219015 (2023/05) EN

CLEANFIX KIT FOR CLAAS TRACTORS

OPERATING INSTRUCTIONS

Model:	NEXOS 220/230/240/260
Emission level:	V
Type designation:	A65 for NEXOS S A66 for NEXOS M A67 for NEXOS L A69 for NEXOS XL
Cleanfix kit number:	219003 Cleanfix-Kit_Claas_Nexos
	Valid only for vehicles without compressed air system

https://cleanfix.org/instructions-claas

EN: Scan QR-Code to get instructions in other languages.

DE: QR-Code scannen um Anleitung in weiteren Sprachen zu erhalten.

FR: Scanner le code QR pour obtenir des instructions dans d'autres langues.

IT: Scansione QR-Code per ottenere istruzioni in altre lingue.

ES: Escanea el Código QR para obtener instrucciones en otros idiomas.

PT: Digitalize o Código QR para obter instruções noutras línguas.

TR: Diğer dillerdeki talimatlar için QR kodunu tarayın.

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1 General information

1.1 Legal notice

TRANSLATED OPERATING INSTRUCTIONS

READ CAREFULLY BEFORE USE.
KEEP THE OPERATING INSTRUCTIONS FOR FUTURE REFERENCE.

1.1.1 Copyright

1.1.2 Manufacturer and service address

Hägele GmbH
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Our customer service department or one of our representatives around the world is available at any time to answer further questions.

1.2 Introduction

Before installing or starting up the Cleanfix® reversible fan, familiarize yourself with the contents of these operating instructions. This ensures safe and efficient handling of the product.

The operating instructions are a component of the product and must always be close at hand. This ensures the following:

- accidents are prevented
- warranty terms are complied with.

1.2.1 Target group of these operating instructions

These operating instructions are intended exclusively for mechanics trained on agricultural machinery.

The product may be installed and started up only by persons who are familiar with the operating instructions, the product, as well as the national laws and regulations concerning work, safety, and accident prevention.

1.2.2 Liability and damages

Since we are not included in technical service updates from the manufacturer, you may be required to make adjustments when installing this product. Hägele GmbH does not assume responsibility for installation and modification costs.

On account of the information provided in these operating instructions, the manufacturer accepts no liability for direct damages or indirect losses arising from improper operation or maintenance. In the same way, we assume no liability for personal injury or property damage caused by untrained personnel or through failure to comply with regulations concerning work, safety, and accident prevention.

No claims for modification of products that have already been delivered may be made on the basis of the data, illustrations, and descriptions in these operating instructions.

For your safety, use only original spare parts and original accessories.

We assume no liability for the use of other products and any resulting damages.

Observe the following before installation or start-up:

- Inspect delivery for damage in transit and for completeness.
- Immediately document in writing any defects and damages.
- Photograph damaged components.
- Send in a written damage report.

1.2.3 Validity

These operating instructions contain information required to install and start up the product.

In addition to the description of the standard features, the operating instructions contain a number of abstractions and exemplary illustrations of optional features. The product features may therefore deviate from the descriptions and depictions in part.

1.2.4 Product identification

The following information is required for inquiries to the manufacturer:

(1) Fan serial number:

- On the side edge of the fan.

Serial number: | | | | | | |

(2) Vehicle:

Manufacturer: _____

Model: _____

Operating hours: _____

(3) Photo of the fan:

1.2.5 Typographical conventions

The following symbols and terms are used in these operating instructions:

- A dot is used for bulleted lists.

▶ A triangle is used for actions to be performed.

➢ An arrowhead is used for measures to avoid risks.

[+] A plus sign indicates an optional feature that is not included in the standard features.

(1) A number in parentheses is used to label illustrations.

The “Information” pictograph points out tips and additional information.

The “Additional information” pictograph points out cross-references to information from other documentation.

1.2.6 Safety information in the text

Safe use is possible only if all information necessary for safe operation is observed.

The safety information warns users about risks and informs them how to avoid the risks.

General safety information is provided at the beginning of these operating instructions in chapter 2.

Specific warning information appears before a dangerous step.

Safety and warning information that must be followed is highlighted as follows:

Danger to people

⚠ DANGER!

Warns of an extremely dangerous situation in which failure to observe the hazard warning will result in death or severe irreversible injury.

⚠ WARNING!

Warns of a dangerous situation in which failure to observe the warning may result in death or severe irreversible injury.

⚠ CAUTION!

Warns of a dangerous situation in which failure to observe the hazard warning may result in minor reversible injury.

Danger to property

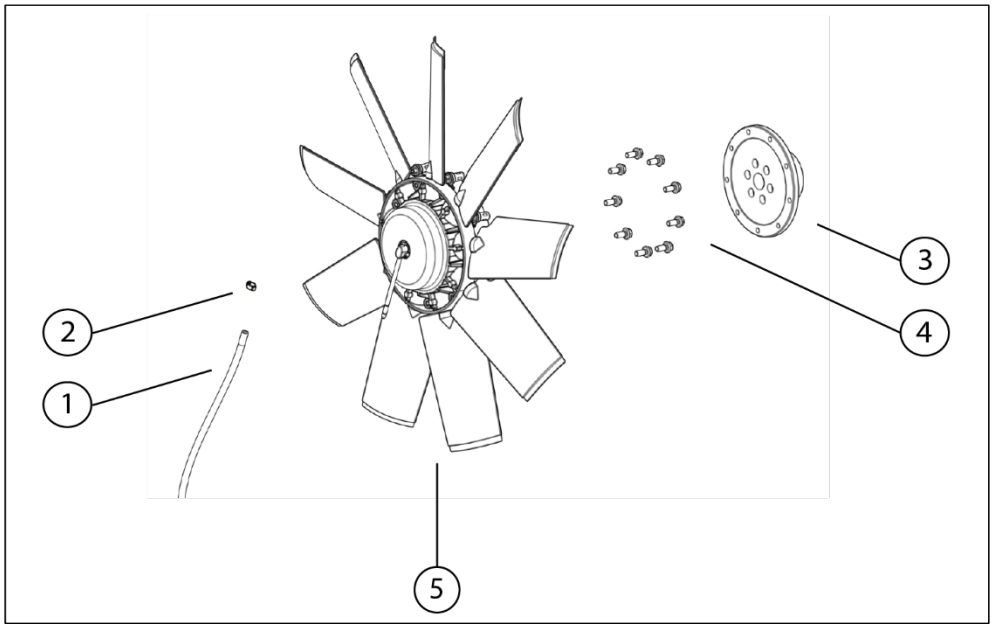
NOTE

Warns of situations in which failure to observe the instruction may result in property damage.

In addition, the information and safety rules provided by the manufacturer in the respective vehicle documentation must be observed.

1.3 Product description

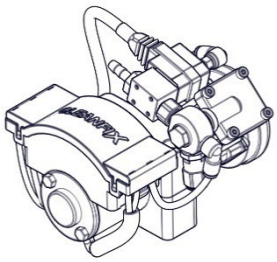
1.3.1 Pneumatic fan components



(1) Pressure hose
(2) Hose clamp
(3) Flange
(4) Flange screws
(5) Fan

1.3.2 Cleanfix® electrical components

Cleanfix® offers a number of control solutions. The reversing function is activated pneumatically or hydraulically and controlled electronically.

	For vehicles without compressed air system
Cleanfix® electrical component	Control Unit 4.0 
Reversing function	Timer 4.0 Switching from cooling to cleaning and back is controlled by the set interval, for example, every 30 minutes. This time period can be changed as desired via the Cleanfix control app. Intermediate cleaning can be performed manually at any time by pressing the push button or via the Cleanfix control app.

2 Safety

This chapter provides general safety information.
The individual chapters of the operating instructions also contain specific safety information that is not provided in the "Safety" chapter. Safety information should be observed:

- for your own safety
- for the safety of others
- to ensure machine safety.

When commercial vehicles are involved, a number of risks can arise due to improper behavior. For this reason, always work very carefully and not under time pressure.

2.1 Intended use

The product may be used only for the following purposes:

- For cooling commercial vehicles.
- For cleaning the fans of commercial vehicles.

Only persons authorized by the manufacturer may make modifications, alterations, and repairs.

Use should be exclusively under normal operating conditions, i.e.:

- temperature range is between – 30 °C to + 35 °C
- radiator package is cleaned and not clogged
- radiator grille is cleaned and not clogged.

Under any other conditions, the engine power could be partially throttled.

Under such conditions, the noise level during operation may be higher than is the case with the original system.

As a general principle, unauthorized modifications, alterations, or improper use exempt the manufacturer from liability for resulting damages.

2.2 Other regulations

In addition to these operating instructions, the respective national laws and regulations as amended must be observed (e.g., protective clothing, accident prevention regulations, and occupational health and environmental rules).

2.3 Safety information

⚠ WARNING!

Serious injuries or death can be caused if the vehicle rolls away!

An unsecured vehicle can run over or crush bystanders. This can result in serious injury or death.

- ➢ Turn off the vehicle.
- ➢ Remove the ignition key.
- ➢ Secure the vehicle to prevent it from rolling away.

Wearing loose-fitting work clothes may result in serious injury or death!

Loose-fitting clothes can become entangled in rotating parts.

- ➢ Wear work and protective clothing stipulated by the employer's liability insurance association.

Working on a machine while it is running may result in serious injury or death!

No work may be performed on the machine while it is running. Objects or persons may be caught, pulled in, or crushed.

- ➢ Work only on machines that have been turned off.

Modifications to the fan may result in serious injury or death!

Unauthorized modifications may impair the functioning and/or safety and the service life of the fan. Unauthorized modifications to the fan will render the manufacturer's warranty and liability null and void. This may result in damage to the machine as well as to serious injury or death.

- ➢ No modifications whatsoever may be made to the fan.

⚠ CAUTION!

Failure to resolve malfunctions may result in accidents or damage!

Operation of a defective fan or fan component may lead to accidents or damage.

- Immediately stop the machine.
- Shut down the machine.
- Secure the machine.
- Resolve the fault promptly or engage a vehicle shop.

Activating the reversing function with bystanders in front of the vehicle may result in accidents!

The fan generates strong air currents when it is in the cleaning position. Bystanders in front of the vehicle may be struck by flying dirt when the reversing function is activated.

- Nobody may be standing in front of the vehicle when the reversing function is activated.

Activating the reversing function in closed rooms may result in accidents!

The fan generates strong air currents when it is in the cleaning position. In closed rooms, this may generate dust and result in damage or accidents due to flying parts.

- Use the reversing function only in a safe location and only outside of closed rooms.

Damage caused by lines or tubes that are too loose or are attached to moving parts!

During travel, the installed lines and tubes are subjected to vibrations. As a result, lines or nearby parts may be damaged due to friction.

- All lines and tubes must be securely fastened and must not make contact with moving parts.

NOTE

Property damage may result if the fan is installed directly on the crankshaft or when the fan is driven by a spur gear!

Torsional vibrations from the crankshaft or the spur gear will damage the fan and may cause damage to the vehicle.

- Install Cleanfix® vibration dampers between the fan and crankshaft or spur gear.

Reversing the fan while the vehicle is in the red temperature range may result in property damage!

The cooling effect is interrupted when the reversing function is activated. Reversing the fan while the machine is in the red temperature range causes the engine to overheat.

- Do not reverse the fan when the machine is in the red temperature range.
- Park the vehicle and open the hood so that the vehicle can cool down.

3 Required tools

Flange installation

- Magnetic or clamp type dial gage
- 150 Nm torque wrench

Fan installation

- 20 Nm torque wrench
- Locking pliers
- Standard tools
- Collecting tray for coolant

Pressure hose installation and connection

- Lubricant
- Hose clamp pincers
- Standard tools

Electrical component installation and connection

- Standard power and hand tools
- Electric drill
- Stepped cutter or conical drill
- 7 mm drill
- 10 mm drill
- Multifunction tool

4 Removing the manufacturer's components

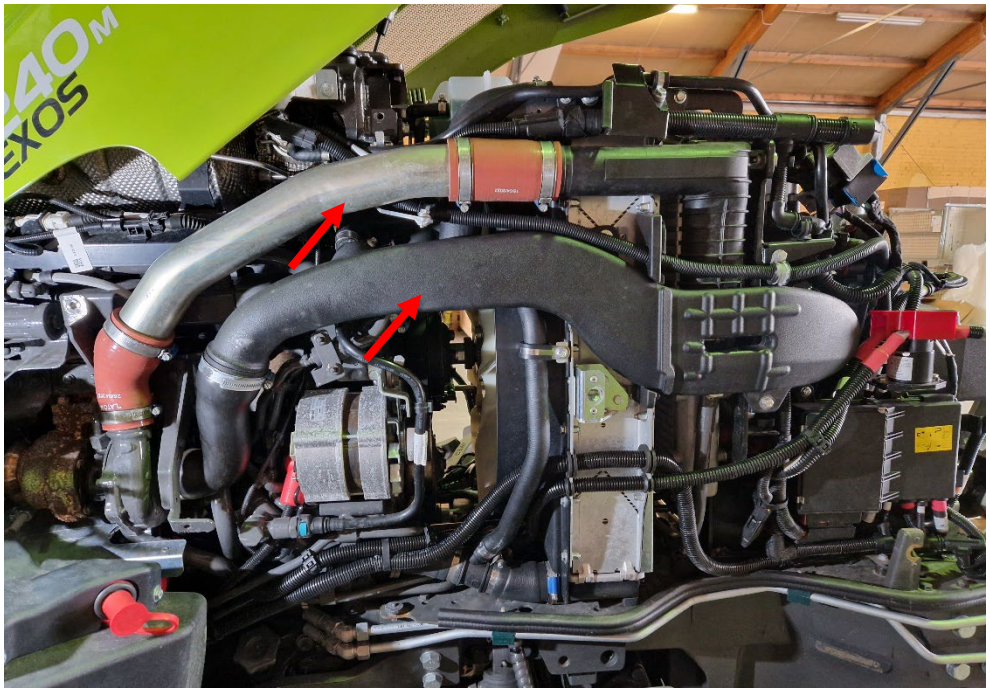
⚠ CAUTION!

