

33

Safety Equipment

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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 CO₂ 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

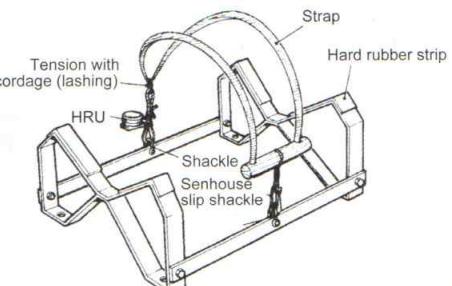
Throw-over type		Davit-Launching type	
CODE	Capacity	CODE	Capacity
33 01 01	6 men	33 02 06	6 men
02	10 men	08	10 men
03	16 men	14	16 men
04	20 men	19	20 men
05	25 men	20	25 men

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	
26	Hammar H20-YSE	Epirb	C M Hammer AB
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 CO₂ 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.



Throw-over Lifebuoy

Quick Release Life buoy

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
Weight Over 2.5 kg (Throw-over Lifebuoy)				

33 01 51	H.K.			
56	U.K.DOT			
57	N.V.			
58	U.S.C.G.			
59	MED			

Under 800 mm Over 400 mm Over 2.5 kg and less than 4.0 kg

Weight Over 4 kg (For Quick-release Arrangement)

33 01 54	H.K.			
53	U.K.DOT			
55	N.V.			
52	U.S.C.G.			
60	MED			

Under 800 mm Over 400 mm Over 4.0 kg

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
Unit Per Set		
CODE	Approved	Material
33 01 69	U.K. DOT	
70	H.K.	
71	N.M.D.	
72	U.S.C.G.	
95	MED	Foam rubber

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
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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.

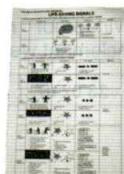


33 02 17	Lifeboat sea anchor oil can	Pc.
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Signal Tables

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.



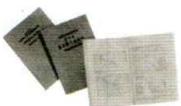
33 02 54	Fishing tackle	Set
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Survival Manuals

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.
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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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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

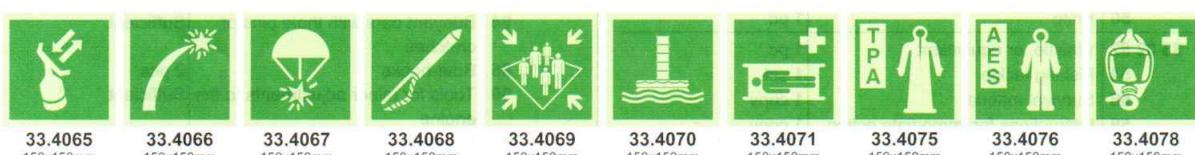
International Life-Saving Appliance (LSA) Code, Regulation Chapter 4.4.8.

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

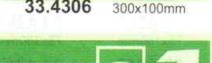
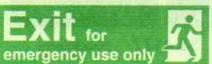
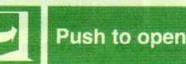
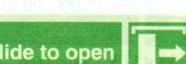
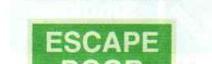
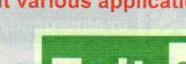
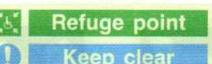
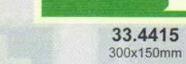
33.5100 150x150mm	33.5101 150x150mm	33.5102 150x150mm	33.5103 150x150mm	33.5104 150x150mm	33.5105 150x150mm	33.5106 150x150mm	33.5107 150x150mm		
33.5108 150x150mm	33.5109 150x150mm	33.4210 75x150mm 33.4250 150x300mm	33.4211 75x150mm 33.4251 150x300mm	33.4212 75x150mm 33.4252 150x300mm	33.4213 75x150mm 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	33.4424 150x150mm
				
33.4406 400x150mm	33.4306 300x100mm	33.4336 300x100mm	33.4326 300x100mm	33.4425 150x150mm
				
33.4403 400x150mm	33.4303 300x100mm	33.4333 300x100mm	33.4323 300x100mm	33.4425 150x150mm
				
33.4405 400x150mm	33.4305 300x100mm	33.4335 300x100mm	33.4325 300x100mm	33.4820 150x150mm
				
33.4407 400x150mm	33.4307 300x100mm	33.4337 300x100mm	33.4327 300x100mm	33.4820 150x150mm
				
33.4410 400x150mm	33.4413 400x150mm	33.4480 300x100mm	33.4481 300x100mm	33.4100 150x150mm
				
33.4411 400x150mm	33.4341 300x150mm	33.4482 300x100mm	33.4483 300x100mm	33.4102 150x150mm
				
33.4340 300x150mm	33.4343 300x150mm	33.4420 150x150mm	33.4421 150x150mm	33.4120 150x150mm
				
33.4342 300x150mm	33.4345 300x150mm	33.4421 150x150mm	33.4415 300x150mm	33.4120 150x150mm
				
33.4344 300x150mm	33.4821 400x150mm	33.4420 150x150mm	33.4421 150x150mm	33.4119 150x150mm
				
33.4824 300x100mm	33.4825 300x100mm	33.4454 150x150mm	33.4455 150x150mm	33.4417 300x150mm

Safety Equipment

Signs within this shaded area may be combined with the arrows to make direction signs to suit various applications



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



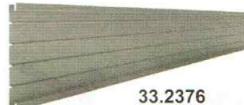
33.2395



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

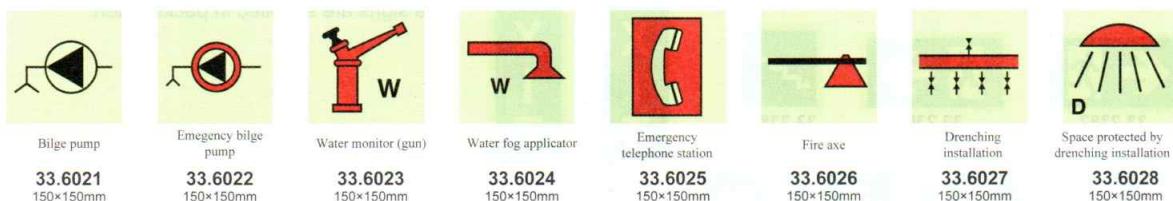
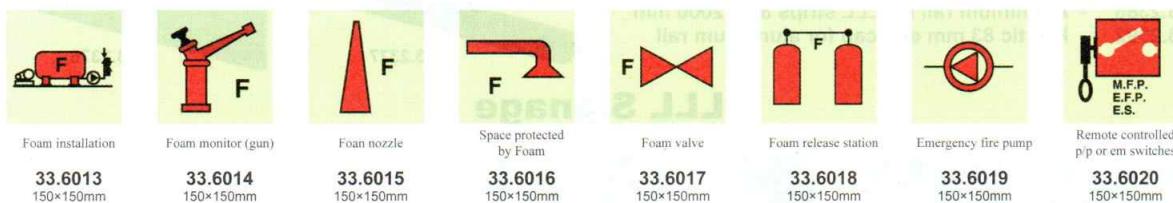
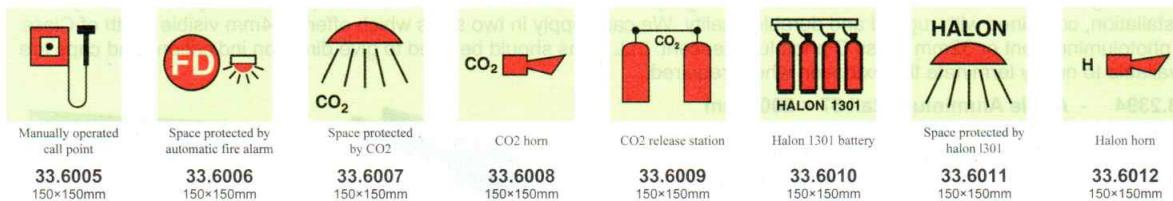
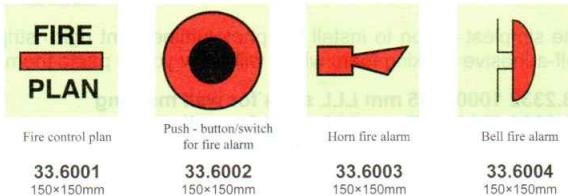
35mm wide x 10m 33.2054

83mm wide x 10m 33.2058

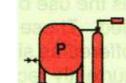
Fire control symbols (A654), on self adhesive photoluminescent vinyl

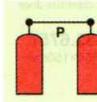
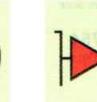
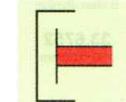
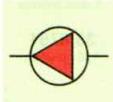
Regulations:

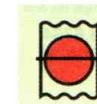
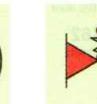
Resolution A654(16) amending Chapter II - 2, Regulation 20 requires the use of these symbols on fire control plans and booklets as international standard. These symbols are often used to identify actual equipment where no standard sign is available.

