



**SIEX** *trace*  
**DETECTION & EXTINCTION**



# COMPONENTS, INSTALLATION & MAINTENANCE SYSTEM MANUAL

**PNEUMATICAL DETECTION & EXTINCTION**

SIEX™ *trace*

**HFC-227ea**

**HFC-125**

**FK-5-1-12**

**Foam**

**Pressurized with N<sub>2</sub>**

At 215 and 360 psi (15 and 25 bar)

DLP – Direct Low Pressure

CLEAN AGENT EXTINGUISHERS,  
AUTOMATIC or MANUAL-AUTOMATIC

SELF-CONTAINED AUTOMATIC  
EXTINGUISHER UNITS

# 1. EXTINGUISHING SYSTEM

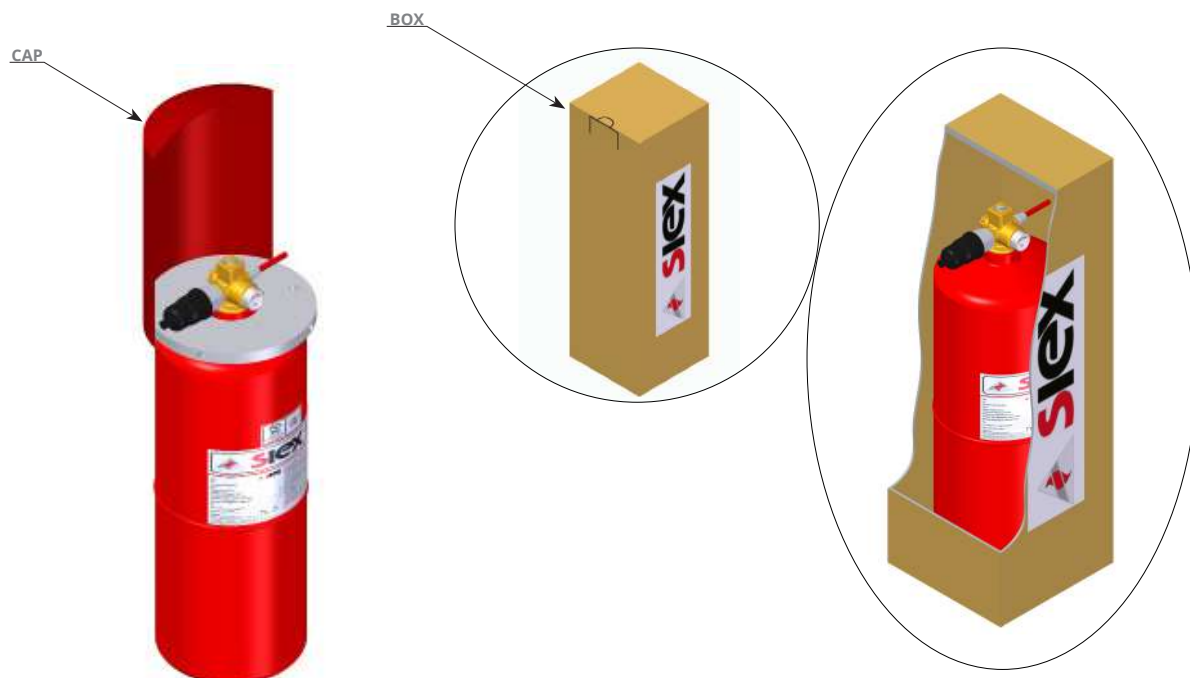
## 1.1. HFC-227ea, HFC-125, FK-5-1-12 AND PRESURIZED WITH N<sub>2</sub> GAS CONTAINER

Other names: container, cylinder or bottle. The extinguishing agent storage vessel consists of steel container (seamless or welded) fitted with a valve and an internal siphon tube factory filled with the relevant agent.



## 1.2. PROTECTIONS

The protections are a series of elements that protect items during transport, also avoiding accidental activation of the system. Depending on the cylinder, it could consist in a bridle fixed with a protective cap or all set can go in a box.

