

AC 46-56-86

SECOND

HALF

AC 46-56-86

**MAINTENANCE**

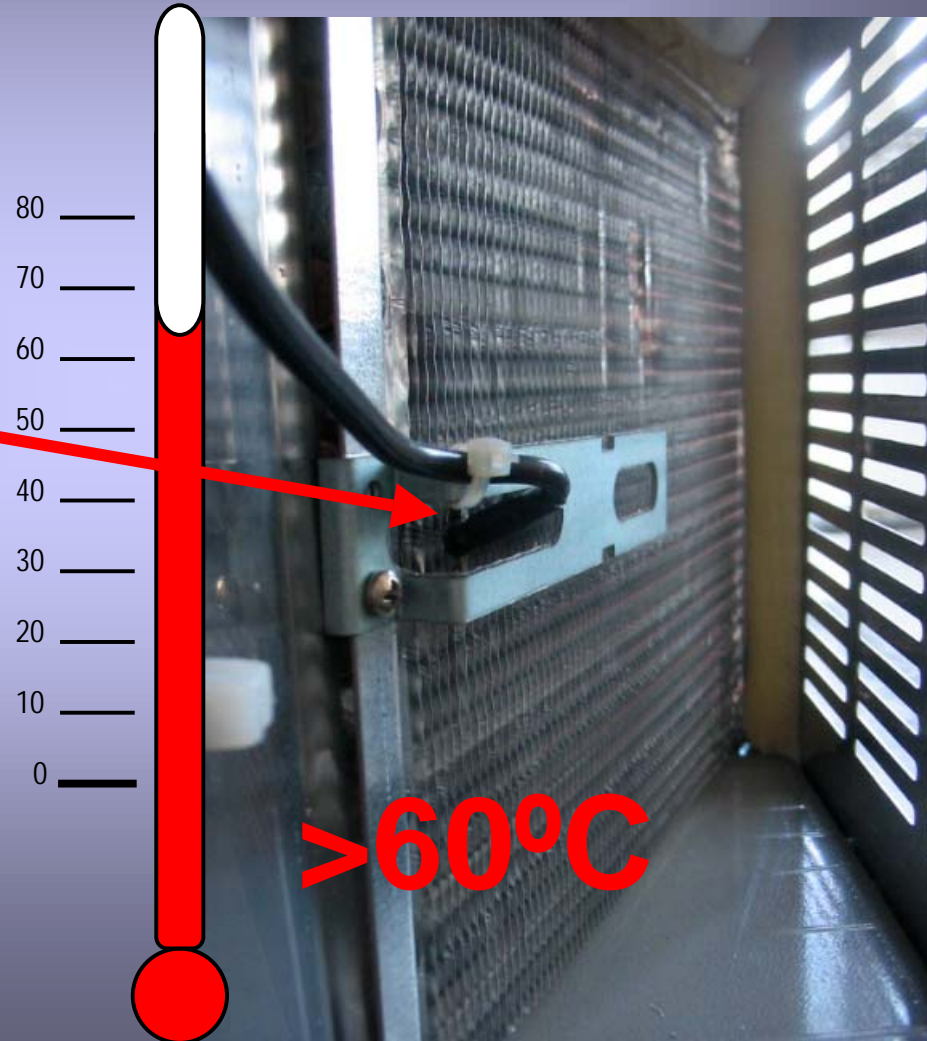
# AC 46-56-86 MAINTENANCE

The models AC 46, AC 56 & AC 86 are equipped with a special PC Board that operates like a  
**“Cleaning/Maintenance Reminder”.**



# AC 46-56-86 MAINTENANCE

When condensing temperature is more than 60°C, the condenser sensor send a signal to the Cleaning/Maintenance Remind Board to .....



# AC 46-56-86 MAINTENANCE

.....activate/energize  
the RED Light with  
machine still in  
operation.



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This is the signal to clean the air cooled condenser filter by taking it out from the front panel.



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In case the RED  
Light is blinking  
slow (0,5" ON -  
3" OFF) with  
machine still in  
operation....



# AC 46-56-86 MAINTENANCE

.... it's the signal to  
perform the  
cleaning/de-scaling of  
the water system.





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## MAINTENANCE

....as per attached  
chart.

DIP SW 1	DIP SW 2	TIME
ON	ON	1 MONTH
OFF	ON	3 MONTHS
ON	OFF	6 MONTHS
OFF	OFF	12 MONTHS

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## MAINTENANCE

The most important program on the maintenance of the cubers is the cleaning/sanitizing to be done on regular base, as detailed here below:

- Sanitizing:           Every month
  
- Cleaning:            Every six

or when cleaning remind board signals it.

On next slides will be shown the procedure for cleaning and sanitizing.

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## MAINTENANCE

### TOOLS REQUIRED

- Medium Phillips Screwdriver
- Medium Flat Screwdriver
- Pair of safety gloves
- Bucket
- Different types of brush
- Approved Cleaner/Sanitizer

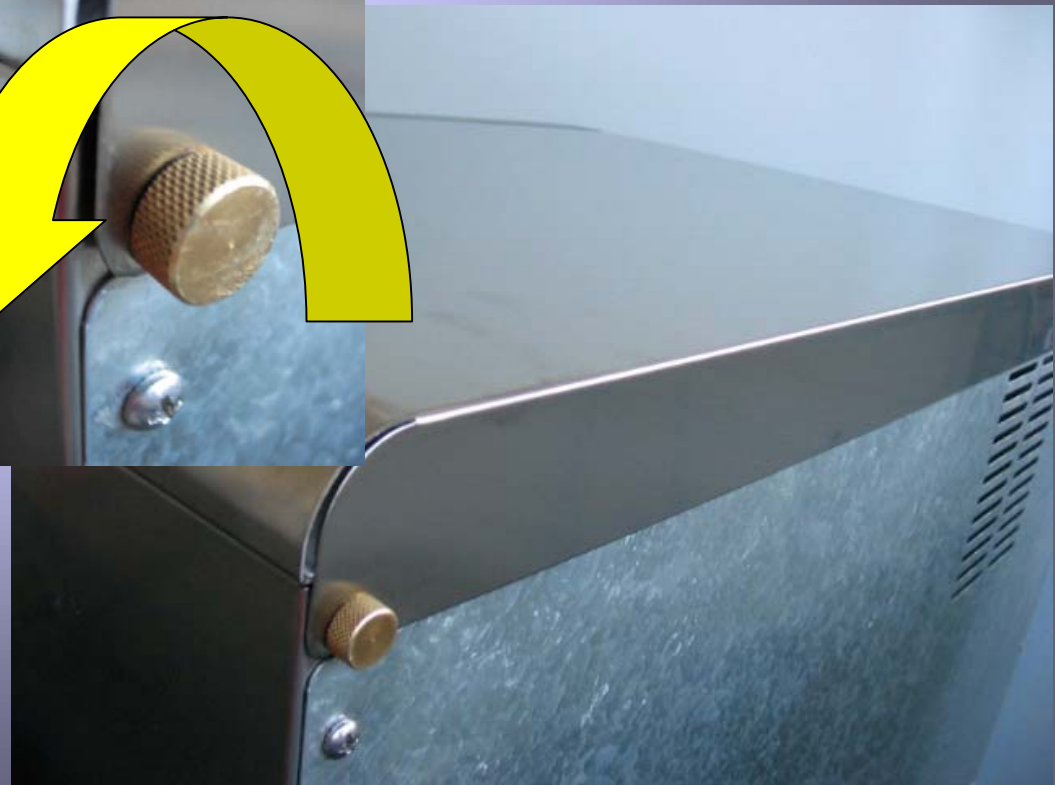
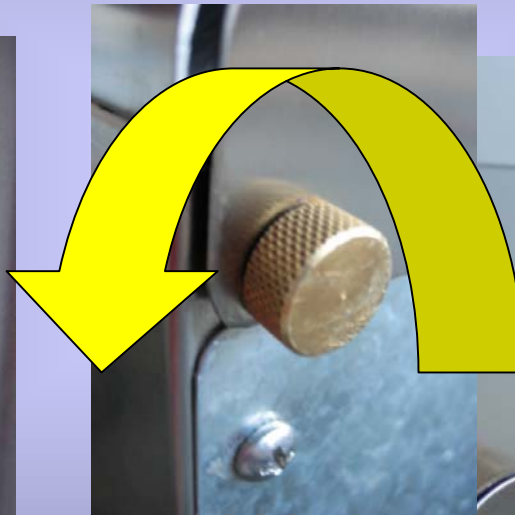
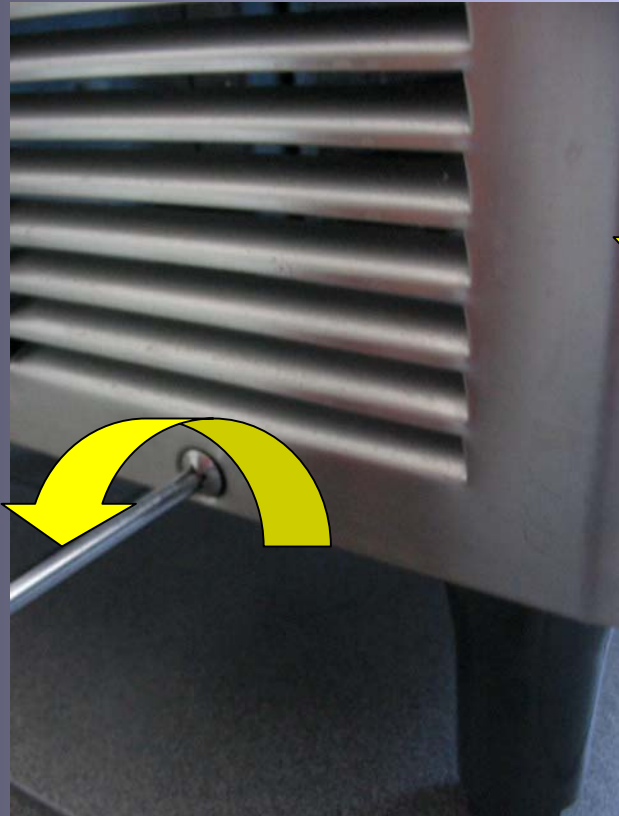


