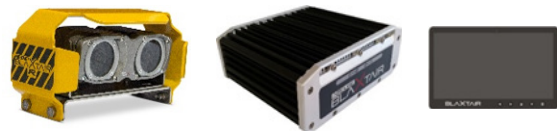# ARCURE

# QUICK USER INSTRUCTIONS

## Arcure-Blaxtair® presentation

Blaxtair® is an intelligent 3D camera that differentiates between objects and people, and warns the driver of any danger.
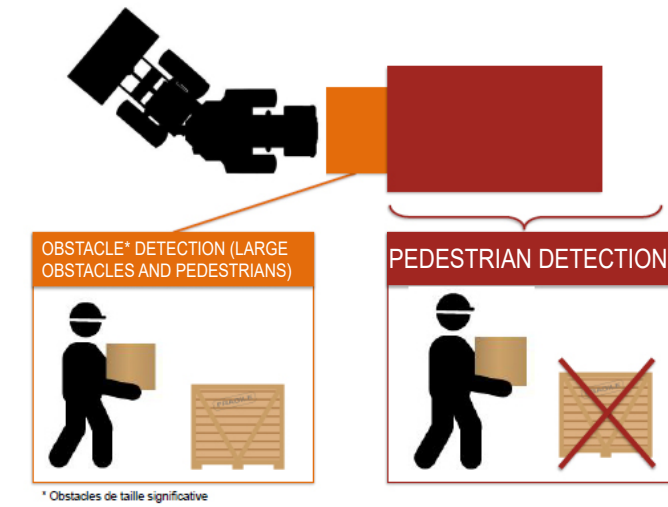
Designed to provide the operator with additional information that will aid maneuvering, its purpose is to complement the usual safety practices already in place. Vehicle inspection and operational safety are always the responsibility of the operator and the competent authorities, and must not replace the vigilance of the driver. The regulations in force in your country must always be followed.

**The Blaxtair®:**
• Is a driving aid system
• Is an addition to the good safety practices already in place within the company
• Does not affect the machine controls and does not replace the driver, who must always remain in charge of driving the vehicle.
• Starts up automatically when the ignition is switched on (around ten seconds)
• Switches off automatically when the ignition is switched off

### 1 About BLAXTAIR®



OBSTACLE* DETECTION (LARGE OBSTACLES AND PEDESTRIANS)

PEDESTRIAN DETECTION

* Obstacles de taille significative

### 2 Signals for the operator

It should not be interfaced with the command or control devices of the machine. Output signals should not be used to control automatically, directly or indirectly, any machine control devices.

Red screen and ringing/buzzer

**STOP IMMEDIATELY / DANGER**
Verify on the monitoring screen and display screen before (re)starting. Do not (re)start while the LED is red

Green screen and no audible alarm

**NO DANGER DETECTED REMAIN VIGILANT!**

Purple screen and no audible alarm

**DYSFUNCTION**
Contact your installer or the ARCURE After-Sales service

## Installation

### Precautions for use

The BLAXTAIR® processing units must be handled with care:
• Do not install the processing units near equipment generating heat.
• Do not install the processing units near equipment generating electromagnetic interference.
• Do not pull on harnesses.
• Do not cover or place anything on the processing units.
• Make sure that there is a free air flow around the processing units. If not, this could prevent proper heat dissipation and lead to the processing unit shutting down.
• Do not hold the head by the cable.
• Keep the windows on the head clean.
• Never open or modify a sensor head or a processing unit, as this will render the warranty null and void.
• Do not modify the location of the sensor heads or processing units. Only trained Blaxtair installation engineers are permitted to make any alterations.
• Do not unplug any connector either on the processing units or on the sensor heads unless requested to do so by a Blaxtair engineer.
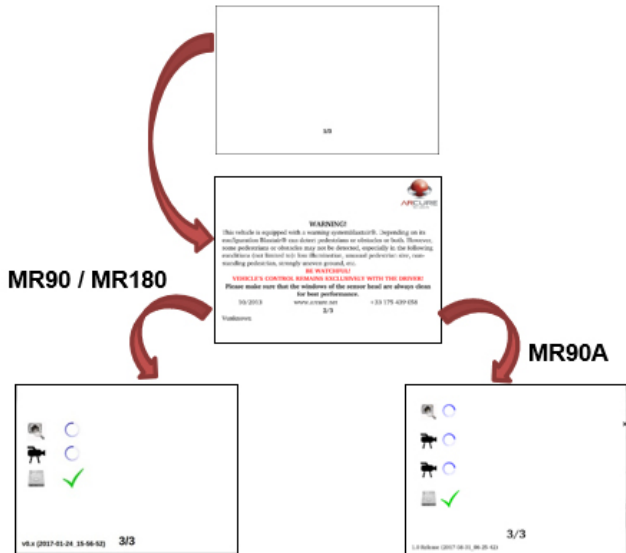


Do not connect or disconnect the monitors or the heads when the processing unit is ON. This could damage the system, which would render it inoperable and void the warranty.

