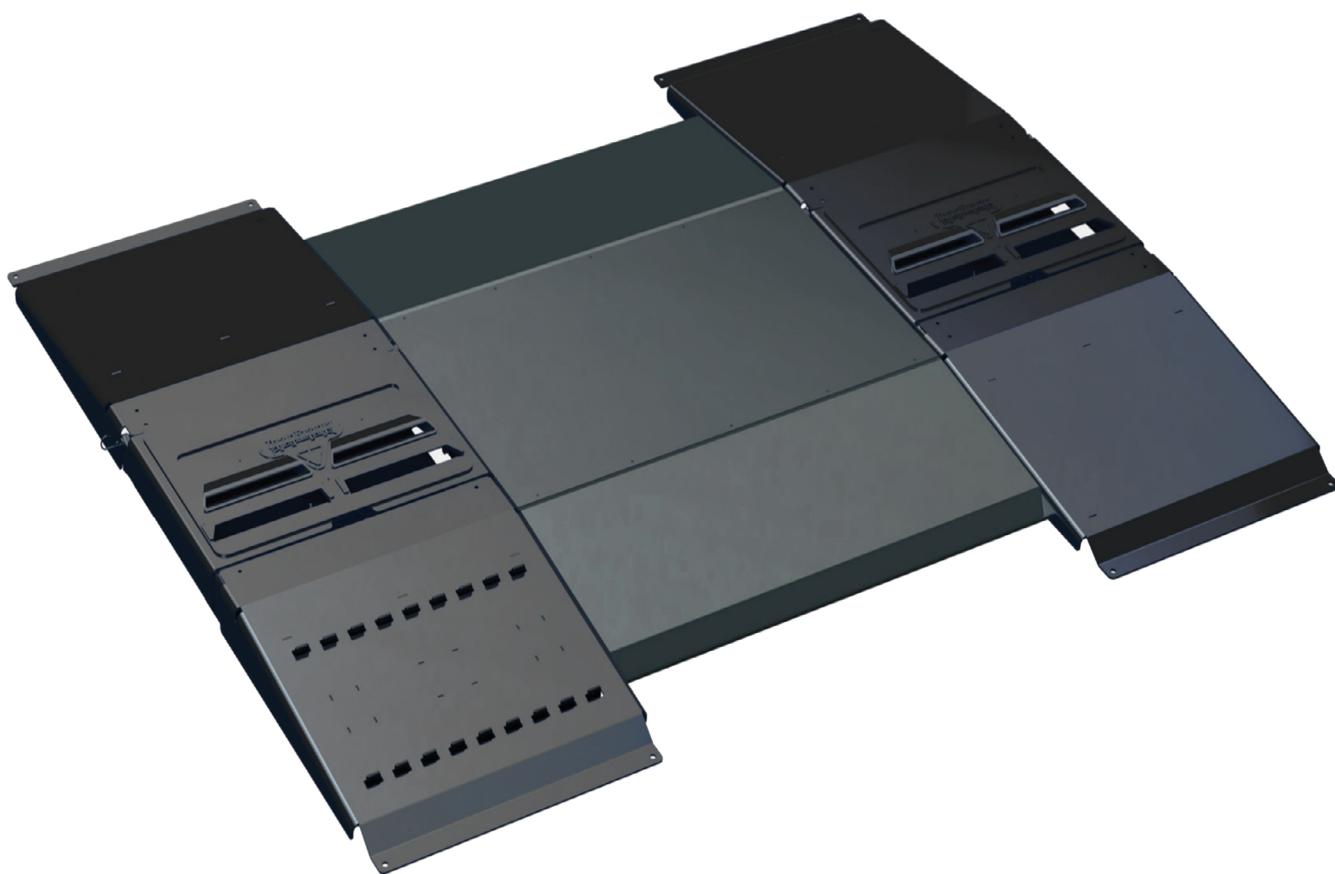




**INSTALLATION
INSTRUCTIONS**



**TREADREADER
SURFACE MOUNTED RAMP**

TOTAL SHOP SOLUTIONS

TREADREADER INSTALLATION INSTRUCTIONS: DRIVEOVER SURFACE MOUNTED RAMP

VERSION: 1.4

LANGUAGE: ENGLISH UNITED KINGDOM

REVISION DATE: FEB.2022

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01 • System requirements

1.1 Power requirements

The cabinet is powered by a 120/240 VAC IEC cable. The AC IEC power cable is NOT supplied with the system.

All components in the cabinet, together with the ramp itself, are powered by a 12VDC 10A PSU.

The system is supplied with a single 10 m cable to connect the ramp with the cabinet. This cable carries both data signals and the 12VDC to power the ramp and operates at 50Hz and 60Hz.

1.2 Air requirements

Compressed air is required for the mechanical shutter and cleaning system. Pressure must be MAX 10bar with a lower-level set at MIN 8bar; the unit is provided with a standard ¼ inch Male, push in 8mm Tube Adaptor.

Fit air isolator for TreadReader and Air regulator with Clean Dried Air filter avoids contamination of shutters pistons and sensor windows.

1.3 Environmental considerations

DriveOver ramp must not be installed outdoors or in areas exposed to rain. Hosing down the ramps is permissible. However, installation in areas of standing water or flooding is prohibited.

Do not pressure wash under any circumstances.



NOTE:

- Recommend that copper slip type grease is used on fixings for the trigger box cover, anti-seize type grease is used on all ramp fixings, not required for floor securing fixings.
 - Air supply min 10 bar filtered and dried.
 - Sensors have serial numbers – the lowest number on the left.
-

02 • Scope of supply

2.1 Included

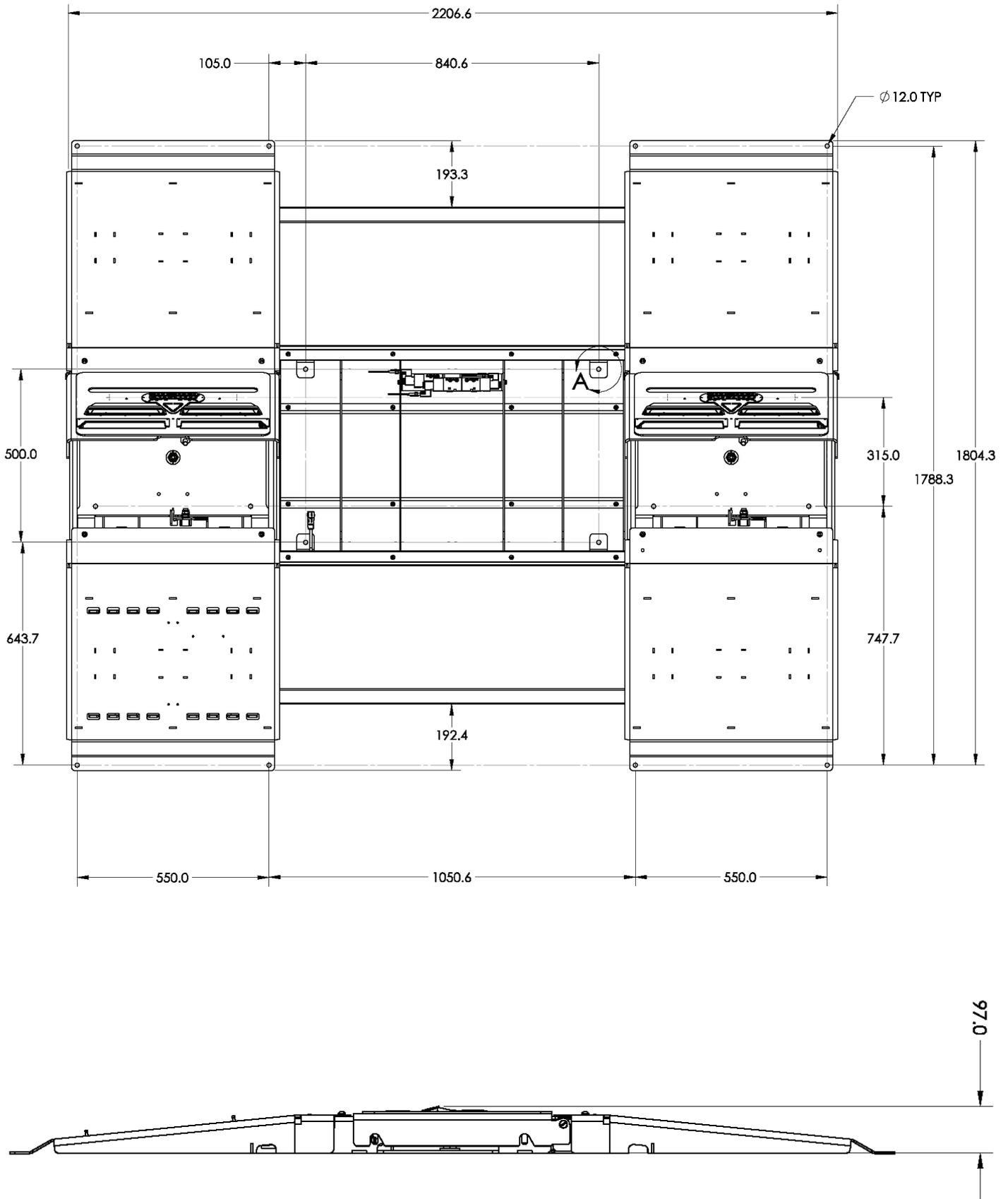
- ALPR Camera
- Trigger Box
- PC Cabinet
- 10 m cable
- 2.5m cable x 2
- 8mm air hose
- Centre section and lid
- Trigger ramp x 1
- Ramps x 3
- Sensors x 2
- 8mm Supply Airline
- Centre cover screws and washers
- Ramp to sensor housings fixings