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## MAINTENANCE

Remove the front....

....and top panel.



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Wait till the end of  
the defrost/harvest  
cycle then Switch  
OFF the machine  
at Push Button  
Master Switch.



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## MAINTENANCE

Scoop out all ice cubes stored into the bin so to prevent its contamination then...



....take out the S.S. spring holding the soft plastic plug to the bottom of the water sump ....



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## MAINTENANCE



....and remove the soft plastic plug by pulling it down so to drain out all water from the water sump.

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## MAINTENANCE



Unloose the two  
thumb screws  
holding the  
curtain assy to  
the  
evaporator/sump  
chamber and ....

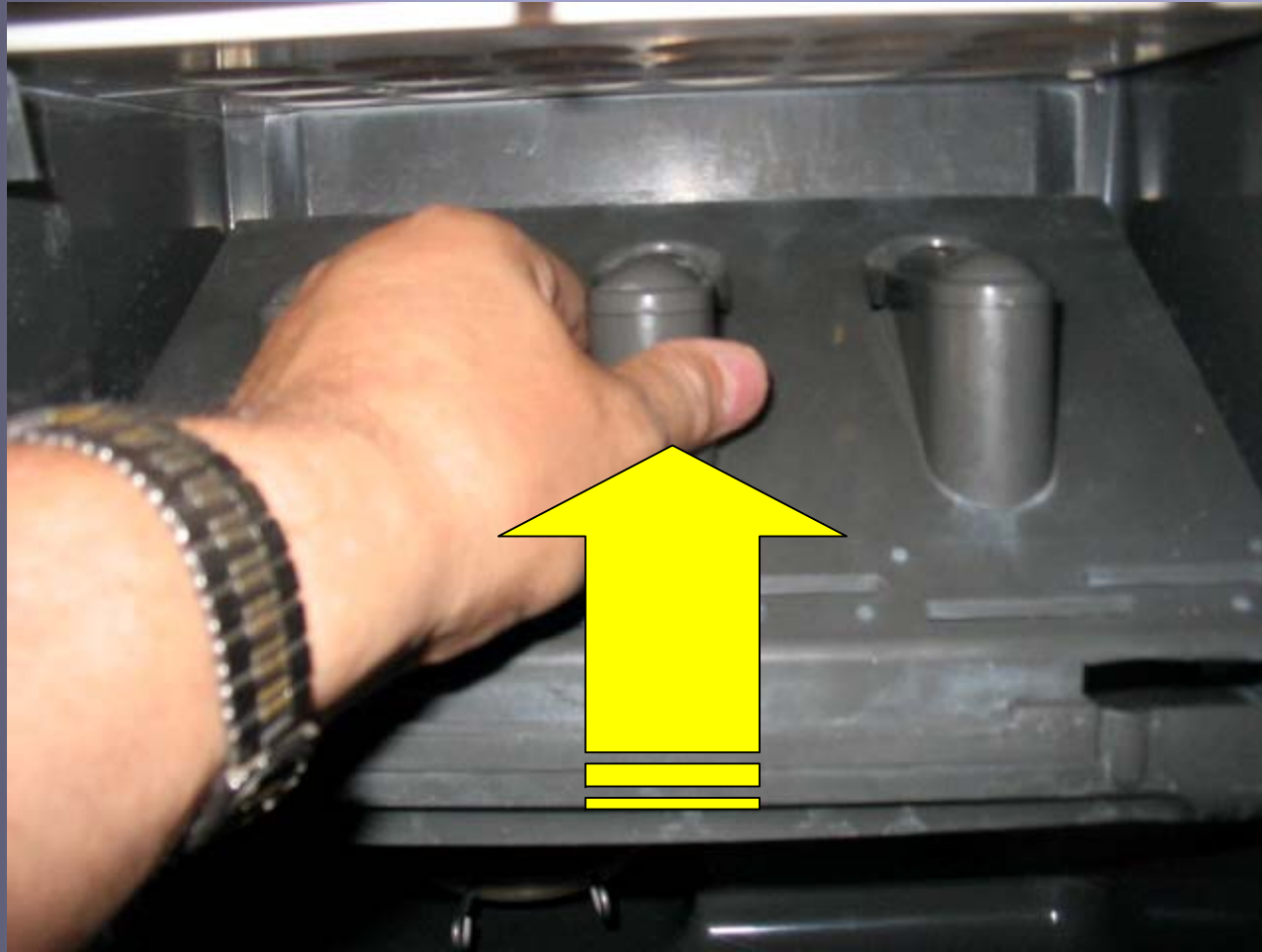
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## MAINTENANCE



.... take out the  
curtain with its  
own plastic  
bracket.

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Grasp the spray platen assy on the center spray jet and lift it up so to have access to the water sump.

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## MAINTENANCE



Turn  
counterclockwise  
the spray platen  
seat and .....

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## MAINTENANCE



... remove it  
from its  
bottom hole.

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## MAINTENANCE



Disconnect  
the plastic  
hose from the  
water pump  
outlet port.

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Prepare the cleaning solution by diluting in a plastic bucket two liters of lukewarm water (max 40°C) with 200 cc of **SCOTSMAN Ice Machine Cleaner**.



# AC 46-56-86 MAINTENANCE

Prepare, in a suitable basin, a second cleaning solution by diluting four liters of lukewarm water (max 40°C) with 400 cc of **SCOTSMAN Ice Machine Cleaner**.



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Pour into the  
cleaning solution  
all parts previously  
removed from the  
water system i.e.:

- Spray platen
- Curtain assy
- Spray platen seat
- Soft Plastic plug



# AC 46-56-86 MAINTENANCE

Leave them into  
the cleaning  
solution for about  
10 minutes then,  
with an help of a  
plastic brush,  
remove all scale  
deposit then....



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## MAINTENANCE

....wash them under  
tap water.

When finish, install  
again all removed parts  
following the  
procedure on reverse.



