EVERSAFE®

Your Solution to FIRE SAFETY

CO2 Fire Extinguishing System

EDITION 2019

About Us

Eversafe Extinguisher Sdn. Bhd. incorporated in year 1979, a member of Leeden National Oxygen Ltd, Singapore. Our production of fire-fighting equipment is housed within 2.844 acres of manufacturing and R&D facilities which allows us to offer an extensive range of high-quality products and systems.

Core Values

- Quality First
- Safety is Our Priority
- Teamwork
- Provide Solutions
- Integrity Always
- Customer Focus
- Positive Change

Vision

We aim to be the global leader in the production and marketing of firefighting equipment, systems, and solutions, through the use of innovative design.

Quality Control

Manufacturing process and quality management systems have been approved to BS EN ISO 9001 by British Standards Institution.
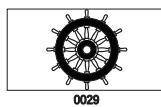
Manufacturer/Distributor of

- Portable Fire Extinguishers
- Mobile Fire Extinguishers
- Fire Hose Reels
- Landing Valves
- Breeching Inlets
- Fire Hydrant Equipment
- Nozzle
- Smoke Alarm
- Fire Blanket
- Canvas Hose
- Cabinets
- CO2 Fire Extinguishing System
- NAF S 227 Fire Extinguishing System (FM 200 Alternative)
- NAF S 125 Fire Extinguishing System
- NAF S 1230 Fire Extinguishing System
- Inert Gases Fire Extinguishing System
- Kerr Fire Foam Compound
- Wet Chemical Fire Suppression System

Product Standard/Certification

Our products are in compliance with the following product standards / certification bodies:

- American Standard (**UL**)
- Australian Standard (**SAI Global**)
- European Standard (**BSI / LPCB**)
- Malaysian Standard (**SIRIM / IKRAM**)
- Singapore Standard (**TÜV SÜD PSB / SETSCO**)
- Construction Prodcut Directive , CPD / CPR (**BRE**)
- Pressure Equipment Directive, CE Mark (**Lloyd's Register**)
- Marine Equipment Directive, Wheel Mark (**Apragaz**)
- Offshore Special Reuirement - Sarawak Shell Bhd / Sarawak Shell Pretroleum Co (**SSB / SSPC**)
- Kuwait National Petroleum Co (**KNPC**)
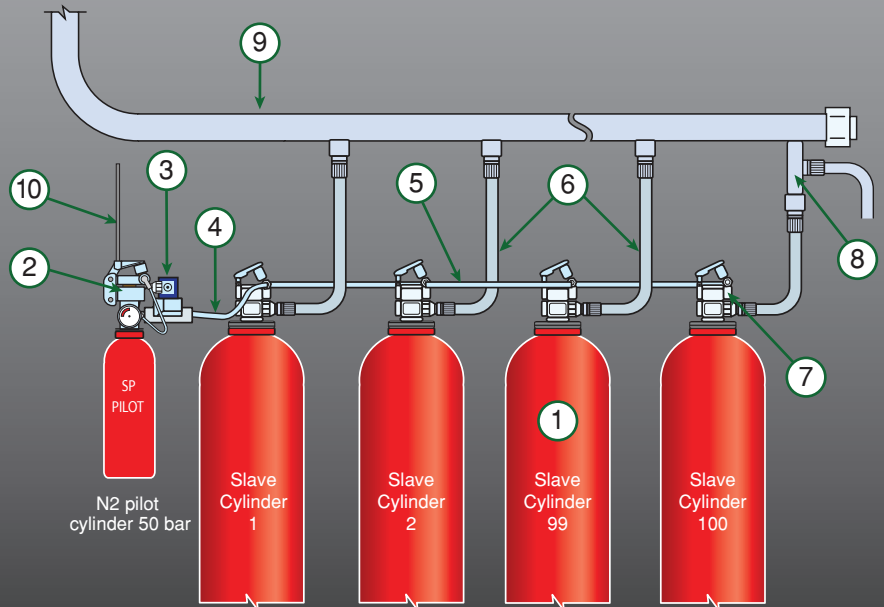- Kuwait Oil Company (**KOC**)

PRODUCT APPROVALS

MS SIRIM | TÜV SÜD PSB | Australian Standard | Lloyd's Register Type approved www.lr.org | KM 544838 KM 61549 | 0029 | CE 0038 0832 | LPCB EN 671-1:2001 Cert No 734a | UL | IKRAM QA | SETSCO

