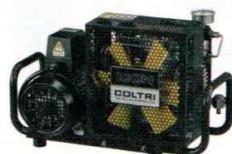


# 33

## Safety Equipment

Liferafts and Lifeboats  P. 33-1	Life Jackets/ Lifebuoys/ Immersion Suits  P. 33-1 ~ 3	Lifeboat/ Liferaft Accessories  P. 33-3 ~ 7
IMO Symbols/Safety Signs  P. 33-8 ~ 41	SOLAS Publication  P. 33-42	Pyrotechnics  P. 33-42 ~ 46
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Safety Lights/Signal Lamps  P. 33-64 ~ 71	Fire Hose/Fire Hose Couplings  P. 33-71 ~ 88	Fire Fighting Equipment  P. 33-88 ~ 89
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## Inflatable Liferafts

Balsas Salvavidas Inflables 膨張式救命いかだ 膨脹式救生筏

A wide variety of models from different manufacturers are available to meet the requirements of the International Convention for the Safety of Life at Sea (SOLAS), known as "96SOLAS".



They are furnished with standard equipment and additional features as the customer specifies, such as Deck Cradle, Hydrostatic Release, etc.

An exceptionally rugged construction supplied in glass-reinforced plastic (GRP) containers.

There are two types of inflatable liferaft mainly used on board, Throw-over type and Davit-Launching type. Throw-over type can be launched manually or by securing the tow line to a strong point on deck and throwing the container overboard. When the tow line is pulled taut, an integral CO<sub>2</sub> gas cylinder is activated which inflates the boarding step, buoyancy chambers and canopy support. Davit-Launching type is obliged to use for either Port or Starboard side on Bulk Carriers since 2007, lowering down by davit and inflate manually by pulling the tow line.

Every liferaft shall be serviced at intervals not exceeding 12 months.

Please specify the following points when ordering.

- 1) Capacity, 2) Throw-over or DL(Davit-launching) type,
- 3) Ship's registered flag, 4) Installation Height,
- 5) Classification society

Unit Per Set

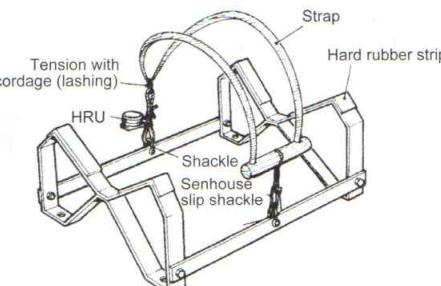
Throw-over type		Davit-Launching type	
CODE	Capacity	CODE	Capacity
33 01 01	6 men	33 02 06	6 men
02	10 men	08	10 men
03	16 men	14	16 men
04	20 men	19	20 men
05	25 men	20	25 men

Note: Deck cradle and hydrostatic release are not included with the above unit.

## Deck Cradles for Liferaft

Cuna o Soporte para Balsas Salvavidas ライフraft用架台 救生筏台架

When ordering, please specify the capacity and manufacturer's name of the liferaft to be installed.



Unit Per Set

CODE	For Liferaft	CODE	For Liferaft
33 01 61	6 men	33 01 64	20 men
62	10 "	65	25 "
63	16 "		

## Hydrostatic Release Units

Double Looped Rope Line Type

Desprendimientos Hidrostáticos, Tipo: Línea Cuerda Doble Lazo  
自動離脱装置 静水压力释放器 (双循环线路)

These units consist of a double looped rope line, a release mechanism, and a weak link. This release unit conforms with the requirements of the 1983 amendments to SOLAS 1974.



For Liferaft

For Epirb

These units will release the liferaft or EPIRB (Emergency Position Indicating Radio Beacon) at a depth of between 1.5 and 4 mtrs underwater. The units could be round or square shape. Below is a reference of brand & manufacturers, but there are specific types of HRU for certain EPIRB brand. Please specify the types and brand when ordering.

Unit Per Set

33 01 19	Hammar H20R	Liferaft	C M Hammer AB
26	Hammar H20-YSE	Epirb	
33 01 28	Thanner DK-2004	Liferaft	Thanner
33 01 29	SafeteTmate LR-2	Liferaft	SafeTmate
93	SafeteTmate EP-2	Epirb	

## Totally Enclosed Lifeboats

Botes Salvavidas Totalmente Cerrado  
全閉囲型救命艇 全封闭式救生艇



According to the 1983 amendments to the International Convention for the Safety of Life at sea 1974, all new building ships of which the keel is laid on or after July 1st 1986 require the installation of fully enclosed lifeboats.

Please specify the required number of persons on board and also specify the required classification society.

33 01 30 Lifeboat, totally enclosed with further detail Set

## Life Jackets

Chalecos Salvavidas 救命胴衣 救生衣 (带哨子)

A life jacket, comply with new SOLAS regulations (Amendments to chapter II of LSA (Life-Saving Appliance) Code effective on July 01, 2010) should be provided for every person on board the ship. Each life jacket is fitted with a whistle, retro-reflective material, lifting loop and buddy line. Made of polyethylene foam material covered by polyester. Life Jacket for Infants should be supplied to all passenger ships.



Adult		Child	Infant
Weight:	Over 43 kg	Weight:	Weight:
Chest:	Under 175 cm	15-43 kg	Under 15 kg

Unit Per Pcs

CODE	Usage	Approved	CODE	Usage	Approved
33 01 31	Adult		33 01 38	Adult	
32	Child	H.K.	39	Child	
33	Infant		47	Infant	U.K. DOT
33 01 34	Adult		33 01 48	Adult	
35	Child	U.S.C.G.	49	Child	
46	Infant		50	Infant	MED

## Inflatable Life Jackets

Chalecos Salvavidas Inflables  
膨張式救命胴衣 膨脹式救生衣

Made of air and watertight rubberlined nylon. Inflation is done by means of CO<sub>2</sub> cylinders provided with the jacket.



Unit Per Pcs.

CODE	Approved	Usage	Material	Required time to expand
33 01 40	U.K. DOT			
41	H.K.			
42	U.S.C.G.	Adult	Rubber lined nylon	app. 5 min.
66	MED			

## Life Jacket Lights

Luces para Chalecos Salvavidas  
救命胴衣灯 救生衣灯



Each life jacket shall be fitted with a light complying with the requirements for a 0.75 cd light for 8 hours. The battery will be operated automatically upon entry into the water.

33 01 43	Life jacket light	Pcs.
45	Bag for life jacket light	"

## Lifebuoys

Aros Salvavidas 救命浮環 救生圈

Normally made from polyethylene outer skin and polyurethane foam inner core.



Cargo ships shall carry no less than the number of lifebuoys complying with the requirements of SOLAS described in the table below. In compliance with requirements it is fitted with a buoyant lifeline.

When being used for operating the quick-release arrangement provided for the self-activated smoke signals and self-igniting lights, the lifebuoy have a mass sufficient to operate the quick-release arrangement or 4 kg, whichever is greater.

### Required quantity by Regulation 32

Length of ship	Numbers of Lifebuoys
Under 100 mtr	8 pcs.
100 and under 150	10 pcs.
150 and under 200	12 pcs.
200 and over	14 pcs.

Unit Per Pcs.

CODE	Approved	O.D.	I.D.	Weight
<b>Weight Over 2.5 kg (Throw-over Lifebuoy)</b>				

33 01 51	H.K.			
56	U.K.DOT			
57	N.V.	Under 800 mm	Over 400 mm	Over 2.5 kg and less than 4.0 kg
58	U.S.C.G.			
59	MED			

### Weight Over 4 kg (For Quick-release Arrangement)

33 01 54	H.K.			
53	U.K.DOT			
55	N.V.	Under 800 mm	Over 400 mm	Over 4.0 kg
52	U.S.C.G.			
60	MED			

## Immersion Suits

Trajes de Inmersión イマーションスーツ 保温服



Made of foam rubber. Serves to prevent the loss of body heat when submerged in cold water. Shall be provided for every person assigned to the crew of the rescue boat and at least three immersion suits shall be provided for each open type lifeboat on the ship.

Below is reference of sizes available from several manufacturers.

Size	Height	
Universal	M	140 - 170 cm
	L	170 - 190 cm
Oversize	XL	190 - 210 cm

CODE	Approved	Material
33 01 69	U.K. DOT	Foam rubber
	70	
	71	
	72	
	95	

## Universal Testing Device for Immersion Suit/Anti-exposure Suit

Dispositivo de pruebas universal para trajes de inmersión/trajes contra la intemperie

イマーションスーツ用テスト・修理キット

保暖救生服 / 海上救生服用测试和修理套件



Complies with IMO guidelines for periodic testing of seams and closures on immersion suits and anti-exposure suits. Universal compatibility, including universal maintenance and repair kit. Consists of stainless steel pressure gauge, pressing and stable board and connecting hose, including metal carrying case and "Super Repair", contains: neoprene gasket, waterproof marker, two emergency lights.

Note: Two whistles, Sleeve cones for detachable gloves available separately.

Standards: MED/SOLAS-certified

33 01 97	Universal testing device for immersion suit & anti-exposure suit, MED/SOLAS certified	Set
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Name of Mfr: Scandia Gear

## Sleeve Cones for use with Universal Testing Device for Immersion Suit



Designed to test immersion suits with detachable gloves. Cone shape creates a universal fit.

Standards: MED/SOLAS-certified.

33 01 98	Sleeve cones for use with universal testing device for immersion suit, MED/SOLAS certified	Set
----------	--	-----

Name of Mfr: Scandia Gear

## Portable Air Compressors for use with Universal Testing Device

An Air compressor with storage compartment designed for use with the Universal Testing Device for Immersion Suits. Easy maintenance, does not require oil.



Unit Per Set

CODE	33 01 99
Model	8100.04
Power	1,100W/1.5 pk.
Maximum pressure	8 bar
Tank capacity	6 L
Motor	3,400 rpm. 230 Vac.
Dimensions	470 × 580 × 330 mm
Weight	12 kg

Name of Mfr: Scandia Gear

## Thermal Protective Aids

Ayudas Terinales o Térmicas 保温具 保温材料

A thermal protective aid is made of waterproof material with low thermal conductivity, and shall be provided for every person on the ship who has not been provided with one of the immersion suits in the open type lifeboat.



Unit Per Set

CODE	Approved	Material	Thermal Conductivity
33 01 75	H.K.		
76	U.S.C.G.		
77	U.K.DOT	Polyethylene	Not more than
96	MED		7,800 W/(m².K)

## Retro-Reflective Tapes

Cintas Retro-reflectivas 再帰反射テープ 反光带(銀灰色)

Retro-reflective tape which reflects light.

All life-saving equipment (Liferafts, Life Jackets, etc.) shall be fitted with retro-reflective tapes where it will assist in detection.



CODE	Colour	Width	Usage	Unit
33 01 86	Silver SOLAS grade	50 mm	For life saving equipment, conforms to IMO Res. A.658 (16) and approved by numerous national authorities.	Mtr.
33 01 87	Orange	50 mm	Marking to vehicles or sign boards.	Mtr.
33 01 88	Silver white	50 mm	Marking to raingear, leisure or emergency equipment.	Mtr.
33 01 89	Silver SOLAS grade	50 mm × 45.7 mtr	For life saving equipment, conforms to IMO Res. A.658 (16) and approved by numerous national authorities.	Rls.

## Radar Reflectors

Refletores para Radar レーダー・リフレクター 雷达反射器

For reflecting radar signals back to their source. Used to inform a position to rescue squads while at open sea.



Prefabricated



Inflatable

Unit Per Pcs.			
CODE	Type	Material	Diam
33 01 90	Prefabricated	Polypropylene panel & alum. coated	320 mm
33 01 91	Inflatable	Double high-density polymer	460 mm

Note: All conforms to SOLAS requirement

## Bailers

Achicadores あか汲み 救生艇水斗



For bailing out water accumulated in the bottom of the boat.

33 02 01	Bailer for lifeboat	Pcs.
02	Bailer for liferaft	"

## Hatchets

Hachuelas 手斧 救生艇手斧

A short handled, single edge rectangular head, usually with a lanyard.



33 02 03	Hatchet for lifeboat	Pcs.
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## Sponges

Esponjas スポンジ 海绵

For absorbing water.

33 02 04	Sponge for liferaft	Pcs.
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## Lifeboat Oil Lamps

Lámparas de aceite para Bote Salvavidas

ライフボート・ランプ 救生船油灯



Made of brass with a clear glass globe operated by kerosene.

33 02 05	Lifeboat oil lamp	Pcs.
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## Lifeboat Matches

Fósforos para Bote Salvavidas

水密マッチ 救生火柴



Windproof matches for use during inclement weather conditions.

33 02 07	Lifeboat match	Pkt
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## Lifeboat Buckets

Cubetas para Bote Salvavidas バケツ 救生桶



For bailing out water.

33 02 09	Lifeboat bucket	Pcs.
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## Dippers

Liara ひしゃく 带绳索勺

Rustproof dipper with lanyard.

33 02 10	Lifeboat dipper with lanyard	Pc.
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## Lifeboat Compasses

Compasses para Bote Salvavidas

ライフボート・コンパス 救生艇磁罗经

A small liquid compass, card dia 100 mm in a binnacle.



33 02 11	Lifeboat compass 100 mm w/cover	Pc.
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## Rescue Quoits

Aros Salvavidas de Rescate

救命浮輪 救生浮环 (救生艇用)

Attached to not less than 30 mtr of buoyant line.



33 02 12	Rescue quoit for lifeboat	Pc.
13	Rescue quoit for liferaft	"

## Sea Anchors

Anchas Flotantes シー・アンカー 救生艇海锚

Fitted with a shock-resistant hawser & tipping line.



33 02 15	Sea anchor for liferaft	Pc.
16	Sea anchor for lifeboat	"

## Sea Anchor Oil Cans

Latas de Aceite para las Anclas Flotantes  
撒油缶 救生艇油罐

Made of galvanized sheet iron for holding storm oil.

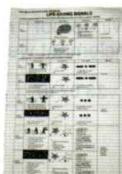


33 02 17	Lifeboat sea anchor oil can	Pc.
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## Signal Tables

Tablas de Señales 救命信号説明表 救生信号

Waterproof card or in a waterproof container.



33 02 18	Signal table plastic	Pc.
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## Rations

Raciones 食料 救生艇食量

Approved by M.I.T.I. (Ministry of Industry and Transport, Japan). Each ration contains 9 meals.



33 02 23	Ration combination 9 meals	Pc.
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## Rations "Seven Ocean"

Raciones "Siete Océanos" Alimentos  
セブン・オーシャン 救生艇用压缩饼干

Compressed vitaminized biscuit bars.  
Takes up little space and will keep for 5 years.



33 02 25	Ration seven ocean, 500 grm	Pkt
26	Ration seven ocean, 1,000 grm	"

## Drinking Water

Agua para Beber 飲料水 救生艇饮用水

Completely sterile, vacuum-sealed water in a can. Required 1.5 ltr per person.



33 02 36	Drinking water, 385 ml	Can
37	Drinking water, 500 ml	Btl

## Drinking Cups

Vasos para Beber コップ 救生艇饮水杯

Should be rustproof and graduated.



33 02 41	Drinking cup for lifeboat	Pct
42	Drinking cup for liferaft	"

## First Aid Kits

Equipos de Primeros Auxilios 応急医療具 救生艇应急药箱

Stores medicines and medical instruments in a watertight container.



33 02 45	First aid kit for liferaft	Set
46	First aid kit for lifeboat	"

## Anti-Seasickness Medicine

Pastillas Antimareos 船酔い薬 晕船药

Required 6 doses per person.

33 02 47	Anti-seasickness medicine	Pkt
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## Seasickness Bags

Bolsas para Vómito 船酔い用の袋 晕船用的清洁袋

1 seasickness bag required for each person.

33 02 48	Sea-sickness bag	Pc.
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## Can Openers

Abrelatas 缶切り 开罐器

3 pieces required for each liferaft or lifeboat.



33 02 49	Can openers, 3's	Set
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## Jack Knives

Navajas de Bolsillo Silbatos

ジャック・ナイフ 水手刀

Furnished with lanyard for attaching the knife to the boat.



33 02 50 51	Jack knife for liferaft Jack knife for lifeboat	Pc. "
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## Whistles

Sibatos 笛 救生艇哨笛

Made of seawater resistant tough plastic.



33 02 52	Whistle	Pc.
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## Signalling Typhoons

Bocina Niebla-Tifón ラッパ 救生艇台风信号

Made with waterproof tin plate.



Will provide a loud sound.

33 02 53	Signalling typhoon	Pc.
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## Fishing Tackles

Equipos de Pesca 釣り道具 救生艇魚具

Contains hooks, lines and other equipment packed in a watertight container.



33 02 54	Fishing tackle	Set
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## Survival Manuals

Manuales de Supervivencia

生存する方法を示すマニュアル 救生艇求救信号書

A guidebook for survival at sea to meet the requirement of the SOLAS convention.



33 02 56	Survival manual	Pc.
----------	-----------------	-----

## Instructions for Immediate Action

Instrucciones para Acción Inmediata

迅速な措置の為の指導書 緊急救生筏登筏手册



A guidebook for immediate action aboard a liferaft.

33 02 58	Instruction for immediate action for liferaft	Vol
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## Waterproof Torches

Linterna (Merse) Bote Salvavidas 水密電気灯 救生艇防水手电筒

For Morse signalling, sealed in a waterproof container.



33 02 61	Torch electric waterproof	Pc.
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## Seawater Torches

Luz Activada para Agua de Mar

海水電灯 救生艇海水自动灯

Electric torch automatically activated in seawater.



33 02 62	Seawater torch	Pc.
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## Searchlights

Proyectores サーチライト 探照灯



Provides illumination for a total period of 6 hours and will remain in operation for at least 3 hours.

33 02 64	Searchlight for lifeboat	Pc.
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## Daylight Signal Mirrors

Espejos Señales-Heliógrafo

日光信号鏡 救生艇反光镜



For daylight signalling to ships and aircraft.

33 02 71	Daylight signal mirror	Pc.
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## Lifeboat Ditty Bags

Equipo para Reparaciones de Vela

ライフボート小袋 救生艇针线袋



Consist of a strong waterproof canvas bag containing a sail makers palm, sail needles, sail twine, a marline spike, and beewax.

33 02 76	Lifeboat ditty bag	Pc.
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## Repair Outfit for Liferaft

Equipo para Reparación de Balsas Salvavidas

ラフト用修理用具 救生筏修理用具



For repairing punctures in buoyancy compartments.

33 02 77	Repair outfit for liferaft	Set
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## Topping up Pumps for Liferaft

(Bellows)

Bombas para inflar Balsa Salvavidas

充気ポンプ 充气泵



For pumping air into a liferaft when reinflation is required.

33 02 79	Topping up pump (Bellows) for liferaft	Pc.
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## Pumps for Lifeboat

Bombas Bote Salvavidas 手動ポンプ 救生船泵

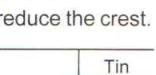
For bailing water out of the lifeboat.

33 02 80	Manual bilge pump for lifeboat	Pc.
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## Storm Oil

Aceite para Tormentas ストーム・オイル 救生艇防浪油

A vegetable oil which is spread on the sea to reduce the crest.



33 02 81	Storm oil, 4 ltr	Tin
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## Paddles

Canaletes かい 船桨



Shall be buoyant and light for easy propulsion of the raft.

33 02 83	Paddles buoyant for liferaft	Pc.
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## Oars

Remos オール 救生艇桨

Usually made of ash or similar wood. When ordering, please specify the overall length, if possible, also specify the sizes of (a) tip, (b) blade, (c) neck, (d) loom and (e) handle.



33 02 84	Oar buoyant for lifeboat	Pc.
----------	--------------------------	-----

## Boat Hooks

Bicheros ボートフック 救生艇杆钩

When ordering, please specify the hook material and the overall length.



33 02 85	Boat hook for lifeboat	Pc.
----------	------------------------	-----

## Lifeboat Rowlocks (Crutches)

Chumaceras ライフボート クラッチ 桨叉



Made of galvanized malleable iron. When ordering, please specify the size of the opening and the overall length.

33 02 86	Rowlock, lifeboat, length x opening	Pc.
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33

Safety Equipment

## Manually Powered Reverse Osmosis Desalinating

Desalinador de osmosis inversa de operación manual

手動式海水脱塩装置 手動式海水除盐装置



LSA Code 4.1.5.1.19 requires the watertight receptacles containing a total of 1.5 liters of fresh water for each person the liferaft is permitted to accommodate. Of which either 0.5 liter per person may be replaced by a desalting apparatus capable of producing an equal amount of fresh water in 2 days, or 1 liter per person may be replaced by a manually powered reverse osmosis desalinator capable of producing an equal amount of fresh water in 2 days;

An emergency desalinator, which produces enough water up to 2.0 litres per hour.

\* Desalination degree : more than 95%, eliminating bacteria or virus.

\* Optimum pump frequency: 40 pumps per minute.

\* Weighs only 1.6 kg.

33 02 24	Desalinator, reverse osmosis, manually powered, conformed to LSA Code 4.1.5.1.19	Pc.
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Name of Mfr.: Kyumei

## Lifeboat Repair Kits

Equipos para Reparación de Bote Salvavidas

ライフボート用補修キット 救生船修补工具箱



Used for lifeboat leakage repair in emergency. Consists of polyester resin, hardener, glass fibre mat, wool roller, etc. The ThistleBond kit is also used for the repair of liferaft containers.

CODE	33 02 87	33 02 88	33 02 89
Type	ThistleBond	Standard Set	Plus Abrasive Paper Set
Contents	<ul style="list-style-type: none"> <li>• 2 set Resin &amp; hardener</li> <li>• 1 sht Glass mat/0.5 m<sup>2</sup></li> <li>• 1 sht Surface/ tissue 0.35 m<sup>2</sup></li> <li>• 1 rol Cellophane</li> <li>• 1 pc Brush</li> <li>• 2 pcs Stirring tools</li> <li>• 1 sht Emery cloth</li> <li>• 1 pr Polythene gloves</li> <li>• 1 pc Barrier cream</li> <li>• 1 pc Resin removing cream</li> <li>• 1 vol Instruction manual</li> <li>• 1 pc Container</li> </ul>	<ul style="list-style-type: none"> <li>• 1 set Resin &amp; hardener 2.05 kg</li> <li>• 1 btl Poly putty/ 200 grm</li> <li>• 1 can Acetone/ 1 ltr</li> <li>• 1 sht Glass mat/ 2 mtr</li> <li>• 1 pc Wool roller/ 3"</li> <li>• 1 pc Syringe</li> <li>• 1 pc Spatula</li> <li>• 1 vol Instruction manual</li> </ul>	<ul style="list-style-type: none"> <li>• 1 set Resin &amp; hardener 4.1 kg</li> <li>• 1 btl Poly putty/500 grm</li> <li>• 1 sht Glass mat/ 4 mtr</li> <li>• 1 pc Wool roller/3"</li> <li>• 1 sht Sand paper/#100</li> <li>• 1 sht Sand paper/#180</li> <li>• 2 sht Silicon paper/#240</li> <li>• 2 sht Silicon paper/#400</li> <li>• 1 pc Spatula</li> <li>• 1 can Acetone/1.8 ltr</li> <li>• 1 pc Syringe</li> <li>• 1 vol Instruction manual</li> </ul>

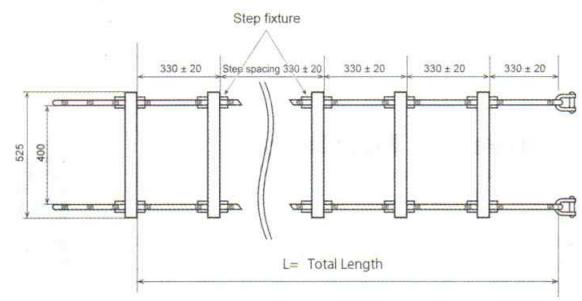
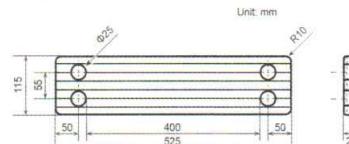
Name of Mfr.: Unique Polymer Systems Ltd.

## Lifeboat Embarkation Ladders

(Ref. JIS F2617-2012)

Escalas de Botes ライフボート用なわばしご 登乘梯

This lifeboat embarkation ladder conforms to ISO 5489 -2008, SOLAS 1974 & LSA Code. When ordering, please specify the length required.



## Specifications

Length	According to users option but the overall length must be an integral multiple of 330 mm and be enough to ensure safe embarkation from the boat deck even when the ship is at its lightest sea-going draught and is listed 15 degrees to the opposite side.
Material	Steps are hard wood and step fixtures must be secured on both top and bottom of each step. The bottom 4 steps may be made of rubber of sufficient strength and stiffness. Side Rope 22 mm Manila Rope or 22 mm Synthetic fibre rope
Step Size	Length 525 mm, Width 115 mm, Thick 28 mm
Step Space	330 mm ±20
Side Rope Distance	400 mm
33 02 96	Lifeboat embarkation ladder overall length mtrs

**Liferaft Accessories**

Accesorios para Balsa Salvavidas

救命いかだの艦装品 防寒防水救生服

International Life-Saving Appliance (LSA) Code, Regulation Chapter 4.1.5.