# AC 46-56-86 MAINTENANCE

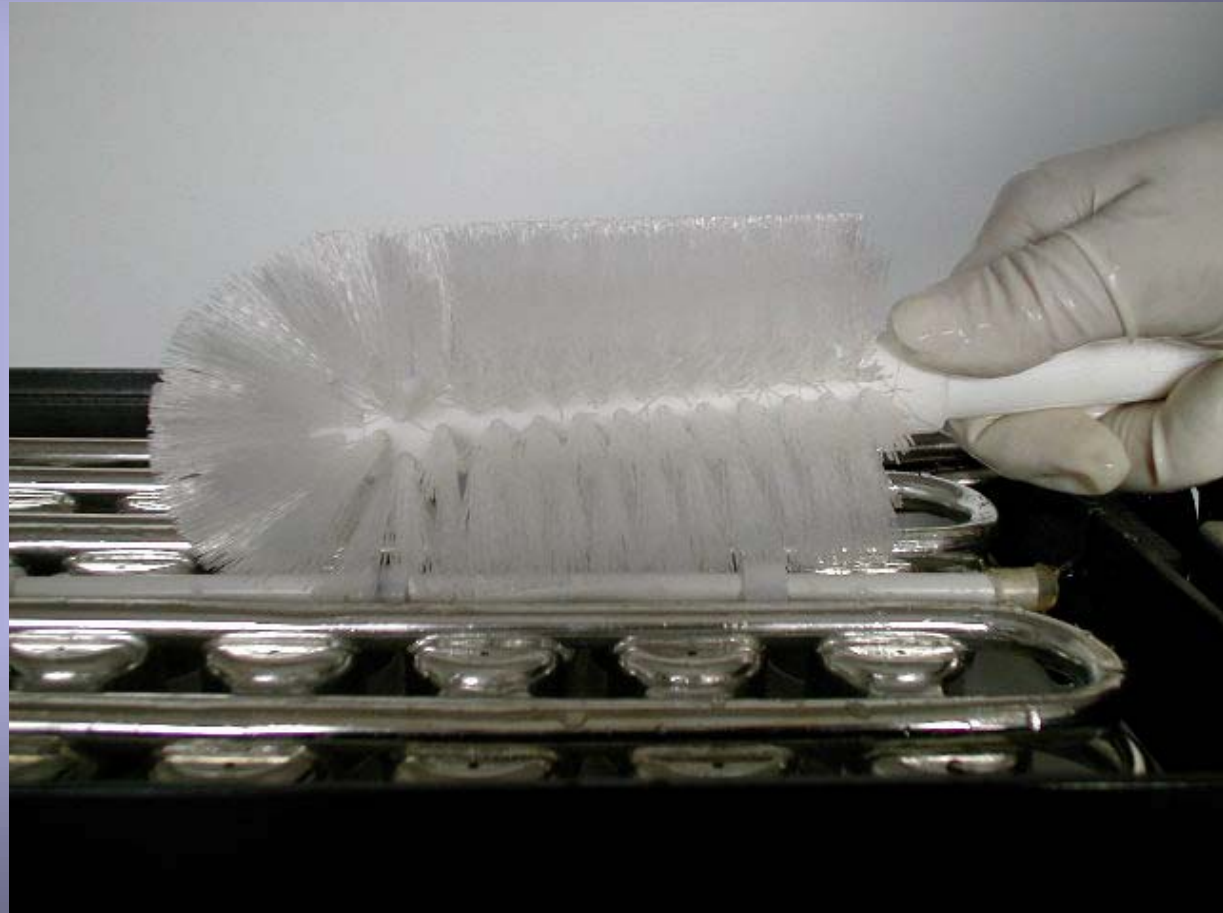
Remove the evaporator cover  
then....

....slowly pour onto the evaporator  
the cleaning solution.



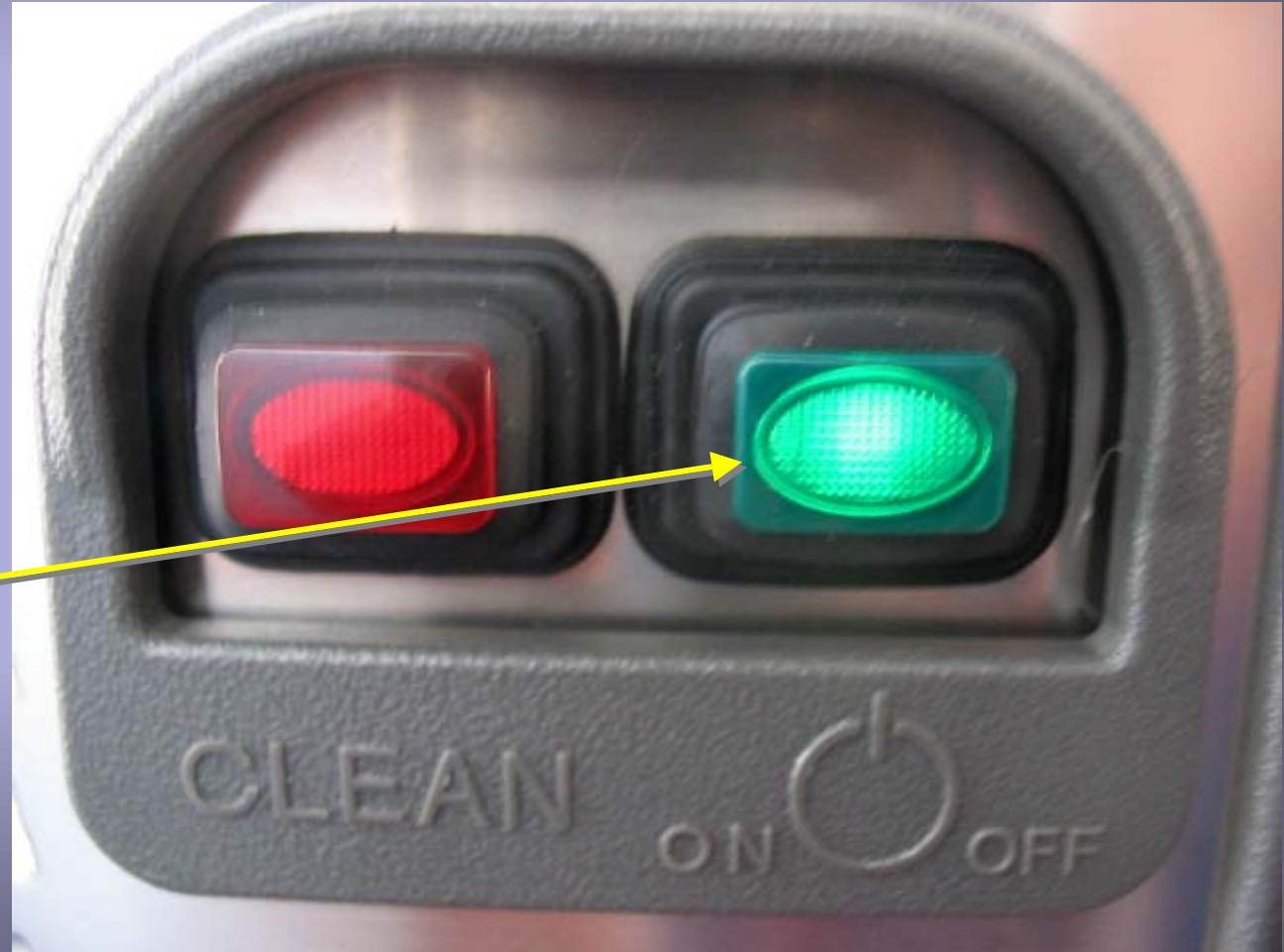
# AC 46-56-86 MAINTENANCE

With the help of  
a brush dissolve  
the most  
resistant and  
remote scale  
deposits in the  
plastic platen.



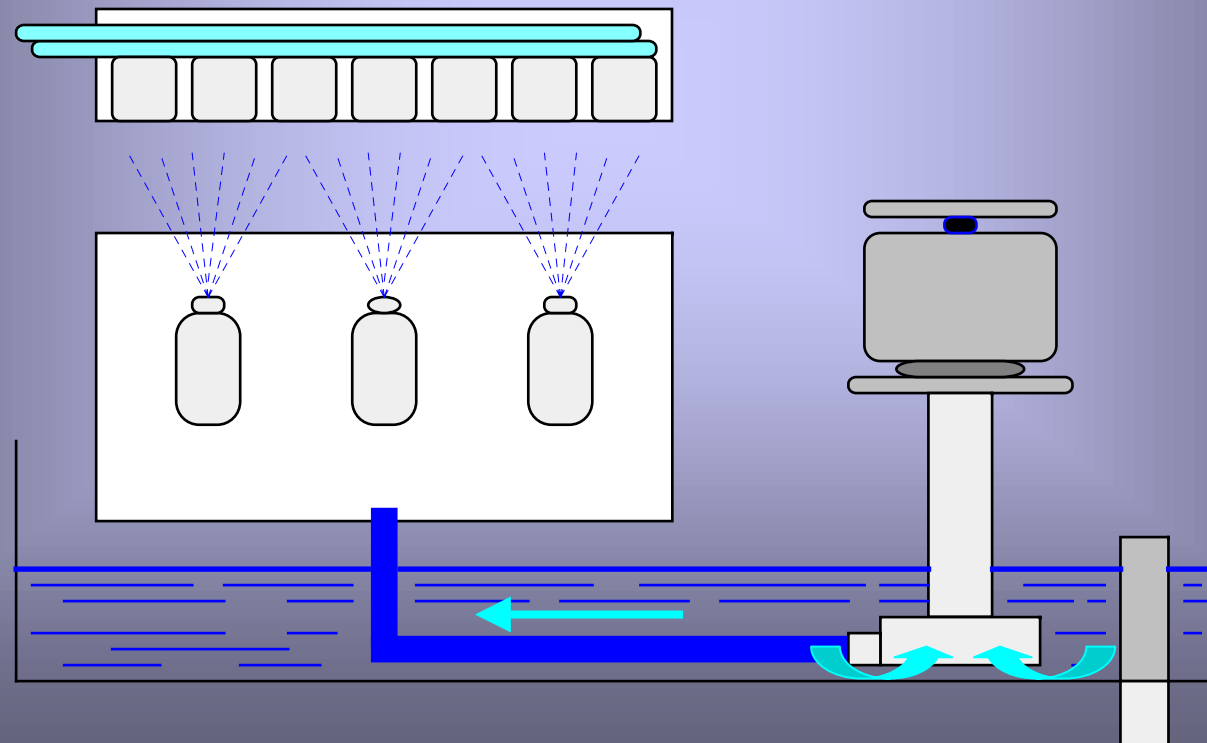
# AC 46-56-86 MAINTENANCE

Switch ON the  
machine at Push  
Button Master  
Switch.



