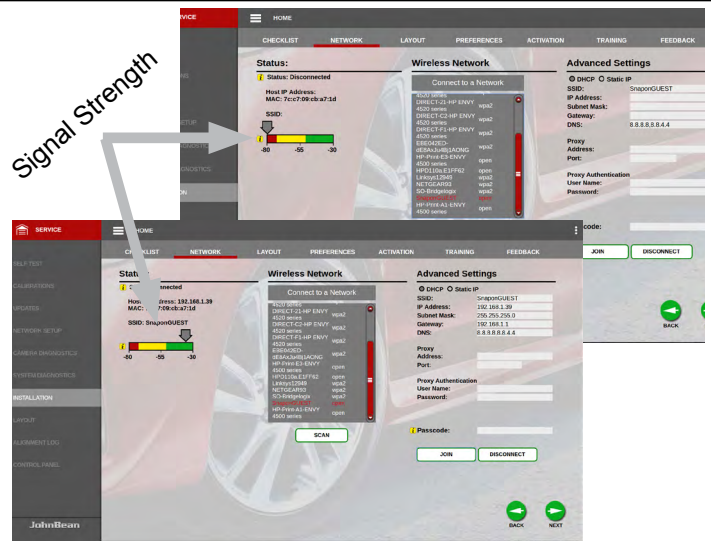
4. Carefully read the “User Agreement and select <AGREE>.

5. Carefully read and understand and check off each process as outlined. Failure to acknowledge this list will not proceed. Once all items are checked the installers can then click on “NEXT. Please understand each item as each can cause the aligner to become in-operable.

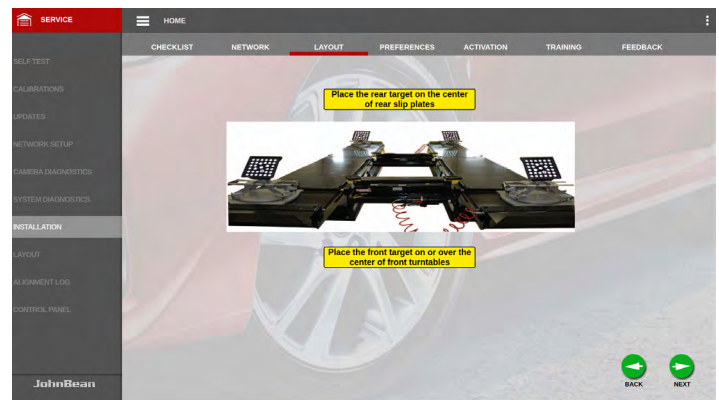
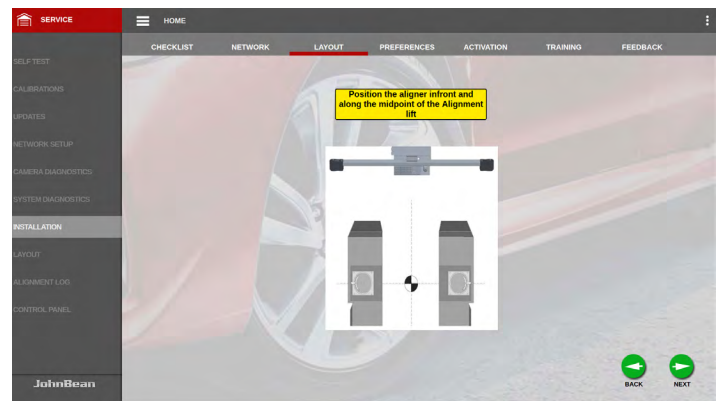


6. Select the shops preferred NETWORK to connect the aligner. Connecting to a NETWORK enables the aligner to receive periodic software and spec updates from the factory. Should the shop not have a NETWORK available all updates will require manual updates using a USB flash drive.

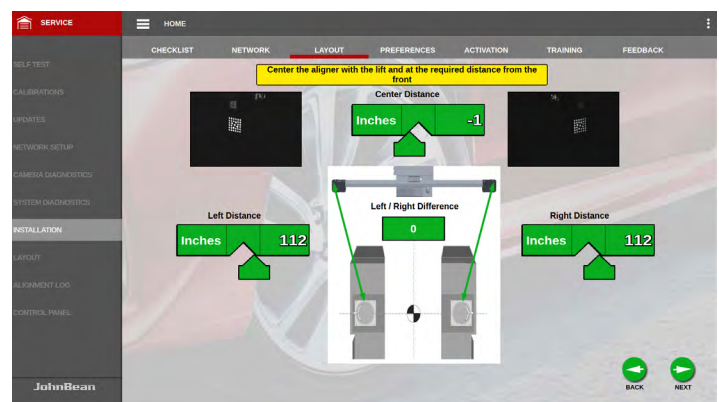
7. Should the Aligner be on a Password protected system the system will require that the password be entered before joining. Once entered click on the <JOIN> button to connect. Should the aligner not connect after a few seconds verify the password was entered correctly. It may require the user exit the NETWORK menu and re-enter. Once connected observe the signal strength meter. The stronger the signal the more reliable the system updates.



