



**eco7** FIRE SUPPRESS

**DETECTION TUBING SYSTEM**

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## ECO7 Fire Extinguishing Liquid Clean Agent - ECO7A



Orient Corporation

### DESCRIPTION

Fire Suppress presents one of the most revolutionary Fire Extinguishing Liquid Clean Agent called **Eco7**. The liquid clean agent has high performance capabilities in suppressing different classes of fires and is non-toxic and non-corrosive. It contains a natural ingredient that will not cause any destruction or hazard to the environments and humans. Since the liquid clean agent has a good ability to retain water, it enables quick heat reduction on the burning object that results in a minimal possibility of re-combustion (or re-ignition).



**Depending on its application, there are three categories of Eco7. This literature describes Eco7A**

#### Eco7A - Petroleum-Based Liquid Clean Agent

**Eco7A** is low expansion foam whose chemical formula has been modified for use on petroleum-based (hydrocarbon) fuels. Similar to AFFF, **Eco7A** creates a unique characteristic of a thin layer of foam solution with unique surface energy characteristics that spread rapidly across the surface of a hydrocarbon fuel causing dramatic fire knockdown.

**Eco7A** has a superior performance than AFFF and is environmentally responsible aqueous film forming foam. It is used **Eco7-A3** at 3% concentration to extinguish hydrocarbon fuels that have high surface tension (e.g. kerosene, diesel oil, jet fuels, etc.) and **Eco7-A6** at 6% concentration to suppress fuels with lower surface tension, such as hexane and high octane gasoline. **Eco7A** is not intended for use on polar solvent/water miscible fuels, such as alcohols, ketones, esters, etc.

#### Features

- Modification of Eco7 for use in hydrocarbon (petroleum) fuels, such as kerosene, diesel oil, jet fuels, etc.
- Excellent fluidity provides rapid fire "knockdown"
- Superior performance than AFFF
- Suitable for use with fresh water or sea water
- Suitable for use with both aspirating foam and standard water fog nozzles
- Compatible with standard proportioning and foam making devices
- Storage temperature is between 5°C and 50°C
- Eco7A is available on various types of Fire Suppress Extinguishing Systems including local applications and total flooding of unoccupied area

#### Foam Properties

Foam concentrate expansion depends on numerous variables, such as water type (e.g. fresh water, sea water, etc.), dilution (e.g. 3% or 6%), and the foam-making equipment. Depending on the discharge device, flow rate, and discharge condition, Eco7A produce expansion foam of 4.3 using aspirating discharge devices and expansion foam of 3.8 for non-aspirating discharge devices.

#### Proportioning Equipment

- Fixed or portable in-line eductors
- In-Line Balanced Pressure (ILBP) pump pressure proportioning skid
- Bladder tank balanced pressure proportioning systems
- Around-the-pump proportioners
- Handline, air-aspirating nozzles with fixed educator pickup tube

#### Discharge Devices

- Foam chambers
- Air-aspirating and non air-aspirating sprinklers or spray nozzles
- Standard water fog nozzles for handlines and monitors
- Air-aspirating foam nozzles
- Foam makers for use with either Floating Roof storage tanks or Dike/Bund protection systems
- High Back Pressure Foam Makers for subsurface base injection system (Class B Hydro carbon type fuels only)



200 KG Container

25 KG Container

## ECO7 Fire Extinguishing Liquid Clean Agent - ECO7B



Orient Corporation

### DESCRIPTION

Fire Suppress presents one of the most revolutionary Fire Extinguishing Liquid Clean Agent called **Eco7**. The liquid clean agent has high performance capabilities in suppressing different classes of fires and is non-toxic and non-corrosive. It contains a natural ingredient that will not cause any destruction or hazard to the environments and humans. Since the liquid clean agent has a good ability to retain water, it enables quick heat reduction on the burning object that results in a minimal possibility of re-combustion (or re-ignition).



(GB 17835-2008)

**Depending on its application, there are three categories of Eco7. This literature describes Eco7B**

#### Eco7B - Alcohol Resistant Liquid Clean Agent

Formulated using a new and proprietary technology, **Eco7B** is developed for the use on hydrocarbon or polar solvent type fuels (e.g. alcohol-type fuels). It is low expansion foam and is alcohol resistant foam that is produced from a combination of a plant extract natural ingredient, synthetic stabilizers, foaming agents, fluorochemicals, and alcohol resistant membrane forming additives. Similar to **Eco7A**, **Eco7B** also forms an aqueous film on the surface of the hydrocarbon fuel. When it is used on alcohol-type fuel, the membrane forming additives form a tough polymeric membrane that separates the foam from the alcohol and prevents the destruction of the foam blanket.

**Eco7B** is used for alcohol-type fuels or polar solvent/water miscible fuels (e.g. alcohols, ketones, esters, etc.) at 6% or on hydrocarbon fuels (e.g. gasoline, kerosene, diesel, etc.) at 3%. The proportioning rate of 3% (or 6%) means that 3 parts (or 6 parts) of **Eco7B** concentrate to 97 parts (or 94 parts) of water (fresh water or sea water).

#### Features:

- A ready-to-use alcohol resistant foam solution
- Available for use at 3% concentration to extinguish hydrocarbon fires and 6% for polar-solvent (water-miscible fires)
- Superior performance than AFFF/AR
- Suitable for use on hydrocarbon or polar solvent type fuels
- Suitable for use with both air-aspirating foam and standard water fog nozzles
- Suitable for use with fresh or sea water
- Storage temperature is between 5°C and 50°C
- Eco7B is available on various types of Fire Suppress Extinguishing Systems including local applications and total flooding of unoccupied area

#### Foam Properties

Foam concentrate expansion depends on numerous variables, such as water type (e.g. fresh water, sea water, etc.), dilution (e.g. 3% or 6%), and the foam-making equipment. Depending on the discharge device, flow rate, and discharge condition, aspirating discharge devices typically produce foam expansion of 3 and non-aspirating discharge devices typically generates a much higher foam expansion.

#### Proportioning Equipment

- Fixed or portable in-line eductors
- In-line balanced pressure (ILBP) pump pressure proportioning skid
- Bladder tank balanced pressure proportioning systems
- Around-the-pump proportioners
- Handline, air-aspirating nozzles with fixed educator pickup tube

#### Discharge Devices

- Foam chambers
- Air-aspirating and non air-aspirating sprinklers or spray nozzles
- Standard water fog nozzles for handlines and monitors
- Air-aspirating foam nozzles
- Foam makers for use with either Floating Roof storage tanks or Dike/Bund protection systems
- High Back Pressure Foam Makers for subsurface base injection system (Class B Hydro carbon type fuels only)



200 KG Container

25 KG Container



Orient Corporation

## DESCRIPTION

Orient presents one of the most revolutionary Fire Extinguishing Liquid Clean Agent called **Eco7**. The liquid clean agent has high performance capabilities in suppressing different classes of fires and is non-toxic and non-corrosive. It contains a natural ingredient that will not cause any destruction or hazard to the environments and humans. Since the liquid clean agent has a good ability to retain water, it enables quick heat reduction on the burning object that results in a minimal possibility of re-combustion (or re-ignition).