# AC 46-56-86 MAINTENANCE

With the water pump in operation the cleaning solution is kept in circulation through the entire water system.



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Let the unit remain in the freezing mode for about 20 minutes then

move the Cleaning

Switch on the Cleaning

position (II) for about

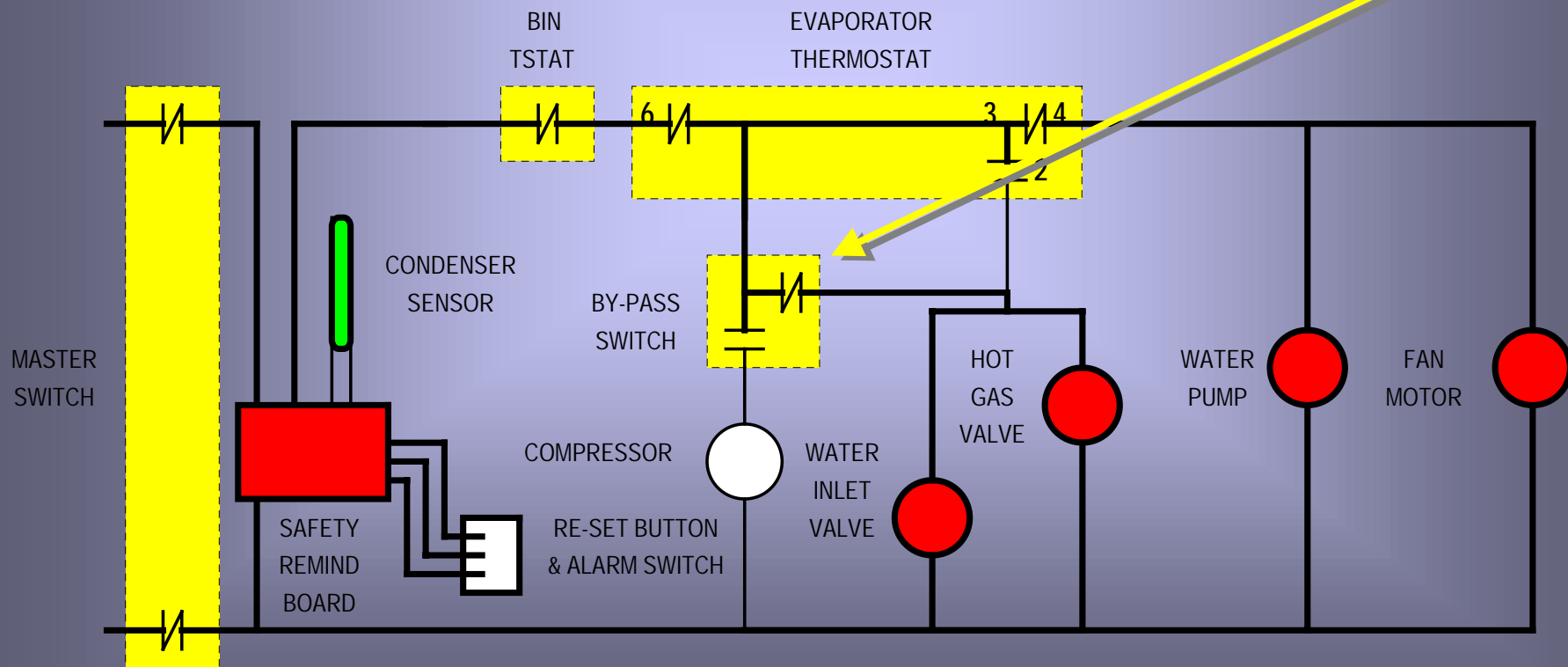
four-five minutes

till.....



# AC 46-56-86 MAINTENANCE

.....all the ice cubes produced with the cleaning solution are released down from the evaporator.

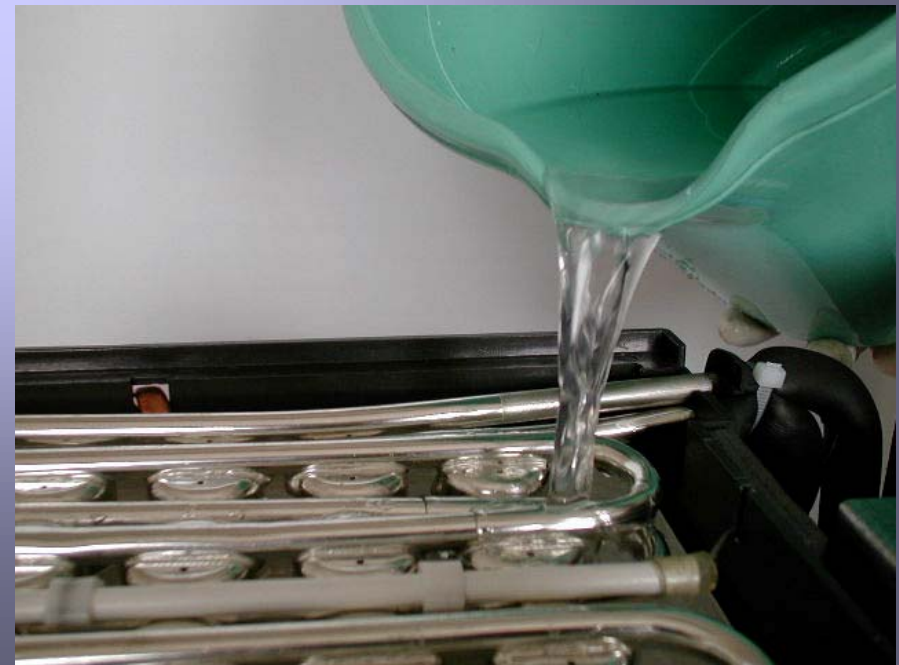


# AC 46-56-86 MAINTENANCE

Flush out the cleaning solution from the sump by removing the soft plastic plug then....



.... pour onto the evaporator cavity three liters of fresh water to rinse the molds and the platen.



# AC 46-56-86 MAINTENANCE

Turn again the Cleaning Switch on Operating position (I) so to leave the water pump circulating the fresh water and rinse the water system



Do it twice so to be sure no more trace of descaling/cleaning solution remains into the sump.

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## MAINTENANCE

Pour on the upper side of the evaporator 2 liters of fresh water with 10-15 drops of **Scotsman Antialgae Solution** then....

.... turn again the Cleaning Switch in Operating Position (I) so to have the water pump circulating the sanitation solution for 10 minutes.

**NOTE. Do not mix delimer with sanitizing solution to avoid the generation of a very aggressive acid.**

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Flush out the sanitizing solution from the sump then....



.... turn the Cleaning Switch to Cleaning Position (II) for 2-3 minutes....



.... and then again in Operating Position (I).



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## MAINTENANCE

Place again the evaporator cover and the service panels previously removed.

At completion of the freezing and harvest cycle make sure of proper texture and clearness of the ice cubes and that they do not have any acid taste.

**ATTENTION. In case the ice cubes are cloudy-white and have acid taste, melt them immediately by pouring on them some warm water so to prevent that anybody can use them.**

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## MAINTENANCE

Wipe clean and rinse the inner surface of the storage bin.

**REMEMBER. To prevent the accumulation of undesirable bacteria it is necessary to sanitize the interior of the storage bin with a sanitizing solution every week.**

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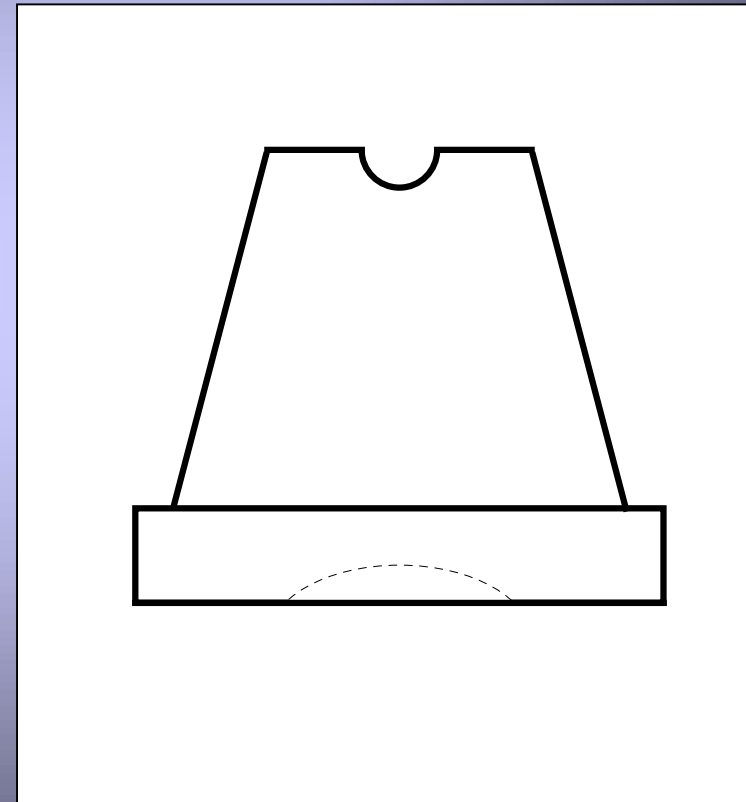
**SERVICE  
ANALYSIS**

# AC 46-56-86

## SERVICE ANALYSIS

This is a **Scotsman Ice Cube**.