CODE	Description	Quantity
33 01 75	Thermal protective aid	Minimum 2 pc. For 25 men capacity, minimum. 3 pc
90	Radar reflector	1 pc.
33 02 02	Buoyant bailer	1 pc.
04	Sponges	2 pcs.
13	Buoyant rescue quoit	1 pc.
33 02 15	Sea anchors	2 pcs.
18	Life-saving signal	1 copy
26	Food rations. Not less than 10,000 kj/person	For each person
37	Watertight receptacle containing 1.5 ltr of fresh water/person	For each person
42	Rustproof graduated drinking cup	1 pc.
33 02 46	First-aid kit	1 set
47	6 tablets of anti-seasickness medicine(for 48 hours)	For each person
48	1 seasickness bag	For each person
49	Can openers	3 pcs.
50	Knife	1 pc.
33 02 52	Whistle, or equivalent	1 pc.
54	Fishing tackle	1 set
56	Survival manual	1 copy
58	Instructions for immediate action	1 copy
33 02 61	Waterproof electric torch (w/1 spare battery, 1 spare bulb)	1 pc.
71	Daylight signal mirror	1 pc.
77	Repair outfit	1 pc.
79	Topping-up pump (Bellows)	1 pc.
83	Buoyant paddles	2 pcs.
33 03 11	Rocket parachute flares	4 pcs.
14	Hand flares	6 pcs.
31	Buoyant smoke signals	2 pcs.
33 10 01	Portable fire-extinguishing equipment	1 pc.

## Note:

- Thermal protective aids: Shall be equipped for 10 % of the number of persons or 2, whichever is greater.
- Buoyant bailer: In the case where 13 persons or more are aboard the liferaft, it shall be equipped with an additional buoyant bailer.
- Knife: In the case where 13 persons or more are aboard the liferaft, it shall be equipped with an additional knife.

**Lifeboat Accessories**

Accesorios de los botes salvavidas

救命艇の艦装品 救生艇配件

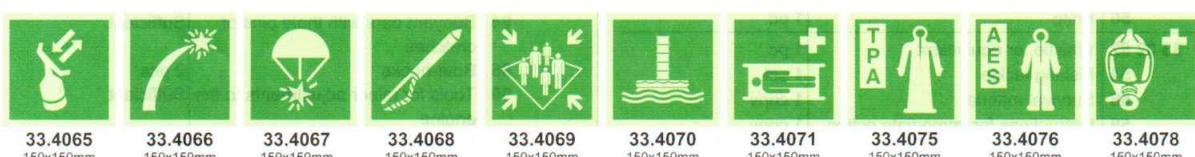
International Life-Saving Appliance (LSA) Code, Regulation Chapter 4.4.8.

CODE	Description	Quantity
33 01 75	Thermal protective aid	10% of the number of persons
90	Radar reflector	1 pc.
33 02 01	Buoyant bailer	1 pc.
03	Hatchets	2 pcs.
09	Buckets	2 pcs.
33 02 10	Rustproof dipper with lanyard	1 pc.
11	Binnacle containing an efficient compass	1 pc.
12	Buoyant rescue quoits	2 pcs.
16	Sea-anchor	1 pc.
18	Life-saving signal	1 copy
33 02 26	Food ration. Not less than 10,000 kj / person	For each person
37	Watertight receptacle containing 3 ltr of fresh water/person	For each person
41	Rustproof graduated drinking vessel	1 pc.
46	First-aid kit	1 Set
47	6 tablets of anti-seasickness medicine(for 48 hours)	For each person
33 02 48	1 seasickness bag	For each person
49	Can openers	3 pcs.
51	Jack-knife	1 pc.
52	Whistle, or equivalent	1 pc.
33 02 54	Fishing tackle	1 set
56	Survival manual	1 copy
61	Waterproof electric torch (w/1 spare battery, 1 spare bulb)	1 pc.
64	Searchlight	1 pc.
71	Daylight signal mirror	1 pc.
33 02 80	Manual pump	1 pc.
84	Buoyant oars with thole pins or crutches	Sufficient
85	Boat-hooks	2 pcs
90	Tools for minor adjustments to the engine	Sufficient
93	Painters	2 pcs
33 03 11	Rocket parachute flares	4 pcs
14	Hand flares	6 pcs
31	Buoyant smoke signals	2 pcs
33 10 01	Portable fire-extinguishing equipment	1 pc.

## Note:

- Thermal protective aids: Shall be equipped for 10 % of the number of persons or 2, whichever is greater.

## IMO Symbols, on self adhesive photoluminescent vinyl



## IMO Symbols, on self adhesive photoluminescent vinyl

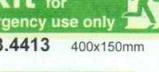
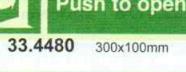
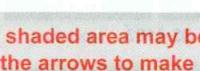
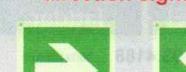
33.5100 150x150mm	33.5101 150x150mm	33.5102 150x150mm	33.5103 150x150mm	33.5104 150x150mm	33.5105 150x150mm	33.5106 150x150mm	33.5107 150x150mm		
33.5108 150x150mm	33.5109 150x150mm	33.4210 75x150mm 33.4250 150x300mm	33.4211 75x150mm 33.4251 150x300mm	33.4212 75x150mm 33.4252 150x300mm	33.4213 75x150mm 33.4253 150x300mm	33.4214 75x150mm 33.4254 150x300mm	33.4215 75x150mm 33.4255 150x300mm		
33.4200 75x150mm 33.4240 150x300mm	33.4201 75x150mm 33.4241 150x300mm	33.4202 75x150mm 33.4242 150x300mm	33.4203 75x150mm 33.4243 150x300mm	33.4204 75x150mm 33.4244 150x300mm	33.4205 75x150mm 33.4245 150x300mm	33.4206 75x150mm 33.4246 150x300mm	33.4207 75x150mm 33.4247 150x300mm	33.4208 75x150mm 33.4248 150x300mm	33.4209 75x150mm 33.4249 150x300mm

## Safety Signs, on self adhesive photoluminescent vinyl

33.4170 200x200mm	33.4171 300x100mm	33.4172 300x100mm	33.4173 300x100mm	33.4174 300x100mm
33.4175 300x100mm	33.4176 300x100mm	33.4177 300x100mm	33.4178 300x100mm	
33.4179 300x100mm	33.4180 300x100mm	33.4181 300x100mm	33.4182 300x100mm	
33.4130 100x300mm	33.4183 300x100mm	33.4184 300x100mm	33.4185 300x100mm	33.4186 300x100mm
33.4187 300x100mm	33.4188 300x100mm	33.4189 300x100mm	33.4193 300x100mm	

33.4132 150x150mm	33.4135 150x150mm	33.4139 150x150mm	33.4152 150x150mm	33.4427 300x150mm
33.4133 150x150mm	33.4137 150x150mm	33.4151 150x150mm	33.4153 150x150mm	33.4426 150x75mm
33.4155 150x150mm	33.4157 150x150mm	33.4420 150x150mm	33.4421 150x150mm	

## Direction Signs, on self adhesive photoluminescent vinyl

 33.4401 400x150mm	 33.4301 300x100mm	 33.4331 300x100mm	 33.4321 300x100mm	 33.4422 150x150mm
 33.4409 400x150mm	 33.4309 300x100mm	 33.4339 300x100mm	 33.4329 300x100mm	 33.4423 150x150mm
 33.4402 400x150mm	 33.4302 300x100mm	 33.4332 300x100mm	 33.4322 300x100mm	 33.4424 150x150mm
 33.4404 400x150mm	 33.4304 300x100mm	 33.4334 300x100mm	 33.4324 300x100mm	 33.4425 150x150mm
 33.4406 400x150mm	 33.4306 300x100mm	 33.4336 300x100mm	 33.4326 300x100mm	 33.4426 150x150mm
 33.4403 400x150mm	 33.4303 300x100mm	 33.4333 300x100mm	 33.4323 300x100mm	 33.4427 150x150mm
 33.4405 400x150mm	 33.4305 300x100mm	 33.4335 300x100mm	 33.4325 300x100mm	 33.4428 150x150mm
 33.4407 400x150mm	 33.4307 300x100mm	 33.4337 300x100mm	 33.4327 300x100mm	 33.4429 150x150mm
 33.4410 400x150mm	 33.4413 400x150mm	 33.4480 300x100mm	 33.4481 300x100mm	 33.4410 150x150mm
 33.4411 400x150mm	 33.4341 300x150mm	 33.4482 300x100mm	 33.4483 300x100mm	 33.4100 150x150mm
 33.4340 300x150mm	 33.4343 300x150mm	 33.4345 300x150mm	 33.4120 150x150mm	 33.4342 300x150mm
 33.4344 300x150mm	 33.4821 400x150mm	 33.4420 150x150mm	 33.4421 150x150mm	 33.4120 150x150mm
 33.4824 300x150mm	 33.4825 300x100mm	 33.4454 150x150mm	 33.4455 150x150mm	 33.4119 150x150mm
<b>Safety Equipment</b>				
<p><b>Signs within this shaded area may be combined with the arrows to make direction signs to suit various applications</b></p> 				
 33.4415 300x150mm				
 33.4422 150x150mm				
 33.4424 150x150mm				
 33.4417 300x150mm				

## Photoluminescent Low Location Lighting System LLL Strips

The simplest option to install the photoluminescent rigid strips, 35 mm, 57 mm, and 83 mm widths, is to request from with a self-adhesive backing foam which will allow you to paste them directly to the wall of the escape route walkways.

33.2332 1000 x 35 mm LLL strips for wall marking

33.2331 1000 x 57 mm LLL strips for wall marking

33.2333 1000 x 83 mm LLL strips for wall marking

## Aluminium LLL Carrier

Consisting of an aluminium carrier extrusion with a rigid photoluminescent PVC insert, which provides a quick and easy installation, combined with rugged and durable quality. We can supply in two sizes which offer a 54mm visible width of Class B photoluminescent or 32mm Class C photoluminescent. LLL signs should be used to give direction indication. End caps are available to neatly terminate the extrusion where required.

- 33.2394 - Angle Aluminium Rail 57 x 2000 mm
- 33.2395 - End cap Angled Rail 57 mm right
- 33.2397 - End cap Angled Rail 57 mm left
- 33.2376 - Aluminium rail for LLL strips 35 x 2000 mm
- 33.2377 - Plastic 35 mm end cap for aluminium rail
- 33.2378 - Aluminium rail for LLL strips 57 x 2000 mm
- 33.2379 - Plastic 57 mm end cap for aluminium rail
- 33.2388 - Aluminium rail for LLL strips 83 x 2000 mm
- 33.2392 - Plastic 83 mm end cap for aluminium rail



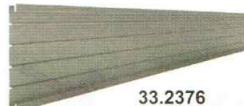
33.2395



33.2394



33.2377



33.2376

## LLL Signage



33.2380  
107x57mm



33.2381  
107x57mm



33.2384  
83x83mm



33.2386  
57x200mm



33.2387  
57x200mm



33.2382  
107x57mm



33.2383  
107x57mm



33.2385  
83x83mm



33.2361  
107x57mm



33.2362  
107x57mm



33.2363  
107x57mm



33.2364  
107x57mm

A range of signs sized to fit the systems above. The signs are printed on transparent, heavy duty vinyl which allows the photoluminescent LLL strip to shine through, highlighting the printed symbol.

The signs are supplied in packs of ten.

## Self Adhesive Photoluminescent Tape

### Installation

When used as part of a low location lighting system, the installer must ensure that there is sufficient ambient light available to activate the tape to attain the required performance.



Photoluminescent Vinyl Tape

35mm wide x 10m 33.2014  
83mm wide x 10m 33.2018



Photoluminescent Wayfinding Tape

35mm wide x 10m 33.2024

83mm wide x 10m 33.2028

10 right & 10 left handed decals supplied with each roll.



Photoluminescent Green Diagonal Tape

35mm wide x 10m 33.2034  
83mm wide x 10m 33.2038



Photoluminescent Wayfinding Dots

With Arrows

60mm wide x 10m 33.2086

100mm wide x 10m 33.2088



Photoluminescent Black Diagonal Tape

35mm wide x 10m 33.2044  
83mm wide x 10m 33.2048



Without Arrows

60mm wide x 10m 33.2096

100mm wide x 10m 33.2098



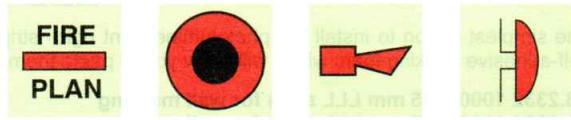
Photoluminescent Red Diagonal Tape

35mm wide x 10m 33.2054  
83mm wide x 10m 33.2058

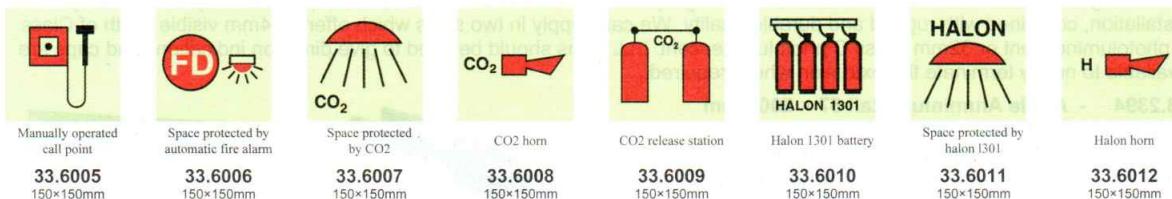
## Fire control symbols (A654), on self adhesive photoluminescent vinyl

### Regulations:

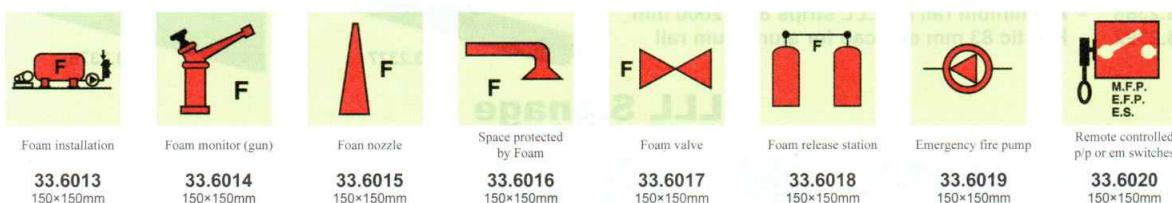
Resolution A654(16) amending Chapter II - 2, Regulation 20 requires the use of these symbols on fire control plans and booklets as international standard. These symbols are often used to identify actual equipment where no standard sign is available.



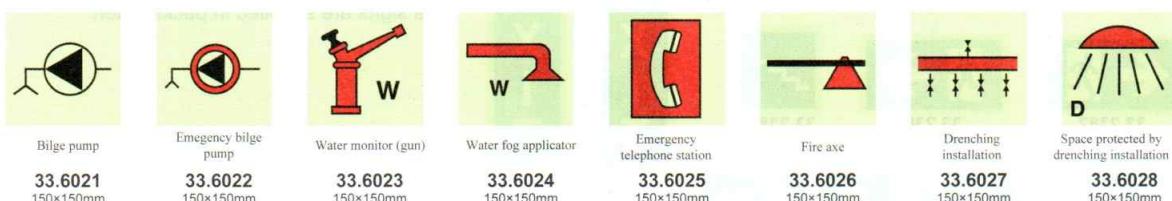
Fire control plan 33.6001 150x150mm	Push - button/switch for fire alarm 33.6002 150x150mm	Horn fire alarm 33.6003 150x150mm	Bell fire alarm 33.6004 150x150mm
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Manually operated call point 33.6005 150x150mm	Space protected by automatic fire alarm 33.6006 150x150mm	Space protected by CO <sub>2</sub> 33.6007 150x150mm	CO <sub>2</sub> horn 33.6008 150x150mm	CO <sub>2</sub> release station 33.6009 150x150mm	HALON 1301 33.6010 150x150mm	Space protected by halon 1301 33.6011 150x150mm	Halon horn 33.6012 150x150mm
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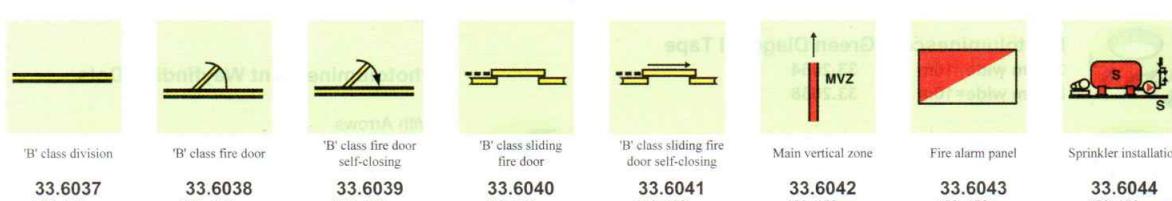
Foam installation 33.6013 150x150mm	Foam monitor (gun) 33.6014 150x150mm	Foam nozzle 33.6015 150x150mm	Space protected by Foam 33.6016 150x150mm	Foam valve 33.6017 150x150mm	Foam release station 33.6018 150x150mm	Emergency fire pump 33.6019 150x150mm	Remote controlled p/p or em switches 33.6020 150x150mm
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Bilge pump 33.6021 150x150mm	Emergency bilge pump 33.6022 150x150mm	Water monitor (gun) 33.6023 150x150mm	Water fog applicator 33.6024 150x150mm	Emergency telephone station 33.6025 150x150mm	Fire axe 33.6026 150x150mm	Drenching installation 33.6027 150x150mm	Space protected by drenching installation 33.6028 150x150mm
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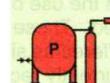


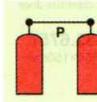
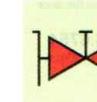
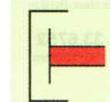
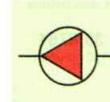
Section valves drenching 33.6029 150x150mm	Fire station 33.6030 150x150mm	'A' class division 33.6031 150x150mm	'A' class fire door 33.6032 150x150mm	'A' class fire door self-closing 33.6033 150x150mm	'A' class sliding fire door 33.6034 150x150mm	'A' class sliding fire door self-closing 33.6035 150x150mm	Potable Foam application 33.6036 150x150mm
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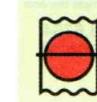
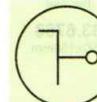
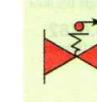


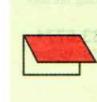
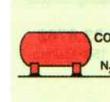
'B' class division 33.6037 150x150mm	'B' class fire door 33.6038 150x150mm	'B' class fire door self-closing 33.6039 150x150mm	'B' class sliding fire door 33.6040 150x150mm	'B' class sliding fire door self-closing 33.6041 150x150mm	Main vertical zone 33.6042 150x150mm	Fire alarm panel 33.6043 150x150mm	Sprinkler installation 33.6044 150x150mm
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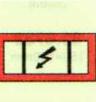
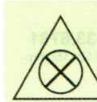
## Fire control symbols (A654), on self adhesive photoluminescent vinyl

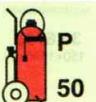
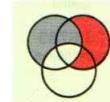
							
Space protected by sprinkler <b>33.6045</b> 150x150mm	Splinkler horn <b>33.6046</b> 150x150mm	Sprinkler section valve <b>33.6047</b> 150x150mm	CO2 battery <b>33.6048</b> 150x150mm	Halon release station <b>33.6049</b> 150x150mm	Halogen 1301 bottles in a protected area <b>33.6050</b> 150x150mm	Powder installation <b>33.6051</b> 150x150mm	Powder monitor (gun) <b>33.6052</b> 150x150mm

							
Powder hose and hand gun <b>33.6053</b> 150x150mm	Powder release station <b>33.6054</b> 150x150mm	Flame detector <b>33.6055</b> 150x150mm	Smoke detector <b>33.6056</b> 150x150mm	Fire main with valves <b>33.6057</b> 150x150mm	Hose box with spray/jet <b>33.6058</b> 150x150mm	International shore connection <b>33.6059</b> 150x150mm	Fire pump <b>33.6060</b> 150x150mm

							
Heat detector <b>33.6061</b> 150x150mm	Gas detector <b>33.6062</b> 150x150mm	Fire damper in vent duct <b>33.6063</b> 150x150mm	Remote controlled skylights <b>33.6064</b> 150x150mm	Remote controlled fuel/lubricating oil valves <b>33.6065</b> 150x150mm	Control station <b>33.6066</b> 150x150mm	Locker with fireman's outfit <b>33.6067</b> 150x150mm	Locker with additional breathing apparatus <b>33.6068</b> 150x150mm

							
Locker with additional protective clothing <b>33.6069</b> 150x150mm	Primary means of escape <b>33.6070</b> 150x150mm	Secondary means of escape <b>33.6071</b> 150x150mm	Closing appliance for exterior vent in/out <b>33.6072</b> 150x150mm	Inert gas installation <b>33.6073</b> 150x150mm	High expansion Foam supply tank <b>33.6074</b> 150x150mm	CO2/Nitrogen bulk installation <b>33.6075</b> 150x150mm	Emergency generator <b>33.6076</b> 150x150mm

							
Emergency switchboard <b>33.6077</b> 150x150mm	Remote ventilation shut-off <b>33.6078</b> 150x150mm	6 kg Powder fire extinguisher <b>33.6079</b> 150x150mm	9l Foam fire extinguisher <b>33.6080</b> 150x150mm	4kg Halon 1211 fire extinguisher <b>33.6081</b> 150x150mm	2kg CO2 fire extinguisher <b>33.6082</b> 150x150mm	2kg Powder fire extinguisher <b>33.6083</b> 150x150mm	1kg Powder fire extinguisher <b>33.6084</b> 150x150mm

							
50kg Wheeled Powder fire extinguisher <b>33.6085</b> 150x150mm	30kg Wheeled CO2 fire extinguisher <b>33.6086</b> 150x150mm	6kg CO2 fire extinguisher <b>33.6087</b> 150x150mm	9kg Powder fire extinguisher <b>33.6088</b> 150x150mm	45l Wheeled Foam fire extinguisher <b>33.6089</b> 150x150mm	5kg Powder fire extinguisher <b>33.6090</b> 150x150mm	9l Foam fire extinguisher <b>33.6091</b> 150x150mm	Extinguisher spare charges <b>33.6715</b> 150x150mm

## Fire control symbols (ISO 17631), on self adhesive photoluminescent vinyl

### Regulations:

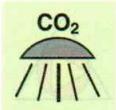
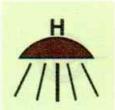
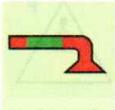
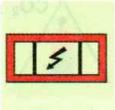
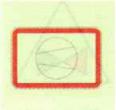
ISO 17631 requires the use of these symbols on fire plants and booklets for new vessels or where existing fire plans have been significantly modified. These symbols are currently intended for use solely on fire plans, but in response to requests from the industry they are offered as signs to identify actual equipment where no standard sign is available. Purchasers should be aware that they are not currently recommended for use as signs by any official body. Although this situation may change in the future, there is no guarantee that the designs will be identical to those shown below.