(GB 17835-2008)

**Depending on its application, there are three categories of Eco7. This literature describes Eco7**

### Eco7 - "Multi-Purpose" Liquid Clean Agent

**Eco7** is capable to suppress fires for most applications including vehicle tires, rubbers, plastics, woods, kitchen fires, and many more. The agent is water soluble that contains a natural ingredient extracted from plants. This natural ingredient makes **Eco7** has the ability to convert to organic fertilizer when it meets the soil and germs. Hence, **Eco7** is highly recommended for use when combating forest fires as it will support plants to grow.

**Eco7** has no CFCS and contains flame retardant compound; hence, it is non-toxic, non-corrosive and is able to put out fires quickly. **Eco7** forms a unique flame retardant layer that prevents further repeat burns and embers (i.e. resist heat and combustion). When it is used on forest or large area of fires, it forms a separating wall to prevent flame from spreading. Thus, **Eco7** is an ideal product to suppress most of fires applications.

Due to its unique abilities (non-toxic and non-corrosive), **Eco7** is safe to use under emergency situation to escape fire scenes. In other words, **Eco7** can be sprayed to soak on clothing and human body without causing any health problems (exception on allergy conditions). Please note that **Eco7** is available on portable extinguishers, disposable spray can, and various types of Fire Suppress Extinguishing Systems.

### Features:

- Multiple functions: extinguish fires, retard flame, resist heat
- Quick and instantaneous in reducing heat of fires
- No repeat combustion or ignition
- 100% water soluble
- Visibility at fire scenes within seconds upon extinguishment
- Has a pH of 6.9 (approx. neutral)
- Has zero potential of global warming and ozone depletion
- Atmospheric lifetime is 30 hours
- Environmentally friendly: non-corrosive, non-toxic, biodegradable
- No risks of secondary pollutions or soil acidification
- Highly effective in suppressing vehicle tires, rubbers, plastics, cooking oil fires
- Suitable for extinguishing fires in most classes.
- No special equipment required
- Low pressure system and can resist high heat temperature environment (up to 50°C)
- Suitable to use in automatic water sprinkler systems as well as all types of automatic or semi-automatic systems as fire extinguishing chemicals



200 KG  
Container

25 KG  
Container



Orient Corporation

### DESCRIPTION

Each of the basic sizes can be filled with one pound increments to meet the exact amount of HFC-227ea Clean Agent required, within their fill ranges. There are two types of cylinders that are used in the Pre-Engineered Clean Agent System. The OCI 3X through the OCI 18X are manufactured, tested and stamped in accordance with UL 299.

### Model:

OCI 3X through the OCI 18X

### System Operating Pressure:

195 psi (13.71 kg<sub>f</sub> / cm<sup>2</sup>) at 70°F (21.1°C)

### Temperature Range:

32°F (0°C) to 130°F (54.4°C)

All cylinders are equipped with a brass and high flow type valve. The valves are pressure operated that utilizes the pressure from the cylinder to activate the valve and allows the Clean Agent to discharge.



Direct Action  
Release (DAR)  
Arrangement

Secondary Action  
Release (SAR)  
Arrangement

Part Number	Valve Type	Cylinder Size	Max Fill at 70 lb/ft <sup>3</sup>	Min Fill at 30 lb/ft <sup>3</sup>	Valve Size	Cylinder Height	Height   Diameter
OCI 3D	DAR	3 LB	3 LB	1 LB	1/2"	12.50	3.50
OCI 3S	SAR	3 LB	3 LB	1 LB	1/2"	12.50	3.50
OCI 6D	DAR	6 LB	6 LB	3 LB	1/2"	12.50	4.25
OCI 6S	SAR	6 LB	6 LB	3 LB	1/2"	12.50	4.25
OCI 12D	DAR	12 LB	12 LB	6 LB	1/2"	17.75	5.15
OCI 12S	SAR	12 LB	12 LB	6 LB	1/2"	17.75	5.15
OCI 18D	DAR	18 LB	18 LB	12 LB	1/2"	16.00	7.00
OCI 18S	SAR	18 LB	18 LB	12 LB	1/2"	16.00	7.00

## Pre-Engineered Cylinders for Eco7 Liquid Agent



Orient Corporation

### DESCRIPTION (For Fire Suppress Detection Tubing Connection)

Each of the basic sizes can be filled with 0.2 Litres increments to meet the exact amount of Eco7 (GB 17835-2008) Liquid Clean Agent required, within their fill ranges. There are two types of cylinders that are used in the Pre-Engineered Clean Agent System. The OCI 999001X-E7 through the OCI 999006X-E7 are manufactured, tested and stamped in accordance with UL 299.

#### Model:

OCI 999001X-E7 through OCI 999006X-E7

#### System Operating Pressure:

195 psi (13.71 kg<sub>f</sub>/cm<sup>2</sup>) at 70°F (21.1°C)

#### Temperature Range:

32°F (0°C) to 131°F (55°C)



Direct Action  
Release (DAR)  
Arrangement

Secondary Action  
Release (SAR)  
Arrangement

All cylinders are equipped with a brass, high flow, pressure differential type valve. The valves are pressure operated that utilizes the pressure from the cylinder to activate the valve and allows the Clean Agent to discharge.

Part Number	Valve Type	Cylinder Size	Maximum Fill	Minimum Fill	Valve Size	Cylinder Height	Height   Diameter
OCI 999001D-E7	DAR	1 L	1 L	1 L	1/2"	12.5	3.5
OCI 999001S-E7	SAR	1 L	1 L	1 L	1/2"	12.5	3.5
OCI 999002D-E7	DAR	2 L	2 L	1.5 L	1/2"	12.50	4.25
OCI 999002S-E7	SAR	2 L	2 L	1.5 L	1/2"	12.50	4.25
OCI 999004D-E7	DAR	4 L	4 L	3 L	1/2"	17.75	5.15
OCI 999004S-E7	SAR	4 L	4 L	3 L	1/2"	17.75	5.15
OCI 999006D-E7	DAR	6 L	6 L	4.5 L	1/2"	16.0	7.0
OCI 999006S-E7	SAR	6 L	6 L	4.5 L	1/2"	16.0	7.0



Orient Corporation

## INTRODUCTION

The principle is a simple self-activating system that offers the widest versatility and is absolutely safe against malfunction, which results in the best cost-performance ratio. It does not rely on any complex electronics or any moving parts.

## DESCRIPTION

Orient employs a flexible detection and delivery system called Fire Detection Tube. The tube is manufactured from specially processed polymer materials to achieve the desired heat detection and delivery characteristics.

The Fire Detection Tube, which is pressurized, is placed within an enclosed area above potential fire hazards and secured in place with brackets provided. Extinguishing mediums can be matched to the particular application. Various canister sizes are available and are supplied attached to the Fire Detection Tube.

The Direct Action Release System discharges the extinguishant directly from the burst hole in the tube, this will be the closest point to the fire, and will allow the fastest extinguishing time and minimum spread of the fire. The Secondary Action Release system discharges the extinguishant into the protected area via plumbed diffusers that are initiated by the tube bursting.

