



<https://cleanfix.org/instructions>

EN: Scan QR code to get instructions in other languages.

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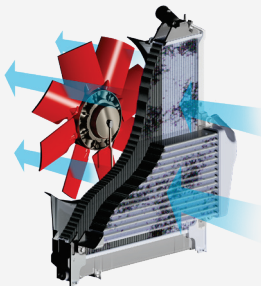
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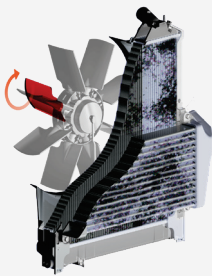


Thank you for choosing the **Cleanfix® reversible fan**.

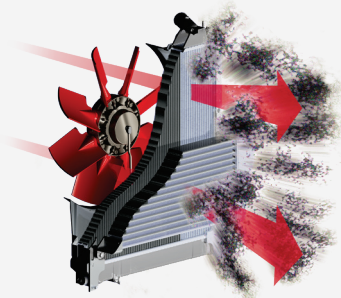
Only Cleanfix® reversible fans rotate their fan blades around over the cross position at the touch of a button and effectively clean radiators and screens. Drive power is reduced thanks to the clean radiator and improved cooling. As a result, more power is available simultaneously at the power take-off shaft and at the wheels, and less fuel is consumed.



EFFICIENT COOLING



REVERSING OVER THE CROSS POSITION



HIGH-PRESSURE



MORE POWER

Cleanfix® reversible fans increase power by up to 27 hp and thus deliver more punch.



INCREASED PRODUCTIVITY

Cleanfix® reversible fans clean at full speed without interruption of work.



FUEL SAVINGS

Cleanfix® reversible fans keep radiators clean and save up to 4 kW compared with dirty radiators.



LESS DOWNTIME

Cleanfix® reversible fans lengthen the maintenance and cleaning intervals.



OPTIMIZED COOLING

Cleanfix® reversible fans adapt their blade angle to the cooling requirements.



POWERFUL CLEANING

Cleanfix® reversible fans automatically blow dirt out of the radiator at a configurable time interval.



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1 General information

1.1 Legal notice

1.1.1 Copyright

TRANSLATED OPERATING INSTRUCTIONS

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The contents of these operating instructions may be changed without notice. Subject to change.

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1.1.2 Service address



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1.1.3 Current operating instructions

The current version of the operating instructions and other information are available at <https://cleanfix.org/instructions>.

1.2 Introduction

Before installing the Cleanfix fan, familiarize yourself with the contents of these operating instructions.

The operating instructions are a component of the product and must be stored close at hand.

1.2.1 Target group

These operating instructions are intended exclusively for mechanics trained on commercial machines.

The product may be installed and started up only by qualified personnel 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

During installation, it may be necessary to make modifications to the machine. Hägele GmbH does not assume responsibility for modification and installation costs.

Hägele GmbH does not accept any liability for the following:

- direct damages or indirect losses arising from improper operation or maintenance.
- personal injury or property damage caused by untrained personnel or through failure to comply with regulations concerning work, safety, and accident prevention.

The operating instructions contain exemplary illustrations as well as optional features. The product may sometimes differ from the descriptions and depictions.

Check the delivered product for transport damage and completeness before installation:

- Immediately document in writing any defects and damage.
- Photograph damaged parts.
- Send a written damage report to customer service.

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

1.2.3 Product identification

The following information is required for inquiries to the manufacturer:

A) Fan serial number

Serial number:

#					
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The serial number is found on the side edge of the front housing.

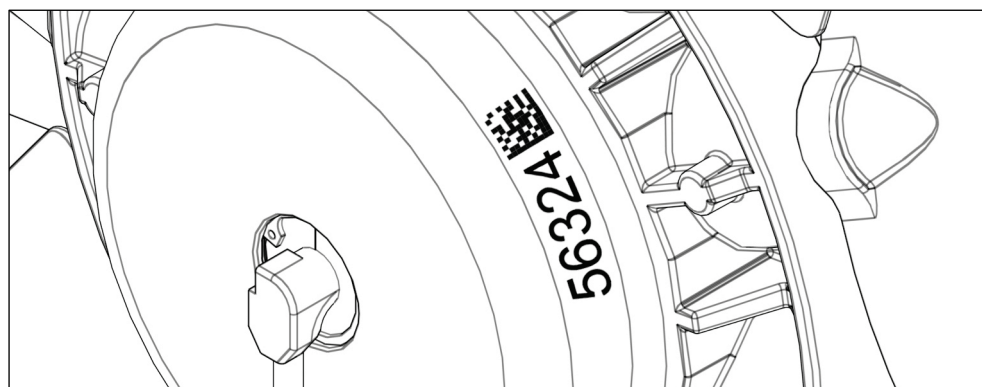


Fig. 1

B) Machine data

Manufacturer:

Model:

Operating hours:

C) Photo of the fan

Send in a photo of the fan.

Service address: See section 1.1.2

1.3 Product description

1.3.1 Pneumatic fan components

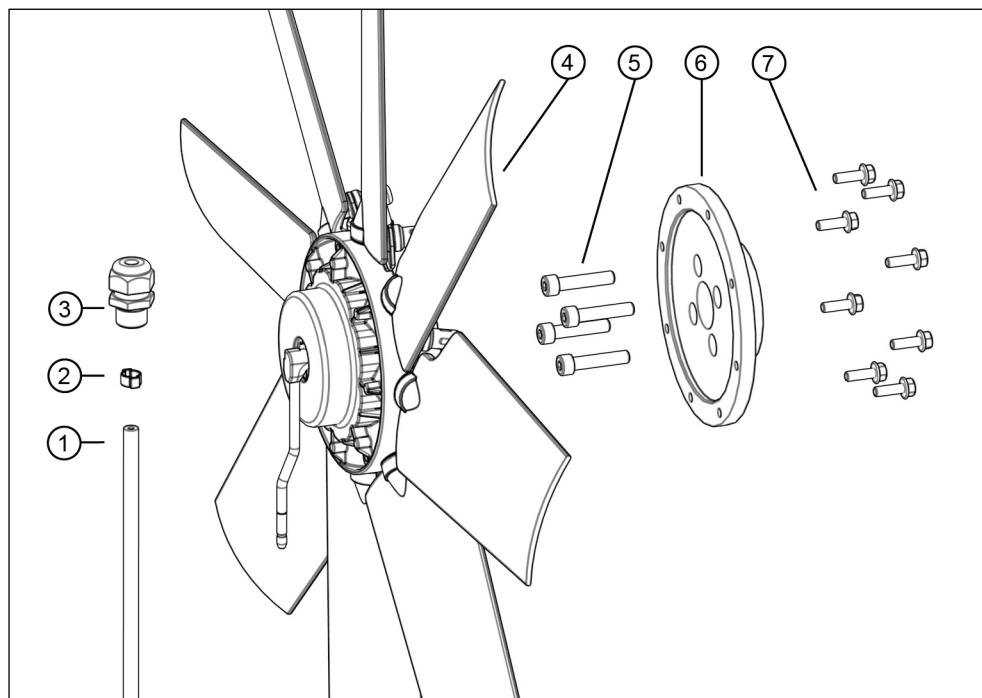


Fig. 2

- (1) Pressure hose
- (2) Hose clamp
- (3) Strain relief
- (4) Fan
- (5) Flange screws
- (6) Flange
- (7) Mounting screws

1.3.2 Hydraulic fan components

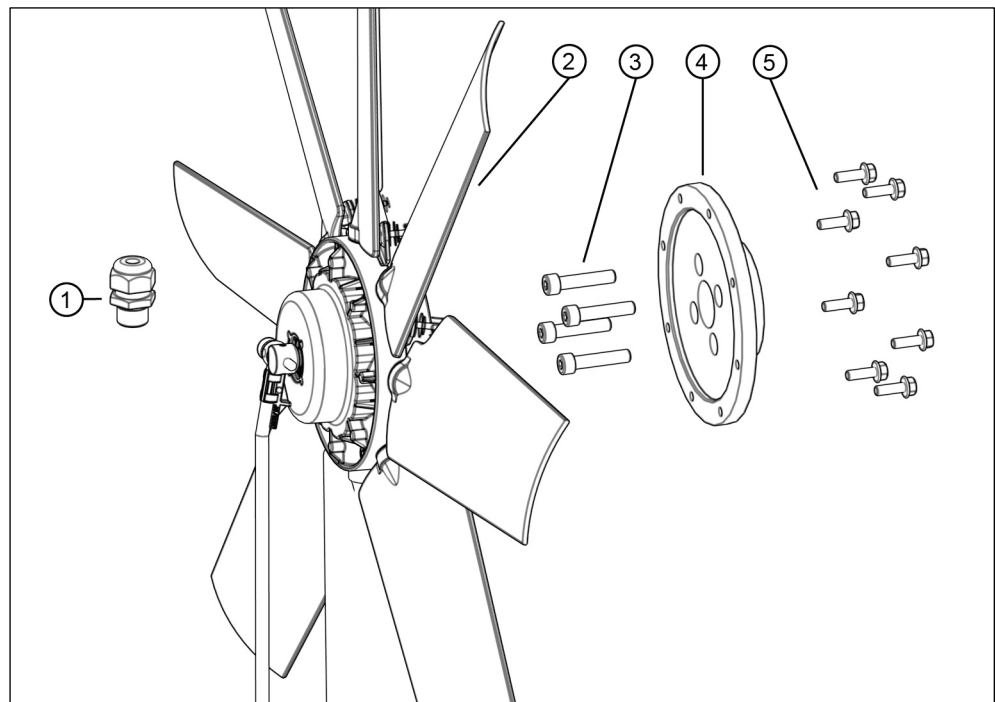
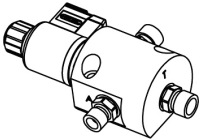
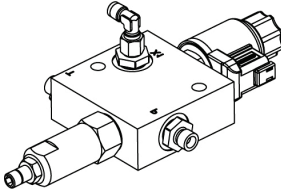
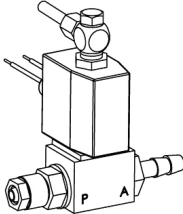
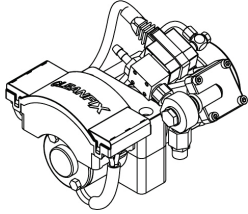
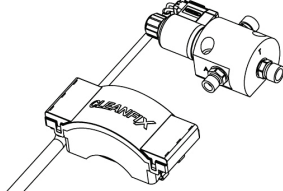
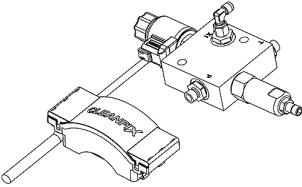
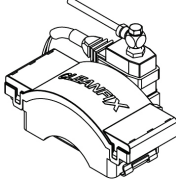
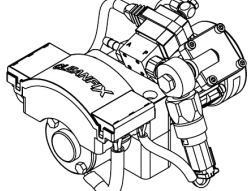
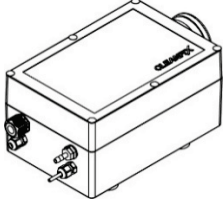


Fig. 3

- (1) Strain relief
- (2) Fan
- (3) Flange screws
- (4) Flange
- (5) Mounting screws

1.3.3 Electronic components

Hydraulic activation		Pneumatic activation	
With a hydraulic system in the machine		With a compressed air system in the machine	Without a compressed air system in the machine
Valve  Fig. 4	Combi block - Valve  Fig. 5	Valve  Fig. 6	Compressor unit  Fig. 7
Valve unit with Timer  Fig. 8	Combi block - Valve unit with Timer  Fig. 9	Valve unit with Timer  Fig. 10	Control unit with Timer  Fig. 11 E-Box with Timer  Fig. 12

2 Safety

2.1 Intended use

The product may be used only for the following purposes:

- For cooling commercial machines.
- For cleaning the radiators of commercial machines.