A class division	B class division	Main vertical zone division	A class fire door	A class Watertight fire door	A class semi-Watertight fire door	B class fire door	B class Watertight fire door
<b>33.6751</b> 150x150mm	<b>33.6752</b> 150x150mm	<b>33.6753</b> 150x150mm	<b>33.6754</b> 150x150mm	<b>33.6755</b> 150x150mm	<b>33.6756</b> 150x150mm	<b>33.6757</b> 150x150mm	<b>33.6758</b> 150x150mm
B class semi-Watertight fire door	A class self closing Watertight fire door	A class self closing Watertight fire door	A class self closing semi-Watertight fire door	B class self closing Watertight fire door	B class self closing Watertight fire door	B class self closing semi-Watertight fire door	A class sliding fire door
<b>33.6759</b> 150x150mm	<b>33.6760</b> 150x150mm	<b>33.6761</b> 150x150mm	<b>33.6762</b> 150x150mm	<b>33.6763</b> 150x150mm	<b>33.6764</b> 150x150mm	<b>33.6765</b> 150x150mm	<b>33.6766</b> 150x150mm
A class Watertight sliding fire door	A class semi-Watertight sliding fire door	B class sliding fire door	B class Watertight sliding fire door	B class semi-Watertight sliding fire door	A class self closing sliding fire door	A class self closing Watertight sliding fire door	A class self closing semi-Watertight sliding fire door
<b>33.6767</b> 150x150mm	<b>33.6768</b> 150x150mm	<b>33.6769</b> 150x150mm	<b>33.6770</b> 150x150mm	<b>33.6771</b> 150x150mm	<b>33.6772</b> 150x150mm	<b>33.6773</b> 150x150mm	<b>33.6774</b> 150x150mm
B class self closing sliding fire door	B class self closing Watertight sliding fire door	B class self closing semi-Watertight sliding fire door	Remote ventilation shut-off for the accomodation	Remove ventilation shut-off for the machinery spaces	Remove ventilation shut-off for cargo spaces	Skylight remote control	Watertight door remote control
<b>33.6775</b> 150x150mm	<b>33.6776</b> 150x150mm	<b>33.6777</b> 150x150mm	<b>33.6778</b> 150x150mm	<b>33.6779</b> 150x150mm	<b>33.6780</b> 150x150mm	<b>33.6781</b> 150x150mm	<b>33.6782</b> 150x150mm
Fire door remote control	Fire damper for accommodation and service spaces	Fire damper for machinery spaces	Fire damper for cargo spaces	Closing device for the accommodation ventilation inlet or outlet	Closing device for machinery spaces ventilation inlet or outlet	Closing device for cargo spaces ventilation inlet or outlet	Remove control for fire dampers for accommodation
<b>33.6783</b> 150x150mm	<b>33.6784</b> 150x150mm	<b>33.6785</b> 150x150mm	<b>33.6786</b> 150x150mm	<b>33.6787</b> 150x150mm	<b>33.6788</b> 150x150mm	<b>33.6789</b> 150x150mm	<b>33.6790</b> 150x150mm
Remote control for fire dampers for machinery spaces	Remote control for fire dampers for cargo spaces	Remote control for closing devices for accommodation	Remote control for closing devices for machinery spaces	Remote control for closing devices for cargo spaces	Fire plans and associated plans	Remote control for fire pump	Fire pump
<b>33.6791</b> 150x150mm	<b>33.6792</b> 150x150mm	<b>33.6793</b> 150x150mm	<b>33.6794</b> 150x150mm	<b>33.6795</b> 150x150mm	<b>33.6001</b> 150x150mm	<b>33.6797</b> 150x150mm	<b>33.6060</b> 150x150mm

## Fire control symbols (ISO 17631), on self adhesive photoluminescent vinyl

Remote control for emergency fire pump	Emergency fire pump	Fuel pumps remote shut-off	Lub oil pumps remote shut-off	Bilge pump remote control	Emergency bilge pump remote control	Fuel oil valves remote control	Lub oil valves remote control
<b>33.6799</b> 150x150mm	<b>33.6019</b> 150x150mm	<b>33.6801</b> 150x150mm	<b>33.6802</b> 150x150mm	<b>33.6803</b> 150x150mm	<b>33.6804</b> 150x150mm	<b>33.6805</b> 150x150mm	<b>33.6806</b> 150x150mm
Fire pump valves remote control	Remote release station for CO2	Remote release station for Nitrogen	Remote release station for Halon equivalent	Remote release station for Foam	Remote release station for Powder	Remote release station for Water	International shore connection
<b>33.6807</b> 150x150mm	<b>33.6808</b> 150x150mm	<b>33.6809</b> 150x150mm	<b>33.6810</b> 150x150mm	<b>33.6811</b> 150x150mm	<b>33.6812</b> 150x150mm	<b>33.6813</b> 150x150mm	<b>33.6059</b> 150x150mm
Foam hydrant	Fire hydrant	Foam section valve	Powder section valve	Fire main section valve	Sprinkler section valve	Fixed CO2 fire extinguishing installation	Fixed nitrogen fire extinguishing installation
<b>33.6879</b> 150x150mm	<b>33.6815</b> 150x150mm	<b>33.6816</b> 150x150mm	<b>33.6817</b> 150x150mm	<b>33.6818</b> 150x150mm	<b>33.6819</b> 150x150mm	<b>33.6820</b> 150x150mm	<b>33.6821</b> 150x150mm
Fixed Halon equivalent fire extinguishing installation	Fixed Foam fire extinguishing installation	Fixed Powder fire extinguishing installation	Fixed Water fire extinguishing installation	Fixed CO2 fire extinguishing battery	Fixed Nitrogen fire extinguishing battery	Fixed Halon equivalent fire extinguishing battery	Fixed Foam fire extinguishing battery
<b>33.6822</b> 150x150mm	<b>33.6823</b> 150x150mm	<b>33.6824</b> 150x150mm	<b>33.6825</b> 150x150mm	<b>33.6826</b> 150x150mm	<b>33.6827</b> 150x150mm	<b>33.6828</b> 150x150mm	<b>33.6829</b> 150x150mm
Fixed Powder fire extinguishing battery	Fixed Water fire extinguishing battery	Fixed CO2 fire extinguishing bottle in protected area	Fixed Nitrogen fire extinguishing bottle in protected area	Fixed Halon equivalent fire extinguishing bottle in protected area	Fixed Foam fire extinguishing bottle in protected area	Fixed Powder fire extinguishing bottle in protected area	Fixed Water fire extinguishing bottle in protected area
<b>33.6830</b> 150x150mm	<b>33.6831</b> 150x150mm	<b>33.6832</b> 150x150mm	<b>33.6833</b> 150x150mm	<b>33.6834</b> 150x150mm	<b>33.6835</b> 150x150mm	<b>33.6836</b> 150x150mm	<b>33.6837</b> 150x150mm
High expansion Foam supply tank	Water spray system valves	Inert gas installation	Foam monitor	Powder monitor	Water monitor	Foam hose and nozzle	Powder fire hose and nozzle
<b>33.6838</b> 150x150mm	<b>33.6027</b> 150x150mm	<b>33.6073</b> 150x150mm	<b>33.6841</b> 150x150mm	<b>33.6842</b> 150x150mm	<b>33.6843</b> 150x150mm	<b>33.6844</b> 150x150mm	<b>33.6845</b> 150x150mm
Water fire hose and nozzle	CO2 fire extinguisher	Halon fire extinguisher	Foam fire extinguisher	Powder fire extinguisher	Water fire extinguisher	CO2 wheeled fire extinguisher	Foam wheeled fire extinguisher
<b>33.6846</b> 150x150mm	<b>33.6847</b> 150x150mm	<b>33.6848</b> 150x150mm	<b>33.6849</b> 150x150mm	<b>33.6850</b> 150x150mm	<b>33.6851</b> 150x150mm	<b>33.6852</b> 150x150mm	<b>33.6854</b> 150x150mm

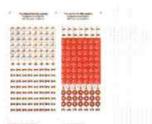
## Fire control symbols (ISO 17631), on self adhesive photoluminescent vinyl

 P Kg	 W L						
Powder wheeled fire extinguisher  33.6855 150x150mm	Water wheeled fire extinguisher  33.6856 150x150mm	Portable Foam applicator unit  33.6857 150x150mm	Fire fighters outfit Locker  33.6858 150x150mm	Space protected by CO2 fire extinguishing system  33.6859 150x150mm	Space protected by Nitrogen fire extinguishing system  33.6877 150x150mm	Space protected by halon equivalent fire extinguishing system  33.6860 150x150mm	Space protected by Foam fire extinguishing system  33.6861 150x150mm
 Space protected by Powder fire extinguishing system  33.6862 150x150mm	 Space protected by Water fire extinguishing system  33.6863 150x150mm	 Space protected by sprinkler system  33.6864 150x150mm		 Emergency source of electrical power (generator)  33.6076 150x150mm	 Emergency source of electrical power (battery)  33.6867 150x150mm	 Emergency switch board  33.6077 150x150mm	 Breathing device air compressor  33.6869 150x150mm
 Fire alarm control panel  33.6043 150x150mm	 Push - button/switch for fire alarm  33.6002 150x150mm	 Manually operated call point  33.6872 150x150mm	 Space protected by smoke detector(s)  33.6056 150x150mm	 Space protected by heat detector(s)  33.6061 150x150mm	 Space protected by flame detector(s)  33.6875 150x150mm	 Space protected by gas detector(s)  33.6876 150x150mm	 Fire Blanket  33.6878 150x150mm

## Fire Control & Life Saving Appliance Plan Modification

Each 10mm square printed on self adhesive gloss paper for updating fire plans.

### Fire Plan Pictograms to Resolution A654

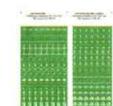


33.2600  
A5 Sheets Booklet

### Fire Plan Pictograms to ISO 17631

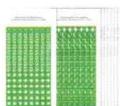


33.2603  
A5 Sheets Booklet



33.2604  
A5 Sheets Booklet

### Fire Plan Pictograms to Resolution A. 1116(30)



33.2601  
A5 Sheets Booklet



33.2602  
A5 Sheets Booklet



33.2607  
A5 Sheets Booklet



33.6093  
400x300mm



33.6092  
400x300mm



33.6094  
400x300mm

## Fire-fighting Equipment Signs



**33.6100**  
150×150mm  
**33.2365**  
57×57mm



**33.6101**  
150×150mm  
**33.2367**  
57×57mm



**33.6102**  
150×150mm  
**33.2366**  
57×57mm



**33.6103**  
150×150mm



**33.6104**  
150×150mm



**33.6105**  
150×150mm



**33.6106**  
150×150mm



**33.6107**  
150×150mm  
**33.2368**  
57×57mm



**33.6108**  
150×150mm  
**33.2369**  
57×57mm



**33.6109**  
150×150mm



**33.6110**  
150×150mm



**33.6111**  
150×150mm



**33.6112**  
150×150mm



**33.6113**  
150×150mm



**33.6114**  
150×150mm



**33.6115**  
150×150mm



**33.6116**  
150×150mm



**33.6117**  
150×150mm



**33.6118**  
150×150mm



**33.6119**  
150×150mm



**33.6125**  
150×150mm



**33.6210**  
150×150mm



**33.6211**  
150×150mm



**33.6260**  
200×200mm



**33.6261**  
200×200mm

### Fire-fighting Equipment signs with Supplementary Text



**33.6120**  
150×200mm



**33.6121**  
150×200mm



**33.6122**  
150×200mm



**33.6123**  
150×200mm



**33.6124**  
150×200mm



**33.6436**  
150×200mm



**33.6437**  
150×200mm



**33.6438**  
150×200mm



**33.6439**  
150×200mm



**33.6440**  
150×200mm



**33.6441**  
150×200mm



**33.6200**  
75×150mm  
**33.6250**  
150×300mm



**33.6201**  
75×150mm  
**33.6251**  
150×300mm



**33.6202**  
75×150mm  
**33.6252**  
150×300mm



**33.6203**  
75×150mm  
**33.6253**  
150×300mm



**33.6204**  
75×150mm  
**33.6254**  
150×300mm



**33.6205**  
75×150mm  
**33.6255**  
150×300mm



**33.6206**  
75×150mm  
**33.6256**  
150×300mm



**33.6207**  
75×150mm  
**33.6257**  
150×300mm



**33.6208**  
75×150mm  
**33.6258**  
150×300mm

### Fire Extinguishing Agent ID Supplementary Signs



**33.6126**  
75×150mm



**33.6127**  
75×150mm



**33.6128**  
75×150mm



**33.6129**  
75×150mm



**33.6130**  
75×150mm



**33.6131**  
75×150mm



**33.6132**  
75×150mm



**33.6133**  
75×150mm



**33.6134**  
75×150mm



**33.6135**  
75×150mm



**33.6136**  
75×150mm



**33.6137**  
75×150mm



**33.6138**  
75×150mm



**33.6139**  
75×150mm



**33.6140**  
75×150mm



**33.6141**  
75×150mm

## Fire Equipment Signs with Supplementary Extinguishing Agent ID Signs

33.6450 200x150mm	33.6451 200x150mm	33.6452 200x150mm	33.6453 200x150mm	33.6454 200x150mm	33.2371 75x57mm	33.6455 200x150mm
33.2372 75x57mm						33.6456 200x150mm
33.6457 200x150mm	33.6458 200x150mm	33.6459 200x150mm	33.6460 200x150mm	33.6461 200x150mm		33.6462 200x150mm
33.2369 75x57mm						33.6463 200x150mm
33.6464 200x150mm	33.6465 200x150mm	33.6466 200x150mm	33.6467 200x150mm	33.6468 200x150mm	33.6469 200x150mm	33.6470 200x150mm
33.6471 200x150mm	33.6472 200x150mm	33.6473 200x150mm	33.6474 200x150mm	33.2370 75x57mm		33.6477 200x150mm
33.6478 200x150mm	33.6479 200x150mm	33.6480 200x150mm	33.6481 200x150mm	33.6482 200x150mm	33.6483 200x150mm	33.6484 200x150mm
33.6485 200x150mm	33.6486 200x150mm	33.6487 200x150mm	33.6488 200x150mm	33.6489 200x150mm	33.6490 200x150mm	33.6491 200x150mm
33.6492 200x150mm	33.6493 200x150mm	33.6494 200x150mm	33.6495 200x150mm	33.6496 200x150mm	33.6497 200x150mm	33.6498 200x150mm
33.6499 200x150mm	33.6511 200x150mm	33.6512 200x150mm	33.6513 200x150mm	33.6514 200x150mm	33.6515 200x150mm	33.6516 200x150mm
33.6517 200x150mm	33.6518 200x150mm	33.6519 200x150mm	33.6520 200x150mm	33.6521 200x150mm	33.6522 200x150mm	

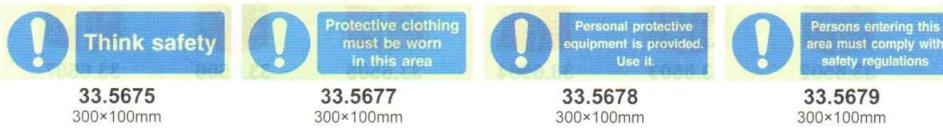
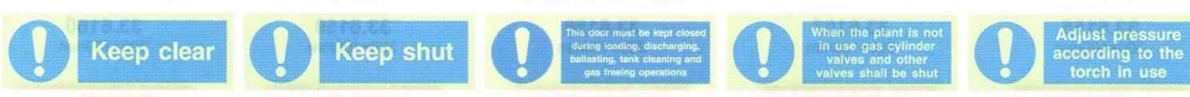
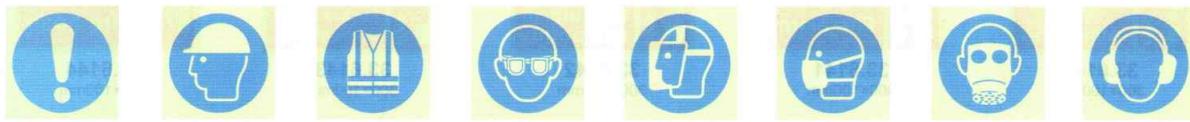
## Fire-fighting Equipment Signs with Supplementary Text

	<b>Fire extinguisher</b>		<b>Fire alarm</b>		<b>Fire alarm call point</b>		<b>In case of fire break glass</b>		<b>Fire hose</b>
33.6140 300×100mm		33.6141 300×100mm		33.6142 300×100mm		33.6143 300×100mm		33.6144 300×100mm	
	<b>Fire hose reel</b>		<b>Open valve before running out hose</b>		<b>Fire point</b>		<b>Fire hydrant</b>		<b>Fire fighting equipment stored inside</b>
33.6145 300×100mm		33.6146 300×100mm		33.6147 300×100mm		33.6148 300×100mm		33.6149 300×100mm	
	<b>Fire blanket</b>		<b>To be used only in the case of fire</b>		<b>Sprinkler stop valve</b>		<b>Sprinkler control valve</b>		<b>Open this valve in the event of fire</b>
33.6150 300×100mm		33.6151 300×100mm		33.6152 300×100mm		33.6153 300×100mm		33.6154 300×100mm	
	<b>Foam inlet</b>		<b>Fire telephone</b>		<b>Fireman's suit</b>		<b>Fire pump start button</b>		<b>Fire flap</b>
33.6155 300×100mm		33.6157 300×100mm		33.6158 300×100mm		33.6159 300×100mm		33.6160 300×100mm	
	<b>For use on any fires</b>		<b>For use on flammable liquid fires</b>		<b>For use on electrical fires</b>		<b>Fire hose Keep clear</b>		<b>Fire hydrant keep clear</b>
33.6163 300×100mm		33.6164 300×100mm		33.6165 300×100mm		33.6166 300×100mm		33.6167 300×100mm	
	<b>Open valve in case of fire</b>		<b>Wet riser</b>		<b>Area with smoke detectors</b>		<b>Fire pump</b>		<b>Area equipped with fixed fire extinguishing system</b>
33.6168 300×100mm		33.6169 300×100mm		33.6170 300×100mm		33.6171 300×100mm		33.6172 300×100mm	
	<b>Fire Plan</b>		<b>Fire alarm control panel</b>		<b>Manual control of fixed fire extinguishing system</b>		<b>Wheeled fire extinguisher</b>		<b>Portable foam applicator unit</b>
33.6173 300×100mm		33.6174 300×100mm		33.6175 300×100mm		33.6176 300×100mm		33.6177 300×100mm	
	<b>Water fog applicator</b>		<b>Fixed fire extinguishing battery</b>		<b>Fixed fire extinguishing installation</b>		<b>Fixed fire extinguishing bottle</b>		<b>Remote release station</b>
33.6178 300×100mm		33.6179 300×100mm		33.6180 300×100mm		33.6181 300×100mm		33.6182 300×100mm	
	<b>Fire monitor</b>		<b>Fire ladder</b>		<b>Fire emergency radio</b>		<b>Fire protection door</b>		<b>Fire extinguisher Keep clear</b>
33.6183 300×100mm		33.6184 300×100mm		33.6185 300×100mm		33.6186 300×100mm		33.6189 300×100mm	
	<b>WATER</b>		<b>FOAM SPRAY</b>		<b>ABC POWDER</b>		<b>CARBON DIOXIDE</b>		<b>Fire Blanket</b>
33.6430 75×200mm		33.6431 75×200mm		33.6432 75×200mm		33.6433 75×200mm		33.6434 75×200mm	
	<b>In case of fire</b>								<b>Fire extinguisher maintenance record</b>
33.6435 75×200mm									<b>MISSING</b>
33.6300 150×200mm								33.2702 100×150mm	
33.6301 100×300mm									

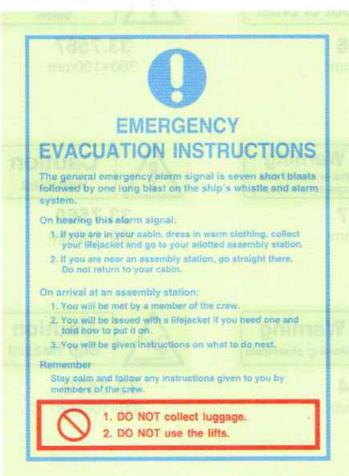
## Panoramic Fire Signs

	<b>33.6500 300×300mm</b>		<b>33.6501 150×150mm</b>		<b>33.6502 200×300mm</b>		<b>33.6503 150×150mm</b>		<b>33.6504 200×300mm</b>		<b>33.6505 200×150mm</b>		<b>33.6506 200×300mm</b>		<b>33.6507 150×150mm</b>
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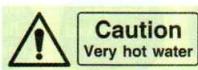
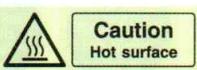
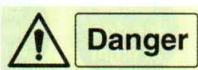
## Mandatory Signs, on self adhesive photoluminescent vinyl



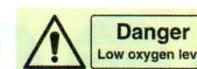
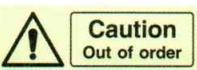
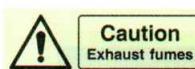
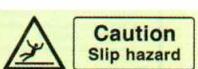
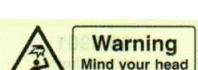
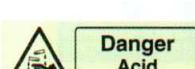
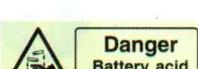
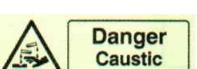
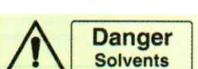
## Mandatory Signs, on self adhesive photoluminescent vinyl

33.5851  
300x100mm33.5852  
300x100mm33.5853  
300x100mm33.5854  
300x100mm33.5830  
400x150mm33.5831  
400x150mm33.5800  
150x150mm33.5801  
150x150mm33.5802  
150x150mm33.5803  
150x150mm33.5804  
150x150mm33.5805  
150x150mm33.5806  
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150x150mm33.5811  
150x150mm33.5812  
150x150mm33.5814  
150x150mm33.5815  
150x150mm33.5816  
150x150mm33.5817  
150x150mm33.5818  
150x150mm33.5819  
150x150mm33.5820  
150x150mm33.5821  
150x150mm33.5822  
150x150mm33.5900  
200x300mm33.5901  
200x300mm33.5110  
200x150mm33.5111  
200x150mm33.5902  
150x200mm33.5903  
150x200mm33.5112  
200x150mm

## Hazard Signs, on self adhesive photoluminescent vinyl

33.7500  
150x150mm33.7501  
150x150mm33.7502  
150x150mm33.7503  
150x150mm33.7504  
150x150mm33.7505  
150x150mm33.7506  
150x150mm33.7507  
150x150mm33.7508  
150x150mm33.7509  
150x150mm33.7510  
150x150mm33.7511  
150x150mm33.7514  
150x150mm33.7515  
150x150mm33.7516  
150x150mmWarning  
Radio antennae to be warned  
during cargo operations33.7578  
300x100mmDanger  
Hot33.7569  
300x100mmCaution  
Very hot water33.7577  
300x100mmCaution  
Hot surface33.7579  
300x100mm

Danger

33.7540  
300x100mmWarning  
Open slowly33.7541  
300x100mmDanger  
Unmanned machinery space  
machinery may start  
without warning33.7542  
300x100mmDanger  
Battery charging33.7543  
300x100mmDanger  
Low oxygen level33.7544  
300x100mmDanger  
You are entering a  
CO<sub>2</sub> protected area33.7545  
300x100mmDanger  
Moving machinery33.7546  
300x100mmDanger  
Under maintenance33.7547  
300x100mmDanger  
Overhead working33.7548  
300x100mmCaution  
Out of order33.7566  
300x100mmDanger  
Men working  
below33.7567  
300x100mmWarning  
Hazardous area33.7549  
300x100mmDanger  
Dust hazard33.7551  
300x100mmDanger  
Asbestos33.7554  
300x100mmWarning  
Motor starts and  
stops automatically33.7557  
300x100mmCaution  
Vehicles33.7560  
300x100mmCaution  
Exhaust fumes33.7561  
300x100mmWarning  
Beware of  
moving vehicles33.7643  
300x100mmCaution  
Steep stairway  
use handrails33.7624  
300x100mmWarning  
Cleaning chemicals33.7664  
300x100mmCaution  
Slip hazard33.7572  
300x100mmCaution  
Wet deck33.7573  
300x100mmCaution  
Slippery surface33.7574  
300x100mmWarning  
Mind your head33.7570  
300x100mmWarning  
Forklift truck  
in operation33.7571  
300x100mmDanger  
Petroleum vapour33.7580  
300x100mmDanger  
Explosion risk33.7581  
300x100mmCaution  
Explosion gases33.7582  
300x100mmDanger  
Explosive material33.7583  
300x100mmDanger  
Compressed gases33.7584  
300x100mmDanger  
Compressed oxygen33.7585  
300x100mmDanger  
Acid33.7590  
300x100mmDanger  
Battery acid33.7591  
300x100mmDanger  
Corrosive substance33.7596  
300x100mmDanger  
Caustic33.7597  
300x100mmDanger  
Solvents33.7555  
300x100mm

## Hazard Signs, on self adhesive photoluminescent vinyl

<b>Danger Toxic</b> 33.7600 300x100mm	<b>Danger Chlorine</b> 33.7601 300x100mm	<b>Danger Harmful vapours</b> 33.7604 300x100mm	<b>Danger Harmful chemicals</b> 33.7605 300x100mm	<b>Danger Cyanide</b> 33.7586 300x100mm
<b>Danger High voltage</b> 33.7610 300x100mm	<b>Danger Electrical hazard</b> 33.7611 300x100mm	<b>Danger Electrical shock risk</b> 33.7613 300x100mm	<b>Danger Static electricity</b> 33.7587 300x100mm	<b>Danger 110 volts</b> 33.7619 300x100mm
<b>Danger 115 volts</b> 33.7618 300x100mm	<b>Danger 220 volts</b> 33.7617 300x100mm	<b>Danger 230 volts</b> 33.7588 300x100mm	<b>Danger 240 volts</b> 33.7616 300x100mm	<b>Danger 380 volts</b> 33.7615 300x100mm
<b>Danger 440 volts</b> 33.7614 300x100mm	<b>Danger 3300 volts</b> 33.7625 300x100mm	<b>Danger 6600 volts</b> 33.7626 300x100mm	<b>Danger Live terminal</b> 33.7627 300x100mm	<b>Danger Live wires</b> 33.7628 300x100mm
<b>Caution Trip hazard</b> 33.7620 300x100mm	<b>Warning Isolate before removing guards</b> 33.7550 300x100mm	<b>Caution Mind the step</b> 33.7623 300x100mm	<b>Danger Uneven surface</b> 33.7629 300x100mm	<b>Danger Flammable liquid</b> 33.7631 300x100mm
<b>Danger Highly flammable material</b> 33.7635 300x100mm	<b>Danger Fire risk</b> 33.7630 300x100mm	<b>Danger Highly flammable gases</b> 33.7632 300x100mm	<b>Danger Flammable atmosphere</b> 33.7633 300x100mm	<b>Danger L.P.G. Flammable</b> 33.7634 300x100mm
<b>Danger Low flash point</b> 33.7636 300x100mm	<b>Caution Noise</b> 33.7650 300x100mm	<b>Caution Radiation risk</b> 33.7660 300x100mm	<b>Danger Ionizing radiation</b> 33.7670 300x100mm	<b>Danger Biological hazard</b> 33.7680 300x100mm
<b>Danger of infection</b> 33.7681 300x100mm	<b>Caution Non-ionizing radiation</b> 33.7673 300x100mm	<b>Danger of death</b> 33.7668 300x100mm		
<b>Warning</b> This ship is fitted with a reverse safety system. Stop and reverse the engines before reversing. Before reversing. Before reversing. Before reversing. Before reversing.	<b>Warning Oxygen</b> 33.7700 300x100mm	<b>Warning Acetylene</b> 33.7701 300x100mm		
<b>Push</b>  <b>Caution</b> Only open door when sheltered from strong wind	<b>Pull</b>  <b>Caution</b> Deck slippery when wet	<b>Pull</b>  <b>Caution</b> Only open door when sheltered from strong wind	<b>Push</b>  <b>Caution</b> Deck slippery when wet	
33.2761 73x200mm	33.2762 73x200mm	33.2763 73x200mm	33.2760 73x200mm	

## Prohibition Signs, on self adhesive photoluminescent or white vinyl



## Combination Signs, on self adhesive white vinyl



33.3122  
300×300mm



33.3128  
300×300mm



33.3129  
300×300mm



33.3136  
300×300mm



33.3137  
300×300mm



33.3111  
300×300mm



33.3123  
300×300mm



33.3125  
300×300mm



33.3126  
300×300mm



33.3141  
300×300mm



33.3127  
300×300mm



33.3135  
300×300mm



33.3108  
300×300mm



33.3139  
300×300mm

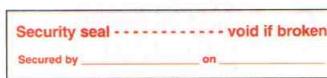
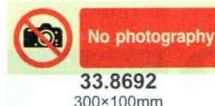
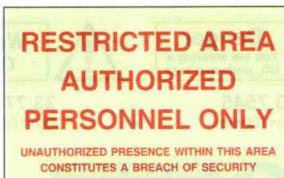


33.3138  
300×400mm

## Combination Signs, on self adhesive white vinyl

33.3100  
300x200mm33.3101  
300x200mm33.3102  
300x200mm33.3103  
300x200mm33.3109  
300x200mm33.3112  
300x200mm33.3116  
300x200mm33.3117  
300x200mm33.3118  
300x200mm33.3115  
300x200mm33.3114  
300x200mm33.3113  
300x200mm33.3106  
300x200mm33.3107  
300x200mm33.3014  
600x900mm33.3104  
300x200mm33.3119  
300x200mm33.3120  
300x200mm33.3110  
300x200mm33.3105  
300x200mm

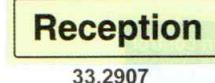
## ISPS Code Signs & Security Signs



Security seal manufactured from a special plastic which tears when attempts to peel it off are made. Ideal for securing bonds etc. Sold in sheets of 10.