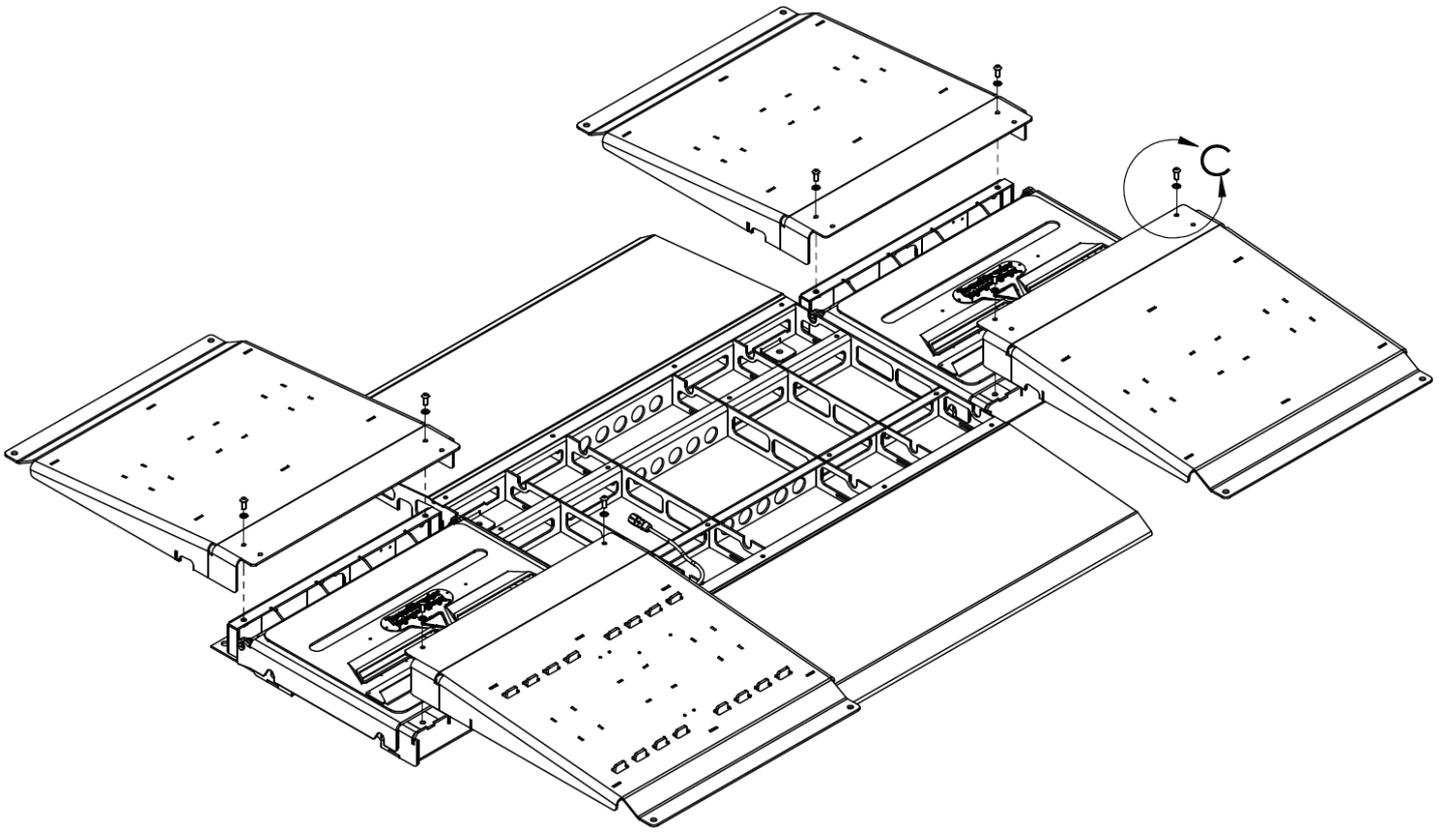
2.2 Not included

- Ground fixings to bolt the centre section and sensor housing to the ground must be suitable for the floor type. 10mm Diameter
- Air Fittings to connect to the main feed include an isolator.
- Air Regulator with filter for Clean Dried Air
- Monitor Screen – to set up the software
- Keyboard and mouse
- Cable covers

03 • System layout

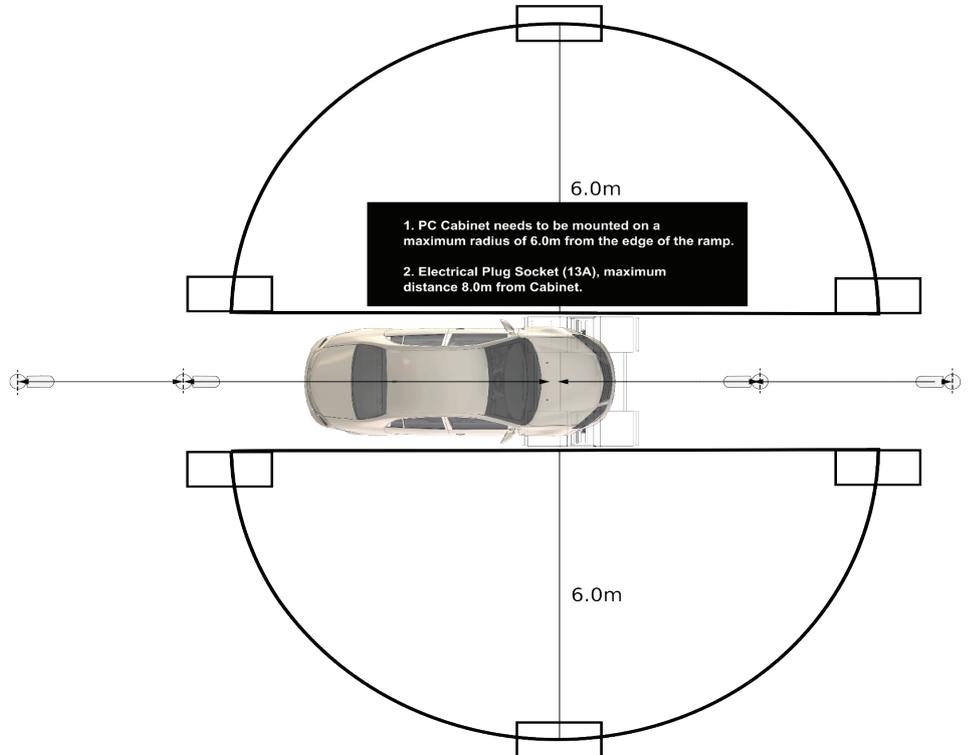
3.1 Layout drawings





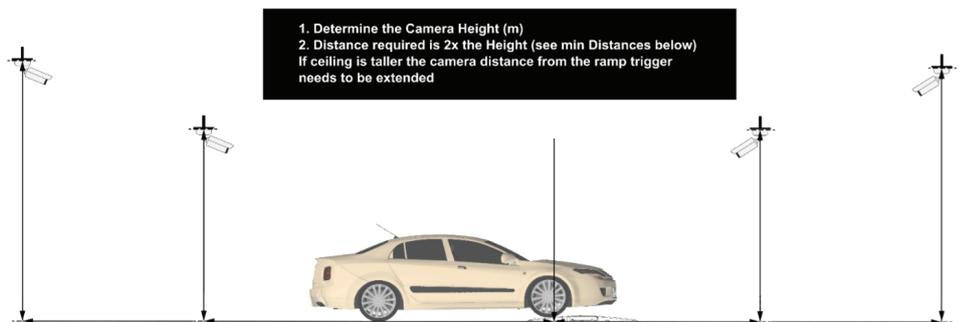
3.2 PC Cabinet locations

- PC Cabinet needs to be mounted on a maximum radius of 6.0m from the edge of the ramp.
- Electrical plug socket (13A), maximum distance of 8.0m from the cabinet.

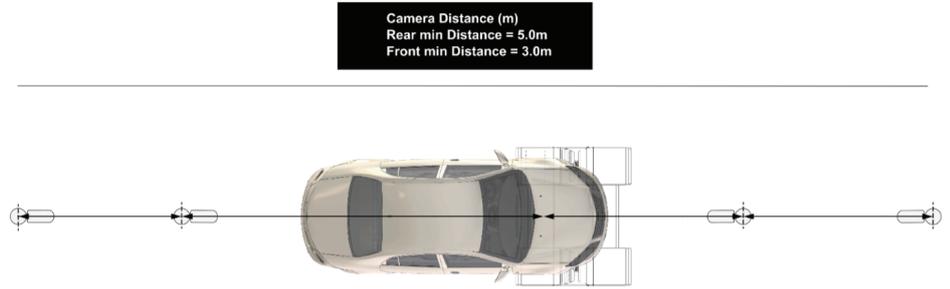


3.3 Camera centre mount

- Determine the camera height (m)
- The distance required is 2x the height (see minimum distance below)
- If the ceiling is taller, the camera distance from the ramp trigger needs to be extended

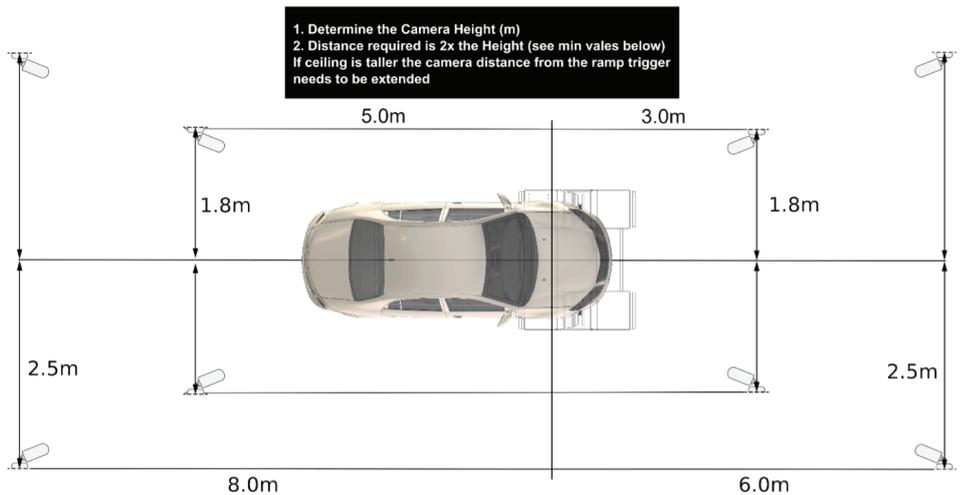


- Camera distance (m)
- Rear minimum distance: 5.0m
- Front minimum distance: 3.0m



3.4 Camera off centre mount

- Determine the camera height (m)
- The distance required is 2x the height (see minimum distance below)
- If the ceiling is taller, the camera distance from the ramp trigger needs to be extended