### Installation and start-up

Your BLAXTAIR® system has been installed by a qualified installer. To operate at peak performance, the equipment must not be disconnected or moved. Positioning of the sensor heads and processing units have been defined for achieving the best performance and the system has been calibrated accordingly.

As soon as the driver switches on the vehicle, BLAXTAIR® starts automatically. The processing unit generates a 'beep' after 5 seconds (+/- 1 second) to confirm that power is on. The image below illustrates the different screens that are successively displayed by the monitor during the initialization process.

MR90 / MR180

MR90A

The system creates a self-diagnostic sequence. Once all the items on this page have received a green tick, the video is displayed on the screen with a green frame and the LED (if installed) turns green, indicating that the Blaxtair system is now fully operational.

## Periodic verification and maintenance

### 1 Starting up the machine

At the beginning of each working day, before starting work with a vehicle equipped with BLAXTAIR®, the operator should check that BLAXTAIR® is operational. Below is a detailed procedure to check for correct operation during periodic machine inspections.
Before performing the test, the operator should ensure that safety conditions are fulfilled and that he/she won't endanger anyone. With the assistance of a second person, the driver should carry out the following procedure:
• Park the vehicle in a flat open area, surrounded by barriers.
• Draw the detection area on the ground.
• Turn on the ignition without starting the engine.
• Wait until the camera view is displayed on the screen and its frame is green (and the LED is green, if installed).
• Ensure that the vehicle cannot move, engage reverse gear or any other signal needed to enable detection.
• Ask the assistant to move across the detection zone. Check that the system detects pedestrians as soon as they enter the danger zone. The screen frame should turn red immediately and the alarm should ring as long as the pedestrian stays or moves within the detection area.
• If the test fails, contact the Blaxtair hotline.

### 2 Cleaning the head

To guarantee optimum performance, the two windows on the sensor heads must be cleaned at least once per day (if you are cleaning the mirrors, then clean the sensor heads as well!). Clean the windows at least once a day with a soft cloth. Window washing products and water may be used. After cleaning, make sure that the windows are:
• Dry, free of dirt and drops.
• Do not have large scratches that could prevent the Blaxtair from operating correctly.

### 3 System configuration

During installation, the system was set up for optimal performance. Should the sensor head be moved from its initial position or subjected to an impact, performance could be adversely affected.



If the sensor head has suffered an impact of any kind, the system must be checked; refer to section 4.3.1. If in any doubt, the system must be inspected by a Blaxtair-certified installer.

## Operation

### 1 Display presentation

Alarm icon

Icon representing the vehicle from top

Detection zone

Status indicator frame (visual alarm): green, red or purple

Position of the detected obstacle or pedestrian

### 2 Detection zone

The detection area (also called danger area) has been defined by your installer according to your needs and constraints.
It is generally composed of two separate sub-zones:
• An "obstacle" sub-zone where any obstacle, including pedestrians, triggers an alarm.
• A "pedestrian" sub-zone where only pedestrians trigger alarms.

| | Screen | | | Additional LED (option) | Additional Buzzer (option) |
|---|---|---|---|---|---|
| | Visual alarm | Audible alarm | Icon | | |
| No obstacles or pedestrians in the detection zone | | None | None | | None |
| No obstacles or pedestrians in the "obstacle" zone No pedestrians in the "pedestrian" zone | | None | None | | None |
| Obstacles or pedestrians in the "obstacle" zone | | | | | |
| No obstacles in the "obstacle" zone Pedestrians in the "pedestrian" zone | | | | | |
| Software or hardware technical problem | | None | See chapter 8 | | None |

## Troubleshooting

When BLAXTAIR® encounters a technical problem, one or more icons may be displayed on the top left of the screen.

| Icons | Meanings |
|---|---|
| | Technical problem related to communication between processing units (MR180 configuration only). |
| | Technical problem related to the sensor heads. |
| | Technical problem related to the LED: either communication is broken or CPU requests are not properly taken into account. |
| | The temperature of the sensor head is nearing its limit. |
| | The temperature of the processing unit is nearing its limit. |

If an icon is permanently displayed on the screen, turn off BLAXTAIR®, wait a few minutes and restart it. If the problem persists, contact your installer or Arcure's customer support.