These signs can be placed beside the lock on a door to indicate the correct status at specific security levels. Sold only in sheets of 10.



Sold in packs of 10 complete with wired 'twists' for fixing.



**THIS SHIP COMPLIES WITH THE  
I.M.O. ISPS CODE**

**STRICT SECURITY MEASURES & PROCEDURES ARE ENFORCED  
NO OFFENSIVE WEAPONS ALLOWED**

**VISITORS WILL BE MET ON DECK AND MUST REGISTER ONBOARD WITH  
A PHOTOGRAPHIC IDENTIFICATION DOCUMENT AND MAY BE SUBJECT  
TO PERSONAL OR BAGGAGE SEARCHES**

**YOUR CO-OPERATION IS EXPECTED IN COMPLIANCE WITH MARITIME  
SECURITY REQUIREMENTS**



### Regulations:

ISPS Code Part B Section 9 requires the identification of restricted areas, access notices and forms of declaration. Part B 16.23 also requires that port facilities show similar identification.

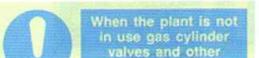
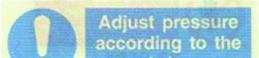
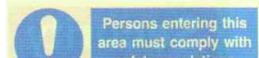
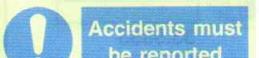
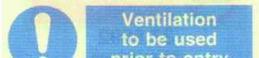
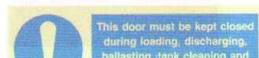
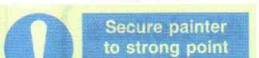
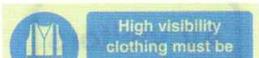
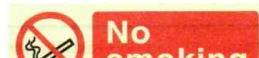
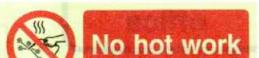
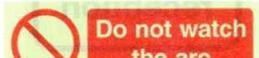


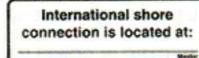
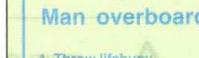
ISPS Code 2003 edition SOLAS amendments came into force in July 2004 and require certain areas to have restricted access and be identified as such.

THE MASTER

33.3140  
900x450mm

## Deck and Engine Room Signs

 <b>Warning Open slowly</b>	 <b>Danger You are entering a CO, protected area</b>	 <b>Warning Oxygen</b>	 <b>Warning Acetylene</b>	 <b>Warning Radio antennas to be earthed during cargo operations</b>
33.7541 300×100mm	33.7545 300×100mm	33.7700 300×100mm	33.7701 300×100mm	33.7578 300×100mm
 <b>CO, Protected area On hearing alarm vacate space immediately Close all exits behind you</b>	 <b>Gas flood system Protected area On hearing alarm vacate space immediately Close all exits behind you</b>	 <b>When the plant is not in use gas cylinder valves and other valves shall be shut</b>	 <b>Adjust pressure according to the torch in use</b>	
33.5876 300×100mm	33.5881 300×100mm	33.5873 300×100mm	33.5874 300×100mm	
 <b>Now wash your hands</b>	 <b>Persons entering this area must comply with safety regulations</b>	 <b>Accidents must be reported</b>	 <b>Ventilation to be used prior to entry</b>	
33.5728 300×100mm	33.5679 300×100mm	33.5851 300×100mm	33.5852 300×100mm	
 <b>No fire loop to be isolated without the knowledge of the watch officer. No fire loop to be kept isolated for longer than the period required. Signed [Signature] Master</b>	 <b>This door must be kept closed during loading, discharging, ballasting, tank cleaning and gas freeing operations</b>	 <b>Secure painter to strong point before launching</b>	 <b>High visibility clothing must be worn in this area</b>	
33.5853 300×100mm	33.5872 300×100mm	33.5875 300×100mm	33.5782 300×100mm	
 <b>No workwear beyond this point</b>	 <b>No smoking</b>	 <b>No hot work</b>	 <b>Do not watch the arc</b>	
33.8574 300×100mm	33.8530 300×100mm	33.8539 300×100mm	33.8565 300×100mm	
 <b>Do not enter pump room</b> <small>Without permission from the chief officer</small>	 <b>No entry</b> <small>except by authorized personnel and unless ventilation has been in use for at least 15 minutes prior to entry</small>			
33.8546 300×100mm	33.8547 300×100mm			

 <b>Drinking water</b>	 <b>Smoking area</b>	 <b>Pollution control equipment</b>
33.4180 300×100mm	33.4185 300×100mm	33.4181 300×100mm
 <b>Danger Steep ladders</b> 	 <b>Danger Confined space</b> 	 <b>Warning Dangerous cargo</b>      <b>No mobile phones, pagers, or other electronic equipment to be turned on except in specified areas</b>  <b>International shore connection is located at:</b> <small>Master</small>
33.3116 300×200mm	33.3110 300×200mm	33.3014 600×900mm
 <b>Danger Vehicle fumes</b> 		 <b>Man overboard</b> <ol style="list-style-type: none"><li>1. Throw lifebuoy.</li><li>2. Keep man in sight.</li><li>3. Inform the bridge or the officer of the watch.</li><li>4. State man overboard and give location.</li></ol> 
33.3103 300×200mm		33.5902 150×200mm

## Galley Signs

 <b>Danger Hot</b> 33.7569 300×100mm	 <b>Caution Slip hazard</b> 33.7572 300×100mm	 <b>Caution Wet deck</b> 33.7573 300×100mm	 <b>Caution Slippery surface</b> 33.7574 300×100mm	 <b>Caution Very hot water</b> 33.7577 300×100mm
 <b>Caution Hot surface</b> 33.7579 300×100mm	 <b>Danger High temperature</b> 33.7598 300×100mm	 <b>Danger Electrical hazard</b> 33.7611 300×100mm	 <b>Caution Mind the step</b> 33.7623 300×100mm	 <b>Warning Cleaning chemicals</b> 33.7664 300×100mm
 <b>Plastic only</b> <small>Marine garbage disposal regulations</small> 33.5690 300×100mm	 <b>Food waste only</b> <small>Marine garbage disposal regulations</small> 33.5691 300×100mm	 <b>No plastics or food waste</b> <small>Marine garbage disposal regulations</small> 33.5692 300×100mm	 <b>Incineration only</b> <small>Marine garbage disposal regulations</small> 33.5693 300×100mm	
 <b>Communication only</b> <small>Marine garbage disposal regulations</small> 33.5694 300×100mm	 <b>Compaction only</b> <small>Marine garbage disposal regulations</small> 33.5695 300×100mm	 <b>Glass only</b> <small>Marine garbage disposal regulations</small> 33.5696 300×100mm	 <b>Now wash your hands</b> 33.5728 300×100mm	
 <b>Hair covering must be worn</b> 33.5736 300×100mm	 <b>Hand wash only</b> 33.5737 300×100mm	 <b>Utensil wash only</b> 33.5738 300×100mm	 <b>Cover all cuts and abrasions</b> <small>Report sickness immediately</small> 33.5739 300×100mm	
 <b>Spillages must be cleaned up immediately</b> 33.5740 300×100mm	 <b>All handlers of food must wash their hands after visiting the toilet</b> 33.5745 300×100mm	 <b>This is a food production area</b> <small>In the interests of hygiene protective garments must be worn</small> 33.5746 300×100mm	 <b>Deep fat fryer</b> <small>Switch off power supply at mains before cleaning. Always wear protective clothing and gloves. Ensure heat is off before cleaning. Avoid contact with oil or grease. If machine jams or stops, immediately switch off power supply and disconnect from power source. Allow machine to cool before reaching into otherwise service access cover.</small> 33.5748 300×100mm	
 <b>Slicing machine</b> <small>Switch off/Disconnect power supply at mains before changing or attempting to dislodge blockages.</small> 33.5750 300×100mm	 <b>Convector oven</b> <small>Switch off heater fan button before opening doors</small> 33.5751 300×100mm	 <b>Steam oven</b> <small>Open door sufficiently to allow steam and water to escape before opening fully</small> 33.5752 300×100mm	 <b>Mincing / Mixing machine</b> <small>Switch off/Disconnect power supply at mains before cleaning. Ensure nothing is left in the machine before cleaning. Allow machine to cool before reaching into otherwise service access cover.</small> 33.5753 300×100mm	
 <b>Potato chipping machine</b> <small>Switch off/Disconnect power supply at mains before changing or attempting to dislodge blockages.</small> 33.5754 300×100mm	 <b>Dishwashing machine</b> <small>Switch off/Disconnect power supply at mains before cleaning. Ensure nothing is left in the machine before cleaning. Allow machine to cool before reaching into otherwise service access cover.</small> 33.5755 300×100mm	 <b>Waste disposal machine</b> <small>Switch off/Disconnect power supply at mains before cleaning. Ensure nothing is left in the machine before cleaning. Allow machine to cool before reaching into otherwise service access cover.</small> 33.5756 300×100mm	 <b>Dangerous machine</b> <small>Switch off/Disconnect power supply at mains before cleaning. Ensure nothing is left in the machine before cleaning. Allow machine to cool before reaching into otherwise service access cover.</small> 33.5757 300×100mm	
 <b>Please wash only food equipment here</b> 33.5759 300×100mm	 <b>Please wash only hands here</b> 33.5760 300×100mm	 <b>Keep hands clear when machine is operation</b> <small>Disconnected power supply before cleaning</small> 33.5761 300×100mm	 <b>Ventilation systems</b> <small>Close ventilation grilles and louvers and turn off fans. Clean filters if necessary. Fans and grilles must not operate without filters unless approved.</small> 33.5763 300×100mm	

# Galley Signs

 Protective clothing must be worn in this area 33.5764 300x100mm	 Personal hygiene rules apply beyond this point 33.5768 300x100mm	 Food preparation area 33.5771 300x100mm	 Pastry preparation area 33.5772 300x100mm
 Food preparation area veg & salad only 33.5773 300x100mm	 Raw meat only 33.5774 300x100mm	 Dairy products only 33.5775 300x100mm	 All food must be covered 33.5776 300x100mm
 This door must be kept closed 33.5777 300x100mm	 Raw food must be stored below cooked meat 33.5778 300x100mm	 Pot wash only 33.5779 300x100mm	 Food wash only 33.5783 300x100mm
 Code of practice for the use of bandages 33.5758 400x150mm	 Deep fat fryer Wear rubber gloves 33.5762 400x150mm	 The safe use of knives 33.5765 400x150mm	 Oven safety 33.5766 400x150mm
 Defrosted food must not be refrozen 33.2884 300x100mm	 Do not store raw and cooked food together 33.2885 300x100mm	 Microwave Oven <small>1. As a sensible precaution do not place metal objects in the oven when it is switched on. 2. Metal containers such as tin foil must not be placed in this oven.</small> 33.5747 300x100mm	 No smoking 33.8530 300x100mm
 This is a no smoking area 33.8532 300x100mm	 No smoking beyond this point 33.8533 300x100mm	 Do not drink 33.8550 300x100mm	 Do not throw garbage overboard <small>This vessel operates in a special area designated by international maritime law</small> 33.8567 300x100mm
 Do not leave garbage here 33.8619 300x100mm	 First aid 33.4171 300x100mm	 Emergency equipment 33.4173 300x100mm	 Emergency eye wash 33.4177 300x100mm
 Drinking water 33.4180 300x100mm	 First aiders 33.4193 300x100mm		
 Galley No smoking Wash hands before preparing food Minimum safety requirements: - Hairnet - Safety footwear 33.3124 300x300mm	 Wash hands 33.5654 100x100mm	 No smoking You are entering a food preparation area 33.3522 300x150mm	

33

Safety Equipment

## Accommodation Signs

**Ships office**

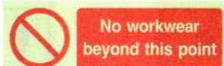
33.2874  
300×100mm

**Private**

33.2909  
300×100mm

**Office**

33.2908  
300×100mm



33.8574  
300×100mm



33.8500  
150×150mm

**Engine control room**

33.2874  
300×100mm

**Cargo control room**

33.2878  
300×100mm

**Safety locker**

33.2879  
300×100mm



33.8619  
300×100mm



33.8505  
150×150mm



33.1713  
200×300mm



33.4197  
150×150mm



33.4198  
150×150mm



33.8530  
300×100mm



33.8531  
300×100mm



Eating and drinking area  
33.4186  
300×100mm



33.8532  
300×100mm



33.8533  
300×100mm



Drinking water  
33.4180  
300×100mm



33.8526  
300×200mm



33.8525  
300×200mm



Smoking area  
33.4185  
300×100mm



33.8550  
300×100mm



33.8658  
300×100mm



No running  
33.8529  
300×100mm



33.8582  
300×100mm



33.8570  
300×100mm



No smoking in bed  
33.8520  
300×100mm



Exit  
keep  
clear  
33.5822  
150×150mm



Fire escape  
keep clear  
33.5811  
150×150mm



Please close  
door quietly  
33.5877  
300×100mm



Close  
this door  
at night  
33.5803  
150×150mm



Close  
these doors  
at night  
33.5804  
150×150mm



Staircase  
must be  
kept clear  
at all times  
33.5809  
150×150mm

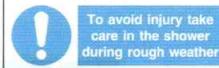
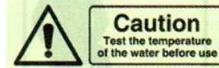
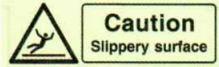
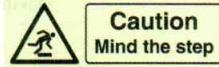


Quiet please  
33.5878  
300×100mm

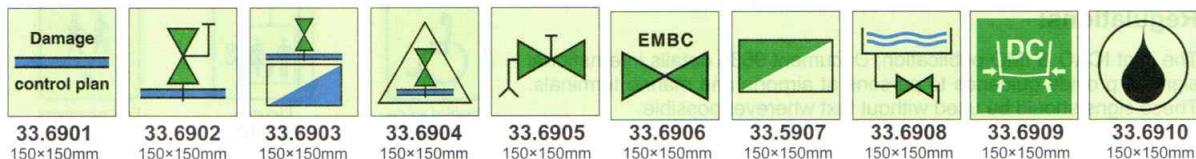


33.1712  
200×300mm

## Accommodation Signs

<b>Toilets</b> 33.2918 300×100mm	<b>Ladies</b> 33.2919 300×100mm	<b>Gentlemen</b> 33.2920 300×100mm	<b>Catering crew toilet</b> 33.2876 300×100mm					
 33.2940 150×150mm	 33.2932 150×150mm	 33.2941 100×150mm	 33.2942 100×150mm					
 33.2931 200×150mm	 33.8002 150×200mm	 33.8003 150×200mm						
<b>PULL</b> 33.2938 100×50mm	<b>PUSH</b> 33.2939 100×50mm	 33.8001 150×100mm						
 33.7000 300×100mm	 33.5769 300×100mm	 33.5728 300×100mm	 33.5680 300×100mm	 33.8000 300×100mm				
 33.7572 300×100mm	 33.7573 300×100mm	 33.7574 300×100mm	 33.7623 300×100mm	 33.7624 300×100mm				
 33.2760 73×200mm	 33.2761 73×200mm	 33.4210 75×150mm	 33.4211 75×150mm	 33.4212 75×150mm	 33.4213 75×150mm	 33.4214 75×150mm	 33.4215 75×150mm	 33.4420 150×150mm
 33.2762 73×200mm	 33.2763 73×200mm	 33.4201 75×150mm	 33.4202 75×150mm	 33.4203 75×150mm	 33.4204 75×150mm	 33.4205 75×150mm	 33.4206 75×150mm	 33.4421 150×150mm
<b>Deck</b> 33.4470 400×150mm	<b>Stairway</b> 33.4471 400×150mm	 33.4171 300×100mm	 33.4176 300×100mm	 33.4187 300×100mm	 33.4177 300×100mm			

## Damage Control Plan Signs



## Temporary Tie Tags

### Installation:

Tie tags are required wherever a need occurs to temporarily mark items and areas for safety reasons, usually during maintenance and in connection with the permit to work system. These tags are printed on a semi - rigid PVC with a matt finish to allow an authorisation signature and the date to be added in pen. The tags are supplied in packs of ten and come complete with cable ties for easy fixing.



# Passenger Vessel and Terminal Building Signs

## Regulations:

The joint ICAO & IMO publication, Document 9636 details international signs to provide guidance to persons at airports and marine terminals. These signs should be used without text wherever possible.



Disabled access  
**33.2401**  
150×150mm



Elevators  
**33.2402**  
150×150mm



Foot passengers  
**33.2403**  
150×150mm



Cars  
**33.2404**  
150×150mm



Lorries  
**33.2405**  
150×150mm



sea arrivals  
**33.2406**  
150×150mm



Sea departures  
**33.2407**  
150×150mm



Toilets, bosh  
**33.2408**  
150×150mm



Toilets, ladies  
**33.2409**  
150×150mm



Toilets, men's  
**33.2410**  
150×150mm



Drinking water  
**33.2411**  
150×150mm



Nursery  
**33.2412**  
150×150mm



First aid (DP)  
**33.2413**  
150×150mm



Pharmacy  
**33.2414**  
150×150mm



Baggage claim  
**33.2415**  
150×150mm



Baggage cart  
**33.2416**  
150×150mm



Baggage store  
**33.2417**  
150×150mm



Baggage lockers  
**33.2418**  
150×150mm



No weapons  
**33.2419**  
150×150mm



No smoking  
**33.2420**  
150×150mm



No entry  
**33.2421**  
150×150mm



Bar  
**33.2422**  
150×150mm



Coffee shop  
**33.2423**  
150×150mm



Restaurant  
**33.2424**  
150×150mm



Shopping area  
**33.2425**  
150×150mm



Information  
**33.2426**  
150×150mm



Hotel reversions  
**33.2427**  
150×150mm



Lost and found  
**33.2428**  
150×150mm



Telephones  
**33.2429**  
150×150mm



Cables and faxes  
**33.2430**  
150×150mm



Postal facility  
**33.2431**  
150×150mm



Banking facility  
**33.2432**  
150×150mm



Taxis  
**33.2433**  
150×150mm



Buses  
**33.2434**  
150×150mm



Trains  
**33.2435**  
150×150mm



Car rental  
**33.2436**  
150×150mm



Air arrivals  
**33.2437**  
150×150mm



Air departures  
**33.2438**  
150×150mm



Connecting flights  
**33.2439**  
150×150mm



Helicopters  
**33.2440**  
150×150mm



Horizontal arrow  
**33.2441**  
150×150mm



Diagonal arrow  
**33.2442**  
150×150mm



Baby change  
**33.2443**  
150×150mm

## Hazard Diamonds, on self adhesive white vinyl

### Hazard Warning Diamonds with Class Numbers



### Hazard Warning Diamonds with Panel for UN Numbers



### Marking of Packages



### Hazardous Substance Symbols



# Training, Safety and Environmental Posters

## **33.1501 Lifeboat Launching**

procedures for launching open/semi - enclosed lifeboats.

## **33.1502 Liferaft Launching**

procedures for launching inflatable liferafts.

## **33.1503 Liferafts Inflatable**

"vital actions" after launching.

## **33.1504 Lifeboat Launching Fully Enclosed**

procedures for launching a fully enclosed lifeboat.

## **33.1505 Lifeboat Launching in a Dangerous Atmosphere**

procedures for launching an enclosed lifeboat in a dangerous atmosphere.

## **33.1506 Enclosed Space Entry**

safety procedures for entering enclosed spaces.

## **33.1507 Enclosed Space Entry Safety Signs**

safety signs used to identify hazardous spaces.

## **33.1508 Oil Spill Prevention**

procedures to reduce the likelihood of oil spills.

## **33.1509 Electric Shock, Drowning, Serious Inj W.H.O**

"vital actions" on discovery of an electric shock, drowning or serious injury casualty.

## **33.1510 Wheel House Poster (Two Sheets)**

as required by IMO Res. A. 601(15) (Pen included)

## **33.1511 Wheel House - Pilot Card**

as required by IMO Res. A. 601(15) (Pen included)

## **33.1512 Emergency Muster List**

as required by IMO Chap. III Reg. 8. (Pen included)

## **33.1513 Accommodation Ladders**

safe rigging and use of accommodation ladders.

## **33.1514 Gangways**

safe rigging and use of gangways.

## **33.1515 Man Overboard**

"vital actions" on discovery of a man overboard.

## **33.1516 Abandon Ship**

"vital actions" preparing to abandon ship

## **33.1517 Enclosed Space and Tank Rescue**

safety procedures for recovering a casualty from a hazardous atmosphere.

## **33.1520 Lifeboat Launching Free Fall**

procedures for launching a free fall lifeboat.

## **33.1521 Towing**

recommended procedures for safe towing operations.

## **33.1522 Bunkering**

safety procedures before, during and after bunkering.

## **33.1523 Oil Spill Actions**

recommended procedures to minimize the effect of an oil spill.

## **33.1524 Hot Work**

recommended safety preparation for hot work.

## **33.1525 Working Aloft or Outboard**

be aware of the risks when working outboard and aloft.

## **33.1526 Pilot - Boarding Arrangement**

in accordance with IMO requirements and IMPA recommendations.