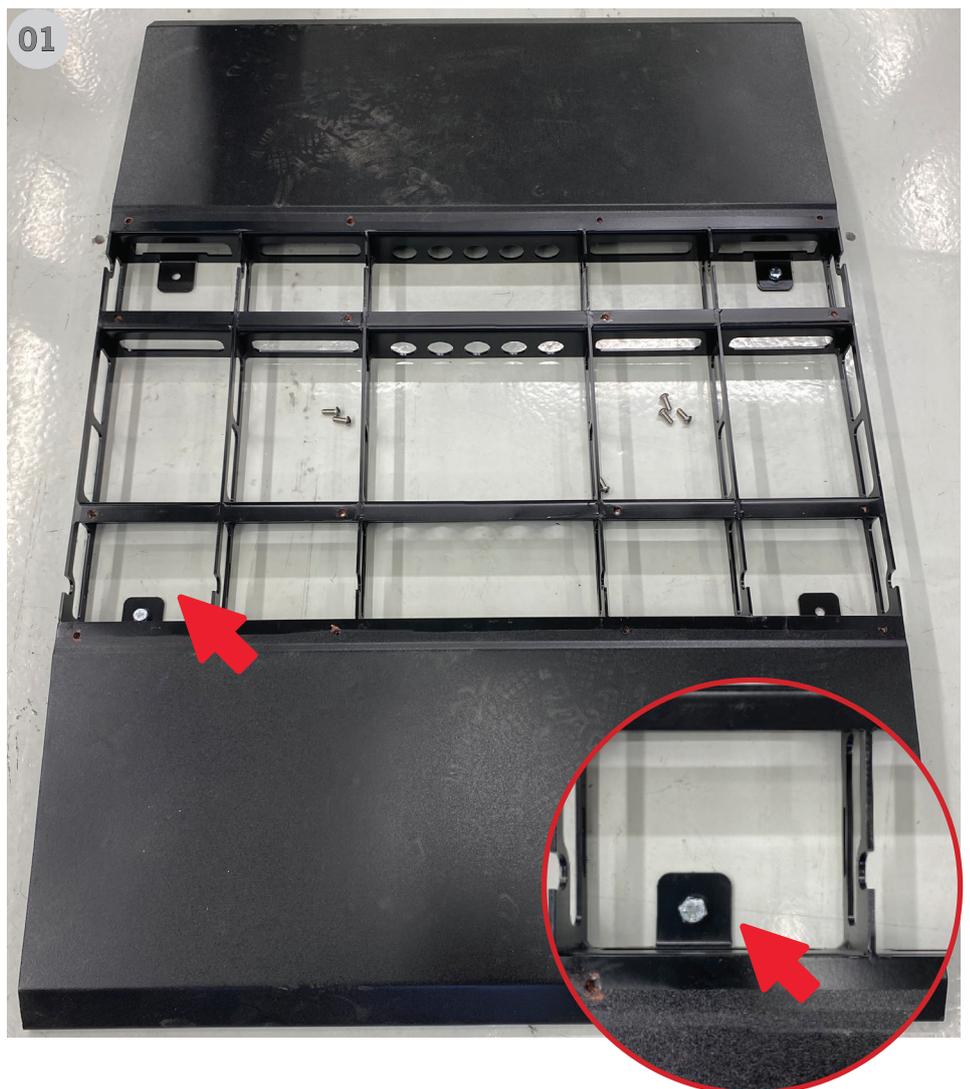


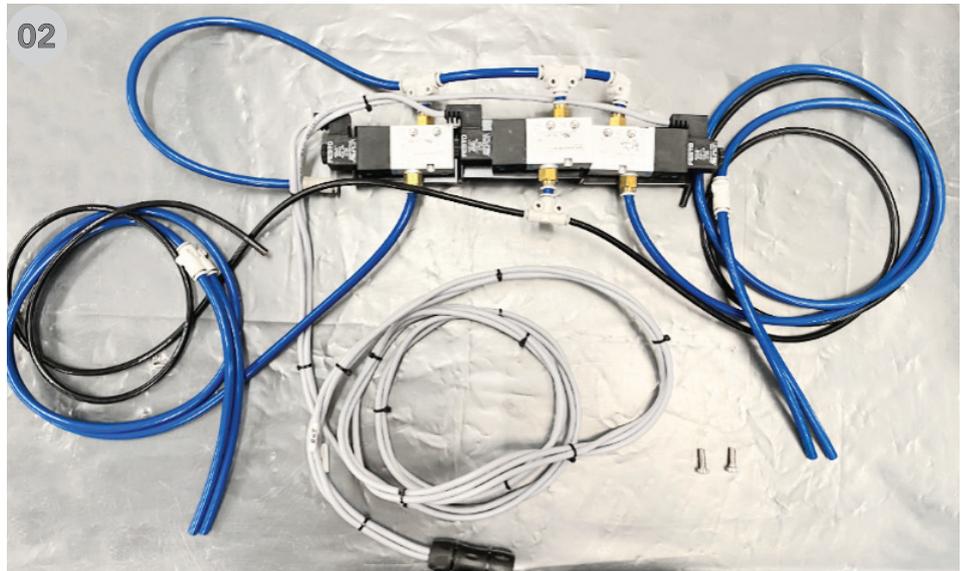
04 • Installation instructions

1. If not pre-fitted, fit the pneumatic valve block before attaching the centre section to the floor. Be careful to not trap any cables or air lines.
2. Mark a centre line to use as a reference, usually with an entrance door
3. Align the centre section with the centre line of the opening
4. Ensure you drive straight onto the ramp
5. Avoid having to turn onto the ramp
6. Position the ramp minimum of 0.5m inside the door
7. When happy with the position, bolt the centre section to the floor using an appropriate fixing.

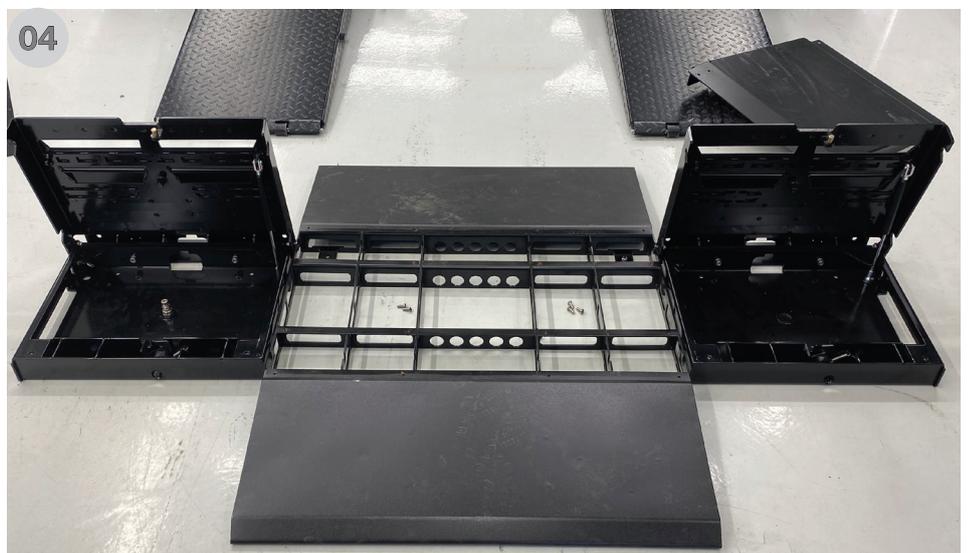


ATTENTION: Ensure the centre section is square before fixing to the floor.





8. Position the 2 sensor housings with the lids opening in the direction of travel on either side of the centre section.



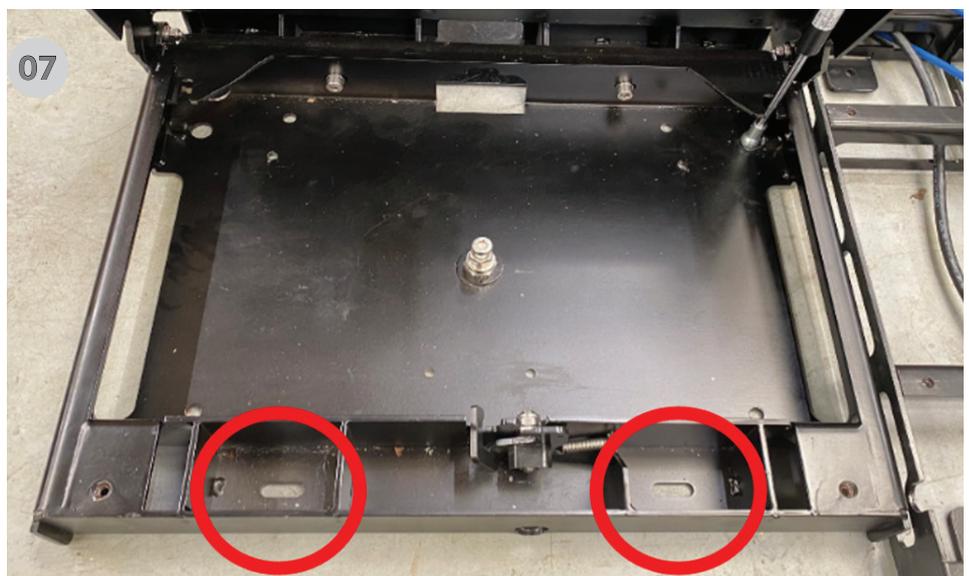
9. Align the hinge pin with the opening in the centre section. Allow room for the lid to close and not hit the centre section.



10. Make sure the housings are aligned correctly.



11. Fix the sensor housings to the floor, use four fixings for each housing.





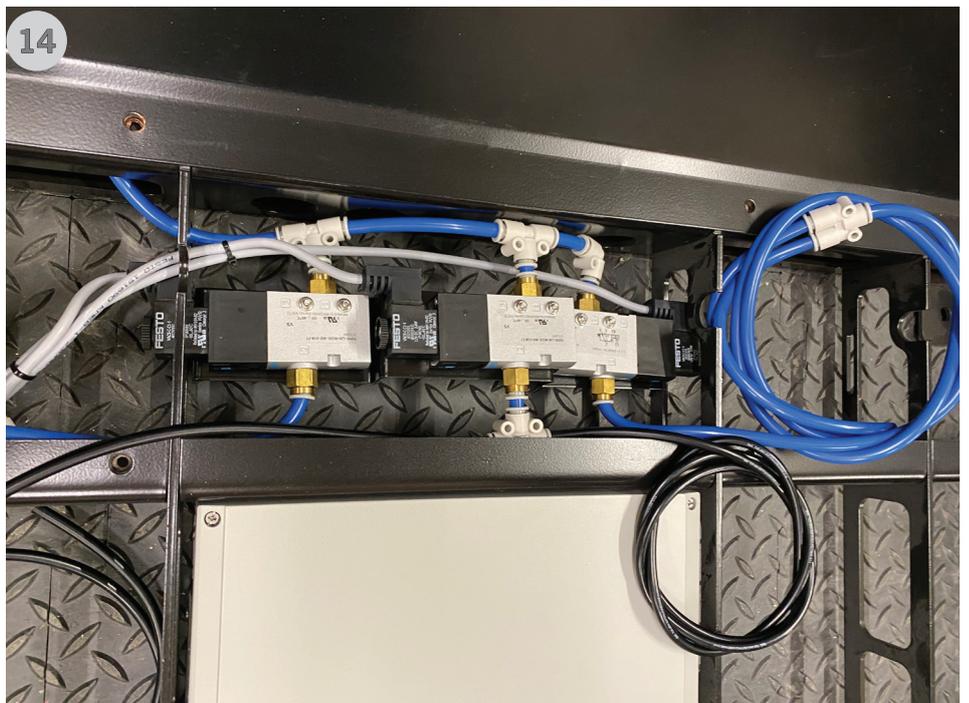
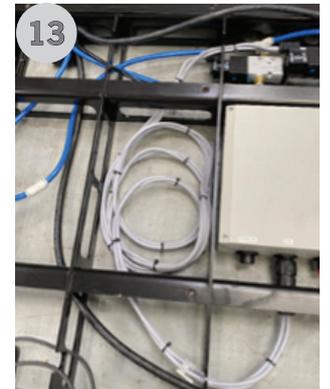
12. Position the trigger box in the centre section.