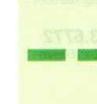
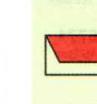
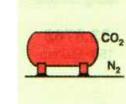


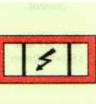
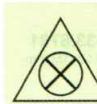
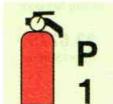
Fire control symbols (A654), on self adhesive photoluminescent vinyl

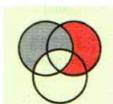
							
Space protected by sprinkler 33.6045 150x150mm	Splinkler horn 33.6046 150x150mm	Sprinkler section valve 33.6047 150x150mm	CO2 battery 33.6048 150x150mm	Halon release station 33.6049 150x150mm	Halogen 1301 bottles in a protected area 33.6050 150x150mm	Powder installation 33.6051 150x150mm	Powder monitor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

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

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

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

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

							
50kg Wheeled Powder fire extinguisher 33.6085 150x150mm	30kg Wheeled CO2 fire extinguisher 33.6086 150x150mm	6kg CO2 fire extinguisher 33.6087 150x150mm	9kg Powder fire extinguisher 33.6088 150x150mm	45l Wheeled Foam fire extinguisher 33.6089 150x150mm	5kg Powder fire extinguisher 33.6090 150x150mm	9l Foam fire extinguisher 33.6091 150x150mm	Extinguisher spare charges 33.6715 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
33.6751 150x150mm	33.6752 150x150mm	33.6753 150x150mm	33.6754 150x150mm	33.6755 150x150mm	33.6756 150x150mm	33.6757 150x150mm	33.6758 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
33.6759 150x150mm	33.6760 150x150mm	33.6761 150x150mm	33.6762 150x150mm	33.6763 150x150mm	33.6764 150x150mm	33.6765 150x150mm	33.6766 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
33.6767 150x150mm	33.6768 150x150mm	33.6769 150x150mm	33.6770 150x150mm	33.6771 150x150mm	33.6772 150x150mm	33.6773 150x150mm	33.6774 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
33.6775 150x150mm	33.6776 150x150mm	33.6777 150x150mm	33.6778 150x150mm	33.6779 150x150mm	33.6780 150x150mm	33.6781 150x150mm	33.6782 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
33.6783 150x150mm	33.6784 150x150mm	33.6785 150x150mm	33.6786 150x150mm	33.6787 150x150mm	33.6788 150x150mm	33.6789 150x150mm	33.6790 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
33.6791 150x150mm	33.6792 150x150mm	33.6793 150x150mm	33.6794 150x150mm	33.6795 150x150mm	33.6001 150x150mm	33.6797 150x150mm	33.6060 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
33.6799 150x150mm	33.6019 150x150mm	33.6801 150x150mm	33.6802 150x150mm	33.6803 150x150mm	33.6804 150x150mm	33.6805 150x150mm	33.6806 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
33.6807 150x150mm	33.6808 150x150mm	33.6809 150x150mm	33.6810 150x150mm	33.6811 150x150mm	33.6812 150x150mm	33.6813 150x150mm	33.6059 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
33.6879 150x150mm	33.6815 150x150mm	33.6816 150x150mm	33.6817 150x150mm	33.6818 150x150mm	33.6819 150x150mm	33.6820 150x150mm	33.6821 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
33.6822 150x150mm	33.6823 150x150mm	33.6824 150x150mm	33.6825 150x150mm	33.6826 150x150mm	33.6827 150x150mm	33.6828 150x150mm	33.6829 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
33.6830 150x150mm	33.6831 150x150mm	33.6832 150x150mm	33.6833 150x150mm	33.6834 150x150mm	33.6835 150x150mm	33.6836 150x150mm	33.6837 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
33.6838 150x150mm	33.6027 150x150mm	33.6073 150x150mm	33.6841 150x150mm	33.6842 150x150mm	33.6843 150x150mm	33.6844 150x150mm	33.6845 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
33.6846 150x150mm	33.6847 150x150mm	33.6848 150x150mm	33.6849 150x150mm	33.6850 150x150mm	33.6851 150x150mm	33.6852 150x150mm	33.6854 150x150mm

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



Powder wheeled fire extinguisher



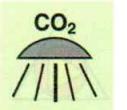
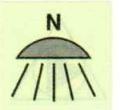
Water wheeled fire extinguisher



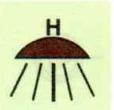
Portable Foam applicator unit



Fire fighters outfit Locker

Space protected by CO₂ fire extinguishing system

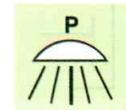
Space protected by Nitrogen fire extinguishing system



Space protected by halon equivalent fire extinguishing system



Space protected by Foam fire extinguishing system

33.6855
150x150mm33.6856
150x150mm33.6857
150x150mm33.6858
150x150mm33.6859
150x150mm33.6877
150x150mm33.6860
150x150mm33.6861
150x150mm

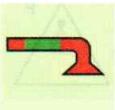
Space protected by Powder fire extinguishing system



Space protected by Water fire extinguishing system



Space protected by sprinkler system



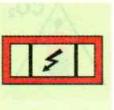
Water for applicator



Emergency source of electrical power (generator)



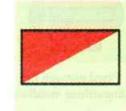
Emergency source of electrical power (battery)



Emergency switch board



Breathing device air compressor

33.6862
150x150mm33.6863
150x150mm33.6864
150x150mm33.6865
150x150mm33.6076
150x150mm33.6867
150x150mm33.6077
150x150mm33.6869
150x150mm

Fire alarm control panel



Push - button/switch for fire alarm



Manually operated call point



Space protected by smoke detector(s)



Space protected by heat detector(s)



Space protected by flame detector(s)



Space protected by gas detector(s)



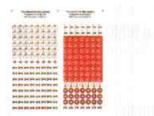
Fire Blanket

33.6043
150x150mm33.6002
150x150mm33.6872
150x150mm33.6056
150x150mm33.6061
150x150mm33.6875
150x150mm33.6876
150x150mm33.6878
150x150mm

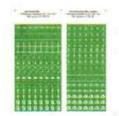
Fire Control & Life Saving Appliance Plan Modification

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

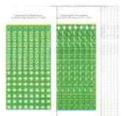
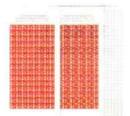
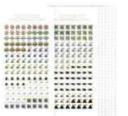
Fire Plan Pictograms to Resolution A654

33.2600
A5 Sheets Booklet

Fire Plan Pictograms to ISO 17631

33.2603
A5 Sheets Booklet33.2604
A5 Sheets Booklet

Fire Plan Pictograms to Resolution A. 1116(30)

33.2601
A5 Sheets Booklet33.2602
A5 Sheets Booklet33.2607
A5 Sheets Booklet33.6093
400x300mm33.6092
400x300mm33.6094
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



33.6104



33.6105
150×150mm



33.6106
150×150mm



33.6107
150×150mm



33.6108
150×150mm
33.2368
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



33.6124



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	

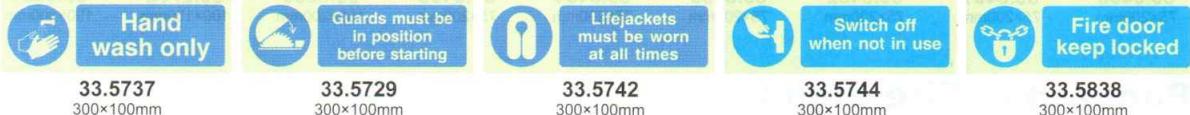
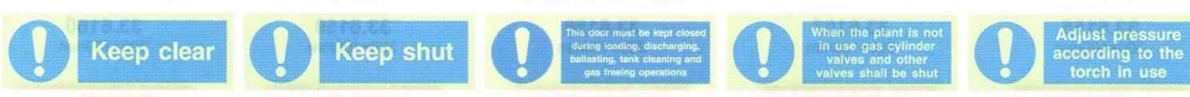
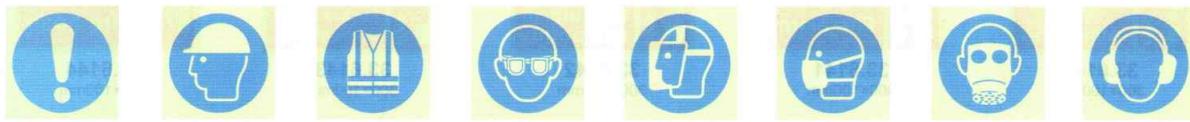
Fire-fighting Equipment Signs with Supplementary Text

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

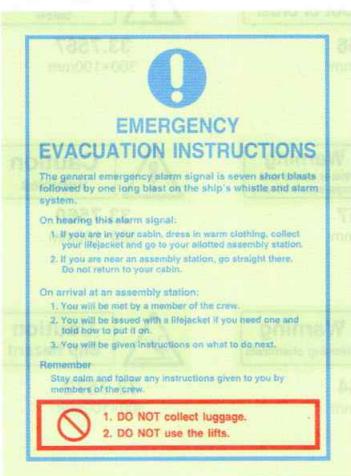
Panoramic Fire Signs

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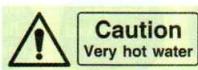
Mandatory Signs, on self adhesive photoluminescent vinyl



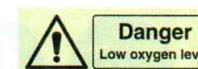
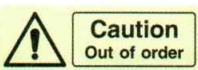
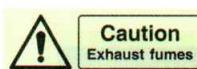
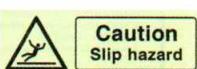
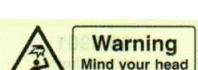
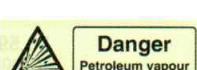
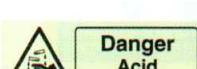
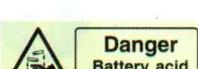
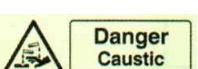
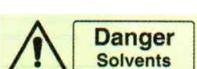
Mandatory Signs, on self adhesive photoluminescent vinyl

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
150x150mm33.5807
150x150mm33.5808
150x150mm33.5809
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
CO₂ 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

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

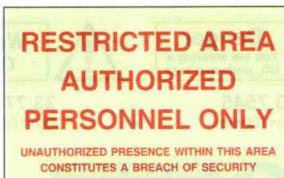


33.3138
300×400mm

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
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300x200mm33.3119
300x200mm33.3120
300x200mm33.3110
300x200mm33.3105
300x200mm

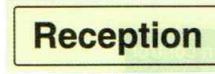
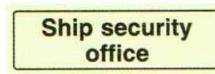
ISPS Code Signs & Security Signs



Security seal ----- void if broken
Secured by _____ on _____

33.2700
150x300mm

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.