8. The next procedure may require moving the alignment beam. The system should have been anchored to the concrete earlier using 1 anchor bolt. The next 3 screens prompts the installer to place the aligner in front of the rack and place all 4 targets on the alignment rack. The final screen allows the installer to move the system to maximize the install.

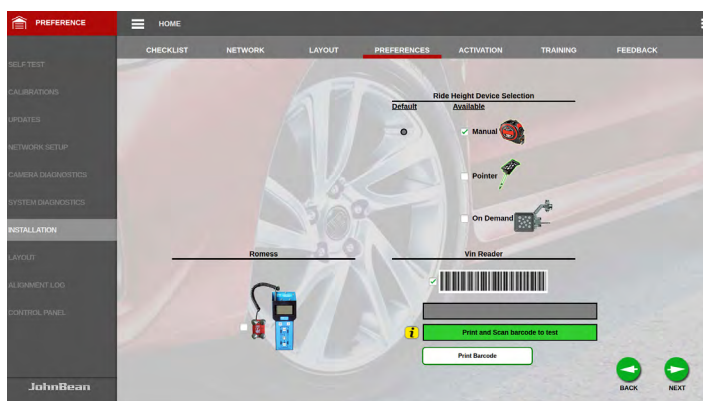
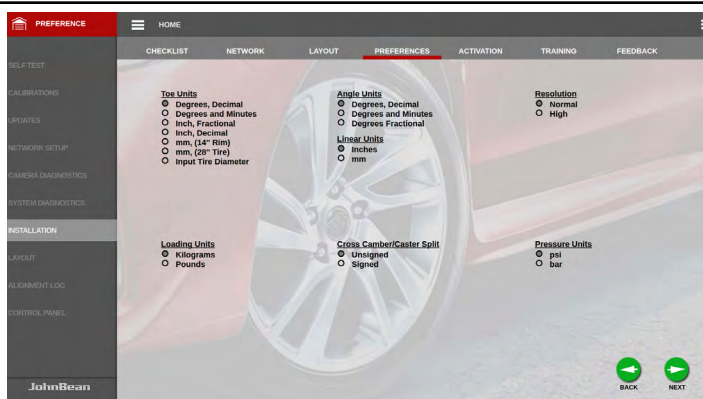


9. IT IS NOT NECESSARY to have each camera locked in on the graph. Please NOTE that proper placement of the targets is critical for proper beam placement.

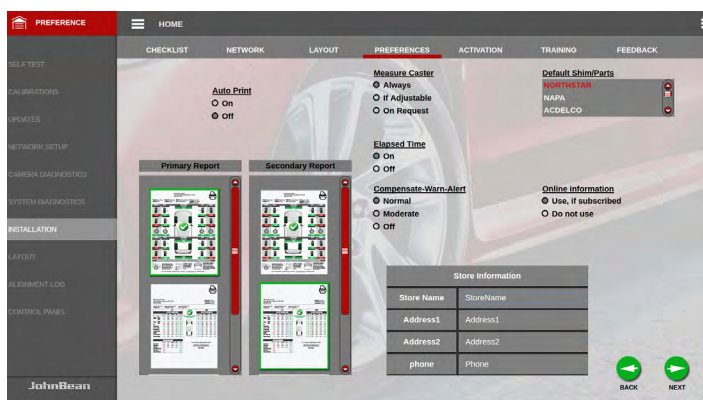


- Select the units of measure for each angle and select <NEXT>.
- Select each feature that comes with the aligner. These features can be chosen but if not purchased they will not activate during the activation process. Each feature can be added at a later date however each feature must be purchased and the aligner must be re-activated to enable the feature.

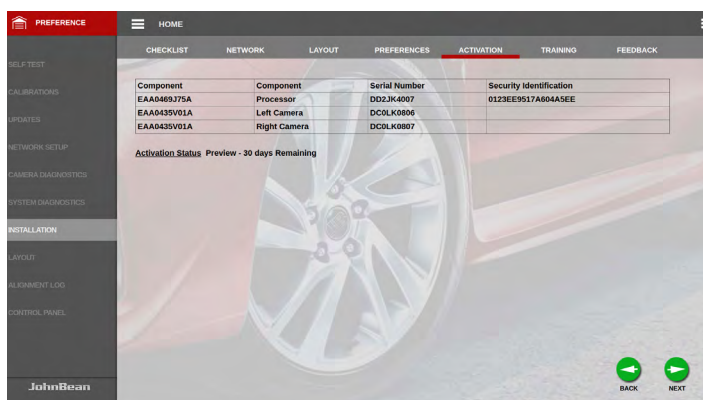
NOTE: A VIN READER IS ALREADY TRAINED IF INITIALLY SOLD WITH THE ALIGNER. A VIN READER THAT IS ADDED AT A LATER DATE MAY REQUIRE PROGRAMMING BEFORE OPERATION.



