



APPLIED TURBINE TECHNOLOGIES

**ATT**

# Operating Manual

Zirocco-M50 Jet Dryer & Cleaner





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## EU Declaration of Conformity

The undersigned, representing the following manufacturer:

<b>Applied Turbine Technology ApS</b>
<b>Nordborgvej 81, 6430 Nordborg, Denmark</b>

hereby declares that:

<b>Machine type no. 10000-40</b>
----------------------------------

is in conformity with all relevant provisions of the following EC directive(s):

DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery The EMC Directive 2004/108/EC
--

Person authorized to collect technical data and make them available to the relevant authorities:

<b>Name</b>	<b>Address</b>
<b>Mike Claudi Kühl</b>	<b>Nordborgvej 81, DK-6430 Nordborg</b>

The machine's design has taken the standards and specifications referenced in Annex 1 of the EU Declaration of Conformity into consideration.

Nordborg, November 13, 2019

Brian Ellegaard Andersen  
CEO



## Annex 1 to EU Declaration of Conformity

References to standards and specifications used for the Declaration of Conformity:

Harmonized standards:

Number	Version	Title
DS/EN 60204-	2006	Safety of machinery – Electrical equipment of machines – General requirements
DS/EN ISO 13849-1	2006	Safety of machinery – Safety-related parts of control systems – General principles for design
ISO 12100	2011	Safety of machinery – General principles for design. Risk assessment and risk reduction.

Other standards:

Number	Version	Title

Other specifications:

Number	Version	Title



## Nameplate

The Zirocco-M50 is provided with a name plate according to the requirements stated in the Directive 2006/42/EC placed in the front of the product above the nozzle cover.

The nameplate is showing the CE and EAC (Russia) symbol as well as the website of the manufacturing company (for contact information etc).

The nameplate is also showing some important product information such as:

- TYPE: Model number of the product
- S/N: Serial number, a unique product number
- Year: Year of manufacturing
- LWA: Sound level in dB at less than 1m distance from the noise source.



The Zirocco-M50 has an A-weighted max sound power level of 96 dBA around the machine and **90 dBA at the operators' position**, at its max performance. The LWA is here not directly related to an environmental noise level as weighted average of the different work steps during machine operation. It is the maximum sound pressure which the operator will experience when using the machine at 100% performance level.

This choice of LWA was made to ensure proper health protection even when the machine is used above its intended use.

Level of noise (dB A)	Maximum daily exposure time
85	8 hours
91	2 hours
97	30 minutes

When persons are exposed to excessively loud environments (85 dB or more), hearing protection is required to prevent noise-induced hearing losses. The table to the left is showing the acceptable noise levels without hearing protection during a maximum daily exposure.

It is required that the operator of the Zirocco-M50 is using relevant hearing protection to prevent work induced hearing losses.

In the United States hearing protection is by law assigned a single number rating, NRR, which is an abbreviation for a Noise Reduction Rating. Hearing protection is available with NRR ratings from 0 to 30.

The required NRR level of a hearing protection is an estimate of the exposed daily noise level dose, which then can be converted to an 8-hour Time Weighted Average called TWA. The following table shows the required NRR rating for the hearing protection dependent of the average machine usage a day.



TWA exposure		Operator				
Working	hours	1	2	3	4	
Work exposure (100% Machine performance level)	dB(A)	103	103	103	103	
TWA dose	dB(A)	89	93	96	98	
NRR protection rating		15	23	29	33	
dBA reduction	(NRR-7)/2	4	8	11	13	
Requirement	dB(A)	85	85	85	85	

In this table the LWA value is used in the calculation of the TWA dose as a “worst case”, although the operator normally would operate the machine at lower performance level because the marking equipment often is limiting the overall operation.

The highest **NRR rating** for earplugs is 33, and the highest available **NRR rating** for earmuffs is 31. These values reflect the **level** of noise **protection** available for each device when worn alone. Combining earplugs with earmuffs can offer a **NRR protection level** of 36.

The environmental exposure will depend on how the work is done. It is possible to work below an environmental sound pressure LWA of 96, if that is needed, but it will require that the machine is operated below 50% of the maximum possible.



## Safety Instructions

### Obligations

#### **Obligations of the Operator/manager:**

The Zirocco-M50 must only be operated by personnel with the following knowledge:

- Are aware of the basic workplace safety information and accident prevention regulations.
- Have been instructed and trained in working with the Zirocco-M50.
- Have read and understood this operating manual.

#### **The operator is obliged to as follows:**

- To ensure that the required service and maintenance is performed according to the instructions laid out in this operating manual.
- To keep all the warning pictograms on the machine in a legible state.

If you still have queries, please contact the representative or manufacturer.

#### **Obligations of the Operator:**

Before starting work, all operators are obliged to as follows:

- To comply with the basic workplace safety instructions and accident prevention regulations.
- To read and understand the operating section of the operating manual.
- To use the required personal protective equipment, when working with the Zirocco-M50.
- To read the section "Warning symbols and other labels on the machine" in this operating manual, and to follow the safety instructions represented by the warning symbols, when operating the machine.
- To get the required work training.

