

## 2.4 Repair

- Only the trained and qualified personnel are authorized to repair the fogger.
- Only use original parts supplied by the manufacturer.  
A high risk will be caused when using copied parts including possibility of injury to personnel.
- Repair of engine should be carried out in accordance with the engine Operator's Manual attached to this Instruction Manual.
- Smoking is forbidden during repair.
- Before starting a repair, disconnect active power supply, shut down the fogger and wait until it is cooled down completely.
- During repair/maintenance, avoid all forms of contact with the high-tension ignition components e.g. spark plugs and ignition coil.
- After repair/maintenance, reassemble all safety devices and ensure all parts are assembled correctly, all caps and seals are in clean and serviceable condition.
- After repair/maintenance, perform a functional test by fogging only water.
- It is recommended to have the fogger inspected and checked by a qualified and authorized specialist e.g. company service representative on a regular basis e.g. annually.

## 8. Cleaning

### 8.1 Cleaning solution tank

The solution tank is cleaned after flushing. However, due to possible stains, manual cleaning is necessary from time to time. The tank can be emptied easily by turning solution valve lever (fig. 30-1) till the pointer pointing to “DRAINAGE” hose (fig. 30-2).

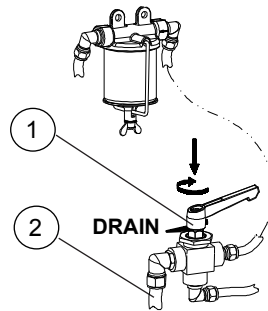



fig. 30

### 8.2 Cleaning solution pipe system

Cleaning solution line system ensures a higher reliability of operation and avoids residues in the system. The solution line system is cleaned after flushing. However, after every fogging the solution filter has to be particularly checked to prevent clogging.

The solution filter (fig. 31-3) can be checked from outside as long as the glass cover (fig. 31-4) is transparent. If not, dismantle by turning counter-clockwise the glass cover holder wingnut (fig. 31-5) and wash out the filter strainer.

Before assembling it back, check if the gasket (fig. 31-2) is in correct position.

-  Wear gloves, eye protection and protective clothing when cleaning.  
Dispose of contaminated cleaning clothes and washing liquid safely.

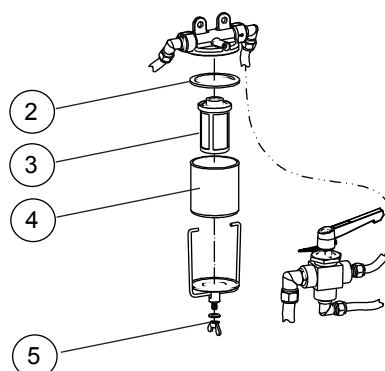


fig. 31

## 9. Maintenance

The fogger running hour can be found at the flow control box. When the engine is running, hour clock (fig. 32-1) starts to record the running time which will be accumulated (please do not reset).

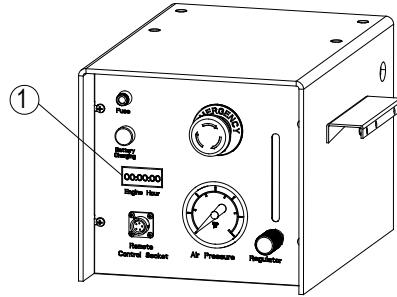


fig. 32

### 9.1 Engine

Please refer to page 9 “Maintenance” of the engine Operator’s Manual.

Maintenance Schedule:

First 5 hours	
#	change oil
Every 8 hours or Daily	
#	check engine oil level
#	clean area around muffler and controls
#	clean finger guard
Every 25 hours or Annually	
#	clean air filter *
#	clean pre-cleaner *
Every 50 hours or Annually	
#	inspect muffler and spark arrester
Every 100 hours or Annually	
#	change engine oil
Annually	
#	replace air filter
#	replace pre-cleaner
#	replace spark plug
#	clean air cooling system *

\* In dusty conditions or when airborne debris is present, clean more often.

## 9.2 Engine speed

Engine speed should be checked periodically to make sure it is between 3400-3600rpm. Engine speed will affect the airflow rate of nozzle system consequently influence the droplet size.

## 9.3 Side channel blower

The side channel blower is equipped with sealed groove ball bearing which does not need lubrication. The grease filled is sufficient to the whole service life of the the bearing. Please remember that even small solid particles e.g. sand can damage the blower or lead to blockage of the rotor. If the conveyed medium contains solid particles or pollutions, these can be removed by the paper filter on the air intake side. Attention should be given either to a careful regular cleaning or replacement of clogged filter.