Risk of injury due to the hot engine!

A hot engine can burn hands or other body parts.

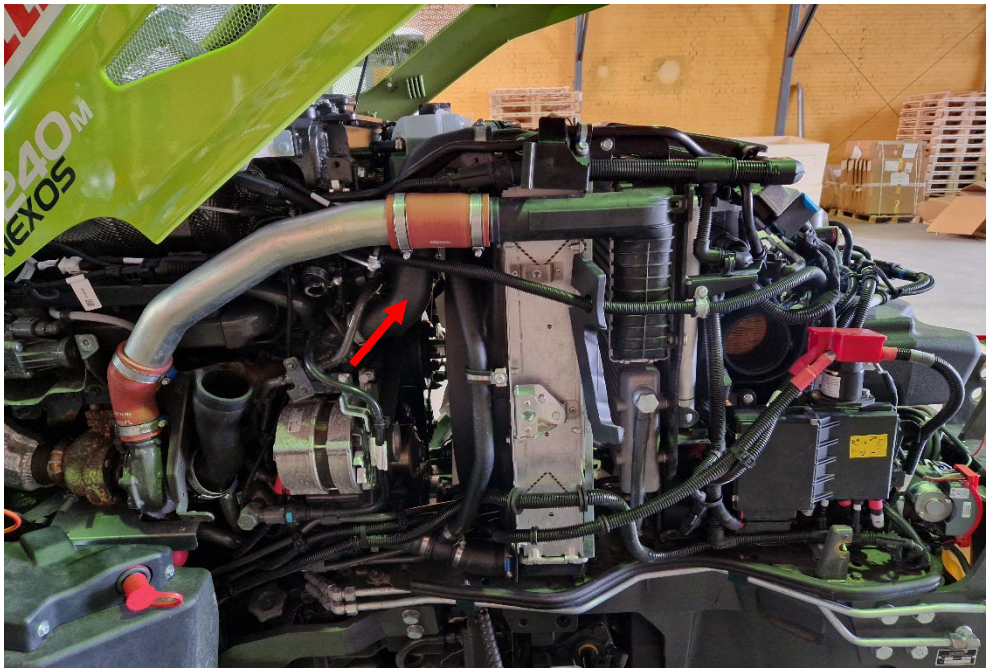
- ➢ Turn off the engine.
- ➢ Allow the engine to cool down.
- ➢ Remove the ignition key.
- ➢ Disconnect the battery.

- ▶ Make sure that the engine is turned off.
- ▶ If necessary, remove the fan guard and safety components to gain access to the manufacturer's installed fan.
- ▶ Loosen the drive belt of the original fan at the alternator.
- ▶ Dismantle the air filter intake duct.
- ▶ Dismantle charge air pipe.

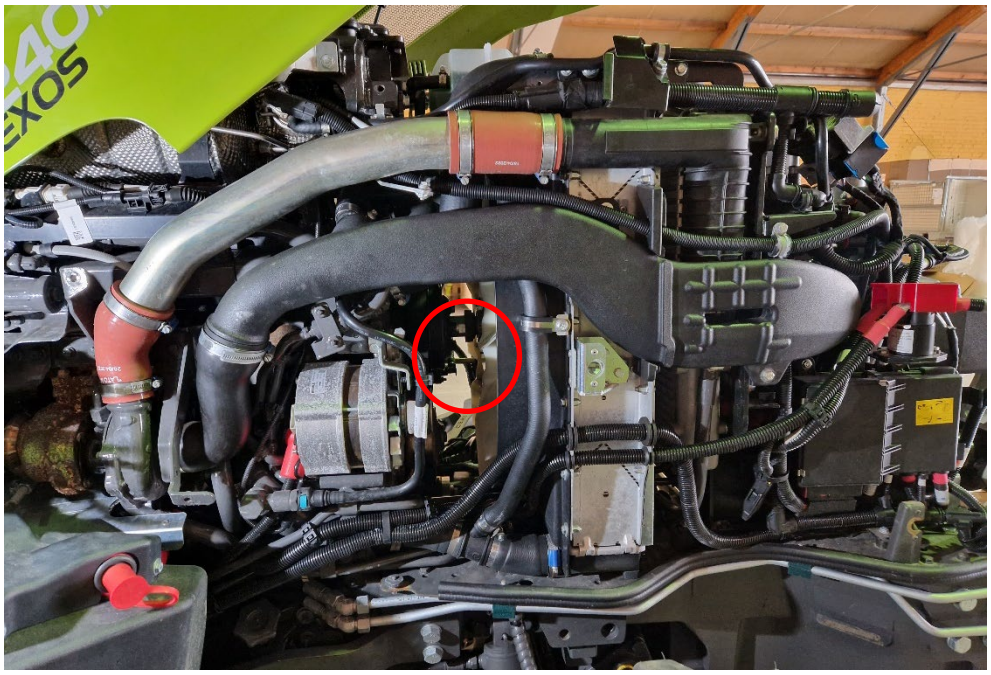


- ▶ Drain coolant.

- Dismantle coolant hose.



- Detach the shroud from the radiator.
- Insert the pre-cut cardboard between the shroud and the radiator to protect the radiator.
- Remove original fan incl. intermediate piece (left-hand thread).



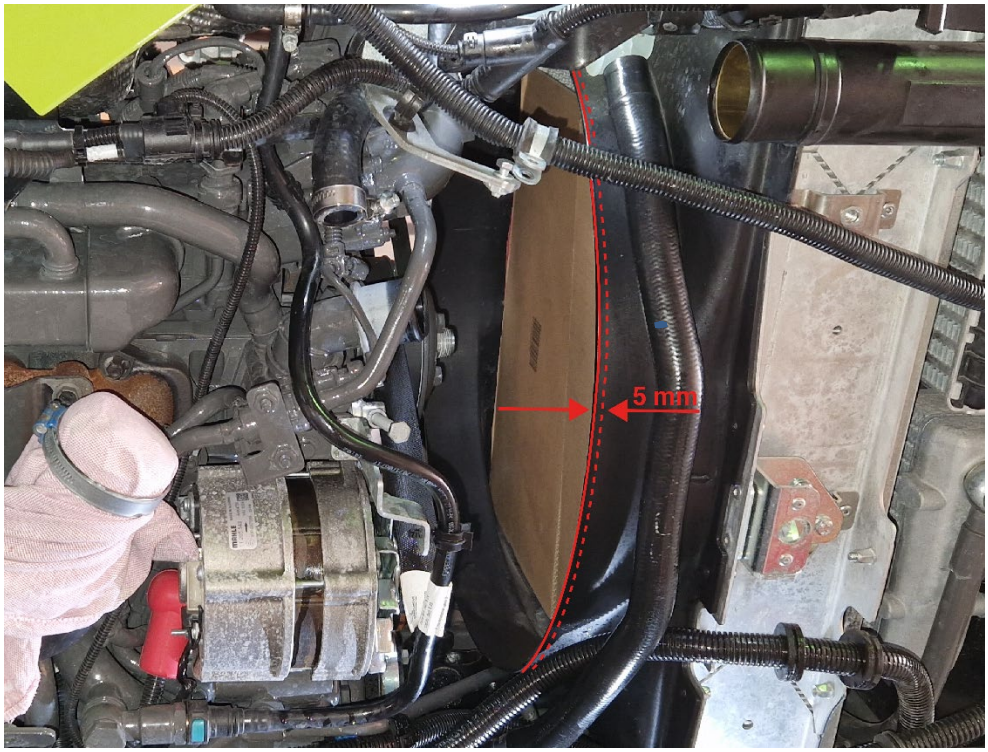
- Remove other fan accessories as required.

Read and observe the manufacturer's vehicle manual before removing the manufacturer's fan.

5 Installing the Cleanfix® fan components

5.1 Preparing the original shroud

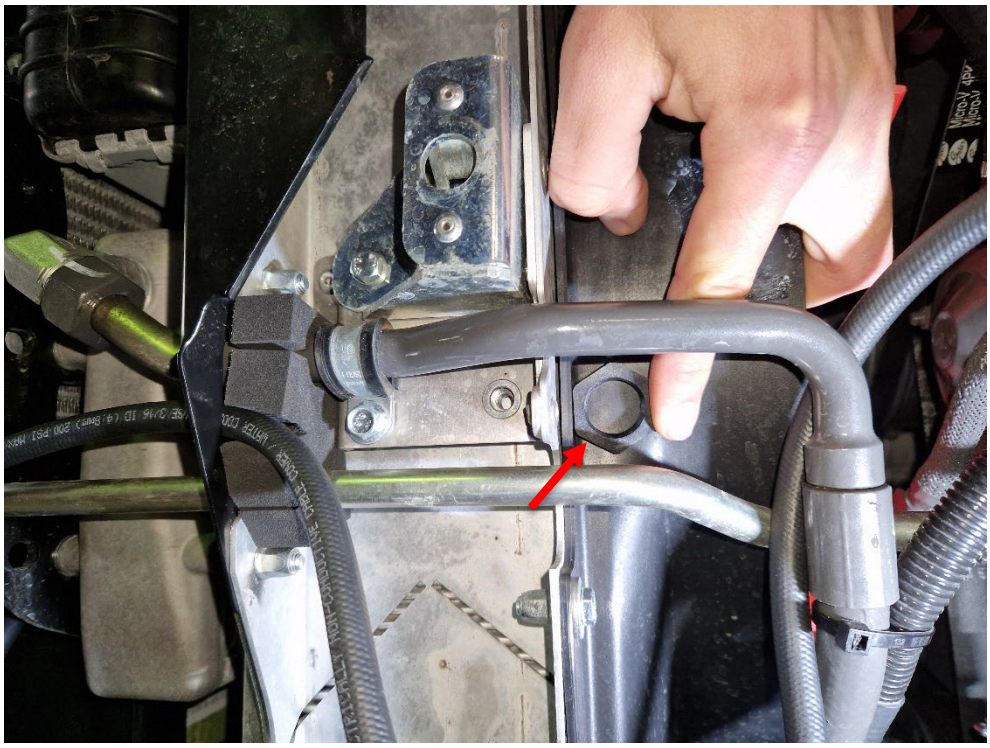
- Shorten the shroud by 5 mm.



When shortening the shroud, pay attention to nearby components.

➢ Use the multi-purpose tool.

- On the left side of the vehicle, position the strain relief approx. 14 mm from the edge, centered between the cables.



- Drill a 20 mm hole.

NOTE

Material damage due to drilling of the strain relief!

When drilling the strain relief, components located behind it may become damaged.

➢ Cover the rear side of the drilling area with a metal plate.

- Insert the strain relief into the shroud from the outside and screw on the nut from the inside.
- Hand-tighten the strain relief.

5.2 Preparing the Cleanfix fan

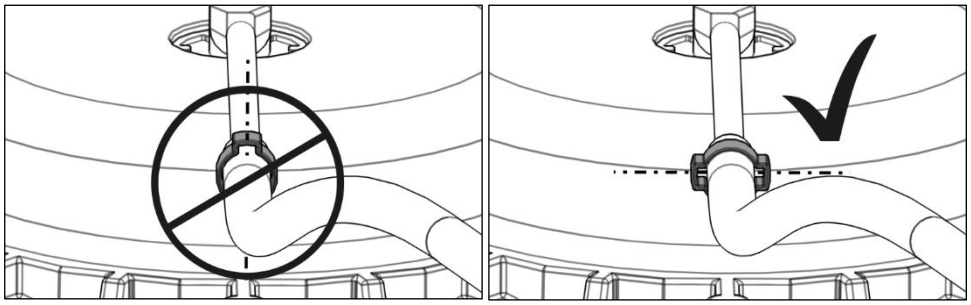
- Slide the pressure hose over the air inlet pipe of the rotating union and fasten it with a hose clamp.
- Make sure that the hose clamp is positioned horizontally.

NOTE

An incorrectly mounted hose clamp may cause collision!

The hose clamp must be parallel to the fan as pictured. If the ears of the hose clamp point up and down, the fan blades can hit the hose clamp during operation.

➢ Rotate the hose clamp using pliers.

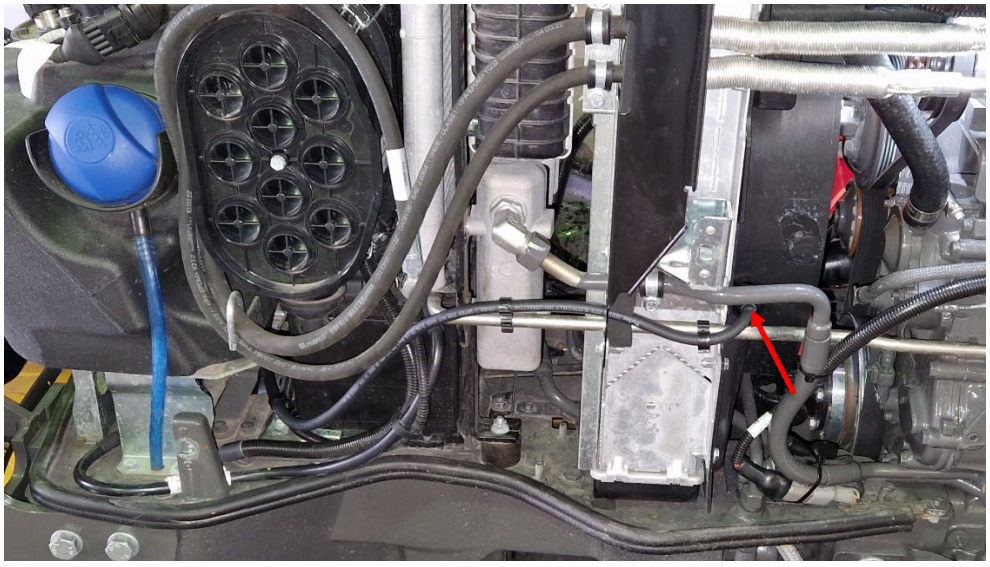


Property damage due to bending of the air intake tube!