## FEATURES

Fire Detection Tube:

- Is a Continuous Linear, Pneumatic Heat Detection Device
- Is made of Proprietary Special Thermoplastic with UV Coated
- Is available in 2 sizes (ID: 4mm / OD: 6mm; ID:6 mm / OD: 8mm)
- Is available in varying lengths up to 100 m (328 feet) per roll but can be extended further with straight connectors (with spring top supports / slip-on) and T-connectors (with spring top supports / slip-on)
- Is Durable and Flexible
- Its performance is not affected by Humidity or Vibration
- Virtually no installation limitations
- Targeted suppression that attacks the fire where it starts
- Accurate rupture at 212°F (100°C)
- Always detect at hottest area within the enclosure
- Will not fuse together under heat and pressure unlike other available pneumatic tubing in the market
- Detecting the fire at its source interrupts the fire at its earliest stages, usually well before other systems can react
- Acts as both pipework and discharge nozzle (for Direct Action Release system applications)
- Discharge also takes place at hottest area
- Extinguishes fire within seconds
- Is pressurized with Dry Nitrogen from 150psig to 240 psig @70°F (21°C)
- Lower cost and more environmentally friendly due to its ability to use smaller equipment and less total extinguishant
- Enhanced people safety by operating inside the hazard space, not where people are present
- Does not require electrical sources, battery backups or control panels
- Better suppression capability since systems operate outside people-occupied spaces
- Much higher system reliability due to fewer components, lack of wiring and power sources and simple operating principles
- Simple to maintain with minimal training
- Easy to replace after rupture
- Just cut off the portion that has ruptured, use 2 pieces straight connectors with spring top support or slip-on to join another replacement length of tube
- Use proper approved fittings to prevent leakages at the joints



Part Number	Int. Dia.	Ext. Dia.
OCI 99011-A-1	4mm	6mm
OCI 99011-B-1	6mm	8mm



### **End-Of-Line Adapter (OCI 99026)**

The End-Of-Line Adapter is used for connecting devices such as Pressure Gauge or Pressure Switch.

Part Number	Description
OCI 99025	End-Of-Line Adapter
OCI 99026	End-Of-Line Adapter with Slip On
OCI 99026-G	End-Of-Line Adapter with Slip On and 195 PSI Pressure Gauge
OCI 99026-S	End-Of-Line Adapter with Slip On and Pressure Switch



### **Direct Manual Release Assembly (OCI 99001)**

The Direct Manual Release Assembly is connected from the Pneumatic Fire Detection Tube. The Direct Manual Release Assembly can also be used in place of an End-Of-Line Adapter. It can be connected to any point along the Fire Detection Tube by adding a High Pressure "T" Fitting.



### **Pressure Gauges**

Pressure Gauge is used to monitor the internal pressure of the cylinder. They are available in two ranges; 195 psig and 240 psig.

Part Number	Description
OCI 27-15-18-DC-3	Pressure Gauge 195 PSI M10x1
OCI 27-15-18	Pressure Gauge 240 PSI 1/8" NPT



### **Fire Detection Tube Protection Guard (OCI 99020-1)**

The Fire Detection Tube Protection Guard comes in two different sizes of 6 mm diameter and 8 mm diameter. The Protection Guard is used to wrap around the Pneumatic Fire Detection Tube to protect it from cuts and abrasion when the tube is installed in harsh environmental conditions that have serious wear and tear conditions. The Protection Guard is 1.2 m. in length and has spring-like connector to extend the protection guard.





## DESCRIPTION

Fire Suppress range of Portable Fire Extinguishers are made of highest quality materials that have been class tested. We offer a wide variety of portable fire extinguishers including powder, foam, and carbon dioxide, as described in the following table.



	PART NUMBER	NAME	TYPE	CAPACITY	OVERALL WEIGHT	WATER CAPACITY	SERVICE PRESSURE	TEMPERATURE RANGE	DISCHARGE TIME
A	OCI 970112	12KG ABC POWDER	Powder Ext.	12 KG	17.4KG	13.6 L	15 Bar at 20°C±2°C	-30°C~60°C	≥ 21 sec.
B	OCI 970109	9KG ABC POWDER	Powder Ext.	9 KG	13.8 KG	10.5 L	15 Bar at 20°C±2°C	-30°C~60°C	≥ 18 sec.
C	OCI 970106	6KG ABC POWDER	Powder Ext.	6 KG	9.7 KG	7.8 L	15 Bar at 20°C±2°C	-30°C~60°C	≥ 15 sec.
D	OCI 970206	6L FOAM	Foam Type (Stored Pressure)	6 L	9.6 KG	7.5 L	10 Bar at 20°C±2°C	5°C~60°C	≥ 30 sec.
E	OCI 970209	9L FOAM	Foam Type (Stored Pressure)	9 L	14.1 KG	10.6 L	10 Bar at 20°C±2°C	5°C~60°C	≥ 40 sec.
F	OCI 970309	9L WATER	Foam Type (Stored Pressure)	9 L	14.1 KG	11.33 L	10 Bar at 20°C±2°C	5°C~60°C	≥ 40 sec.
G	OCI 970405	5KG CARBON DIOXIDE	CO <sub>2</sub> Type	5 KG	13.9 KG	6.67 L	216 Bar	-30°C~60°C	10~12 sec.
H	OCI 970103	3KG ABC POWDER	Powder Ext.	3 KG	5.2 KG	3.8 L	15 Bar at 20°C±2°C	-30°C~60°C	≥ 9 sec.
I	OCI 970102	2KG ABC POWDER	Powder Ext.	2 KG	3.5 KG	2.4 L	15 Bar at 20°C±2°C	-30°C~60°C	≥ 9 sec.
J	OCI 970104	4KG ABC POWDER	Powder Ext.	4 KG	5.9 KG	4.7 L	15 Bar at 20°C±2°C	-20°C~60°C	≥ 12 sec.
K	OCI 970203	3L FOAM	Foam Ext.	3 L	5.5 KG	3.57 L	10 Bar at 20°C±2°C	-5°C~60°C	≥ 3 sec.
L	OCI 970402	2KG CARBON DIOXIDE	CO <sub>2</sub> Type	2 KG	6.3 KG	2.67 L	216 Bar	-30°C~60°C	≥ 6 sec.

EN3



Orient Corporation

## DESCRIPTION

Fire Suppress newest range on Portable Fire Extinguishers utilized Eco7 (GB 17835-2008) and are made of highest quality materials that have been class tested. We offer a wide variety of capacity for the portable fire extinguishers.



Fire Suppress presents one of the most revolutionary Fire Extinguishing Liquid Clean Agent called **Eco7** (GB 17835-2008). The liquid clean agent has high performance capabilities in suppressing different classes of fires and is non-toxic and non-corrosive. It contains a natural ingredient that will not cause any destruction or hazard to the environments and humans. Since the liquid clean agent has a good ability to retain water, it enables quick heat reduction on the burning object that results in a minimal possibility of re-combustion (or re-ignition).

	OCI 970001	OCI 970002	OCI 970003	OCI 970006	OCI 970009
<b>Cylinder Weight (kg)</b>	0.68	1.01	1.54	2.7	3.56
<b>Extinguisher Weight (kg)</b>	2.1	3.5	5	9.4	13.2
<b>Volume (L)</b>	1.2	2.4	3.6	7.2	10.7
<b>Filling Charge</b>	1 Litre Eco7	2 Litres Eco7	3 Litres Eco7	6 Litres Eco7	9 Litres Eco7
<b>Temperature Range (°C)</b>	+0°C ~ +60°C				
<b>Working Pressure (bar)</b>	15	15	15	15	15
<b>Test Pressure (bar)</b>	30	30	30	30	30
<b>Material</b>	DC01	DC01	DC01	DC01	DC01
<b>Drive Gas</b>	Dry Nitrogen				
<b>Fire Class</b>	A, B, C, K (F)				



## DESCRIPTION

Fire Suppress provides 4 ranges of Eco7 (GB 17835-2008) Fire Extinguishers Trolley Units Complete with Hose and Nozzle.