2.2 Foreseeable misuse

- Use of the fan in a way that is not intended by the manufacturer.
- Use of a third-party electrical unit.
- Installation of the fan directly on the crankshaft or driving of the fan using a spur gear.

2.3 General safety information

The following **WARNING!** safety information warns of a dangerous situation in which failure to observe the warning may result in death or major irreversible injury.

 **WARNING!**

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

Objects or persons may be caught, pulled in, or crushed.

- Turn off the engine.
- Remove the ignition key.
- Disconnect the ground cable from the battery.
- Hang a “Do not operate” sign on the machine.

Rolling of the machine may result in serious injury or death!

An unsecured machine can run over or crush bystanders.

- Secure the machine against rolling.
-

The following **CAUTION!** safety information warns of a dangerous situation in which failure to observe the warning may result in slight to moderate injury.

⚠ CAUTION!**Parts under pressure may cause injuries!**

Injuries may occur during work on pneumatic and hydraulic parts.

- Only qualified personnel may perform work on parts under pressure.
-

The following **NOTE!** safety information warns of situations in which failure to observe the warning may result in damage.

NOTE**Aging of the hydraulic hose lines may cause damage!**

Hydraulic hose lines are subject to natural aging that reduces the material's performance.

- For normal requirements, the recommended replacement interval is six years (see German Social Accident Insurance (DGUV) Rule 113-020 / as of 2021).
-

The individual chapters of the operating instructions contain further safety information that must also be observed.

3 Required tools

Pressure hose installation

- Lubricant
- Pincers (hose clamp pincers)
- Standard tools for pressure hose fitting

Flange installation

- Dial gauge with magnetic base holder
- 10 Nm – 80 Nm torque wrench

Fan installation

- Cordless screwdriver
- Step drill
- 12 Nm – 20 Nm torque wrench
- Locking pliers (for example vise grip)

Installation of fitting on pressure hose (H162)

- 10 mm wrench
- 12 mm wrench

Electronic component installation and connection

- Cordless screwdriver
- 22 mm (0.866") drill
- Standard power and hand tools

4 Removing the original fan



CAUTION!

Injuries due to a hot engine!

A hot engine can burn hands or other body parts

- Allow the engine to cool down.

- 1) Remove components to gain access to the original fan.
- 2) Remove the original fan.
- 3) Remove other components as required.



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

5 Installing the Cleanfix fan

NOTE

Installing the fan on the crankshaft or using a spur gear to drive the fan may cause damage!

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

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

5.1 Preparing the shroud

- 4) Drill a hole (20 mm / 0.787") as close as possible to the radiator.



Hole position

On the right or left side in the lower part of the shroud as close as possible to the radiator (Fig. 13).

- 5) Insert the strain relief into the hole from the outside.
- 6) Secure the strain relief from the inside using the nut.

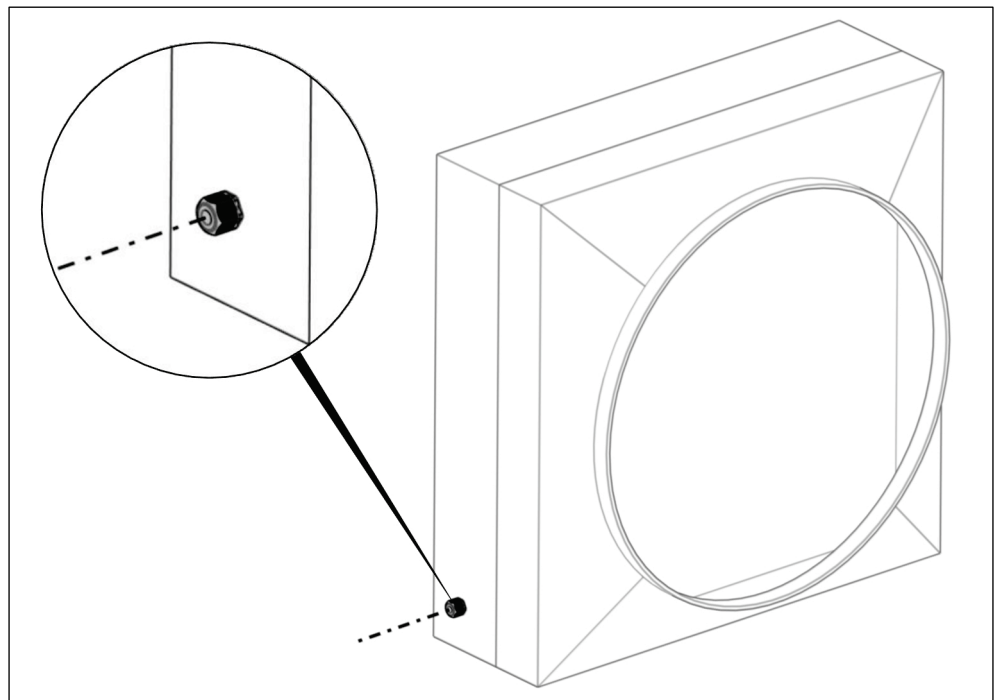


Fig. 13

**Optional: sheet metal ring**

Depending on the machine design, a sheet metal ring may be included in the scope of delivery and must also be installed.

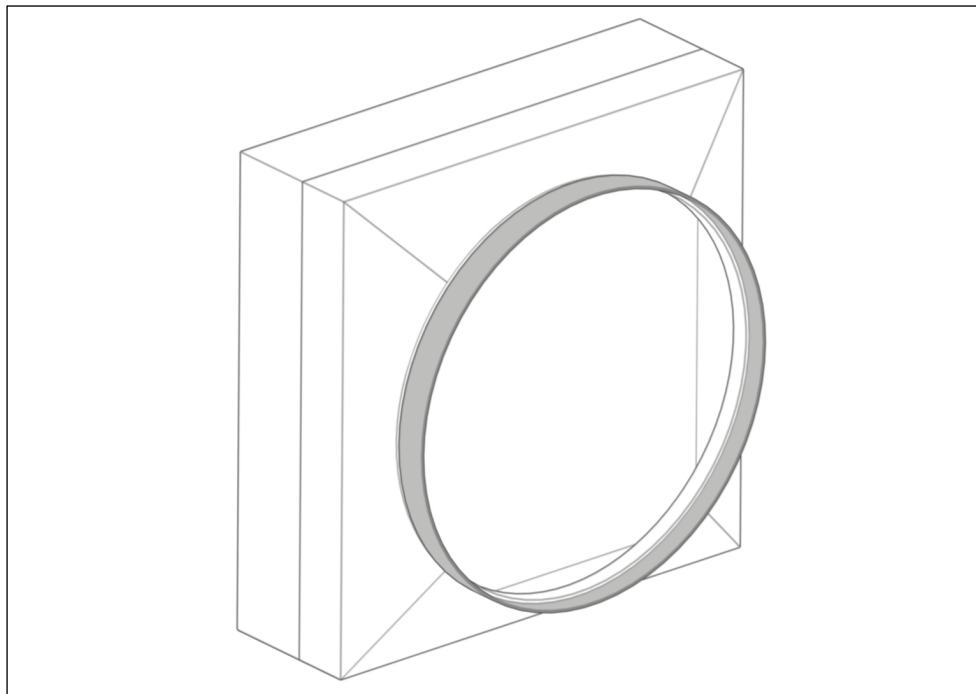


Fig. 14

5.2 Installing the pressure hose

NOTE

A bent air intake tube may cause damage!

The air intake tube may become bent when the pressure hose is installed. As a result, the pressure hose may collide with the fan blades and damage the fan.

- Carefully bend the air intake tube manually back into a horizontal position.

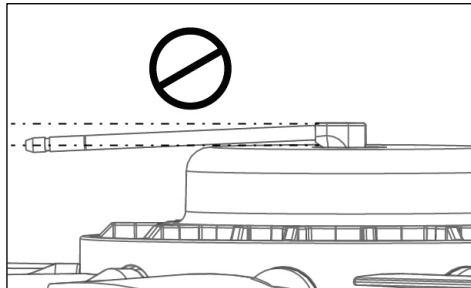


Fig. 15

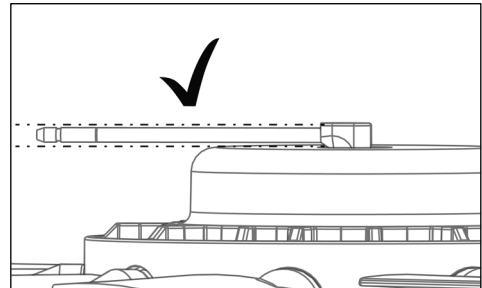


Fig. 16

An incorrectly installed hose clamp may cause damage!

When the hose clamp is installed, the ears might be positioned vertically. As a result, the ears might collide with the fan blades.

- Use hose clamp pincers to rotate the hose clamp until the ears are positioned horizontally.

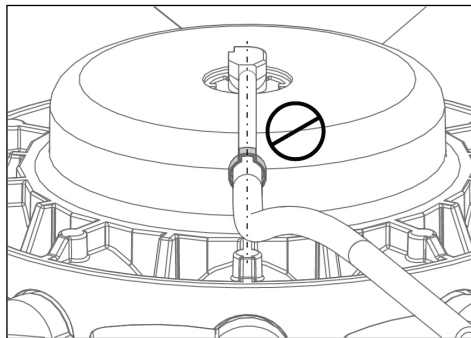


Fig. 17

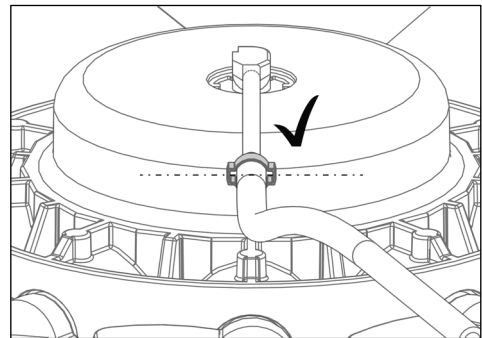


Fig. 18

- 7) Slide the hose clamp over the pressure hose.
- 8) Place a drop of oil at the opening of the air intake tube.
- 9) Slide the pressure hose over the air intake tube up to the mark (25 mm / 0.984") (Fig. 19).
- 10) Position the hose clamp as shown in Fig. 18.
- 11) Pinch the ears of the hose clamp together using hose clamp pincers.

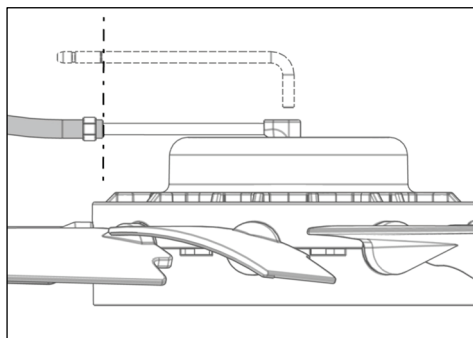


Fig. 19

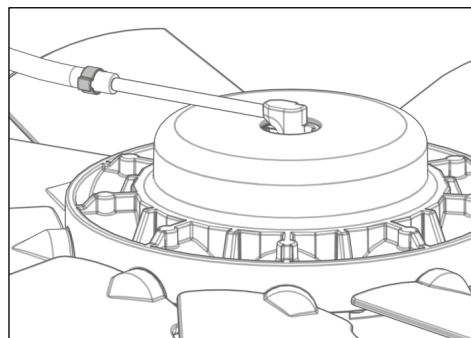


Fig. 20

5.3 Installing the flange

- 12) Remove all rust from the mounting surface to the machine.
- 13) Remove any remaining dirt.
- 14) Pull the label off the flange and clean the surface.
- 15) Attach the flange using screws (observe the machine manufacturer's indicated torque values).