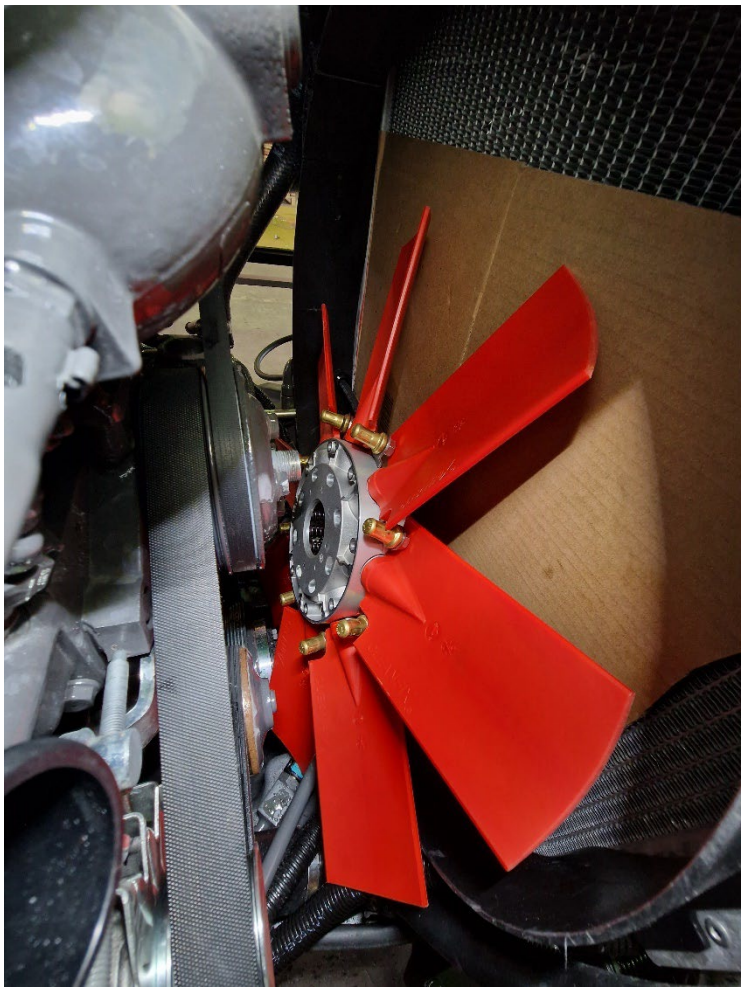
If the air intake tube of the air intake assembly is bent down toward the blades during installation, the fan blades will hit the hose during operation.

➢ Manually bend the air intake tube of the air intake assembly into the original position.

- Pull the pressure hose through the strain relief from inside.

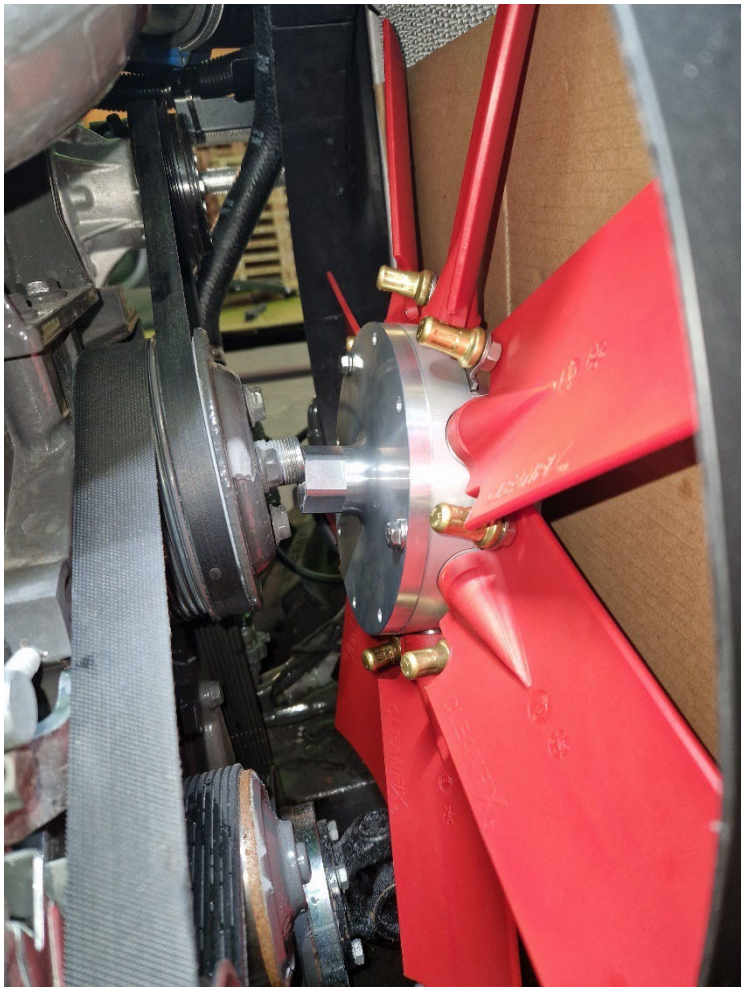


- Clean the fan drive mounting surface for the flange to remove all dirt and rust.
- Place the fan in the shroud.



5.3 Installing the Cleanfix flange

- Firmly fasten the flange to the fan using at least 2 screws.



- Apply threadlocker (low/medium strength, e.g. Loctite 243) to the thread of the drive shaft.
- Screw flange with fan onto the drive shaft (left-hand thread).

NOTE

Material damage caused by fastening of the flange!

The flange is made of aluminum and can be damaged during installation.

➢ Carefully screw flange to the drive shaft.

- Remove fan from the flange (flange remains on pulley).
- Tighten the flange to 150 Nm torque.

5.3.1 Checking the flange axial and radial circular runout

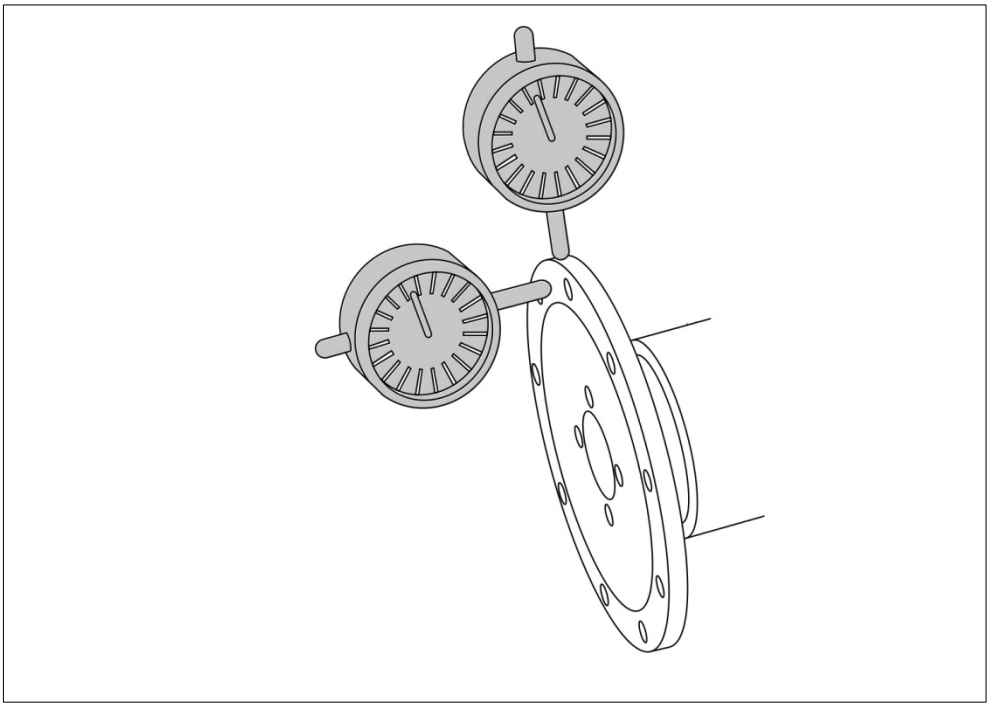
⚠ WARNING!

Property damage due to axial and radial circular runout!

Imbalances damage the fan and may result in vehicle damage and serious injury.

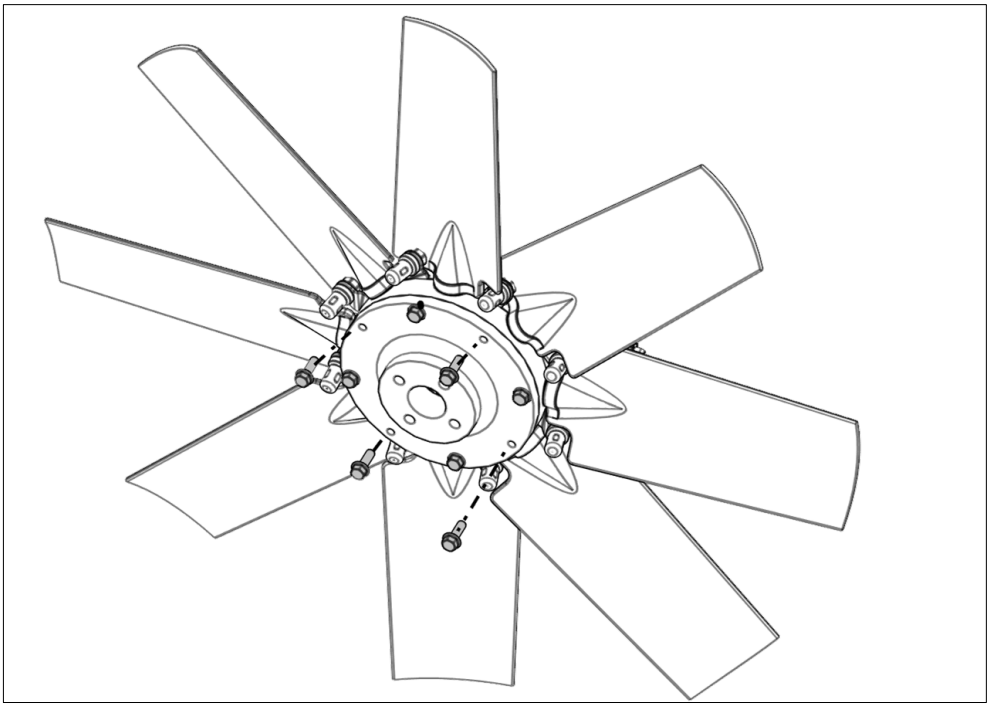
- The radial and axial runout must be checked using a dial gage and must not exceed 0.1 mm.
- Check the fan drive mounting surface and the flange for contamination and clean accordingly.
- If necessary, rotate the flange to the next hole and mount and measure again.

- Loosen any belts that drive the fan pulley. This will allow for a more accurate axial and radial circular runout measurement.
- Check the axial and radial circular runout using a dial gage. The axial and radial circular runout must not exceed 0.1 mm (0.004").



5.4 Installing the Cleanfix reversible fan

- Attach the fan to the flange using the supplied mounting screws.
- Tighten the mounting screws (8x) to 12 Nm in a crosswise sequence.

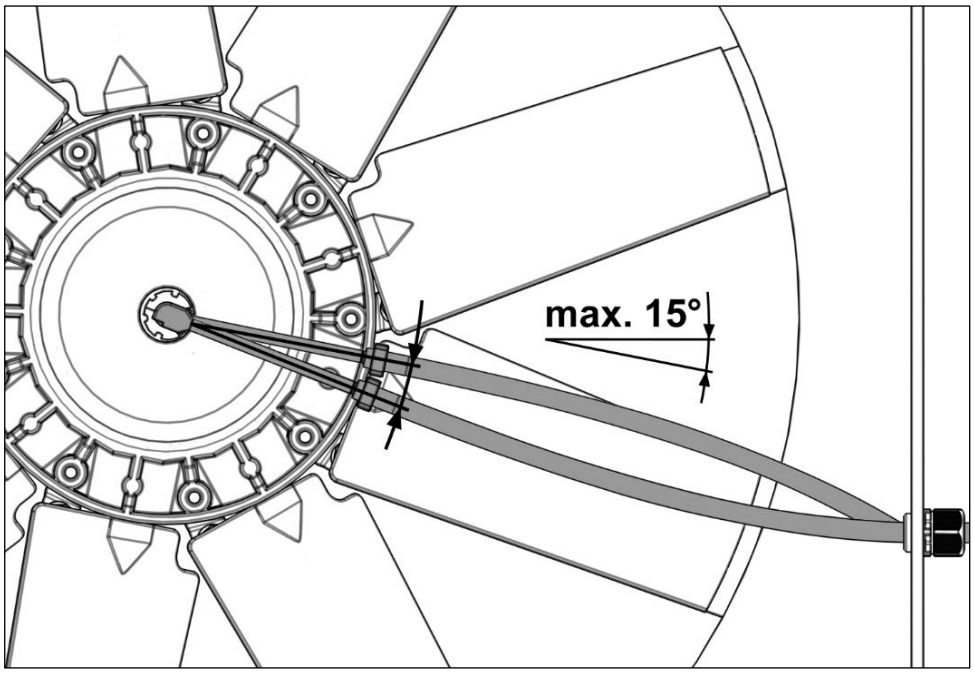


- Tighten the pressure hose until it no longer sags but is not under tension, and tighten the strain relief.

