

General

Flanders models MS and MSG Moisture Separators are designed for use in air handling systems requiring collection of water droplets or oil mist. Water droplets in outside air is usually fog. In supply air, water droplets may occur as carry over from cooling coils and evaporative media or unevaporated moisture downstream of humidifiers. Oil mist in return air is most often found in production machine shops.

Application

The optimum face velocity for MS and MSG Moisture Separators is 500 fpm, and at this point they are 98% efficient on 20 micrometer liquid droplets. Performance is relatively unchanged in the recommended range of 450 fpm to 550 fpm. Above 550 fpm captured liquid may be re-entrained in the airstream.

The system designer must recognize that moisture separators will also act as low efficiency particulate prefilters and that the separator bank pressure drop will increase over time. System static pressure calculations for fan selection should include an allowance of at least 0.50 in. w.g. final static pressure for dirty wet moisture separators.

Models MS and MSG Moisture Separators are meant to be installed with their pleats vertical so that collected liquid will drain easily to the bottom of the frame and out through five 3/8 in. diameter holes. The top of the frame has an arrow to guide the installer as to the proper air flow direction and position for proper drainage

Installation Considerations

In a mixed air (outside air/return air) system, place the Moisture Separators in the outside air duct if possible. Otherwise, place them as the first filtration stage ahead of the particulate filters.

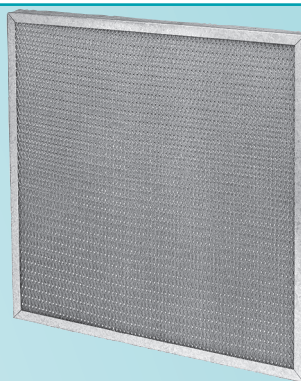
Moisture Separators may be installed in built-up banks using Flanders Precisionaire Type 9 Holding Frames or in Flanders Precisionaire Side Access Housings specially equipped with drain tubes. When built-up banks are used, field-fabricated water drain pans should be installed between each horizontal row of frames.

For banks four or five separators wide, locate 3/4 in. I.D. downspouts at each end. For banks six separators wide or wider, locate downspouts at each end and proportionately along the width of the bank, one for every six separators or a fraction thereof. Example: a six separator wide bank would have downspouts at both ends and one in the middle; an eight separator wide bank would have downspouts at both ends and two more proportionately spaced along the width of the bank. If not individually trapped, the downspouts should be manifolded to a 1 in. I.D. or larger collector with a trap of a depth exceeding the negative pressure expected in the plenum where the separator bank is located.

Sureseal two-stage Side Access Housings may be special-ordered with the 2 in. tracks fitted with drain tubes to hold both Moisture Separators and particulate final filters. If the 2 in. tracks are to be used for 2 in. prefilters, a Surepleat single-stage Side Access Housing with drain tube should be selected and located upstream of the particulate filter housing.

Important Features

- Efficiency of 98% on 20 micrometer liquid droplets at 500 fpm
- Corrosion-resistant construction
- Nominal 2 in. thick for application flexibility
- Models for both built-up banks and side access housings



Construction

Moisture separators are constructed much like permanent metal washable filters. The nominal two inch thick media pack consists of 15 individual layers of pleated and flat aluminum wire mesh.

Air entering and exiting support grids are expanded metal, and the media enclosing frame is 16 ga. galvanized steel with five 3/8 in. diameter holes in the bottom for drainage.

Model Number			Recommended Range of Face Velocities (FPM)						Weight Each (lbs)
For Built-up Banks	For Side Access Housings (Note 1)	Nominal Size HxWxD inches (Note 2)	375	450	500	550	625		
MS24242	MSG-24242	24x24x2	1500 .14	1800 .20	2000 .22	2200 .28	2500 .34	15	
MS-12242	MSG-12242	12x24x2	750 .14	900 .20	1000 .22	1100 .28	1250 .34	9	
MS-24122	MSG-24122	24x12x2	750 .14	900 .20	1000 .22	1100 .28	1250 .34	9	

Notes:

1. Model MSG separators for use in side access housings with drain tube option are furnished with neoprene gaskets on vertical sides to prevent moisture bypass.
2. Actual separator size is 5/8 in. under on both height and width. Actual depth is 1-7/8 in.
3. For maximum capture of liquid droplets, operate separators in the 500 fpm + 10% range.
4. Pd= Pressure Drop, in w.g.
5. Special sizes are available. Contact your local representative or the factory.
6. Performance values stated may be averages typical of the products listed. Contact factory for actual performance test reports on specific products.

Guide Specifications

1.0 General

- 1.1 Moisture separators shall be Models MS or MSG as manufactured by Flanders Corporation.
- 1.2 Separator sizes and capacities shall be as scheduled on the drawings.

2.0 Filter Construction

- 2.1 Enclosing frame shall be nominal 2 inches thick 16 ga. galvanized steel with five 3/8 in. drain holes in the bottom.
- 2.2 The media pack shall consist of 15 individual layers of pleated and flat aluminum wire mesh.
- 2.3 The face grids on the entry and exit sides shall be expanded metal.
- 2.4 Arrow on top of frame shall indicate placement of separator as to air flow and drainage position.

- 2.5 Model MSG separators for use in side access housings with drain tube option shall have neoprene gaskets on vertical frame sides to prevent liquid by-pass.

3.0 Performance

- 3.1 Separators shall have a minimum efficiency of 98% on 20 micrometer water or oil droplets when operated at 500 fpm gross face velocity.
- 3.2 Initial resistance shall not exceed the scheduled values.

4.0 Installation

- 4.1 The installing contractor shall construct filter banks or provide housings with drain tubes in accordance with the separator manufacturer's recommendations.
- 4.2 Drain tubes and/or drain manifold shall be trapped before running the piping to an open drain



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