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



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.



**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.



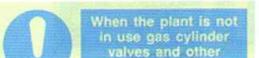
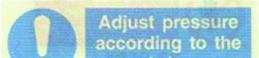
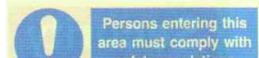
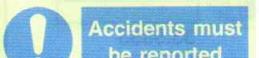
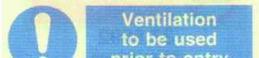
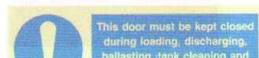
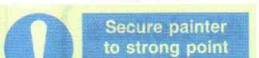
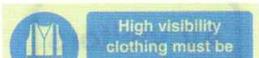
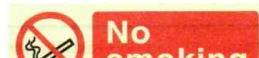
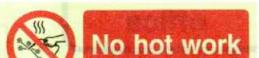
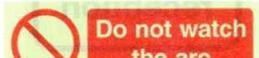
33.2419
150x150mm

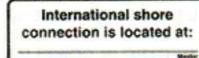
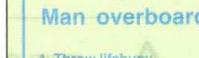
ISPS Code 2003 edition SOLAS amendments came into force in July 2004 and require certain areas to have restricted access and be identified as such.

THE MASTER

33.3140
900x450mm

Deck and Engine Room Signs

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

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

Galley Signs

 Danger Hot 33.7569 300×100mm	 Caution Slip hazard 33.7572 300×100mm	 Caution Wet deck 33.7573 300×100mm	 Caution Slippery surface 33.7574 300×100mm	 Caution Very hot water 33.7577 300×100mm
 Caution Hot surface 33.7579 300×100mm	 Danger High temperature 33.7598 300×100mm	 Danger Electrical hazard 33.7611 300×100mm	 Caution Mind the step 33.7623 300×100mm	 Warning Cleaning chemicals 33.7664 300×100mm
 Plastic only <small>Marine garbage disposal regulations</small> 33.5690 300×100mm	 Food waste only <small>Marine garbage disposal regulations</small> 33.5691 300×100mm	 No plastics or food waste <small>Marine garbage disposal regulations</small> 33.5692 300×100mm	 Incineration only <small>Marine garbage disposal regulations</small> 33.5693 300×100mm	
 Communication only <small>Marine garbage disposal regulations</small> 33.5694 300×100mm	 Compaction only <small>Marine garbage disposal regulations</small> 33.5695 300×100mm	 Glass only <small>Marine garbage disposal regulations</small> 33.5696 300×100mm	 Now wash your hands 33.5728 300×100mm	
 Hair covering must be worn 33.5736 300×100mm	 Hand wash only 33.5737 300×100mm	 Utensil wash only 33.5738 300×100mm	 Cover all cuts and abrasions <small>Report sickness immediately</small> 33.5739 300×100mm	
 Spillages must be cleaned up immediately 33.5740 300×100mm	 All handlers of food must wash their hands after visiting the toilet 33.5745 300×100mm	 This is a food production area <small>In the interests of hygiene protective garments must be worn</small> 33.5746 300×100mm	 Deep fat fryer <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	
 Slicing machine <small>Switch off/Disconnect power supply at mains before changing or attempting to dislodge blockages.</small> 33.5750 300×100mm	 Convector oven <small>Switch off heater fan button before opening doors</small> 33.5751 300×100mm	 Steam oven <small>Open door sufficiently to allow steam and water to escape before opening fully</small> 33.5752 300×100mm	 Mincing / Mixing machine <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	
 Potato chipping machine <small>Switch off/Disconnect power supply at mains before changing or attempting to dislodge blockages.</small> 33.5754 300×100mm	 Dishwashing machine <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	 Waste disposal machine <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	 Dangerous machine <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	
 Please wash only food equipment here 33.5759 300×100mm	 Please wash only hands here 33.5760 300×100mm	 Keep hands clear when machine is operation <small>Disconnected power supply before cleaning</small> 33.5761 300×100mm	 Ventilation systems <small>Close ventilation grilles and louvers and turn off fans. Clean filters if necessary. Fans and filters should not be cleaned without disconnecting the power supply.</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 containers 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

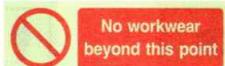
33.2874
300×100mm

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

300×100mm

33.8524
150×150mm



33.5822
150×150mm



33.5811
150×150mm

SHUSH

**PLEASE
PEOPLE
SLEEPING**



33.1712
200×300mm



Close this door at night
33.5803
150×150mm

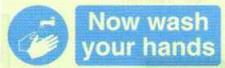
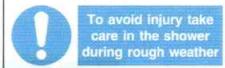
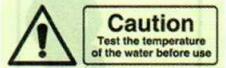
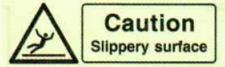
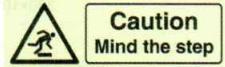


33.5804
150×150mm

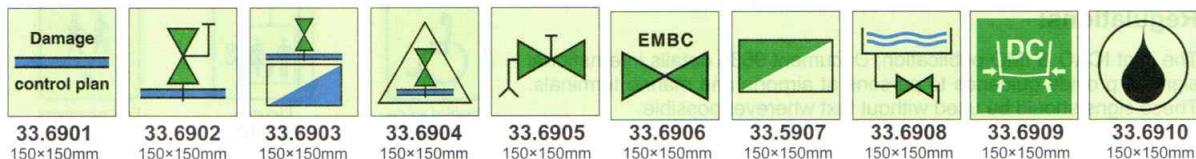


33.5809
150×150mm

Accommodation Signs

Toilets 33.2918 300×100mm	Ladies 33.2919 300×100mm	Gentlemen 33.2920 300×100mm	Catering crew toilet 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						
PULL 33.2938 100×50mm	PUSH 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
Deck 33.4470 400×150mm	Stairway 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.
300x400mm
- 33.1502 Liferaft Launching**
procedures for launching inflatable liferafts.
300x400mm
- 33.1503 Liferafts Inflatable**
"vital actions" after launching.
300x400mm
- 33.1504 Lifeboat Launching Fully Enclosed**
procedures for launching a fully enclosed lifeboat.
300x400mm
- 33.1505 Lifeboat Launching in a Dangerous Atmosphere**
procedures for launching an enclosed lifeboat in a dangerous atmosphere.
300x400mm
- 33.1506 Enclosed Space Entry**
safety procedures for entering enclosed spaces.
300x400mm
- 33.1507 Enclosed Space Entry Safety Signs**
safety signs used to identify hazardous spaces.
300x400mm
- 33.1508 Oil Spill Prevention**
procedures to reduce the likelihood of oil spills.
300x400mm
- 33.1509 Electric Shock, Drowning, Serious Inj W.H.O**
"vital actions" on discovery of an electric shock, drowning or serious injury casualty.
300x400mm
- 33.1510 Wheel House Poster (Two Sheets)**
as required by IMO Res. A. 601(15) (Pen included)
400x300mm
- 33.1511 Wheel House - Pilot Card**
as required by IMO Res. A. 601(15) (Pen included)
400x300mm
- 33.1512 Emergency Muster List**
as required by IMO Chap. III Reg. 8. (Pen included)
400x300mm
- 33.1513 Accommodation Ladders**
safe rigging and use of accommodation ladders.
300x400mm
- 33.1514 Gangways**
safe rigging and use of gangways.
300x400mm
- 33.1515 Man Overboard**
"vital actions" on discovery of a man overboard.
300x400mm
- 33.1516 Abandon Ship**
"vital actions" preparing to abandon ship
300x400mm
- 33.1517 Enclosed Space and Tank Rescue**
safety procedures for recovering a casualty from a hazardous atmosphere.
300x400mm
- 33.1520 Lifeboat Launching Free Fall**
procedures for launching a free fall lifeboat.
300x400mm
- 33.1521 Towing**
recommended procedures for safe towing operations.
300x400mm
- 33.1522 Bunkering**
safety procedures before, during and after bunkering.
300x400mm
- 33.1523 Oil Spill Actions**
recommended procedures to minimize the effect of an oil spill.
300x400mm
- 33.1524 Hot Work**
recommended safety preparation for hot work.
300x400mm
- 33.1525 Working Aloft or Outboard**
be aware of the risks when working outboard and aloft.
300x400mm
- 33.1526 Pilot - Boarding Arrangement**
in accordance with IMO requirements and IMPA recommendations.
400x300mm
- 33.1527 Fire Extinguisher Types**
popular types of fire extinguishers and types of fire which they are suited to.
300x400mm
- 33.1528 Personal Protective Equipment**
choosing the correct equipment for your safety.
300x400mm
- 33.1529 Garbage Disposal Plan**
MARPOL 73/78 Annex V
400x300mm