NOTE

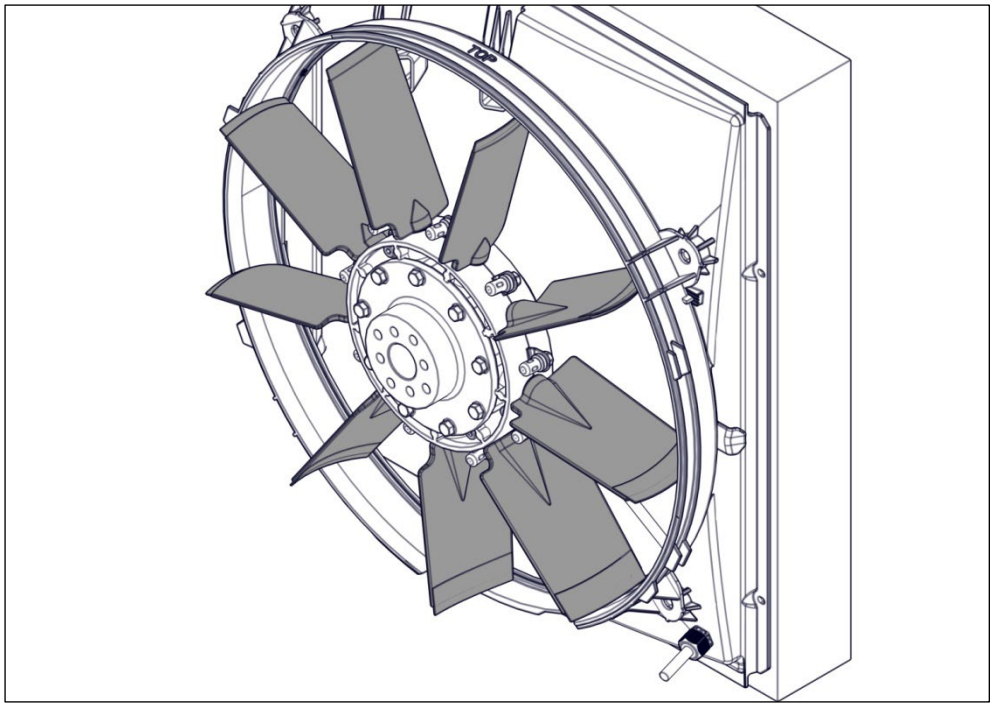
If the pressure hose is tensioned too tightly, the seals at the air intake assembly will wear and the fan will leak. For an optimum result, it must be possible to rotate the air intake assembly by maximum 15°.

- Make sure that the pressure hose neither makes contact with the fan during operation nor is tensioned too tightly.



5.4.1 Checking the smooth movement of the Cleanfix® reversible fan

- Supply compressed air (max. 10 bar or 140 psi) to the fan until the blades turn to their cross position.
- Disconnect pressure hose with locking pliers to trap the air in the fan.
- Remove the pressure hose from the compressed air supply.



The depicted representation is an example

NOTE

Property damage due to rotation of the fan with tight drive belts!

Rotating the fan with force when the drive belt is tensioned can damage the fan and the drive.

➢ Loosen the drive belts.

- ▶ Manually rotate the fan.
- ▶ Make sure that the blades do not come into contact with any objects.
- ▶ Make adjustments as needed.
- ▶ Remove the locking pliers to vent the fan.
- ▶ Re-tension the drive belts.

6 Installing manufacturer components

⚠ WARNING!

Pulling in of loose objects!

Loose objects can be pulled into the fan during operation, which may result in damage to the fan and vehicle and cause serious injury!

➢ Remove loose objects or secure them with plastic ties.

- Remove pre-cut cardboard.
- Fasten the shroud to the radiator.
- Install coolant hose.
- Fill coolant up to the mark in the expansion tank (total fill quantity: 15 liters, Agricool OAT 0).
- Reassemble charge air pipe and intake duct.
- Install additional components if necessary.
- Check coolant level after test run, top up if necessary.

7 Mounting the Cleanfix® electrical components

⚠ CAUTION!

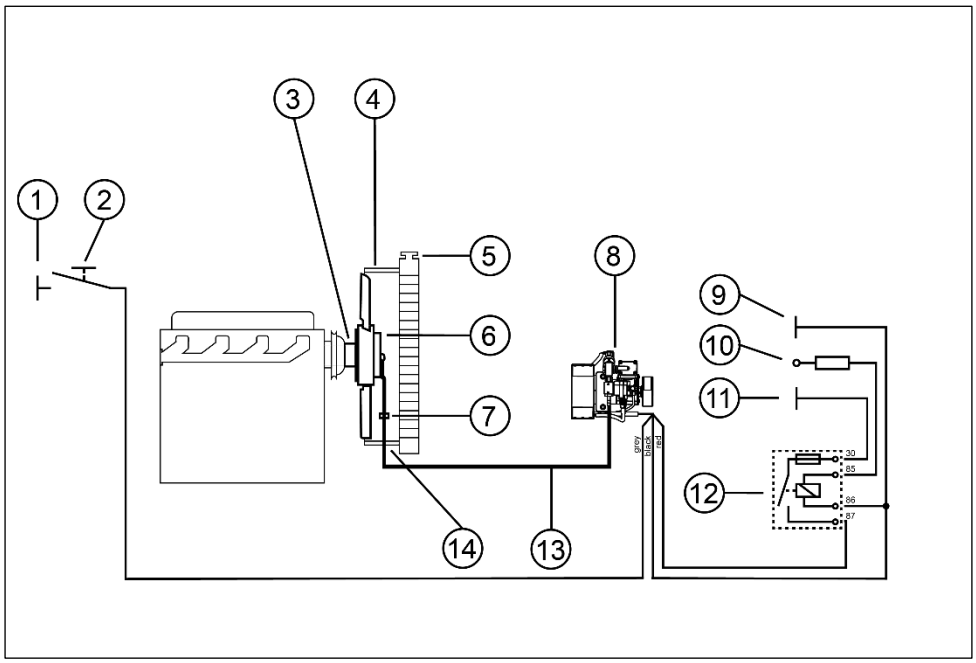
Damage caused by lines or tubes that are too loose or are attached to moving parts!

During travel, the installed lines and tubes are subjected to vibrations. As a result, lines or nearby parts may be damaged due to friction.

- ➢ All lines and tubes must be securely fastened and must not make contact with moving parts.

The Cleanfix® electrical components are installed as described in the sections that follow. The section corresponding to the version delivered must be observed.

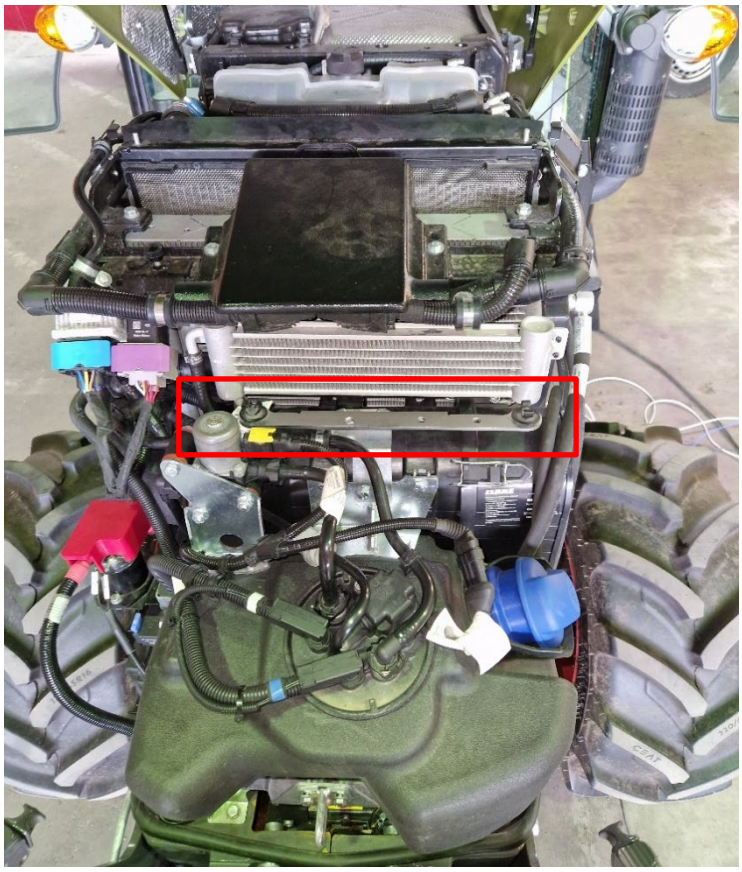
7.1 Cleanfix® control unit / for vehicles without a compressed air system



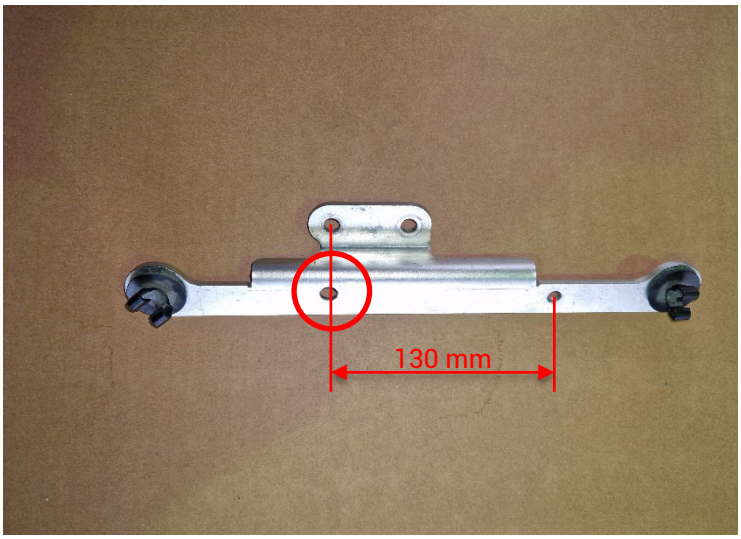
(1) Vehicle ground [gray cable]
(2) Cleanfix® switch (push button)
(3) Flange
(4) Shroud
(5) Radiator
(6) Cleanfix® reversible fan
(7) Hose clamp
(8) Cleanfix® control unit
(9) Vehicle ground (terminal 31) [black cable]
(10) Keyed power (terminal 15) [black cable]
(11) Power supply battery (terminal 30)
(12) Relay
(13) Pressure hose
(14) Strain relief

7.2 Installing the control unit

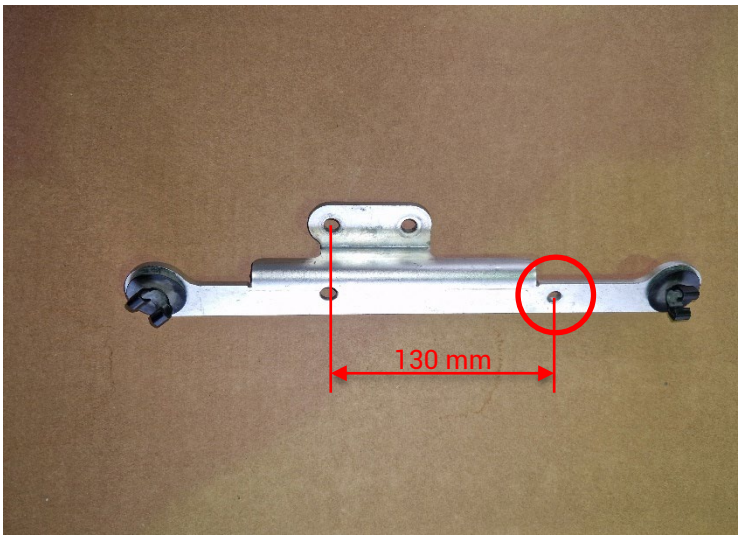
- Unscrew the sheet metal holder.



- Drill the first 7 mm hole in the sheet metal holder.

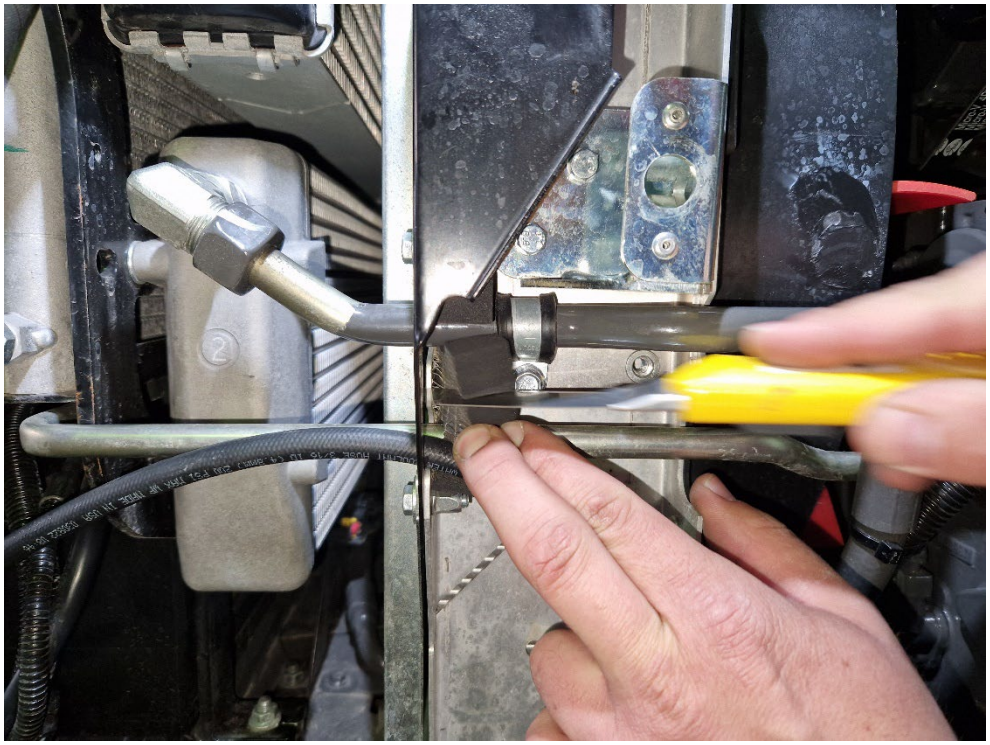


- Drill the second 7 mm hole in the sheet metal holder at a distance of 130 mm.