## **33.1527 Fire Extinguisher Types**

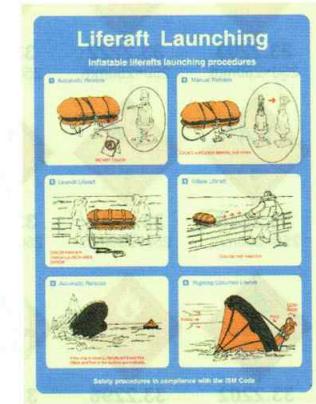
popular types of fire extinguishers and types of fire which they are suited to.

## **33.1528 Personal Protective Equipment**

choosing the correct equipment for your safety.

## **33.1529 Garbage Disposal Plan**

MARPOL 73/78 Annex V



**33.1502**



**33.1508**



**33.1524**

# Training, Safety and Environmental Posters



33.1530

- 33.1530 Craneage Safety**  
300x400mm  
Craneage hand signals and safe working practices.



33.1537

- 33.1531 Fire & Explosion Actions**  
300x400mm  
"vital actions" following a fire or explosion.

- 33.1532 Gas Bottle Safety**  
300x400mm  
safe handling, storage and working practices.

- 33.1533 Welding & Flamecutting**  
300x400mm  
safety procedures during welding operations.

- 33.1534 Light, Shape & Sound Signals**  
300x400mm  
international communication signals.

- 33.1535 Engine & Machinery Room Safety**  
300x400mm  
procedures for safe working practice.

- 33.1536 IMO Safety Signs**  
300x400mm  
IMO safety signs and their various meanings.

- 33.1537 Drugs Warning Notice**  
200x300mm  
advises owners will assist in prosecuting users and traffickers.

- 33.1538 Drugs Warning Notice**  
150x200mm  
advises owners will assist in prosecuting users and traffickers.

- 33.1539 Drugs & Alcohol Warning Notice**  
200x300mm  
advises prohibition of drugs & alcohol and warns owners will prosecute users and traffickers.

- 33.1540 Drugs & Alcohol Warning Notice**  
150x200mm  
advises prohibition of drugs & alcohol and warns owners will prosecute users and traffickers.

- 33.1541 Drugs & Trafficking Warning**  
200x300mm  
advises of the consequences of drug use and trafficking.

- 33.1542 Garbage Don't Throw Overboard**  
300x400mm  
complies with MARPOL Annex V.

- 33.1543 Oil Discharge Prohibited**  
300x200mm  
(CFR151.15 153.203 & 155.450) extract from CFRs regarding oil pollution.

- 33.1544 Food Hygiene**  
300x400mm  
recommended procedures for health and safety in pantries, galleys and freezers.

- 33.1545 Liferafts Davit Launched**  
300x400mm  
procedures for davit launched inflatable liferafts.

- 33.1546 Evacuation Chutes & Slides**  
300x400mm  
abandon ship procedures using vertical chutes or angled slides.

- 33.1547 Self Contained Breathing Apparatus**  
300x400mm  
safety procedures for using apparatus in hazardous conditions.

- 33.1548 Hazard Diamonds**  
300x400mm  
for the carriage of dangerous goods.

- 33.1549 Hazardous Substance Symbols**  
300x400mm

- 33.1550 Hazchem Sign Guide**  
200x300mm

- 33.1557 IMO Fire Control Symbols**  
300x400mm  
to IMO resolution A.654(16)

- 33.1558 SOLAS Poster Life Saving Signals**  
300x400mm  
international search and rescue communication signals based on SOLAS requirements.

- 33.1559 SOLAS CARD (double sided)**  
150x200mm  
international search and rescue communication signals based on SOLAS requirements.

- 33.1564 Mooring**  
300x400mm  
procedures for mooring/unmooring

- 33.1565 Williamson Turn**  
400x300mm  
as required by IMO Res. A. 601(15) (Pen included)

- 33.1566 Pipe Identification**  
300x400mm  
in accordance with ISO 14726:2008



33.1542

# Training, Safety and Environmental Posters

**33.1567 IMO Fire Control Symbols - ISO 17631:2002(E).**  
300x400mm  
IMO fire control symbols in accordance with ISO 17631:2002(E).

**33.1568 Know Your Signs**  
300x400mm  
meanings, colours and examples of graphics used for signage.

**33.1569 Electric Shock & Serious Injury CoSTRA**  
300x400mm  
Basic life support (COSTRA)

**33.1570 Drowning Hypothermia CoSTRA**  
300x400mm  
Basic life support (COSTRA)

**33.1571 Precautions Against Piracy (ISPS)**  
300x400mm  
SOLAS Chapter X 1 - 2

**33.1572 Control of Noise**  
300x400mm  
reference IMO code of noise levels on board ships (exceptions can apply).

**33.1573 Fast Rescue Boat Operation**  
300x400mm  
SOLAS chapter III / MSC circular 1161

**33.1574 Ro-Ro Vessels**  
300x400mm  
Vehicle deck safety operations

**33.1576 Port Security**  
300x400mm

**33.1577 Helicopter Operations**  
300x400mm  
winching

**33.1578 Helicopter Operations**  
300x400mm  
landing on.

**33.1579 International Signalling Flags**  
300x400mm  
single letter signals

**33.1580 Dedicated rescue boat operation**  
300x400mm  
SOLAS chapter III

**33.1581 Vessel Induction & Familiarisation**  
300x400mm  
a requirement of the STCW95 convention.

**33.1582 Hand wash technique**  
300x400mm

**33.1583 Radio Distress Transmitting Procedure inc. Interco Procedure**  
300x400mm

**33.1585 Immersion, Survival or Anti-exposure Suits**  
300x400mm  
SOLAS 74 Chapter III (as amended) and LSA code

**33.1587 Slips, Trips and Falls**  
400x300mm



33.1573



33.1585

## Think Safety Posters

**33.1700 Eye Protection**  
300x400mm      **33.1706 Follow Correct Procedures**  
300x400mm

**33.1701 Fire Prevention**  
300x400mm      **33.1707 Seek Medical Attention**  
300x400mm

**33.1702 Housekeeping**  
300x400mm      **33.1708 Confined Spaces**  
300x400mm

**33.1703 Hazardous Materials**  
300x400mm      **33.1709 Personal Protective Equipment (PPE)**  
300x400mm

**33.1704 Lift Correctly**  
300x400mm      **33.1710 Electrical Protection**  
300x400mm

**33.1705 Slips and Falls**  
300x400mm      **33.1711 Noise Protection**  
300x400mm

### Safety First

Eye Protection

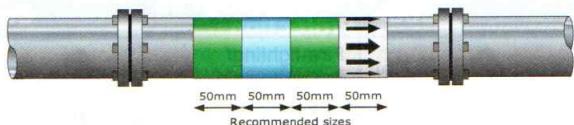


33.1700

**For on-going new poster titles, contact IMPA**

N.B. Unlawful copies of ISM posters endanger crew and passenger safety.

## Pipe Identification Tape, in accordance with ISO 14726



### Installation

Pipelines should be marked at least once in each room; at each penetration point in bulkheads and decks, close to each valve and within a distance of 3 - 5m along the length of the pipeline. Local conditions may require more marking due to pipe bends or the close proximity of pipes for different services.

Prior to application, pipes should be dust and oil free. The tape should overlap by at least 20mm on the 'blind side' of the pipe, however on pipes with an external circumference of over 200mm the tape only needs to cover half the circumference of the pipe.

#### Waste Media

	Ref. Nos.
Black water	33.2140 - 33.2141 - 33.2140
Waste oil/Used oil	33.2140 - 33.2142 - 33.2140
Bilge water	33.2140 - 33.2143 - 33.2140
Exhaust gas	33.2140 - 33.2144 - 33.2140
Grey water	33.2140 - 33.2150 - 33.2140
Sewage - contaminated	33.2140 - 33.2151 - 33.2140

#### Fresh Water

	Ref. Nos.
Fresh water, sanitary	33.2141 - 33.2142 - 33.2141
Potable water	33.2141 - 33.2143 - 33.2141
Distillate	33.2141 - 33.2144 - 33.2141
Gas turbine wash water	33.2141 - 33.2146 - 33.2141
Feed water	33.2141 - 33.2147 - 33.2141
Cooling fresh water	33.2141 - 33.2149 - 33.2141
Chilled water	33.2141 - 33.2150 - 33.2141
Condensate	33.2141 - 33.2151 - 33.2141

#### Sea Water

	Ref. Nos.
Decontamination water	33.2143 - 33.2141 - 33.2143
Sea water, sanitary	33.2143 - 33.2142 - 33.2143
Ballast water	33.2143 - 33.2149 - 33.2143
Cooling sea water	33.2143 - 33.2151 - 33.2143

#### Fuel

	Ref. Nos.
HFO (Heavy fuel oil)	33.2142 - 33.2140 - 33.2142
Aviation fuel	33.2142 - 33.2141 - 33.2142
Biological fuel	33.2142 - 33.2149 - 33.2142
Gas turbine fuel	33.2142 - 33.2150 - 33.2142
MDO (Marine diesel fuel)	33.2142 - 33.2151 - 33.2142

#### Non - flammable gases

	Ref. Nos.
Oxygen	33.2144 - 33.2141 - 33.2144
Inert gas	33.2144 - 33.2142 - 33.2144
Nitrogen	33.2144 - 33.2143 - 33.2144
Refrigerant	33.2144 - 33.2145 - 33.2144
Compressed air - low pressure	33.2144 - 33.2146 - 33.2144
Compressed air - high pressure	33.2144 - 33.2148 - 33.2144
Control air/Regulating air	33.2144 - 33.2149 - 33.2144
Breathing air*	33.2144 - 33.2150 - 33.2144
Breathing gas*	33.2144 - 33.2151 - 33.2144

#### Oil other than fuel

Thermal fluid	
Lub. oil for gas turbines	
Hydraulic fluid	
Lubrication oil for steam turbines	
Lubrication oil for gears	
Lub. oil for int. combustion engines	

#### Ref. Nos.

33.2146 - 33.2141 - 33.2146
33.2146 - 33.2143 - 33.2146
33.2146 - 33.2144 - 33.2146
33.2146 - 33.2147 - 33.2146
33.2146 - 33.2149 - 33.2146
33.2146 - 33.2151 - 33.2146

#### Steam

Steam for heating	
Exhaust steam	
Supply steam	

#### Ref. Nos.

33.2147 - 33.2140 - 33.2147
33.2147 - 33.2150 - 33.2147
33.2147 - 33.2151 - 33.2147

#### Air in ventilation systems

Discharge air	
Mech. supply air - cold	
Natural exhaust air	
Atmospheric air	
Mech. exhaust air	
Decontaminated supply air	
Mech. recirculated air	
Mech. supply air - warm	
Smoke clearance	
Conditioned supply air	
Natural supply air	

#### Ref. Nos.

33.2150 - 33.2141 - 33.2150
33.2150 - 33.2143 - 33.2150
33.2150 - 33.2142 - 33.2150
33.2150 - 33.2143 - 33.2150
33.2150 - 33.2144 - 33.2150
33.2150 - 33.2145 - 33.2150
33.2150 - 33.2146 - 33.2150
33.2150 - 33.2147 - 33.2150
33.2150 - 33.2148 - 33.2150
33.2150 - 33.2149 - 33.2150
33.2150 - 33.2151 - 33.2150

#### Fire fighting/fire protection

Fire - fighting water	
Fire - fighting gas	
Sprinkler water	
Spray water	
Fire - fighting powder	
Fire - fighting foam	

#### Ref. Nos.

33.2148 - 33.2143 - 33.2148
33.2148 - 33.2144 - 33.2148
33.2148 - 33.2146 - 33.2148
33.2148 - 33.2149 - 33.2148
33.2148 - 33.2150 - 33.2148
33.2148 - 33.2151 - 33.2148
33.2148 - 33.2151 - 33.2148

#### Flammable gases

Hydrogen	
Acetylene	
Liquid gas	

#### Ref. Nos.

33.2151 - 33.2141 - 33.2151
33.2151 - 33.2144 - 33.2151
33.2151 - 33.2149 - 33.2151

#### Air and sounding pipes

Waste media	
Fresh water	
Fuel	
Sea water	
Non - flammable gases	
Oil other than fuels	
Steam	
Fire fighting	
Acids & Alkalies	
Ventilation system	
Flammable gases	

#### Ref. Nos.

33.2145 - 33.2141 - 33.2145
33.2145 - 33.2142 - 33.2145
33.2145 - 33.2143 - 33.2145
33.2145 - 33.2144 - 33.2145
33.2145 - 33.2146 - 33.2145
33.2145 - 33.2147 - 33.2145
33.2145 - 33.2148 - 33.2145
33.2145 - 33.2149 - 33.2145
33.2145 - 33.2150 - 33.2145
33.2145 - 33.2151 - 33.2145

#### Flow arrows

Flow arrows	
All pipe tapes on this page are offered as self adhesive rolls 50mm wide by 30m long.	

#### Ref. Nos.

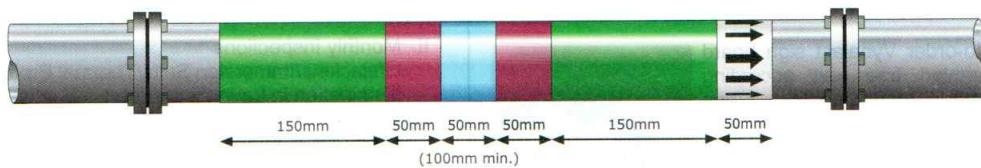
Black		Orange	
Blue		Silver	
Brown		Red	
Green		Violet	
Grey		White	
Maroon		Yellow-ochre	
	33.2140	33.2146	
	33.2141	33.2147	
	33.2142	33.2148	
	33.2143	33.2149	
	33.2144	33.2150	
	33.2145	33.2151	

## Pipe Identification Tape - Multiple Colour Rolls

All pipe tapes on this page are offered as self adhesive rolls, 100 mm x 25 m long.

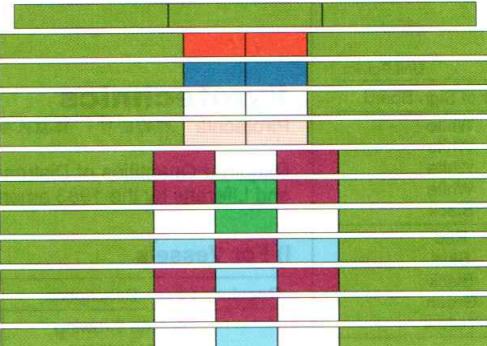
Waste Media	Code	Steam	Code	Fire Fighting/Fire Protection	Code
Black water	33.2100	Steam for heating process	33.2161	Fire-fighting/ fire protection	33.2188
Waste oil	33.2109	Driving steam	33.2162	Fire-fighting gas	33.2189
Bilge water	33.2110	Exhaust steam	33.2163	Sprinkler water	33.2190
Exhaust gas	33.2122	Supply steam	33.2164	Spray water	33.2191
Grey water	33.2123	Air and Sounding Pipes		Fire Fighting/Fire Protection	
Sewage contaminated	33.2124	Waste Media	33.2165	Fire-fighting powder	33.2192
Sea Water	Code	Fresh water	33.2166	Fire-fighting foam	33.2193
Decontamination water	33.2125	Fuel	33.2167	Air in Ventilation Systems	
Sea water, sanitary	33.2126	Sea Water	33.2168	Discharge air	33.2194
Ballast water	33.2127	Non-flammable gases	33.2169	Mechanical supply air, cold	33.2195
Cooling sea water	33.2128	Fuel oil	33.2170	Natural exhaust air	33.2196
Fresh Water	Code	Steam	33.2171	Atmospheric air	33.2197
Fresh water	33.2129	Fire fighting	33.2172	Mechanical exhaust air	33.2198
Fresh water, sanitary	33.2131	Acids, Alkalies	33.2173	Decontaminated supply air	33.2199
Potable water	33.2132	Ventilation system	33.2174	Mechanical recirculated air	33.4901
Distillate	33.2133	Flammable gases	33.2175	Mechanical supply air, warm	33.4902
Gas-turbine wash water	33.2134	Oils other than Fuels		Smoke clearance	33.4903
Feed water	33.2135	Oils other than fuels	33.2176	Conditioned supply air	33.4904
Cooling fresh water	33.2136	Thermal fluid	33.2177	Natural supply air	33.4905
Chilled water	33.2137	Lubrication oil for gas turbines	33.2178	Flammable Gases	
Condensate	33.2138	Hydraulic fluid	33.2179	Flammable gases	33.4906
Non-flammable Gases	Code	Lubrication oil for steam turbine	33.2180	Hydrogen	33.4907
Non-flammable gases	33.2139	Lubrication oil for gears	33.2181	Acetylene	33.4908
Oxygen	33.2152	Lubrication oil for internal combustion engine	33.2182	Liquid gas	33.4909
Inert gas	33.2153	Fuel			
Nitrogen	33.2154	Heavy fuel oil (HFO)	33.2183		
Refrigerant	33.2155	Aviation fuel	33.2184		
Compressed air-low pressure	33.2156	Biological fuel	33.2185		
Compressed air-high pressure	33.2157	Gas-turbine fuel	33.2186		
Control air/ regulating air	33.2158	Marine diesel oil (MDO)	33.2187		
Breathing air	33.2159				
Breathing gas	33.2160				

## Pipe Identification Tape, in accordance with BS 1710



### Water

- Sea, river or untreated
- Fire mains
- Drinking
- Cooling (primary)
- Hydraulic power
- Boiler feed
- Condensate
- Chilled
- Heating over 100°C
- Heating under 100°C
- Hot
- Cold

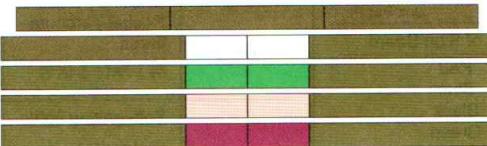


**Use tapes in this sequence:**

- 33.2101 33.2101 33.2101
- 33.2101 33.2111 33.2111 33.2101
- 33.2101 33.2113 33.2113 33.2101
- 33.2101 33.2117 33.2117 33.2101
- 33.2101 33.2116 33.2116 33.2101
- 33.2101 33.2114 33.2117 33.2114 33.2101
- 33.2101 33.2114 33.2115 33.2114 33.2101
- 33.2101 33.2117 33.2115 33.2117 33.2101
- 33.2101 33.2118 33.2114 33.2118 33.2101
- 33.2101 33.2114 33.2118 33.2114 33.2101
- 33.2101 33.2117 33.2114 33.2117 33.2101
- 33.2101 33.2117 33.2118 33.2117 33.2101

### Oils

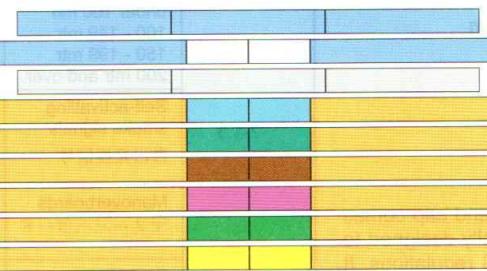
- Furnace
- Diesel
- Lubricating
- Hydraulic power
- Transformer



- 33.2103 - 33.2103 33.2103
- 33.2103 33.2117 33.2117 33.2103
- 33.2103 33.2115 33.2115 33.2103
- 33.2103 33.2116 33.2116 33.2103
- 33.2103 33.2114 33.2114 33.2103

### Gases

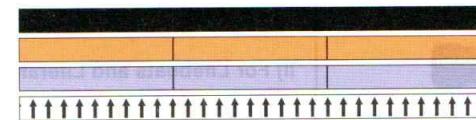
- Compressed air
- Vacuum
- Steam
- Refrigerant 12
- Refrigerant 22
- Refrigerant 502
- Anhydrous ammonia
- Other refrigerants
- Natural gas



- 33.2106 33.2106 33.2106
- 33.2106 33.2117 33.2117 33.2106
- 33.2102 33.2102 33.2102
- 33.2104 33.2118 33.2118 33.2104
- 33.2104 33.2119 33.2119 33.2104
- 33.2104 33.2120 33.2120 33.2104
- 33.2104 33.2121 33.2121 33.2104
- 33.2104 33.2115 33.2115 33.2104
- 33.2104 33.2112 33.2112 33.2104

### Others

- Drainage
- Elec. conduits and vent. ducts
- Acids and alkalis
- Flow direction arrows



- 33.2107 33.2107 33.2107
- 33.2108 33.2108 33.2108
- 33.2105 33.2105 33.2105
- 33.2130

### 150mm Tape

### Reference

Green	33.2101
Silver/Grey	33.2102
Brown	33.2103
Yellow ochre	33.2104
Violet	33.2105
Light blue	33.2106
Black	33.2107
Orange	33.2108

### 50mm Tape

### Reference

Red	33.2111
Primrose	33.2112
Auxiliary blue	33.2113
Crimson	33.2114
Emerald green	33.2115
Salmon pink	33.2116
White	33.2117
Blue	33.2118

### 50mm Tape

### Reference

Sea green	33.2119
Golden brown	33.2120
Dark mauve	33.2121
Flow arrows	33.2130

All pipe tapes on this page are offered as self adhesive rolls 30m long.

## Vynalast Engraved Text Signs

## Señales de Texto Grabado Vynalast バイナラスト彫刻文字サイン Vynalast 刻字标牌

A make-to-order Vynalast sign board with engraved free text according to customer's requirements. When ordering provide text content and sign dimensions (vertical x horizontal in mm). The amount of text and sign size will determine the font size.



## **Vinalast Engraved Text Signs**

		Unit Per Pcs.
CODE	Colour of Text	Colour of Sign Board
33 89 01	Red	White
02	Blue	White
03	Black	White
04	Green	White
05	Yellow	Black
33 89 11	White	Red
12	White	Blue
13	White	Black
14	White	Green
15	Black	Yellow

## **Vynalast Photoluminescent Engraved Text Signs**

		Unit Per Pcs.
CODE	Colour of Text	Colour of Sign Board
33 89 21	White	Red
22	White	Blue
23	White	Black
24	White	Green
25	Black	Yellow

*How to order: 33 - 89 - XX*

TEXT CONTENT, DIMENSIONS of BOARD in mm

## **Fire Plan Holders**

Portadocumentos de Extinción

消火計画書ホルダー 消防計劃書袋

This UPVC holder with weatherproof screw end cap comes complete with fixings and has been specifically designed to comply with the requirements of the SOLAS regulations. It has a length of 1 m and OD of 110 mm enabling Fire Plans up to size A0 to be accommodated without the need to fold the plan.



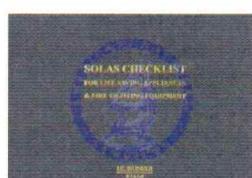
33 26 13 Fire Plan Holder 110 mm dia x 1 mtr length Pcs.

## SOLAS Check List

## Lisa de Inspección de SOLAS

SOLAS 檢査表

As required by SOLAS Chapter III Regulation 20.7 and 36.1 (96/98 amendments), all vessels constructed before, on or after 1 July 1998, should carry SOLAS Check List to provide a record of monthly inspections of all lifesaving appliances.



## Contents

- I. Weekly Inspections  
Lifeboats/Rescue Boats/Liferafts/General Alarm
  - II. Monthly Inspections  
Lifejackets/Immersion Suits/Thermal Protective Aids / Illumination in Launching Area/Lifeboats/Rescue Boats/ Liferafts/EPIRBs, SARTs, & Radios/Pyrotechnics/ Lifebuoys & Attachments

**33 26 33** SOLAS check list Vol.

# Pyrotechnics

Pirotecnia 救難信号 拯救灾难信号

Required Quantities of Distress Flares for Vessels, Lifeboats and Liferafts by the 1983 amendment to SOLAS 1974.

#### I) For Vessels

Regulation	Description	Required Quantity
17 & 49	Line throwing appliances 救命索引発射器	Includes no less than 4 projectiles, each capable of carrying the line at least 230 mtr.
6 - 3	Rocket parachute flares 落下傘付き信号	No less than 12 pcs must be stowed on or near the navigation bridge
7-1.3	<p>Self-igniting lights 自己点火灯</p> <p>Ship's length under 100 mtr 100 - 149 mtr 150 - 199 mtr 200 mtr and over</p>	<p>No less than one half of the total number of lifebuoys</p> <p>Quantity</p> <p>4 pcs. 5 pcs. 6 pcs. 7 pcs.</p>
	Self-activating smoke signals 自己発煙信号	No less than two of the total numbers of lifebuoys
	Manoverboards マノーバーボード	Substitute for above self-activating smoke signals, combined with self-igniting light
	Rocket star signals 火せん	6 pcs

## **II) For Lifeboats and Liferafts**

Regulation	Description	Required Quantity
38 - 5.1 and 41 - 8	Rocket parachute flares 落下傘付き信号	4 pcs.
	Hand flares 手用信号炎	6 pcs.
	Buoyant smoke signals 発煙浮信号	2 pcs.