SP-MP 1 CARBON DIOXIDE TOTAL FLOODING FIRE EXTINGUISHING SYSTEM

(Bank Cylinder)

General Installation

1. Cylinder
2. Quick Release Valve
3. Solenoid Actuator
4. Pilot T-Connection Hose
5. Pneumatic Actuating Hose
6. Discharge Hose
7. Steam Plug
8. Pilot T-Connection
9. Manifold
10. Manual Pull Release Lever

SP PILOT

N2 pilot cylinder 50 bar

Slave Cylinder 1

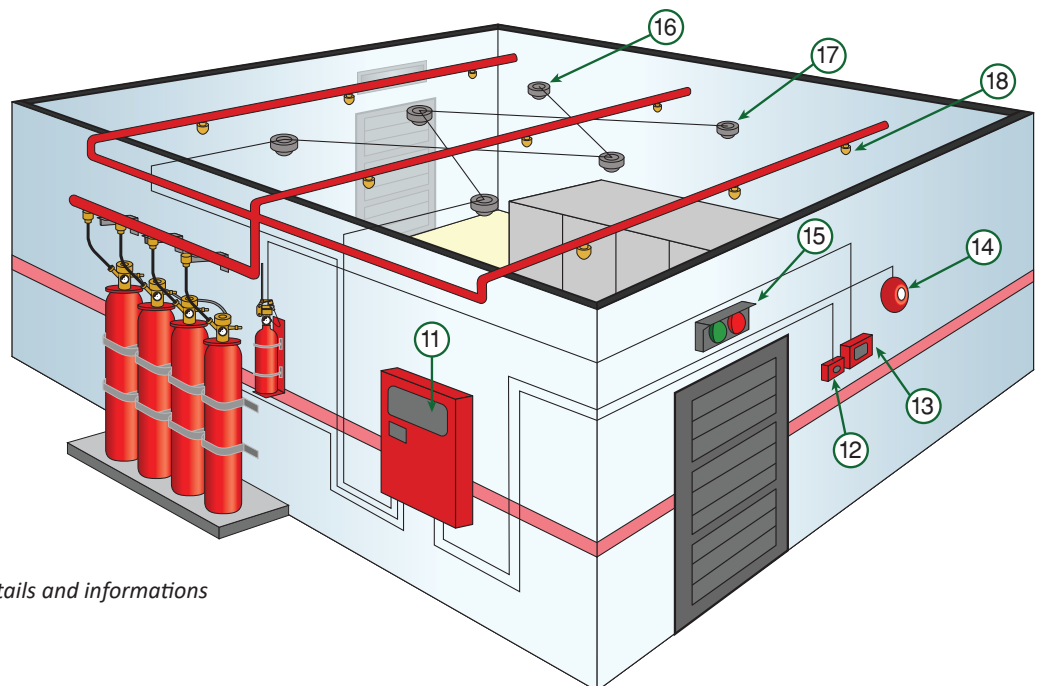Slave Cylinder 2

Slave Cylinder 99

Slave Cylinder 100

Refer to system components pages for details and informations

(Distribution, Detection & Alarm System)

General Installation

11. Fire Alarm Control Panel
12. Key Switch
13. Manual Pull Station
14. Alarm Bell
15. Double Flashing Light
16. Heat Detector
17. Smoke Detector
18. Discharge Nozzle

Refer to system components pages for details and informations

Carbon Dioxide Fire Extinguishing System

Description

Carbon Dioxide (CO_2) is one of the most effective fire extinguishing agents available on the market. In non-occupied environment, you will typically find CO_2 fire extinguishing system installed for fire protection.