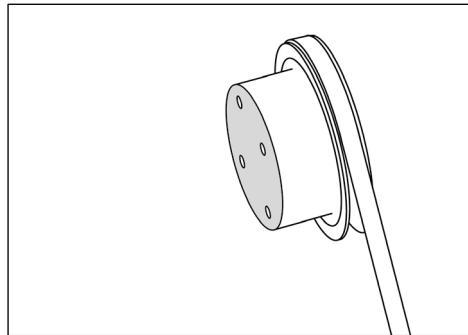


Fig. 21

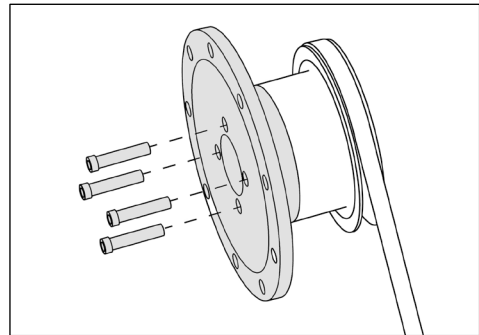


Fig. 22



When the flange is installed, the space needed to install the fan may become tight.

If this is the case:

- Use cardboard to protect the radiator fins.
- Guide the fan into the shroud.
- Install the flange.

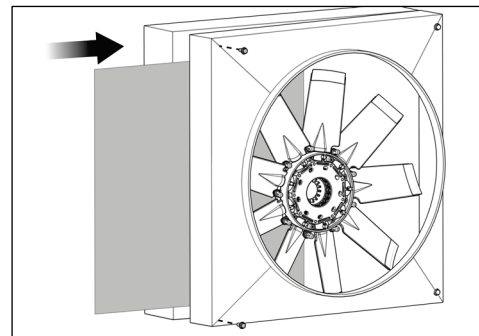


Fig. 23

NOTE

Using screws of the wrong length may cause damage!

If the screws are too short, the flange with the fan may come loose during operation.

Screws that are too long may cause damage to the machine.

- Check the length of the screws.
- If necessary, replace the screws.

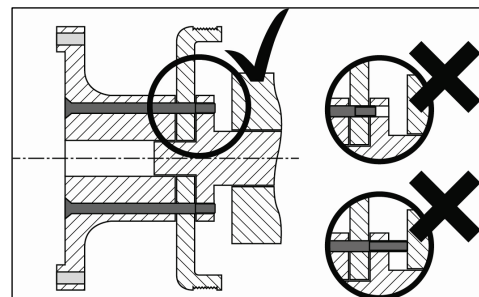


Fig. 24

5.4 Measuring the axial and radial runout

NOTE

Axial and radial runout may cause damage!

Imbalance damages the fan and the machine.

- The axial and radial runout must be checked using a dial gauge.
- If necessary, inspect the contact surfaces and clean them again.
- If necessary, rotate the flange to the next hole and repeat the process.

16) If necessary, reduce the belt tension to ensure exact measurement.

17) Check the axial and radial runout using a dial gauge.

18) The tolerance must not exceed 0.1 mm (0.004").

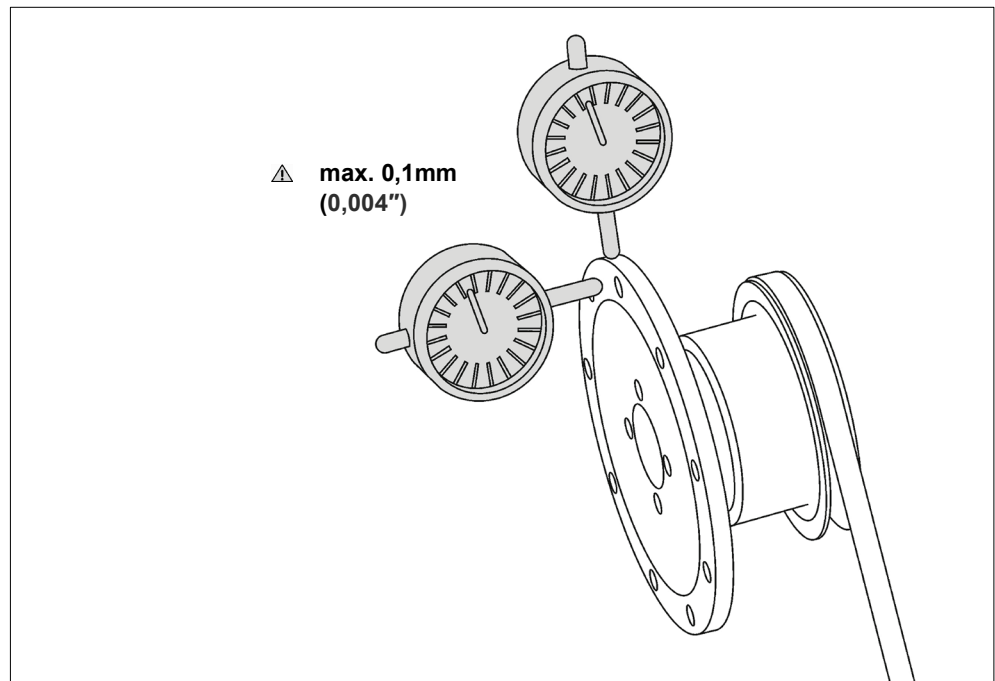


Fig. 25

5.5 Installing the fan



Installation depth

For the fan to reach its maximum airflow rate, it must be installed to an installation depth of 2/3 of the blade profile in the shroud.

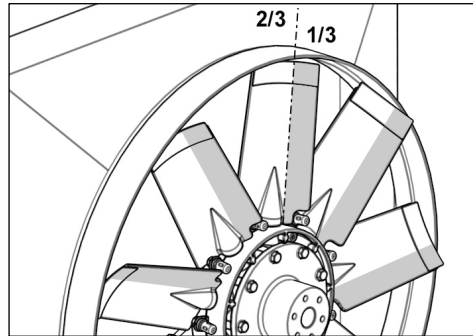


Fig. 26

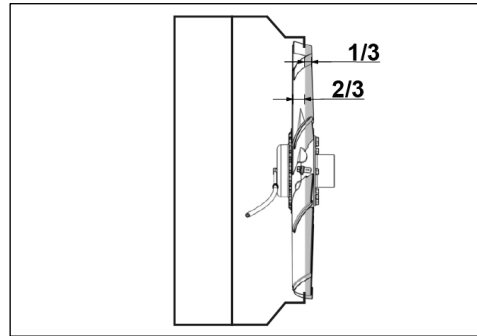


Fig. 27

Optional: Flex-Tips (blade extensions)

To increase the airflow rate, use elastic Flex-Tips to minimize the gap between the blade and the shroud.

Ideal airflow rate is achieved when the gap between the Flex-Tips and the shroud is 1 mm / 0.004". Out-of-roundness of the shroud may cause abrasion of material from the Flex-Tips due to contact with the shroud.

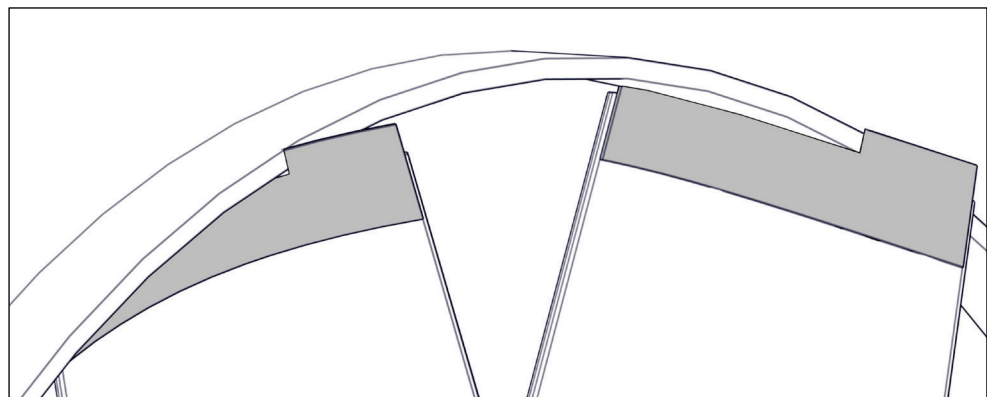


Fig. 28

NOTE**Careless installation of the fan may cause damage!**

The radiator fins can be damaged if the fan is installed carelessly. This may reduce radiator performance.

- Use cardboard to protect the radiator fins.

- 19) Carefully guide the fan into the shroud.

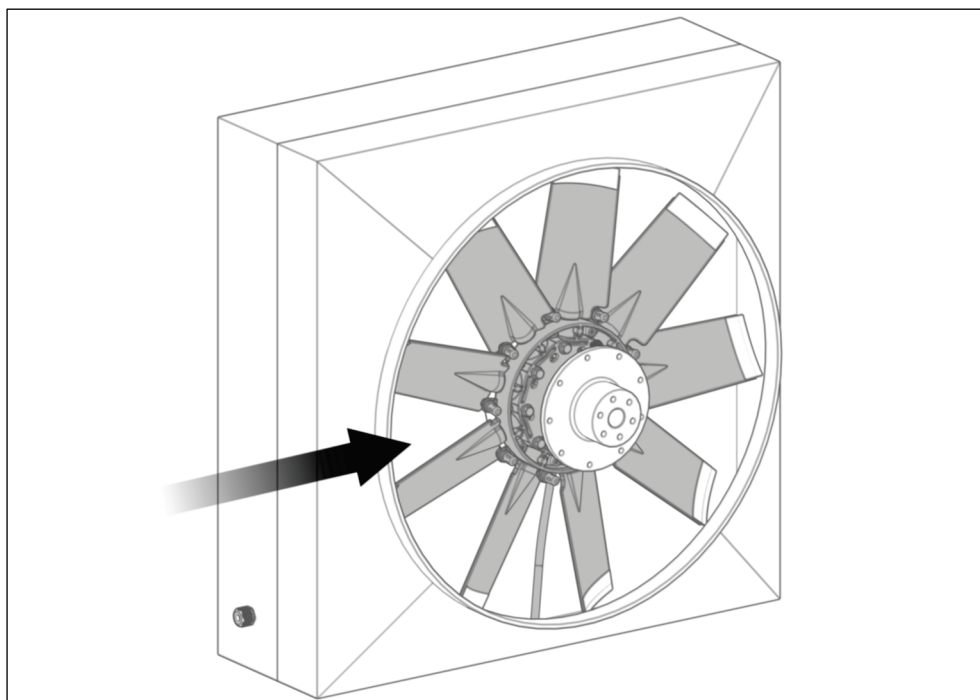


Fig. 29

- 20) Guide the pressure hose through the strain relief (see Fig. 30 step 1).
- 21) Set the fan on the flange.
- 22) Screw in the supplied mounting screws by hand (see Fig. 30 step 2).