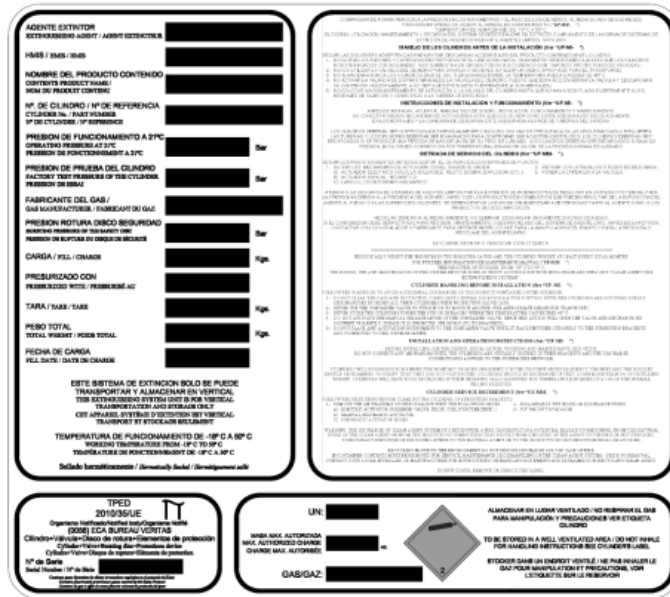


### 1.3. CONTAINER STICKERS

In the cylinder are placed stickers as shown in the following figure. Cylinder sticker large and small can be used interchangeably (depending on the cylinder size).



COMPANY STICKER



CYLINDER STICKER (LARGE)

EXTINGUISHING AGENT	
HFC-227ea	
HFC-125	
FK-5-1-12	
Foam	



COMPANY STICKER

\*The cylinders containing the foam extinguishing agent have an outer coating.

## 1.4. CONTAINER VALVES

The cylinder valve RGS-MAM-02-DXX has been designed for direct systems. Its function is contain the extinguishing agent inside the cylinder and when the system is activated, to allow the circulation of the extinguishing agent to the SIEX™trace tubing. The valve, designed and manufacture for gas containers, is the result of extensive R&D and has unique built-in safety features. The valve is factory fitted to the container.

Each valve includes the following elements:

The valve is provided with a pressure gauge, pressure switch (Optional) and burst disc which meet the DOT and TPED requirements.

Valve 1/8" BSP (Female outlet)	Component RGS-MAM-02-D / DP1
Valve 1/8" BSP (Female outlet)	Component RGS-MAM-02-DW / DP1W
Direct connect tubing (Male outlet)	Component RGS-MAM-02-DP2 / DP2W

## OPERATING PRINCIPLES

The Siex 2001 valve is a high flow, quick opening valve specially designed for fire protection use. It operates using a differential pressure piston mechanism. The container pressure is used with the valve to create a positive force on the piston, thus sealing the valve. The valve opens when pressure is relieved from the upper chamber and the piston move upwards, thus allowing extinguishing agent to flow out through the piping network. The upper chamber pressure is relieved via an actuator.

Each valve includes the following elements:

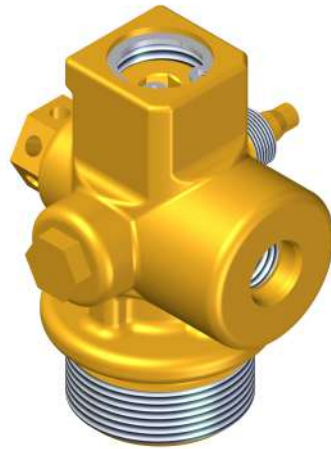
- Port for burst disc to relieve pressure in case of needed.
- Discharge port complete with safety cap.
- Port for activation port.
- Port for connect the pressure gauge or pressure gauge with switch contact.
- Port for connect the pressure switch (Optional).