33.1502



33.1508



33.1524

Training, Safety and Environmental Posters



33.1530



33.1537



33,1542

- | | |
|-----------------------------|--|
| 33.1530
300x400mm | Craneage Safety
Craneage hand signals and safe working practices. |
| 33.1531
300x400mm | Fire & Explosion Actions
"vital actions" following a fire or explosion. |
| 33.1532
300x400mm | Gas Bottle Safety
safe handling, storage and working practices. |
| 33.1533
300x400mm | Welding & Flamecutting
safety procedures during welding operations. |
| 33.1534
300x400mm | Light, Shape & Sound Signals
international communication signals. |
| 33.1535
300x400mm | Engine & Machinery Room Safety
procedures for safe working practice. |
| 33.1536
300x400mm | IMO Safety Signs
IMO safety signs and their various meanings. |
| 33.1537
200x300mm | Drugs Warning Notice
advises owners will assist in prosecuting users and traffickers. |
| 33.1538
150x200mm | Drugs Warning Notice
advises owners will assist in prosecuting users and traffickers. |
| 33.1539
200x300mm | Drugs & Alcohol Warning Notice
advises prohibition of drugs & alcohol and warns owners will prosecute users and traffickers. |
| 33.1540
150x200mm | Drugs & Alcohol Warning Notice
advises prohibition of drugs & alcohol and warns owners will prosecute users and traffickers. |
| 33.1541
200x300mm | Drugs & Trafficking Warning
advises of the consequences of drug use and trafficking. |
| 33.1542
300x400mm | Garbage Don't Throw Overboard
complies with MARPOL Annex V. |
| 33.1543
300x200mm | Oil Discharge Prohibited
(CFR151.15 153.203 & 155.450) extract from CFRs regarding oil pollution. |
| 33.1544
300x400mm | Food Hygiene
recommended procedures for health and safety in pantries, galleys and freezers. |
| 33.1545
300x400mm | Liferafts Davit Launched
procedures for davit launched inflatable liferafts. |
| 33.1546
300x400mm | Evacuation Chutes & Slides
abandon ship procedures using vertical chutes or angled slides. |
| 33.1547
300x400mm | Self Contained Breathing Apparatus
safety procedures for using apparatus in hazardous conditions. |
| 33.1548
300x400mm | Hazard Diamonds
for the carriage of dangerous goods. |
| 33.1549
300x400mm | Hazardous Substance Symbols |
| 33.1550
200x300mm | Hazchem Sign Guide |
| 33.1557
300x400mm | IMO Fire Control Symbols
to IMO resolution A.654(16) |
| 33.1558
300x400mm | SOLAS Poster Life Saving Signals
international search and rescue communication signals based on SOLAS requirements. |
| 33.1559
150x200mm | SOLAS CARD (double sided)
international search and rescue communication signals based on SOLAS requirements. |
| 33.1564
300x400mm | Mooring
procedures for mooring/unmooring |
| 33.1565
400x300mm | Williamson Turn
as required by IMO Res. A. 601(15) (Pen included) |
| 33.1566
300x400mm | Pipe Identification
in accordance with ISO 14726:2008 |

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

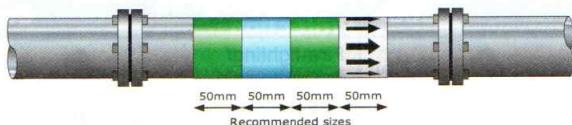


33.1700

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.

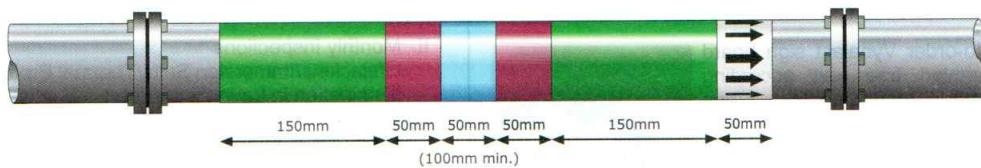
33.2140	Orange	
33.2141	Silver	
33.2142	Red	
33.2143	Violet	
33.2144	White	
33.2145	Yellow-ochre	

Pipe Identification Tape - Multiple Colour Rolls

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

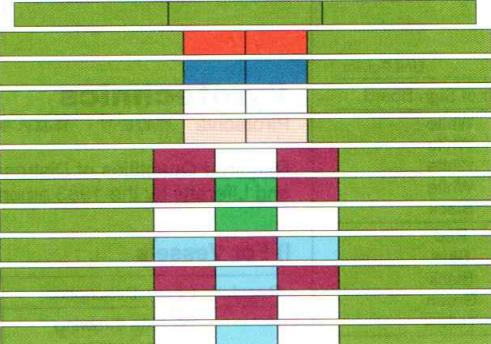
Waste Media	Code	Steam	Code	Fire Fighting/Fire Protection	Code
Black water	33.2100	Steam for heating process	33.2161	Fire-fighting/ fire protection	33.2188
Waste oil	33.2109	Driving steam	33.2162	Fire-fighting gas	33.2189
Bilge water	33.2110	Exhaust steam	33.2163	Sprinkler water	33.2190
Exhaust gas	33.2122	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

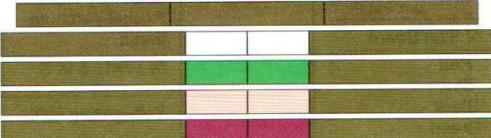


Use tapes in this sequence:

- 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

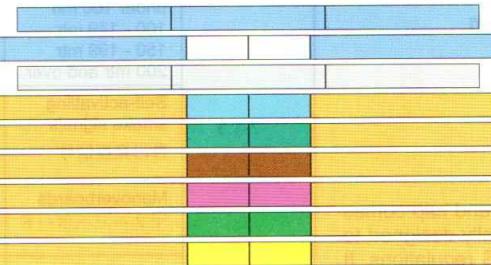
- Furnace
- Diesel
- Lubricating
- Hydraulic power
- Transformer



- 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

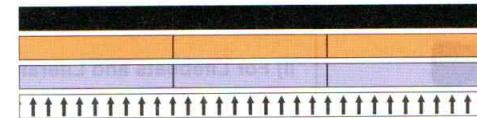
- Compressed air
- Vacuum
- Steam
- Refrigerant 12
- Refrigerant 22
- Refrigerant 502
- Anhydrous ammonia
- Other refrigerants
- Natural gas



- 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	White
	03	White
	04	White
	05	Black
33 89 11	Yellow	
	White	Red
	12	Blue
	13	Black
	14	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 卢检表 SOLAS 檢查

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 applicances 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	Self-igniting lights 自己点火灯	No less than one half of the total number of lifebuoys
	Ship's length under 100 mtr	Quantity 4 pcs.
	100 - 149 mtr	5 pcs.
	150 - 199 mtr	6 pcs.
	200 mtr and over	7 pcs.
7-1.3	Self-activatiing 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
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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 ² = 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 ²	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
Emergency Escape Breathing Device w/Air Cylinder			
33 04 35	Duration of Service	10 min.	Set
33 04 38	"	15 min	"
Spare Cylinder for E.E.B.D.			
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

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

Name of Mfr.: Draeger

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 ₂ O/m ³	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 ³ /h, 3.5 cfm)	125 ltr/min. (7.5 m ³ /h, 4.4 cfm)	235 ltr/min. (14.1 m ³ /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 ₂
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 ₂ (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 ₂	
Accuracy	Within ± 0.7%O ₂	

(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 ₂ at Oxygen decrease mode AL2: 8% O ₂ 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, O₂ (Oxygen), H₂S (Hydrogen Sulfide) and CO (Carbon Monoxide).

GX-3 Pro you can add one more gas detection from SO₂ and CO₂ 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 ₂ : 0-40 VOL% (0.1 VOL%) H ₂ S: 0-100.0 ppm (0.5 ppm) CO: 0-500 ppm (1 ppm)	Combustible gases: 0-100%LEL (1%LEL) O ₂ : 0-40 VOL% (0.1 VOL%) H ₂ S: 0-100.0 ppm (0.5 ppm) CO: 0-500 ppm (1 ppm) < Option > SO ₂ : 0-20.00 ppm (0.05 ppm) CO ₂ : 0-5.00 vol% (0.01 vol%) 0-10,000 ppm (20 ppm) NO ₂ : 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 ₂ : Low 18.0 VOL%, High 25.0 VOL%, Over 40.0 VOL% H ₂ 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 ₄ , i-C ₄ H ₁₀ , H ₂ , others): Thermal conductivity: 0-100 VOL% (1 VOL%) Catalytic combustion: 0-100%LEL (1%LEL) O ₂ : Galvanic cell 0-40 VOL% (0.1%) H ₂ 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 ₂ : Low 19.5 VOL%, High 23.5 VOL% H ₂ 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 ₄ , CO, H ₂ S, i-C ₄ H ₁₀ , O ₂
Sampling method	Suction type
Principle of detection	New Ceramic catalytic Method, Potentiostatic Electrolysis Method
Detection range	0-100% LEL (HC/CH ₄) 0.0-25.0 VOL% (O ₂) 0-500 ppm (CO) 0.0-30.0 ppm (H ₂ 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 CH₄ 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 ₂)	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 ₄	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				

(to be continued)

		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 ₂) : 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 ₂ S)	0-200 ppm	0.1 ppm
Carbon monoxide (CO)	0-1,000 ppm	1 ppm
Oxygen (O ₂)	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 Pcs.			
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 ia and IIC T4 and IP67 approval, the X-am 2500 is suitable for the most demanding environments.

3 years Warranty.



CODE		33 05 82
Model	X-am 2500	
Measuring Range	Ex-measurement: 0 to 100% LEL, resolution 1%-LEL 0 to 5 VOL.-% CH ₄ , 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	

Multi-Gas Detector

Draeger X-am® 5000

Detector Multigas

This 1- to 5-gas detector reliably measures combustible gases and vapors as well as O₂ 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 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 ₂ EN 45544: CO & H ₂ 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 O₂, Cl₂, CO, CO₂, H₂, H₂S, HCN, NH₃, NO, NO₂, PH₃, SO₂, O₃, Amine, Odorant, COCl₂ and organic vapors. Draeger infrared sensors for detection of CH₄ 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 ₂ EN 45544: CO, CO ₂ & H ₂ 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 H₂S with CO or O₂ 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 ₂ S/CO 0–100 ppm H ₂ S 0–2,000 ppm CO	O ₂ /CO 0–25 Vol.% O ₂ 0–2,000 ppm CO	CO-H ₂ -CP 0–2,000 ppm
Alarm Thresholds A1/A2	5/10 ppm H ₂ S 30/60 ppm CO	19/23 Vol.% O ₂ 30/60 ppm CO	30/60 ppm
Battery Service Life	1 year (O ₂ 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

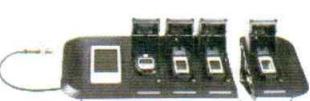
33

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.