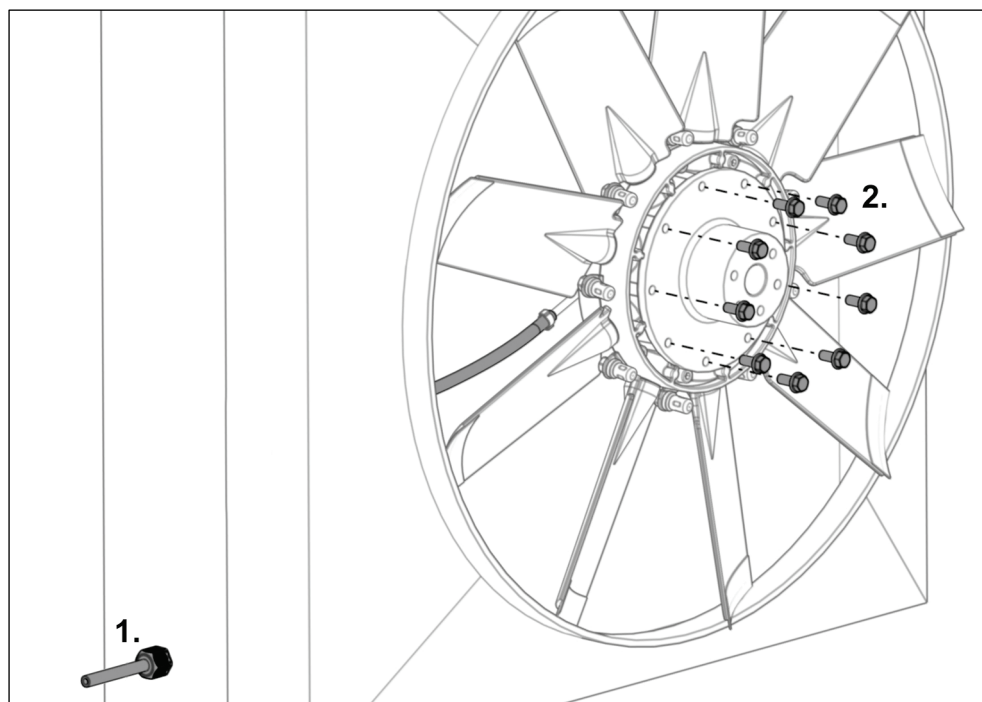


Fig. 30

- 23) Tighten the mounting screws to the specified torque.



Torque

C162, H162, C225 → 12 Nm

C200, C220, C222, H222, C252, → 20 Nm

H252, C300

5.6 Tensioning the pressure hose

NOTE

Incorrect tension of the pressure hose may cause damage!

If the tension is too low, the pressure hose may be caught by the fan blades during operation.

If the tension is too high, the seal at the air intake assembly may wear, causing the fan to leak air.

- Check the tension and, if necessary, retension the pressure hose (see Fig. 31).

24) Tension the pressure hose (see Fig. 32 step 1) so that the air intake assembly can rotate slightly (max. 15°).

25) Secure the pressure hose using the strain relief (see Fig. 32 step 2).

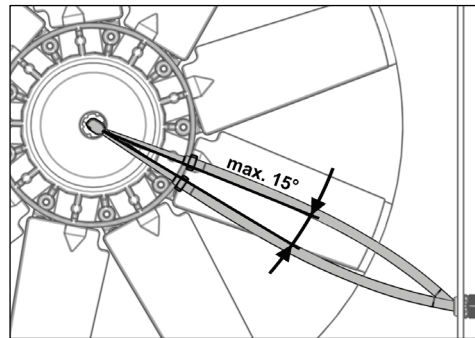


Fig. 31

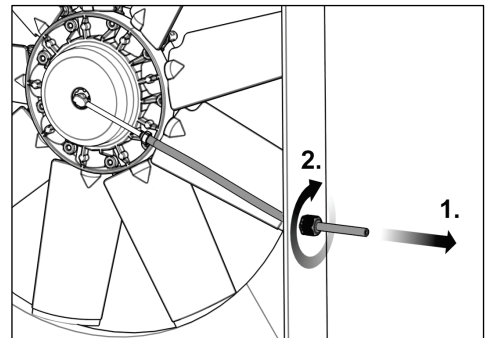


Fig. 32



For fans larger than 900 mm (35.433"), the pressure hose must be secured at mid-length.

5.7 Precluding collision

5.7.1 Pneumatic fan

- 26) Apply compressed air (max. 10 bar / 145 psi) to the fan until the fan blades are positioned crosswise.

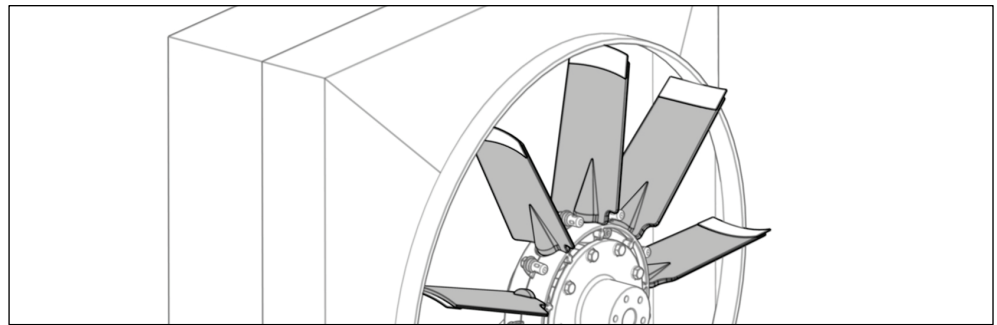


Fig. 33

- 27) Pinch the pressure hose (e.g., using locking pliers).
- 28) If necessary, reduce the belt tension.
- 29) Manually rotate the fan (see Fig. 34).
- 30) Make sure that when the blades are in the cross position, they do not collide with any objects in front of or behind the fan (minimum gap 5 mm (0.196") / see Fig. 35).
- 31) Make adjustments as needed.

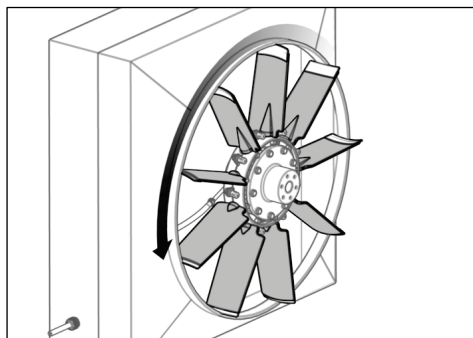


Fig. 34

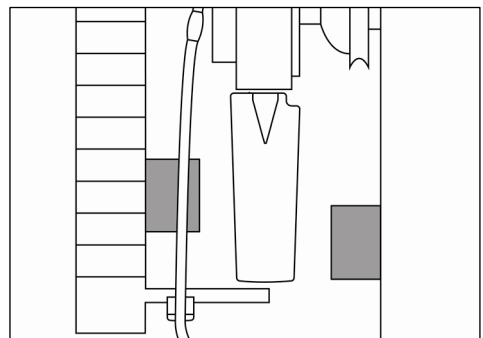


Fig. 35

- 32) Release the compressed air from the fan.

5.7.2 Hydraulic fan

You must ensure that the blades do not collide with any objects in front of or behind the fan when they are in the cross position. For hydraulic fans, you must do this through measurement because the fan cannot be reversed when the machine is stationary (hydraulic pressure is not available in the system).

Cooling position

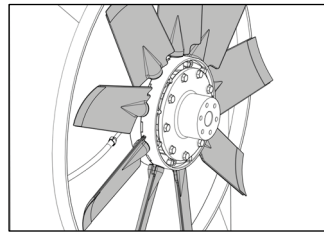


Fig. 36

Cross position

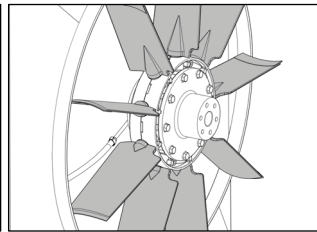


Fig. 37

Cleaning position

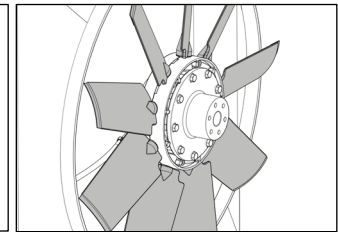


Fig. 38

33) Measure whether any objects are in the way (see Fig. 39).

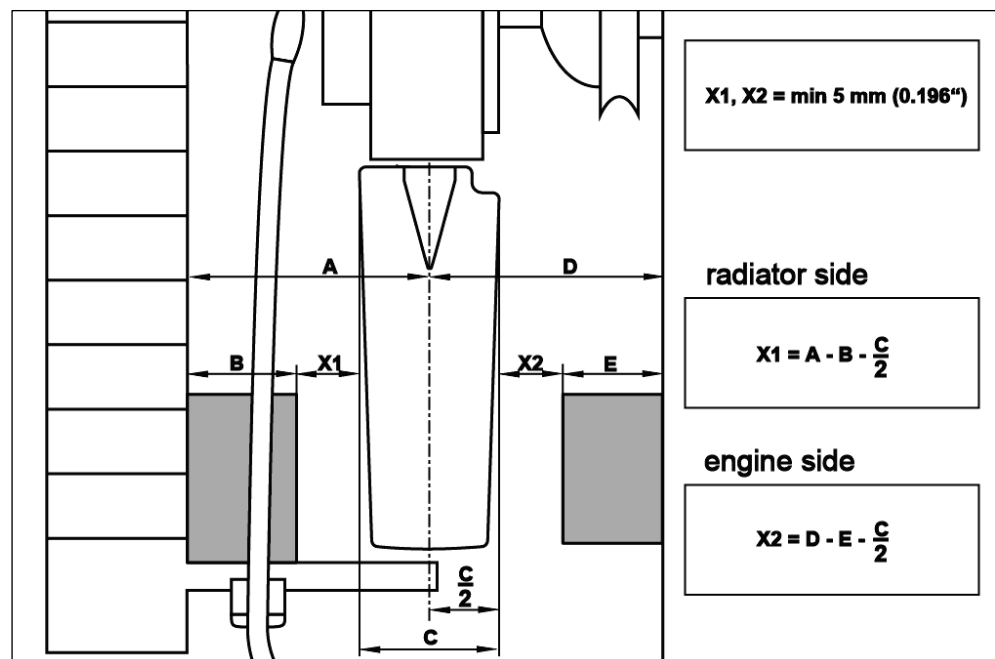


Fig. 39

A = distance from the center of the blade to the radiator

B = interfering contour on the radiator side

C = blade width

D = distance from the center of the blade to the engine

E = interfering contour on the engine side

X1, X2 = gap, min. 5 mm (0.196")

5.8 Installing the fitting on the pressure hose (H162)

- 34)** Screw the sleeve counterclockwise onto the pressure hose until it stops (12 mm wrench).

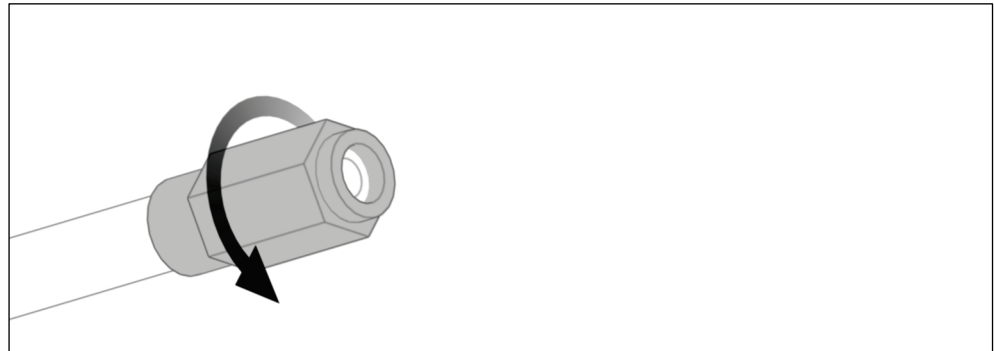


Fig. 40

- 35)** Screw the connecting piece clockwise into the sleeve until it stops (10 mm wrench).