 DO NOT EVER RUN THE BLOWER WITHOUT AIR FILTER ! (fig. 33)

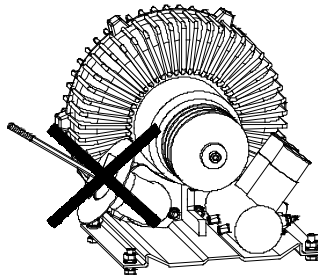


fig. 33

## 9.4 Cleaning the air filter (side channel blower)

- After about 20 hours of operation in normal air condition, the air filter cartridge (fig. 34-1) should be cleaned.
- To check and clean, loosen knob nut (fig. 34-3) and pull off housing (fig. 34-2).
- Pull off filter cartridge, use compressed air to blow parallel to the folds of the paper filter from outside.
- Finally blow from inside to outside.

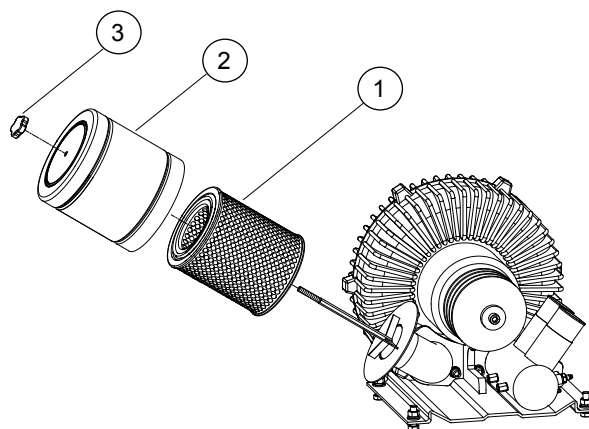



fig. 34

 Clogged or damaged filter cartridge must be replaced.  
Life time of the blower depends entirely on cleanness of the air filter.

## 9.5 V-belt drive

Check V-belt tension every week if the fogger is used regularly, make adjustment if necessary.

The tension of the V-belt can be tested by pressing down the V-belt in the condition that the fogger is switched off and belt guard is removed. The V-belt should be able to be pushed down by approx. 5-10mm (fig. 35). If the belt can be pushed over 10mm, you have to decide whether to tighten it or to relace with a new belt.

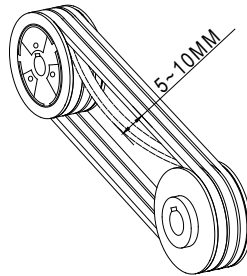


fig. 35

The tighten or replacement should follow as below:

- loosen all the 4 screws (fig. 36-1) of blower
- loosen the tension bolt nut (fig. 36-2) and locking nut (fig. 36-3)
- push blower towards engine
- take off V-belts
- fit new V-belts
- push blower back to position and tighten screws slightly, at the same time, align blower's and engine's V-belt pulleys are parallel
- tighten tension bolt nut to get necessary tension of the V-belts.
- tighten locking nut
- firmly tighten 4 screws of blower

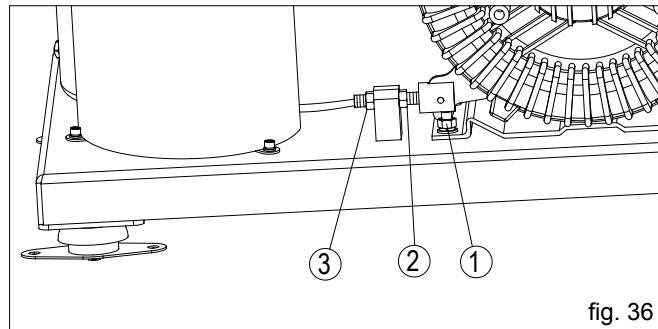


fig. 36




After repair, fit belt guard and other protective devices back, tighten all bolts and nuts.

## 10. Trouble shooting

### 10.1 Engine

The engine is equipped with a low-oil sensor that disables the ignition if the oil falls below the minimum level. Over oil filling can cause the engine very hot and to run intermittently or unexpected stop.

Please refer to page 11 “Troubleshooting” of engine Operator’s Manual.

 Only trained personnel is allowed to service or repair combustion engine.

### 10.2 Side-channel blower

The blower is maintenance free and completely oil free.

To check if the blower is turning easily,

- Switch off the engine firstly.
- Move the belt pully backwards and forwards.