### Major Pyrotechnics Comparison Table

A full range of distress signals are available from several manufacturers as listed below, under the SOLAS '83 regulations which conform to maritime approval authorities throughout the world.

When ordering, please specify the following points:

- |                      |                         |                         |                 |
|----------------------|-------------------------|-------------------------|-----------------|
| 1. CODE number ..... | 33 03 01                | 4. Brand.....           | Linethrower 250 |
| 2. Description.....  | Line throwing apparatus | 5. Classification ..... | M.E.D           |
| 3. Name of Mfr.....  | PainsWessex             | 6. Quantity .....       | Set             |

Description	PainsWessex (U.K.)	Comet (U.K.)	Hansson PyroTech AB (Sweden)	Koryo Pyrotechnics (South Korea)	Koa (Japan)	Kokusai (Japan)
Approval classification society	All major classification	All major classification	MED/U.S.C.G. B.V./D.N.V.	KR HELLAS	H.K.	H.K./MED/Z.C.
CODE (Unit)	33 03 01 (Set)	33 13 51 (Set)	33 13 01 (Set)	33 13 02 (Set)	33 03 51 (Set) KM-2S 33 13 47 (Set) KM-5E	33 03 74 (Set)
Line throwing apparatus 救命素発射器	Linethrower 250 No. 9502000	Linethrower 250 No. 9160400	IKAROS line thrower No. 346100	Line-throwing appliance K-19	Line-throwing appliance	Line-throwing appliance RL-2
CODE (Unit)	33 03 11 (Pc.)	33 13 61 (Pc.)	33 13 11 (Pc.)	33 13 12 (Pc.)	33 03 54 (6's) 33 03 55 (4's) 33 03 56 (2's)	33 03 76 (2's) 33 03 77 (4's) 33 03 78 (6's)
Rocket parachute flares 落下傘付き信号	Para red rocket MK8A No. 9506720	Parachute rocket red No. 9163100	IKAROS parachute rocket red No. 340100	Rocket parachute flare K-31	Rocket parachute flare KM-55	Rocket parachute flare KP-16
CODE (Unit)	33 03 14 (Pc.)	33 13 64 (Pc.)	33 13 14 (Pc.)	33 13 15 (6's)	33 03 58 (4's) 33 03 59 (6's)	33 03 79 (4's) 33 03 80 (6's)
Hand flares 手用信号炎	Red hand flare MK8 No. 9529000	Red handflare No. 9162800	IKAROs hand flare red No. 341500	Red hand flare K-33	Hand flare KM35	Red hand flare KF-8
CODE (Unit)	-	-	-	-	33 03 60 (2's) 33 03 61 (4's) 33 03 62 (6's)	33 03 82 (2's) 33 03 83 (4's) 33 03 84 (6's)
Rocker star signals 火せん	-	-	-	-	Rocket star signal KM-25	Rocket star KR-10
CODE (Unit)	33 03 21 (Set)	33 13 71 (Set)	33 13 21 (Set)	33 13 22 (Pc.)		
Manoverboards マノーバーボード	Manoverboard MK9 No. 9537800	Light and smoke signal No. 9181600	Man Overboard light smoke signal No. 345105	Light-smoke signal K-52	-	-
CODE (Unit)	33 03 23 (Set) 33 03 24 (Pc.)	33 13 73 (Set)	33 13 23 (Set)	33 13 24 (Pc.)	33 03 64 (Pc.)	33 03 89 (Pc.)
Self-activating smoke signals 自己発煙信号	Buoysmoke MK9 No. 9538350	15 minute smoke signal No. 9181700	MOB compact light and smoke signal No. 345305	Self-activating smoke signal K-34	Self-activating smoke signal KM83	Self-activating smoke signal KS-6
CODE (Unit)	-	-	-	33 13 29 (Pc.)	33 03 70 (Pc.)	33 03 86 (Set) 33 03 87 (Pc.)
Self-igniting lights 自己点火灯	-	-	-	Self-igniting light K-36	Self-igniting light KM79S	Self-igniting light KL-7
CODE (Unit)	33 03 31 (Pc.)	33 13 81 (Pc.)	33 13 31 (Pc.)	33 13 32 (Pc.)	33 03 66 (2's)	33 03 91 (Pc.)
Buoyant smoke signals 発煙浮信号	Lifesmoke MK9 No. 9537000	Smoke signal orange No. 9192000	Buoyant smoke orange No. 342130	Buoyant smoke signal K-45	Buoyant smoke signal KM46S	Buoyant smoke signal KB-8

## Line Throwing Apparatuses

Lanzacabos 救命索発射器 抛绳器

Self-contained rocket-powered line-throwing unit designed for ship-to-ship and ship-to-shore operations as well as for the rescue of people in distress at sea.



One line throwing apparatus is required to be equipped, which includes not less than 4 projectiles each capable of carrying the line at least 230 mtr in calm weather.

### Line Throwing Apparatus Complete

CODE	Brand	Model	Unit
33 03 01	PainsWessex Linethrower 250, comprising body + Line (9500700) and rocket (9500800)	9502000	Pc.
33 03 09	PainsWessex Linethrower 250, with 4 unit complete	950200×4	Set
33 13 51	Comet Linethrower 250, comprising body + Line (9160500) and rocket (9162700)	9160400	Pc.
33 13 56	Comet Linethrower 250, with 4 unit complete	9160400×4	Set
33 03 51	Koa Kako, with 4 projectiles (1 body + 4 line + 4 rockets)	KM-2S	Set
33 13 47	Koa Kako, with 4 projectiles Electric ignition type (1 body + 4 line + 4 rockets)	KM-5E	Set
33 03 74	Kokusai, with 4 projectiles (1 body + 4 line + 4 rockets)	RL-2	Set
33 13 01	Ikaros by Hansson Pyrotech 1 body + 1 line + 1 rocket	346100	Pc.
33 13 09	Ikaros by Hansson Pyrotech 4 unit complete	346100×4	Set
33 13 02	Koryo Pyrotechnics with 4 projectiles	K-19	Set

### Spare Kits for Linethrower

CODE	Description	Model	Unit
For PainsWessex Linethrower 250			
33 03 12	Linethrower 250 body + line	9500700	Set
33 03 13	Linethrower rocket	9500800	Pc.
For Comet Linethrower 250			
33 13 52	Linethrower 250 body + line	9160500	Set
33 13 53	Linethrower rocket	9162700	Pc.
For Hansson Pyrotech Linethrower 346100			
33 13 54	Ikaros Linethrower body + line	346000	Set
33 13 55	Linethrower rocket	346200	Pc.

### For Koa Kako Line Throwing Apparatus

33 03 52	Spare 4 rockets & 5 cartridges for KM2S	Set
33 13 48	Spare 4 rockets & 1 ignitor for KM5E	Set

### For Kokusai Line Throwing Apparatus

33 13 57	Spare 4 rockets for RL-2	Set
----------	--------------------------	-----

## Rocket Parachute Flares

Cohetes con Paracaídas 落下傘付信号 降落伞烟雾信号

For use in day and night long range distress signal situations.



1) Colour of light	Red
2) Duration of burn time	40 seconds minimum
3) Light intensity	30,000 candela minimum
4) Height	300 mtr
5) Ignition	Base pull-wire igniter
6) Temperature operating range	-30°C to 65°C
7) Temperature storage	-30°C to 75°C
8) Weight	270 grm

CODE	Model	Brand	Unit
33 03 11	MK8A (9506720)	PainsWessex	Pc.
33 03 54 55 56	KM55	Koa (HK)	6's/set 4's/set 2's/set
33 03 76 77 78	KP-16	Kokusai	2's/set 4's/set 6's/set
33 13 11	340100	Hansson PyoTech AB	Pc.
33 13 12	K-31	Koryo Pyrotechnics	"
33 13 61	9163100	Comet	"

## Hand Flares

Bengalas de Mano 手用信号炎 红火号



For use in day and night. Short range distress signal used to pinpoint position.

1) Colour of light	Red
2) Duration of burn time	60 seconds minimum
3) Light intensity	15,000 candela minimum
4) Ignition	Top pull-wire igniter
5) Temperature operating range	-30°C to 65°C
6) Temperature storage range	-30°C to 75°C
7) Weight	160 grm

CODE	Model	Brand	Unit
33 03 14	MK8 (9529000)	PainsWessex	Pc.
33 03 58 59	KM35	Koa (HK)	4's/set 6's/set
33 03 79 80	KF-8	Kokusai	4's/set 6's/set
33 13 14	IKAROS 341500	Hansson PyroTech AB	Pc.
33 13 15	K-33	Koryo Pyrotechnics	6's/set
33 13 64	9162800	Comet	Pc.

## Rocket Star Signals

Señales de Cohete Estrella 火せん 红星信号



Complementary distress signal to the parachute rocket.

CODE	Model	Brand	Unit
33 03 60 61 62	KM-25	Koa	2's/set 4's/set 6's/set
33 03 82 83 84	KR-10	Kokusai	2's/set 4's/set 6's/set

## Manoverboards

Manoverboards (Hombre al Aqua)

マノーバーボード 人员落水信号

Combined light and smoke lifebuoy marker. Day and night signal which is attached to a lifebuoy (not supplied) and used in an emergency to mark position of a manoverboard.



1) Colour of smoke	Dense orange smoke
2) Duration of burn time	15 minutes
3) Light intensity and duration	Minimum 2 candela for 2 hours
4) Ignition	Pull-wire igniter
5) Temperature operation range	-1°C to 30°C
6) Temperature storage range	-30°C to 75°C
7) Weight	3.5 kg

CODE	Model	Brand	Bracket	Unit
33 03 21	MK9 (9537800)	PainsWessex	with	Set
33 13 21	345105	Hansson PyroTech AB	with	Set
33 13 22	K-52	Koryo Pyrotechnics	without	Pc.
33 13 71	9181600	Comet	with	Set

## Lifebuoy Self-activating Smoke Signals

Boya Salvavidas con Señales de Humo y Activación Automática  
自己発煙信号 組合烟灯

A daylight smoke marker attached to the lifebuoy by means of a lanyard. Identical to manoverboard, but without the lighting system.



1) Colour of smoke	Dense orange smoke
2) Duration of burn time	15 minutes
3) Light intensity and duration	Minimum 2 candela for 2 hours
4) Ignition	Pull-wire igniter
5) Temperature operation range	-1°C to 30°C
6) Temperature storage range	-30°C to 75°C
7) Weight	3.5 kg

CODE	Model	Brand	Bracket	Unit
33 03 23	BuoySmoke MK9 (9356350)	PainsWessex	with	Set
24			without	Pc.
33 03 64	KM-83	Koa		Pc.
33 03 89	KS-6	Kokusai		Pc.
33 13 23	345305	Hansson PyroTech AB	with	Set
33 13 24	K-34	Koryo Pyrotechnics	without	Pc.
33 13 73	9181700	Comet	with	Set

## Lifebuoy Self-igniting Lights

Luz Flotante para Aro Salvavidas 自己点火灯 救生自燃烟灯

For use with all externally mounted lifebuoys. All lights provide the 2 cd output called for by IMO and meet the SOLAS' 83 amendments requirement of 2 hours duration.



CODE	Model	Brand	Unit
33 03 29	Lifebuoy light L160 (Lithium battery)	Daniamant	Pc.
33 03 30	Lifebuoy light L161 Intrinsicly safe (Zone 0, 1, 2)		Pc.
33 13 78	Lifebuoy light L90 LED with battery, 63-400A		Pc.
33 13 79	Lifebuoy light L90 LED without battery, 63-401A		Pc.
33 13 80	Bracket for lifebuoy light L90, 63-4003		Pc.
33 03 70	KM79S HK/MED approved	Koa	Pc.
33 03 75	KM80E Intrinsicly safe	Koa	Pc.
33 03 86	KL-7 with bracket	Kokusai	Set
87	KL-7 without bracket		Pc.
33 13 29	K-36	Koryo Pyrotechnics	Pc.

## Buoyant Smoke Signals

Señales de Humo 発煙浮信号 漂浮烟雾信号



For use in day distress signal situations and to mark the position during a rescue operation.

1) Colour of light	Dense orange smoke
2) Duration of burn time	3 minutes minimum
3) Ignition	Pull-wire igniter with a 2 second safety delay
4) Temperature operation range	-1°C to 30°C
5) Temperature storage range	-30°C to 75°C
6) Weight	370 grm

CODE	Model	Brand	Unit
33 03 31	MK9 (9537000)	PainsWessex	Pc.
33 03 66	KM46S	Koa (HK)	2's/Set
33 03 91	KB-8	Kokusai	Pc.
33 13 31	342130	Hansson PyroTech AB	"
33 13 32	K-45	Koryo Pyrotechnics	"
33 13 81	9192000	Comet	"

## Ship's Lifeboat and Liferaft Distress Kits

Equipo de Salvavidas para Botes 救命艇・救命いかだ用救難信号セット 救生艇和救生筏用救生信号箱



Designed to be carried on a ship's lifeboats and liferafts. Consists of 4 pcs of rocket parachute flares, 6 pcs of hand flares and 2 pcs of buoyant smoke signals are contained in a watertight bottle.

Unit Per Set

CODE	Brand	CODE	Brand
33 03 36	PainsWessex	33 13 36	Hansson PyroTech AB
71	Koa	86	Comet
96	Kokusai		

## Ship's Bridge Distress Kits

Equipo de Señales para Puente 本船用救難信号セット 驾驶台遇难信号



Designed to be carried on a ship's bridge. Kits consists of 12 pcs of rocket parachute flares contained in a watertight bottle.

Unit Per Set

CODE	Brand	CODE	Brand
33 03 37	PainsWessex	33 13 37	Hansson PyroTech AB
33 03 98	Kokusai	33 13 87	Comet

## Pneumatic Line Thrower PLT® Rescue 230

Lanzador Neumático de Cable Salvavidas  
圧縮空気救命索発射機 气动抛绳器

The PLT® Rescue 230 meets the IMO SOLAS regulation 74/96. There is no expiry-date which means it will stay on board for the lifetime of your vessel. A stand-by tool for rescue purposes. The training projectile allows easy live training and line transfer at no cost. Launching unit with air cylinder holds sufficient air for 4 - 6 launches before refilling from a high pressure compressor (200 – 300 bars) or a diving cylinder. Holds Type approval, CCS approval, USCG approval and MED B&D certificate from DNV. NATO no.1095-25-142-3704.



Technical Data		Contents
Range	: Min. 230 mtr	4 Rescue projectiles
Line strength	: Min. 2,000 N	1 Training projectile
Recoil	: Max. 5,400 N	1 Loading device
Flight time	: 4 sec.	1 Users manual, video/CD

33 13 45	Line thrower, pneumatic, PLT® Rescue 230	Set
----------	--	-----

Name of Mfr.: Restech Norway AS

## Line Throwing Appliance Electric Ignition Type

Lanzador de Cable Salvavidas con Chispa Eléctrica  
電気点火式救命索発射器 电动抛绳器

Designed for portable, compact, safe and ease of operation, and projects a line to a normal range 230 mtr in calm weather condition, conforms to LSA code and IMO Resolution M.S.C. 81 (70).



It provides a new ignition system which can be fired by a self-contained electric ignition mechanism. The line-throwing device can be used from ship to ship or ship to sea shore and also is suitable for rescue operation at sea and on land. Effective period of rockets and igniter: 3 years and 6 months. The spares (Rockets, igniter and liners) are available on request.

### Composition

- 1 Plastic casing with an igniter
- 4 Rockets
- 4 Lines
- 1 Container for rocket and lines

33 13 47	Line throwing appliance, electric ignition type, Koa Kako KM5E	Set
48	Spre 4 rockets & 1 ignitor for KM5E	Set

## Portable Oxygen Apparatus

Aparatos Portátiles de Oxígeno  
自動人工蘇生器 便携式人工呼吸器

Installation required by the Medical First Aid Guide (MFAG) for use in accidents involving noxious gases. These units may be used as a resuscitator, aspirator and oxygen inhaler. Oxygen capacity for resuscitator: 50 % – 40 minutes (for adult) per 2 ltr cylinder. Cylinders are of a 2 ltr capacity. 1 or 2 cylinder units are available.



### Oxygen Consumption for Inhaler

Flow/Hour	1 Cylinder	2 Cylinders
0.5 ltr	8 H 30'	17H 00'
1.0 "	4 H 20'	8H 40'
2.0 "	2 H 10'	4H 20'
3.0 "	1 H 25'	2H 50'
4.0 "	1 H 00'	2H 00'
5.0 "	50'	1H 40'

Unit Per Set		
CODE	Capacity	Gross Weight
33 04 01 02	2 ltr x 1 cylinder, complete set Spare cylinder, 2 ltr	14 kg -
33 04 03	2 ltr x 2 cylinders, complete set	15.5 kg

## Self-contained Breathing Apparatus

Equipos de Respiración Autonomos  
自藏式呼吸器 空气呼吸器



Required by the Medical First Aid Guide (MFAG) for use in accidents involving dangerous gases where a portable oxygen apparatus is not available. A self-contained breathing apparatus is also required by 1983 SOLAS amendments Chapter III Regulation 17. Suitable for fire fighting, rescue work, inspection and maintenance of equipment and other related activities, especially on board a ship.

Unit Per Set					
CODE	33 04 16	33 04 21	33 04 25	33 04 23	33 04 27
Model	KS-8C	FireHAWK M7 Air Mask	AirGofix Com	PSS 3000 with FPS 7000	PAS Lite
Effective Duration	30 min.	30 min.	45 min.	45 min.	30 min.
Cylinder Volume	8 ltr	8.4 ltr	6.8 ltr	6.8 ltr	6.0 ltr
Pressure	14.7 MPa	316 kgf/cm²	300 bar	300 bar Carbon Composite	200 bar Steel
Air Capacity	1,200 ltr	1,260 ltr	1,860 ltr	1,860 ltr	1,200 Ltr
Total Weight	15.6 kg	10.0 kg	10.5 kg	10.3 kg	13.0 kg
Approvals	NFPA 1981 and 1982 – 2007 edition, NIOSH 42 CFR, Part 84 CBRN certified	EN 137:2006, type 2 requirements (incl. flame engulfment test)	SOLAS, MED B & D Certified, EN 137:2006 Type 2	SOLAS, MED B & D Certified, EN 137:2006 Type 2	SOLAS, MED B & D Certified, EN 137:2006 Type 2
	Directive 94/9/EC [ATEX] BVS 05 H 027 I M1 II 1G IIC T6 -30°C<Ta<+60°C II 1D				

(to be continued)

CODE	33 04 16	33 04 21	33 04 25	33 04 23	33 04 27	Unit Per Set
Part No.	-	Request Assemble-To-Order Matrix	10086572 + D4080801 + 39B2368UL	3358906 + R56200 + 3366787	3357774 + R54450 + 3366788 Grey	
Name of Mfr.	Air Water Safety Service	MSA The Safety Company		Draeger		
Air Capacity	= Cylinder volume × Charging pressure = 8 Ltr × 150 kgf/cm <sup>2</sup> = 6 Ltr × 200 Bar = 1,200 Litre = 3-mins					

### Air Filled Spare Cylinders



Unit Per Pcs.

CODE	33 04 17	33 04 22	33 04 26	33 04 24	33 04 18
For Model	KS-8C	FireHAWK M7 Air Mask	AirGofix Com	PSS3000	PAS Lite
Cylinder Volume	8 ltr	8.4 ltr	6.8 ltr	6.8 ltr	6.0 later
Pressure	14.7 MPa	150 kgf/cm <sup>2</sup>	300 bar	300 bar	200 bar
Part No.	-	10128111-SP	10175092	3366787	3366788

### Communication Systems for SCBA

Sistema de Comunicación para SCBA

自藏式呼吸具用コミュニケーションシステム

SCBA用通訊系統

By simultaneous use of a SCBA and a radio, communication is getting difficult in a noisiness area.



Communication system exist of a combined microphone – speaker, wired to a radio connector with a PTT(Push to Talk) knob, connected to the full face mask by a radio-exhalation valve adapter. Or to be used without full face mask.

Loud and clear communication is possible, even in combination with a full face mask. Other option is to use it in a gastight suit.

Connection with a wide range of brand and types of radios is possible.



Positive Pressure Version



Normal Pressure Version

CODE	Description	Manufacturer	Part No.
33 04 28	Draeger FPS-COM 5000 with FPS 7000 Mask (without radio connection and earphone)**	Draeger	R62700
33 04 29	Radio-exhalation valve, positive pressure version	MSA	D2055720
33 04 30	Radio-exhalation valve, normal pressure version		D2055761

\*\* Options for Push-To-Talk radio connector available upon request

### Emergency Escape Breathing Devices

Equipos de Respiración en Caso de Evacuación de Emergencia  
非常脱出用呼吸具 救生呼吸器

Required by SOLAS 1974 in regulation 13 revised in 2000, all ships shall carry at least two Emergency Escape Breathing Devices (E.E.B.D.) within accommodation spaces for providing respiratory protection in toxic and oxygen deficient atmospheres. On all ships, within the machinery spaces, E.E.B.D. shall be situated ready for use at easily visible places, which can be reached quickly and easily at any time in the event of fire. The location of E.E.B.D. shall take into account the layout of the machinery space and the number of persons normally working in the spaces. The E.E.B.D. should have at least a duration of service of 10 minutes and should include a hood or full face piece to protect the eyes, nose and mouth during escape, complying with the Fire Safety Systems (F.S.S.) Code. Hoods and face pieces should be considered flame resistant and include a clear window for viewing. An unactivated E.E.B.D. should be capable of being carried hands-free.



#### Specifications

Mfr.	MSA The Safety Company	Interspiro (Survitec)	Draeger		Scott Safety
Duration of Service	15 min.	15 min.	10 min.	15 min.	15 min.
Model	S-Cap Air	Spiroscape	Saver CF-10	Saver CF-15	ELSA 15-B
Part No.	10032181 (with filled cylinder)	731491 (with filled cylinder)	3363824 (Air flow: Hood 35-37 ltr/min.)	3363826 (Air flow: Hood 35-37 ltr/min.)	1047372 (with filled cylinder)
Approval	EN 1146	EU: 89/686/EEC/ PPE 2014/90/EU, (EU)2022/ 1157, EN 1146 ISO23269-1	EN1146:2005, ISO 23269-1:2008, ISO 23269-4:2011, SOLAS Chapter II-2, Marine Equipment Directive MED module B & D.	US: NIOSH 42 CFR Part 84	EC Type examination (BSI/A.1/3.41/ 71236), Product Quality Assurance (BSI/MED/ PC/90907), EN1146:2005, ISO23269- 1:2008, ISO SOLAS 74/2014 Reg. II-2/13 FSS code3 IMO Res.MSC. 98(73) IMO MSC/Circ.849

CODE	Description		Unit
<b>Emergency Escape Breathing Device w/Air Cylinder</b>			
33 04 35	Duration of Service	10 min.	Set
33 04 38	"	15 min	"
<b>Spare Cylinder for E.E.B.D.</b>			
33 04 36	Duration of Service	10 min.	Pc.
33 04 39	"	15 min	"

### Emergency Escape Breathing Devices Single Use Type

Respirador de Escape de Emergencia del Tipo de Uso  
使い切りタイプ非常脱出用呼吸器 使用型紧急逃生呼吸器

The M-20.2 is a self-contained, closed-circuit breathing apparatus for single use which do not require to refill the oxygen. The compressed oxygen delivery system activates

automatically when the device is removed from the clear case. The demand regulator allows the user to inhale immediately from the device when donned and provides up to 100 liters of oxygen flow during high work rates.

The M-20.2 can be either belt-worn or stored and is used in multiple markets to protect the user during escape from toxic, or oxygen-deficient atmospheres.



#### Specification

Oxygen Delivery	Automatic on, demand regulated
Performance Duration	10 minutes - NIOSH Approved 15 minutes - CE Marked
Donning Time	Less than 10 seconds
Service Life	15 years
Storage Temperature	-12.2 to + 65°C
Approvals	MED, CE/EN13794, NIOSH, NK, HK
Weight (kg)	1.4
Dimensions (mm)	69 x 167 x 155

33 04 43	Emergency Escape Breathing Device, Single Use Type	Set
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## Airline Trolley

Lineas Aéreas Universales  
ユニバーサル・エアーライン  
萬能軟管（氣體用）



Uninterrupted air supply is provided by the trolley-mounted cylinder(s) to the wearer via a hose reel. As the air-trolley can be easily re-located and therefore positioned in a safe zone which is in close proximity to working area, the user need only wear a lightweight harness during operation. This allows the wearer a greater freedom of movement, and less stress and fatigue than they would be subjected to if wearing a conventional self contained breathing apparatus unit.

The air-trolley is able to accommodate up to four compressed air cylinders of up to 12 litres in capacity and is constructed from an anti-static powder coated steel material. The trolley hose reel connector is protected with a cover to minimize inadvertent damage being caused. The system incorporates a safety pressure relief valve and the pressure reducer is shrouded in a protective plate for additional safety.