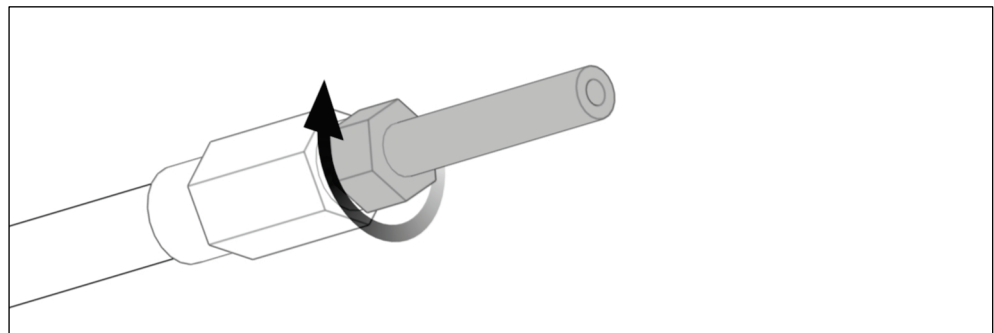


Fig. 41

6 Installing the electronics

NOTE

Using an incorrect power supply may cause damage!

Electronic components may be damaged when connected to an incorrect power supply.

- Make sure that electronic components are suitable for the existing voltage source (12 V / 24 V).

Environmental damage!

Electronic components may be damaged by environmental impacts.

- Install electronic components at a location that is protected from water, dust, vibrations, and heat (max. 70°C / 158°F).
- To ensure greater protection, you can install the air filter in the machine cab via an extension (see Fig. 94).

6.1 Installing electronic components

NOTE

Incorrect orientation of the air filter may cause damage!

Electronic components equipped with an air filter may be damaged by water entering the air filter.

- Install electronic components with the air filter oriented upward or to the side.

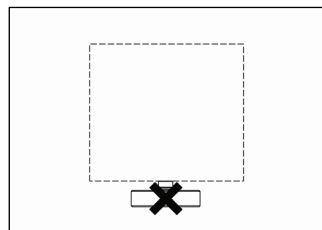


Fig. 42

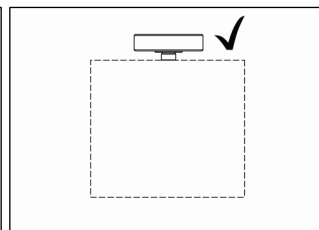


Fig. 43

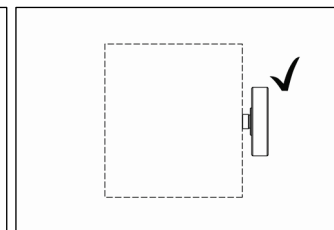


Fig. 44

- 36) Install the electronic component using suitable screws.

6.1.1 Installation dimensions

Pneumatic | Valve

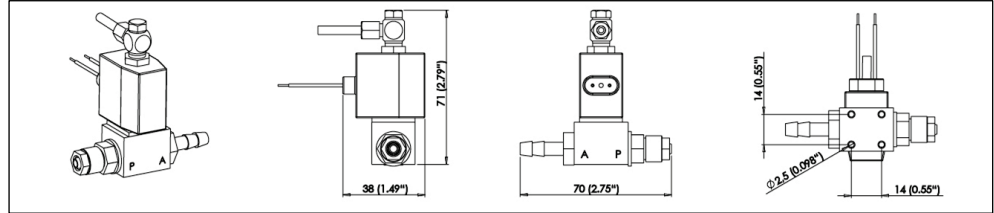


Fig. 45

Pneumatic | Valve unit

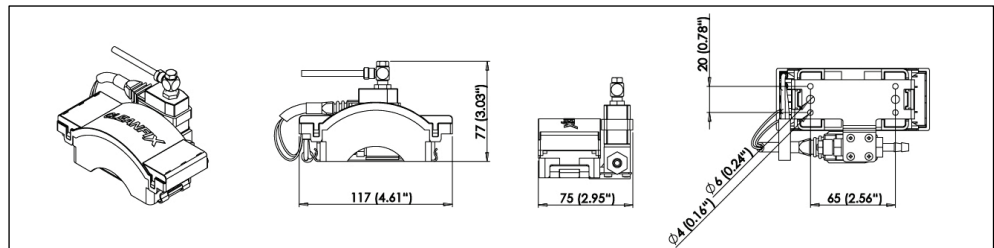


Fig. 46

Pneumatic | Standard compressor unit

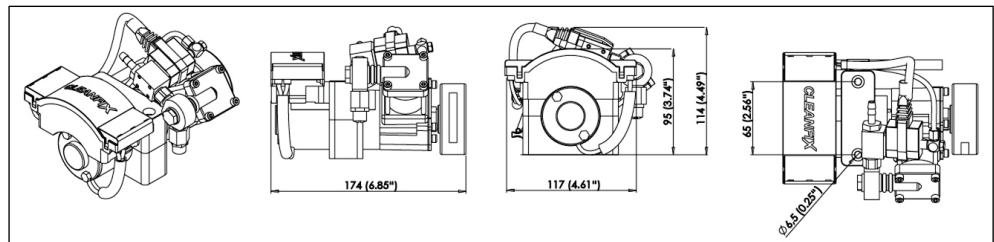


Fig. 47

Pneumatic | Control unit with Mini-Timer / Multi-Timer

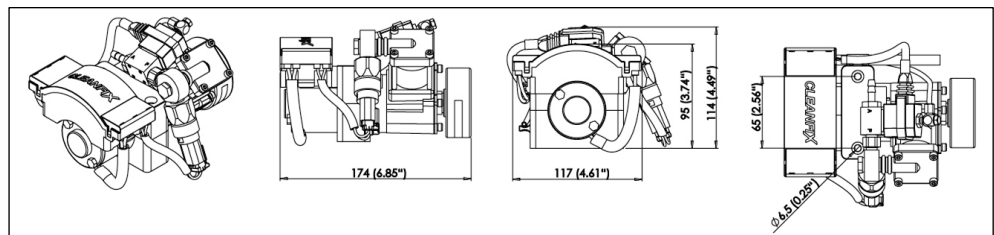


Fig. 48

Pneumatic | E-Box with Multi-Timer

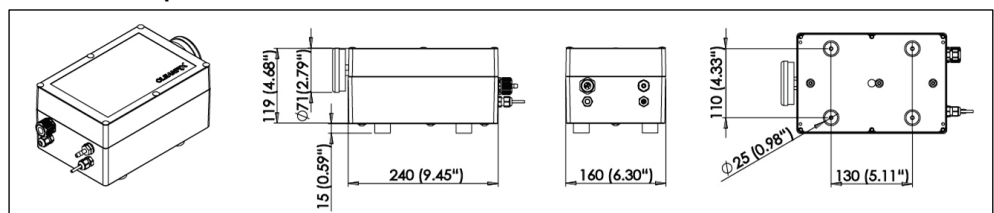


Fig. 49

Hydraulic | Valve

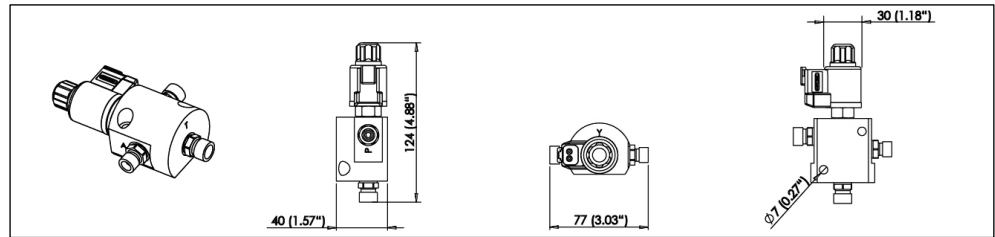


Fig. 50

Hydraulic | Valve unit with Mini-Timer / Multi-Timer

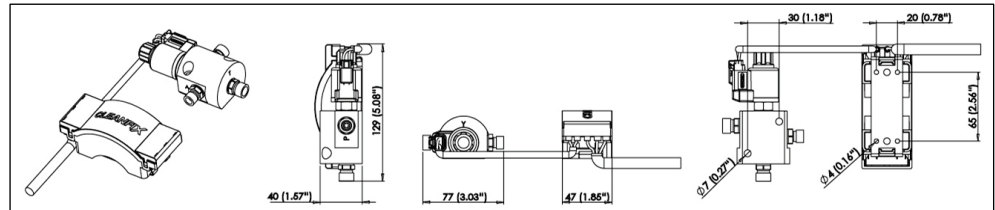


Fig. 51

Hydraulic | Combi block - Valve

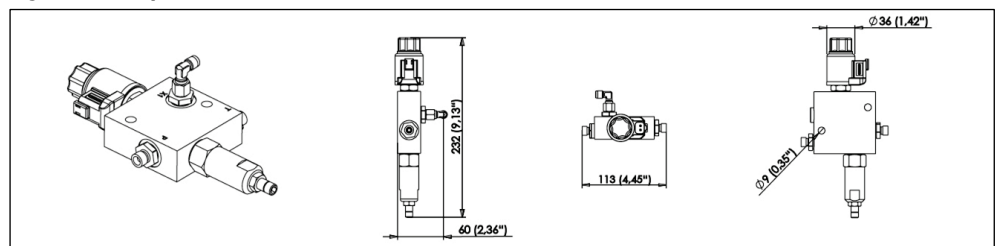


Fig. 52

Hydraulic | Combi block - Valvet with Mini-Timer / Multi-Timer

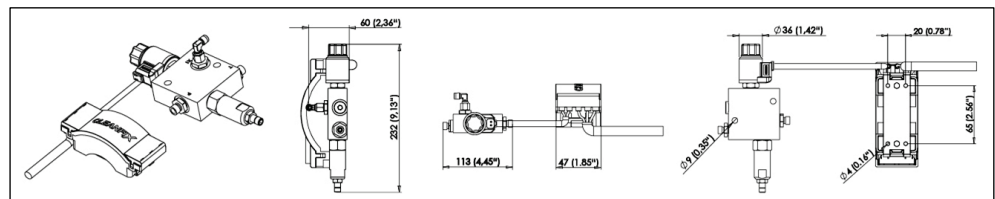
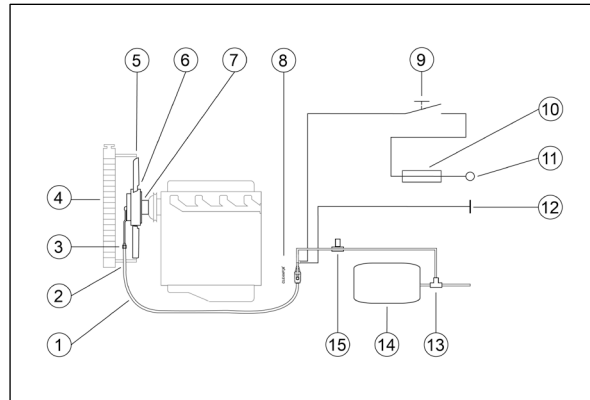


Fig. 53

6.1.2 Installation overview

Pneumatic | Valve

(for machines with a compressed air system)

