

Radi-Ion Corporation

PHYSICISTS - MANUFACTURERS - CHEMISTS

Pacific Coast
MONTGOMERY BROTHERS
61 Fremont Street
SAN FRANCISCO

General Office and Laboratories
54 West Illinois Street
Chicago, U. S. A.

Canada
DARLING BROTHERS, LTD.
140 Prince Street
MONTREAL

RADI-ION

Radi-Ion is recommended for air purification, in mechanical ventilation, where the air supply is drawn from the city streets or recirculated for reasons of economy in heating and air conditioning.

Radi-Ion is not a chemical and produces no odor. It is an electrical apparatus that subjects air to the combined effects of ultra-violet light and a special electric discharge that is radiant in character. These combined forces act on the oxygen of the air to produce therein a state of excitation, or activation, that enormously intensifies the chemical activity of oxygen. This excited or activated oxygen immediately reacts with odoriferous gases, present in the air supply, as well as those produced by the occupants of the building, immediately oxidizing them to stable, non-odoriferous substances. No new chemical form of oxygen is produced. Simply the physical structure and properties of the oxygen molecules are changed, and these changes specifically conduce to a state of high chemical activity. This physical activation of the oxygen differs materially from methods producing so-called chemical or allotropic modifications of oxygen. In the latter case a new chemical form of oxygen, that possesses an odor of itself, is produced. Radi-Ion activates the ordinary oxygen of the air so that it removes odors by immediately oxidizing them, and produces no odor inherent in the apparatus or process.

RADI-ION IS DESIGNED FOR VENTILATION ONLY

Radi-Ion is the only air purifying apparatus that is designed for just that purpose. It has no other application or function. Radi-Ion is the result of the experience and research of scientists and engineers who have devoted their lives to ventilation.

Radi-Ion is intended for general ventilation only. It is not intended for heavy

duty deodorizing, such as is required for many industrial exhausts, kitchens, etc. For such purposes special controlled oxidizing equipment will be recommended.

Radi-Ion is as nearly an exact duplication of the forces resident in Nature that operate to keep the atmosphere pure and invigorating, as is now physically possible to obtain. Nature has been closely paralleled in Radi-Ion apparatus and it is the only apparatus used for air purification that accomplishes a perfectly natural result in a perfectly natural way.

RADI-ION SERVICE

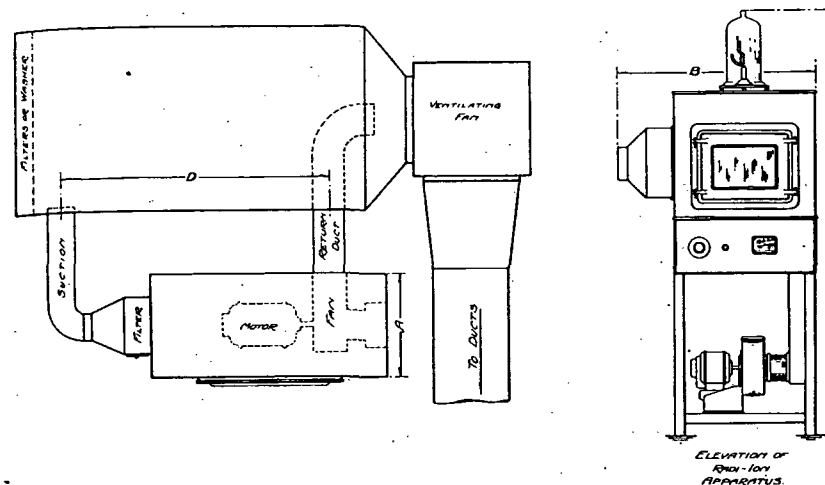
The services of our engineers are at all times available to assist in the detail necessary for the application of Radi-Ion apparatus to existing ventilating systems, or those in process of construction or contemplation. This expert service costs you nothing. Important technical publications and informative trade literature on Radi-Ion will be furnished for the asking.

