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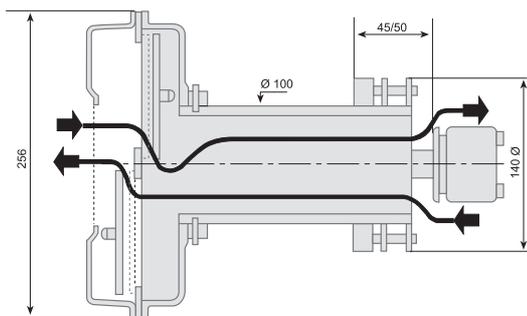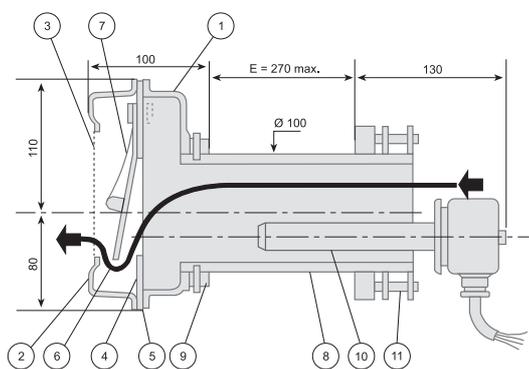
VÁLVULA **2200** VALVE

Para instalar en techo o pared / *To install on wall or ceiling*

2230 - 2231 / 2250 - 2251

Modelo *Version*	Código *Code*	Aplicación *Aplication*	Descripción *Description*	Peso *Weight*
2230	FI0 0845	Pared Wall	Con resistencia With heating cord	2.9 Kgs.
2231	FI0 0801	Techo Ceiling	Con resistencia With heating cord	2.8 Kgs.
2250	FI0 0093	Pared Wall	Sin resistencia Without heating cord	1.7 Kgs.
2251	FI0 0096	Techo Ceiling	Sin resistencia Without heating cord	1.6 Kgs.

Válvula destinada a equilibrar presiones mediante un paso de aire, a través de la misma, entre el interior y exterior de una cámara frigorífica. Estas diferencias de presión que corregimos mediante esta válvula, se producen normalmente por las siguientes causas a modo de empleo:
- Puesta en marcha de los elementos de desescarche en los evaporadores.
- Por una fuerte entrada de mercancía en el seno de la cámara.
- Por una prolongada apertura de las puertas.
- Por cambios de presiones atmosféricas exteriores ajenas a la cámara, y que provocan también los mismos inconvenientes.

Descripción:
1. Caja exterior en aluminio fundido.
2. Tapa en poliestireno antichoque con rejilla de protección.
3. Rejilla de protección inoxidable.
4. Pletina de aluminio anodizado con junta de estanqueidad.
6. Membranas móviles en aluminio anodizado provistas de otra membrana en Neopreno para asegurar una absoluta estanqueidad.
7. Resortes en acero inoxidable que mantienen las membranas cerradas por debajo de 10 mm. presión columna de agua.
8. Tubo de fibrocemento pasante, en el interior del cual se alojará la caña calefactora.
9. Juntas de estanqueidad.
10. Caña calefactora 25 W - 220 V con toma de tierra
11. Caja de conexión

Fórmula de aplicación:

$$\text{Num. de válvulas} = \frac{1.3\ V.}{T\ (273 + t)}$$

V = Volumen
T = Variación de temperatura x minutos x ºC
t = Temperatura en el interior de la cámara ºC
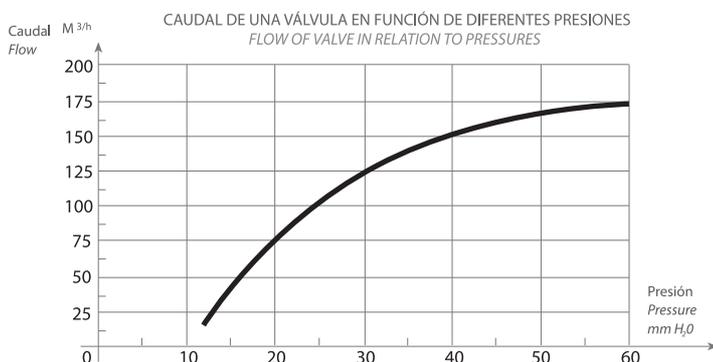273 y 1.3 = Constantes

Ejemplo:

Volumen = 5.000 m3
T = 15 minutos para 1 º C
t = -30ºC

$$\frac{1.3\ x\ 5.000}{15\ (273 - 30)} = \frac{6500}{3645} = 1.78\ \text{válvula} \longrightarrow 2\ \text{válvulas}$$

If above data are exactly observed, the two valves will ensure that an evenly distributed pressure of 30 kg/m2 is not exceed.

The walls of a cold room are constantly subjected to strains caused by pressure variations, either from inside or from outside.
In order to control said pressures , Valve 2200 has been created in order to balance internal and external pressures through venting.
Internal pressures
Defrosting of evaporators, loading of goods, extended opening of doors entail warming up of the air, hence overpressure risk of violent opening of the doors or yielding of the walls. Likewise Cooling down of the air and consequently of the room, will result in underpressure and possibility collapse of the walls.
For example, a rise or fall of temperature by 1 degree C. creates a pressure of about 40 mm. water column i.e. 40 Kg/m2: for a 100 m2 ceiling, an evenly distributed load of 4 metric tons.
External pressures
Another factor has to be considered : atmospheric pressure.
Changes in weather (e.g. storms) may cause pressure variations acting on the outside of walls, with the same drawbacks as internal pressures

Description of Valve 2200:
It is a heating , mechanically operated valve, with two water tight mobile flaps, one for admission and the other for exhaust. it is adjustable to operate over a given pressures of about 10 mm. water column. It consists in two elements:
A. Mechanical element, outside the room. It is composed:
- 1 Case made of aluminium light alloy, epoxy coated (1)
- 1 gear case (2) made of polyestyrene, equipped with stainless protective grid (3)
- 1 Anodized dural plate (4) with gasket (5)
- 2 Mobile flaps (6) consisting in anodized plates between wich a neoprene diaphragm is placed to ensure tightness.
- 2 stainless springs (7) hold the two flaps in closed position as long as the pressure does not exceed 10 mm. water column.
- 1 fibro-ciment tube (8)with gasket (9) goes through the walls ans is attached to the case (1) by a tight fixture.
Heating element fixed inside the tube with a tightening band. It prevents frosting and consists in:
- A 25 W. heating rod (10) , 220 V. supply with ground connection.
- 1 Tight connecting box (11) , attached to the heating rod.

The following formula determines the number of valve needed for a given case.

$$\text{Num. of valves} = \frac{1.3\ V.}{T\ (273 + t)}$$

V = Volumen of the room
T = Time variation in min. for 1 ºC
t = Temperature of the room in ºC
273 & 1.3 = Constant values

Example:

V = 5.000 m3
T = 15 min. for 1 º C
t = -30ºC

$$\frac{1.3\ x\ 5.000}{15\ (273 - 30)} = \frac{6500}{3645} = 1.78\ valve\ \dashrightarrow\ 2\ valves$$

Esta curva ha sido establecida después de los ensayos efectuados sobre la válvula 2200
This diagram has been drawn upon the basis of the tests carried out with valve 2200

CAUDAL DE UNA VÁLVULA EN FUNCIÓN DE DIFERENTES PRESIONES
FLOW OF VALVE IN RELATION TO PRESSURES