The discharge valve is activated by one of the following methods:

- Manual operation through the discharge valve.
- Electric actuation through the electric solenoid.
- Automatic operation via SIEX™ trace tubing



RGS-MAM-02-DP1



RGS-MAM-02-DP2



## 1.5. RGS-MAM-02-DX / DPX CONTAINER VALVE

CONTAINER VALVE			
Part number		RGS-MAM-02-DP1	RGS-MAM-02-DP2
Connection to pressure switch	(Female thread) (Optional port)	1/8" NPT	1/8" NPT
Connection to pressure gauge	(Female thread) (Optional port)	M10	M10
Fill port		1/8" NPT (Female)	M10 (Male connection nut standar/ bicone)
Valve outlet thread			
Thread of burst disc cap	(Female thread)	1/4" BSP	1/4" BSP
Connection to the container	(Male thread)	M30	M30
Micro-switch		Optional	Optional



RGS-MAM-02-DP1



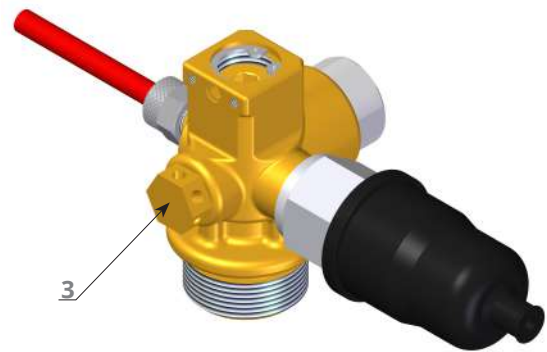
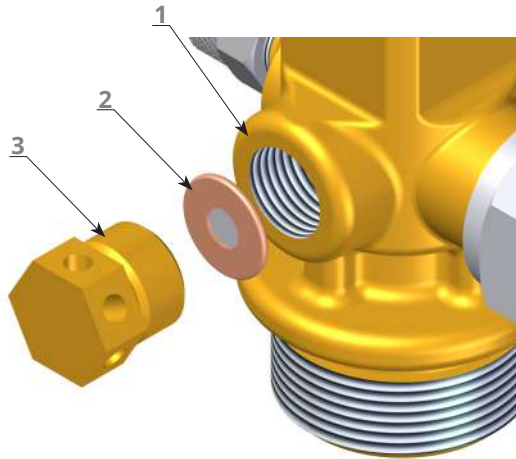
RGS-MAM-02-DP2

## 1.6. BURST DISC

This burst disc is a safety mechanism that protects the system against excess pressure.

### 1.6.1. BURST DISC OF CONTAINER VALVES

This disc is a safety mechanism that protects against excess pressure. It is housed in a side port of the container valve and is locked by a hollow hex-head screw drilled transversely to allow controlled exit of gas when the disc is burst. This burst disc meets the DOT and TPED requirements.



RGS-MAM-02-DP2

The burst disc assembly consists of:

Nº	DENOMINATION
1	Disc housing in the valve
2	Burst disc
3	Exhaust plug

BURST DISC OF CONTAINER VALVES	
Diameter of the burst disc	0.43 (11)
Exhaust plug thread	1/4" BSP



## 2. PNEUMATICAL DETECTION SYSTEM

### 2.1. STNT AND STHT HEAT AUTOMATIC FIRE DETECTOR SIEX™trace TUBING

The automatic fire detector tubing, STNT, is a heat sensitive tube designed to have an specific breaking temperature, concretely 284 °F at 217 psi (140°C at 15 bar) and °F at 360 psi (120°C at 25 bar) and for STHT, is a 243 °F at 217 psi (173 °C at 15 bar) and 316 °F at 363 psi (158 °C at 25 bar).