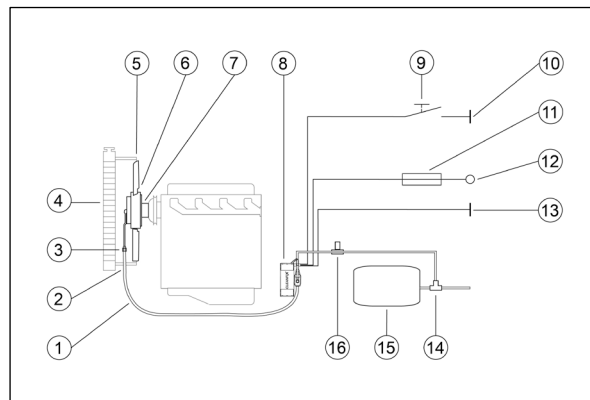


- (1) Pressure hose
- (2) Hose screw connection
- (3) Hose clamp
- (4) Radiator
- (5) Shroud
- (6) Fan
- (7) Flange
- (8) Valve
- (9) Switch (push button)
- (10) Fuse (12 V : 20 A / 24 V : 15 A)
- (11) Keyed power (terminal 15) [red cable]
- (12) Machine ground (terminal 31) [black cable]
- (13) Tee
- (14) Compressed air reservoir
- (15) Overflow valve

Fig. 54

Pneumatic | Valve unit with Mini-Timer / Multi-Timer

(for machines with a compressed air system)

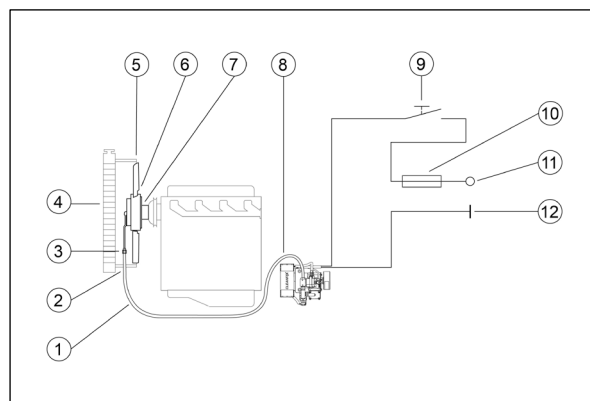


- (1) Pressure hose
- (2) Hose screw connection
- (3) Hose clamp
- (4) Radiator
- (5) Shroud
- (6) Fan
- (7) Flange
- (8) Valve unit with Mini-Timer or Multi-Timer
- (9) Switch (push button)
- (10) Machine ground (terminal 31) [grey cable]
- (11) Fuse (12 V / 24 V : 3 A)
- (12) Keyed power (terminal 15) [red cable]
- (13) Machine ground (terminal 31) [black cable]
- (14) Tee
- (15) Compressed air reservoir
- (16) Overflow valve

Fig. 55

Pneumatic | Standard compressor unit

(for machines without a compressed air system)

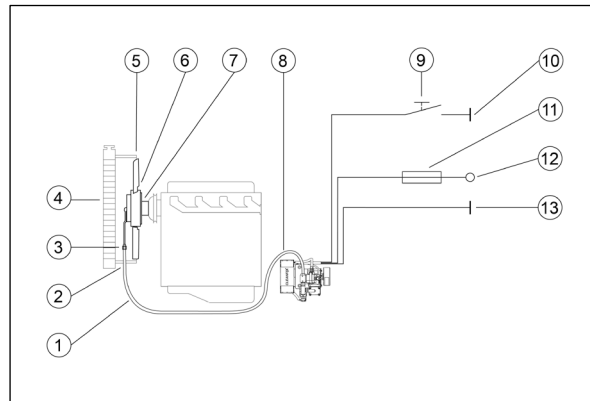


- (1) Pressure hose
- (2) Hose screw connection
- (3) Hose clamp
- (4) Radiator
- (5) Shroud
- (6) Fan
- (7) Flange
- (8) Compressor unit
- (9) Switch (push button)
- (10) Fuse (12 V : 20 A / 24 V : 15 A)
- (11) Keyed power (terminal 15) [red cable]
- (12) Machine ground (terminal 31) [black cable]

Fig. 56

Pneumatic | Control unit with Mini-Timer / Multi-Timer

(for machines without a compressed air system)

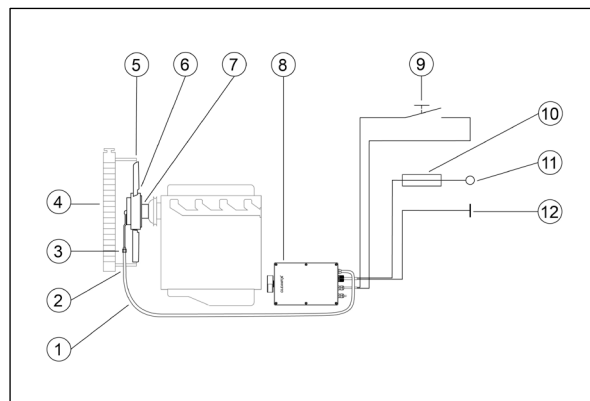


- (1) Pressure hose
- (2) Hose screw connection
- (3) Hose clamp
- (4) Radiator
- (5) Shroud
- (6) Fan
- (7) Flange
- (8) Control unit with Mini-Timer or Multi-Timer
- (9) Switch (push button)
- (10) Machine ground (terminal 31) [grey cable]
- (11) Fuse (12 V : 20 A / 24 V : 15 A)
- (12) Keyed power (terminal 15) [red cable]
- (13) Machine ground (terminal 31) [black cable]

Fig. 57

Pneumatic | E-Box with Multi-Timer

(for machines without a compressed air system)

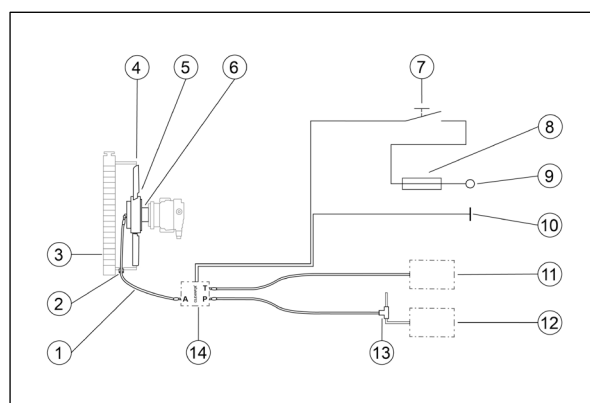


- (1) Pressure hose
- (2) Hose screw connection
- (3) Hose clamp
- (4) Radiator
- (5) Shroud
- (6) Fan
- (7) Flange
- (8) E-Box with Multi-Timer
- (9) Switch (push button)
- (10) Fuse (12 V : 20 A / 24 V : 15 A)
- (11) Keyed power (terminal 15) [red cable]
- (12) Machine ground (terminal 31) [black cable]

Fig. 58

Hydraulic | Valve

(for machines with a hydraulic system)



- (1) Hose connection between the fan and valve
- (2) Hose screw connection
- (3) Radiator
- (4) Shroud
- (5) Fan
- (6) Flange
- (7) Switch (push button)
- (8) Fuse (12 V / 24 V : 3 A)
- (9) Keyed power (terminal 15) [red cable]
- (10) Machine ground (terminal 31) [black cable]
- (11) Hydraulic oil reservoir
- (12) Hydro pump
- (13) Tee
- (14) Valve

Fig. 59

Hydraulic | Valve unit with Mini-Timer / Multi-Timer

(for machines with a hydraulic system)

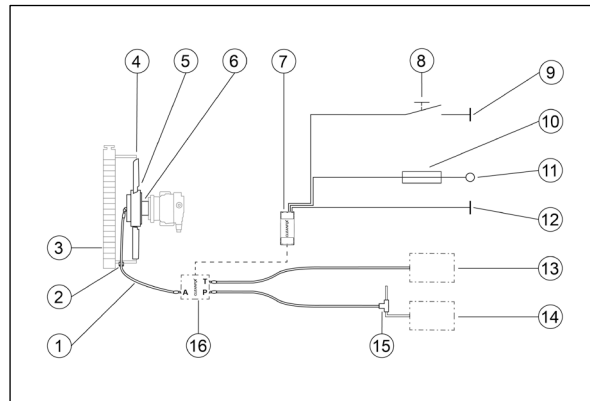


Fig. 60

- (1) Hose connection between the fan and valve
- (2) Hose screw connection
- (3) Radiator
- (4) Shroud
- (5) Fan
- (6) Flange
- (7) Timer control
- (8) Switch (push button)
- (9) Machine ground (terminal 31) [grey cable]
- (10) Fuse (12 V / 24 V : 3 A)
- (11) Keyed power (terminal 15) [red cable]
- (12) Machine ground (terminal 31) [black cable]
- (13) Hydraulic oil reservoir
- (14) Hydro pump
- (15) Tee
- (16) Valve

Hydraulic | Combi block - Valve

(for machines with a hydraulic system)

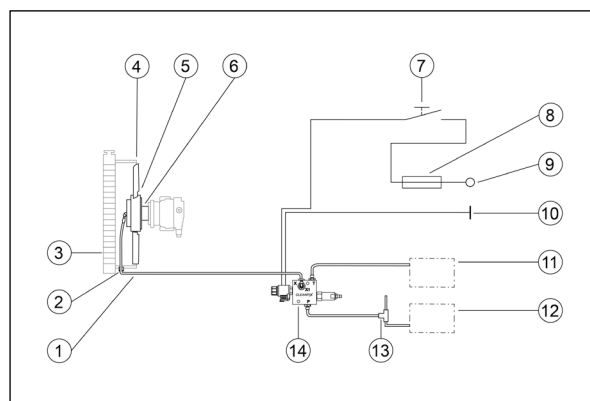


Fig. 61

- (1) Hose connection between the fan and valve
- (2) Hose screw connection
- (3) Radiator
- (4) Shroud
- (5) Fan
- (6) Flange
- (7) Switch (push button)
- (8) Fuse (12 V / 24 V : 3 A)
- (9) Keyed power (terminal 15) [red cable]
- (10) Machine ground (terminal 31) [black cable]
- (11) Hydraulic oil reservoir
- (12) Hydro pump
- (13) Tee
- (14) Combi block - Pressure reducing 3/2 way valve

Hydraulic | Combi block - Valvet with Mini-Timer / Multi-Timer

(for machines with a hydraulic system)

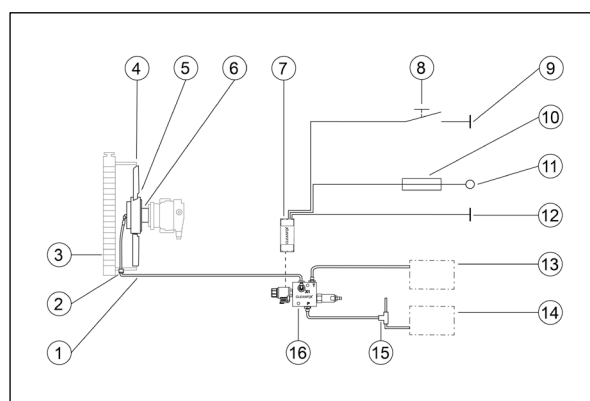


Fig. 62

- (1) Hose connection between the fan and valve
- (2) Hose screw connection
- (3) Radiator
- (4) Shroud
- (5) Fan
- (6) Flange
- (7) Timer control
- (8) Switch (push button)
- (9) Machine ground (terminal 31) [grey cable]
- (10) Fuse (12 V / 24 V : 3 A)
- (11) Keyed power (terminal 15) [red cable]
- (12) Machine ground (terminal 31) [black cable]
- (13) Hydraulic oil reservoir
- (14) Hydro pump
- (15) Tee
- (16) Combi block - Pressure reducing 3/2 way valve

6.2 Installing the push button



Installation location

If an unassigned push button is available in the consoles, it can be used. Otherwise, a hole must be drilled in the console for the supplied push button.