<X-dock Master Technical Data>

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 x 130 x 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 ₄)	Oxygen (O ₂)	Carbon Monoxide (CO)	Carbon Dioxide (CO ₂)
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			

Unit Per Set

CODE	33 05 80			
Model	RX-8700			
Target Gas	Combustible Gas (HC)	Oxygen (O ₂)	Hydrogen Sulfide (H ₂ 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

Unit Per Set

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	

Unit Per Set

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.	

Halogen Refrigerant Leak Detectors

Detectores Halógenos de Fugas de Refrigerante

ハロゲンガス検知器 卤素制冷剂检漏仪

A hand held detector able to detect all halogen refrigerants(CFC, HCFC, HFC and HFO) enabling you to find leaks in your refrigeration system. Seven-segment visual leak size indicator, audible alarm, cordless, and supplied in carrying case and spare sensing tip.



CODE	33 05 35
Model	Unirx-1A
Detection mode	Microprocessor controlled circuit with advanced digital signal processing.
Sensitivity	Better than 5 ppm
Sensor	Corona Sensor
Display	LED
Power Supply	3 V DC
Batteries	2 × C cell alkaline (LR-14/AM-2)
Battery Life	30 hrs normal operation
Size	229 × 57 × 57 mm
Weight	560 grm
Approval	UL classified and CE approved
Name of Mfr.	Wilhelmsen Ships Service Co., Ltd.

Portable Toxic Gas Meters

Medidores portátiles de gases tóxicos

有毒ガス検知器 有毒气体检测器

A portable toxic gas meter with the following features.

- Peak hold function enable to memorize maximum density.
- Alarm is two-staged type (AL1 and AL2).
- Auto-zero function can calibrate automatically at the time of power-on.
- Long-life sensor (2 years, 1 year warranty).



Measurable Gas

Model	TIP-HS	TIP-HY
Measurable Gas	H ₂ S (Hydrogen sulfide)	H ₂ (Hydrogen gas)
Measuring range (ppm) Low/High range	0-20/0-100	0-400/0-2,000
Resolution (ppm)	0.1	2
Alarm Level (ppm) AL1/AL2	5/25	100/500

Unit Per Set

CODE	33 05 55	33 05 56
Model	TIP-HS	TIP-HY
Measuring Gas	Hydrogen sulfide	Hydrogen gas
Sensing Principle	Potentiostatic electrolysis method	

(to be continued)

Gas Collection Method	Suction type by built in pump
Accuracy	Within ± 10% in full scale
Response	90% response within 60 sec.
Display	Digital display by LCD panel, Power lamp, Alarm lamp, Peak hold mode lamp
Alarm Level	Two staged type (AL1/AL2: adjustable)
Alarm Display	Alarm lamp and buzzer
Power Source	Manganese dry cell (R20P) × 2 pcs
Dimensions	W:163 × H:137 × D:67 mm
Weight	1.3 kg (without sampling tube)
Safety Approval	Intrinsically safe: i3aG4
Ability Approval	Explosion proof approved by NK
Accessories	Air Filter, Leather case, Sampling tube (5 m ~ max 20 m)
Name of Mfr.	Toka Seiki Co., Ltd.

Portable Gas Leak Detector

Detector de Fugas de Gas Portátil

ポータブルガス漏れ検知器

便携式气体检漏仪



Handy type of highly sensitive lightweight gas leak detector for Toxic, Combustible and CFC Freon gases. It uses a hot-wire semiconductor sensor (MOS) to detect a range of target gases from the list of 40 gases.

CODE	33 06 79	Unit Per Set
Model	SP-220 TYPE SC	
Sampling method	Suction Type	
Principle of detection range	Hot Wire Type Semi-Conductor Method	
Detection Range	Depend on target gas	
Type of alarm	Gas alarm/Fault alarm Display: Lamp blinking/intermittent buzzer sounding	
Ingress proof rating	IP55	
CE marking	EMC/RoHS	
Power source	AA alkaline battery × 2	
Continuous operation	12 hours (normal temp. w/o alarms)	
Dimensions	Approx. 43 (W) × 200 (H) × 39 (D) mm	
Weight	Approx. 215 g (w/o batteries)	
Operating Temperature range	-20°C ~ +55°C	
Operating Humidity range	95% RH or less (Non-condensing)	
Target Gases	PH ₃ , C ₃ H ₆ O, ASH ₃ , NH ₃ , i-C ₄ H ₁₀ , IPA, CO, C ₂ H ₅ OH, C ₂ H ₄ , VCM, CH ₃ CL, C ₆ H ₁₀ , EO, SiH ₄ , CH ₃ Br, H ₂ , C ₂ HCl ₃ , C ₃ H ₈ , EDC, SO ₂ , C ₃ H ₆ , r-134a, r-22, r-32, n-C ₆ H ₁₄ , C ₆ H ₆ , HCHO, CH ₄ , CH ₃ OH, MEK, H ₂ S, B ₂ H ₆ , GeH ₄ , HBr, HCl, r-407c, H ₂ Se, r-410a, r404a, CH ₂ C ₂ F ₄	
Name of Manufacture	Riken Keiki	

Tube Type Gas Detectors

Detectores de Gases tipo Tubo

ガラス管式検知器 MSA 气体抽样泵（活塞式）

Measured value can be read-off directly and immediately via colour indication. It consists of sampler pump and tubes. A wide variety of tubes are available, applicable to the gas being tested. The most common tubes are discussed below.



KWIK-DRAW™



Draeger



Kitagawa



Uniphos

33 05 40	Tube type gas detector, Kwik-Draw™ Model Kwik-Draw Deluxe	Pc.
33 05 53	Tube type gas detector, Kwik-Draw™ Model Gas Tester II H	Pc.
33 05 54	Tube type gas detector, Kwik-Draw™ Model Gas Tester I	Pc.
33 05 60	Tube type gas detector, Draeger Model Accuro	Pc.
33 16 51	Tube type gas detector, Kitagawa Model AP-20	Pc.
33 16 72	Tube type gas detector, Uniphos Model ASP-40	Pc.

33 16 11	Mercaptans	Ethyl-Mercaptan-0.5	0.5 - 100 ppm	D5086815
12	Methyl Bromide	Methyl-Bromide-2	1 - 140 ppm	D5086845
05	Natural Gas	Erdgas	Warning Marks	D5086846
33 05 41	Nitrogen Dioxide	NO2-0.5	0.5-50 ppm	D5085805
33 16 85	Organic Compounds	Qualitest	Qualitative	D5085810
33 38 10	Oxygen	Oxygen-3%	3 - 24%	D7086864
33 16 04	Petroleum Hydrocarbons	Petroleum Hydrocarbon-10	10 - 2500 ppm	D7086876
13	Phenol	Phenol-1	1 - 25 ppm	D5086838
21	Phosgene	Phosgene-0.1	0.1 - 20 ppm	D5085854
14	Phosphine	PH ₃ -0.1	0.1 - 100 ppm	D5085830
33 16 25	Propane	Propane-200	200 - 4000 ppm	D5086831
33 05 47	Sulfur Dioxide	SO ₂ -1	0.5 - 30 ppm	D5085803
33 16 15	Styrene	Styrene-10	10 - 300 ppm	D5086819
33 05 50	Toluene	Tol-5	5 - 1000 ppm	D5085828
49	Trichloroethylene	Tri-5	5 - 250 ppm	D5085842
33 16 16	Vinyl Chloride	VC-1	1 - 70 ppm	D5085837
17	Xylene	Tol-5	5 - 2500 ppm	D5085828

For Draeger tube gas detector

Sold 10 pieces per packet.

Unit Per Pkt

CODE	Substance Measured	Range of Measurement	Part No.
33 05 61	Hydrocarbon 0.1%/c	0.1 to 1.3 Vol.-%	8103571
62	Ammonia 5/a	5 to 70 ppm	CH 20501
63	Carbon Dioxide 0.1%/a	0.5 to 6 Vol.-%	CH 23501
64	Carbon Dioxide 1%/a	1 to 20 Vol.-%	CH 25101
65	Carbon Monoxide 0.3%/b	0.3 to 7 Vol.-%	CH 29901
33 05 66	Natural Gas Test	Qualitative	CH 20001
67	Sulphur Dioxide 1/a	1 to 25 ppm	CH 31701
68	Carbon Monoxide 5/c	100 to 700 ppm	CH 25601
70	Carbon Dioxide 100/a	100 to 3,000 ppm	8101811
71	Carbon Dioxide 0.5%/a	0.5 to 10 Vol.-%	CH 31401

Tubes for Gas Detectors

Tubos para Detectores de Gas ガス検知器用チューブ 气体检测仪用管

All tubes are sold 10 tubes each per pkt.