If the operator discovers that a function is not working properly, he must eliminate the fault immediately. If this is not the task of the operator or if he does not possess the appropriate technical knowledge, then he must report this fault to his superior (supervisor).





### Intended use

The Zirocco-M50 intended use is for outdoor drying and cleaning of roads, runways, concrete areas or other areas of non-flammable surfaces.

The product is using the exhaust from a micro jet turbine to dry and clean the surfaces and should not be used on surfaces covered with sand or gravel as well as waste of or close to flammable materials.

The product is intended to be operated by a professional construction worker according to the guidelines in the instruction manual using the required PPE's.

***When operating the Zirocco-M50 hearing protections is mandatory. In restricted work areas with limited air exchange respiratory protection or a limited use can be necessary to apply.***

A backup operator needs to be present, where oncoming traffic is not shielded from the working area or on roads in hilly areas.

### Misuse

The product Zirocco-M50 should not be used indoor, since the jet turbine is using diesel fuel and the exhaust emission could be toxic.

As soon as the turbine engine is warming up or running the machine needs to be moved in order not to leave unintended hot spot marks on the ground.

Bystanders should be kept behind the machine when working, or at a safety distance of 5m away from the nozzle cover in the working direction. The exhaust can lead to ejection of debris such as dust, sand or small gravel, which can lead to eye injuries.

Examples of intended use:

- Drying and cleaning prior to **road marking**
- Drying and cleaning prior to **crack repair and joint sealing** on roads, runways, aprons etc.
- Drying and cleaning prior to **line and tape marking/removal**
- Drying and cleaning prior to **paving on concrete and asphalt.**

This Operating Manual utilise the following safety signs. Follow these safety signs carefully since failure to comply may cause personnel injuries or irreparable damage to the equipment.



**WARNING**

**Personal injury / mortal danger**

A usage situation of a technical nature or similar that may cause personal injury or mortal danger.



**CAUTION**

**Damage to machine or accessories**

A usage situation of a technical nature or similar that may cause damage to the machine or its accessories.



**ATTENTION**

**Important information**

A usage situation of a technical nature or similar that is very important.



**INFORMATION**

The product without operational disturbances. Provides useful tips and recommendations as well as information about the efficient use.

## Disclaimer

All specifications and instructions in this document conform to the rules and provisions in the EU Machinery Directive 2006/42/EC and Directive 2004/104/EC.



**INFORMATION**

This Operating Manual is subject to change without prior notice.  
Contact [info@zirocco.dk](mailto:info@zirocco.dk) to request new editions of the Guide.

**The warranty will be voided if the product is damaged for one of the following reasons:**

- Non-compliance with the instructions in this Operating Manual
- Use of the product for a purpose it is not designed for
- Natural wear or tear
- Incorrect installation performed by the owner or a third party
- Mechanical or technical alterations
- Use of unauthorized spare parts
- Non-compliance with the maintenance instructions or lack of maintenance within the prescribed service intervals.
- Use of safety button.



## Introduction

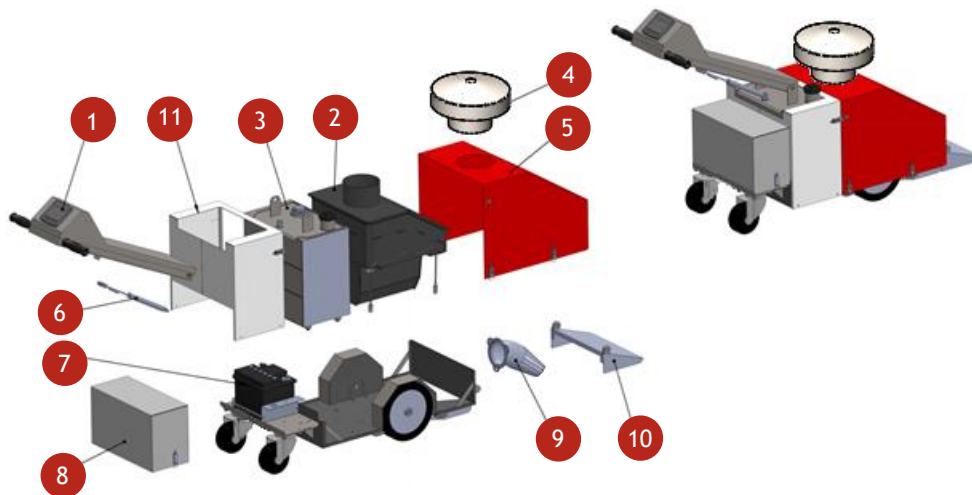
### Zirocco-M50 Jet Dryer & Cleaner

- A very flexible machine, which can be pushed by hand for minor jobs or be attached to and pushed by a line driver for larger projects (requires purchase of accessory called the “the Zirocco tow bar”).
- Independent and convenient machine operation as there is no need for a compressor or bottled gas supply.
- The Zirocco-M50 is equipped with a gas turbine which operates on standard diesel type EN590 mixed with 5% ATT turbine oil. The Zirocco-M50 does not use LPG, which makes its use possible also in populated areas.
- Only hot air - no open flames (a requirement for operations many airports etc.)
- Drying and cleaning speed up to 3 km/h depending on the surface and weather conditions and nozzle width.
- Both the Display DP250 and Telematics WS403/WS503 (WS403 is standard and WS503 is optional) controller are constructed to industrial specifications relevant to the automotive and transport industries.