It must be clear, solid with a small depression on its bottom rim of about 3-4 mm.

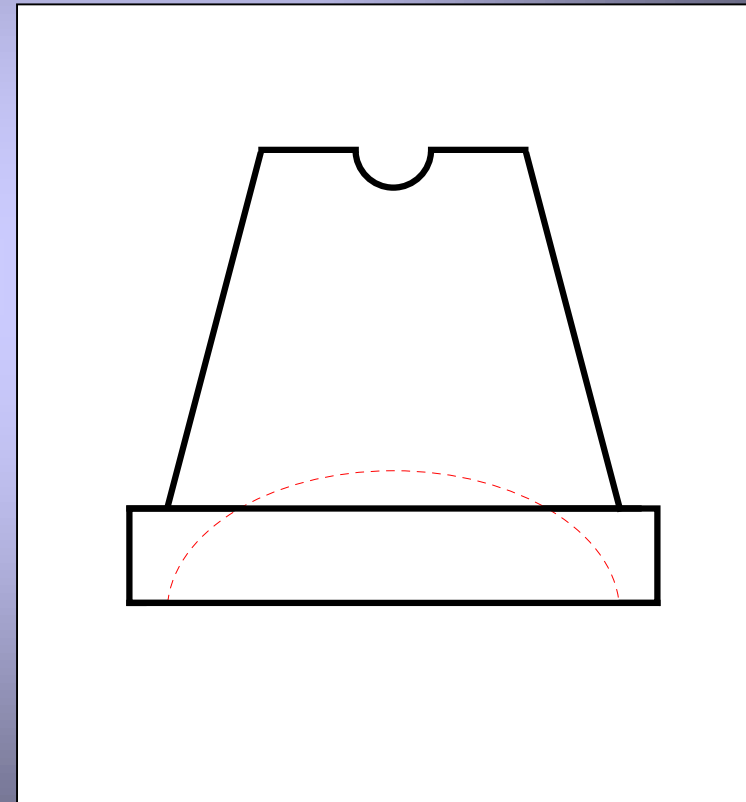


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## SERVICE ANALYSIS

This ice cube is clear, solid but it has a deep depression on its bottom rim due to a too short freezing cycle.

It is necessary to extend the length of the freezing cycle by turning the.....



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## SERVICE ANALYSIS

..... Evaporator

Thermostat a little bit  
**clockwise.**



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## SERVICE ANALYSIS

This is a typical ice cube clear on its upper left side and white and corroded on its bottom right side.

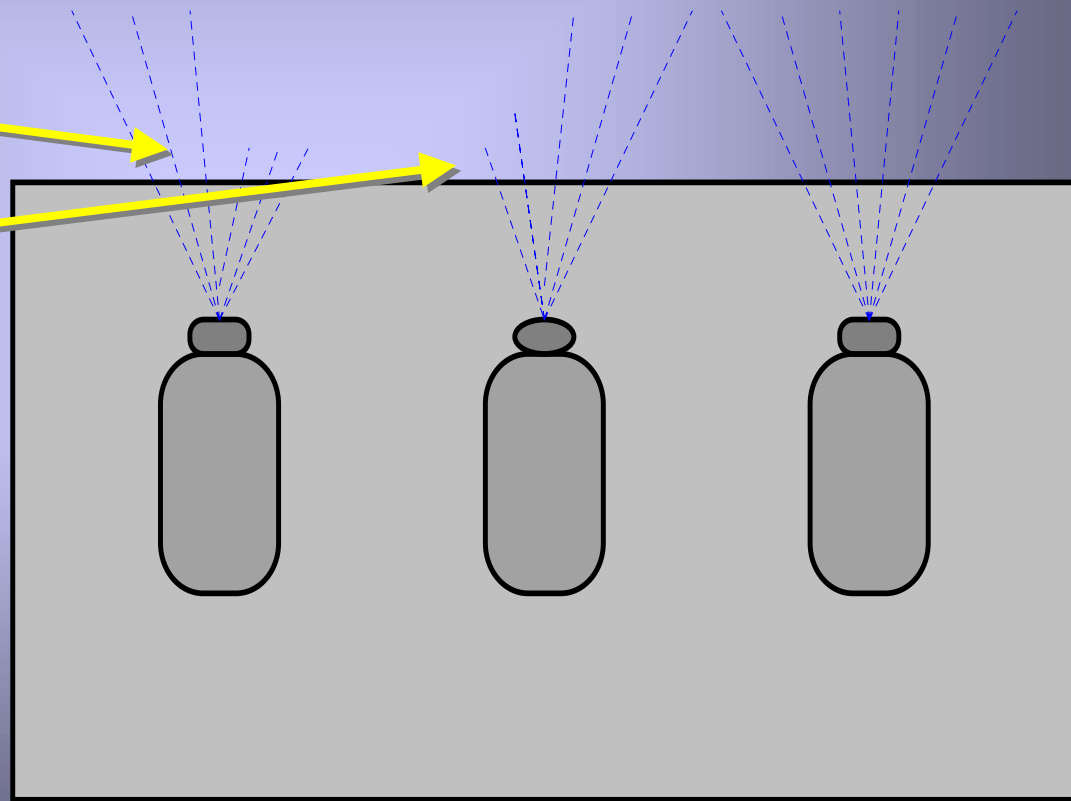
The reason is that the water doesn't reach in correctly the inside of some of the tin cooper molds.



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## SERVICE ANALYSIS

Probably one or more of the spray jets of the spray platen is partially blocked by scale/dirt and the water is no longer sprayed as a complete inverted water cone.



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## SERVICE ANALYSIS

To overcome the problem it is necessary first to find out which of the six spray jets doesn't spray water in the correct way then remove the complete spray platen from the sump and ....



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## SERVICE ANALYSIS

....unloose the two screws securing the plastic spray cover to clean it or replace it with a new one.



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## SERVICE ANALYSIS

When refit it on the spray platen be careful in correctly install the O ring between the spray cover and its bottom seat.

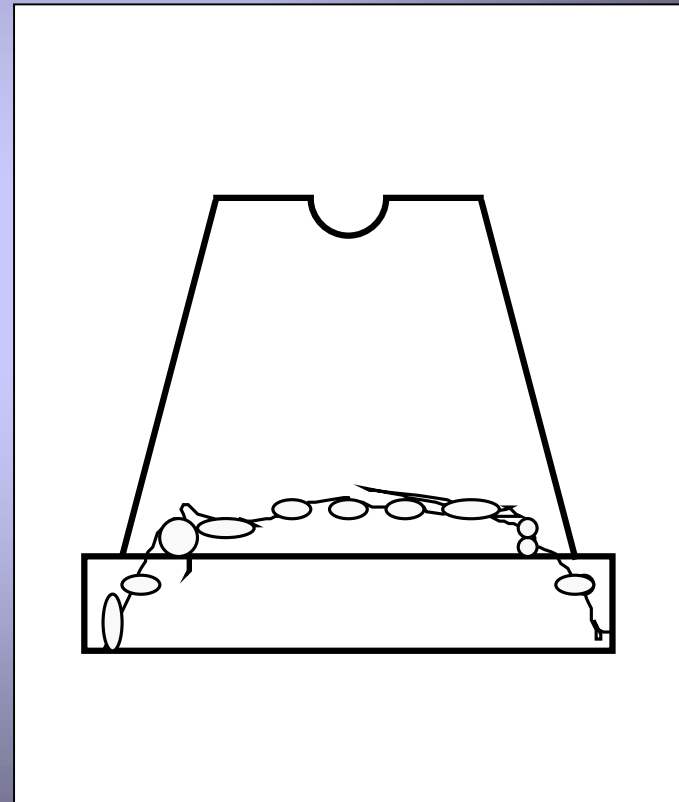


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## SERVICE ANALYSIS

This is a typical ice cube; clear on its upper side and white and corroded on its bottom side.

The water is sprayed in the correct way and under the right pressure only during the first portion of the freezing cycle while on the second half the level of the water in the sump is not enough to assure the proper spray of the water pump (cavitation).