For KWIK-DRAW™ tube gas detector

Unit Per Pkt

CODE	Substance Measured	Applicable	Range of Measurement	Part No.
33 16 06	Acetic Acid	Acetic-Acid-1	1 - 80 ppm	D5086821
33 05 48	Acetone	Acetone-100	100 - 10000 ppm	D5086829
33 16 07	Alcohol	Ethanol-100	Ethanol: 100 - 6000 ppm	D5086818
33 05 42	Ammonia	NH3-2	2-600 ppm	D5085845
33 16 08	Benzene	Benzene-0.25	0.25 - 10 ppm	D5086852
33 16 09	Benzene	C6H6-1	1 - 25 ppm	D5086835
33 05 43	Carbon Dioxide	CO2-100	100-3000 ppm	D5086814
33 16 02	Carbon Dioxide	CO2-0.1%	0.1 - 7%	D5085817
23	Carbon Disulfide	CS2-2	2 - 300 ppm	D5085834
33 05 45	Carbon Monoxide	CO-5	2-1000 ppm	D5085836
33 05 46	Chlorine	Cl2-0.2	0.2 - 30 ppm	D5085801
33 16 22	Chlorobromomethane	Trichloroethane-5	8 - 180 ppm	D5086834
24	Gasoline	Gasoline-30	30 - 6000 ppm	D5085898
10	Hexane	Hexane-20	20 - 3200 ppm	D5086832
19	Hydrogen Chloride	HCL-1	1 - 50 ppm	D5085846
33 16 18	Hydrogen Cyanide	HCN-2	2 - 50 ppm	D5085824
20	Hydrogen Fluoride	HF-1	1 - 50 ppm	D5086830
33 05 44	Hydrogen Sulfide	H2S-1	1 - 200 ppm	D5085826
33 16 03	Hydrogen Sulfide	H2S-100	100 - 4000 ppm	D5085827
33 05 09	Hydrogen Sulfide	H2S -0.2%	0.2 - 7%	D7000003

(to be continued)

Other test tubes from Draeger

Sold 10 pieces per packet.

Unit Per Pkt

CODE	Substance Measured	Range of Measurement	Part No.
33 16 26	Acetic Acid 5/a	5 to 80 ppm	6722101
27	Methanol 20/a	20 to 5000 ppm	8103801
28	Benzene 0.25/a	0.25 to 10 ppm	8103691
29	Benzene 5/b	5 to 50 ppm	6728071
30	Benzene 2/a (5)	2 to 60 ppm	8101231
33 1631	Carbon Dioxide 0.1/a	0.5 to 6 Vol.% / 0.1 to 1.2Vol%	CH23501
32	Carbon Monoxide 5/c	100 to 700 ppm / 5 to 150 ppm	CH25601
33	Hexane 10/a	10 to 200 ppm / 300 to 2500 ppm	8103681
35	Hydrogen Sulphide 1/d	1 to 20 ppm / 10 to 200 ppm	8101831
36	Hydrogen Sulphide 100/a	100 to 2000 ppm	CH29101
33 16 37	Mercapton 0.1/a	0.1 to 2.5 ppm / 3 to 15 ppm	8103281
38	Mercapton 0.5/a	0.5 to 5 ppm	6728981
39	Methyl Acrylate 5/a	5 to 200 ppm	6728161
40	Methyl Bromide 0.1/a	0.1 to 2.5 ppm	8103281
41	Oxygen 5%/C	5 to 23 Vol.-%	8103261
33 16 42	Petroleum Hydrocarbon 100/a	100 to 2500 ppm	6730201
43	Phenol1/b	1 to 20 ppm	8101641
44	Phosphine 0.1/c	0.5 to 3 ppm / 0.1 to 1.0 ppm	8103711
45	Styrene 10/b	10 to 250 ppm	6733141
46	Sulphuric Acid 1/a (9)	1 to 5 mg/m ³	6728781
33 16 47	Sulphur Dioxide 0.5/a	1 to 25 ppm / 0.5 to 5 ppm	6728491
48	Vinyl Chloride 0.5/b	0.5 to 5 ppm / 5 to 30 ppm	8101721
49	Toluene 5/b	5 to 80 ppm / 50 to 300 ppm	8101661
50	Xylene 10/a	10 to 400 ppm	6733161
33 38 19	Ethanol 100/a	100 to 3000 ppm	8103761
20	Ammonia 5/a	5 to 70 ppm / 50 to 600 ppm	CH20501

For Kitagawa tube gas detector

CODE	Substance Measured	Range of Measurement	Part No.	Part No.	Unit Per Pkt
33 16 52	Acetylene	50 to 1,000 ppm	101S	10	
33 39 97	Ammonia	0.5 to 10 %	105SA	10	
33 16 53	Ammonia	50 to 900 ppm	105SB	10	
33 39 98	Ammonia	1 to 200 ppm	105SE	10	
99	Ammonia	0.2 to 20 ppm	105SD	10	
33 38 13	Benzene	0.2 to 15 ppm	118SD	10	
12	Benzene	2 to 50 ppm	118SC	10	
16	Carbon Dioxide	0.05 to 1.0%	126SB	10	
33 16 54	Carbon Dioxide	0.1 to 2.6%	126SA	10	
33 38 17	Carbon Dioxide	1 to 20%	126SH	10	
33 16 55	Carbon Disulphide	30 to 500 ppm	141SA	2x5	
33 38 11	Carbon Monoxide	1 to 50 ppm	106SC	10	
33 16 56	Carbon Monoxide	20 to 1,000 ppm	106SA	10	
57	Chlorine	0.5 to 10.0 ppm	109SB	10	
58	Chloroform (Trichloromethane)	70 to 500 ppm	152S	2x5	
33 16 59	Ethylene Oxide	0.01 to 1.8%	122SA	10	
60	Hydrogen Chloride	2 to 20 ppm	173SB	2x5	
61	Hydrogen Cyanide	2 to 100 ppm	112SB	10	
62	Hydrogen Fluoride	0.5 to 30 ppm	156S	10	
63	Hydrogen Selenide	5 to 600 ppm	167S	10	
33 38 14	Hydrogen Sulphide	1 to 30 ppm	120SD	10	
33 16 64	Hydrogen Sulphide	3 to 150 ppm	120SB	10	
33 38 15	Hydrogen Sulphide	50 to 1,000 ppm	120SF	10	
33 16 65	Methyl Alcohol (Methanol)	0.05 to 6.0%	119SA	10	
66	Methyl Amine	1 to 20 ppm	227S	10	
33 16 67	Nitric Acid Vapour	2 to 20 ppm	233S	10	
68	Nitrogen Oxide and Dioxide	NO:10to300 ppm NO ₂ :1to40 ppm	174A	5	
69	Phosgene (Carbonyl Chloride)	0.5 to 20 ppm	146S	10	
70	Sulphur Dioxide	1 to 60 ppm	103SD	10	
71	Toluene (Methyl Benzene)	10 to 500 ppm	124SA	10	
33 38 18	Vinyl Chloride	0.05 to 1.0%	132SA	10	

33

Safety Equipment

For Uniphos tube gas detector

CODE	Substance Measured	Range of Measurement	Part No.	Q'ty/ Pkt	Unit Per Pkt
33 38 04	Acetic Acid	2.5 - 50 ppm	SAA-2	10	
05	Aceton	50 - 4,000 ppm	SAC-5	10	
08	Acetylene	100 - 5,000 ppm	SAL-5	10	
33 16 81	Ammonia	2.5 to 200 ppm	SAM-3	10	
78	Benzene	0.1 to 75 ppm	SBE-2M	10	
33 16 73	Carbon Dioxide	150 to 10,000 ppm	SCD-5	10	
97	Carbon Disulfide	1.25 - 100 ppm	SCS-2	10	
76	Carbon Monoxide	2 to 100 ppm	SCO-3	10	
96	Chloroform	10 - 100 ppm	SCF-3	10	
33 38 06	Ethanol	0.05 - 5 %	SET-7	10	
33 38 07	Ethylene Oxide	0.1 - 10 ppm	SEO-1	10	
33 16 98	Gasoline	0.03 - 0.6%	SGA-6L	10	
93	Hydrogen Chloride	0.25 - 75 ppm	SHC-1	10	
92	Hydrogen Cyanide	0.25 - 100 ppm	SHN-2	10	
94	Hydrogen Fluoride	0.5 - 60 ppm	SHF-2	10	
33 16 75	Hydrogen Sulphide	0.25 to 8%	SHS-7	10	
74	Mercaptans	0.5 to 40 ppm	SEM-2M	10	
33 38 03	Methyl Bromide	0.5 - 80 ppm	SMB-2M	10	
01	Nitric Acid	1 - 20 ppm	SNA-2M	10	
33 16 83	Nitrogen Dioxide	0.5 to 30 ppm	SND-2	10	
33 16 86	Nitrogen Oxides	0.5 - 15 ppm	SNO-2M	10	
77	Oxygen	3 to 24%	SOX-9M	5	
87	Phenol	1 - 25 ppm	SPE-2M	10	
95	Phosgene	0.1 - 10 ppm	SPG-1	10	
88	Phosphine	0.05 - 20 ppm	SPH-1	10	
33 16 89	Styrene	2.5 - 500 ppm	SST-4L	10	
99	Sulfuric Acid	0.5 - 5mg/m ³	SSA-1L	10	
79	Sulphur Dioxide	0.25 to 20 ppm	SSD-1	10	
80	Toluene	5 to 600 ppm	STO-4M	10	
90	Vinyl Chloride	1 - 20 ppm	SVC-2M	10	
33 16 91	Xylene	25 - 2,000 ppm	SXY-4	10	

Tube Type Gas Detectors**All-in-one Automatic Tube Pump**

Detectores de Gases tipo Tubo

チューブ式検知器 MSA 气体抽样泵（活塞式）

The automatic tube pump is the first all-in-one solution designed for measurements with all Dräger short-term tubes and for sampling tubes and systems. Ease of operation and a high degree of reliability compliment the measurement and sampling of gases, vapours and aerosols.