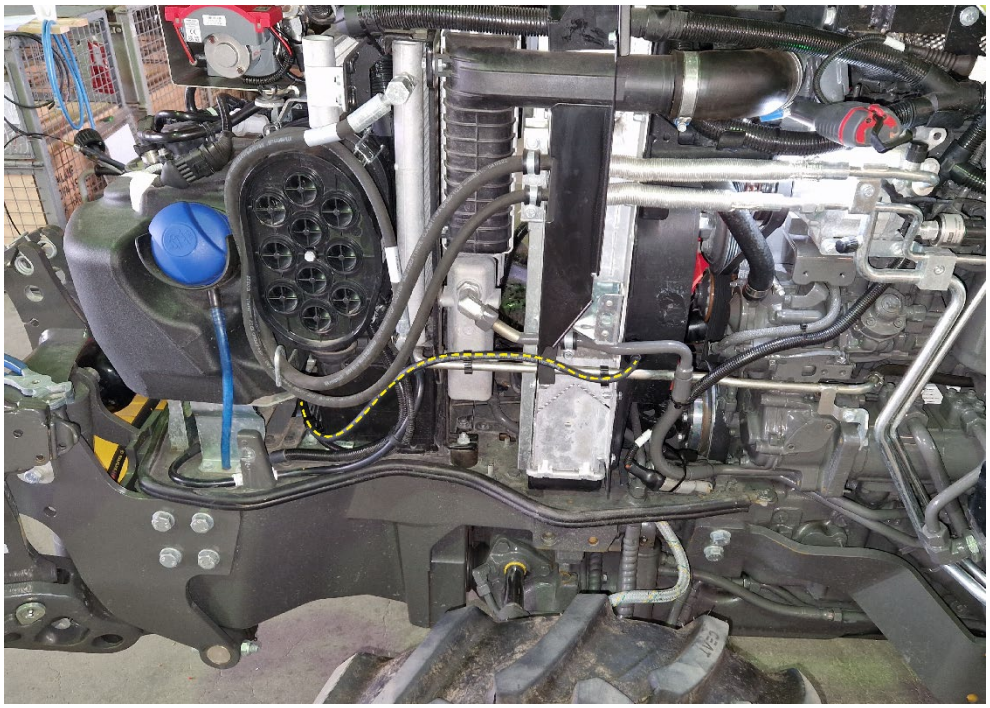


- Bolt the sheet metal holder back on.
- Fasten the control unit cover to the sheet metal holder using the screws supplied.

- Cut a slot in the foam on left side of vehicle at the coolant radiator.



- Feed pressure hose through foam and sheet metal holder and lay as shown.
- Fasten hose with double corrugated pipe holder.



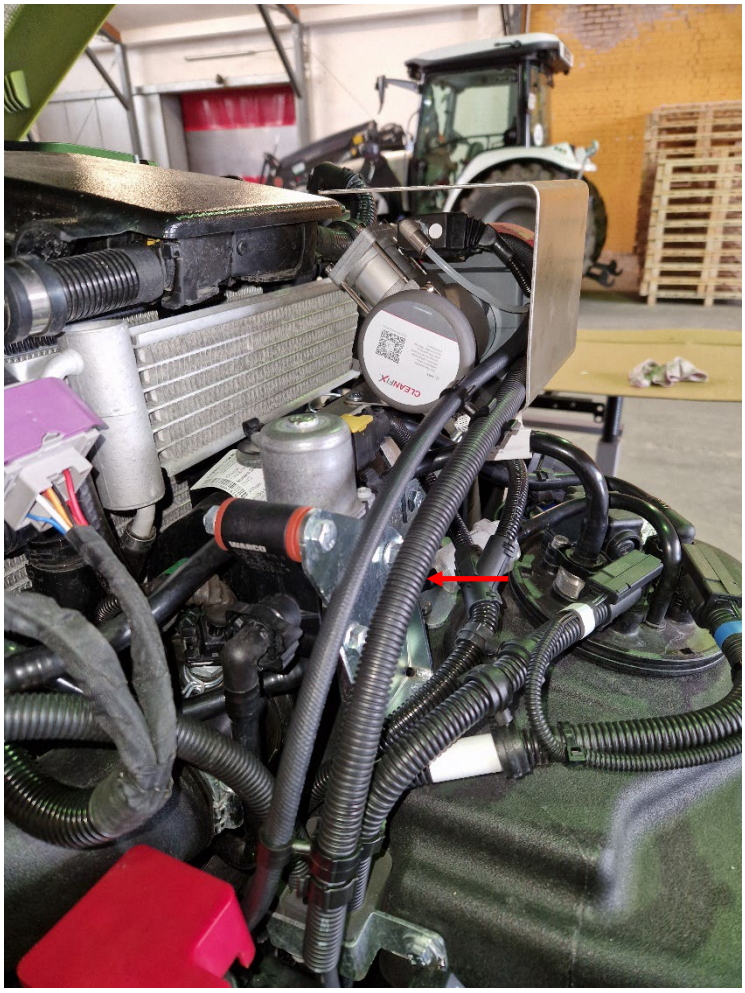
- Place control unit in sheet metal holder.
- Mark the hose length.

- Cut the hose.
- Remove the control unit.
- Fasten the hose to the control unit using the hose clamp.
- Loosen the nuts of the control unit screws.

- Place the control unit with hose in the sheet metal holder.
- Fasten screws with nuts to sheet metal holder.

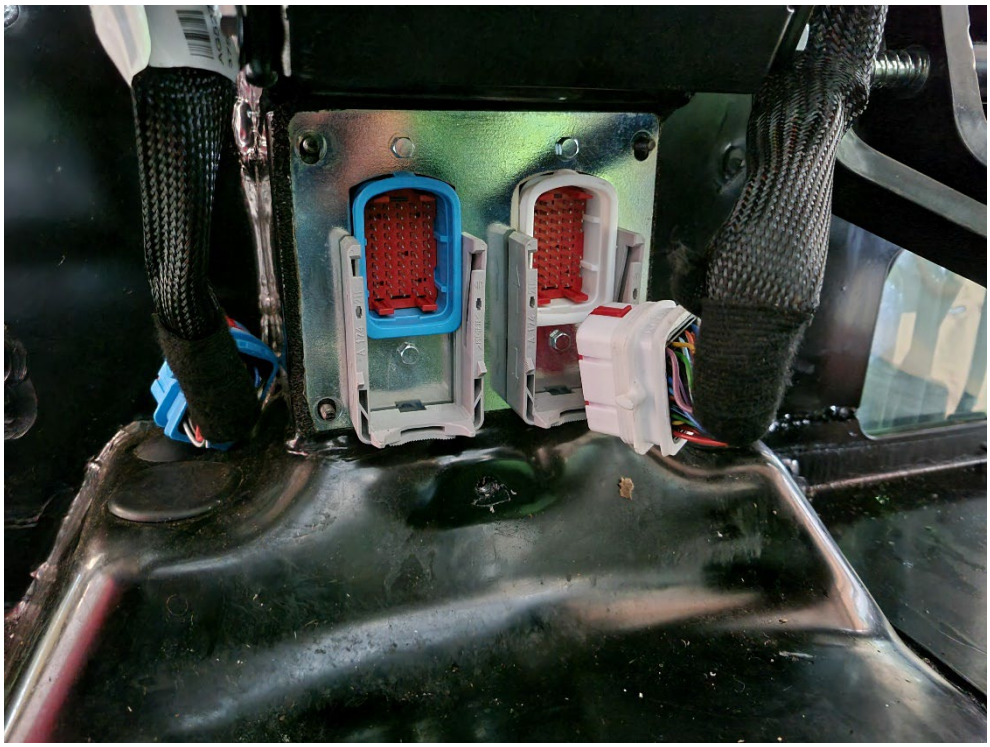
7.3 Laying the cable

- Lay cable from control unit to relay.

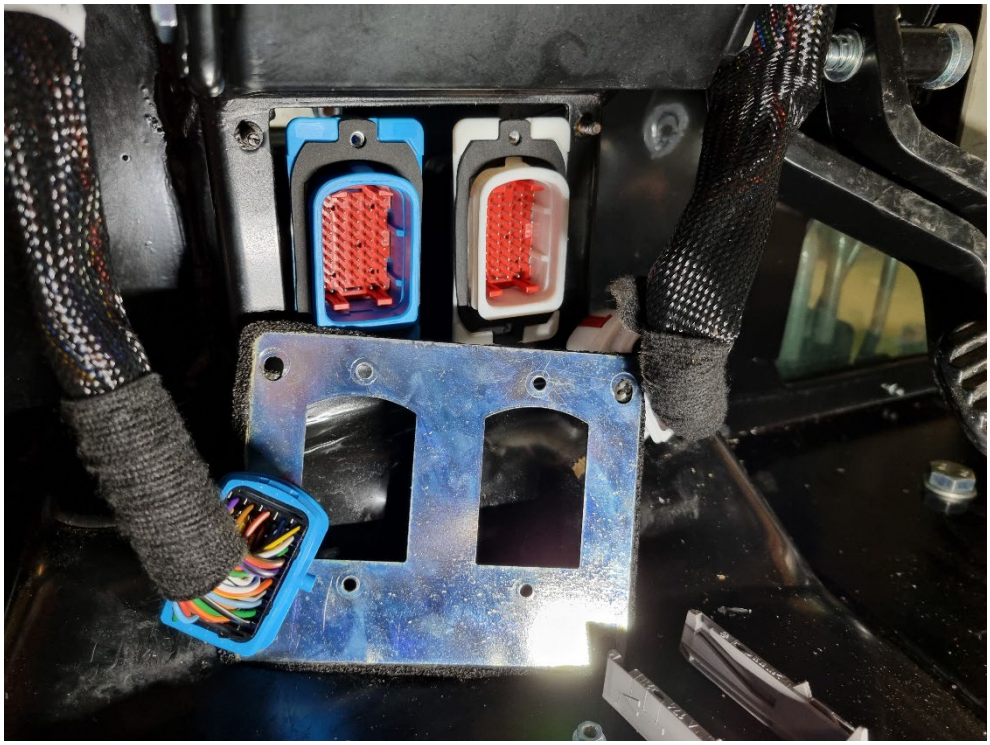


- Remove the right and rear bracket in the driver's cab.

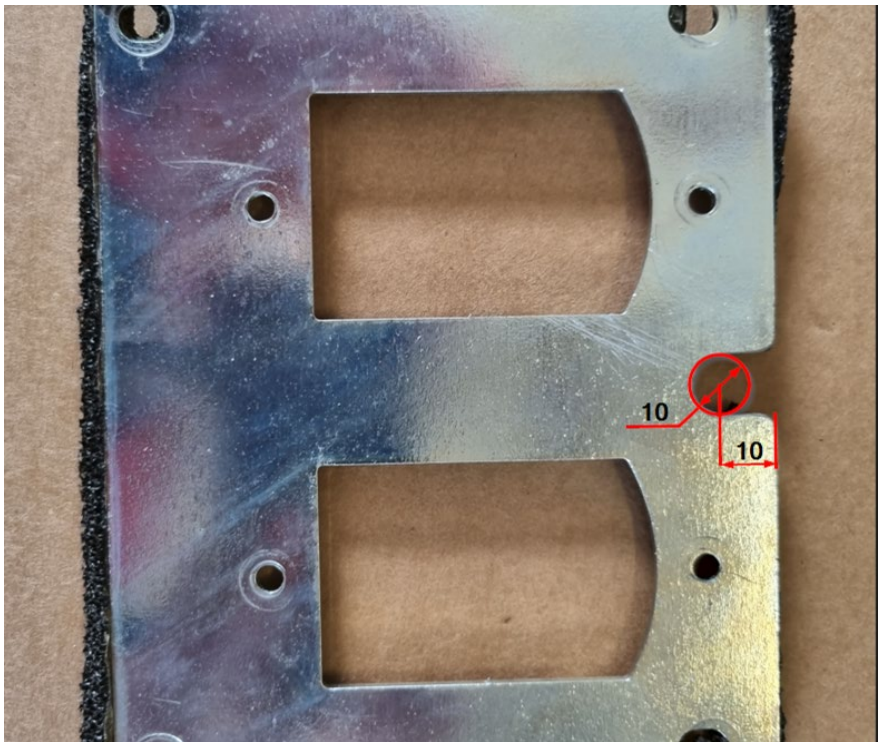
- Unscrew and unplug the connector between the pedals.



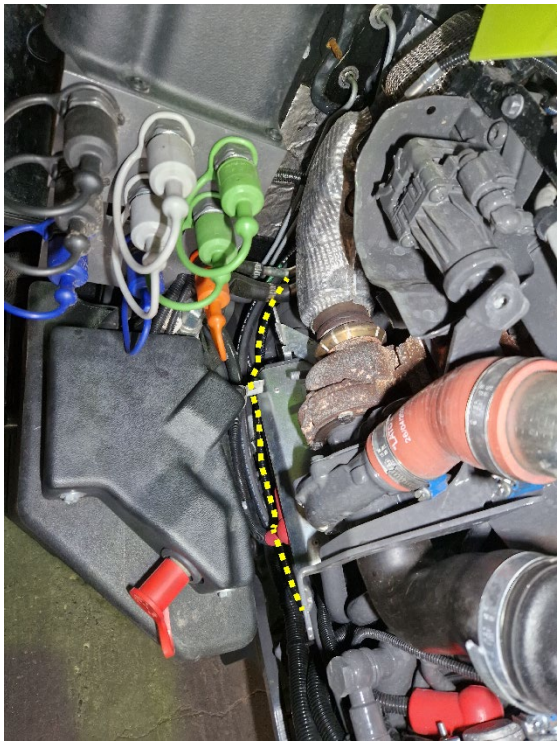
- Unscrew plate.