Application: Chemical tank cleaning, toxic spillages or certain tasks when working on offshore installations

Dräger PAS AirPack 1  
Trolley, Reducer Hose Reel & Hose

Unit Per Set

CODE	33 04 41
Model	33 52 228
Input Pressure Cylinder	200 or 300 bar
Input Pressure Airline	6 – 10 bar
Normal 1st Stage Output Pressure	8 bar
1st Stage Output Flow	>600 ltr/min
Whistle Sound Level	>90 dBA
Standard Length of air Hose	50 meters (with options of extension hose of 50 mtr)
Size, excluding cylinder (H×W×D)	1,019 × 465 × 60 mm
Weight	40.5 kg

## Breathing Air Quality Tester

Probador de la calidad del aire de respiración  
呼吸器用空気品質検査器 呼吸空气质量测试仪

Used to determine the quality of respiratory air in high-pressure compressor or a compressed air cylinder. The application of the test system ensures the reliable testing in accordance with the purification standard EN 12021. This quick check guarantees a reliable measuring result and provides information regarding the level of contamination within five minutes. In compliance to IMO MSC Circular.1/Circ.1432 on Revised guidelines for maintenance and inspection of fire protection systems and appliance for air quality of breathing apparatus air recharging systems.



Unit Per Set

CODE	33 04 46
Model	Aerotest Simulant HP
Pressure Reducer Inlet	External threads G5/8 – 300 bar (hand-tightened connection) 300 bar
Max. Pressure Pressure Gauge Outlet	0 – 400 bar 9 mm plug-in connector for measuring device
Over Pressure Value Adapter (Inlet & Outlet)	Set to 10 bar Internal threads G 5/8 – 200&300 bar for pressure reducer
Measuring Device Flow	0.2 L/min and 4.0 L/min
Size L × W × H mm	350 × 300 × 85
Weight kg	Approx. 3.5
Name of Mfr.: Draeger	

Dräger Detection Tube holder included

Dräger Tubes	Standard Range of Measurement	Order Code
Description	(20 Deg C, 1,013 hPa)	
Carbon Dioxide 100/a-P	100-3,000 ppm	6728521
Carbon Monoxide 5/a-P	5-150 ppm	6728511
Water Vapour 20/a-P	20-250 mg H <sub>2</sub> O/m <sup>3</sup>	8103061
Oil Impactor	Oil mist	8103560
Adapter for the Oil-Impactor		8103557

## Breathing Air Compressors

Equipos Respiración de Emergencia  
エアー・コンプレッサー 呼吸空气压缩机



Used to fill the air cylinders of breathing apparatuses.

Unit Per Set

CODE	33 04 67	33 04 68	33 04 69
Model	ICON LSE 100 ET	SMART 125 EM	SMART 235 ET
Charging Rate	100 ltr/min. (6m <sup>3</sup> /h, 3.5 cfm)	125 ltr/min. (7.5 m <sup>3</sup> /h, 4.4 cfm)	235 ltr/min. (14.1 m <sup>3</sup> /h, 8.3 cfm)
Filling Time Cylinder 10 ltr-0-200 bar	20 mn.	16 min.	8 min. 30 sec.

(to be continued)

	Unit Per Set		
CODE	33 04 67	33 04 68	33 04 69
Working Pressure	232 bar - 3,300 psi		
Rpm Pumping Unit	2,800	1,500	1,200
Power	3 kW	3 kW	4 kW
Full Load Amps	6.7A (400V 50/60 Hz)	18A (230V 50/60 Hz)	15A (230V 50/60 Hz) 8.7A(400V 50/60Hz)
Noise	94 dB	95 dB	94 dB
Breathing Air	DIN3188EN 12021CGA E		
Switch Board	Built-in	Option	Option
Filling Valve	1	2	2
Dimensions L×H×W	24"×13.7"×15.4"	36.4"×18.1"×27.6"	39.4"×18.1"×27.6"
Weight	38 kg	93 kg	95 kg

Name of Mfr.: Aerotecnica Coltri S.r.l.



Unit Per Set

CODE	33 04 65
Model	JUNIOR II-E
Charging Rate	100 ltr/min.
Operating Pressure Max.	330 bar
Purification System	P21
Number of Stages	3
Speed	2,300 rpm
Drive and Motor Power	Three-phase 220/440V 50/60Hz 2.2 kW
Dimensions	L69 × W39 × H44 cm
Net Weight approx.	46 kg
Name of Mfr.	Bauer Kompressoren GmbH

## Oxygen Indicators

Indicadores de Oxigeno

酸素濃度計 便携式測氧仪

For measuring concentrations of oxygen within the rate of 0 to 25% by volume. Dependable instrument for preventing a threat in areas with an oxygen shortage.



Also for preventing accidents of fire or explosion caused by oxygen leakage.

Unit Per Set

CODE	33 05 06
Model	OX-08
Gas Detected	Oxygen in air
Detection principle	Galvanic cell
Detection Range	0 - 40.0 vol%. (0.1 vol%).
Alarm Set Point	Low : 19.5 vol%. High : 23.5 vol%. Over : 40.0 vol%.
Trouble Alarm	Sensor disconnection, low battery, calibration range error, system error
Alarm Types	Gas alarm: Flashing light, intermittent buzzer and flashing gas value, pulsing vibration

(to be continued)

	Unit Per Set
CODE	33 05 06
Display	Digital display
Power Source	Alkaline dry cells (2-AA) 2 pcs
Continuous Operation	Maximum 20,000 hours
Safety Design	Intrinsically safe (ExiaIICt4GA)
Approval	JML (Japanese Ministry of Labor)
Special Functions	Manual backlight for LCD / Peak hold
Dimensions & Weight	Approx. 69 (W) × 150 (H) × 53 (D) mm / Approx. 330 grm
Standard Accessories	Hand Strap
Name of mfr.	Riken Keiki

Unit Per Set

CODE	33 05 16
Model	XP-3380II
Range	0-25%
Sampling Method	Extractive
Alarm Set Value	Factory preset at 18% O <sub>2</sub>
Readout	LCD digital (with backlight)
Power Source	4 x AA alkaline dry cell batteries or Rechargeable 4 x AAA batteries
Size W×H×D mm	91 × 164 × 44
Weight	460 grm
Approved	ATEX: Ex II 1G Ex ia IIC T4 Ga*1 IECEx: Ex ia IIC T4 Ga*1 CE (ATEX, RoHS and RE directives)
Name of Mfr.	New Cosmos Electric

Unit Per Set

CODE	33 05 19	33 05 17	33 05 18
Model	XO-326IIsC	XO-326IIsA	XO-326IIsB
Detection Range (Service Range)	0 – 25% vol.% O <sub>2</sub> (25.1- 40% vol.%)		
Sampling Method	Diffusion Type		
Sensor Cable	10 mtr	5 mtr	1 mtr
Alarm Preset	1st stage : 19.5 vol%	2nd stage : 18.0 vol%	
Protection	IP20 or equivalent		
Readout	Liquid crystal diode digital meter		
Continuous Use	Approx. 15,000 hours		
Power Source	2 x AA alkaline batteries		
Size W×H×D mm	66×200×29	66×170×29	66×120×29
Weight	410 grm	340 grm	265 grm
Approved	Ex ia II CT3 X(Explosion Proof) H.K.		
Name of Mfr.	New Cosmos Electric		

Unit Per Set

CODE	33 05 04	33 05 05
Model	TIP-OXF	TIP-OXP
Measuring Gas	Oxygen	
Sensing Principle	Galvanic cell method	
Gas Collection Method	Diffusion type (Direct Sensing) with remote cable	Suction type by built-in pump with sampling tube
Measuring Range	0 – 25%O <sub>2</sub>	
Accuracy	Within ± 0.7%O <sub>2</sub>	

(to be continued)

CODE	33 05 04	33 05 05	Unit Per Set
Response	90% response within 20 sec.		
Display	Digital display by LCD panel, Power lamp, Alarm lamp, Peak hold mode lamp		
Alarm Level	Two user – adjustable alarm level AL1: 18% O <sub>2</sub> at Oxygen decrease mode AL2: 8% O <sub>2</sub> at Oxygen increase mode		
Alarm Display	Alarm lamp and buzzer		
Power Source	Manganese dry cell (R20P) x 2 pcs		
Dimensions	W:163 x H:137 x D:67 mm		
Weight	1.6 kg (with sensor and 5 m cable)	1.5 kg (without sampling tube)	
Safety Approval	Intrinsically safe: i3aG4		
Ability Approval	Type approved by NK *HK examination available on request		
Accessories	Leather case, Sensor with remote cable (5 m~max 20 m)	Air Filter, Leather case, Sampling tube (5 m~max 20 m)	
Name of Mfr.	Toka Seiki Co., Ltd.		

## Multi-Toxic Gas Monitor

Monitoer de Múltiples Gases Tóxicos

酸欠事故防止用ガス検知器 多功能有毒气体检测仪

### GX-3R / GX-3R Pro

A four to five gas personal monitor with advanced features including large LCD which can display 4-5 gas concentrations, current time, and battery indicator, temperature and peak reading simultaneously. Compact, lightweight tough design to withstand 7m drop.



\* Simultaneously and read-time detection of 4 gases LEL, O<sub>2</sub> (Oxygen), H<sub>2</sub>S (Hydrogen Sulfide) and CO (Carbon Monoxide).

GX-3 Pro you can add one more gas detection from SO<sub>2</sub> and CO<sub>2</sub> as option.

\* Rechargeable Lithium-ion battery pack.

\* Continuous operation for up to 40 hours.

\* Data logging standard.

\* STEL (Short Term Exposure Limit) and TWA (Time Weighted Average) readout.

CODE	33 05 20	33 05 09	Unit Per Set
Model	GX-3R	GX-3R Pro	
Detection Principle and range	Combustible gases: 0-100%LEL (1%LEL) O <sub>2</sub> : 0-40 VOL% (0.1 VOL%) H <sub>2</sub> S: 0-100.0 ppm (0.5 ppm) CO: 0-500 ppm (1 ppm)	Combustible gases: 0-100%LEL (1%LEL) O <sub>2</sub> : 0-40 VOL% (0.1 VOL%) H <sub>2</sub> S: 0-100.0 ppm (0.5 ppm) CO: 0-500 ppm (1 ppm) < Option > SO <sub>2</sub> : 0-20.00 ppm (0.05 ppm) CO <sub>2</sub> : 0-5.00 vol% (0.01 vol%) 0-10,000 ppm (20 ppm) NO <sub>2</sub> : 0-20.00 ppm (0.05 ppm)	
Communication	-	Bluetooth 4.2	
Detection Method	Diffusion Type		

(to be continued)

CODE	33 05 20	33 05 09	Unit Per Set
Display	LCD Digital, backlight, operation status, clock, battery level, temperature, peak reading, calibration notification		
Preset Alarms	Combustible gases: 1st 10%LEL, 2nd 50%LEL, Over 100%LEL O <sub>2</sub> : Low 18.0 VOL%, High 25.0 VOL%, Over 40.0 VOL% H <sub>2</sub> S: 1st 1.0 ppm, 2nd 10.0 ppm, TWA 1.0 ppm, STEL 5.0 ppm, Over 200.0 ppm CO: 1st 25.0 ppm, 2nd 50.0 ppm, TWA 25.0 ppm, STEL 200 ppm, Over 2,000 ppm		
Buzzer volume	Approx. 95 dB (30 cm)		
Display of Alarm	Gas alarms: Flashing LEDs, intermittent buzzer, flashing gas value, vibration Trouble alarms: Flashing LEDs, intermittent buzzer, display of error message		
Temperature/Humidity range	-40°C+60°C (no sudden changes) 0~95%RH (non-condensation)		
Power Source	Lithium-ion rechargeable battery	Lithium-ion rechargeable battery or A4 battery × 2	
Protection Level	Equivalent to IP66/68 (2 m, 1 h)		
Explosion-proof Class	[ATEX] II1G Ex ia IIC T4 Ga [IECEx] Ex ia IIC T4 Ga [Japan Ex] Ex ia IIC T4 Ga	[ATEX] II1G Ex da ia IIC T4 Ga / IM1 Ex da ia I Ma (With combustible gas sensor) II1G Ex ia IIC T4 Ga / IM1 Ex ia I Ma (No combustible gas sensor) [IECEx] Ex da ia IIC T4 Ga / Ex da ia I Ma (With combustible gas sensor) Ex ia IIC T4 Ga / Ex ia I Ma (No combustible gas sensor) [Japan Ex] Ex ia IIC T4 Ga	
Dimensions	Approx. 65(H) × 58(W) × 26(D) mm	Approx. 65(H) × 73(W) × 34(D) mm	
Weight	Approx. 100 grm	Approx. 140 grm	
Name of Mfr	Riken Keiki Co., Ltd.		

## SC-8000

Reliable portable toxic gas detector with waterproof protection. It will operate correctly in any challenging situation to protect workers with real time detection with ppm range.



CODE	33 05 59	Unit Per Set
Model	SC-8000	
Sampling method	Sample draw	
Principle of detection range		
Power source	Lithium-ion battery, Alkaline AA 3 pcs	
Battery life	Lithium-ion battery : 25 hours Alkaline AA : 18 hours	
Operating temperature	-10°C ~ 40°C	
Ingress Protection	IP 67	
Dimensions	154 (W) x 81(H) x 164 (D) mm	
Weight	1.1 kg	
Name of Mfr	Riken Keiki Co., Ltd.	

## Combination Gas Detectors

Detektoren de Gases Combinados

多目的ガス知器 四合一气体检测仪

Designed for detecting oxygen, combustible gas and toxic gas in the atmosphere. Providing full-function capability in a personal monitoring device.



### Portable Type

Unit Per Set

CODE	33 05 21
Model	GX-8000
Detection Principle and range	Combustible gases (CH <sub>4</sub> , i-C <sub>4</sub> H <sub>10</sub> , H <sub>2</sub> , others): Thermal conductivity: 0-100 VOL% (1 VOL%) Catalytic combustion: 0-100%LEL (1%LEL) O <sub>2</sub> : Galvanic cell 0-40 VOL% (0.1%) H <sub>2</sub> S: Electro-chemical cell 0-100.0 ppm (0.5ppm) CO: Electro-chemical cell 0-500 ppm (1 ppm)
Sampling Method	Sample draw, minimum 0.75 l/min
Display	Digital LCD with auto backlight Digital display (7 segments) and digital bargraph (25 segments)
Gas Alarm	Combustible gases: Thermal conductivity: N/A Catalytic combustion: 1st 10%LEL, 2nd 50%LEL O <sub>2</sub> : Low 19.5 VOL%, High 23.5 VOL% H <sub>2</sub> S: 1st 5.0 ppm, 2nd 30.0 ppm, TWA 10.0 ppm, STEL 15.0 ppm CO: 1st 25.0 ppm, 2nd 50.0 ppm, TWA 25.0 ppm, STEL 200 ppm,
Types of Alarm	Gas alarm: latching, 2 alarms Failure alarms : Flow failure, sensor failure, battery failure, circuit failure, calibration failure
Display of Alarm	LED: LED's flash Buzzer: Buzzer sounds alternating between a low and high pitch Visual indication: Indication value flashes. Alarm message displays and flashes.
Power Source	Lithium-ion battery, standard (3 hours for a full charge) AA Alkaline battery (3 pcs), option
Continuous Operation	Lithium-ion battery: more than 12 hours AA Alkaline battery: more than 6 hours
Ingress Proof Rating	Equivalent to IP67
Explosion Proof	Intrinsically safe Exia II CT4
Approvals	IECEx , ATEX, TIIS, MED, HK, CE mark, Complying to IEC60079-29-1
Additional Features	Indication to show energizing (pilot indicator and pump driving indicator), "Activating confirmation beep and LED's flash (every one min)" Pump stop function, Bump test function, IrDA communication, Data logger, Password protection
Dimensions	Approx. 154 (W) × 81 (H) × 130(D) mm
Weight	Approx. 1.1 kg
Standard Accessories	AC powered charger (Input: AC100V-AC240V, 50/60Hz, Output: DC12V, 1.25A) Gas sampling probe Gas sampling hose (Spiral 1 mtr) Lithium-ion battery unit BUL-8000 Neck/shoulder strap Instruction manual
Name of Mfr	Riken Keiki Co., Ltd.

### Pocket Type



### GX-Force

Solid and reliable Multi Gas Detector designed to offer extensive gas detection capabilities even in challenging environments.

Unit Per Set

CODE	33 05 27
Model	GX-Force
Target Gas	CH <sub>4</sub> , CO, H <sub>2</sub> S, i-C <sub>4</sub> H <sub>10</sub> , O <sub>2</sub>
Sampling method	Suction type
Principle of detection	New Ceramic catalytic Method, Potentiostatic Electrolysis Method
Detection range	0-100% LEL (HC/CH <sub>4</sub> ) 0.0-25.0 VOL% (O <sub>2</sub> ) 0-500 ppm (CO) 0.0-30.0 ppm (H <sub>2</sub> S)

Type of alarm	Gas alarm / fault alarm
Explosion protected construction	Flameproof enclosures + Intrinsic safety
IP rating	IP67
Approvals	Japan Ex, ATEX, IECEx, JIS
CE marking	EMC / ATEX / RoHS
Power source	Lithium-ion rechargeable battery unit
Continuous operation	Approx. 30 hours
Dimensions	Approx. 64 (W) × 173 (H) × 47 (D) mm
Weight	Approx. 300 g
Operating Temperature	-40°C - 60°C
Name of Mfr	Riken Keiki Co., Ltd.

### GX-2012GT

It can monitor the standard gas safety hazards for gas/pipeline operations, (LEL combustibles, oxygen content and Carbon Monoxide), and it has a high-sensitivity ppm CH<sub>4</sub> leak tracker mode which reads down to 10 ppm.

Unit Per Set

CODE	33 05 28				
Gas Detected	Combustible gases (Methane as standard)	% Volume Methane	PPM Methane	Oxygen (O <sub>2</sub> )	Carbon monoxide (CO)
Detection principle	Catalytic combustion	Thermal conductivity	MOS/Catalytic	Galvanic cell	
Detection Range	0-100% LEL	0-100% Vol	0-5,000 ppm	0-40% Vol	0-500 ppm
Sampling Method	Internal sample pump. Flow rate nominal 0.5 LPM, includes hydrophobic filter				
Display	Digital LCD with 7 segments, auto backlight during alarm				
Preset Alarm (User Adjustable)	1st alarm 10% LEL 2nd alarm 50% LEL Over alarm 100% LEL	No alarms for % Vol CH <sub>4</sub>	Increasing tone/light pulse as concentration increases	Low alarm 19.5% High alarm 23.5% Over alarm 40.0%	1st 25 ppm 2nd 50 ppm TWA 25 ppm STEL 200 ppm Over 500 ppm
Alarm Types	Leak tracker mode: Escalating audible / visual alarm, changes with gas level (audible can be turned off) Gas alarms: 1st and 2nd, STEL, TWA (user adjustable) and OVER Trouble alarms: Sensor connection, low battery, low flow, circuit trouble and calibration error				
Alarm Methods	Gas alarms: Flashing lights, two tone buzzer, and vibration Trouble alarms: Flashing lights, trouble displayed, intermittent buzzer, and vibration				
Response Time	Within 30 seconds (T90)				
Continuous Operation	Alkaline battery: 15 hours Li-Ion battery: 10 hours				
Power Source	Li-Ion battery pack, or 3 "AA" alkaline battery pack; interchangeable				
Safety Rating	ATEX Ex II 1G Ex ia IIC T4 / IECEx II 1G Ex ia IIC T4 / IIIS / MED / HK / CE				

		Unit Per Set
CODE	33 05 28	
Size & Weight	Approx. 173 (H) × 71 (W) × 43 (D) mm, 360 grm (include 3 "AA" alkaline batteries)	
Standard Accessories	Belt clip / Rubber nozzles / Wrist strap / Manual / Alkaline battery pack	
Name of Mfr.	Riken Keiki Co., Ltd.	

		Unit Per Set
CODE	33 05 81	
Model	XP-3318II	
Detection Method	Oxygen (O <sub>2</sub> ) : Galvanic cell Combustible gas and Vapors (specify gas detected) : Catalytic combustion	
Measuring Range	Oxygen : 0-25.0 VOL% Combustible gas : 0-100% LEL	
Accuracy	Oxygen : ±0.3 VOL% (Complies to JIS T8201) Combustible gas : ±5% of full scale	
Alarm Preset Point	Oxygen : 18.0 VOL% Combustible gas : 20% LEL	
Alarm Method	Gas alarm: Beeping with flashing red light and AL icon on the LCD. Error alarm: Beeping with flashing yellow light and error message on the LCD	
Sampling Method	Extractive	
Power Source	4 x AA alkaline dry batteries or Rechargeable 4 x AA batteries	
Approval	ATEX: Ex II 1G Ex ia da IIC T4 Ga*1 IECEx: Ex ia da IIC T4 Ga*1 CE (ATEX, RoHS and RE directives)	
Dimensions	W:91 × H:164 × D:44 mm	
Weight	460 grm	
Accessories	Gas sampling tube (1mtr), Shoulder strap, Drain filter, Filter element, 4 x AA alkaline dry batteries (or 4 x AA rechargeable batteries), Screen protector film × 3	
Name of Mfr	New Cosmos Electric	

## Multi Gas Detectors

### GasAlertQuattro

Detectores de gases múltiples

マルチガス検知器 多气体探测器

A four-gas detector combines a comprehensive range of features with simple one-button operation, suited to a wide range of industrial applications including confined space entry. The graphic LCD displays easy to identify icons that indicate operational information, such as bump test and calibration status for simplified onsite auditing. Interchangeable power options with extended battery runtimes for longer shifts. Full function self-test of sensor(s), battery status, circuit integrity and audible / visual alarms on start up and continuous testing on sensor(s). Multi-language support in English, French, German, Spanish and Portuguese.



### Sensor Specifications

Gas	Measuring Range	Resolution
Hydrogen sulfide (H <sub>2</sub> S)	0-200 ppm	0.1 ppm
Carbon monoxide (CO)	0-1,000 ppm	1 ppm
Oxygen (O <sub>2</sub> )	0-30.0%	0.1%
Combustible gases (%LEL)	0-100% LEL 0-5.0% v/v	1% 0.1%

		Unit Per Pcs.
CODE	33 05 85	
Model	GasAlertQuattro	
Tests	Sensor integrity	
Alarms	Visual (six, red LEDs), vibrating, audible (95 dB) Low, High, STEL (Threshold Limit Value), TWA (Time Weighted Value), OL (Over Limit)	
Pump	Compatible with the Sampler motorized sampling pump	
Battery Life	AA alkaline: 14 hrs Rechargeable: more than 18 hrs	
Certifications and Approvals	Class II, Div. 1, Gr. A, B, C, D ATEX : CE Ex II 1 G Ga Ex ia II C T4 IECEx : ga Ex ia II C T4 BR-Exia II C T4, MED [0098xx]	
Warranty	Full two year warranty including all sensors	
Size	13.0 × 8.1 × 4.7 cm	
Weight	316 grm (with rechargeable battery pack)	

Name of Mfr. : BW Technologies

## Combination Gas Detectors

Detectores de Gas Combinados

多目的検知器 多功能探测器

Designed for detecting, combustible gas in the atmosphere. Providing full-function capability in a personal monitoring device.

## MSA ALTAIR 5X/ALTAIR 5X-IR

The rugged, multi-featured MSA ALTAIR 5X Gas Detector provides maximum safety and make it easy to use in even the most demanding situations. It features large buttons for easy use, and its polycarbonate housing protects the detector for drops of up to 10 feet. The detector also boasts the exclusive MotionAlert™, which lets others know if the user has become immobile, and InstantAlert™, a manual alarm that alerts others if a dangerous situation has arisen, while the large buttons and bright display makes operation possible even when the user is wearing gloves.



### Approvals:

USA/NRTL [Intrinsic Safety, Non-Mining]/Canada/CSA [Intrinsic Safety, Combustible Performance, Non-Mining]/Australia [Intrinsic Safety, Industrial Mining-TestSafe]/European Union ATEX-FTZU [Intrinsic Safety, Industrial and Mining]/IECEx [Intrinsic Safety, Industrial and Mining-Test Safe]/Wheelmark 213.050 Complying with SOLAS 74/78 Chapter II-2/4 and VI/3, as amended IMO Resolution MSC.98 (73) - (FSS-code) 15.

- Rugged detector tests levels of LEL.
- Rapid bump test gives results in under 15 seconds .
- Versatile MSA Link™ allows user to transmit data to a computer.
- Durable XCell sensor last longer than 3 years.
- Exclusive end-of-sensor warning cautions user when unit's sensor needs to be changed.
- Polycarbonate housing is both dust-tight and water-tight.