This should be easily done if the engine is seperated from belt pully, or, if the internal flyweight of the centrifugal clutch (fig. 37-1) is separated from the clutch’s outer drum.

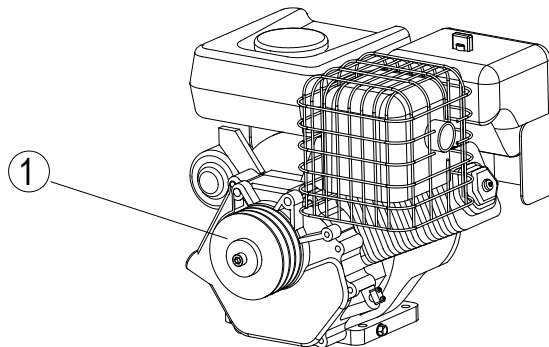


fig. 37

If the belt is blocked, it may due to following faulties:

- a) the centrifugal clutch is damaged or no longer separated
- b) the blower impeller touches the blower housing or housing cover or bearing is damaged.

To identify which faulty it is, please proceed as follows:

- a) use the rope start from the engine. If engine with belt drive and blower can move, the clutch is damaged.

 The clutch can only be replaced but never be repaired.

b) if nothing can move, the blower impeller got stuck. This might be caused by either the damaged bearings or the impeller contacting with blower housing or housing cover.

- If it is the bearing damaged, you need special tools to replace the bearings.
- If it is the impeller (fig. 38-1) touching the blower housing (fig. 38-2) or housing cover (fig. 38-3), both impeller and housing or cover have to be replaced, then we recommend to replace a complete blower.

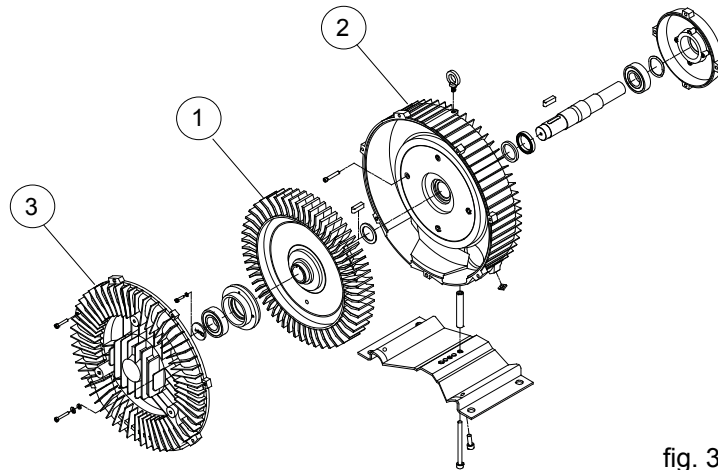


fig. 38

### 10.3 Solution system

#### 10.3.1 Throughput too low or uneven

Possible causes and actions:

- If the system does not permit a larger throughput, clean solution filter
- If solution nozzle or solution hose is clogged, clean nozzle or hose
- If solution hose leaks, replace a new hose
- Check solenoid valve for free passage, choked or defective, clean or replace the solenoid valve
- If flow regulator is clogged, clean
- If pressure in the solution tank is too low, check following:
  - a. Start the fogger and check the pressure gauge  
If the pressure is below approx. 180mbar, pressure in the solution tank is too low, then taking off the tank cover and cover cap, checking cover gasket and cap seal, replacing if necessary, and fitting cover and cap back to solution tank.
  - b. Check pressure tube connection from blower outlet to solution tank for leakage, replace if necessary.
  - c. Check air hose for leakage, replace if necessary.
  - d. If engine speed is too low, check if throttle valve is fully opened.

### 10.3.2 No throughput

- Is the control power voltage available?
- Are the solenoid valves (fig. 39) defective or not release?

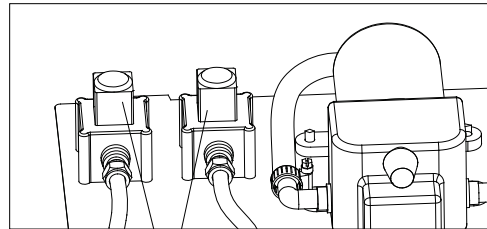


fig. 39

solenoid valve

- Is the shut-off valve open?
- Is the solution filter clogged?
- Is the solution tube broken?
- Is there a residue blockage at the solution nozzle?
- Is the flow regulator (fig. 40) clogged?