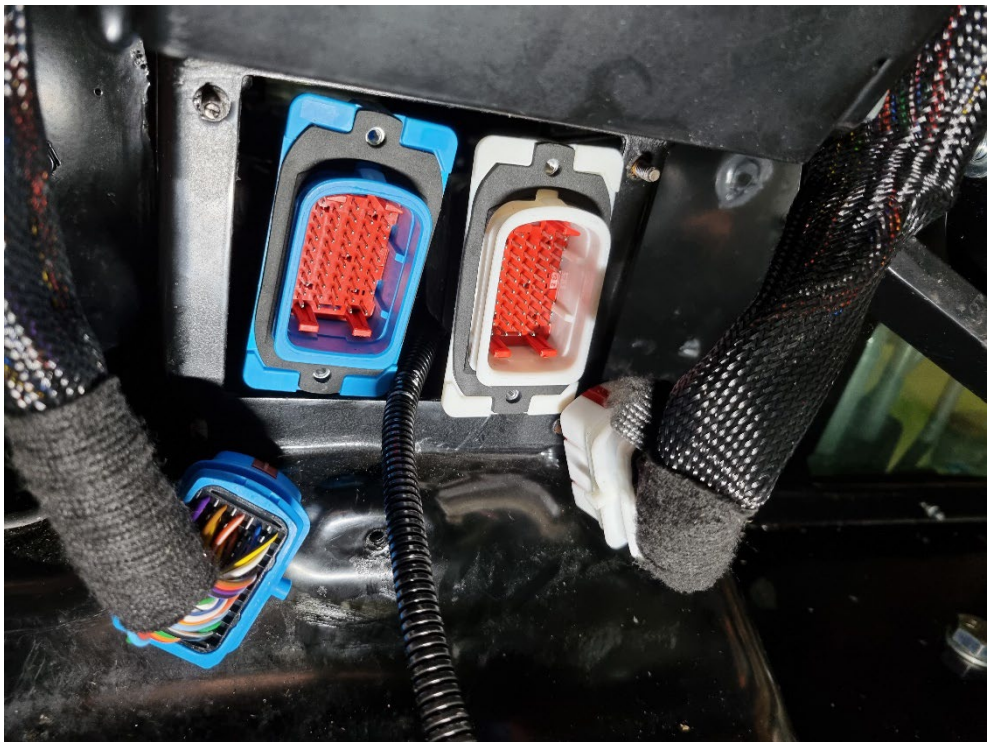


- Cut slot in plate: 1 cm from edge, 5 mm radius.



- Lay cable with 4-pin Superseal connector to the driver's cab.

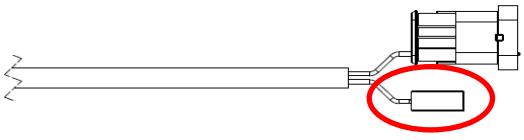




7.4 Mounting the push button

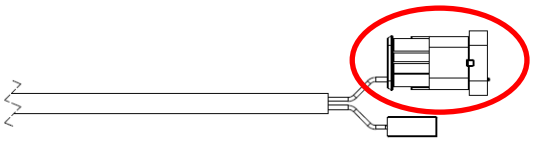
- Cut recess for push button (37x21 mm).

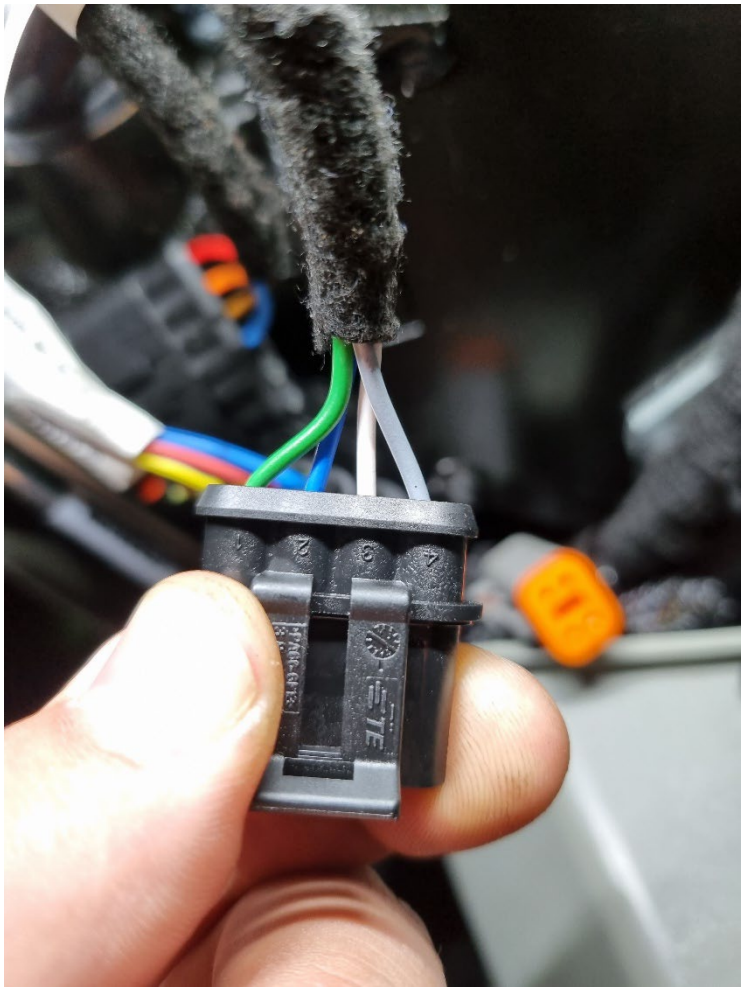
- Insert push button.
- Connect the flat plug sleeve to the push button.




DO NOT MIX OIL

- Connect Superseal connector to freely available 4-pin Superseal connector.





Pin assignment:

Pin 1:	Green/white
Pin 2:	Blue/white
Pin 3:	White/black
Pin 4:	Gray/white (terminal 15)

Remove 1 dummy connector.

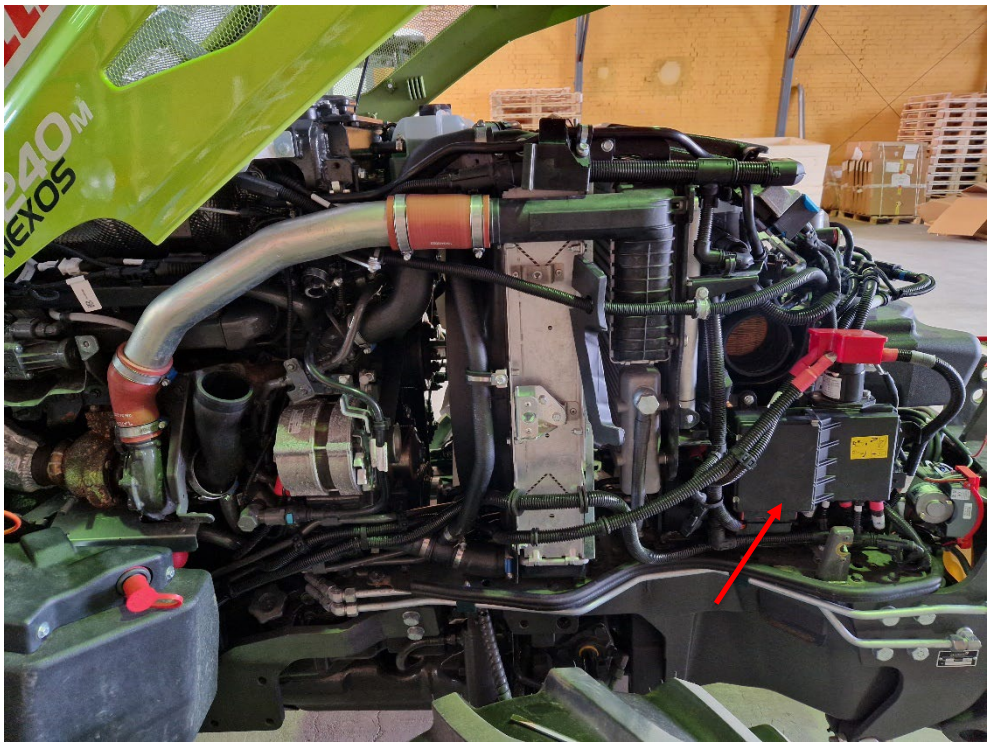
- Connect the push button to the vehicle ground.

- Thread cable through slot and screw on plate between pedals.
- Mount the connector and screw it on.

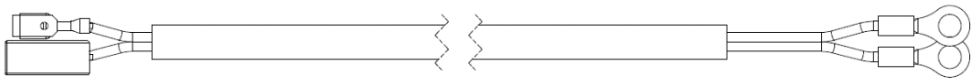
- Attach the brackets.

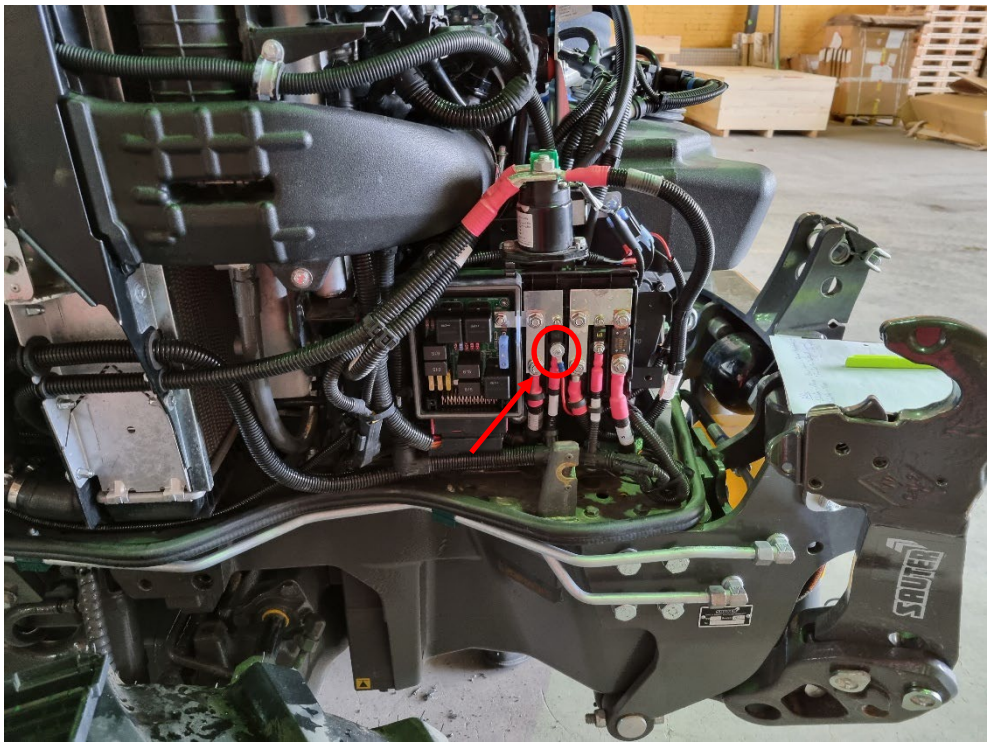
7.5 Connecting the relay

- Remove the control unit cover.

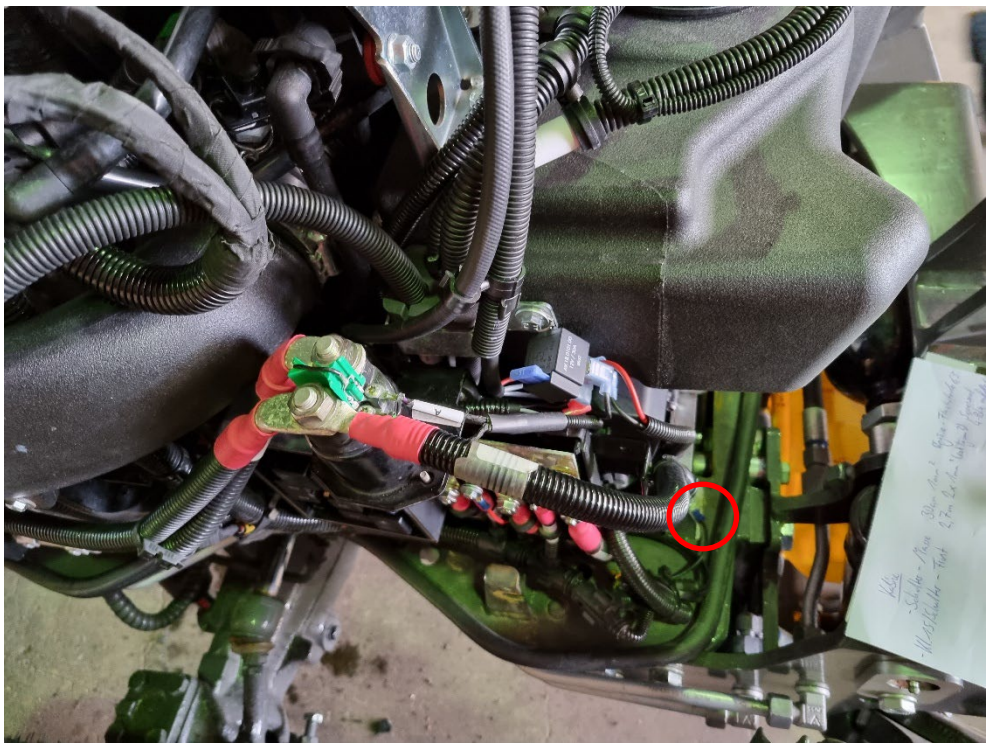


▶ Connect the red cable to the positive terminal using the ring lug.