OCI 970525



OCI 970550



OCI 970575



OCI 970510

	OCI 970525	OCI 970550	OCI 970575	OCI 970510
<b>Cylinder Weight (kg)</b>	20	32	123	146
<b>Extinguisher Weight (kg)</b>	60	100	198	270
<b>Volume (L)</b>	30	59	94	124
<b>Filling Charge</b>	25 Litres Eco7	50 Litres Eco7	75 Litres Eco7	100 Litres Eco7
<b>Temperature Range (°C)</b>	0°C ~ +60°C	0°C ~ +60°C	0°C ~ +60°C	0°C ~ +60°C
<b>Working Pressure (bar)</b>	15	15	18	18
<b>Test Pressure (bar)</b>	35	35	27	27
<b>Material</b>	HP245	HP245	ST12	ST12
<b>Drive Gas</b>	Dry Nitrogen	Dry Nitrogen	Dry Nitrogen	Dry Nitrogen

\* The Trolley Units can be provided with red or white in color.



## DESCRIPTION

Fire Extinguishing Liquid Clean Agent called Eco7 (GB 17835-2008) is one of the most revolutionary Fire Extinguishing Liquid Clean Agent that has high performance capability in extinguishing fires in most applications including vehicles tires, rubbers, plastics, woods, kitchen fires, and many more. It contains a natural ingredient that will not cause any destructions or hazards to environments and humans; hence, Eco7 Fire Extinguishing Liquid Clean Agent is an eco-friendly fire extinguishing agent (e.g. non-toxic, non-corrosive). For convenience and easy to use, Eco7 is offered by Fire Suppress in a 400 mL container.

### Features

- Multiple functions: extinguish fires, retard flame, resist heat
- Quick and instantaneous in reducing heat of fires
- No repeat combustion or ignition
- 100% water soluble
- Visibility at fire scenes within seconds upon extinguishment
- Has a pH of 6.9 (approx. neutral)
- Has zero potential of global warming and ozone depletion
- Atmospheric lifetime is 30 hours
- Environmentally friendly: non-corrosive, non-toxic, biodegradable
- No risks of secondary pollutions or soil acidification
- Highly effective in suppressing vehicle fire Classes A, B, and K(F)
- No special equipment required
- Low pressure system and can resist high heat temperature environment (up to 55°C)



OCI 970400

### APPLICATIONS



#### CLASSES OF FIRES



Kitchen Fires



Vehicle Fires



Household Items and Furniture Fires



Wood, Plastic, Tires, Textile Fires

OCI 570003

**ACCESORIES :** Canister Bracket is included.



## Waterproof Pressure Supervisory Switch Enclosure

### DESCRIPTION

In order to provide a protection from dusts, fluids, and/or damages during installation, Fire Suppress offers a waterproof, "dust tight" enclosure to protect pressure supervisory switch. The waterproof pressure supervisory switch enclosure has IP rated as "dust tight" and protected against water projected from a nozzle (i.e. IP65 Rating) and is in compliance with the requirements of EN 62208. Thus, the waterproof pressure supervisory switch enclosure offers reliable protection against liquid, moisture and dust.

The waterproof pressure supervisory switch enclosure comes with one piece of cable gland (part number: OCI 99055), which is in compliance with EN 50262, and one piece of slip on (part number: OCI 60032-A,B) in order to ensure a secure and seal system connections.

### Features

- IP65 certified weather proof design - Protects pressure supervisory switch from direct water sprays, spills and dust
- Makes more secure connection between system cylinders and agent control panels

### Technical Specification

#### Waterproof Enclosure

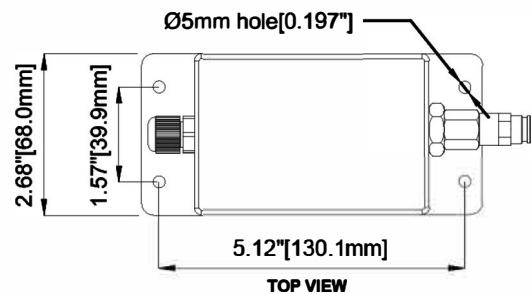
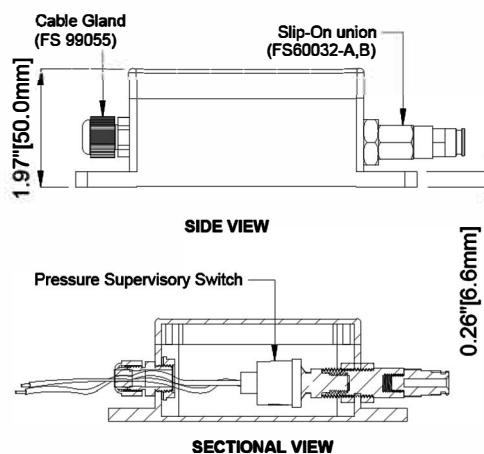
- Approval(s) : CE
- Rating(s) : IP65
- Material : Acrylonitrile Butadiene Styrene (ABS)
- Dimensions : 5.12 inch (L) x 2.68 inch (W) x 1.97 INCH (H)
- Operating Temperature : 32°F (0°C) to 100°F (37.7°C)

#### Cable Gland

- Approval(s) : CE
- Rating(s) : None
- Material : Polyamide 6 (PA6)
- Operating Temperature : -4°F (-20°C) to 176°F (80°C)



P/N: OCI 50138-TB





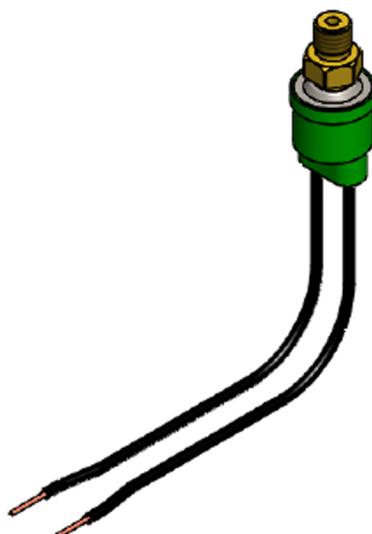
## DESCRIPTION

The switch is used to monitor the pressure within the Clean Agent cylinder. If a leak is detected, the pressure will drop to below  $70 \pm 5$  psig. As a result, the switch contacts will be activated, providing a signal to the Release Control Panel to indicate loss of pressure and/or leakages. The pressure supervisory switch is wired into a supervised circuit to give a trouble signal upon activation.

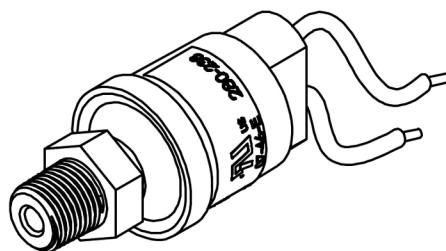
## Specification

1. Auto-Reset Pressure Switch (SPST)
2. Proof Pressure: 700 psig
3. Burst Pressure: 5000 psig
4. Electrical Ratings:
  - 120/240 VAC - 375 VA
  - 24 VAC - 125 VA
5. Cycle Life: 100,000 Minimum
6. Ambient Temperature: -30 to +70°C
7. Fluid Temperature: -54 to +135°C

Part Number	Description	Operation
OCI 50138-6	135 psi	Normally Closed
OCI 50138-3	135 psi	Normally Open



LOW PRESSURE SUPERVISORY SWITCH



ISOMETRIC VIEW



## 1/4" FLEXIBLE HOSE AND FITTINGS

Flex hoses are used to connect the agent storage containers to the manifold in multiple cylinders arrangement. Flex hoses are constructed of high pressure hydraulic rubber in the 1/4" sizes and stainless steel corrugated inner core with stainless steel braided in the 1/4" size. All sizes are fitted with male NPT thread on both ends except 1/4" has 7/16" - 20 UNF Flare connection.