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## SERVICE ANALYSIS



# AC 46-56-86

## SERVICE ANALYSIS

The reason is the too low water level into the sump during the harvest cycle that could be related to:

- Too low water inlet pressure
- Clogged water filter
- Clogged water inlet strainer
- Clogged water flow control
- Water leak through the front curtain
- Water leak through the overflow stand pipe

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- Too low water inlet pressure
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- Clogged water inlet strainer
- Clogged water flow control
- Water leak through the front curtain
- Water leak through the soft plastic plug

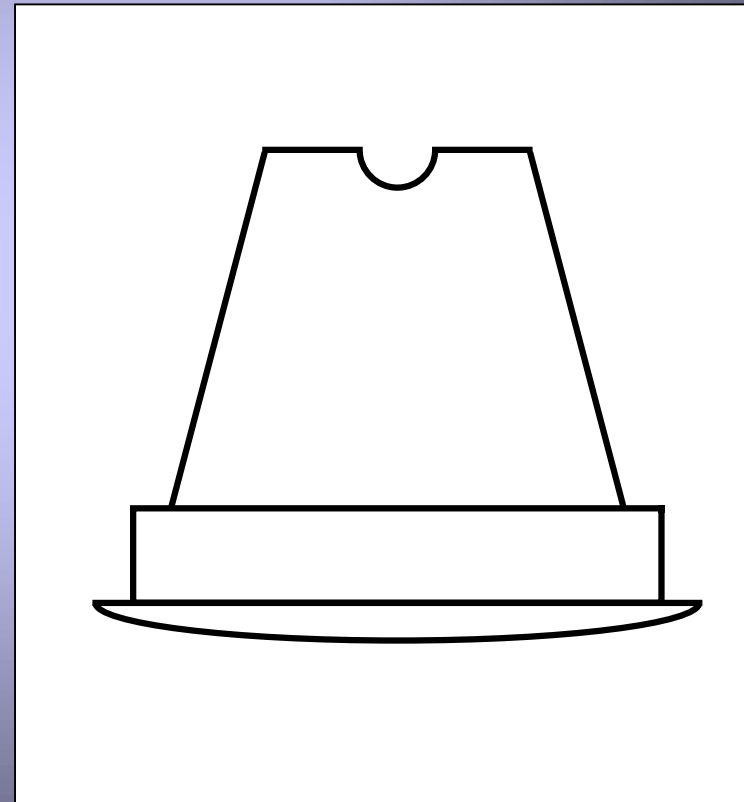


# AC 46-56-86

## SERVICE ANALYSIS

This ice cube is clear, solid but it is oversized.

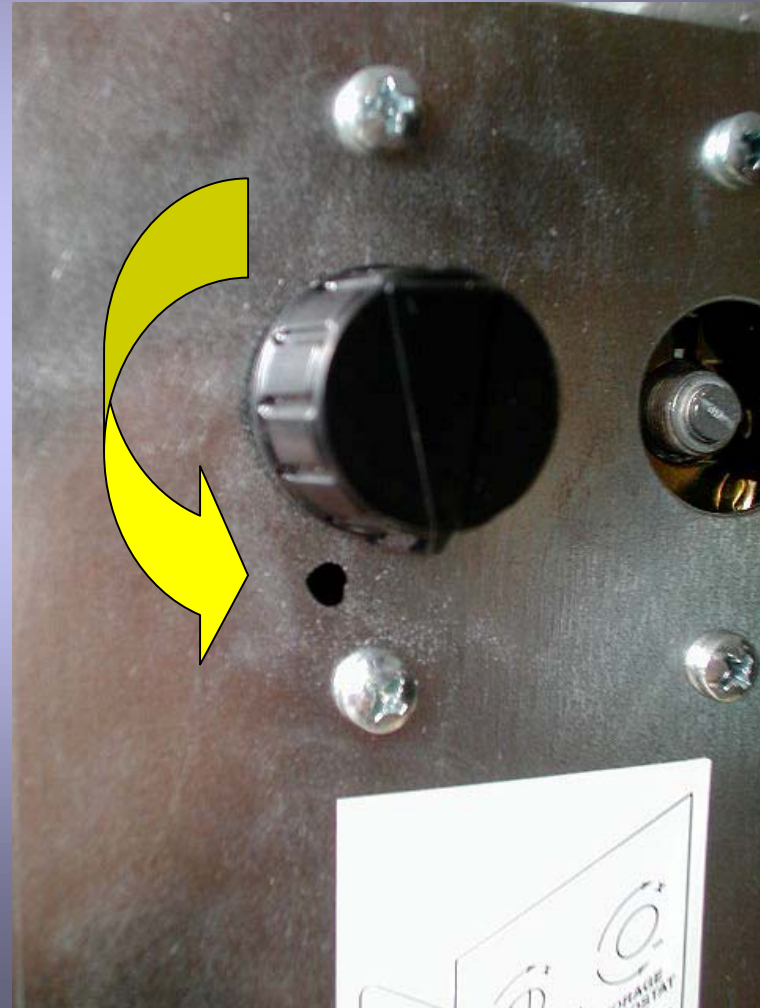
It is necessary to reduce the length of the freezing cycle by turning the Evaporator Thermostat Knob.....



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## SERVICE ANALYSIS

..... a little bit  
**counter-clockwise.**

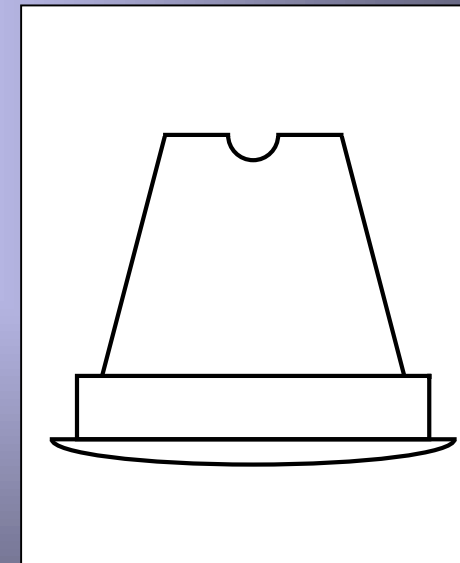
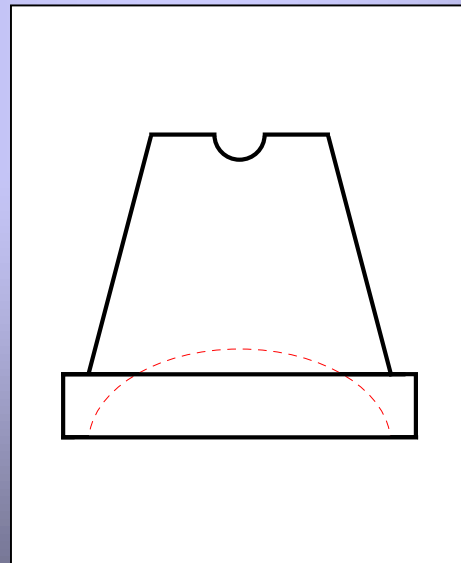


# AC 46-56-86

## SERVICE ANALYSIS

These ice cubes are both clear, solid but some are oversized and some other are undersized.

If so the possible reason is an incorrect charge of refrigerant in the system (too low).



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## SERVICE ANALYSIS

Looking the upper side of the evaporator after 15-20 minutes in the freeze the serpentine is properly frosted mainly on the first portion of the same (inlet of refrigerant) while on the second portion (outlet) the frost is very thin (no exchange of heat between refrigerant - already in vapor state - and sprayed water).



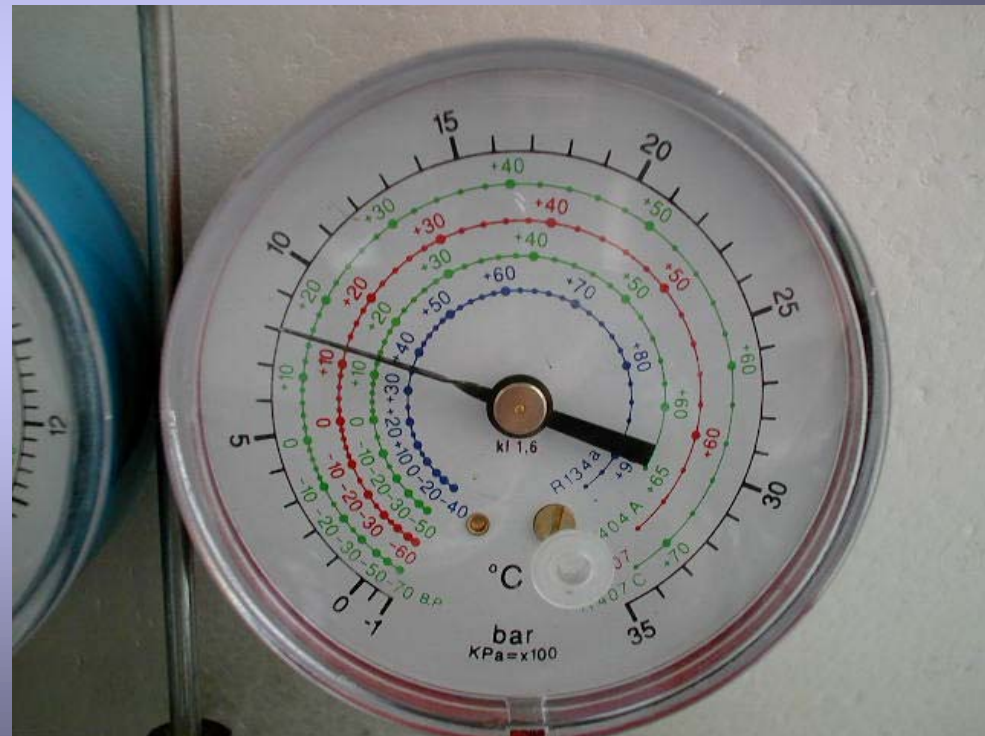
# AC 46-56-86

## SERVICE ANALYSIS

Check the operating pressures of the refrigerant system connecting the gauges on hi and low service valve.