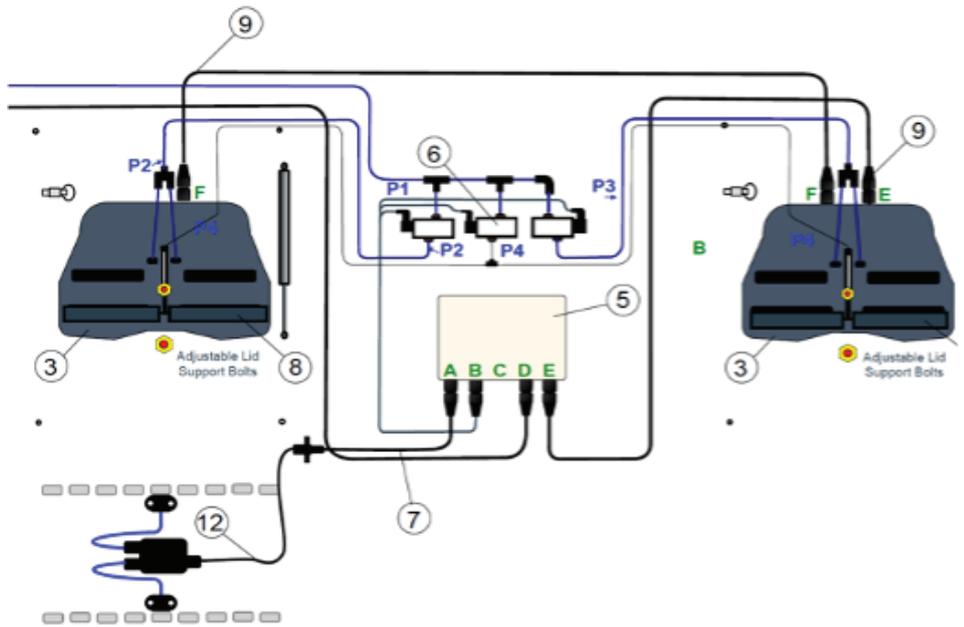
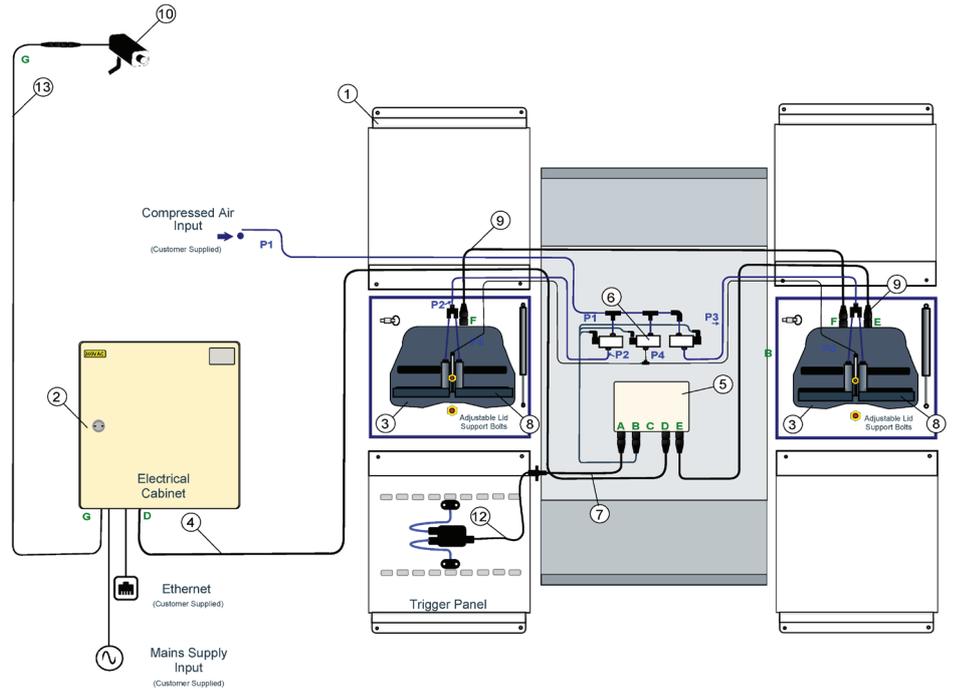
13. Mount the solenoid block in position.

14. Connect the Solenoid block to the trigger box. Coil excess cable in the centre cover

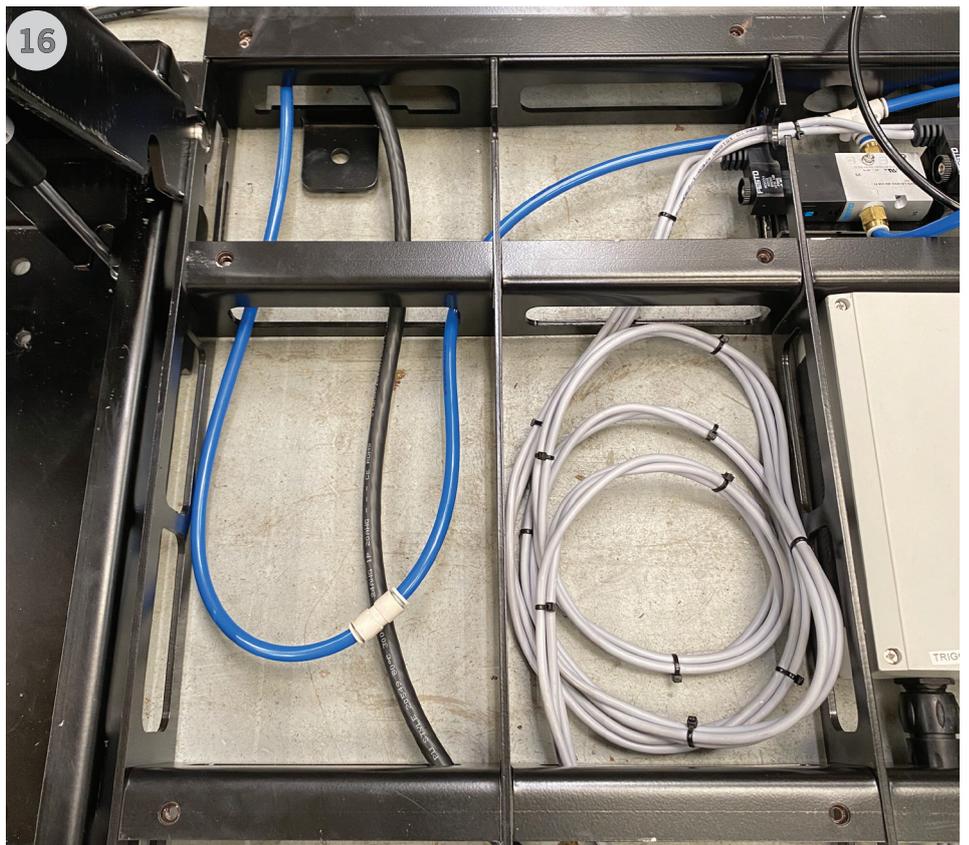


. Decide which side of the ramp the PC cabinet will be placed on. This will determine where the cables will run for air and power.

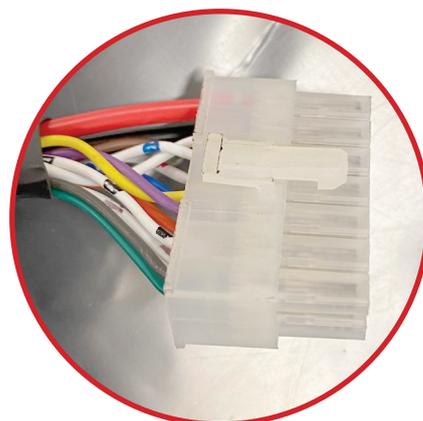
15. Wiring

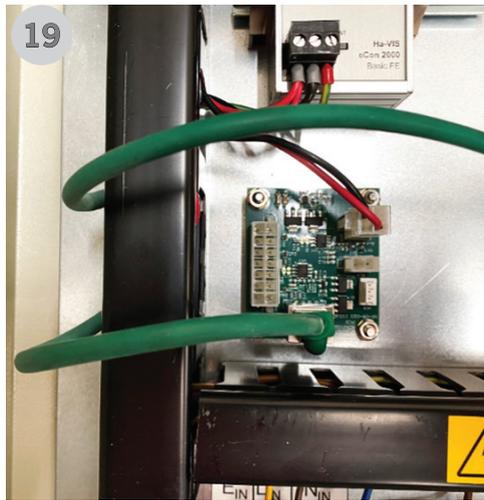


16. Route the main air supply to the solenoid block. This supply should be filtered and regulated 8-10bar.

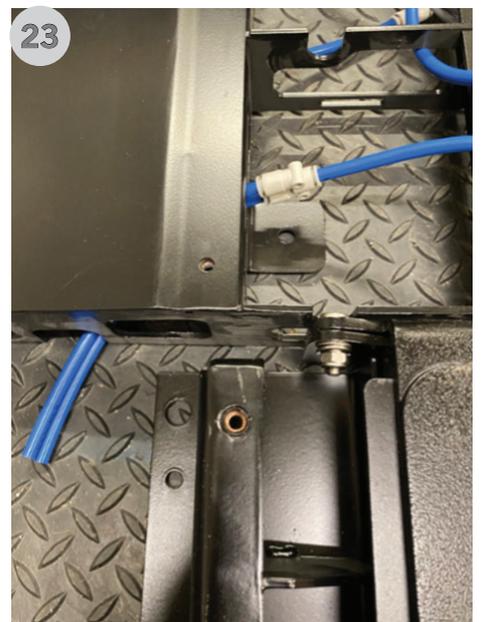
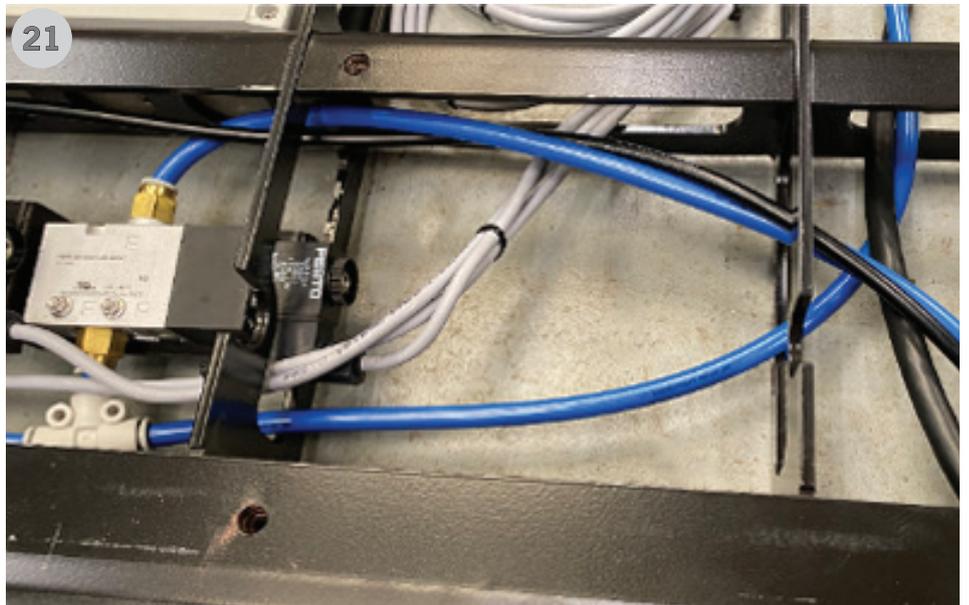