It comes with various options of fittings of 7/16" - 20 UNF Flare Connection and 1/8" NPT Threads.



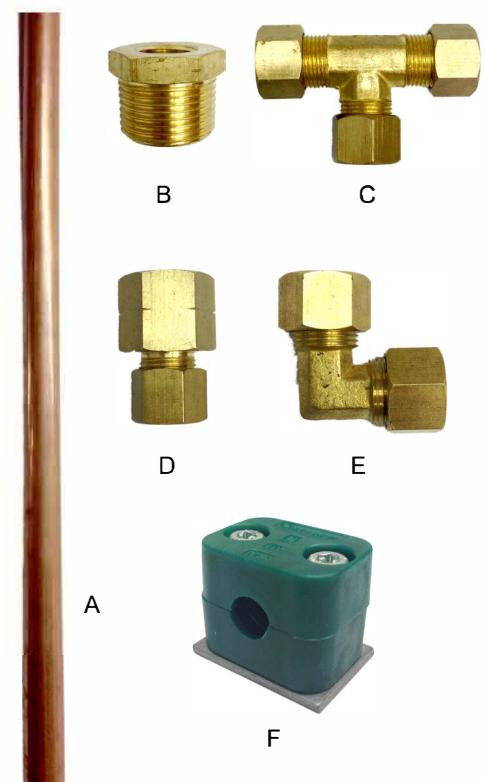
Part Number	Description
OCI 50192-3	1/4" Flexible Hose x 12"
OCI 50192	1/4" Flexible Hose x 20"
OCI 50192-1	1/4" Flexible Hose x 24"
OCI 50192-2	1/4" Flexible Hose x 36"

Part Number	Description
A OCI 50194-6	1/8" NPT x 7/16"- 20-UNF Flare Elbow
B OCI 50194-1A	1/8" Flare x 7/16"- 20-UNF Flare T-Joint
C OCI 50194	1/8" NPT x 7/16"- 20-UNF Flare Nipple
D OCI 70191-A	7/16"-20-UNF Nipple Cap



## 1/2" COPPER TUBE AND FITTINGS

The 1/2" Copper Tube is used as discharge pipes for various type of extinguishing agents. It comes with compression fittings of different configurations. The 1/2" Copper Tubes and its fittings are rated to 800 psig.



Part Number	Description
A OCI 99051-C	1/2" Copper Tube
B OCI 99063	1" NPT - 1/2" NPT Bushing
C OCI 99045	1/2" Copper Tubing Compression "T"
D OCI 99064	1/2" Copper Tubing x 1/4" NPT Stud
E OCI 99047	1/2" Copper Tubing Compression Elbow
F OCI 99050	1/2" Tube Clamp



### DIRECTIONAL MIST NOZZLE

The Directional Mist Nozzle produces a wispy, light mist in a horizontal discharge angle of 80°. The mist blankets the fire not allowing the flame to breathe whilst simultaneously providing significantly higher cooling rates to eliminate the chances of fire re-flash.

Fire Suppress Directional Mist Nozzle is recommended to use for total area coverage systems.

Part No.	Thread Size	Flow rate	Orifice Diameter	Discharge Angle
OCI990002-IP	1/4" NPT	2.75 LPM	1.0 mm	80° + - 10°

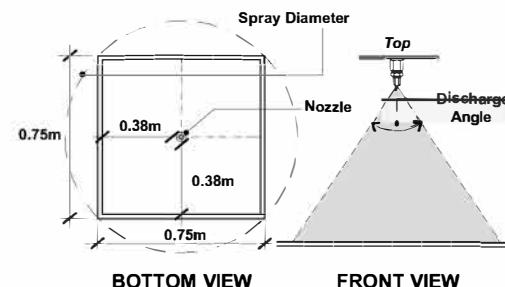


P/N: OCI 990002-IP

#### Protection Coverage Area:

For All Application	Total Area	Height for Nozzle Installation
0.10m x 0.10m	0.01 sq.m.	0.10 meters
0.20m x 0.20m	0.04 sq.m.	0.20 meters
0.30m x 0.30m	0.09 sq.m.	0.30 meters
0.40m x 0.40m	0.16 sq.m.	0.40 meters
0.50m x 0.50m	0.25 sq.m.	0.50 meters
0.60m x 0.60m	0.36 sq.m.	0.60 meters
0.70m x 0.70m	0.49 sq.m.	0.70 meters
0.75m x 0.75m	0.56 sq.m.	0.80 meters

#### DISCHARGE DIAGRAM:



### WIDE MIST NOZZLE

The Wide Mist Nozzle creates a uniform, low velocity mist at high discharge angle of 120°. Its X-style vane allows high free passage without heavy spots, and its spray angle is consistent over the full capacity range.

Fire Suppress Wide Mist Nozzle is recommended for the application in which the distance to the target is limited.



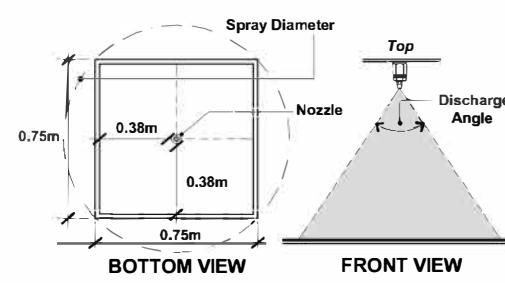
P/N: OCI 990001-XV

Part No.	Thread Size	Flow rate	Orifice Diameter	Discharge Angle
OCI990001-XV	1/8" NPT	1.75 LPM	1.0 mm	120° + - 10°

#### Protection Coverage Area:

For All Application	Total Area	Height for Nozzle Installation
0.10m x 0.10m	0.01 sq.m.	0.10 meters
0.30m x 0.30m	0.09 sq.m.	0.20 meters
0.50m x 0.50m	0.25 sq.m.	0.30 meters
0.70m x 0.70m	0.49 sq.m.	0.40 meters
0.75m x 0.75m	0.56 sq.m.	0.50 meters