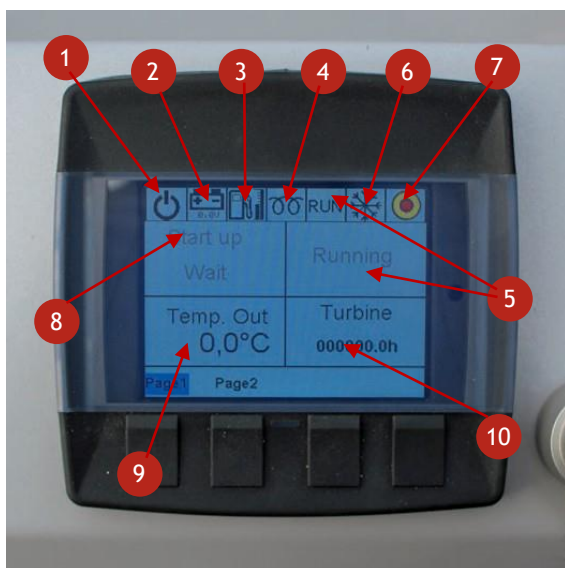




## Product Overview



- 1) Handlebar incl. controller and display
- 2) Turbine module box
- 3) Fuel tank
- 4) Filter cap
- 5) Turbine cover
- 6) Gas Spring w/adjusting lever
- 7) Battery
- 8) Battery cover
- 9) Nozzle (available in various designs and widths)
- 10) Nozzle cover/shroud
- 11) Fuel tank cover



Display, page 1 (Page 1)

### Display "Page 1"

- 1) Operating symbol
- 2) Battery voltage
- 3) Fuel level
- 4) Pre-heater
- 5) "Run" and "Running" indicate that the machine is ready for operation
- 6) Cooling
- 7) Safety stop indicates red when the safety stop is enabled.
- 8) Start-up/Wait. Flashes when the turbine is heating up.
- 9) Temperature indication
- 10) Operational hours



Display, page 2 (Page 2)

### Display "Page 2"

- 1) Air Flow adjustment up/down
- 2) - Air Flow is adjusted down
- 3) + Air Flow is adjusted up
- 4) Percentage indication
- 5) Button 1
- 6) Button 2
- 7) Button 3
- 8) Button 4



## Spareparts

Item	Description	Order no.
Battery Charger 230V assembly	8 A, 12 volts	12000-90
Battery Charger 110V assembly	8 A, 12 volts	12000-95
Fuel filter	40 µm	5000-100
Air filter	50 m2	5000-60
Filter cap for M50	Air inlet filter	5000-410
Battery	60 Ah	4000-10
Display	DP 250	1000-10
V-Head Nozzle 15 cm	150 mm standard for M50	14010-50
Labels: ATT	Logo	9000-30
Label: Heat	Warning sign	9000-20
Label: Hearing protection	Warning sign	9000-10
Turbine oil	ATT Turbine oil	7000-80
Quick Release set w. 2 pcs.	Quick Release	15010-30
Swivel Wheel (Rear)	Ø125 mm	5000-40
Wheel (Front)	Ø250 mm	5000-30
Wheel Disc for 5000-30	Wheel Disc	6000-30
Fuel Tank Cap	Fuel Tank Cap	6000-40
M50 Spare filter cover	325 x 150 mm	5000-390



## Operation

Zirocco-M50 may only be operated by personnel, who have read and understood this Operating Manual.

Relevant product-training could cover the following subjects:

- Operation of the Zirocco-M50
- Fuel mix and refuelling procedures
- Maintenance procedures, hereunder air filter and igniter replacement
- Turbine box replacement
- Turbine box ventilation
- Telematics portal (Not necessary for rental clients)
- Machine safety

### Safety Instructions



#### **WARNING**

##### **Fire hazard**

Do not use the Zirocco-M50 indoors or close to flammable material.

##### **Hot exhaust air/safety distance**

The outlet temperature next to the turbine is 350 to 550°C. Keep a distance of at least 5 m from the machine during operation.

##### **Hearing and eye protection**

The personnel in the immediate vicinity of the Zirocco-M50 must use hearing protection and safety goggles, when operating the Zirocco-M50.



#### **CAUTION**

##### **Fuel**

Use Diesel EN 590 along with 5 % ATT Turbine oil (7000-80) in the mixing ratio 1 to 20. (20 litres of fuel to 1 litre of ATT Turbine oil). When utilizing US Gallons, the mixing ratio is 1 litre ATT Turbine Oil to 5 US Gallons of Diesel. In areas where low smoke emission is needed, then use odourless and smokeless petroleum (use Exxsol D 80 or Shellsol D70 petroleum corresponding to Diesel EN 590).