## MSA ALTAIR 4X

The ALTAIR 4X Multigas Detector surpasses industry standards in several crucial areas. Its four-year sensor life is 60% longer than the industry average, while its 24-hour run time exceeds the industry average by 71%. This versatile portable detector is a perfect match for industries ranging from firefighting to welding, and its digital sensor output makes it less likely to suffer from RF interference. The unit features exclusive MotionAlert™, which lets others know if the user has become immobile, and InstantAlert™, a manual alarm that alerts others of potentially dangerous situations. This rugged unit is designed to withstand a drop of up to 20 feet and uses less than half as much calibration gas as the industry average.



### Approvals:

USA: ETL Class I, Div. 1, Groups A,B,C&D , Tamb=-40°C to +54°C, ETL Class II, Div.1, Groups E,F&G, Class III, Div. 1, Tamb=-40°C to +54°C; T4 / CANADA : CSA Class I, Div. 1, Groups A,B,C&D, CAN/CSA C22.2 152; 12.13.01-2000, ETL Class II, Div.1, Groups E,F&G, Class III, Div. 1, Tamb=-40°C to +54°C; T4 / Australia/New Zealand TestSafe Australia/European Union ATEX – FTZU [Intrinsic Safety, Industrial and Mining]/Wheelmack 213.048: Complying with SOLAS 74/78 Chapter II-2/4 and VI/3, as amended IMO Resolution MSC.98(73)-(FSS-code) 15.

- Dependable multigas detector tests for LEL.
- Economical construction saves users more than 50% on calibration gas, replacement sensor and maintenance.
- Unit uses 50% less calibration gas per minute than the average detectors within the industry.
- Large buttons and high-contrast screen make operation easy in low-light conditions.
- Ribbed rubber housing provides secure grip and high durability.
- Unit features 95+ db alarm and ultra-bright LEDs.
- Exclusive end-of-sensor warning cautions user when unit's sensor needs to be changed.

Unit Per Pc.			
CODE	33 05 96	33 05 97	33 05 98
Model	ALTAIR 5X	ALTAIR 5X-IR	ALTAIR 4X
Measurement of Combustible	0 ...100 %LEL and/or 0 ... 100 Vol% [Methane]	0 ...100 %LEL or 0... 5 Vol% [Methane]	0 ...100 %LEL or 0... 5 Vol% [Methane]
Measuring Principle Combustible	Catalytic Combustion	Catalytic Combustion and/or IR light wavelength absorption	Catalytic Combustion
Resolution Combustible	1 %LEL	1 %LEL and/or 1 Vol% Methane	1 %LEL
T90 Combustible	[time needed to reach 90% of final reading and to recover] < 10 seconds		
Measuring Method	Integral pump		Diffusion, or, by an external to connect electrical pump

(to be continued)

Dimensions	H 170.0 mm W 88.7 mm D 45.5 mm < 450 Grams	H 170.0 mm W 89.4 mm D 48.8 mm < 520 Grams	H 112 mm W 76 mm D 35 mm < 210 Grams
Weight	Colour	Colour	-
Display	or Monochrome, showing actual measuring value, time, battery status, check mark*, Motion sensor* and Sensor End-Of-Life Indicator*		
Housing	Armoured Rubber		
Alarms	Optica - two super bright LED's with 320° view Akoustic - 95 dB Typical, Vibration		
Alarm Thresholds	Adjustable Low and High		
Safety LED	Indicator flashes every 15 seconds to show the user that the instrument is functioning normally		
Operation Signal	Sounds every 30 second and the alarm LED's flashes simultaneously		
Bump Check Mark	24 hour check mark for confidence in good working of sensors		
End-Of-Life	Indication for preventive replacement of sensor, to avoid unnecessary and unexpected break down of the instrument		
Motion Alert	Man-Down Alarm / Automatic alarm when wearer doesn't move anymore		
Instant Alert	Man-In-Trouble Alarm / Manually activated Alarm, when wearer can't move anymore		
Data Logging	Standard, 1,000 events		Standard, 500 events
Energy Supply	Rechargeable Lithium Ion Battery		
Operation time	>18 hours at 25°C	>14 hours at 25°C	>24 hours at 25°C
Charging time	< 6 hours		< 4 hours
Temperature range	0°C ... +40°C - 20°C ... +50°C - 40°C ... +50°C [short period] +10°C ... +35°C [during charging of battery] +18°C ... +30°C [during storage of instrument]		-10°C...+50°C - 20°C...+50°C [short period] +10°C...+35°C [during charging of battery] +18°C..+30°C [during storage of instrument]
Humidity range	15 % – 90 % relative, non-condensing 5 % – 95 % relative, intermittent		
Ingress Protection	IP65, Certified by 3rd party		IP67, Certified by 3rd party
Warranty	4 years on sensor, rechargeable battery-pack, case and electronics	4 years on sensor, 1 year on IR sensor, rechargeable battery-pack, case and electronics	4 years on sensor, rechargeable battery-pack, case and electronics

\* When applicable

Name of Mfr.: MSA The Safety Company

## Personal Multi Gas Detection Devices

Dispositivos Personales de Detección de Gases Múltiples  
パーソナル可燃性ガス検知器 个人可燃气体探测器

Designed to be a compact, robust, easy to use instrument for either flammable gas detection, or flammable and oxygen detection.

With a large LCD display, loud acoustic and bright optical

alarm with vibrating battery option, the X-am 2500 gives clear warning of a hazardous atmosphere and is, therefore, suitable for a wide range of personal monitoring and confined space entry tasks.

With EEx iad IIC T4 and IP67 approval, the X-am 2500 is suitable for the most demanding of environments.

3 years Warranty.



Unit Per Set

CODE	33 05 82
Model	X-am 2500
Measuring Range	Ex-measurement: 0 to 100% LEL, resolution 1%-LEL 0 to 5 VOL.-% CH <sub>4</sub> , resolution 0.1 VOL.-% Oxygen measurement: 0 to 25 VOL.-%, resolution 0.1 VOL.-%
Display	LCD, backlight
Alarm	Optic, acoustic and vibrating alarm, 2 adjustable alarm thresholds for LEL range and oxygen measurement. Ex-measurement: Default A1: 10%-LEL Default A2: 20%-LEL Oxygen measurement: Default A1: 19 VOL.-% Default A2: 23 VOL.-%
Sound Volume of Horn	>90 dB(A), at 30 cm distance
Power Supply	NiMH battery (rechargeable), Alkaline
Operation Time	>12 hours
Charging Time	<4 hours
Ingress Protection	IP67
Intrinsic Safety	EEx iad IIC T4
Approvals	Europe: CE mark, IM 2 EEx iad I; II2G EEx iad IIC T4/T3 USA: UL Class 1 Group A,B,C,D; Div. 1 Temp code T4/T3 Canada: CSA Class 1 Group A,B,C,D; Div. 1 Temp code T4/T3 Shipping: Steering Wheel Certification
Response Time	t50 < 7 seconds (methane)
Dimension	48 x 130 x 44 mm (W x H x D)
Weight	220 - 250 grm

Name of Mfr.: Draeger

## Multi-Gas Detector

### Draeger X-am® 5000

Detector Multigas

多種ガス対応検知器 多气体检测器

This 1- to 5- gas detector reliably measures combustible gases and vapors as well as O<sub>2</sub> and harmful concentrations of toxic gases, organic vapors, Odorant and Amine. It is easy to exchange, upgrade or calibrate the sensors to other gases. The X-am 5000 provides dependable warnings in the event of explosive atmospheres thanks to the high level of sensitivity of the innovative catalytic Ex sensor. The optional external pump, which operates with a hose up to 30 (98 feet) meters long, makes it possible to use the detector for pre-entry measurements into confined spaces such as tanks, shafts, etc. Consisting of basic instrument with an integrated data logger and manufacturer's and calibration certificates.



Unit Per Set

CODE	33 06 74
Model	X-am 5000
Item No.	83 20 000
Ingress Protection	IP 67
Data Logger	Can be read out via Infrared > 1,000 hours with 5 gases and a recording interval of 1 value per minute
Dimensions (W x H x D)	48 x 130 x 44 mm
Weight	250 grm

### Approvals

ATEX	I I M1 Ex ia I Ma, II 1G Ex ia IIC T3 Ga, I M2 Ex d ia I Mb, II 2G Ex d ia IIC T4 / T3 Gb
Performance approval to:	EN 50104 (2002) + A1 (2004): O <sub>2</sub> EN 45544: CO & H <sub>2</sub> S EN 60079-29-1:2007: Methane to nonane EN 50271:2010: Software and documentation
CSA	Class I, Div. 1 Group A, B, C, D T.-Code T4/T3
IECEx	Ex ia I, Ex ia IIC T3, Ex d ia I, Ex d ia IIC T4/T3
CE-mark	Electromagnetic compatibility Directive 2004 / 108 / EG; EN 50270:2006
MED	Marine Equipment Directive 96 / 98 / EC
Sensors	4 sensors preferred from the separate list of sensors. NOTE: Contact Draeger for the available Catalytic Ex sensor and Electrochemical sensors.

Name of Mfr.: Draeger

## Multi-Gas Detection Device

### Draeger X-am® 5600

Dispositivo de Detección de Gases Múltiples

多種ガス対応検知器 多气体检测器

The smallest gas detection instrument for the measurement of up to 6 gases. This detector reliably detects explosive, combustible and harmful concentrations of O<sub>2</sub>, Cl<sub>2</sub>, CO, CO<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>S, HCN, NH<sub>3</sub>, NO, NO<sub>2</sub>, PH<sub>3</sub>, SO<sub>2</sub>, O<sub>3</sub>, Amine, Odorant, COCl<sub>2</sub> and organic vapors. Draeger infrared sensors for detection of CH<sub>4</sub> in inert or oxygen depleted condition and can generally be used for up to eight years. This advanced technology reduces the cost of ownership considerably because less replacement sensors are needed. In addition, a sensor calibration is only necessary every 12 months which reduces maintenance costs. An optional external pump which can be operated with hoses up to 30 m or 98 ft. in length is the perfect solution for pre-entry measurements in tanks or pipelines. The small and reliable gas detector is suitable for use in areas classified as zone 0, which are areas where explosive atmospheres are always to be expected.



Consisting of basic instrument with an integrated data logger, support CD, manufacturer's and calibration certificates.

Unit Per Set	
CODE	33 06 75
Model	X-am 5600
Item No.	83 21 050
Ingress Protection	IP 67
Data Logger	Can be read out via Infrared > 1,000 hours with 6 gases and a recording interval of 1 value per minute
Dimensions (W x H x D)	47 x 130 x 44 mm
Weight	250 grm
Approvals	
ATEX	I M1 Ex ia I Ma, II 1G Ex ia IIC T4/T3 Ga
Measurement Performance Certificate	EN 50104 (2002) + A1 (2004): O <sub>2</sub> EN 45544: CO, CO <sub>2</sub> & H <sub>2</sub> S EN 60079-29-1:2007: Methane, Propane, Nonane EN 50271:2001: Software and documentation
IEC	Ex ia I Ma Ex ia IIC T4/T3 Ga for MQG 01**
MED	Marine Equipment Directive 96/98/EC
CSA C US	Div.1, Class I, Groups A,B,C,D T4/T3 A/Ex ia IIC T4/T3 /Ga
Sensors	4 sensors preferred from the separate list of sensors NOTE: Contact Draeger for the available Infrared Ex sensor and Electrochemical sensors.

Name of Mfr.: Draeger

## Multi-Gas Detectors

### X-am® 8000

Detectors Multigas マルチガス検知器 多种气体探测器

Measures up to seven toxic as well as flammable gases, vapours and oxygen all at once—either in pump or diffusion mode. Innovative signaling design and handy assistant functions ensure complete safety throughout the process. It can be connected with hoses of up to 45 mtr in length. An optional Bluetooth® module in the X-am 8000 enables measured values to be transferred automatically to the CSE Connect app. You can also use the app to create measurement reports. In case of an alarm, the X-am 8000 alerts you with colourful alarm LEDs, a loud horn (100 dB (A) at a distance of 30 cm), and clearly palpable vibration.



#### Specification:

- \* Dimensions (H x W x D): 179 x 77 x 42 mm.
- \* Weight: Approx. 495 grm depending on sensor configuration, without strap and pump.
- \* Ingress protection class: IP67.
- \* Energy supply: Lithium-ion battery, rechargeable, inductive charging.

#### Approvals:

ATEX/IECEx: I M1, II 1G / Ex da ia I Ma, Ex da ia IIC T4 Ga EAC : PO Ex da ia I Ma X / Ex da ia IIC T4 Ga X

cCSAus (Please contact Draeger regarding availability.):  
Class I, Zone 0, AEx da ia IIC T4 Ga / Class II, Div 1, Gr. E, F, G T4 / C22.2 No. 152, ANSI-ISA 12.13.01:2000  
CE labeling  
MED/DNV (Please contact Draeger regarding availability.)

Selectable device options when ordering:

- \* Integrated pump with pump adapter
- \* Bluetooth® module
- \* RFID transponder

Please contact your local supplier more about sensors and accessories of your necessary jobs.

33 05 83	Multi Gas Detector, Draeger X-am 8000	Set
Name of Mfr. Draeger		

## Single-Gas Detectors

### Pac® 8500

Detector de Gas シングルガス検知器 单一气体检测仪



A reliable and precise instrument even under the toughest conditions. The device can be equipped with a hydrogen-compensated CO sensor or a dual sensor. This gives you the option of measuring two gases at once: either H<sub>2</sub>S with CO or O<sub>2</sub> with CO, and detect of even low concentrations – and all in one and the same handy device. You can take vol.% measurements of oxygen and ppm measurements of carbon monoxide simultaneously using just one sensor. The Pac 8500 also provides a data and event logger for logging concentrations. Data can be loaded on a PC via an interface and processed further there.

The shock-proof, chemical-resistant housing meets the requirements specified in the IP68 standard rating. In case of an alarm, it sets off an audible, visual and perceptible vibrating alarm. All of the versions of the Pac 8500 are equipped with extremely durable DraegerSensors® and a powerful battery. Please contact your local supplier more about sensors and accessories of your necessary jobs.

Unit Per Set			
CODE	33 05 84		
Model	Pac 8500		
Measuring Range	H <sub>2</sub> S/CO 0–100 ppm H <sub>2</sub> S 0–2,000 ppm CO	O <sub>2</sub> /CO 0–25 Vol.% O <sub>2</sub> 0–2,000 ppm CO	CO-H <sub>2</sub> -CP 0–2,000 ppm
Alarm Thresholds A1/A2	5/10 ppm H <sub>2</sub> S 30/60 ppm CO	19/23 Vol.% O <sub>2</sub> 30/60 ppm CO	30/60 ppm
Battery Service Life	1 year (O <sub>2</sub> sensors min. 10 months)		
Approval	cCSAus, IECEx, ATEX, CE		
Dimension (W×H×D)	64 × 84 × 20 mm		
Weight	106 grm		

Name of Mfr.: Draeger

## Bumptest and Calibration Station for Gas Detectors

Puesto de Prueba Funcional y Calibración de Detectores de Gases

ガス検知器用機能及び較正試験装置

气体探测器用冲撞及校正测试装置

An automated test system provides simple and intelligent testing and calibration of multigas detectors, driven by the most advanced technology available in any portable gas detector. The gas provided by the Bump Test Station flows through the dust and water filter to the sensor(s) confirming correct functionality of the gas detector ensuring compliance with country-specific requirements and regulations, standards, recommendations, etc. Once any gas detector is placed in this system, it can be tested, calibrated automatically.



MSA



Draeger

**MSA GALAXY GX2 Automated Test System**

Unit Per Set

Galaxy GX2 with EU plug for	No-Charging		Charging	
	CODE	Part No.	CODE	Part No.
ALTAIR, ALTAIR Pro, ALTAIR 2X	-	-	33 06 06	10128653
ALTAIR 4X	33 06 04	10128651	33 06 15	10128639
ALTAIR 5X, 5X-IR, 5X-PID	33 06 05	10128637	33 06 36	10128635

Name of Mfr.: MSA The Safety Company

**Calibration Gas**

- \* Type Model RP with RFID Tag.
- \* 58 Liter - 500 psig/34.5 Bar.
- \* Approval: EN12205, U.S. DOT-39 and Canadian TC-39M.
- \* Content: 1.45 Vol% Methane, 15.0 Vol% Oxygen, 60 ppm Carbon Monoxide, 20 ppm Hydrogen Sulfide.
- \* Balance: Nitrogen.

Unit Per Pcs.

CODE	Description	Part No.	
		USA	Europe
33 06 39	Calibration gas, model RP, with RFID tag, 58 ltr for MSA Altair gas detector	10045035	10053022

Name of Mfr.: MSA The Safety Company

**Draeger Bump Test Station X-am 1/2/5x00**

Unit Per Pcs.

CODE	Description	Item No.
33 06 60	Bump test station, Draeger X-am 1/2/5x00, without gas cylinder	8319131
33 06 67	Bump test station, Draeger X-am 1/2/5x00, including test gas cylinder 58 ltr	8319130

Note: Gas and concentration are freely selectable.

Name of Mfr.: Draeger

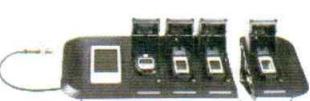
33

**Calibration and Bump Testing****Draeger X-dock® 5300/6300/6600**

Aparato de Prueba Funcional y Calibración

較正及びパンプテスト装置 校正及通气测试装置

The X-dock 5300 includes a master station including a module for a gas detection instrument from the X-am 1/2/5x00 or Pac family. It is immediately ready to use.



The X-dock 6300 and 6600 versions can be configured freely. They consist of a master station and can be expanded with up to 10 modules for X-am 1/2/5x00 and/or Pac gas detection instruments.

Insert the device, close the lid and remove it when the indicator goes "green" – a test with the X-dock is just that simple. It immediately detects all sensor combinations. Furthermore, the X-dock automatically tests and adjusts when all required test gases are connected.

The X-dock stores all of the relevant data and reads the collected information from the gas detection instruments for subsequent evaluations. All Draeger test gas cylinders are already stored in the database – entering the part number will automatically fill in the fields required for the gas configuration.

## &lt;X-dock Master Technical Data&gt;

Protection Class	IP20
Power Supply (power up to 3 modules)	Via 24V (8321849) power supply or car adapter
Approvals	CE marking
Weight	1,500 grm
Dimensions	120 × 130 × 250 mm

Name of Mfr.: Draeger

**Ready-to-use Versions**

Unit Per Set

CODE	Type	Contents	Item No.
33 06 68	X-dock 5300 X-am 125	X-dock Master including X-am 125 module and power supply. 3 test gas connections. Limited to one module.	8321880
33 06 69	X-dock 5300 Pac	X-dock Master with Pac module and power supply. 3 test gas connections. Limited to one module.	8321881

**Master Versions**

Unit Per Pcs.

CODE	Type	Contents	Item No.
33 06 70	X-dock 6300 Master	3 test gas connections. Can be expanded to 10 X-am 125 modules	8321900
33 06 71	X-dock 6600 Master	6 test gas connections. Can be expanded to 10 X-am 125 modules	8321901

**Modular Versions**

Unit Per Pcs.

CODE	Type	Contents	Item No.
33 06 72	X-dock Module X-am 125	-	8321890
33 06 73	X-dock Module X-am 125+	allows charging X-am 125 devices	8321891

**External Pump for Multi-gas Detectors****Draeger X-am® Pump**

Bomba externa para detectores de gases múltiples

多種ガス検知器用外付けポンプ 多气体探测器外置泵

An external pump for the portable gas detectors Draeger X-am® 2500, 5000, and 5600 – designed for clearance measurement, for example in tanks and shafts. The X-am pump can reach the ambient atmosphere in inaccessible places – up to a distance of 45 m, e.g. in channels, shafts, or tank systems. The pump has an explosion protection approval for Ex zone 0.



The battery capacity lasts for three workweeks at 8 measurements per day (i.e. up to 20 hours of continuous operation).

CODE	33 06 76
Model	X-am pump
Item No.	83 27 100
Max. Hose Length	45 mtr

NOTE: The sampling hose sold separately.

(to be continued)

Air Flow Volume	0.4 ltr/min.
IP Protection Class	IP67
Dimensions	67 x 175 x 38 mm (Without X-am)
Weight	200 grm
Approvals	c_CSA_us, ATEX/IECEx (Zone 0 T4 and M1), DNV, CE label

Name of Mfr.: Draeger

## Combustible Gas Detectors

Detectores de Gases Combustibles

可燃性ガス検知器 可燃性瓦斯检测器

Required to be provided on board by SOLAS regulation 1983 amendments Chapter II, Part C, Regulation 53 and 62. For measuring and testing any area where combustible gases or vapors may have accumulated.



### Portable Type

Unit Per Set

CODE	33 05 37			
Model	RX-8500			
Target Gas	Methane (CH <sub>4</sub> )	Oxygen (O <sub>2</sub> )	Carbon Monoxide (CO)	Carbon Dioxide (CO <sub>2</sub> )
Detection principle	Non-Dispersive Infrared Ray	Galvanic Cell	Electro Chemical	Non-Dispersive Infrared Ray
Detection Range (Increments)	0-100% LEL (0.5 LEL) / 5-100.0 VOL % (0.5 VOL %)	0-40.0 VOL % (0.1 VOL %)	0-1,000 ppm (1 ppm)	0.01 VOL % (0-2 VOL %) 0.05 VOL % (2-5 VOL %)
Sampling Method	Minimum 0.75 L/min			
Operating temp & Humidity	-20 ~ +50°C, below 95% RH (Non-condensing)			
Power Source	Lithium-ion battery (3 hours for a full charge) as standard AA Alkaline batteries x 3 pcs (as option)			
Sizes W x H x D	154 x 81 x 163 mm			
Weight	1.2 kg			
Approvals	IECEx, ATEX, MED			
Explosion Proof	Intrinsically safety (II 1G EX ia IIC T4 Ga) <ATEX/IECEx>			
Name of Mfr.	Riken Keiki			

CODE	33 05 80			
Model	RX-8700			
Target Gas	Combustible Gas (HC)	Oxygen (O <sub>2</sub> )	Hydrogen Sulfide (H <sub>2</sub> S)	
Detection principle	Non-Dispersive Infrared Ray	Galvanic Cell	Electrochemical	
Detection Range (Increments)	0-100% LEL (0.5 LEL) / 2-100.0 VOL % (0.5 VOL %)	0-25.0 VOL % <25.1-40.0 VOL%> (0.1 VOL %)	(Low) 0-30.0 ppm (0.5 ppm)	(High) 0-1,000 ppm (1 ppm)
Sampling Method	Minimum 0.75 L/min			

(to be continued)

Operating temp & Humidity	-20 ~ +50°C, below 95% RH (Non-condensing)
Power Source	Lithium-ion battery (3 hours for a full charge) as standard AA Alkaline batteries x 3 pcs (as option)
Sizes W x H x D	154 x 81 x 163 mm
Weight	1.2 kg
Approvals	IECEx, ATEX, MED
Explosion Proof	Intrinsically safety (II 1G EX ia IIC T4 Ga) <ATEX/IECEx>
Name of Mfr.	Riken Keiki

CODE	33 06 00	
Model	GP-1000	
Target Gas	Hydrocarbons	
Detection principle	Catalytic combustion	
Sampling Method	Sample draw	
Opening Temperature	-20 ~ +50°C	
Power Source	Alkaline battery 4-AA size	
Explosion Proof	Japan Ex: Ex ia IIC T4, ATEX: II 1G Ex ia IIB T4 Ga, IECEx: EX ia IIB T4 Ga	
Battery life	20 hours	
Sizes W x H x D	W80 x H124 x D36	
Weight (kg)	Approx. 0.26 (without batteries)	
Name of Mfr.	Riken Keiki	

CODE	33 05 57	33 05 58
Model	P-508	P-510H
Measurable Gas	General combustible gas	
Principle	Catalytic combustion method	
Gas Sampling	Suction type by built in pump	
Measuring Range	0-20/0-100% LEL	
Accuracy	Within ±5% of full scale	
Response	90% response Within 30 sec.	
Display	Analogue meter	
Alarm Level	20% LEL (Adjustable)	
Alarm Display	Buzzer	
Power Source	Manganese dry cell (R20P) x 2 pcs	Alkali dry cell (LR14) x 2 pcs
Dimensions	W:163 x H:137 x D:67 mm	
Weight (without sampling tube)	1.5 kg	1.6 kg
Safety Approval	id2G4	id3aG4 (Hydrogen explosion-proof)
Ability Approval	Explosion proof approved by NK *HK examination available on request	
Accessories	Sampling rod with W.S.filter, Leather case, Sampling tube (5 m ~ max 20 m)	
Name of Mfr.	Toka Seiki Co., Ltd.	