**Specification**

Short-term Measurements	Using Dräger short-term tubes Number of strokes: adjustable, 1 to 199 strokes Stroke volume: 100 mL
Sample Taking	Flow rate range: 0.1 to 2.0 L/min Resolution: 0.1 to 1.0 L/min: 0.1 L/min ±5% Sampling time: adjustable, up to 12 hours, depending on flow rate Resolution in steps of 15 minutes (default) or 1 minute
Display	Two Parts: Segment and matrix
Use of Extension Hose	Up to 30 mtr (98 ft.)
Power Supply	Rechargeable Battery NiMH, T4: 7.2 V, 1,500 mAh (charging time < 4 hours) Alkaline Battery Pack, T4: 6 AA cells, (see battery pack label for approved battery types)
Battery Capacity at 25°C (77°F)	Dräger short-term tubes: >1,000 strokes Sample taking: up to 12 hours, depending on adjusted flow rate
Approvals	ATEX: Ex ia IIC T4 Ga Ex ia I Ma IM 1 / II 1G MED UL: Class I, Div. 1, Group A, B, C, D Class II, Div. 1, Group F, G 5°C ≤ Ta ≤ +40°C Temp. Code T4 Ex ia UL: Class I, Div. 1, Group A, B, C, D Class II, Div. 1, Group F, G 5°C ≤ Ta ≤ +40°C Temp. Code T4 Ex ia IECEx: Ex ia IIC T4 Ga CE-mark: according to 2004/108 EC and 94/9/EC
Dimensions (H × W × D)	Approx. 175 × 230 × 108 mm (7" × 9" × 4.25")
Weight (w/o battery pack)	Approx. 1.6 kg (3.5 lbs)
Name of Mfr. Draeger	
CODE	Description
33 05 72	Automatic Draeger Tube Pump, Model X-act 5000, without power supply
73	Rechargeable battery NiMH, T4
76	Charging accessories, 110 - 240 VAC
77	Extension hose, Dräger accuro & Dräger X-act 5000, 10 m, incl. adapter for tubes, adapter for hose
78	Extension hose, Dräger accuro & Dräger X-act 5000, 15 m, incl. adapter for tubes, adapter for hose
79	Extension hose, for Dräger X-act 5000 only 30 m, incl. adapter for tubes, adapter for hose

Volatile Organic Compounds Detectors

Detectores de compuestos orgánicos volátiles
揮発性有機物質検知器 挥发性有机物质探测器

Designed to replace all range of gas tubes, it is a revolutionary handheld PID instrument for rapid, accurate detection of volatile organic compounds (VOCs) with exceptional resistance to humidity and contamination. Fastest response time of just 2 seconds and is as quick to clear down. It is simple and, enables one handed operation. Its rugged design and protective, removable rubber boot withstand the harshest environments. Inexpensive consumables and parts, and 5 years warranty when instrument is registered online.



Unit Per Set

CODE	33 05 99	Unit Per Set
Model	MiniRAE 3000+	
Range	Detect up to 480 VOC	
Maximum Reading	15,000 ppm or 20,000 mg/m ³ (gas dependent)	
Accuracy	± 5% display reading ± one digit	
Intrinsically Safe Approvals	US and Canada: CSA, Classified as Intrinsically Safe for use in Class I, Division 1 Groups A, B, C, D Europe: ATEX II 2G EEx ia IIC T4	
Battery Life	<ul style="list-style-type: none"> • Rechargeable, external field-replaceable Lithium-Ion battery pack • Alkaline battery adapter • Runtime 16 hours of operation (12 hours with alkaline battery adapter) 	
Calibration	Standard calibration 100 ppm isobutylene Custom calibration capability	
Alarm	<p>95dB at 12" (30 cm) buzzer and flashing red LED to indicate exceeded preset limits.</p> <ul style="list-style-type: none"> • High: 3 beeps and flashes per second • Low: 2 beeps and flashes per second • STEL and TWA: 1 beep and flash per second • Alarms latching with manual override or automatic reset • Additional diagnostic alarm and display message for low battery and pump stall Pre-programmed with over 480 gases* 	
Protection	<ul style="list-style-type: none"> • IP-67 unit off and without flexible probe • IP-65 unit running 	
Weight & Dimensions	10" L × 3.0" W × 2.5" H (255 × 76 × 64 mm) Instrument weight 26 oz (738 g)	

Name of Mfr.: Atlas Marine Services Pte Ltd.

Carbon Monoxide Gas Alarm

Detector de gas de monóxido de carbono
一氧化炭素感知器 一氧化碳探测器



A device for detecting the "Silent Killer", Carbon Monoxide, which is released when fuels are burnt inefficiently. Raising loud 85 db alarm and flashing RED LED light to alert when detecting the CO in the room. This alarm can be mounted on the ceiling or on a wall near the ceiling. Battery operated, five year lifetime, and chirp sounds and indicator light notify you the end of battery lifetime. This alarm comes with calibrated test gas kit to enable the unit to be inclusively tested on installation and annually over the expected life. Certified to BS EN 50291. Battery included. Hard wire version is also available.

CODE	33 10 12	Unit Per Set
Alarm Sound	85 dB	
Alarm Light	LED x 3	
Size	112 mm diam × 40 mm thick	
Weight	130 gram	

Name of Mfr.: Gas Safe Europe Ltd.

CO Alarm Test Gas Kit

Equipo de gas de prueba para alarmas de monóxido de carbono
一氧化炭素感知器テストキット 一氧化碳探测器测试套件

A calibrated test gas kit for sensor inclusively testing Carbon Monoxide (CO) alarms manufactured to BS EN 50291(Europe) and UL 2034(USA). Low cost, safe and easy to use, this test kit ensures CO alarm sensors are still sensing CO. Sensors have a limited and underterminable life and can be effected by airborne pollutants such as cigarette smoke, cooking fumes etc. Each kit contains a patented enclosure shroud which holds the test gas at the required level for a fixed time to facilitate a field sensor test. It contains sufficient test gas to carry out 11 tests per can.



33 10 13	CO alarm test kit, 11 tests/can, 400ml	Can
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Name of Mfr.: Gas Safe Europe Ltd.

Test Gas for Gas Detector

Comprobador de Gases para Detector de Gases

ガス検知器用テストガス 气体探测器的测试用气体

For testing the accuracy of gas detectors. There are various type of test gases according to the type of gas, manufacturer of the gas detectors.

When ordering, please specify the following points.

How to order: 33 - 05 -

Test gas for gas detector, TYPE of GAS DETECTOR, MFR'S NAME, MODEL NAME, COMPOSITION of GAS, GAS DENSITY

Example of Combustible Gases and Toxic Gases

Combustible Gases

Gases		Molecular Formula (Chemical Formula)	Explosion Range (Vol%)
Acetone	アセトン	C ₃ H ₆ O	2.1~13.0
Acetylene	アセチレン	C ₂ H ₂	1.5~100
Butyl Acetate	酢酸ブチル	C ₆ H ₁₂ O ₂	1.2~7.5
Butylene	ブチレン	C ₄ H ₈	1.7~9.0
City Gas	都市ガス	-	5~
Ethanol	エタノール	C ₂ H ₅ OH	3.3~19
Ethyl Acetate	酢酸エチル	C ₄ H ₈ O ₂	2.0~11.5
Ethylene	エチレン	C ₂ H ₄	2.7~34
Gasoline	ガソリン	-	1.4~7.6
Hydrogen	水素	H ₂	4.0~75.6
i-Butane	i-ブタン	C ₄ H ₁₀	1.8~8.0
Kerosene	灯油	-	0.8~
Liquefied Propane Gas	LPG	-	2~12
Methane	メタン	CH ₄	5.0~15.0
Methanol	メタノール	CH ₃ OH	5.5~44
Methyl Ethyl Ketone	メチルエチルケトン	CH ₃ COC ₂ H ₅	1.8~11.5
n-Butane	n-ブタン	C ₄ H ₁₀	1.5~7.8
n-Pentane	n-ペンタン	C ₅ H ₁₂	1.4~7.8
O-Xylene	O-キシレン	C ₈ H ₁₀ (CH ₃) ₂	1.0~6.0
Propane	プロパン	C ₃ H ₈	2.1~9.5
Propylene	プロピレン	C ₃ H ₆	2.0~11.7
Toluene	トルエン	C ₆ H ₅ CH ₃	1.2~7.0

Toxic Gases

Gases		Molecular Formula (Chemical Formula)	Explosion Range (Vol%)
Acetaldehyde	アセトアルデヒド	CH ₃ CHO	4.0~57
Acrylonitrile	アクリロニトリル	CH ₂ CHCN	2.8~28
Ammonia	アンモニア	NH ₃	15~28
Arsine	アルシン	AsH ₃	0.8~98
Benzene	ベンゼン	C ₆ H ₆	1.2~8.0
Butadiene	ブタジエン	C ₄ H ₆	2.0~11.5
Carbon Monoxide	-酸化炭素	CO	12.5~74
Chlorine	塩素	Cl ₂	-
Diborane	ジボラン	B ₂ H ₆	0.8~88
Ethylene Oxide	エチレンオキサイド	CH ₂ CH ₂ O	3.0~100
Germane	ゲルマン	GeH ₄	0.5~50
Hydrogen Chloride	塩化水素	HCl	-
Hydrogen Cyanide	シアノ化水素	HCN	5.4~46.6
Hydrogen Sulfide	硫化水素	H ₂ S	4.8~45.5
Methyl Bromide	臭化メチル	CH ₃ Br	10.0~15.0
n-Hexane	n-ヘキサン	C ₆ H ₁₄	1.2~7.5
Phosgene	ホスゲン	COCl ₂	-
Phosphine	ホスフィン	PH ₃	1.3~9.8
Silane	シラン	SiH ₄	0.8~98
Sulfur Dioxide	二酸化硫黄	SO ₂	-
Vinylchloride	塩化ビニル	CH ₂ CHCl	3.8~29.3

Span Gases

Gas Patrón スパンガス 气体气瓶

Span Gas for all types of gas detectors and analyzer. To help comply with standards, various types of calibration gas cylinders are available for your usage.

