# Corona Supplies Ltd

for all your corona needs

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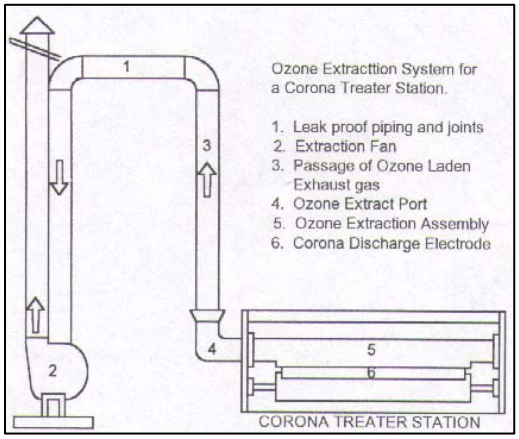
## Ozone extraction information

The main criteria for fan size selection are the output power rating of the corona generator, treatment width of the electrodes, substrate line speed, extraction duct configuration and the pressure and flow characteristics of the fan. With this data, a simple computation will determine the correct selection.




Much design effort has also been targeted at achieving leak-proof ozone extraction to keep ozone concentration levels around the treater station below the required 0.1 ppm. Given that ozone concentrations in the electrode exhaust are typically in the region 25-30 ppm, which is seriously harmful to man, the demands on the accuracy of the designs are critical in order to keep work station environmental levels below 0.1 ppm. These levels can be monitored locally using a variety of permanent fixtures employing technologies such as chemi-luminescence, ultra-violet photometry and electrochemical cells but the use of Draeger vials has proved operationally reliable and convenient and therefore popular.

Corona discharge treaters have had to be designed using components in and around the treater that are corrosion resistant and more specifically ozone resistant. Any exposure of unprotected materials will result in rapid attack and eventual deterioration of the component. This is the case for not only the ducting and extraction fans but also less obvious components like safety

interlocks, electrodes assembly bearings and jointing compounds. If insufficient attention is given to this, problems will result.

The traditional extraction system uses ozone resistant ducting/piping coupled to an ozone resistant extract fan, sited within a few metres of the treater station. The ozone laden air gas stream is drawn from the treater station to the fan, after which the gas stream is pushed along ducting to the outside of the building and the ozone is dispersed into the atmosphere. Any ducting should be kept as short as possible, should be of rigid construction, have a smooth internal bore and be as straight as possible. Where bends are required they should be swept and kept to a minimum. Where flexible ducting must be used, this should be kept as short as possible.

Any ducting leaks caused, for example, by accidental damage or corrosion, will severely affect the efficiency of the fan because a negative pressure upstream will be created inside the pipe drawing factory air inwards. However, the converse is the case from the fan downstream where there is a positive pressure inside the duct allowing ozone laden air to be leaked from these points into the factory atmosphere and in to the operator area. So, site the extraction fan closer to the exit point of the building than the station, this means the longer ducting, station to fan inlet, is under negative pressure and thus any leakage will not put ozone into the factory.

If duct lengths have to be long, 10 meters plus, you should consider an ozone destruct device to eliminate the ozone at source. Contact Corona Supplies about their range of ozone destruct devices.