EVERSAFE® Carbon Dioxide Fire Extinguishing Total Flooding System is developed and designed in accordance with NFPA 12 Standard by the innovative and creative R&D team of **EVERSAFE**®, to provide automatic, simultaneous discharge for a variety of hazards and configurations.
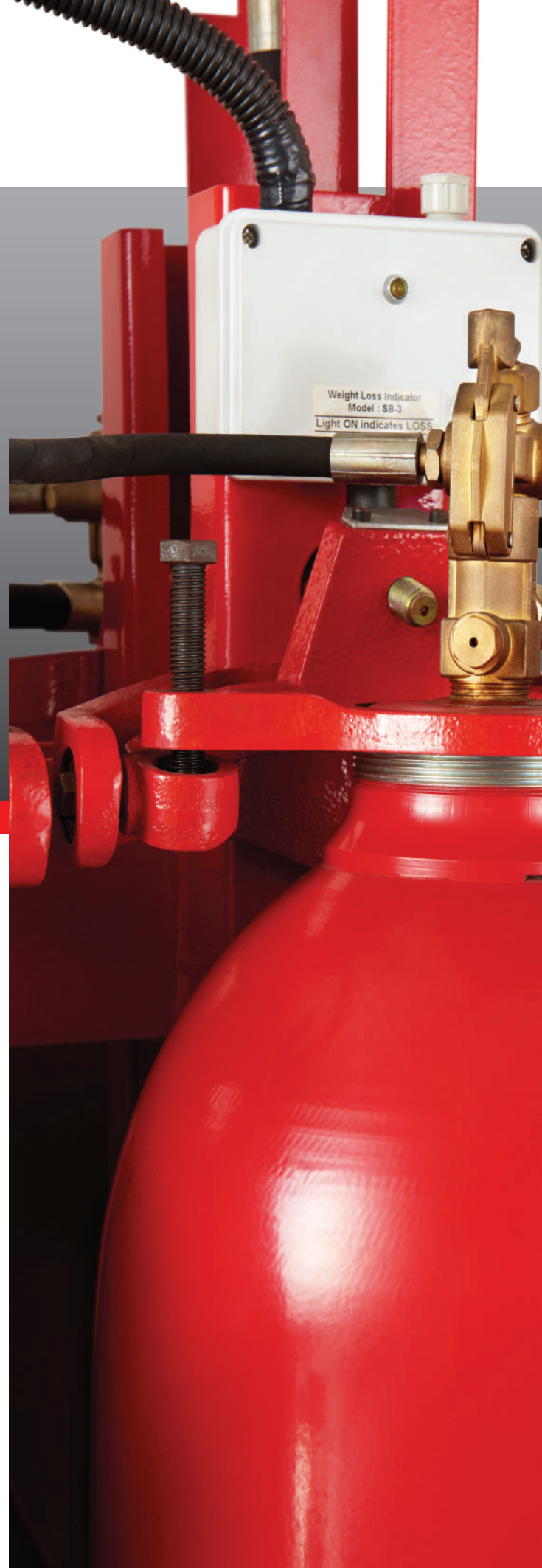
Typical Applications

- Power Generation/Transmission
- Metal Production and Processing
- Cement Plant/Blast Furnace
- Indirect Coal Firing Systems
- Automotive
- Electronics Operations
- Automated Storage and Retrieval Facilities

How Does CO₂ Fire Extinguishing System Put Out A Fire?

Fire is suppressed by *reducing the oxygen* level in the protected area to the point where combustion cannot be sustained.

Cooling is a secondary action of the agent which is used in local application where the liquid phase of the discharge is applied directly to the fire and hazard materials.

Environmentally Friendly

Carbon Dioxide is a colorless, odorless and electrically non-conductive gas that leaves no residue behind. Sensitive equipment in the protected area will not be damaged by CO_2, which reduce downtime and costs. Personnel can access any damage from the fire or smoke and quickly get back to work with no cleanup needed once the CO_2 has dispersed to safe levels from the protected area.

Own Pressure

CO_2 gas is commonly compressed to the liquid state for storage and transportation in cylinders. Upon release, it discharges under its own pressure giving the appearance of steam as its low temperature crystallizes water in the air.

Fast and Efficient

Its low boiling point allows it to vaporize rapidly to provide a three-dimensional penetrating action. It expands at a ratio of 450 to 1 by volume. This rapid expansion ensures that fire is targeted even in the most inaccessible hazard areas.

Type of Fire

Carbon dioxide is an effective fire extinguishing agent that can be used on many types of fires. It is effective for surface fires, such as flammable liquids and most solid combustible materials.

Flexible Design

The system can be engineered to suit specific customer requirements. Audible and visual indicators can be intergrated into the control system that facilitates automatic trigger of fire doors, dampers and shutters by means of an electrical detection system, Multi cylinder designs can be achieved by using manifolds, allowing simultaneous relesase to meet the specifications requires for each unique space.

Other Desirable Attributes

Thermal stability of CO_2 is excellent and it is free from deterioration. In addition, carbon dioxide has many additional commercial uses that refills are available in practically every large city or seaport throughout the world.