## Customer support

If you require assistance or have any technical questions on BLAXTAIR®, its installation or maintenance, please do not hesitate to contact us:

**hotline@blaxtair.com**
**+33 1 75 43 90 58**

or see our web page http://arcure.net/arcure-throughout-the-world to find the contact details of BLAXTAIR® in your country. For any support request, Arcure's technical team will ask you for the product and serial numbers indicated on the processing unit.

**The references to the chapters or sections cited in this manual can be found in the complete manual, which can be downloaded from the following link:http://blaxtair.com/img/fichiers/User_Manual_BXT3_20190509_version-EN_V2.3.pdf**

Full user manual in English

# ARCURE

# QUICK INSTALLATION INSTRUCTIONS

## Installation

### Recommended sequence

- Choose the head position carefully, following the configuration sheet provided and precautions given in section 3.
- Select the position of the processing unit, taking into account the precautions given in section 8.
- Select the position of the optional items, taking into account the precautions given in section 6.
  Disconnect the machine's main power before installation. DO NOT connect or disconnect any cables when the system is ON. Any damage caused by failing to comply with this regulation will not be covered by the warranty.
- Install the sensor head (section 3).
- Route the green cable of the sensor head to the processing unit position (section 5).
- If no "reverse signal" is available near the processing unit location, you are advised to run a separate wire with the head cable, as the head will be located near a reversing light or a reversing alarm.
- Install the power cable (section 7).
- Mount the screen and any optional add-ons (section 6).
- Temporarily connect all of the cables to the processing unit (section 9).
- Reconnect the power and start the machine. The processing unit emits an audible signal to confirm that it is switched on.
- Check that the system "starts up" correctly (section 10).
- Turn off the system and finish installing the processing unit, ensuring that all cable excesses are properly stored out of sight and compatible with the compartment opening or vehicle maintenance operation.
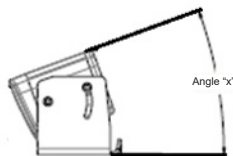
## Positioning

### Of the head

⚠ To achieve optimal detection, the following rules must always be respected at all times:
- The sensor head must be installed at a height between 1.0 m and 2.4 m from ground level.
- Any pedestrian must appear on the screen in full when between 1.2 m and 7.0 m away from the sensor head. The sensor head should therefore be positioned according to the corresponding table below.
- The sensor head cables should never be connected or disconnected when the processing unit is turned on

| Head height (m) | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 |
|---|---|---|---|---|---|---|---|---|
| Sensor head angle ("x", °) | 0 | -6 | -11 | -17 | -23 | -29 | -31 | -33 |

Angle "x"

### Monitors and optional accessories

⚠ Never plug in or unplug the monitor when the system is working. If necessary, turn off the whole system fully before working on the screen.

The screen must be installed in accordance with the following conditions:
- Preferably, the monitor should be positioned in line with the mirrors.
- The monitor must not obstruct the driver's view.
- The monitor must be easy to see by the driver.
- Mount the monitor holder with self-tapping screws or bolts.

DO NOT violate the ROPS or FOPS standards. It is strictly prohibited to drill or screw in structural areas. If you have any questions, contact the manufacturer

## Powering the systems

⚠ Make the connections with the ignition and circuit-breakers OFF. The Blaxtair® guarantee is only valid if the supplied fuse holder is used

Make the connections with the ignition and circuit-breakers OFF. The processing unit(s) should be powered in accordance with the following conditions:

- Use the fuse holder provided in the kit.
- Brown wire – via 7.5 A fuse – Connect to the permanent power supply. Ensure that this power is connected directly to the battery without "passing through" other fuses.
- Grey wire – via 2 A fuses – Connect to a power supply powered by the ignition. Ensure this power supply remains constant at all times when the ignition is turned on and does not "cut out" during engine cranking.
- White wire – Connect directly to the vehicle chassis.
- Green wire – via 2 A fuse – Connect to the desired vehicle mode system either in the cab or at the reversing light/alarm.
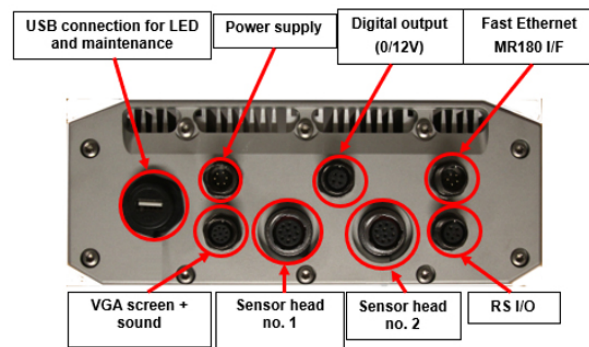
The Blaxtair can be powered by 12 V or 24 V. An additional device to lower the voltage should be used when installing systems on vehicles with a higher voltage, such as electric forklift trucks. Contact your supplier for more details.

## Processing unit

Be sure to install it in accordance with the following recommendations:
- Fasten the processing unit to a solid support: the processing unit must not be subjected to vibrations.
- Do not install near to a heat source (heating vent, etc.) or into a box with no airflow, as this could lead to overheating and to the system switching off.
- Be sure to leave room for the connectors, without over-bending the wires (minimum bend radius of 10 mm).

## Connecting the accessories

| USB connection for LED and maintenance | Power supply | Digital output (0/12V) | Fast Ethernet MR180 I/F |
|---|---|---|---|

| VGA screen + sound | Sensor head no. 1 | Sensor head no. 2 | RS I/O |
|---|---|---|---|

## Initial start-up

- Turn on the vehicle ignition.
- The system automatically goes through different stages before launching.
- The initial start-up lasts around 1 minute, the system will display the camera view, with an orange message in the foreground, with an orange frame on the perimeter of the screen.

WARNING: THIS SYSTEM MUST BE CONFIGURED TO BE OPERATIVE
ACHTUNG: UM KORREKT ZU FUNKTIONIEREN, SOLL DIESES SYSTEM ZUVOR KONFIGURIERT WERDEN
ATTENTION : CE SYSTEME DOIT ETRE CONFIGURE POUR MISE EN SERVICE

## Configuration

### Launch

When the screen displays the warning message or the scene filmed by the cameras, left click 🖱 using the mouse to display the maintenance buttons on-screen and left click 🖱 on the top right icon:
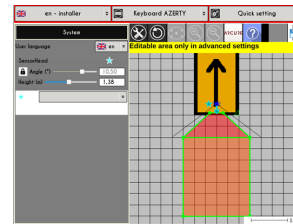
**Note:** the icons disappear when the editor is closed.

A password is required: 5504.
The customer may have requested a different password; the password may then be changed (factory setting). Request the specific password from your supplier.
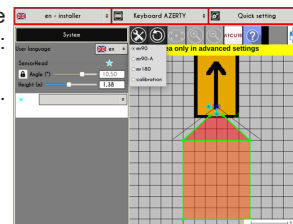
The configuration page will open:
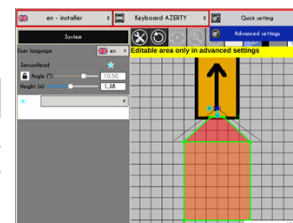
## Selecting the configuration model

The configuration models available for operational use are as follows:
- For a system composed of a processing unit and a sensor head, select model MR90.
- For a system composed of a processing unit and two sensor heads operating alternately based on the incoming signal via the green E1 wire, select model MR90-A.
- For a system composed of two processing units and two sensor heads, select model MR180.
- For a bespoke Arcure-configured system: select the vehicle (make and model) specified on the system's delivery note.

## Advanced setup

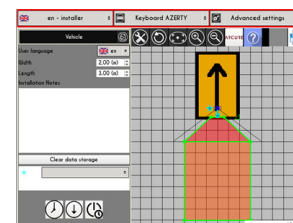For optimum setup, it is necessary to go to advanced setup:

### Vehicle setup

To get an accurate as possible configuration, it is necessary to adjust the measurements corresponding to the machine:
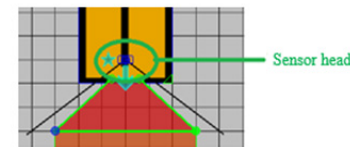- Overall length
- Overall width

⚠ The machine dimensions will be displayed in the user view. If the dimensions stored in the tool are significantly different from the reality, this could cause the machine operator to make a mistake.
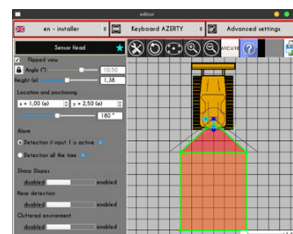
## Setting up the sensor heads

- Click 🖱 on the Blaxtair head symbol.
- In some configurations, a diagram showing the machine and its detection zones appears in the user view.
- In advanced setup, click on the sensor head in the area shown.