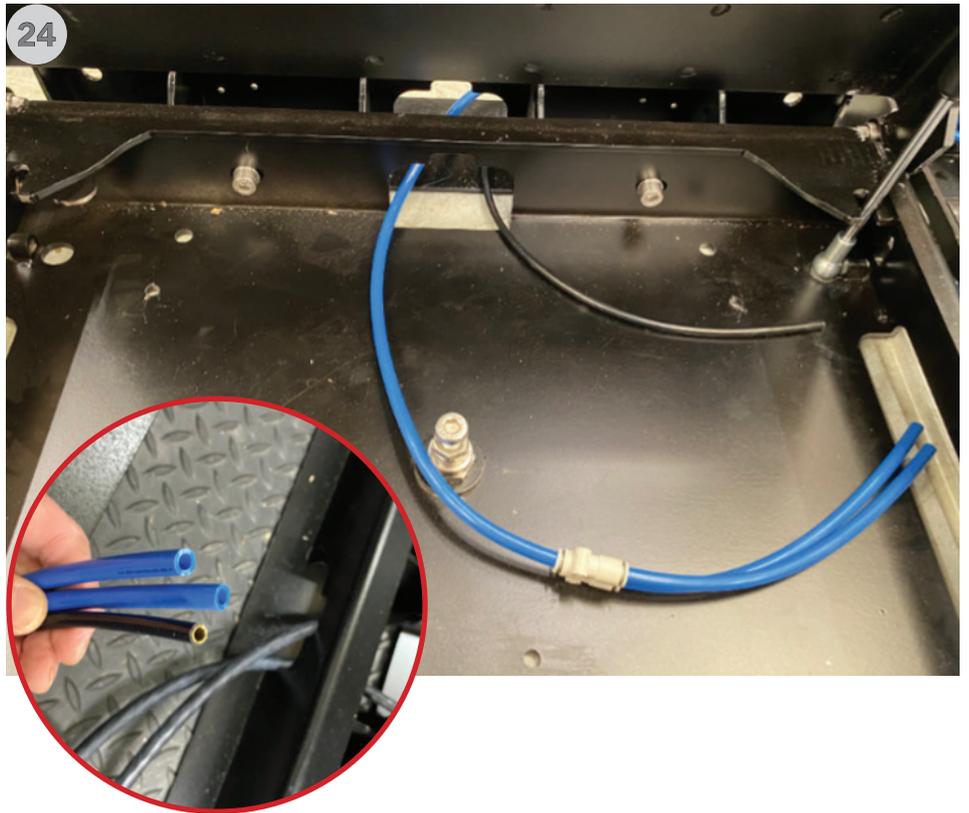
17. Route the 10m cable from the PC cabinet to the Trigger box





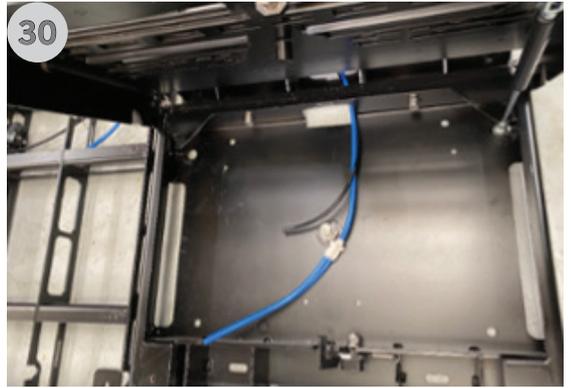
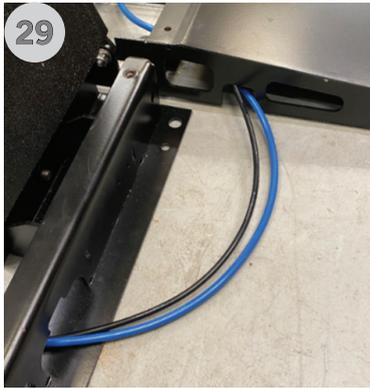
18. From the solenoid block, route, the left air supply for the shutter (black) and air supply for the air knives (blue) through the centre section into the left sensor housing, through the hole.



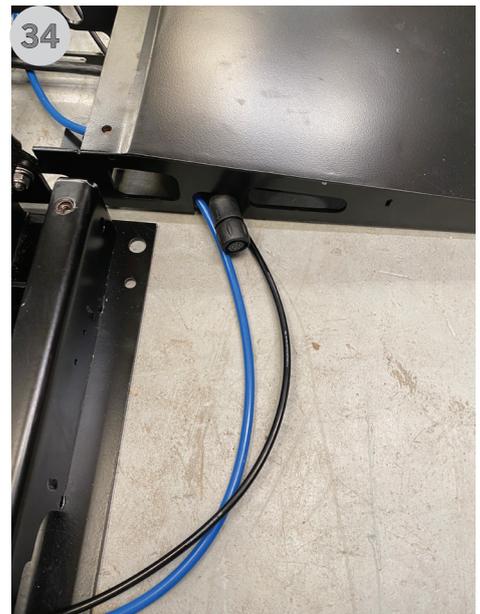


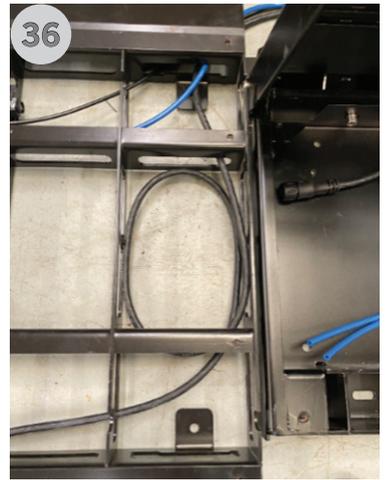
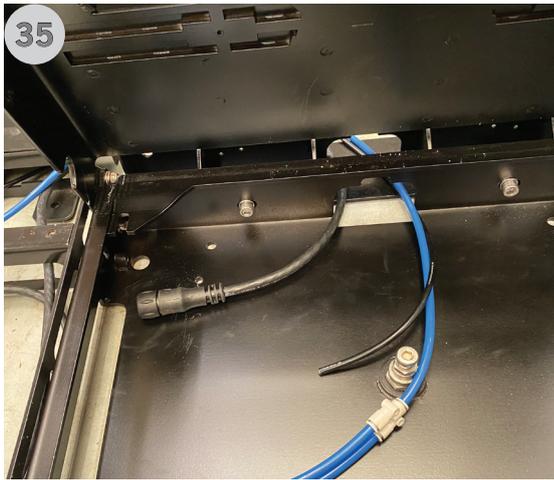
19. From the solenoid block, route, the right air supply for the shutter (black) and air supply for the air knives (blue) through the centre section into the right sensor housing, through the hole.



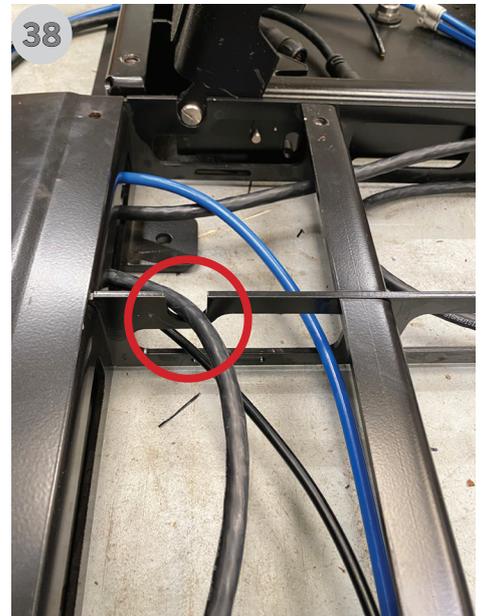
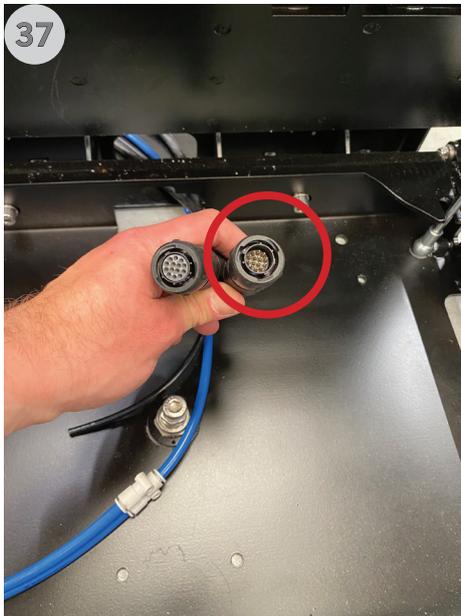


20. Route a 2.5m cable from the trigger box to the right sensor housing





21. 2.5m cable from right sensor housing to left sensor housing. Female connection to the left, male connection to the right



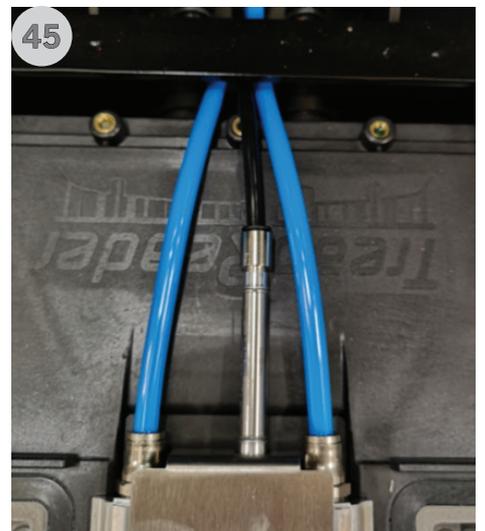


22. Fitting the sensors. Select the sensor with the lower serial number for the left-hand sensor housing

- a. Connect the female plug to the male sensor socket



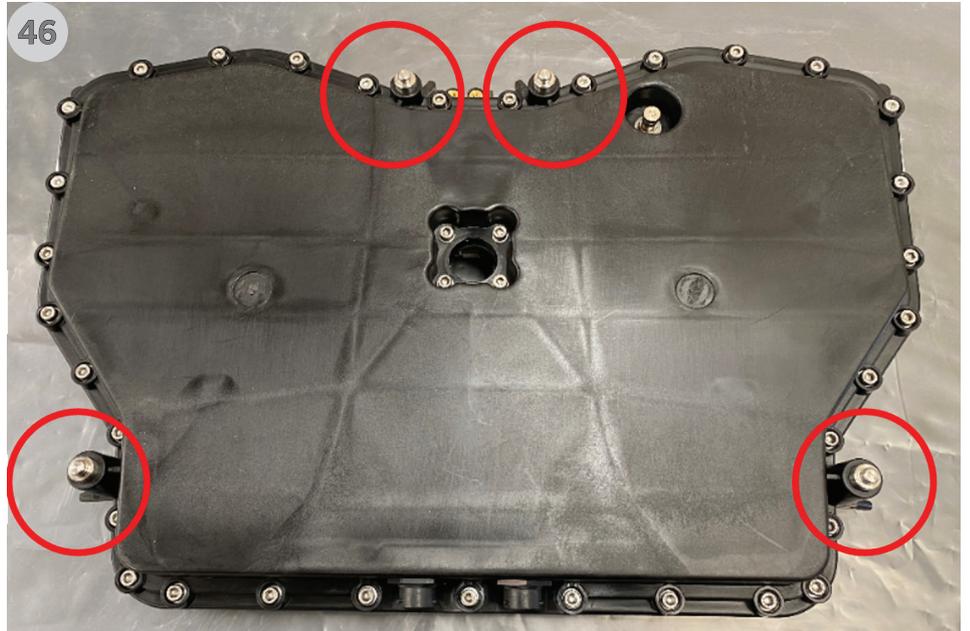
- b. Connect the black airline to the shutter piston and the blue 8mm airlines to the air knives. Then repeat for the right sensor.