MONTGOMERY BROTHERS CONTROLLED OZONE EQUIPMENT

For specific problems in industrial and exhaust deodorization Montgomery Brothers, 500 N. Dearborn Street, Chicago, offer a comprehensive service backed by a full line of ozone producing apparatus. This company offer the services of specialists in the purification of air in cold storage, the prevention of odor absorption by foods and the prevention of fungi growths.

CONTROLLED OZONE WATER PURIFYING EQUIPMENT

Montgomery Brothers Water Purifying equipment is widely used for the purification of potable water, industrial purposes and swimming pools. Special problems in filtration and the removal of unstable mineral constituents are also undertaken.



The scheme of installation is illustrated at the left of the cut. Elevation of typical unit given at the right. Over-all dimensions are given by the following table:

Capacity of Vent System C.F.M.	Dimensions in Inches			Capacity of Elec. Service K.V.A.
	A	B	C	
2500 to 7500	16	28	82	0.175
10,000 to 20,000	17	36	82	0.475
25,000 to 30,000	26	56	82	0.575
35,000 to 50,000	26	56	84	0.820

Detail of larger sizes given in our Bulletin No. 10.

N. B. Dimension D may be anything down to zero, in which case the duct shown in broken lines must be provided. When D exceeds three feet this duct is not necessary.

SPECIFICATIONS

1. GENERAL: The contractor shall provide and install, as indicated on the ventilating plans, RADI-ION air purifying and ionizing equipment, as manufactured by the Radi-Ion Corporation, Chicago, Illinois.

2. CAPACITY: Each RADI-ION apparatus shall be of such capacity as to deodorize and purify the quantity of air handled by the ventilating fan which it serves.

Here specify fans to be served by Radi-Ion equipment, either by number and capacity, or other means that will serve to identify the fans for the contractor.

3. CONSTRUCTION: The RADI-ION apparatus shall employ special, evacuated discharge tubes, of transmission glass, excited by high tension electric current. The discharge produced shall not occur between superimposed electrodes. All electric contacts must be housed so as to render accidental contact with same impossible. The tubes shall be inclosed in a sheet metal housing, hinged glass door being provided for access to tubes. Duct connections of sufficient size shall be provided for connecting the RADI-ION apparatus with the ducts of the ventilating system.

Special transformers shall be provided for exciting the tube and so housed that accidental contact with live parts is impossible.

A rheostat shall be provided for controlling the intensity of the electric field.

An indicating instrument shall be provided for indicating the intensity of the electric field.

A conoidal type fan, directly connected to suitable size motor, shall be provided for drawing air from the ventilating system, passing same over ionizing tubes and returning it to ventilating system.

4. ELECTRIC SERVICE: RADI-ION apparatus shall operate on (here specify characteristics of electric service). N. B. Only single phase can be utilized.

5. INSTALLATION: the contractor shall provide and install ducts connecting the RADI-ION apparatus with the ventilating system. Air must be taken from the ventilating system, downstream with respect to the filters or other air conditioning apparatus, and connect same with inlet of the RADI-ION apparatus. He will further provide connections between the discharge of the RADI-ION apparatus and the ventilating system, for the return of the activated air. The return connection is made preferably immediately upstream with respect to the inlet of the main ventilating fan. Where the tap-off for supplying the RADI-ION apparatus must necessarily be close to the point of return of the activated air, suitable baffles shall be provided to prevent diffusion taking place between the air to and from the RADI-ION apparatus.

6. GUARANTEE: the contractor shall guarantee, through the manufacturer, the equipment to be free from inherent defects of material and workmanship for a period of one year after date of installation. The apparatus is also guaranteed to maintain the ionic content of the atmosphere equivalent to that normally occurring in Nature. It is further guaranteed that the ionizing equipment will maintain the air pure and free from odor, both in the case of recirculated air, or drawing air from the outside in the congested districts of the city.