##### **Nozzle**

Always check the nozzle for damages, cracks or constrictions before use.

##### **Keep under supervision**

Do not power up and leave the Zirocco-M50 unsupervised.

Do not transport the Zirocco-M50 before it has cooled down completely.



### Before start up

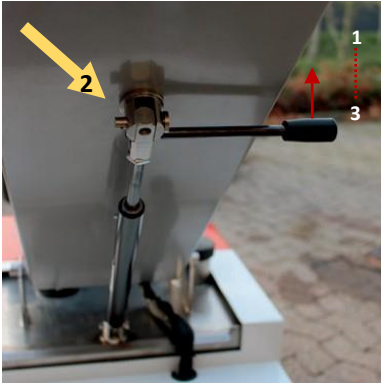


Figure 1

Set the adjusting lever to the correct working height:

- 1) Pull or push the lever.
- 2) Set the handlebar to the desired position.
- 3) Release the lever.

### Safety Stop



Figure 2

- 1) The safety wire is connected to a stop switch. The wire is attached to the operator during operation. If the operator moves to a distance of more than 0.5 m from the machine, the safety wire is pulled, and the turbine stops.

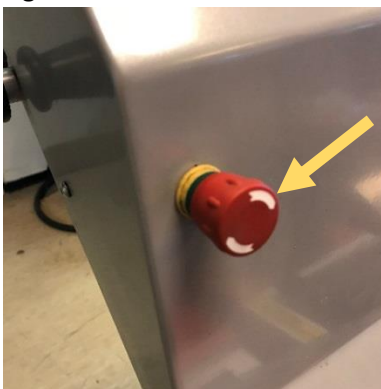


Figure 3

- 2) Button for safety stops only.





## Power-Up



Figure 4



Figure 5



Figure 6

1) Press the green start button to turn the display on.

2) To engage the turbine, turn the key switch to the right (to position 2) and hold for app. 5 seconds. The clutch will engage with a mechanical sound.  
The key will automatically return to the middle (position 1), when released.

**See Figure 10**

3) The pre-heater symbol in the display will flash after app. 15 seconds (and the starter engine will engage with a recognisable sound) and the current temperature will be displayed, when above app. 50°C.

4) The "Start-up/Wait" symbol flashes.

5) It is important to move the machine, when the Start-up/Wait indication flashes in order to avoid burn marks on the ground.



Figure 7



Figure 8



Figure 9

6) Once the machine has warmed up, the "Running" indication will indicate steady green (30-60 seconds).

7) The temperature can vary from app. 400-460 °C

8) Press the button 2 to get on page 2

9) Press + to increase the airflow (button 4) or – to decrease the airflow (button 3). The airflow will increase/decrease with 5% with every press.

10) By pressing 0% the turbine goes to idle (button 2).



## Shut down and Cooling



Figure 10

- 1) Turn the key switch from position "1" to position "0". The Zirocco-M50 will immediately slow down to 0 % (idle), idle for 30 seconds, and then start a cooling program (will cool down until below app. 50°C).

The Zirocco-M50 can be restarted once the display shows the text "Ready to Start again".



Figure 11

- 2) When the key is turned to the left the display will show "Shut down Wait"



Figure 12

- 3) During cooling, the cooling symbol will flash in the display, and the current temperature will be displayed.



## Parking and storage



Figure 13

1) After use the Zirocco-M50 needs to be placed with brakes engaged on firm surfaces.

2) The Zirocco-M50 has parking brakes on each rear wheel, which must be activated before leaving the Zirocco-M50.

## Display shut-down



Figure 14

1) The red stop button of the power switch can only be utilised, when the turbine's cooling program is completed and the operating symbol on the display has been off for 2 minutes. The Zirocco-M50 turns off automatically after 60 minutes (factory setting). The timer can be set from 20 to 60 minutes.

## Re-fuelling



Figure 15

1) Refuel either when prompted or for preparation of the next utilisation of the Zirocco-M50. Premix turbine oil and fuel in a separate canister (plastic canisters are recommended). Refill by removing the Fuel Tank Cap. Avoid spilling of fuel by utilising e.g. a funnel. After refuelling ensure proper installing of the Fuel Tank Cap.



### Low Fuel Level

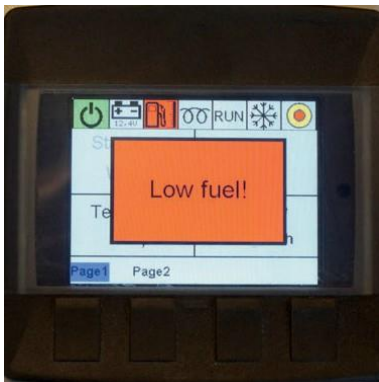


Figure 16

- 1) If the fuel tank is indicated empty, the turbine turns off, and the display indicates "Low Fuel". Fill up the fuel tank and power up again.