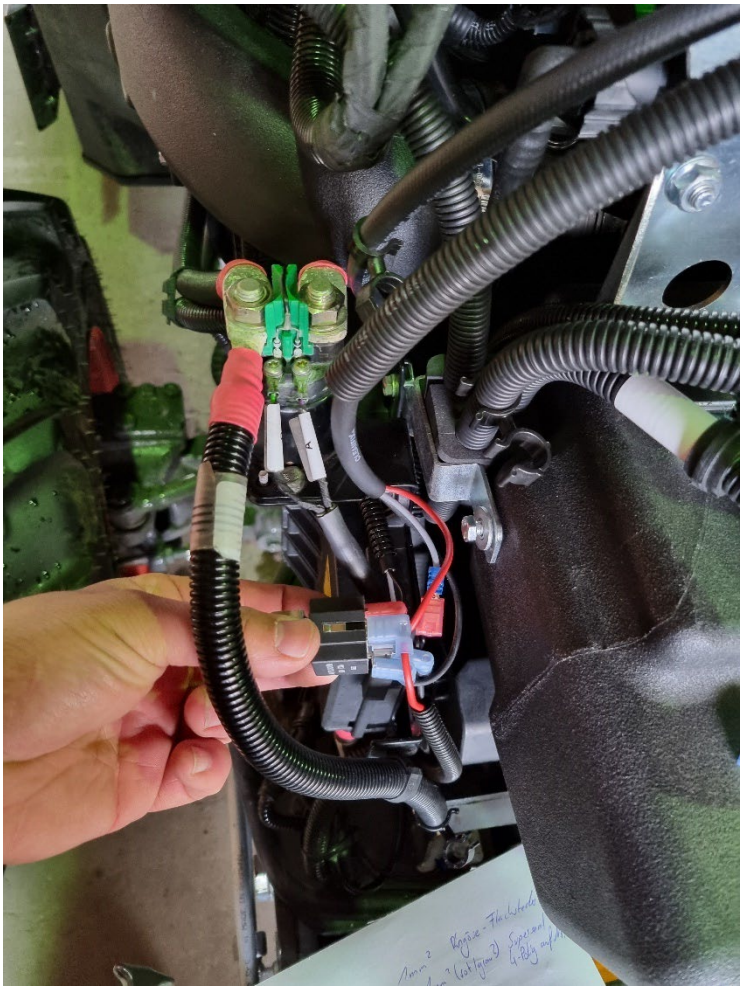




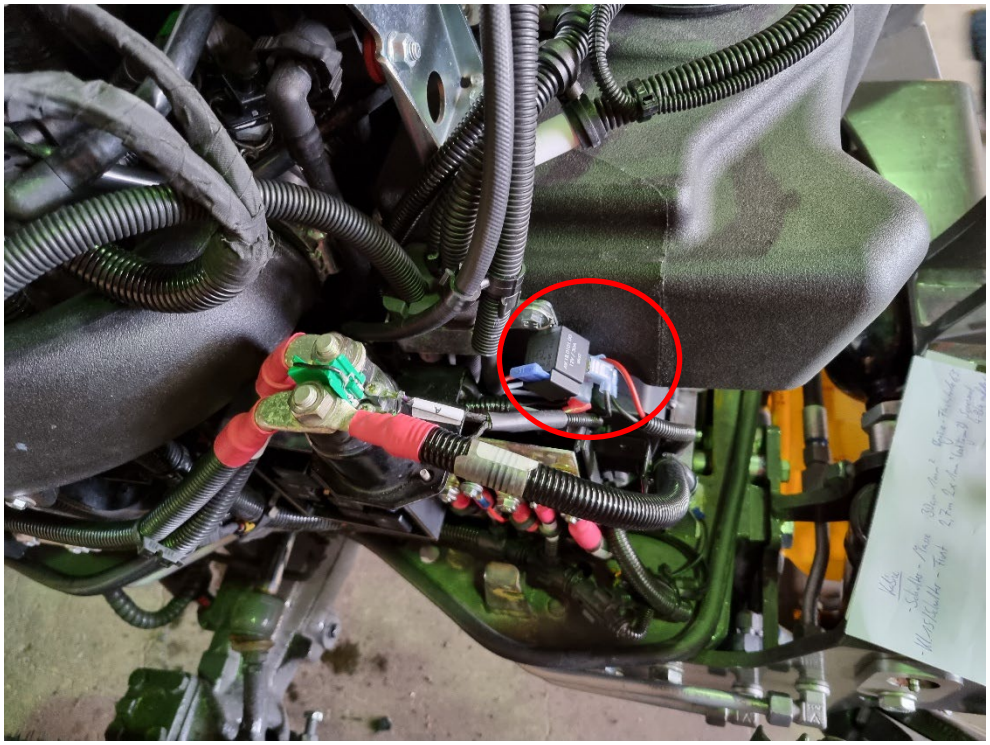
▶ Connect the black cable to the ground using the ring lug.



- Connect the red cable for the power supply to terminal 30 of the relay supplied.
- Connect the black cable with the plug distributor for vehicle earth to terminal 86 of the relay supplied.
- Connect the black cable of the control unit to the plug distributor.
- Connect the black cable from the driver's cab to terminal 85 of the relay supplied.
- Connect the red cable for the control unit to terminal 87 of the relay supplied.



▶ Connect the relay to the screw on the AdBlue tank.

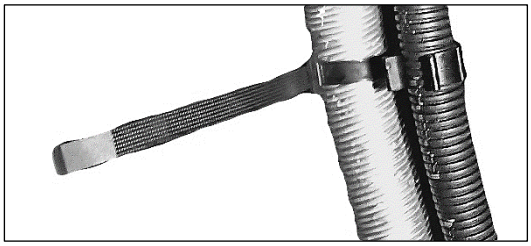


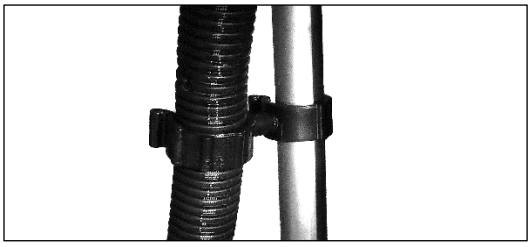
NOTE

Property damage due to contact of the corrugated tube with hot pipes!

➢ The minimum clearance of 10 mm (0.4") to other cables and tubes must be observed.

▶ Use the supplied rotatable corrugated tube holders to attach the corrugated tube to adjacent cables or tubes.





⚠ CAUTION!

Damage caused by lines or tubes that are too loose or are attached to moving parts!

During travel, the installed lines and tubes are subjected to vibrations. As a result, lines or nearby parts may be damaged due to friction.

- ➢ All lines and tubes must be securely fastened and must not make contact with moving parts.

8 Operation

8.1 Initial start-up

⚠ WARNING!

Flying parts may result in serious injury or death!

Loose parts can be drawn in by the fan and may cause serious injury or death as well as machine damage.

- ➢ Remove tools and loose objects.
- ➢ Reliably secure components near the fan.

- ▶ Start the engine.
- ▶ Reverse the fan three times in neutral.
- ▶ Reverse the fan 3x at approx. 1400 rpm.
- ▶ Reverse the fan 3x at approx. 1800 rpm.

8.2 Operation (Cleanfix control app)

⚠ WARNUNG!

Using the app while driving may cause major injuries or death!

Using the app in traffic on public roads impairs traffic safety.

- ▶ Do not use the app in traffic on public roads.
- ▶ Do not reverse the fan in traffic on public roads.

⚠ CAUTION!

Flying dirt may cause injuries!

Persons near the radiator may be hit by flying dirt.

- ▶ Before activating the reversing function, make sure that nobody is in the vicinity of the radiator.
- ▶ Before activating the reversing function, make sure that the machine is not in a closed space.

NOTE

Reversing the fan while the machine is in the red temperature range may result in damage!

The cooling effect is interrupted when the reversing function is activated. Reversing the fan while the machine is in the red temperature range causes the engine to overheat.

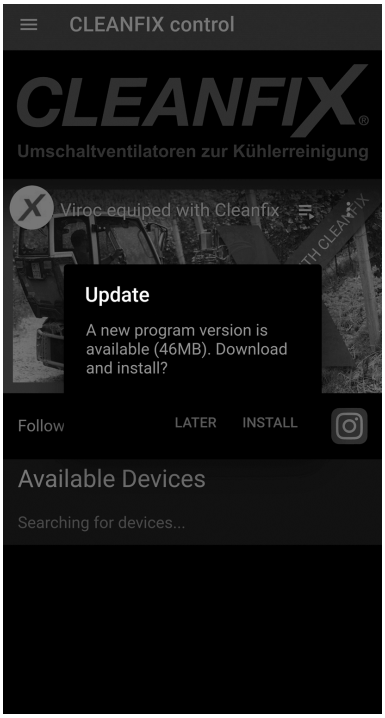
- ▶ Do not reverse the fan when the machine is in the red temperature range.
- ▶ Park the machine and open the hood so that it can cool down.

Cleanfix offers an app that can be used to operate the electronic components with timer and to make settings.

The Cleanfix control app provides the following functions:

- Switching between automatic and manual operation
- Setting the cycle time
- Pausing cleaning
- Pairing with the device
- Monitoring the air filter status
- Performing manual cleaning
- Performing a system check

8.3 Downloading the app



- Open the app store on your mobile device.
- Search for Cleanfix control app in the app store.
- Download the Cleanfix control app.
- Open the Cleanfix control app.

Mobile device access

So that the app can access certain functions on your mobile device, you must accept the permissions.

The app requires Bluetooth access. Access might not be available in every country.

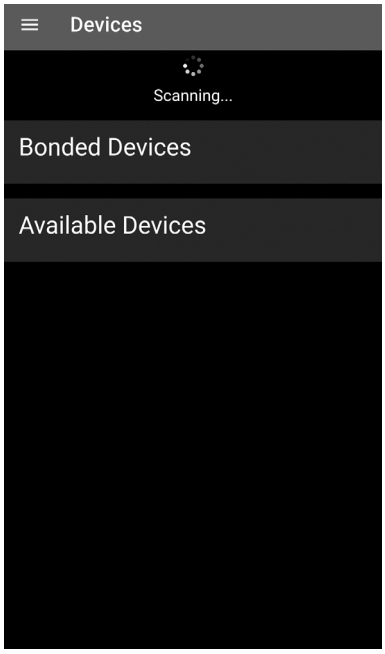
- Follow the instructions on your mobile device.
- If necessary, install the update.

Updates

To ensure that the app will function optimally and is the current version, install all updates.

8.4 Pairing the device

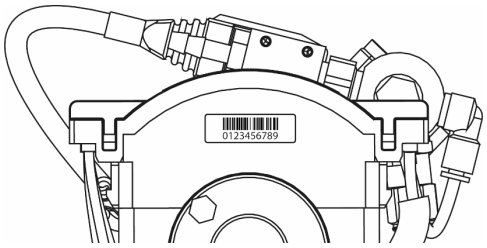
- ▶ Tap the ☰ button to open the menu.
- ▶ Select [Devices].

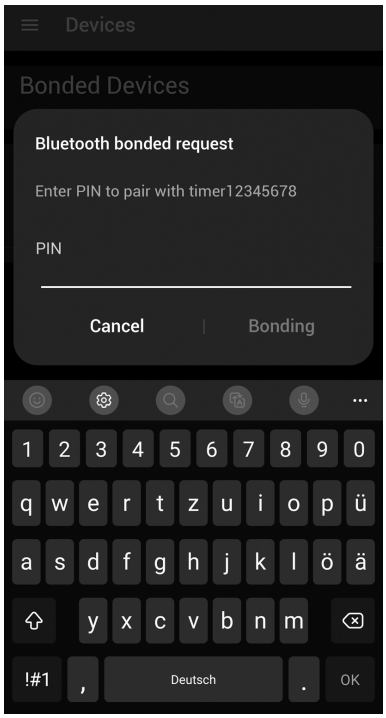


> For subsequent steps, the device must be turned on.
>
> - ▶ If necessary, turn on the ignition.

- ▶ Swipe downward to start the search for devices.
- ▶ Select the relevant device.

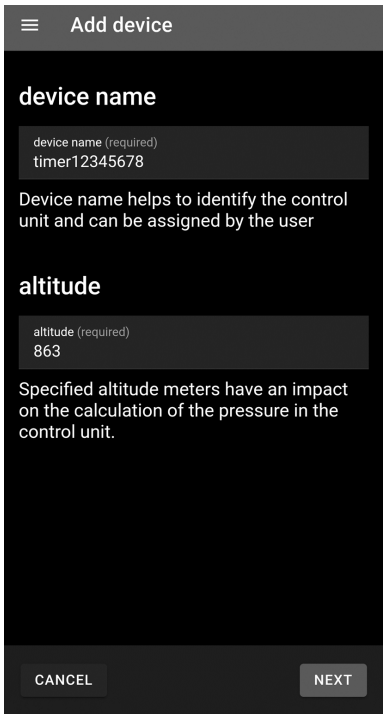
- ▶ Enter the PIN.

> The PIN consists of the last six digits of the device serial number.
>
> 
>

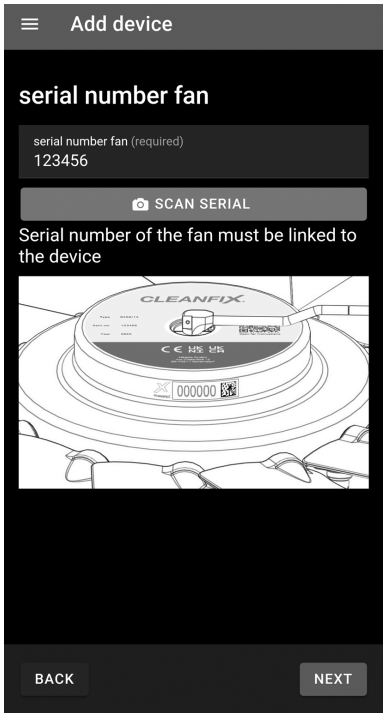


- ▶ Tap [Pairing] to confirm.

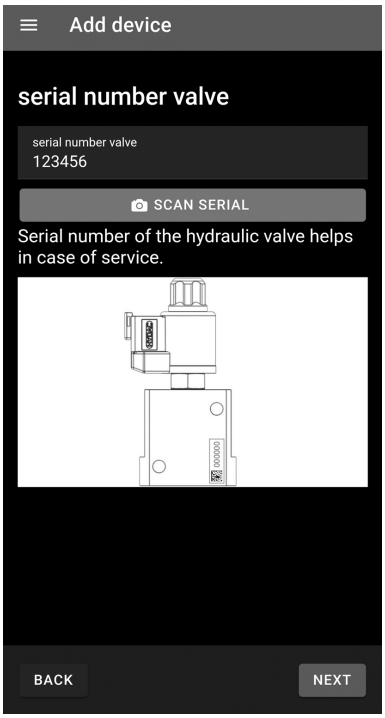
- Define the [device name].
- Enter the average [altitude] of the working environment.
- Tap [next] to confirm.



- Enter or scan the [serial number fan].
- Tap [next] to confirm.