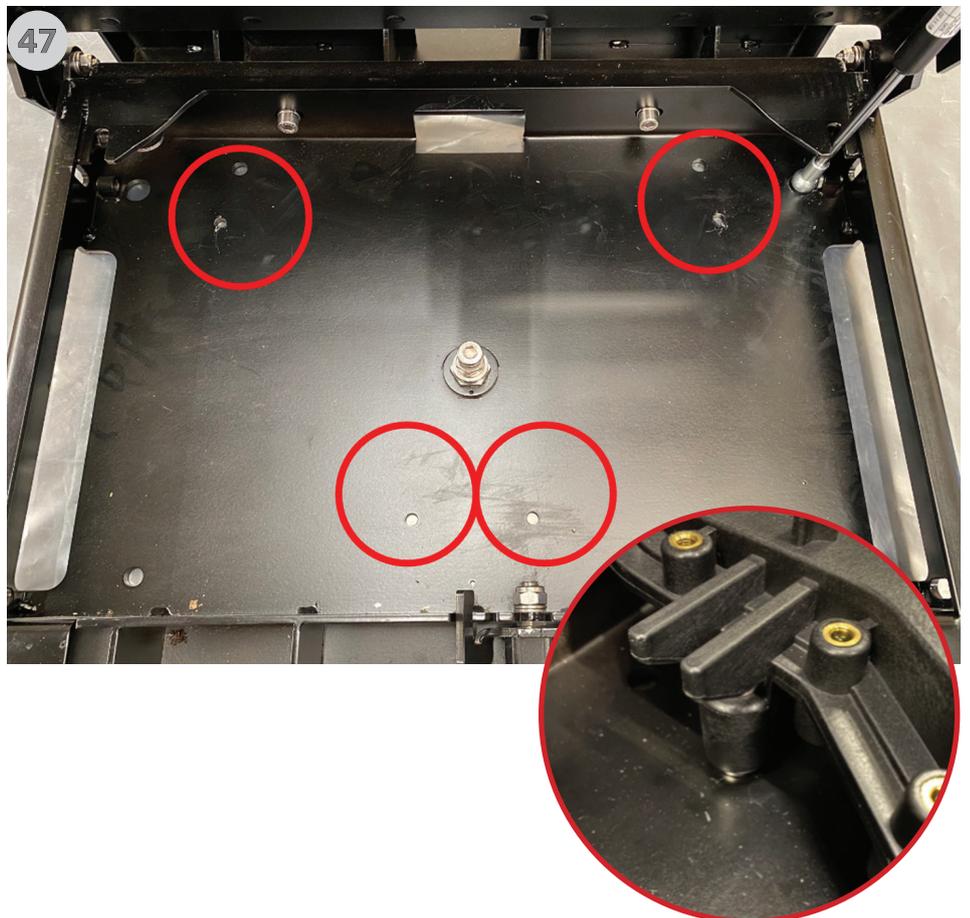


NOTE: There will be 2 cable connections 1st from the left sensor 2nd cable to the trigger box

23. Fit the sensors into the housings, locating the 4 spring loaded pins into the bottom of the sensor housing



The four pins on the bottom of the sensor locate into the four holes in the base of the sensor housing



24. Connect the trigger plate to the ramp and connect the cable to the trigger box. The trigger plate is placed on the left hand side when looking at the direction of travel

- a. Run the cable out through the side of the up ramp and into the centre section



NOTE: Be careful do not trap the cable

- b. Join to the extension and then connect to the trigger box





25. Mount the trigger ramp to the sensor housing using 2 x fixings



26. To close the lid of the sensor housing, you must pull the pin on the safety catch.



27. Secure and mount the other drive-up ramp and 2x drive down ramps using the supplied fixings to the sensor housings.





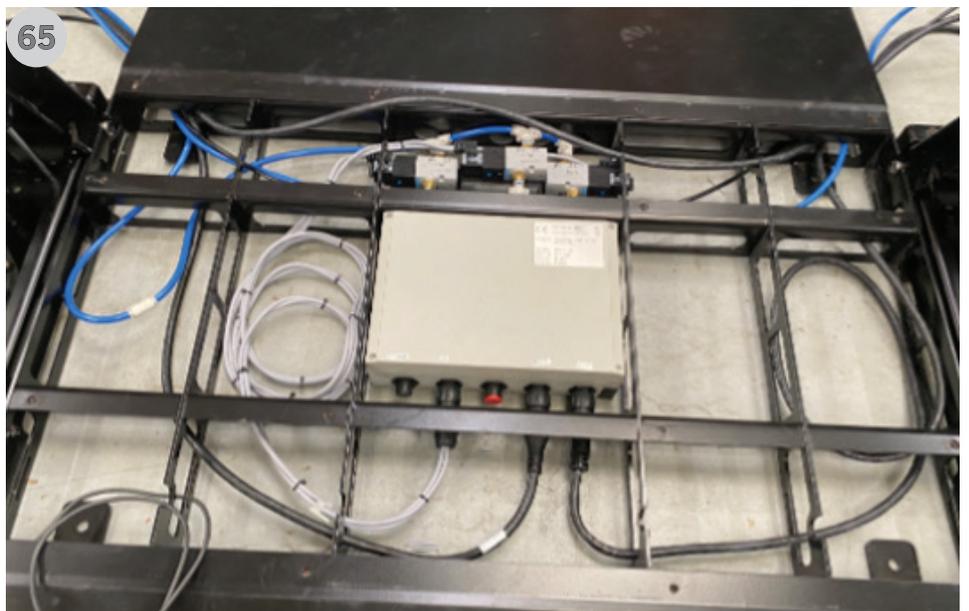
NOTE: Make sure no cables are trapped.

28. Fix the ramps to the ground through the fixing holes



29. Centre cover

- a. Check all connections and for trapped cables
- b. Make sure cable cannot be trapped when lids are closed

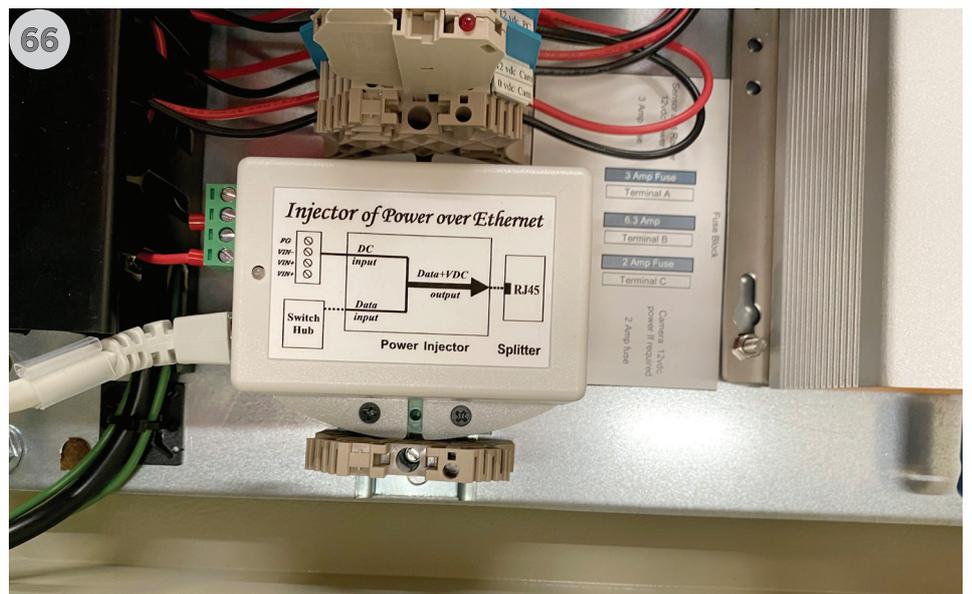




NOTE: For safety, all cables on the floor should be secured and covered (not supplied).

30. ALPR camera can be fitted behind or in front. Best to get close to the vehicle centre line. The ideal distance is 2 x from the ramp height of fixing. For example, the roof to fix the camera is 3m high, the camera needs to be 6m from the front of the vehicle. Be mindful of sunlight behind the vehicle and lighting in general.

The ALPR camera is connected via the supplied CAT 5 cable to the PC cabinet.



31. Mount the PC cabinet to a wall.

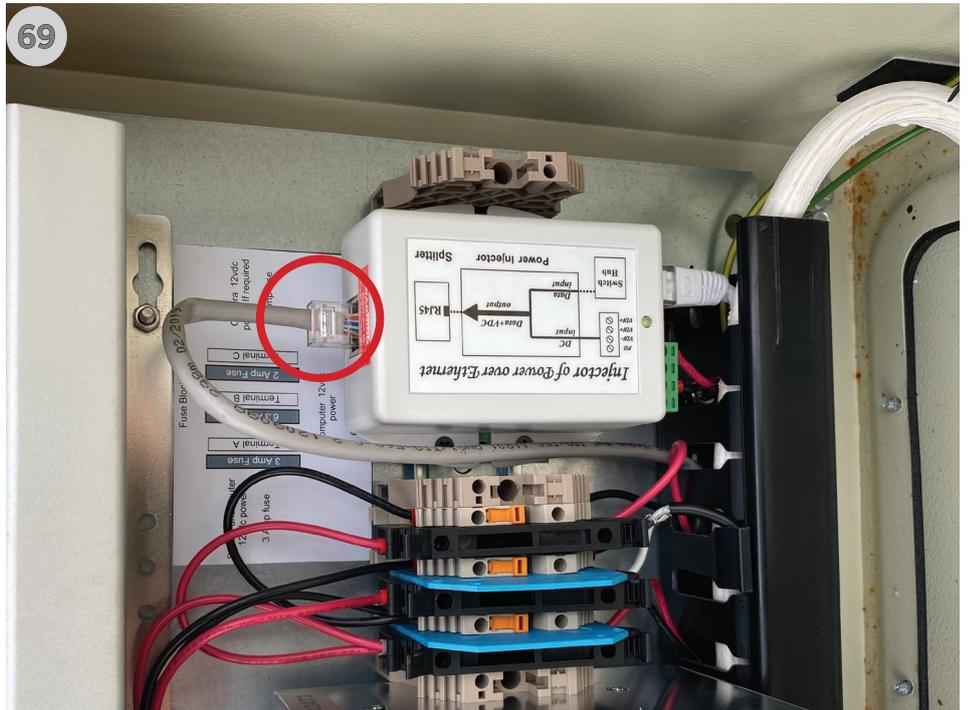
- Mount the cabinet to the wall using the supplied fitting kit or directly through the holes in the cabinet.