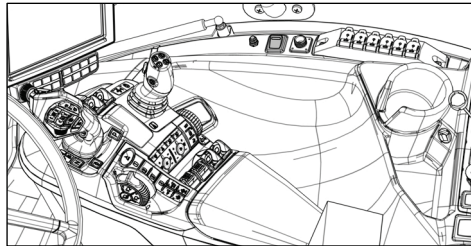


Fig. 63

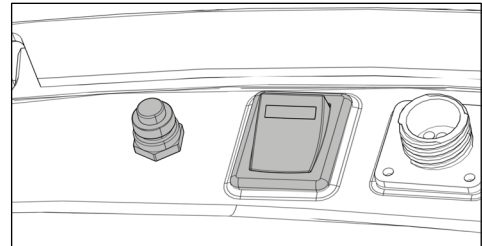


Fig. 64

- 37) Determine the installation location for the push button.

NOTE

Drilling into electronic components may cause damage!

Electronic components are installed under the consoles. These components can be damaged during drilling.

- Check whether electronic components are in the way.
- Drill carefully.

- 38) If necessary, drill a hole (22 mm / 0.866") in the console.

- 39) Install the push button.

6.3 Connecting the electronic component to the power supply



Power supply

If a switched, fused power supply (terminal 15) with sufficient voltage (see Fig. 65 - Fig. 73) is available, it can be used.

- 40) Connect the electronic component to the machine's power supply (see Fig. 65 - Fig. 73).

Pneumatic | Valve

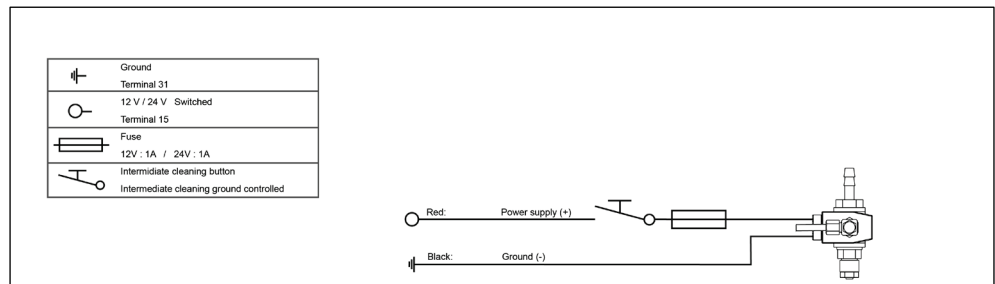


Fig. 65

Pneumatic | Valve unit

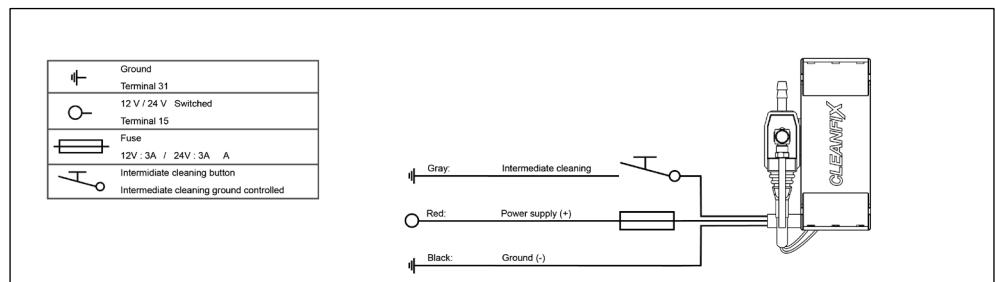


Fig. 66

Pneumatic | Standard compressor unit

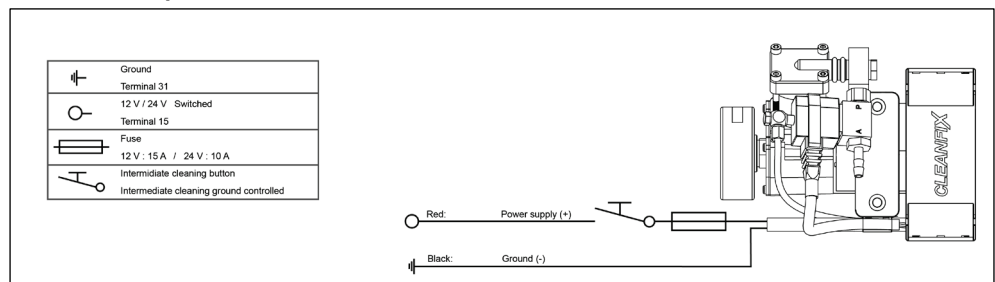


Fig. 67

Pneumatic | Control unit with Mini-Timer / Multi-Timer

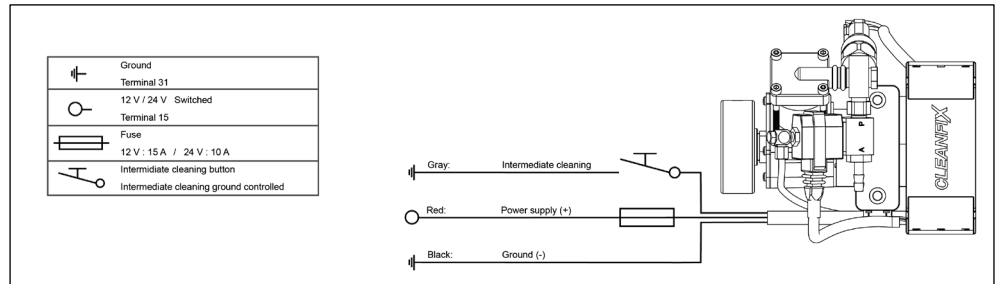


Fig. 68

Pneumatic | E-Box with Multi-Timer

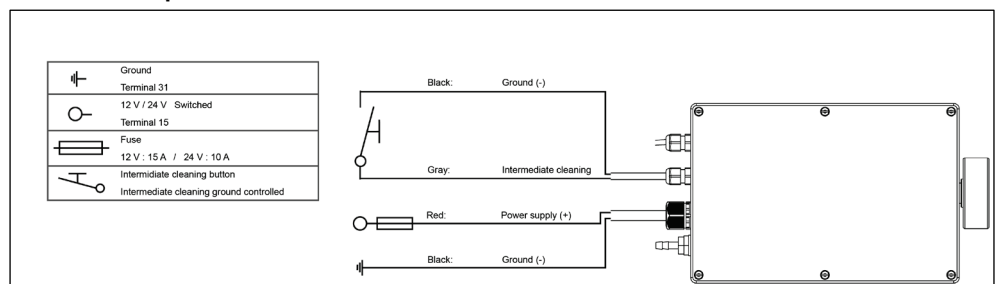


Fig. 69

Hydraulic | Valve

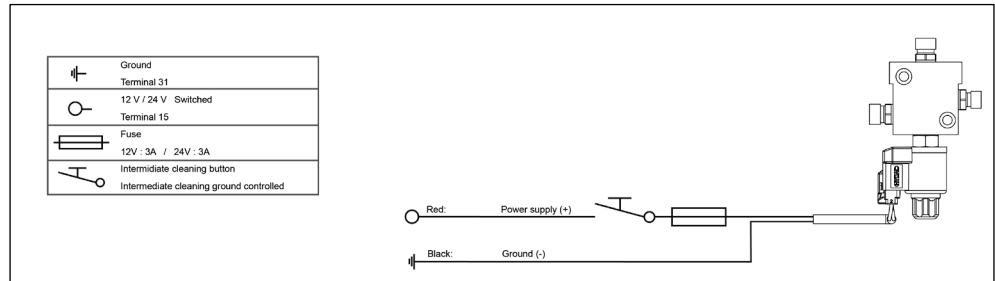


Fig. 70

Hydraulic | Valve unit with Mini-Timer / Multi-Timer

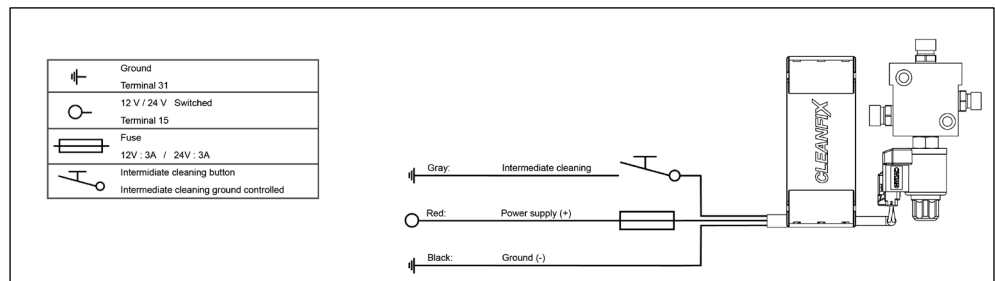


Fig. 71

Hydraulic | Combi block - Valve

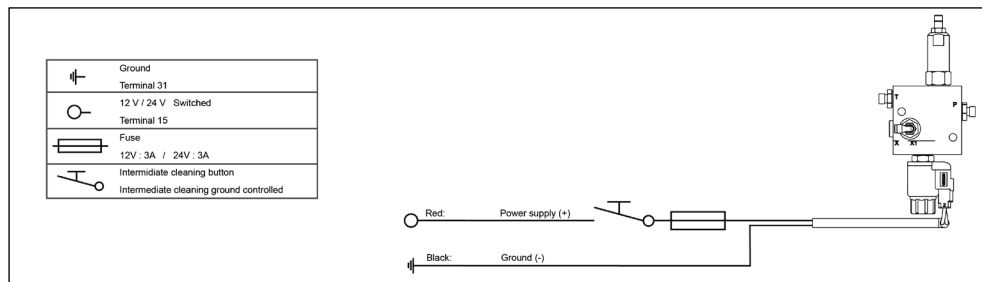


Fig. 72

Hydraulic | Combi block - Valvet with Mini-Timer / Multi-Timer

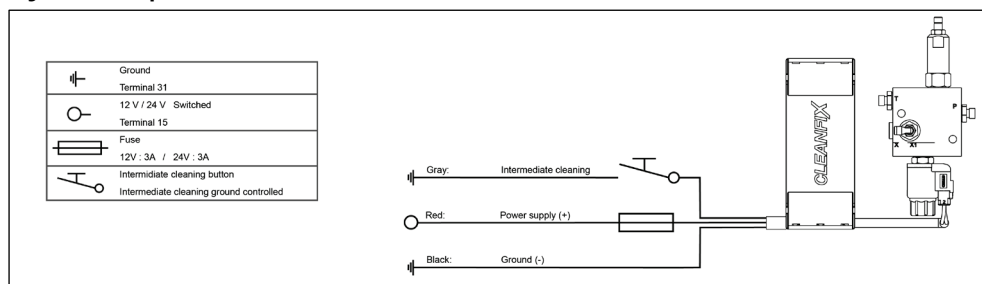


Fig. 73

7 Installing the pressure hose (pneumatic fans)

7.1 Connecting the electronic component to the fan

- 41) Cut the pressure hose to a suitable length.
- 42) Place a drop of oil at the opening of the pressure hose.
- 43) Slide the hose clamp over the pressure hose.
- 44) Slide the pressure hose over the hose fitting (A) of the electronic component.
- 45) Pinch the ears of the hose clamp together using hose clamp pincers.

7.2 Connecting the electronic component to the compressed air system



Electronic component connection to the compressed air system

If the compressed air system has an auxiliary consumer circuit (fused compressed air circuit), this circuit can be used.

If an auxiliary consumer circuit is not available, an appropriate overflow valve must be installed between the electronic component and the compressed air system.

Overflow valve

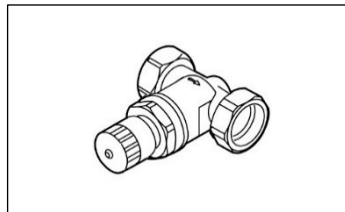


Fig. 74

Item no.: 200129

- 46) Connect the electronic component to the compressed air system.