### "Change Filter" Indication

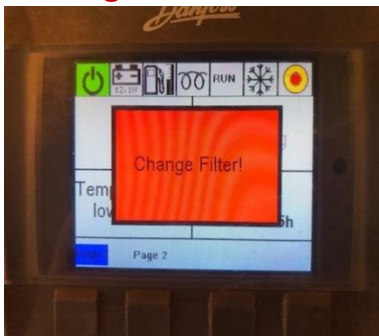


Figure 17

- 1) The lower air filter (The air filter in position 2) must be replaced and after app. 10 hours of operation or when worn out.
- 2) Switch off the machine before replacing the filter. Use only filter type ATT 5000-60. Then change the filter and turn the key to the left to reset the warning.
- 3) This indication can be disregarded if filter is serviceable and replaced recently.
- 4) By turning the key to the left (position 0), the indication for the recent 10 hours of operation will be reset. This has to be done for each 10 hours of use (if installing a turbine module with a higher number of hours).



## Air filter setup

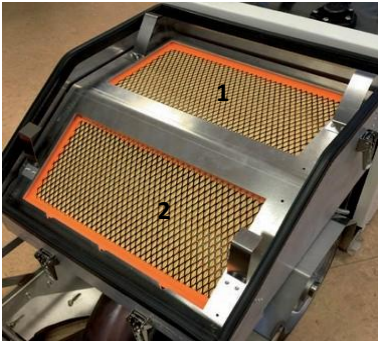


Figure 18

- 1) The filter in position 1 is a spare filter and can be covered by the Spare Filter Cover P/N: 5000-390 to always have a new filter available
- 2) The filter in position 2 is to be replaced when worn out (app. Every 10 hours of operation).

## Air filters

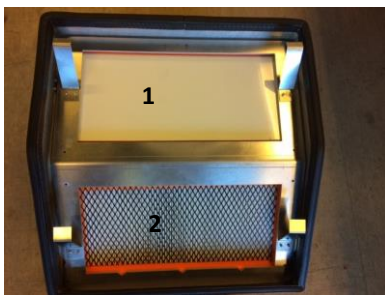


Figure 19

- 1) Daily Air Filter check before use:
- 2) Inspect for intact filters and excess dirt and damage.
- 3) The air filter in position 2 must be replaced after app. 10 hours of operation or when worn out.
- 4) The filter in position 1 is a spare filter when covered by the Spare Filter Cover P/N: 5000-3 or a relevant size cover.
- 5) When prompted to change filter or if the filter(s) are not serviceable, then follow the steps of figure 20 (Change filter(s))

## Change Filter(s)

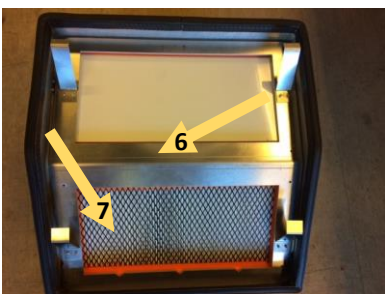


Figure 20

- 1) Pull out and remove the filter frame.
- 2) Remove the air filter.
- 3) Check the air filter for dirt, penetration or any damage. Replace if worn out.





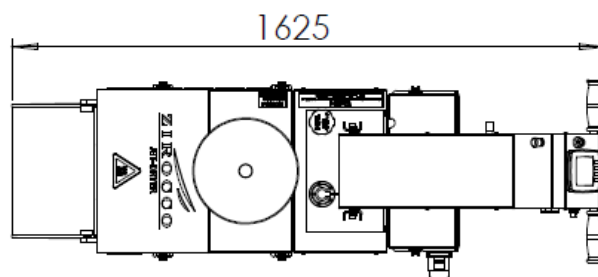
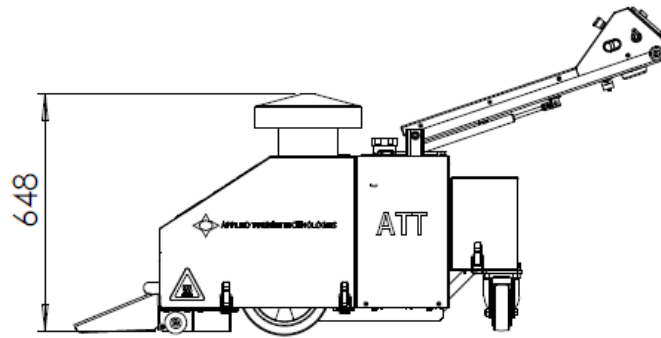
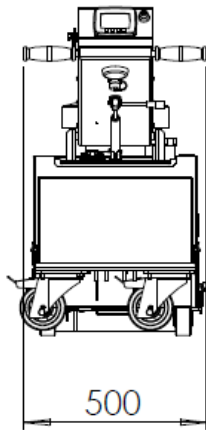
## Technical Data