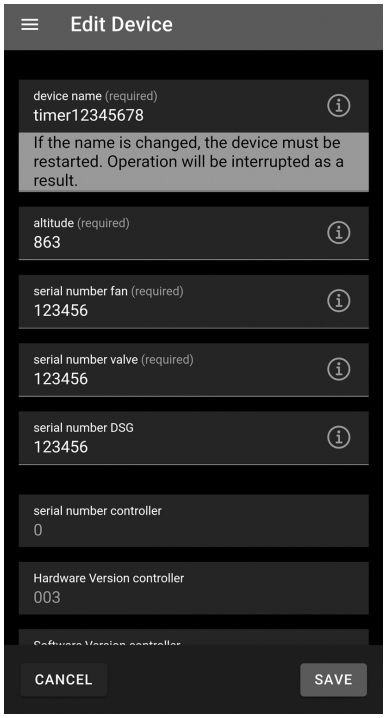
- Optionally, enter or scan the [serial number valve].
- Tap [next] to confirm.



- Optionally, enter or scan the [serial number DSG].
- Tap [save] to confirm.

8.5 Editing the device

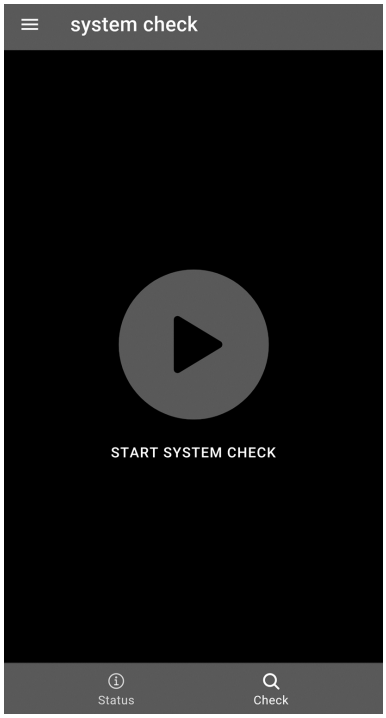
- Select the device from the [Devices] or the main screen.
- Tap the ⚙ button to open the [Edit Device] dialog.
- Adapt the information accordingly.
- Tap [save] to confirm.



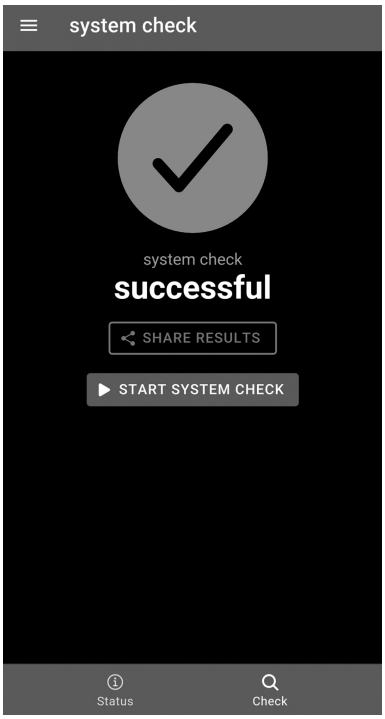
8.6 Performing a system check

- Select the device from the [Devices] or the main screen.
- Tap the 🔍 button to open the [Check] dialog.
- Tap the ▶ button to start the system check.

ℹ The system check is performed.
The result is shown when the check is complete.



A) System check successful

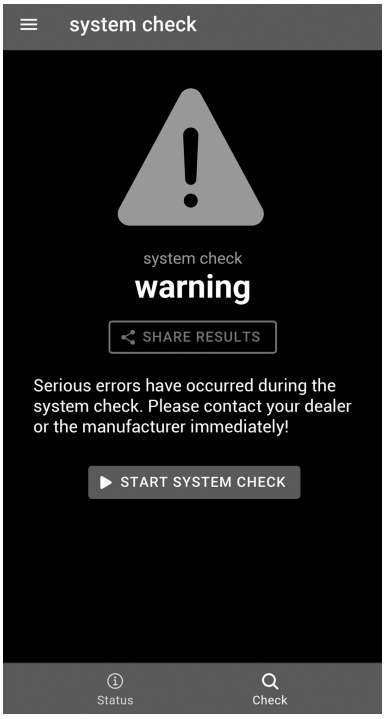


Sharing the results

The result of the system check can be transmitted or saved as a PDF file via the [share results] button.

B) System check failed

➢ Contact the dealer or manufacturer.

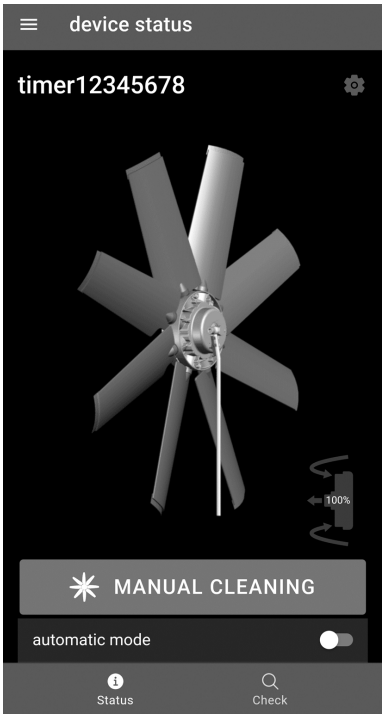


Sharing the results

The result of the system check can be transmitted or saved as a PDF file via the [share results] button.

8.7 Performing manual cleaning

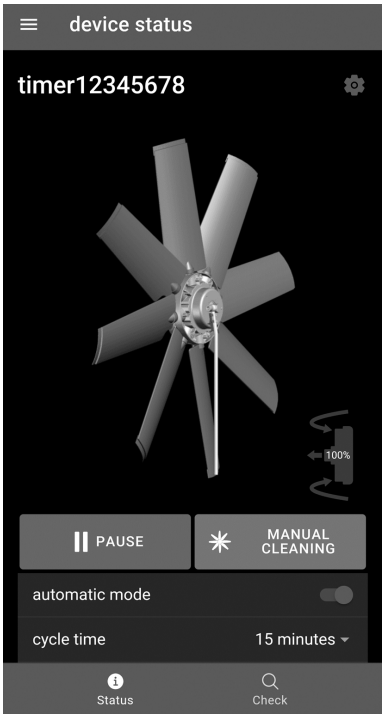
- Select the device from the [Devices] or the main screen.
- Tap the [✳ manual cleaning] button to performing manual cleaning.



> If [✳ manual cleaning] is tapped during automatic operation, intermediate cleaning is performed. The cycle time then starts over.

8.8 Turning automatic operation on/off

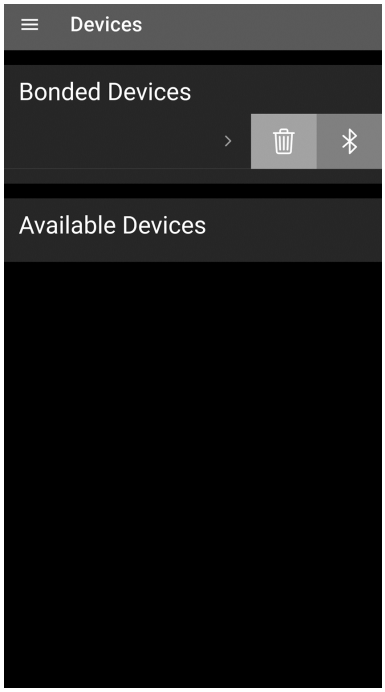
- Select the device from the [Devices] or the main screen.
- In the [automatic mode] dialog, tap the switch to turn automatic operation on or off.
- Select the [cycle time] dialog to set the cycle time.
- Select a cycle time between 5 and 120 minutes.



> You can pause automatic operation by tapping the [II pause] button and then resume automatic operation by tapping the [▶ resume] button.

8.9 Removing a device

- Tap the ☰ button to open the menu.
- Select the [Devices] menu screen.
- Swipe the corresponding device to the left to display options.
- Tap the 🗑 button to remove the device.

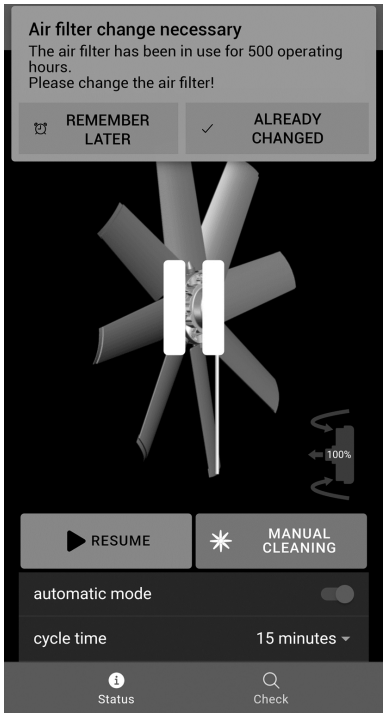


8.10 Showing the air filter status

The air filter on the device becomes clogged in the course of operation. This occurs depending on the operating time and the number of times the fan is reversed.

The indicator on the filter symbol shows the air filter status. If the value falls below 10%, a corresponding message appears and filter replacement is recommended.

- Select the device from the [Devices] or the main screen.
- Tap the button to show the air filter status.
- Tap [OK] to confirm.



9 Maintenance

9.1 Servicing the Cleanfix® reversible fan

Cleanfix® reversible fans are maintenance-free.

9.2 Maintaining the Cleanfix® electrical components

For pneumatic electronic components with a compressor, the filter must be replaced at every maintenance interval of the machine, but at the least after 500 operating hours.

10 Troubleshooting (Cleanfix® reversible fans)

10.1 Blades do not rotate to the cleaning position

No or low pressure supply (for electronic components with compressor)

Check	Comment	Action
Check the compressor function.	When the compressor builds up pressure, the voltage may fall to max. 0.5 V below the rated voltage.	If necessary, install the electronic component in a stabler manner (different cross section, shorter cables, etc.).
Check the compressor pressure build-up.	Check the pressure build-up of the compressor (max. 15 s / min. 6.5 bar / 94.27 psi) with the fan connected.	If insufficient pressure is built up, the compressor must be replaced.
Check the valve function.	The valve must click softly when the power supply is switched on and off. If necessary, connect an external power supply. Note: observe voltage of 12 V/ 24 V.	If the valve does not click, it must be replaced.
Check the pressure hose.	If necessary, pull the pressure hose from the valve and connect it to the vehicle shop compressed air supply (max. 8 bar / 116.03 psi) to locate possible leaks faster.	If the hose leaks, it must be replaced. If the fan leaks, an appropriate seal kit must be ordered.
Mechanical fault	If all the above conditions are met and the blades do not rotate, there is likely a mechanical fault.	Contact the manufacturer. Service address: See section 1.1.2

10.2 Blades do not rotate to the cooling position

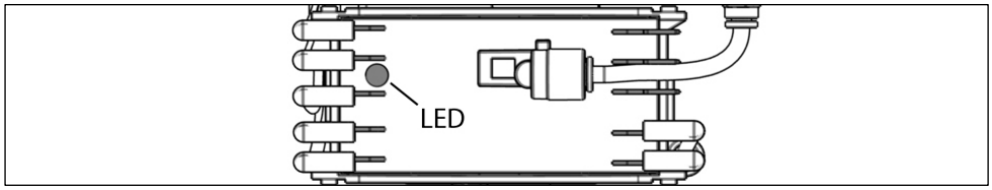
Fan speed is too high

Check	Comment	Action
Check the reversing function at a reduced speed.	Reducing the speed reduces the aerodynamic force acting on the blades.	Reduce the speed while reversing the fan or install additional springs in the fan. Service address: See section 1.1.2

Fan does not vent / Oil does not flow back

Check	Comment	Action
Check the pressure hose.	The pressure hose must not be bent or pinched.	Eliminate bends and pinch points If the pressure hose is damaged, it must be replaced.
Check the valve function.	The valve must click softly when the power supply is switched on and off. If necessary, connect an external power supply. Note: observe voltage of 12 V/ 24 V.	If the valve does not click, it must be replaced.
Mechanical fault	If the fan with hose disconnected does not switch back in idle, there is likely a mechanical fault.	Contact the manufacturer. Service address: See section 1.1.2

11 Troubleshooting (electronic components)



LED error code	Cause of error
Does not flash	Check the operating voltage

Green LED error code	Cause of error
Permanently lit green	Normal status without Bluetooth connection
Lit green for 3 sec.	Normal status with Bluetooth connection
Permanently flashing green quickly	[automatic mode] paused ▶ In the Cleanfix control app, tap the [▶ resume] button to resume [automatic mode] (see section 8.8).

Red LED error code	Cause of error
Flashing red 1x	Air filter status is below 10% ▶ Pair the device with the Cleanfix control app. ▶ Follow the instructions in the app (see section 8.10).
Flashing red 2x	Increased temperature ▶ Pair the device with the Cleanfix control app. ▶ Acknowledge the error message in the app. The service life of the device is impaired at a temperature of 65° or higher. ▶ If necessary, change the installation position of the device.
Flashing red 3x	The pressure sensor values are faulty ▶ Turn the ignition off and on. ▶ If the error persists, contact the manufacturer. Service address: See section 1.1.2

 Flashing red 4x	Short circuit, excess temperature, or broken valve cable ▶ Turn the ignition off and on. ▶ If the error persists, contact the manufacturer. Service address: See section 1.1.2
 Flashing red 5x	Short circuit or broken compressor cable ▶ Turn the ignition off and on. ▶ If the error persists, contact the manufacturer. Service address: See section 1.1.2
 Permanently flashing red	Critical temperature / temperature shutdown The device switches off at a critical temperature. When the device has cooled off, it switches on again. ▶ If the error occurs repeatedly, move the device to a cooler location.
 Permanently flashing red quickly	Short circuit in the push button in the driver's cab or the pressure switch ▶ Turn the ignition off and on. ▶ If the error persists, contact the manufacturer. Service address: See section 1.1.2
 Permanently lit red	Multiple error messages present ▶ Pair the device with the Cleanfix control app to call up all error messages.

Red/green LED error code	Cause of error
 Permanently flashing alternately red and green	Faulty memory readout ▶ Contact the manufacturer. Service address: See section 1.1.2