45 kg CO₂ Seamless Cylinder

Cylinder Type	Seamless	
Volume	68 litres	
CO₂ Capacity	45 kg	
Test Pressure	250 bar	
Working Pressure @ 20°C	56 bar	
Material	34Mn or 37Mn	
Approvals	DOT-3AA	ISO 9809

Pilot Cylinder

Cylinder Volume	3 Litre
Medium	Nitrogen
Working Pressure @ 20°C	50 bar
Burst Disc Pressure	60 - 70 bar
Solenoid Valve Pressure	0 - 90 bar
Solenoid Valve Voltage	24V DC
Approvals	Factory Manufacturing Standard

Quick Release Valve

Model	EE-209	EE-208
Thread Size	1" BS 341	W 28.8 x 1/14"
Test Pressure	250 bar	
Material	Brass	

EE-209   EE-208

Solenoid Actuator

Type	Direct Acting
Size	1/4"
Control Mode	Normally Close
Voltage	24V DC
Working Pressure	0 - 90 bar
Material	Brass
Approvals	Factory Manufacturing Standard

Pilot T-Connection

Application	100th Slave CO2 Cylinder
Connection	Ø 21.7 x 14 G
Material	Hydraulic Steel
Finishing	Rainbow Chromed
Approvals	Factory Manufacturing Standard

Discharge Hose

Type	High Pressure Hose
Size (Ø x L)	1/2" x 430 mm
Connection	3/4" BSPT Male / Ø 21.7 x 14 G Female Swivel
Working Pressure	160 bar
Test Pressure	310 bar
Material	Wire Braided Reinforced Synthetic Rubber
Hose Standard	SAE 100 RIAT

Pneumatic Actuating Hose

Type	High Pressure Hose	
Size (Ø x L)	1/4" x 300 mm	1/4" x 600 mm
Connection	3/8" BSP Male Swivel	
Working Pressure	160 bar	
Test Pressure	310 bar	
Material	Wire Braided Reinforced Synthetic Rubber	
Hose Standard	SAE 100 RIAT	

Pilot T-Connection Hose

Type	High Pressure Hose	
Size (Ø x L)	1/4" x 540 mm	1/4" x 800 mm
Connection	3/8" BSP Male Swivel / Ø 21.7 x 14 G Female Swivel	
Working Pressure	160 bar	
Test Pressure	310 bar	
Material	Wire Braided Reinforced Synthetic Rubber	
Hose Standard	SAE 100 RIAT	

CO₂ Discharge Nozzle

Type	Pendent
Thread Size	1/2 " BSPT
Material	Brass
Discharge Pattern	Universal Direction
Approvals	Factory Manufacturing Standard

Pressure Switch With Locking Device

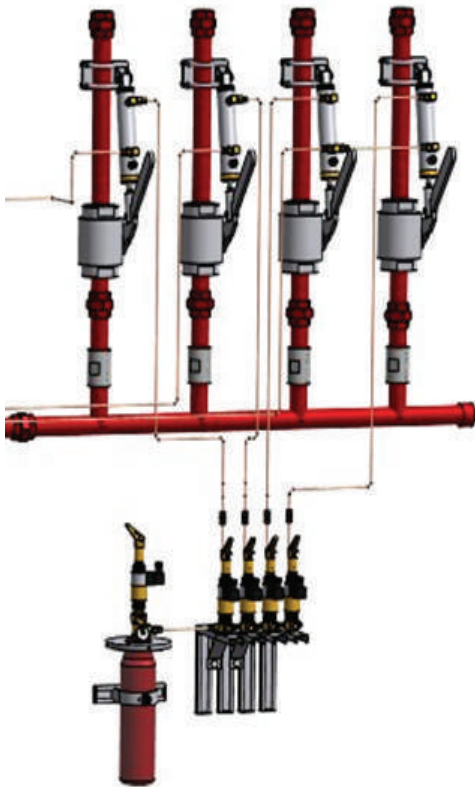| Part No.	SH30330010
Connection	G. ½"
Min. Actuation Pressure	10 bar
Max. Working Pressure	370 bar
Working Temperature	-25°C to 80°C
Material	Brass
Approvals	Dir. 2006/95/EC ; 2006/42/EC ; 2004/108/EC ; UL Listed

Manifold

Size Ø	DN 20 - DN 80
Pipe Connection	BSPT Male
Test Pressure	100 bar
Material	Carbon Steel ASTM A-106 Grade B
Internal Coating	Galvanized
Finishing	RAL 3000 Flame Red Epoxy Polyester Powder Coating
Approvals	Factory Manufacturing Standard

Bracket

Thickness	5 mm
Material	Carbon Steel Flat Bar
Finishing	RAL 3000 Flame Red Epoxy Polyester Powder Coating