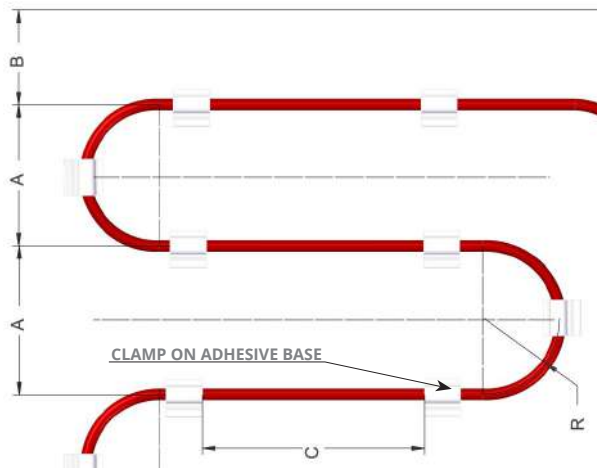
The SIEX™ trace tubing is installed along the risk to protect and pressurized at 217 or 360 psi (15 or 25 bar). Once it has been depressurized because an increase in temperature produced by a fire, it causes the activation of the automatic extinguishing unit, releasing the agent in the protected area.



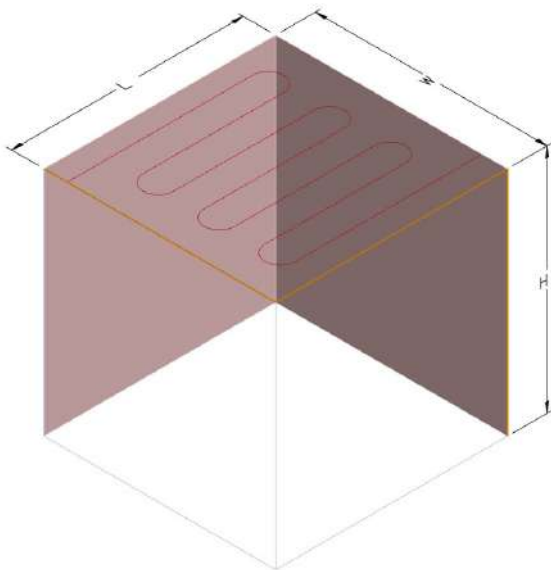
DENOMINATION	HEAT AUTOMATIC FIRE DETECTOR TUBING SIEX™trace	
	STNT	STHT
Part number		
Colour	Red	Red
Internal diameter	0.157 +/- 0.0393 in (4 +/- 0.1 mm)	0.157 +/- 0.0393 in (4 +/- 0.1 mm)
External diameter	0.236 +/- 0.0393 in (6 +/- 0.1 mm)	0.236 +/- 0.0393 in (6 +/- 0.1 mm)
Min. Bending radius	1,574 in (40 mm)	1,574 in (40 mm)
Max. working pressure	384 psi at 68 °F (26.48 bar at 20 °C)	384 psi at 64.4 °F (26.48 bar at 18 °C)
Burst pressure	1,421 psi at 64.4 °F (98 bar at 18 °C)	1,595 psi at 64.4 °F (110 bar at 18 °C)

## INSTALLATION DATA

This component is used as a main detection in automatic fire protection systems Direct Low Pressure (DLP) using HFC-227ea, HFC-125, FK-5-1-12, Foam and pressurized with N<sub>2</sub>. The following limitations shall be respected for their correct use.



INSTALLATION LIMITATION			
	Part number	STNT	STHT
<b>A</b>	Maximum distance between tubings	43.3 in (1.10 m)	43.3 in (1.10 m)
<b>B</b>	Maximum distance to the wall of the tubing	21.65 in (0.55 m)	21.65 in (0.55 m)
<b>R</b>	Maximum radio	21.65 in (0.55 m)	21.65 in (0.55 m)
<b>R</b>	Minimum radio	1.57 in (0.04 m)	1.57 in (0.04 m)
<b>C</b>	Maximum distance between clamps	23,622 in (0.60 m)	23,622 in (0.60 m)
	Maximum length of the tubing	1,968.5 in (50 m)	1,968.5 in (50 m)



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