#### DISCHARGE DIAGRAM:





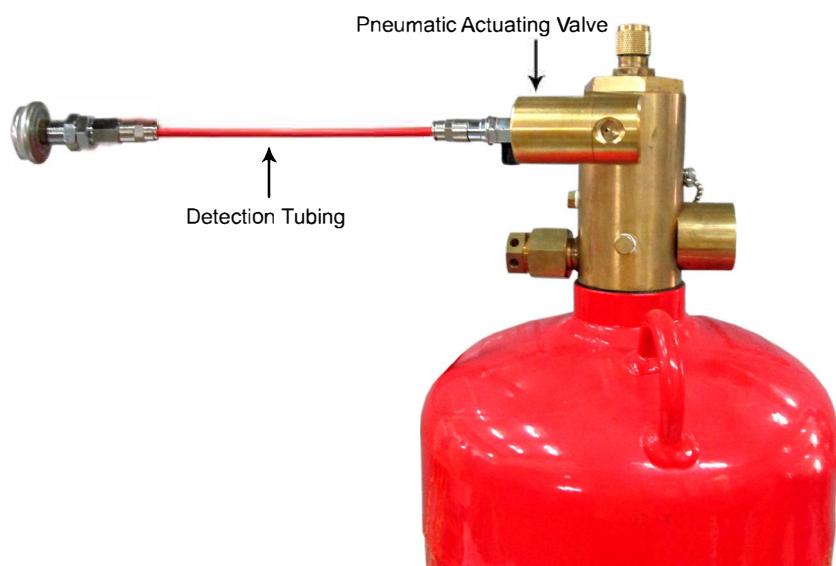
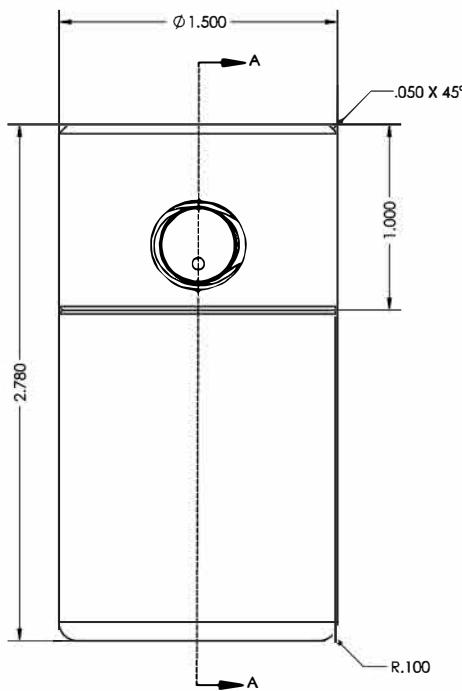
### DESCRIPTION

- Specifically design for use in conjunction with Fire Suppress Detection Tubing
- Replace the need of using electric solenoid
- Solid brass construction
- Operating pressure is up to 500 psi

The Pneumatic Actuating Valve (PAV) is designed for specialized, micro-environment system applications of Fire Suppress Products. The PAV is installed to the valves to replace the electric solenoid for the activation of the clean agent discharged. Unlike the electric solenoid, the PAV does not need electricity for it to work. When the pressurized Detection Tubing ruptures due to fires, the PAV would automatically activate for the clean agent to get discharged because of the pressure difference inside of the system.



P/N: OCI 70272-OR





## **ECO7 Large Trolley Concentrate Units With Hose, Nozzle and Inductor**

### **DESCRIPTION**

Fire Suppress provides two sizes of Eco7 (GB 17835-2008) Large Trolley Concentrate Units with Hose, Nozzle and Inductor. The 150 litres unit is currently the largest unit available in the Fire Protection Industries.



OCI 971250-X



OCI 971215-X

	Filling Charge	Flow Rate	Inlet	Hose
OCI 971250-A	120 Litres Eco7	200 L/min	1.5"NH	2 x 38 mm
OCI 971250-B	120 Litres Eco7	400 L/min	DSP40	2 x 45 mm
OCI 971250-C	120 Litres Eco7	400 L/min	UNE 45	2 x 45 mm
OCI 971250-D	120 Litres Eco7	400 L/min	UNI 45	2 x 45 mm
OCI 971215-A	150 Litres Eco7	200 L/min	1.5"NH	2 x 38 mm
OCI 971215-B	150 Litres Eco7	200 L/min	DSP40	2 x 45mm
OCI 971215-C	150 Litres Eco7	200 L/min	UNE 45	2 x 45mm
OCI 971215-D	150 Litres Eco7	400 L/min	Storz-C	2 x 52mm
OCI 971215-E	150 Litres Eco7	400 L/min	BS336	2 x 52 mm

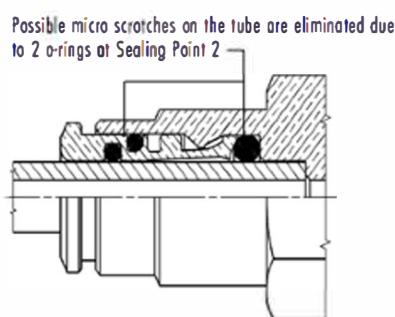
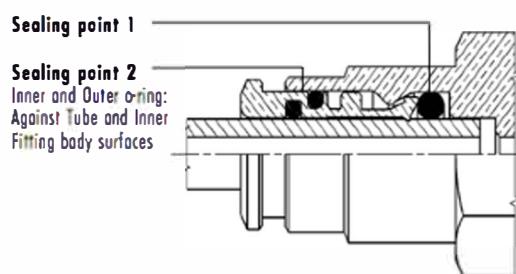
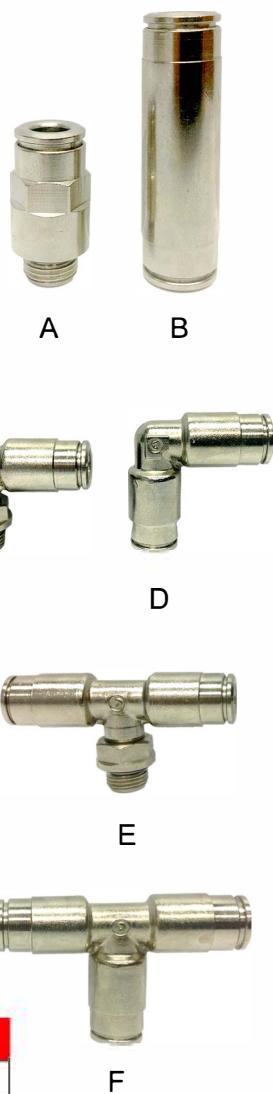
## DESCRIPTION

Standard accessories (high pressure fittings) for Fire Detection Tube are available from Fire Suppress. The fittings feature a dual sealing design that has been extensively tested in the pneumatic sector and include the inclusion of additional seals to provide a leak tight and positive connection which would eliminate the possibility of leakage that may occur during tube scoring. The fittings design allows them to be disconnected and slipped back to the tubing multiple times without affecting the performance and the sealing on the tube. Two types of fittings are available: (1) tube to tube, and (2) threaded connections.

## Standard Features

- Materials: Nickel-plated brass body and collet with BUNA-N O Rings
- Working pressure is between 0.9 bar and 60 bar (13 psi to 870 psi)
- Working temperature is between -20°C and 100°C (-4°F to 212°F)
- Proven Collet release system. Collets will not break like plastic release rings and bodies
- Seals at high pressure
- Resistance to UV exposure, stress-cracking, abrasion, solvents, detergents, hydrocarbons, and other fluid media
- No tubing assembly or disassembly tools required

	6mm Fittings	8mm Fittings	Description
A	OCI 60032-A	OCI 60032-B	1/8 BSPP Slip Lock Adapter
B	OIC 60035-A	OCI 60035-B	Slip Lock Joint
C	OCI 60033-A	OCI 60033-B	Adapter with 90° Elbow, 1/8 BSPP Slip Lock
D	OCI 60036-A	OCI 60036-B	Slip Lock Elbow
E	OCI 60034-A	OCI 60034-B	T-Joint 1/8 BSPP - 2 x Slip Lock
F	OCI 60037-A	OCI 60037-B	Slip Lock T-Joint





Orient Corporation

## DESCRIPTION

This electronic sounder is designed for use with fire alarm systems, security systems and industrial signaling systems. Combined sounder and beacon provides an audio-visual warning which is suitable for places where high sound output and visual indication is required.

