# **Extract from the DUCT manual**



**Operation & Maintenance Instruction** 



13.1

# 13. operation & maintenance instructions

#### **Cleaning intervals**

The UV tubes should be cleaned at regular intervals to keep the DUCT plant functioning optimally. The frequency of cleaning varies with the type of installation. When the DUCT is fitted in the exhaust air duct from a restaurant, cleaning should be carried out once every two weeks. When the DUCT is installed in the exhaust air duct of a residential building, cleaning once a quarter may be sufficient.

The Touch Panel will remind you when it is time to clean the UV tubes. The factory setting is that the reminder comes every 200 hours. Once the UV tubes have been cleaned, the cleaning interval is reset (see "13.2 Cleaning UV tubes" below).

You can increase or decrease the cleaning intervals if necessary:

1) Press the arrow key four (4) times until the display shows "Cleaning interval increase by +".

**2)** Set the desired interval with the "+" and "-" buttons. You can only change the cleaning interval once the 60-minute calibration has been completed.

## **Cleaning of UV tubes**

The UV tubes should be cleaned at regular intervals to keep the DUCT system functioning optimally. To clean the UV tubes:

**1)** Stop the DUCT plant on DUCT Control by pressing "start/stop" once. The display should now show "Not Operating"

**2)** Unscrew the power cable on the DUCT plug-in module and disconnect it. Open the buckles on the side the DUCT. Carefully pull the plug-in module out of the adapter and place the plug-in module on a work surface.

**3)** Gently wipe the UV tubes with a damp cloth.

**4)** If the pipes do not become crystal clear after step 3, spray on a high pH detergent (pH+10-13) and leave for one (1) minute. Then wipe the pipes again with a damp cloth.

**5)** Carefully insert the plug-in module back into the Adapter. Check that the microswitch is in the correct position and that it clicks into when you insert the plug-in module. Tighten the buckles on the side of the DUCT. Insert and screw on the power cable.

6) Start the DUCT plant on DUCT Control by pressing once on "start/stop" The display should now show "Operation"

7) Press the arrow key five (5) times to go to "Reset after cleaning". Press the "+" button.

NOTE! Avoid touching the UV tubes with your fingers when cleaning, as fingerprints can cause the UV tubes to become dirty more quickly.



WARNING:

UV light can cause painful irritation of the cornea ("snow blindness" or "welding glare"), so always avoid looking directly at the blue light from the UV tubes and always wear protective glasses during installation or servicing of the system.



13.2



#### Interval for replacement of UV tubes

The Touch panel gives an alarm when the life of the UV tubes is approaching the end. The UV tubes has a lifetime of 12,000 hours or 2 years, whichever comes first. The touch panel keeps track of the time left until replacement and gives two different alarms:

**1)** "Lamp replacement prepare". From the factory, this alarm is preset to come when there are 1,000 hours of total life remaining - When this alarm comes, it is time to contact the supplier to plan the replacement of UV tubes.

**2)** "Lamp change". From the factory, this alarm is preset to occur when only 300 hours remain. This alarm is accompanied by an audible signal.

#### Checking the time remaining before replacing UV tubes

To check how much operating time is left on the UV tubes in the system: Press the arrow key two (2) times until the display shows "Operating time hours left". This shows how many hours of operation are left before the UV tubes need to be replaced.

#### **Replacement of UV tubes**

To change the UV tubes:

**1)** Stop the DUCT plant on DUCT Control by pressing "Start/stop" once. The display should now show "Not Operating".

**2)** Unscrew the power cable and disconnect it. Open the buckles on the side of the DUCT. Carefully pull the plug-in module out of the adapter and place it on a work surface.

**3)** To gain access to change the UV tubes, the stainless steel cover of the plug-in module must be unscrewed.

**4)** Disconnect the electrical connectors at the ends of the tubes, then carefully remove the UV tubes and rubber gaskets from the module. The rubber gaskets may have hardened over time - use great care when removing the UV tubes. Should a tube break during the process, follow the same procedure as when a low energy lamp breaks - i.e. leave the room for thirty (30) minutes before resuming work.

**5)** Insert new rubber gaskets and new UV tubes. Connect the electrical plugs on the ends of the UV tubes and screw on the stainless steel cover

**6)** Carefully insert the plug-in module into the Adapter again. Check that the microswitch is in the correct position and that it clicks into when you insert the plug-in module. Tighten the buckles on the side of the DUCT. Insert and screw on the power cable.

**7)** Start the system on DUCT Control by pressing "Start/stop" once. The display should now show "Operation".

**8)** Reset the UV system after pipe replacement: Press the arrow key three (3) times until the display shows "Extended menus". Press and hold the "+" button for five (5) seconds, the display now shows "Power on". Press the arrow key seven (7) times until the display shows "Reset". Press the "+" button. The system is now updated to show that the remaining life is 12,000 hours.

#### **Recycling of UV tubes**

NOTE! The used UV tubes contain mercury and should therefore be recycled at a recycling centre. UV tubes are disposed of in the same place as fluorescent tubes for light fittings.

During transport, the pipes should be treated as dangerous goods and thus protected from shocks or other impacts that could cause the pipes to break.