8 Installing the pressure hose (hydraulic fans)

8.1 Connecting the electronic component to the fan

NOTE

Lengthening the pressure hose may cause damage to the fan!

If the pressure hose is lengthened, the exchange of hydraulic oil within the fan is not guaranteed.

- The supplied pressure hose must not be lengthened and must be connected directly to the electronic component.

- 47) Connect the pressure hose to connector (A) of the electronic component.

8.2 Connecting the electronic component to the hydraulic system

NOTE

Excessive pressure on the seals and hub may cause damage!

Excessive pressure at the pressure supply may cause damage to the seals and hub (risk of bursting).

- The pressure supply must not exceed 50 bar / 725.19 psi.



Hose connection return flow: nominal size min. DN 8

- 48) Use suitable pressure hose to connect the electronic component to the hydraulic system.

9 Setting the timer

49) Remove the cover of the electronic component.

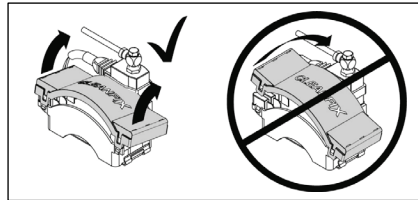


Fig. 75

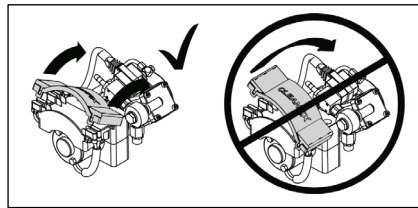


Fig. 76

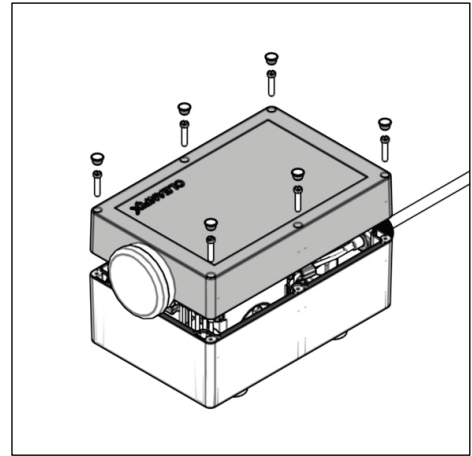


Fig. 77

50) Set the time interval.



DIP switch settings

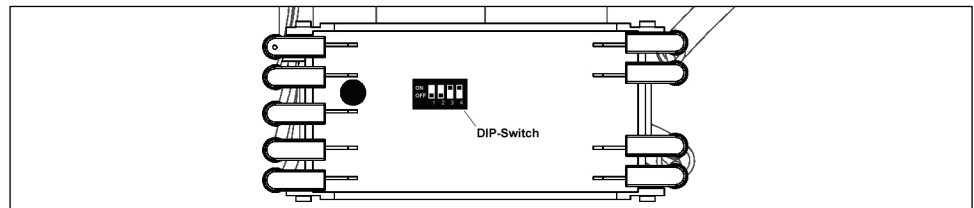


Fig. 78

Time interval



Fig. 79

Compressor



Fig. 80

You can set the time intervals z1 to z7 using DIP switches 1-3 (only with Multi-Timer enabled).

	1	2	3
z1 = 5 min	ON	OFF	OFF
z2 = 10 min	OFF	ON	OFF
z3 = 15 min	ON	ON	OFF
z4 = 30 min	OFF	OFF	ON
z5 = 45 min	ON	OFF	ON
z6 = 60 min	OFF	ON	ON
z7 = 90 min	ON	ON	ON

Use DIP switch 4 to set whether the electronic component is equipped with a compressor or not.

	4
with compressor	ON
without compressor	OFF

10 Putting the fan into operation

10.1 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.
-

51) Start the engine.

52) Reverse the fan three times in neutral.



If Flex-Tips are used, slight abrasion of material will occur.

53) Reverse the fan once at approx. 1/3 of the max. rotational speed.

54) Reverse the fan once at approx. 2/3 of the max. rotational speed.

55) Reverse the fan once at full rotational speed.

10.2 Operation

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

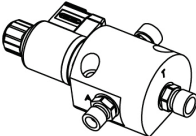
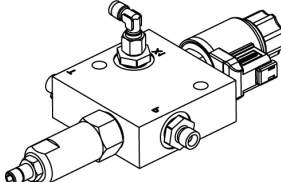
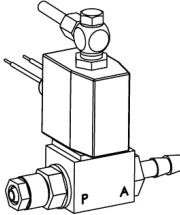
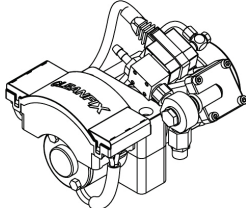
Reversing the fan while the machine is in the red temperature range may result in damage!

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.

Electronic component without timer (semi-automatic cleaning)

Press the push button to change from cooling to cleaning. The fan remains in cleaning mode for as long as the switch is pressed. The cooling effect is interrupted when the reversing function is activated. Do not hold the push button down too long (see table).

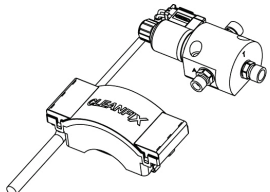
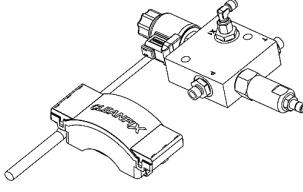
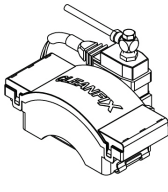
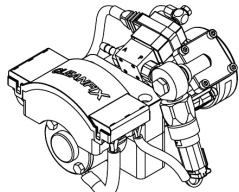
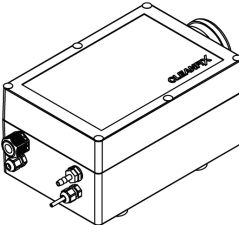
Hydraulic activation		Pneumatic activation	
With a hydraulic system in the machine Hold the push button down for max. 15 sec.		With a compressed air system in the machine Hold the push button down for max. 15 sec.	Without a compressed air system in the machine Hold the push button down for max. 30 sec.
Valve  Fig. 81	Combi block - Valve  Fig. 82	Valve  Fig. 83	Compressor unit  Fig. 84

Electronic component with Mini-Timer (fully automatic cleaning)

Briefly press the push button to change fully automatically from cooling to cleaning and back again.

Electronic component with Multi-Timer (fully automatic cleaning at intervals)

Switching from cooling to cleaning and back is controlled by the set interval, for example, every 30 minutes. This interval can be changed as desired (see chapter 9). Intermediate cleaning can be performed at any time by pressing the push button. By default, the first cleaning operation will start immediately after the power supply is attached. The first cleaning operation can be started after a time delay in customized solutions.

Hydraulic activation		Pneumatic activation	
With a hydraulic system in the machine		With a compressed air system in the machine	Without a compressed air system in the machine
Valve unit with Timer  Fig. 85	Combi block - Valve unit with Timer  Fig. 86	Valve unit with Timer  Fig. 87	Control unit with Timer  Fig. 88 E-Box with Timer  Fig. 89

11 Maintenance

11.1 Servicing the fan

The fan is maintenance-free.

11.2 Servicing the electronic components

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

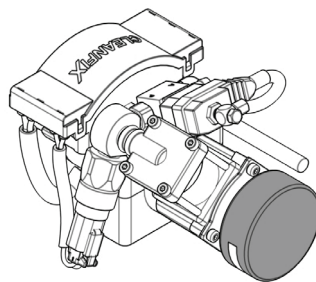


Fig. 90
Compressor and control unit

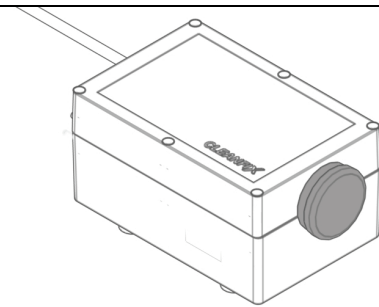


Fig. 91
E-Box

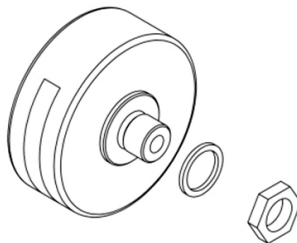


Fig. 92
Item no.: 100858 Air filter spare parts kit

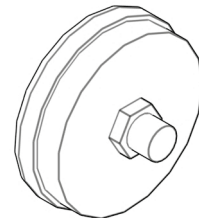


Fig. 93
Item no.: 100858 Air filter spare parts kit

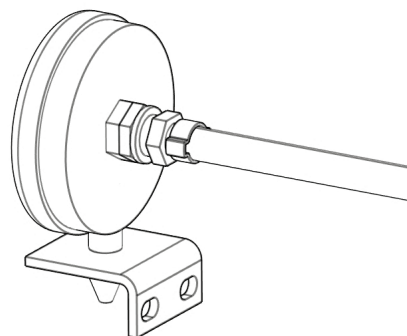


Fig. 94
Art.-Nr.: 214483
Item no.: 214483 Remote air filter with 2 m (39.37") hose

12 Troubleshooting pneumatic fans

12.1 Blades do not rotate to the cleaning position

No or low pressure supply (with a compressed air system)

Check	Comment	Action
Check the pressure supply.	Pressure of min. 6.5 bar / 94.27 psi to max. 8 bar / 116.03 psi must be applied to the electronic component.	Set the pressure supply.
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

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

12.2 Blades do not return to the cooling mode

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

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

13 Troubleshooting hydraulic fans

13.1 Blades do not rotate to the cleaning position

No or low pressure supply

Check	Comment	Action
Check the pressure supply.	Pressure of min. 20 bar (H222, H252) or 42 bar (H162) must be applied to the electronic component. Max. 50 bar / 725.19 psi may be applied.	Set the pressure supply.
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.	Check the pressure hose for leaks.	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

13.2 Blades do not return to the cooling mode

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

Oil in the fan 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

14 Troubleshooting

14.1 Electronic components

Short circuit

In the case of a short circuit, the internal fuse switches the electronic component off.

- 56) Examine the electronic installation for a short circuit and eliminate any short circuit.

Overheating

In the case of overheating (temperatures above 70°C / 158°F), the internal fuse switches the electronic component off.

- 57) Select a cooler installation location for the electronic component.

Error code

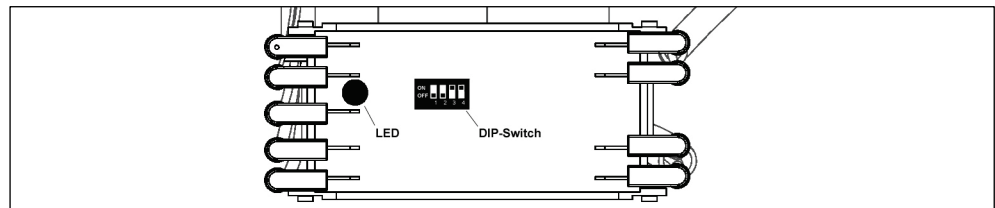


Fig. 95

LED error code	Cause of error
Does not flash	Check the operating voltage
Flashes every second	Normal status
Flashes every 6 seconds	<p><u>Valve fault:</u></p> <p>If DIP switch 4 is set to the "On" position:</p> <ul style="list-style-type: none"> - Short circuit to ground - Maximum temperature of electronics reached <p>If DIP switch 4 is set to the "Off" position:</p> <ul style="list-style-type: none"> - Open circuit to the valve
Flashes every 12 seconds	<p><u>Compressor fault:</u></p> <ul style="list-style-type: none"> - Short circuit to ground - Maximum temperature of electronics reached - Open circuit to the compressor



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