### Standard Features

- 32 signal tones selectable by Dip switch.
- High sound output with low current consumption.
- High efficiency lens for maximum light output.
- Volume Control as standard.
- Two sets of IN and OUT terminals, easy for installation.

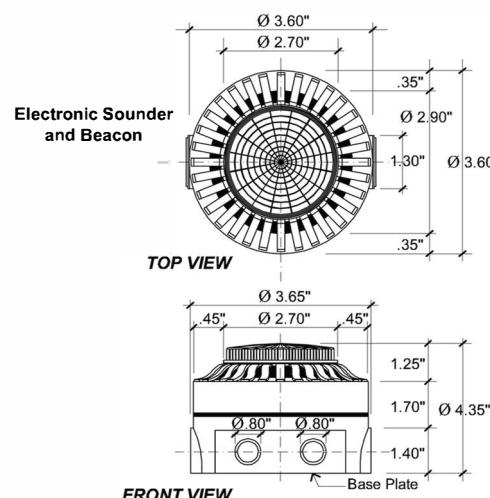
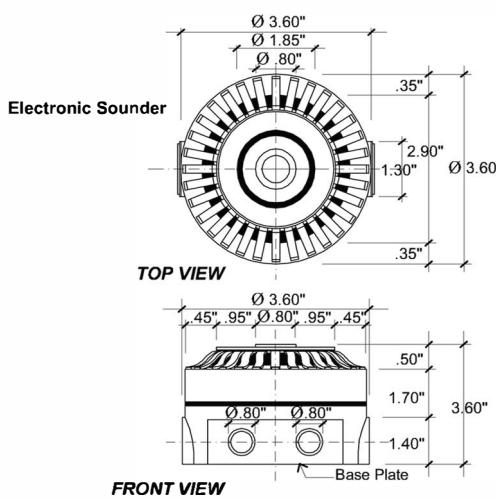
	OCI 60040-S	OCI 60040-BS
<b>Voltage</b>	24V DC	
<b>Current Consumption</b> 24V DC (tone 3)	14.5mA	
<b>Sound Output</b> 24V DC dB (A) at 1 meter	Max. 114	
<b>Volume Control</b>	0 to -20dB adjustment	
<b>Ingress Protection</b>	IP44	
<b>Ambient Temperature</b>	-25°C ~ +80°C	
<b>Material</b>	ABS plastic	
<b>Dimensions</b>	92.5mm(Dia.) x 94mm(H)	92.5mm(Dia.) x 110mm(H)
<b>Weight</b>	254g	278g



Electronic Sounder  
P/N: OCI 60040-S



Electronic Sounder and Beacon  
P/N: OCI 60040-BS





Orient Corporation

## INSTALLATION

The System Control Unit is incorporated with the Fire Suppress Automatic Fire Suppression System for Vehicle Fire Protection. The system is usually installed near the driver dashboard which can be easily accessible. It also provides the continuous supervision of the Clean Agent Fire Suppression System.

## DESCRIPTION

The System Control Unit provides an alarm to inform the personnel that there may be a fire in the protected area. It also serves to control the alarm of the unit if you want to disable or silence the alarm. It provides a fault indicator LED to be illuminated when fault is detected in the system.

## OPERATION

### Silencing the Alarm

To silence the alarm, perform the following procedures:

- Press RED "Push Button"
- Built-in LED in Push Button illuminated
- External sounders silenced

**Note:** The Buzzer can be replaced with customer's preferences for tone.



## SPECIFICATION

### STROBE HORN

(P/N: OCI 89800)

Operation Power : DC 10V - 14V  
 Siren Output : 105 Decibel  
 Operational Current : 100 mA - 250 mA  
 Dimension : 7cm x 12cm x 4cm

### PUSH BUTTON WITH LIGHT

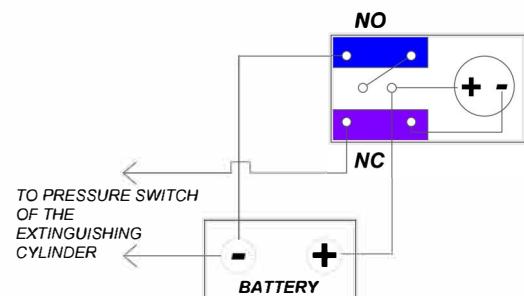
(P/N: OCI 89801)

Blue : Normally Open Switch  
 Purple : Normally Closed Switch  
 Lamp : 5V - 30V 1W Max  
 LED : 24 VDC

### BOX

(P/N: OCI 89802)

Single Hole  
 IP 65 Gray / Red Enclosure  
 Dimension : 7cm x 7cm x 7cm





## DESCRIPTION

Fire Suppress Automatic Fire Extinguishers are modular in design and does not require electrical control unit to operate the extinguishers. It contains the latest environmentally-friendly Eco7 (GB 17835-2008) Liquid Clean Agent which is very effective in extinguishing Class A solid fires, Class B marine engine fires, Class F kitchen fires and other high risk hazards of these classes of fires.

When heat from an outbreak of fire reaches to a pre-set temperature of 68°C, the sprinkler bursts releasing the pressurized Eco7 Liquid Clean Agent to extinguish the fire.

It provides round-the-clock protection and requires no electrical appliance to operate and is easy to maintain. It is long-lasting and it uses a reusable cylinder so it is economical.



P/N	Capacity	Type	Weight	Water Capacity	Service Pressure	Temperature Range
OCI 971503	3 L	Eco7	6.7 KG	5.5 L	12 Bar at 20°C ±2°C	+5°C - +60°C
OCI 971506	6 L	Eco7	10.2 KG	8.46 L	12 Bar at 20°C ±2°C	+5°C - +60°C
OCI 971512	12 L	Eco7	19.5 KG	13.9 L	12 Bar at 20°C ±2°C	+5°C - +60°C

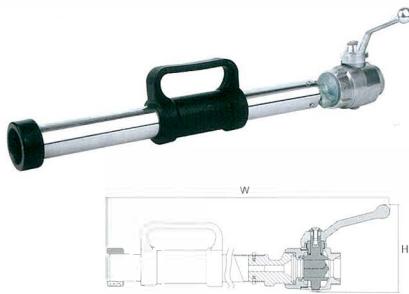
## Nozzles Branch Pipes for Eco7 Liquid Clean Agent



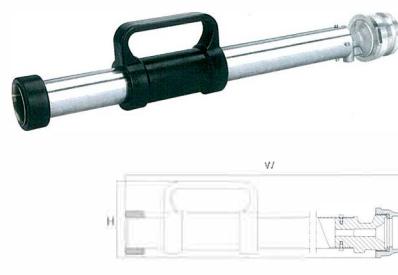
Orient Corporation

### DESCRIPTION

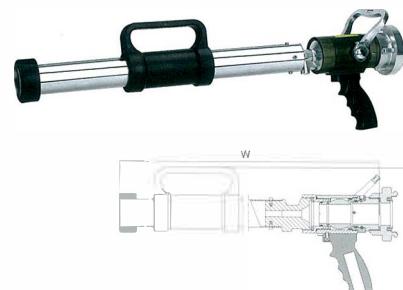
Fire Suppress provides a variety of nozzles/ branch pipes for Eco7 Liquid Clean Agent used in various type of spray applications.