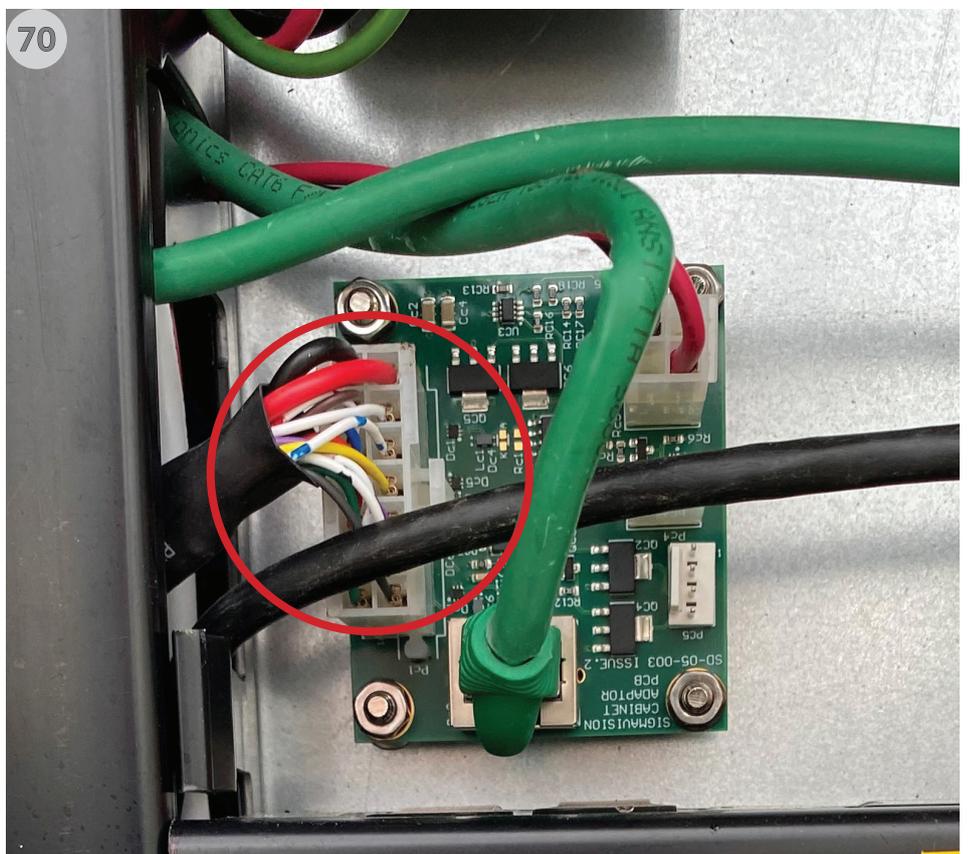
NOTE: The Cable from the PC Cabinet to the sensor housing is only 10m long.

05 • Connecting cables to the electrical cabinet

Camera cable, RJ45 POE Injector (This is an option, usually fitted). Further setup is needed in the software (ALPR server and Country).



Trigger box cable, 10m DriveOver cable.

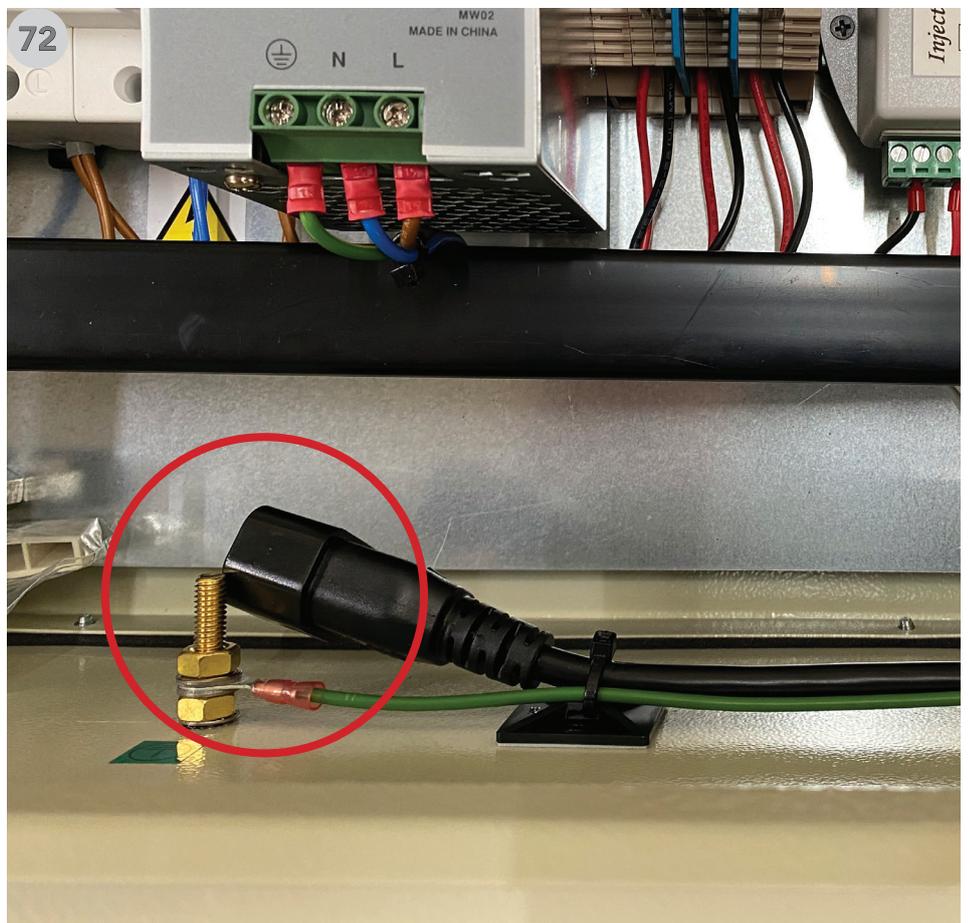


Network cable (This is an option). If the system uses a customer-supplied network, it needs to be connected to the right RJ45 port viewing the PC from the back. This port is from factory setup in DHCP mode.



Power IEC cable.

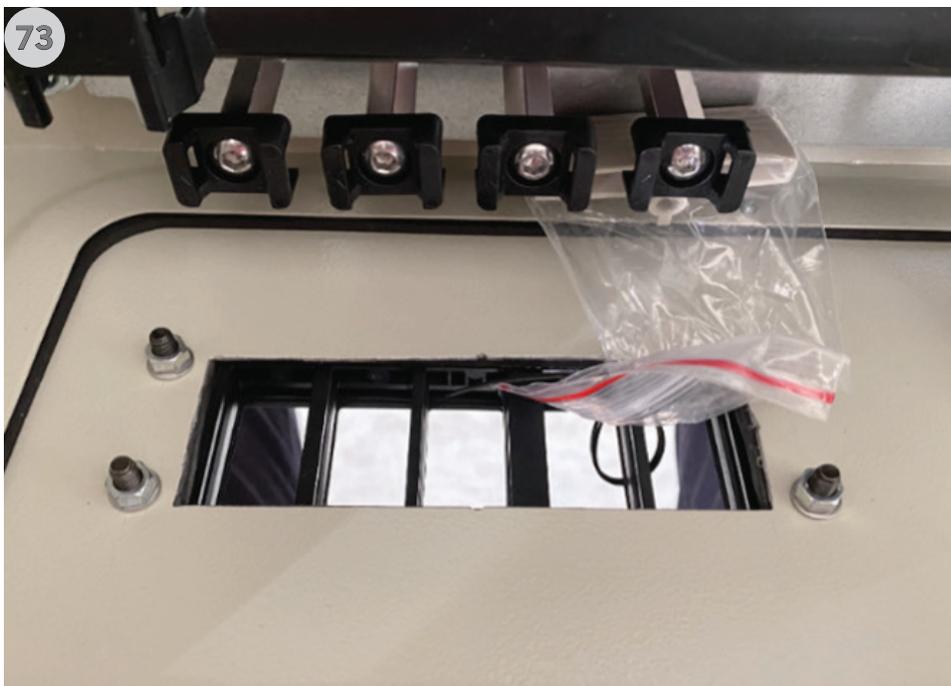
This cable is NOT supplied/included as it is customer dependent (Country and length).



5.1 Cabinet grommets

Cables entering the cabinet must be fitted with grommets to ensure appropriate strain relief.

Instructions for fitting can be found by scanning the QR code.

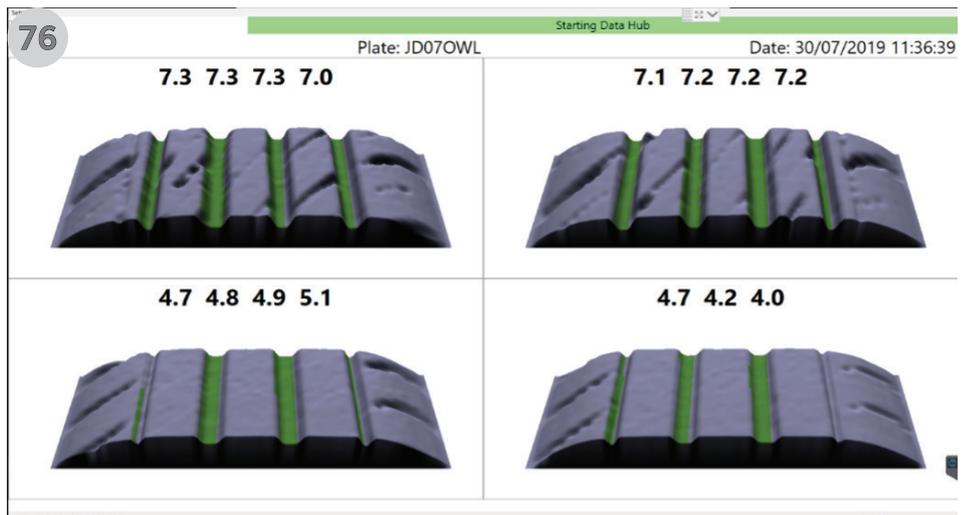


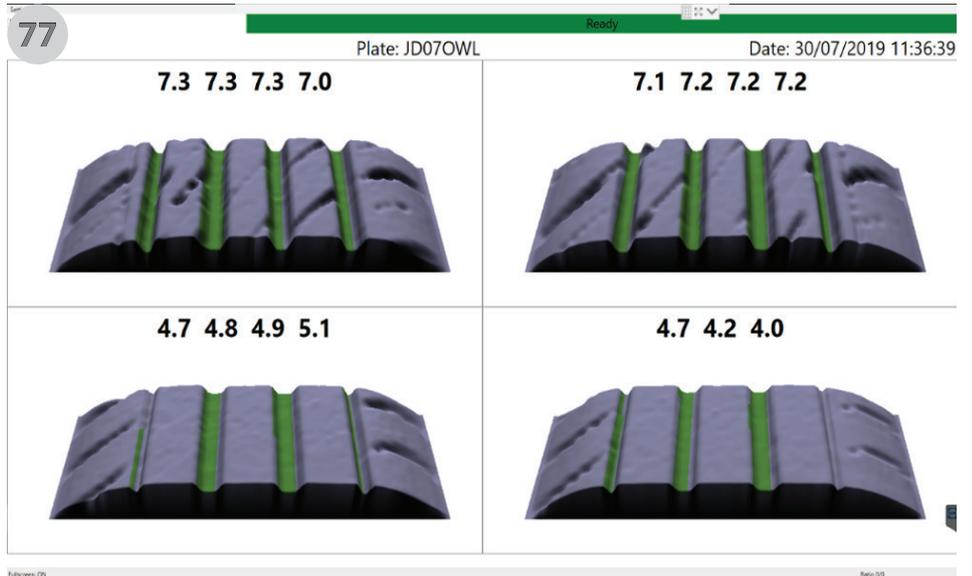
06 • Software

The system is preconfigured and tested in the factory before shipment. This means that if all is connected correctly, as described in **Section 4/ item 14**, the system will be fully operational a few minutes after turning it on as per the below description.