The operating pressures at the end of the freezing cycle with unit at 21°C ambient must be:

**Hi pressure (air): 8 bar  
(110 PSI)**



# AC 46-56-86

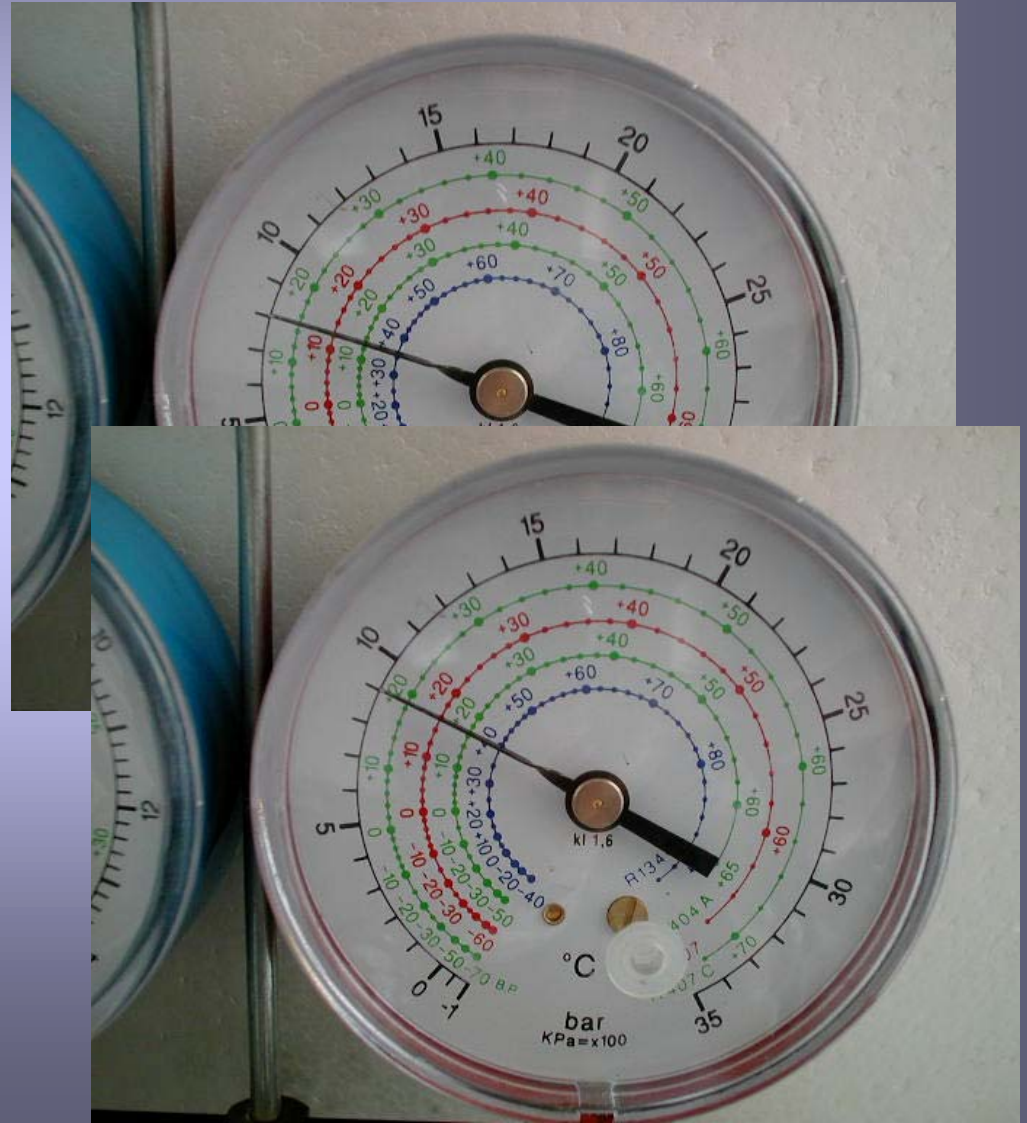
## SERVICE ANALYSIS

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Hi pressure (air): 8 bar  
(110 PSI)

**Hi pressure (water): 8-9 bar  
(110-125 PSI)**



# AC 46-56-86

## SERVICE ANALYSIS

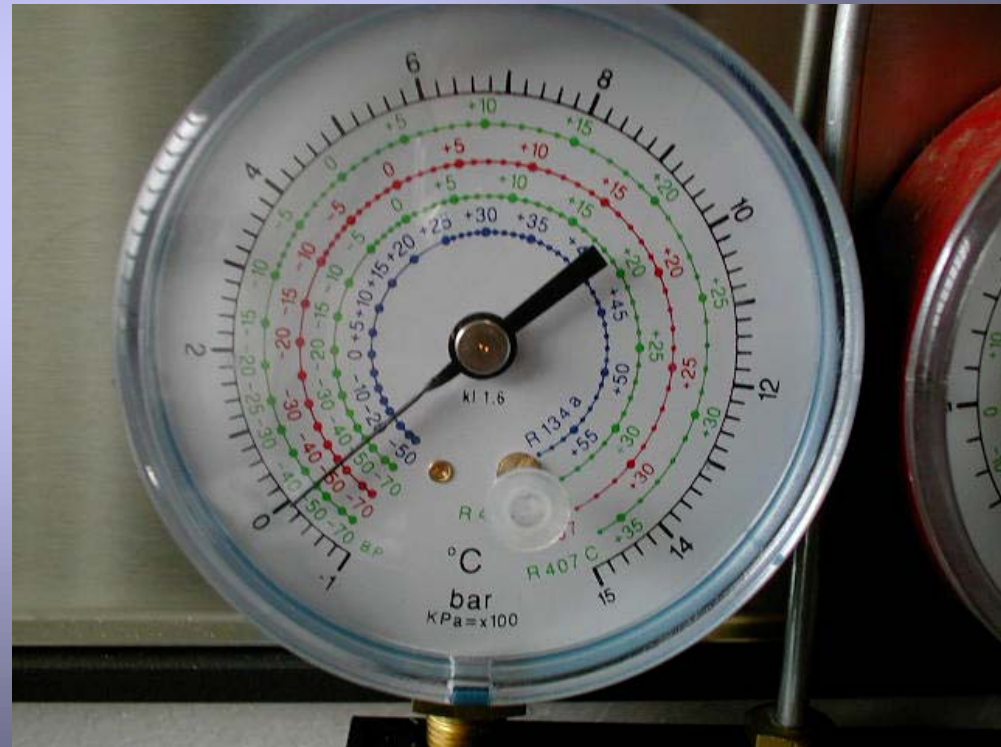
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The operating pressures at the end of the freezing cycle with unit at 21°C ambient must be:

Hi pressure (air): 8 bar  
(110 PSI)

Hi pressure (water): 8-9 bar  
(110-125 PSI)

Low pressure: 0-0,1  
bar (0-2 PSI)