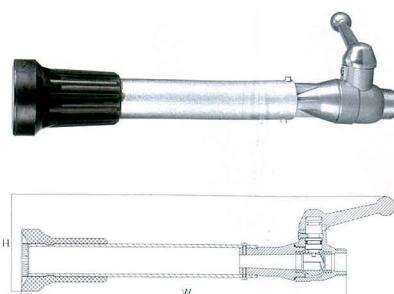
**OCI 960029-XXX**



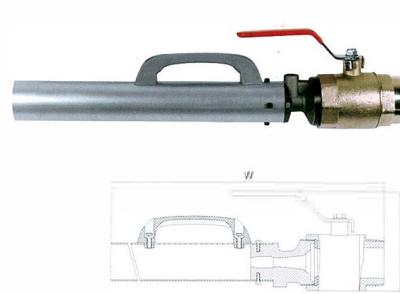
**OCI 960030-XXX**



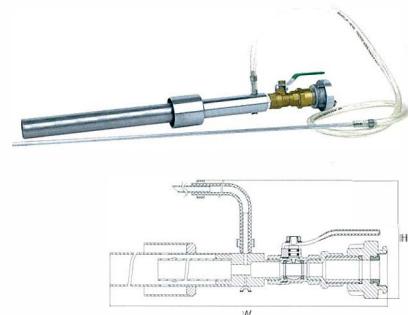
**OCI 960031-XXX**



**OCI 960033-XXX**



**OCI 960034-XXX**



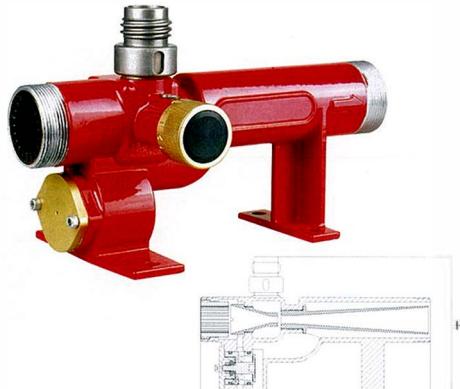
**OCI 960032-XXX**

	Flow Rate	Inlet	W (mm)	H (mm)
OCI 960029-G2	200 & 400 L/min	G 2"	690	163
OCI 960029-SC	200 & 400 L/min	Storz-C	710	163
OCI 960029-336	200 & 400 L/min	BS336	705	163
OCI 960030-D40	200 & 400 L/min	DSP 40	650	120
OCI 960030-SC	200 & 400 L/min	Storz-C	620	120
OCI 960030-336	200 & 400 L/min	BS336	617	125
OCI 960031-1.5-NH	200 & 400 L/min	1.5" NH	710	220
OCI 960031-SC	200 & 400 L/min	Storz-C	745	233
OCI 960031-336	200 & 400 L/min	BS336	800	220
OCI 960033-SD	100 L/min	Storz-D	440	118
OCI 960033-G1	100 L/min	G 1"	400	118
OCI 960034-1.5-NH	200 L/min	1.5" NH	665	132
OCI 960034-SC	200 L/min	Storz-C	700	132
OCI 960034-336	200 L/min	BS336	710	132
OCI 960032-SD	100 L/min	Storz-D	525	82
OCI 960032-1-B	100 L/min	1" BSP	500	82

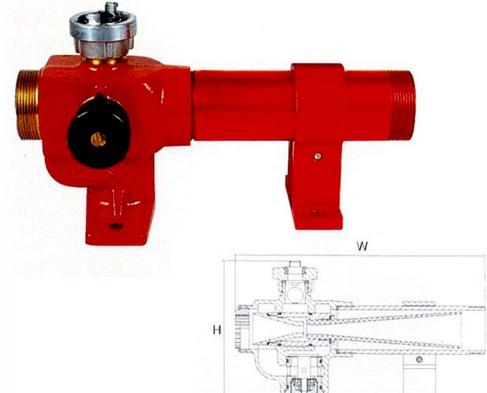


## DESCRIPTION

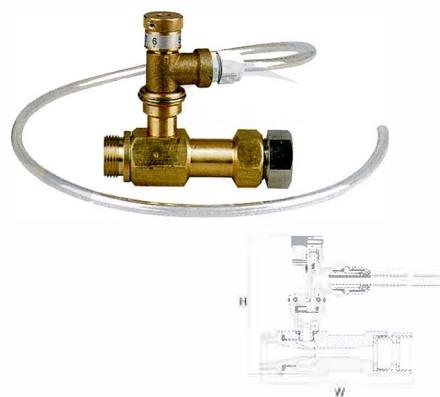
Fire Suppress provides a wide range of Eco7 inductors for used in various type of system applications.



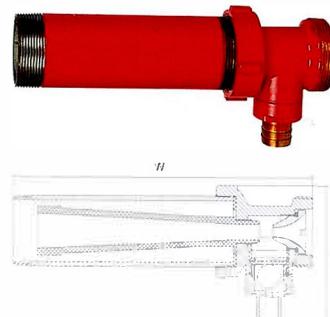
**OCI 960035-XXX**



**OCI 960036-XXX**



**OCI 960037-XXX**



**OCI 960038-XXX**

	Flow Rate	Inlet	W (mm)	H (mm)
<b>OCI 960035-1.5-NH</b>	200 & 400 L/min	1.5" NH	350	185
<b>OCI 960035-G2</b>	200 & 400 L/min	G2"	310	185
<b>OCI 960035-SC</b>	200 & 400 L/min	Storz-C	370	185
<b>OCI 960036-G2</b>	200 & 400 L/min	G2"	325	177
<b>OCI 960036-SC</b>	200 & 400 L/min	Storz-C	380	177
<b>OCI 960036-336</b>	200 & 400 L/min	BS336	400	177
<b>OCI 960037-SD</b>	100 L/min	Storz-D	190	132
<b>OCI 960037-G1</b>	100 L/min	G1"	145	132
<b>OCI 960038-2-N</b>	200 L/min	2" NPT	245	110
<b>OCI 960038-2-B</b>	200 L/min	2" BSP	245	110



### Standard Specifications Malleable Iron Pipe Fittings

<b>Class</b>	<b>300lbs</b>
<b>Materials</b>	ASTM A 197.87
<b>Dimension</b>	ANSI B 16.3.1998, B 16.14.1991
<b>Union Dimensions</b>	ASME B 19.39.1998
<b>Threads</b>	ANSI/ASME B 1.20.1.1983
<b>Tensile Strength</b>	$\geq 40,000$ psi (28.2 kg/mm <sup>2</sup> )
<b>Elongation</b>	$\geq 5\%$
<b>Zinc Coating</b>	ASTM A 153/A 153M.1998
<b>Working Pressure</b>	600 psi at 550°F



**Elbow 90°**  
OCI 88120-2XXX



**Elbow 45°**  
OCI 88120-3XXX



**Street Elbow 90°**  
OCI 88120-3XXX



**Tee**  
OCI 88120-5XXX



**Coupling**  
OCI 88120-6XXX



**Cap**  
OCI 88120-7XXX



**Plug**  
OCI 88120-8XXX



**Nipple**  
OCI 88120-9XXX



**Union**  
OCI 88120-10XXX



**Coupling - Grooved**  
OCI 88120-11XXX



**Elbow 90° - Grooved**  
OCI 88120-12XXX



**Elbow 45° - Grooved**  
OCI 88120-13XXX



**Straight Tee - Grooved**  
OCI 88120-14XXX



**Cap - Grooved**  
OCI 88120-15XXX