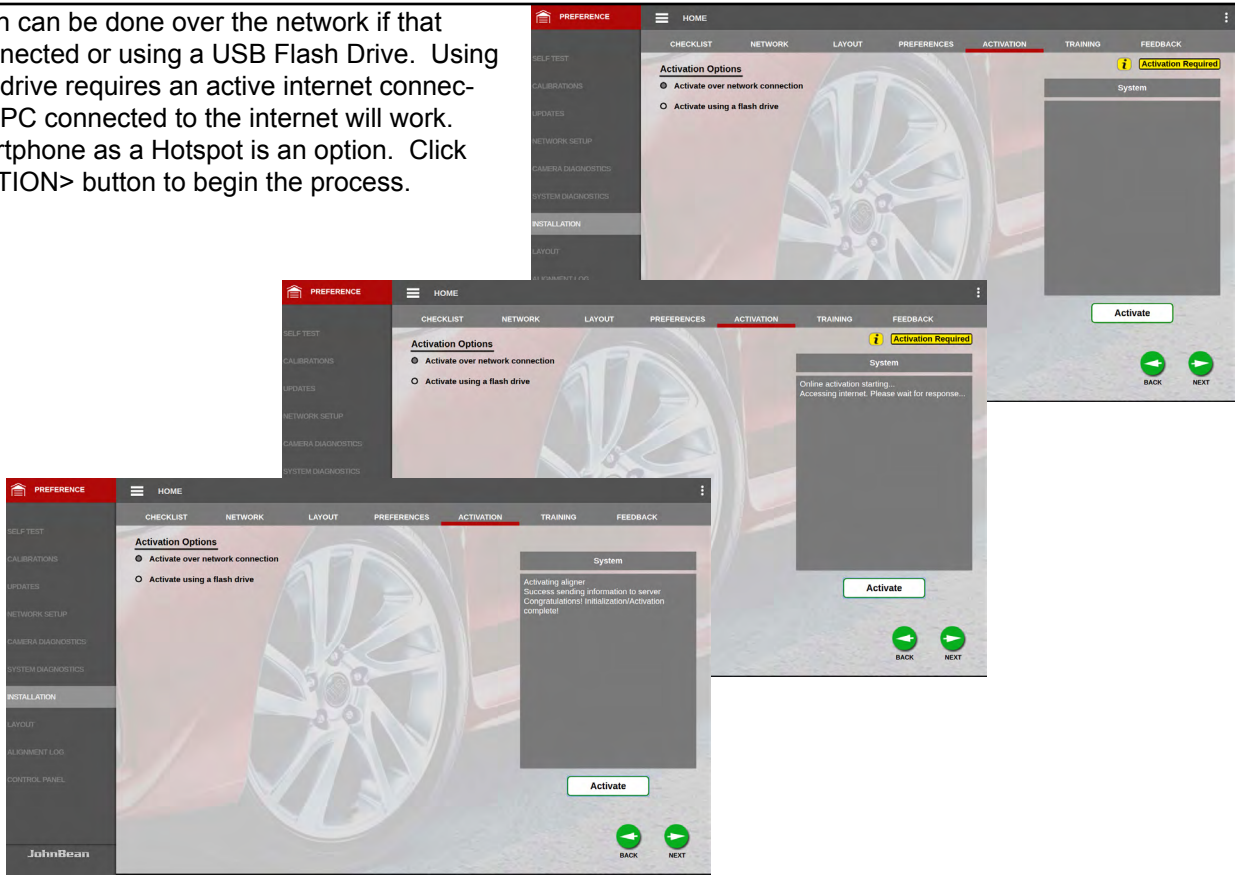
- Use this menu to set up the preferred print report and shim selection. Please note there is a Primary and Secondary print report. Enter the shop information (name and address) to be printed on each report.



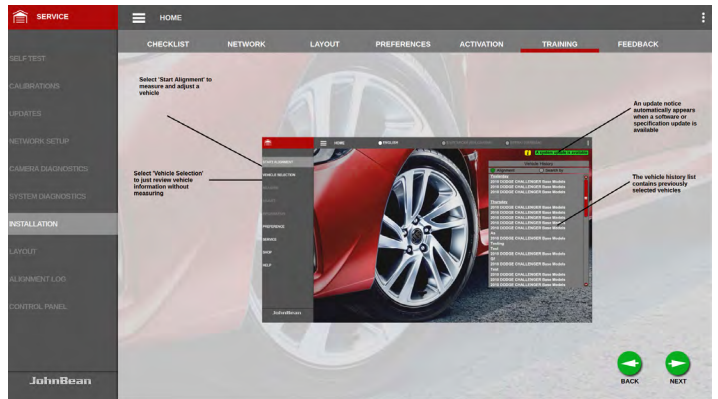
- Click on the <NEXT> button on the "activation status".



14. The Activation can be done over the network if that aligner is connected or using a USB Flash Drive. Using a USB Flash drive requires an active internet connection. A Shop PC connected to the internet will work. Using a Smartphone as a Hotspot is an option. Click the <ACTIVATION> button to begin the process.



15. After Activation completes the installer is prompted with a quick training information page, Click on NEXT to proceed.



16. A feedback page is provided for the installer to enter any information that may assist the factory at a later date or entry of ideas that may make future installation easier.