Sensor head

- Checked by default, this option enables the Blaxtair scene to be displayed in mirror mode. Uncheck if the Blaxtair head "looks" in the same direction as the driver
- Negative angle and actual height of the head from the ground.
- Spatial position and orientation of the machine. The machine's point "0" is located on the top left of the image; 180° = head turned to the rear; 0° = head turned to the front
- The alarm settings can be adjusted to determine under which conditions the driver will be alerted in connection with input "E1".
- System optional add-ons. These optional add-ons enable detection of the machinery environment.
- To configure an MR90-A, follow these steps for each sensor head.
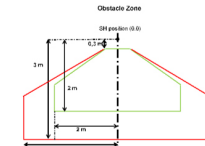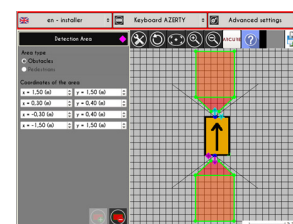
## Description of detection zones

Two zones can be configured:
- An "obstacle" zone, near to the sensor head, where the presence of any large obstacle (pedestrian or otherwise) will trigger an alarm,
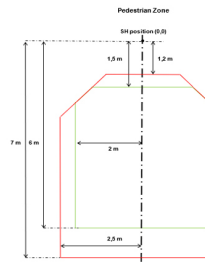- A "pedestrian" zone, where only the presence of a pedestrian will trigger an alarm.

## Changing the detection zones' shape and size

By left clicking the detection zones in the outlined area, the coordinates of the points outlining the zone will appear on the left of the screen.
The detection zones can be changed by moving the points and/or segments using the mouse in the outlined area, or by changing their coordinates in the text fields on the left of the screen.

Obstacle Zone

Pedestrian Zone

Within the green lines:
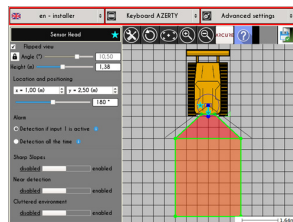Dimensions recommended for optimal detection performance.

Within the red lines:
Extended dimensions. The coordinates (see 3.9.2) turn yellow in the editor. A loss of performance is possible.

Outside of the red lines:
Not recommended. The coordinates turn red. Outside of the usage specifications.

## Options

Optional add-ons are available:
- Steep slopes
- Near detection
- Obstructed environment

They might be activated depending on the machine's operating environment.

## Validating the configuration

To exit the configuration tool, click "exit". Changes are automatically saved.

💾 **SAVE AND EXIT THE CONFIGURATION**

The system will restart and test each component, then will display the Blaxtair ® view with your settings.

- Check that the warning notice displayed during the initialisation is in the correct user language.
- Check that the rear-view mode activated matches the user's expectations when the screen displays the scene filmed by the cameras. (front view: no mirror mode; rear view: mirror mode enabled).
- Check on the image that the view of the machine, heads, and detection zones are displayed at the top right.
- Check that large obstacles and pedestrians trigger an alarm in the "obstacle" zone.
- Check that only pedestrians trigger an alarm in the "pedestrian" zone.

## Customer support

If you require assistance or have any technical questions on BLAXTAIR®, its installation or maintenance, please do not hesitate to contact us:

**hotline@blaxtair.com**
**(+33) (0) 175 43 90 58**

For assistance enquiries, you will be asked to provide the serial and product numbers indicated on the processing unit.

The technical team may also ask you:
- Whether the screen indicator light is on or off.
- If there are any messages or icons displayed on-screen.
- The status/color of the visual alarm.
- The status of the test page.
- The serial numbers on the sensor head.

**The references to the chapters or sections cited in this manual can be found in the complete manual, which can be downloaded from the following link:http://blaxtair.com/img/fichiers/MNL_InstallationBXT3_EN_20190509_V2.2.pdf**

Full installation manual in English