# AC 46-56-86

## SERVICE ANALYSIS

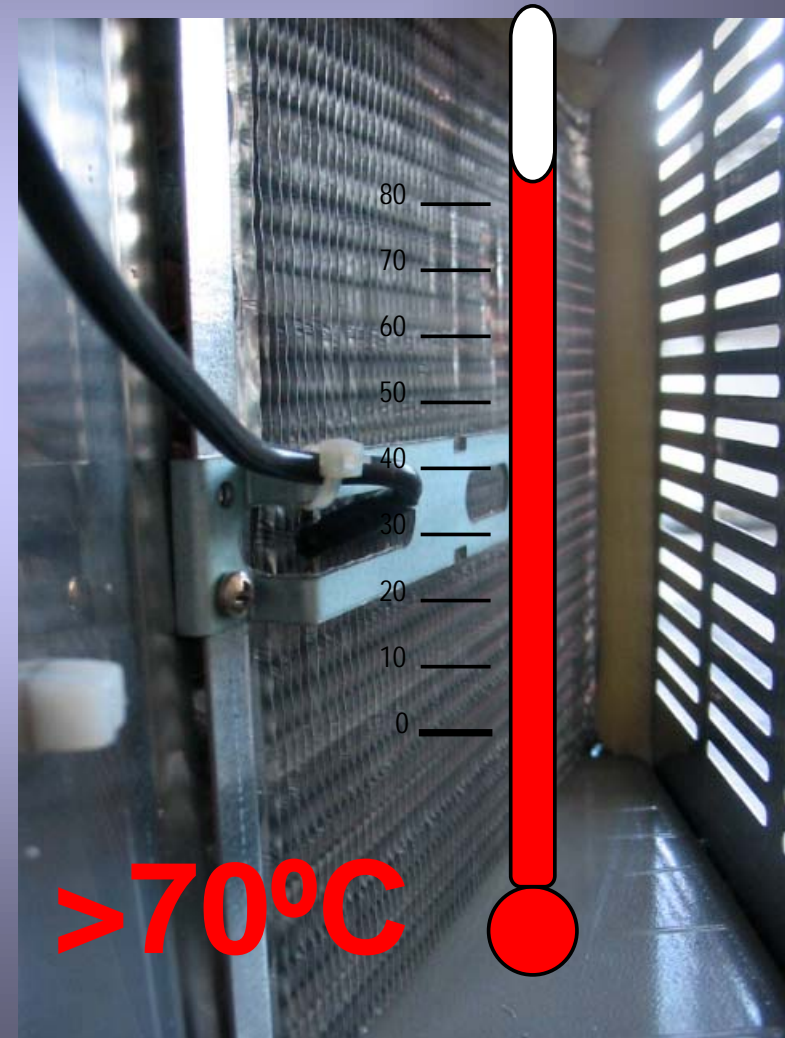
The unit is OFF  
with RED  
LIGHT ON  
steady.



# AC 46-56-86

## SERVICE ANALYSIS

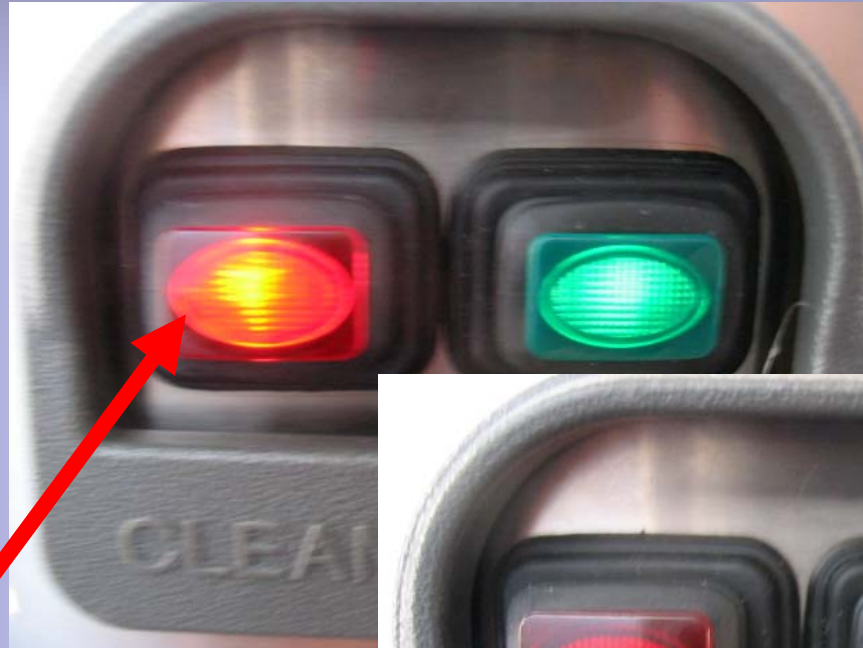
This means that  
condensing  
temperature rises  
up to more than  
**70°C.**



# AC 46-56-86

## SERVICE ANALYSIS

To restart the operation of the machine it is necessary to push and release the reset RED the reset RED button.

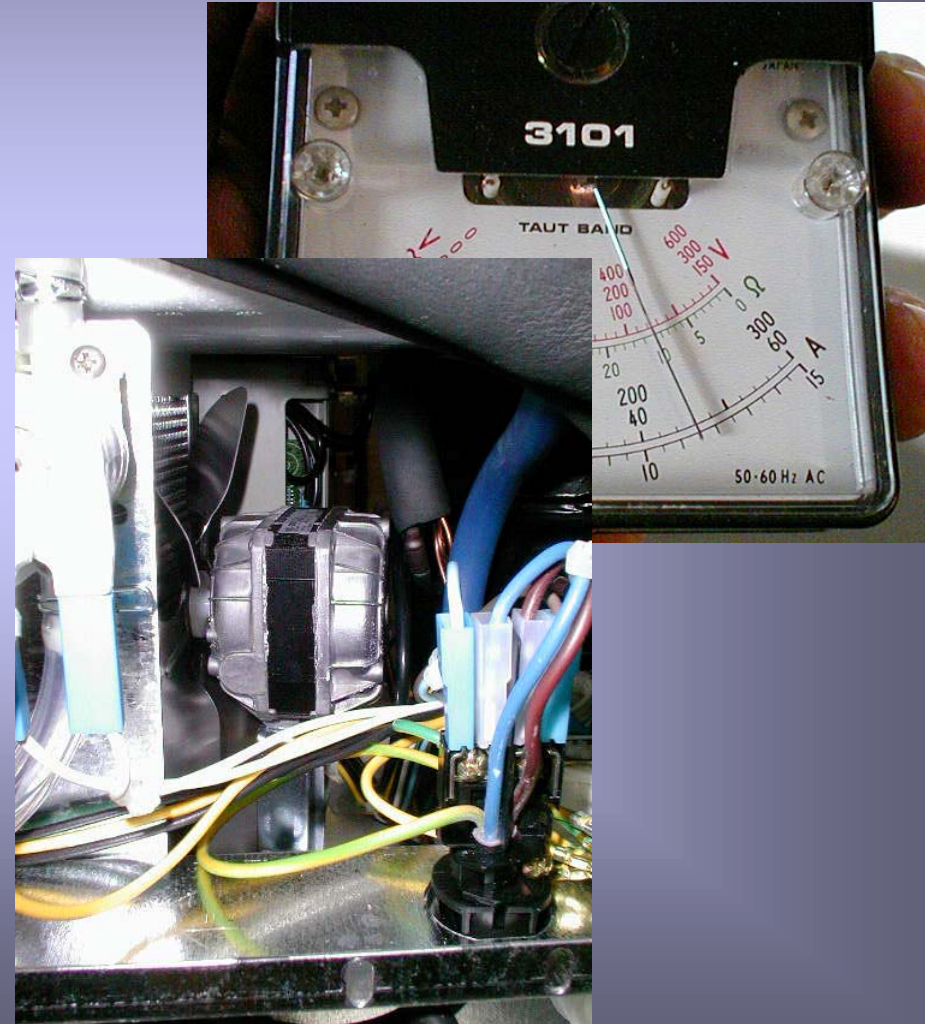


# AC 46-56-86

## SERVICE ANALYSIS

The possible reasons are:

- Fan motor (air cooled version) inoperative
- No water to the water cooled condenser (water cooled version)
- Hi pressure control (water cooled version) inoperative
- Water inlet solenoid valve to condenser inoperative



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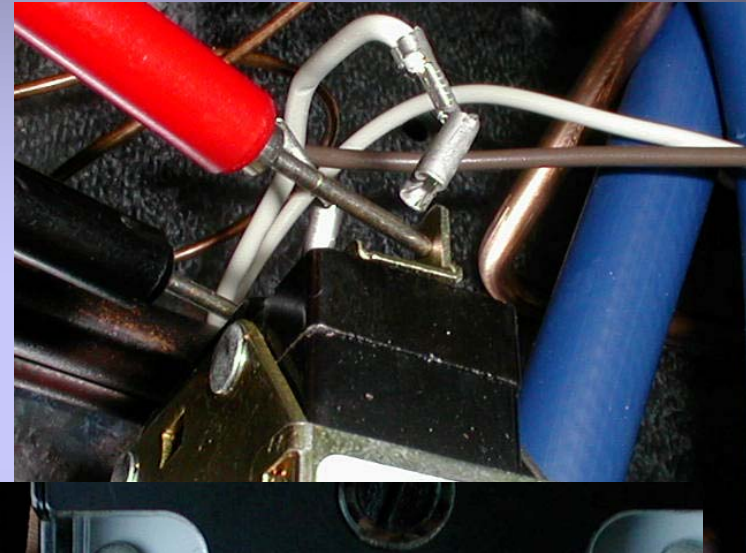


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**AC 46-56-86**

**END**

**A SCOTSMAN EUROPE presentation**

Author: R. Ceriani