6.1 System power up sequence

1. Turn on POWER
2. The computer will start automatically
3. Windows will login automatically
4. Task scheduler runs TreadReaderGUI task
5. GUI starts in full screen and flags LIGHT GREEN, STARTING DATA HUB (Pic. 78)
6. GUI starts the Middleware (sensor connections and tread depth calculation).
7. Middleware will try to connect to sensors using the serials set (The left sensor should always have the lowest serial number **Section 4/ item 21**).
8. GUI will wait for the Trigger box to respond.
9. GUI receives an active message and flags DARK GREEN, READY (Pic. 79)
10. System ready for vehicles





6.2 System power up sequence

To fully utilise the system's features, there are a few added things that usually need to be set up during installation. Instructions on where to place the camera can be found in the Survey document DOC70-01. For car park or public space locations, the ALPR camera is NOT to be installed viewing the rear of the vehicle.



ATTENTION: The system needs access to the following Internet domains for the below functionality to be available.

- <https://sigmavision-api-prod.universlabs.io>
- <https://treadmanager.net>
- <https://alpr.sigmavision.com>

Local network to allow outbound connection to TeamViewer.

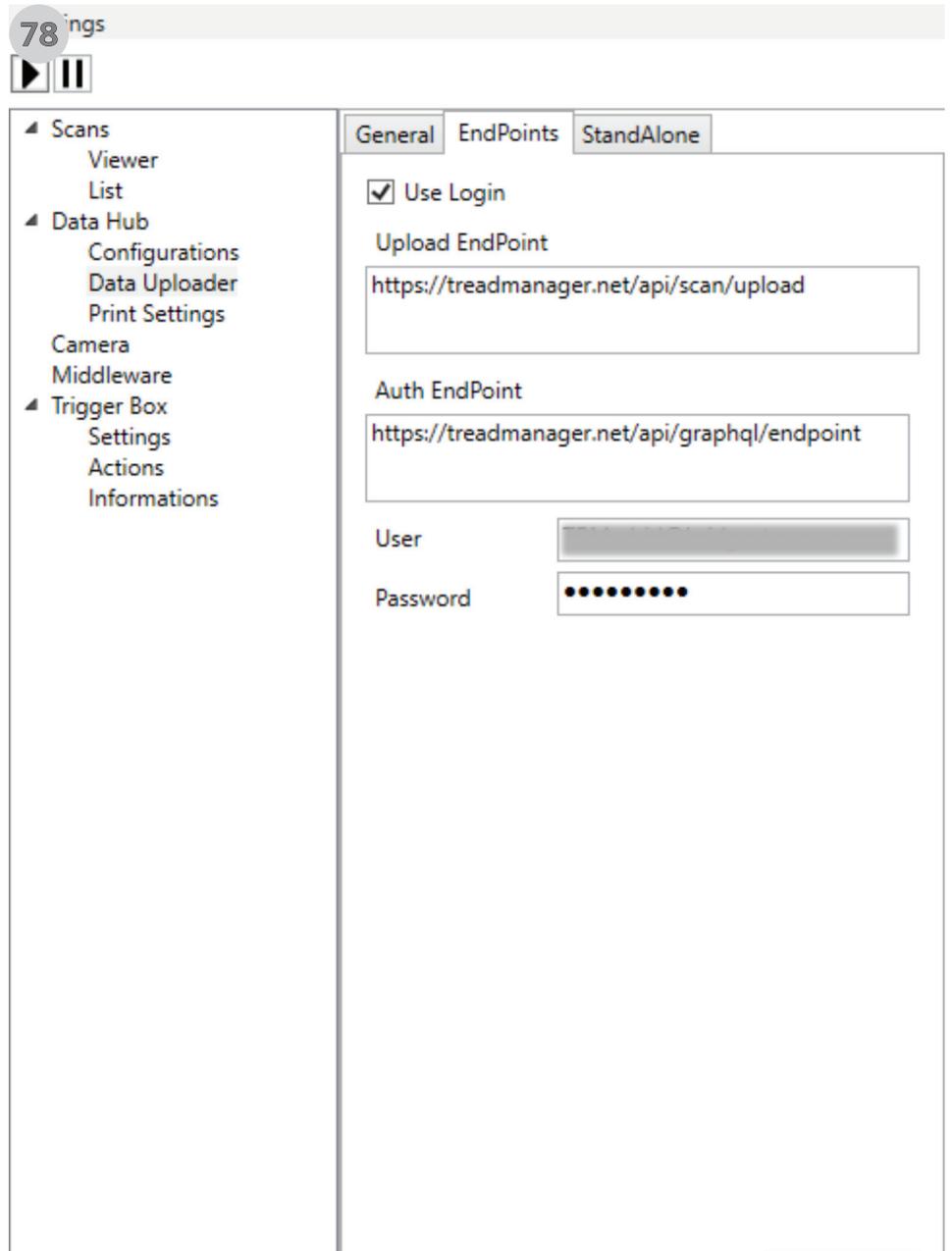
6.2.1 TreadManager login/password

This enables the system to upload tyre scan data to TreadManager.

Each ramp belongs to a workshop that can be viewed from an internet browser.

For this to work, a user needs to be created beforehand. Please contact your sales representative or distributor for more information.

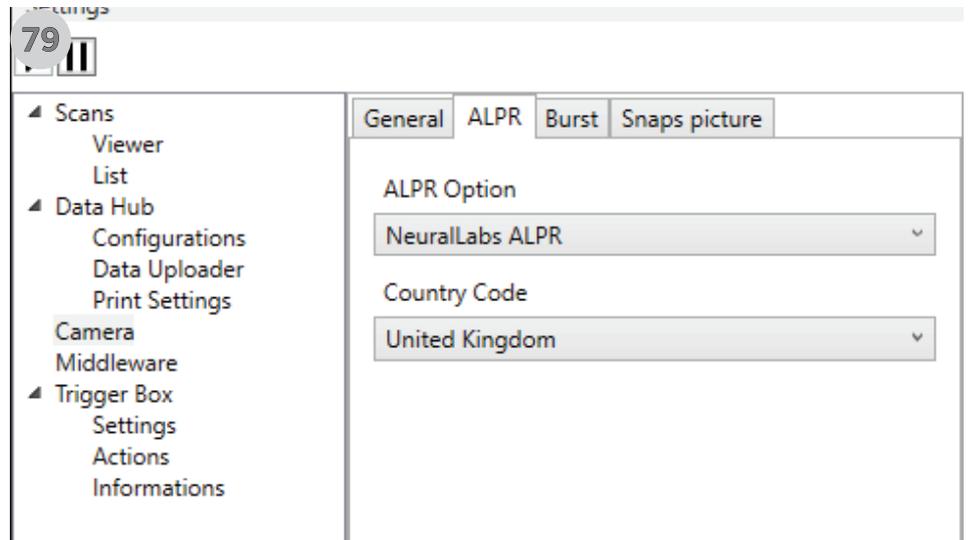
When filled in, press the Check button to test that the user/password is correct. Internet access is required for this to work.



The screenshot shows a software configuration window with a sidebar menu on the left and a main configuration area on the right. The sidebar menu includes sections for Scans, Data Hub, Camera, Middleware, and Trigger Box. The 'Data Hub' section is expanded, showing 'Configurations', 'Data Uploader', and 'Print Settings'. The 'Data Uploader' option is selected. The main configuration area has three tabs: 'General', 'EndPoints', and 'StandAlone'. The 'General' tab is active. It contains a checked checkbox for 'Use Login', followed by two text input fields: 'Upload EndPoint' with the value 'https://treadmanager.net/api/scan/upload' and 'Auth EndPoint' with the value 'https://treadmanager.net/api/graphql/endpoint'. Below these are two more input fields: 'User' (with a greyed-out text) and 'Password' (with masked characters).

6.2.2 ALPR

Server and country need to be set for decoding the license plate. This is set by using the below drop-down lists. NeuralLabs ALPR is the preferred Server to use for best results.

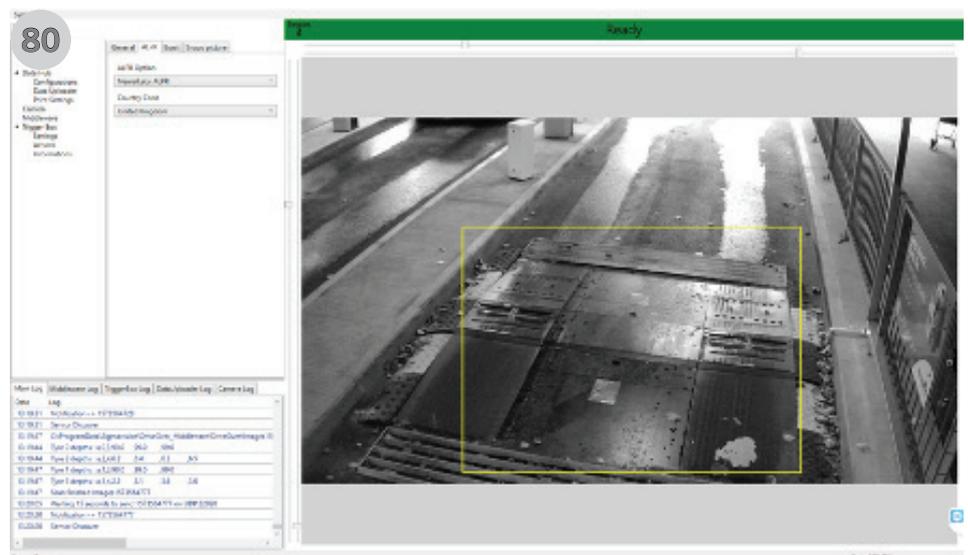


6.2.3 Camera view

We suggest to “crop” and limit the ALPR camera’s view as the software can pick up multiple license plates.

i.e. from multiple vehicles in the view of the camera.

This is performed by adjusting the sliders around the image. There are four sliders. By moving them, a yellow window will appear to show the cropped view. We do not suggest making the window too small as the vehicle will never be at the exact same location based on speed and driver behaviour.



6.2.4 Remote support

TeamViewer is pre-installed from the factory for any remote support requirements (requires internet access).

TreadReader can use this to diagnose the systems remotely or aid with any installation or future issues.

07 • Support during installation

If any problems are encountered during the installation process, TreadReader can be contacted using the details below or via your sales representative or distributor:

Email: info@treadreader.com



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