Selector Valve Assembly

Pilot Cylinder   Electrical-manual Actuator   Selector Valve

Pilot Cylinder

Medium	Nitrogen
Cylinder Capacity	2 Litres
Working Presssure	100 bar
Approvals	UL / FM

Electrical-manual Actuator

Model	SIEX-SVS
Connection to Pipe	1/8" NPT Female
Material	Brass
Approvals	UL / FM

Selector Valve

Model	SVD
Ball Valve Size	DN20 - DN100
Actuator	Pneumatic Cylinder
Reset	Manual
Connection	Thread NPT / BSP Male / Welded
Approvals	UL / FM

Control Panel

Model	PE - GA2000		PE - GA4000	
Type	Normal	Weatherproof	Normal	Weatherproof
No. of Zone	2		4	
Size (W x H x L)	430 mm x 370 mm x 170 mm	430 mm x 380 mm x 170 mm	550 mm x 390 mm x 170 mm	550 mm x 400 mm x 170 mm
Operating/System	24V DC			
Power Supply Input	240V AC 50Hz			
Finishing	Signal Red Painted			
Approvals	MS 1745-2, EN 54-2, BOMBA Approved			

Heat Detector

Model	KP-303	D-103
Type	ROR & Fixed Temperature	
Size (W x L x H)	101 mm x 43 mm	78 mm x 55 mm
Voltage	6 - 28V DC	12 - 28V DC
Rated Temperature	135°F	
Finishing	White	
Approvals	UL 521 / EN 54-5, CE	UL 521

Smoke Detector

Model	D-213-2
Type	Photoelectric
Size (Ø x H)	100 mm x 46 mm
Voltage	10.8 - 33V DC
Finishing	White
Approvals	EN 54-5 , CE

Manual Pull Kit

Type	Break Glass Pull to Discharge
Size (W x L x H)	80 mm x 184 mm x 154 mm
Plate Thickness	0.9 mm
Material	Mild Steel
Finishing	Red Painted
Approvals	Factory Manufacturing Standard

Key Switch

Model	KP-307
Size (W x L x H)	90 mm x 110 mm x 110 mm
Contact	0.5A (Max)
Material	Mild Steel
Finishing	Red Painted
Approvals	Factory Manufacturing Standard

In accordance to **EVERSAFE**® policy of continuous improvement, specifications are subject to change without notice.

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Manual Call Point

Model	EE-302M
Size	88 mm x 88 mm x 59 mm
Operating Voltage	30V DC
Type	IP24D
Material	-20°C to 70°C
Finishing	Red Painted
Approvals	EN 54-11 / MS 1745-11 BOMBA Approved

Fire Alarm Bell

Model	EE-301
Size (Ø x H)	150 mm x 62 mm
Operating Voltage	24V DC
IP Rating	IP33C
Operating Temperature	-20°C to 70°C
Finishing	Red Painted
Approvals	EN 54-3 / MS 1745-3 BOMBA Approved

Twin Flashing Light

Model	KP-305
Size (W x H x L)	74 mm x 90 mm x 179 mm
Operating Voltage	24V DC
Material	Mild Steel
Finishing	Black
Approvals	Factory Manufacturing Standard

LED Evacuate Sign

Model	KP-309
Size (W x H x L)	89 mm x 102 mm x 254 mm
Operating Voltage	20-28V DC
Current Consumption	15mA@24V DC
Finishing	Black
Approvals	Factory Manufacturing Standard

Battery

Model	MSL 12 - 7.2
Size (W x H x L)	63 mm x 94 mm x 150 mm
Voltage	12V
Capacity	7.2 Ah
Operating Temperature	-20°C to 60°C
Standard	IEC 896-2

Tripping Device

Model	TDS-24
Voltage	24V DC
Amp	300mA
Trip Load	10Kgs
Finishing	Red Painted
Approvals	Factory Manufacturing Standard

Fire Curtain

Material	High Strength Non Combustible Fibre Glass Fabric
Size	Custom Size Available Upon Request

Pyrocharge with Fitting

Model	45KG-PC
Voltage	24V
Material	Steel
Finishing	Galvanized
Approvals	Factory Manufacturing Standard

Smoke Detector Tester

Model	Smokesabre
Volume	150 ml
Approvals	UL Listed

Our Global Network

EVERSAFE products are available in more than 45 countries worldwide

EVERSAFE EXTINGUISHER SDN. BHD. (053162-V)

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