<b>Turbine module:</b>	A50
<b>Turbine force:</b>	App. 70 N
<b>Air flow:</b>	App. 50 m <sup>3</sup> /min
<b>Temperature:</b>	App. 350-480°C (662-896 °F)
<b>Weight (approx.):</b>	115 kg (253 lbs)/146 kg (321 lbs) w. fuel
<b>Drying width (approx.):</b>	15-30 cm (6-12 in)- delivered with 15 cm/6 in nozzle
<b>Drying speed (approx.):</b>	Up to 3 km/h (up to 1.8 mph)
<b>Fuel (EU specifications):</b>	EN 590 – see alternatives under the section “Safety Instructions”
<b>Fuel (US specifications):</b>	1-D S15 ULSD
<b>Fuel capacity:</b>	31L (8.2 US Gallons)
<b>Fuel consumption:</b>	10-15 L/h (3-4 US Gallons/h)
<b>Battery:</b>	12V, AGM, 60 Ah, Box size L02 (min. 100A)
<b>Generator:</b>	No – Frequent charging required after app. 10-15 starts
<b>Towbar for line drivers etc:</b>	No - Accessory
<b>Max noise level at 100%</b>	96 dB
<b>Air filters:</b>	2 pcs. of which 1 pcs. can be used as a spare filter if a “Spare Filter Cover” is utilised for cost saving. The filter(s) must be replaced app. every 10 operation hours or when unserviceable.

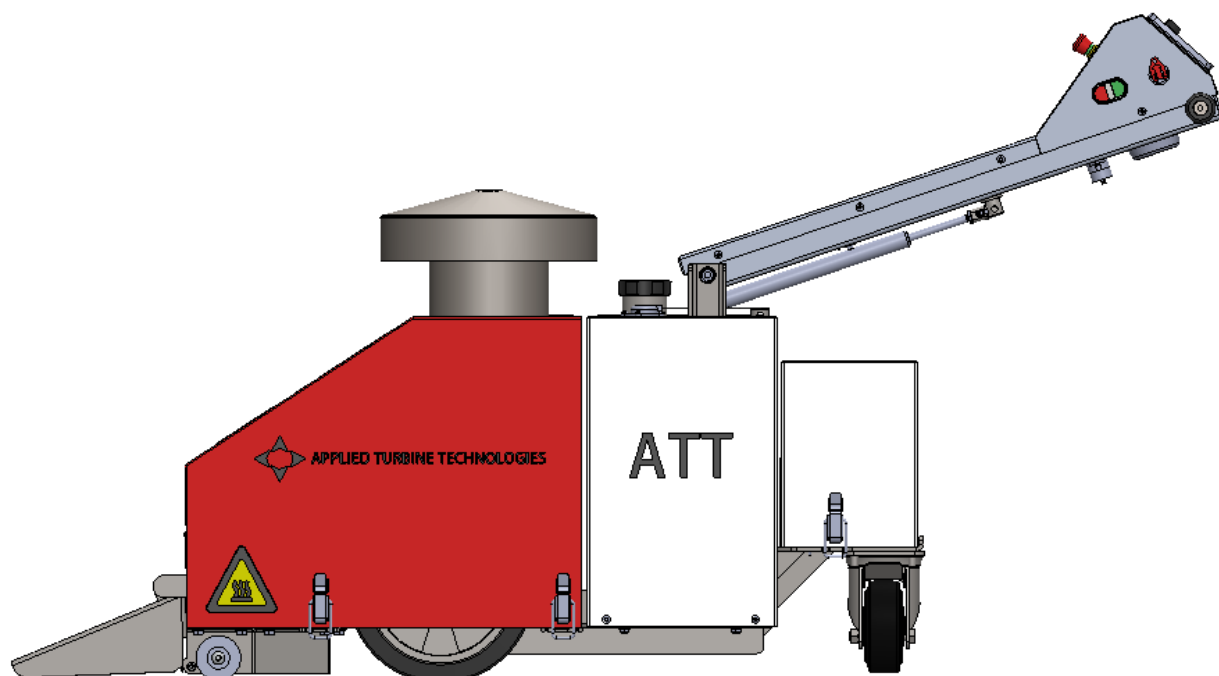
See order numbers in “Accessories” on page 15.



## Dimensions

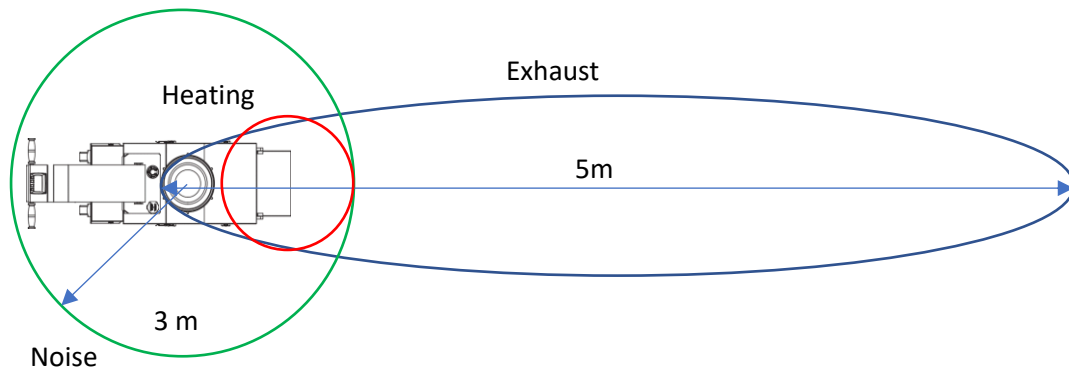








## Hazard and danger zones



The hazard and danger zones are illustrated in the above figure.