14.1

14.2

4.3

4.4

14.5

# 14. alarms and troubleshooting

DUCT Control keeps track of 5 different alarms:

## Reminder "Cleaning intervals"

This alarm is displayed when the set interval between UV tube cleanings has passed since the last reset after cleaning. The number displayed after "Cleaning interval" indicates number of hours since the cleaning reminder was first displayed.

#### Alarm "Pipe fault"

If one or more UV tubes are off for any reason. The display reads "Tube fault". For alarm levels, see "11. Adjusting the alarm levels"

## Drift error" alarm

If several UV tubes are switched off for some reason. The display reads "Operating error". For alarm levels, see "11. Adjustment of alarm levels"

#### Alarm "Stop EXT"

If the pressure switch in the Power Box has tripped and switched off the DUCT system. The display shows "Ext. Stop". This alarm will also be displayed when interlocked equipment connected according to "7. Installation of interlocking with other equipment" has tripped.

## Alarm "Replace UV tube"

When the operating time is nearing its end:

At 1000 hours left, the display shows "Prepare lamp change hours left XXX". If there are less

than 300 hours left, the display shows "Replace lamps, contact service".

When the life of the UV tubes has gone below zero (0) hours, the DUCT Control automatically switches off the UV system and the display shows "System stop"

If you have UVtech Inservice, we will contact you and book an appointment automatically.

If no one has contacted you, it is probably because you are not registered with UVtech Inservice. Then contact your dealer or email info@uvtech.se

See further information on the next page in "Troubleshooting scheme DUCT"



# DUCT troubleshooting Message on the Touch Panel

Warning: Make sure to always protect your eyes from the blue light to avoid painful conjunctivitis. Never work inside the ventilation ducts when the UV lights are switched on to avoid exposure to ozone concentrations above the hygienic limit.

			Reason		Action
1	"OPERATION" changes to "Cleaning interval" Green diode lights up with a steady glow Red diode flashing slowly	A	It's time to clean the UV tubes	l.	Clean the UV tubes. Follow the instructions in section 14.2 of this manual.
2	"DRIFT" changes to "Stop EXT" Green LED flashes rapidly	A	Exhaust fan not running.	l.	Switch on the fan, let it warm up and see if the alarm goes off
		В	The pressure switch in the power box is not installed correctly	l.	Make sure that the hose is connected to the front nipple of the pressure switch marked "-" (as opposed to the rear one marked "+"). Check that the hose is correctly connected to the exhaust air duct. The nipple should be fitted with the tapered part in the duct. Check that the hose fits tightly against the nipple.
		С	The pressure switch in the Kraft box does not pull	l.	Unscrew the transparent plastic cover of the pressure switch in Kraftbox. Turn the small screw anti-clockwise until the pressure switch clicks into place.
		D	The pressure switch in the power box is defective	l.	If all the above points have been addressed, the pressure switch may be defective and need to be replaced.
3	"DRIFT" changes to "Pipe fault" Green diode lights up steadily Red diode flashes rapidly	А	One or more UV tubes are defective	I.	Replace the UV tubes. If the UV tubes do not light up after replacement, it means that one or more ballasts inside the cassette are defective. Replace the ballasts
4	"OPERATION" changes to "Operational error, service" Green diode lit solid Red diode lit solid	A	The pressure switch in one or more UV cassettes does not pull.	I.	Check that the pressure switches of the cassettes are connected: The red pressure hose supplied should be connected with one end to the small black nipple next to the electrical connector on the UV cassette. The other end of the hose should be connected using the supplied loose small black plastic nipple. This nipple should be attached to the inner ceiling of the filter housing of the ventilation hood. Drill a 6 mm hole, stick out the tapered part of the nipple and screw the nipple on. Connect the other end the red hose.
				н.	With point I. done and the problem persisting, the pressure across the hood grease filter must be checked. The pressure switch in the UV cassette draws at 15-18 Pa. If the pressure is below 20 Pa, the pressure must be increased, this is most easily done by replacing the grease filter with blanking plates.
		В.	Several UV tubes are defective	l.	Replace the UV tubes. If the UV tubes do not light up after replacement, it means that one or more ballasts inside the cassette are defective. Replace the ballasts
5	"DRIFT" changes to "Replacement UV tube hours left <1000" Green diode lights up with a steady glow Red diode flashing slowly	A	1000 hours (or less) left until UV tube replacement is necessary	11.	Plan for the replacement of UV tubes. Contact your supplier for ordering and planning.
6	"DRIFT" changes to "Replacement UV tube hours left <300" Green diode lights up with a steady glow Red LED flashing rapidly	A	300 hours (or less) left until UV tube replacement is necessary	I.	Replace the UV tubes. Follow the instructions in section 14.5 of this manual
7	"DRIFT" changes to "System stop" Green LED off Red diode lights up with a steady glow Beep every minute	A.	The UV tubes are worn out and the system has therefore shut down automatically	I.	Replace the UV tubes. Follow the instructions in section 14.5 of this manual
8	The ControlPanel shows "DRIFT" but the UV lights are off	A.	Due to repeated switching on/off over a short period of time, the inbuilt sticky protection has kicked in	l.	Switch on the system. Wait up to four (4) minutes for the anti-sticking device to switch on again.



## Wiring diagram DUCT Control





# Setting up the Touch Panel