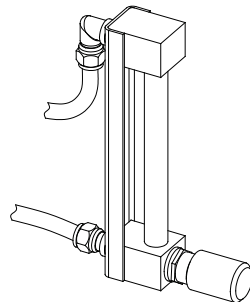


fig. 40



## 10.4 Electric failure

### 10.4.1 Charging light is not on / Battery does not charge

- check if the rectifier (fig. 41) at the engine defective or fuse (fig. 42) blow

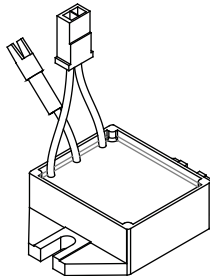


fig. 41

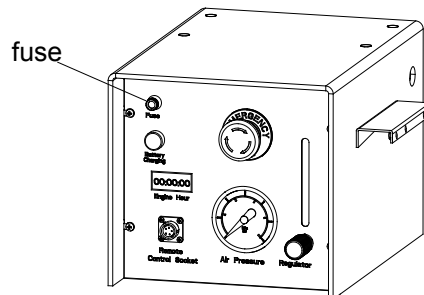


fig. 42

### 10.4.2 Control power light is not ON / Solenoid valve can not be activated

- check if manometric switch (fig. 43) is defective (at control box), or air pressure is too too low due to following possibilities:
  - leakage of air system
  - engine speed is slow
  - the centrifuger clutch is slip
  - the belt slip

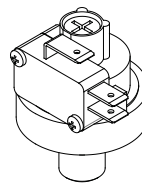


fig. 43

### 10.4.3 Tank empty light is not ON when solution is empty; Tank empty light is not OFF when solution is full;

- check if the level sensor (fig. 44-1) at the tank is dirty or its cable connection (fig. 44-2) is loose or damaged
- check if the secure board at the control box is defective

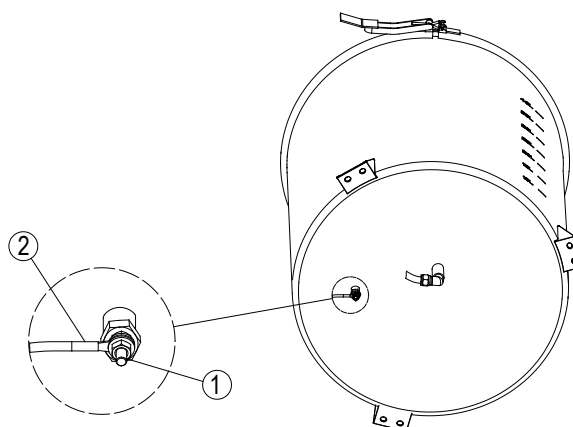


fig. 44

## 10.5 Flushing

10.5.1 Press the flushing button on the remote control, pump does not run:

- Check the 2 prerequisites for pump running
  - solution tank **MUST** be empty (tank empty light must be on);
  - flushing tank **MUST NOT** be empty (flushing light must be on)
- Check if the pump is defective
- Check if the control circuit board is defective

10.5.2 Solution tank is not clean after flushing:

- Is there a residue blockage at the flushing ball
  - remove the ball, use compressed air or pressurized water to blow from outside (fig. 45)

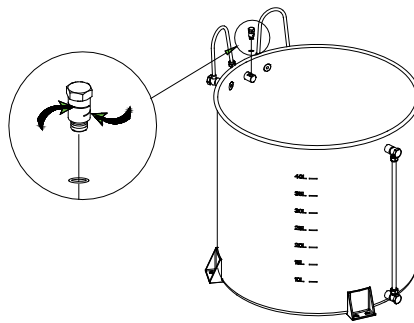


fig. 45

- Is the flushing tube or connection leaking or broken
- Is the water filter clogged

## 11. Storage

If the fogger will not be used for 30 days, please handle it as below. In winter time, these should be done after every use.

- Engine:
  - Please refer to page 10 “Storage” of the engine Operator’s Manual.
- Solution system:
  - To avoid crystallization of residues in the solution system parts, put approximate 0.5 l of resin-free oil (e.g. paraffin, diesel, heating oil) into the cleaned solution tank then fog until the tank is completely empty and no fog is coming out of the spray nozzle.
- Battery:
  - Disconnect the minus pole (equipment ground).
- Fuel tank:
  - Remove all the fuel from fuel tank.
- Store the fogger in a clean and dry place out of the direct sun.
- In freezing winter, to avoid frosting, keep the fogger dry and indoor.