Each hazard zone requires its own protection measures

- The NOISE zone requires protection to avoid loss of hearing ability
- The EXHAUST zone, where the use of safety glasses are required
- The HEATING zone, where use of safety shoes are required'



## Warning Signs



Figure 4: Heating



Figure 5: Hearing protection

Caution, the nozzle cover can still be warm after the turbine has cooled down.

Order immediately new warning signs if the old ones get damaged. Warning signs can be ordered via ATT or Distributors (see under order numbers in “Accessories” on page 15).



# Troubleshooting

## Error Messages

Error message	Solution
Black user screen	Remove battery cover and check <ul style="list-style-type: none"><li>• Main switch is activated</li><li>• Reset the thermo fuse</li><li>• Battery cable logs and connections</li><li>• Measure battery voltage</li></ul> Remove handlebar cover and check <ul style="list-style-type: none"><li>• The electric fuse</li></ul>
User screen turns off immediately after start-up attempt	Reset safety switch on the handlebar
No preheat after 15 seconds	Terminal will show <ul style="list-style-type: none"><li>• To low battery voltage</li><li>• To low fuel level</li><li>• Wait 2 minutes and try again</li></ul>
Low battery level. symbol flashes red.	Recharge the battery with the battery charger.
Low fuel level. The fuel level symbol flashes red.	Fill up with fuel. Wait 2 minutes to get CANBUS updated
Safety switch activated	Reset safety switch
Turbine will not start after repeated attempts.	Contact ATT support team (+45 29405023)
The display flash one time	Reset the safety switch
The battery symbol shows no voltage and flashes red	Check the electric plug outside the turbine engine module is connected. Check if any wire is damaged or loose to the electric plug
Low airflow with 100% on the display	Check if the diesel filter is dirty
Unstable airflow in range 0 to 100%	Check the diesel system and ventilate the system
Air flow high flashes on display	Change air filters
Air flow low flashes on display	Check air filters = install air filters
Rotor Blocked	Contact ATT support team (+45 29405023)



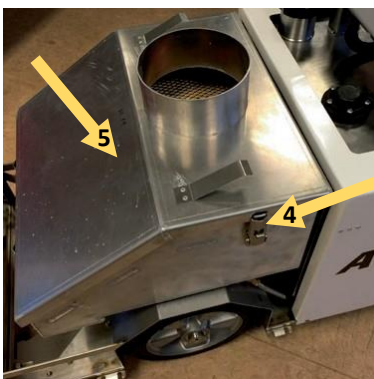
## Fuel System Ventilation



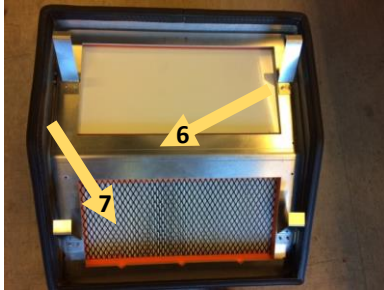
- 1) Remove the filter cap.



- 2) Loosen the quick releases on both sides of the Turbine Cover.
- 3) Lift and remove the Turbine Cover.



- 4) Loosen the quick releases on the turbine module box cover on both sides.
- 5) Remove the turbine module box cover.



6) Pull out and remove the filter frame.

7) Remove the air filter.

8) Check the air filter(s) for dirt, penetration or any damage. Replace if worn out.



8) Check for air bubbles in the fuel hose.

9) Air out the system.



## Maintenance and Service

### Turbine Module Box

Ensure completion of the service check of the turbine module box after maximum 100 hours or once a year. ATT has the only authorised workshop for repair and service checks.

### Air filter

Inspect the air filters daily. Replace the air filter(s) if they are soiled or blocked or in any way unserviceable.

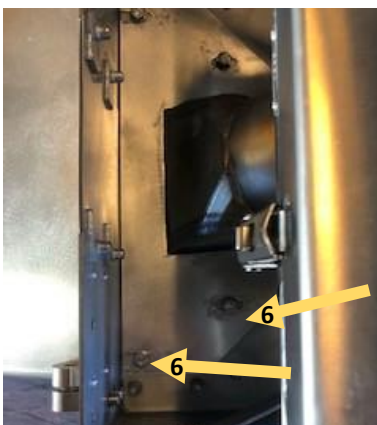
### Filter cap

Inspect the filter cap daily. Clean and check for any damage or other elements, which can prevent full functionality

### Turbine Module Box Replacement



- 1) Remove the filter cap.
- 2) Loosen the quick releases on both sides of the Turbine Cover.
- 3) Lift and remove the Turbine Cover.
- 4) Release the electric plug.
- 5) Release the fuel hose quick release.



- 6) Remove the 4 screws on the Nozzle Cover Plate.
- 7) Pull out the turbine module box.

Once the new turbine module box is installed, ship the replaced turbine module box to Applied Turbine Technologies for service etc.

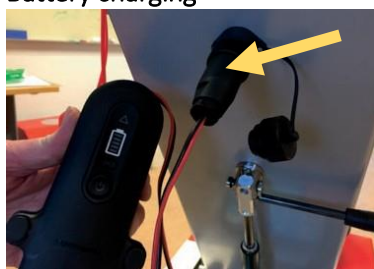
Pack the replaced turbine module box into the dedicated transport box, state your contact details on the supplied shipment label, place the label on the transport box and return the parcel.

**Overview of Recommended Maintenance and Service**

Daily	Remarks	Every 10 Hours	Yearly/100 Hours
Clean the wheels	Remove bitumen or other sticking materials	Replace the Air Filters	Service check at ATT
Clean the Filter Cap	If cleaned with water, then dry before installation	Check the wheel locks	
Clean the Nozzle Cover	Remove bitumen or other sticking materials	Clean the engine cover plate	
Dust off and clean the Zirocco-M50	Remove dust and dirt incl. bitumen leftovers etc.		
Check the Air Filters	Replace if dirty or showing signs of tear		
Check fuel level in the display	Refuel if necessary (premix in a plastic cannister)		

**12V Battery and Charging**

Standard battery (See specification in the section “Technical Data”). If the Zirocco-M50 is being shipped by air freight, then the 12V battery due to air safety regulations, will not be included. Then you must buy a standard 12V battery locally.

**Battery charging**

1) Charging plug.



2) Charge the battery with the supplied battery charger. If the battery is charged at a temperature below 0°C, use the 14.7 V charging button.

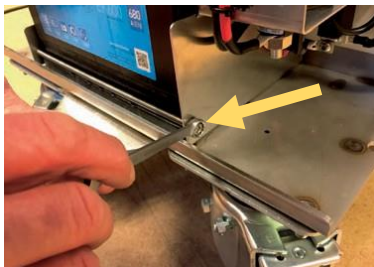




### Battery replacement



- 1) Dismantle the battery wires.  
Remove the (+) pole and then the (-) pole.



- 2) Dismantle the two battery brackets.
- 3) Install the new battery and battery brackets.

### Wheels

The Zirocco-M50 wheels are subject to extensive heat and wear. It is recommended that they are replaced, as soon as they show signs of damage. New wheels and other spares and accessories can be ordered via our distributors (see more on our website: <https://zirocco.dk/en/distributors> or if distributors are not available via direct order to [info@zirocco.dk](mailto:info@zirocco.dk)

### Replacement of wheels



- 1) Dismantle the fixed wheels (Ø250 mm) on the front end of the Zirocco-M50 with a hex key.





- 2) Install the new wheels.







- 3) Dismantle the swivel wheels on the Zirocco-M50 back end (Ø125 mm). Each wheel is installed with four nuts. Install the new wheels.

**Igniter Replacement Guide:**

	Remove the cyclone, unlock the red machine cover and remove it to get access to the machine's turbine box.		
	Unlock the hood of the turbine box and remove both filters to get full access to the machines jet turbine		



	Find the white electric wire and pull gently on it to open the spring mechanism allowing you to lift the connector from the igniter.		
	Next, unscrew the blue sealing nut by hand and gently pull off the fuel tube from the igniter.		
	Next, unscrew the igniter by hand.		
	Once removed, make sure the replacement igniter has both the aluminum and white nylon washers mounted so that the firing chamber is sufficiently sealed. Once the new igniter has been mounted make sure all connections are tightly sealed by hand.		



## Storage & Transportation

If the Zirocco-M50 is not utilised for more than three months, dismantle the battery and empty the machine's fuel tank.

Store the Zirocco-M50 in a place with low air humidity and do not expose to dust, dirt, rain, snow and vibrations. If possible, the Zirocco-M50 should be stored in the relevant packaging box from ATT.

ATT recommends the use of our Nozzle Protection to avoid getting dust and dirt in the turbine, when not in use (both on the work site and in the storage facility)



M50 Nozzle Protection  
Item number: 14000-75

## Wastedisposal

Zirocco-M50 – should be returned to Applied Turbine Technologies for proper waste disposal.



### **ATTENTION**

#### **Important information**

Do not try to take apart the Zirocco-M50 yourself. It contains components that need separate treatment in connection with waste disposal.

Prior to returning:

- 1) Empty the machine for fuel and batteries.



APPLIED TURBINE TECHNOLOGIES

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