The most important accessory to any gas detector is a calibration kit, which provides the means to determine if the instrument is working properly. When using gas detection equipment, it is necessary to calibrate the equipment on a regular basis to guarantee accurate results. According to some regulations and standards, one must test the gas detector prior to each use with a suitable test gas.



Can Specifications

Type	34 L	58 L	110 L
Height x Diam	280×74mm	360×88mm	360×88mm
Weight in kg	0.7	0.8	0.8
Material	Aluminium Alloy		
Filling Pressure	500 PSI	500 PSI	1,000 PSI
Usable Gas	34 ltr	58 ltr	110 ltr
Connection	5/8" - 18 UNF (C-10)		
Filling Tolerance	5-49 PPM ±10%, 50-500 PPM ±5% > 500 PPM ±2%		
Transportation	UN 1956 Class 2		
Mixture	Flammable, non reactive and reactive gases		

Type of Mixture Gases

A span gas comes in aluminum alloy cylinder. Please specify kind of gas with capacity of cylinder you request selecting from standard ranges in the following table. If other Mixtures are required, please specify Gas Type and Concentration.

CODE	Description of Gas	Capacity of Cylinder Unit Per Can
85 15 12 13 14	0.75% Vol (50%LEL) Iso-Butane (C ₄ H ₁₀) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 16 17 18	8% Iso-Butane (C ₄ H ₁₀) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 20 21 22	99.5% Pure Butane (C ₄ H ₁₀)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 24 25 26	50 PPM Carbon Monoxide (CO) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 28 29 30	100 PPM Carbon Monoxide (CO) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 32 33 34	250 PPM Carbon Monoxide Balance Air (CO)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 36 37 38	5% Carbon Dioxide (CO ₂) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 79 80	10% Carbon Dioxide (CO ₂) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 16 00		
85 17 44 45 59	15% Carbon Dioxide (CO ₂) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 40 41 42	25 PPM Hydrogen Sulphide (H ₂ S) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 44 45 46	50 PPM Hydrogen Sulphide (H ₂ S) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 48 49 50	2.5% Vol (50%LEL) Methane (CH ₄) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 17 60	1.0% Vol (20%LEL) Methane (CH ₄) Balance Air	in 110 ltr can
85 17 81	800 PPM Methane (CH ₄) Balance Air	in 110 ltr can
85 17 82	10% Vol (50%LEL) Methane (CH ₄) Balance Nitrogen	in 110 ltr can
85 17 83	50% Vol (50%LEL) Methane (CH ₄) Balance Nitrogen	in 110 ltr can
85 15 52 53 54	99.95% Pure Methane (CH ₄)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 56 57 58	99.995% Pure Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 60 61 62	2.1% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 64 65 66	5.5% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can in 58 ltr can in 110 ltr can
85 17 84	8% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 110 ltr can
85 17 85	10% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 110 ltr can
85 17 86	20.9% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 110 ltr can
85 15 68 69 70	0.7% Vol (50%LEL) Pentane (C ₅ H ₁₂) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 72 73 74	1.1% Vol (50%LEL) Propane (C ₃ H ₈) Balance Air	in 34 ltr can in 58 ltr can in 110 ltr can
85 15 75	1.1% Propane (C ₃ H ₈), 20 PPM Hydrogen Sulphide (H ₂ S) Balance Nitrogen	in 58 ltr can
85 17 87	50% Pure Propane (C ₃ H ₈), Balance Nitrogen	in 110 ltr can

(to be continued)

CODE	Description of Gas	Capacity of Cylinder Unit Per Can
85 15 76		in 34 ltr can
77	99.95% Pure Propane (C ₃ H ₈)	in 58 ltr can
78		in 110 ltr can
85 15 07	100 PPM Isobutylene Balance Air	in 110 ltr can
85 15 08	216 PPM Ethanol Balance Nitrogen 0.038% BRAC Equivalent for Alcohol Meter Test Gas	in 110 ltr can
85 15 09	2% Vol (50% LEL) Hydrogen Balance Air	in 110 ltr can
85 17 88	50 PPM Ammonia (NH ₃) Balance Nitrogen	in 58 ltr can
85 17 89	5 PPM Chlorine (Cl ₂) Balance Nitrogen	in 58 ltr can
85 17 90	5 PPM Nitrogen Dioxide (NO ₂) Balance Nitrogen	in 58 ltr can

4 Gas Mixtures

Very reactive gas mixture only available in 34, 58, 100 ltr cylinders.

CODE	Description of Gas	Capacity of Cylinder Unit Per Can
85 15 81	2.5% Methane (CH ₄), 50PPM Carbon Monoxide (CO), 25 PPM Hydrogen Sulphide (H ₂ S), 12% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can
82		in 58 ltr can
83		in 110 ltr can
85 15 84	2.5% Methane (CH ₄), 100 PPM Carbon Monoxide (CO), 25 PPM Hydrogen Sulphide (H ₂ S), 20.9% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can
85		in 58 ltr can
86		in 110 ltr can
85 15 87	2.5% Methane (CH ₄), 100 PPM Carbon Monoxide (CO), 40 PPM Hydrogen Sulphide (H ₂ S), 15% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can
88		in 58 ltr can
89		in 110 ltr can
85 15 90	2.5% Methane (CH ₄), 100 PPM Carbon Monoxide (CO), 25 PPM Hydrogen Sulphide (H ₂ S), 18% Oxygen (O ₂) Balance Nitrogen (N ₂)	in 34 ltr can
91		in 58 ltr can
92		in 110 ltr can
85 17 91	0.9% (50%LEL) Isobutane, 50 PPM Carbon Monoxide, 25 PPM Hydrogen Sulphide, 12% Oxygen Balance Nitrogen	in 34 ltr can
85 15 10		in 58 ltr can
85 17 92	25% LEL Pentane (C ₅ H ₁₂) 100 PPM Carbon Monoxide, 25 PPM Hydrogen Sulphide, 18% Oxygen Balance Nitrogen	in 34 ltr can
93		in 58 ltr can
94		in 110 ltr can

Name of Mfr.: Atlas Marine Services Pte. Ltd.

Regulators and Accessories

Reguladores y Accesorios

調整器並びにアクセサリー 調整器及附件

Fixed Flow Regulators for 34 ltr, 58 ltr, and 110 ltr

Available for portable detectors with no pump or hand pump, also ideal for fixed head detectors. Flow rate 0.3 litres/minute, 0.5 litres/minute or 1.0 litres/minute.



Unit Per Pcs.

CODE	Flow Rate	CODE	Flow Rate
85 15 93	0.3 ltr/min	85 15 95	1.0 ltr/min
94	0.5 ltr/min		

Demand Flow Regulators for 34 ltr, 58 ltr and 110 ltr

Special Designed for gas detectors with built-in electric sample pump. Important gas is supplied at "Sample pump" normal working flow rate, hence ensures testing and calibration are similar to true operation conditions.



85 15 96	Regulator, demand flow, for 34 ltr, 58 ltr and 110 ltr	Pc.
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Gas Sample Bags with Clip Valve

Sample Bags are available too for use with fixed equipment or pumped instrument.



85 15 99	Gas sample bag with clip valve	Pc.
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Mixtures Gases from Fastcalgas

CODE	Gas Description	Fastcalgas No.	Cylinder Size Ltr
Ammonia (NH₃)			
85 17 01	25 ppm NH ₃ /Air	FCG22000	58
Butane (C₄H₁₀)			
85 17 02	0.9% (50% LEL) C ₄ H ₁₀ /Air	FCG23000	103
03	0.9% (50% LEL) C ₄ H ₁₀ /N ₂	FCG23005	103
04	8% C ₄ H ₁₀ /N ₂	FCG23010	34
05	8% C ₄ H ₁₀ /N ₂	FCG23015	16
06	8% C ₄ H ₁₀ , 13.8% CO ₂ /N ₂	FCG23020	34
07	8% C ₄ H ₁₀ , 13.8% CO ₂ /N ₂	FCG23025	16
Iso-Butane (i-C₄H₁₀)			
85 17 08	0.9% (50% LEL) i-C ₄ H ₁₀ /Air	FCG24000	34
09	0.9% (50% LEL) i-C ₄ H ₁₀ /Air	FCG24010	103
10	10% i-C ₄ H ₁₀ /N ₂	FCG24005	34
11	10% i-C ₄ H ₁₀ /N ₂	FCG24060	18
Carbon Dioxide (CO₂)			
85 17 12	1% CO ₂ /Air	FCG25000	103
13	15% CO ₂ /Air	FCG25005	103
14	15% CO ₂ /N ₂	FCG25010	103
Carbon Monoxide (CO)			
85 17 15	50 ppm CO/Air	FCG26000	103
16	60 ppm CO/Air	FCG26005	103
17	100 ppm CO/N ₂	FCG26010	34
Ehtanol (C₂H₅OH)			
85 17 18	191 ppm C ₂ H ₅ OH/N ₂	FCG33000	34
Hydrogen Sulphide (H₂S)			
85 17 19	10 ppm H ₂ S/N ₂	FCG27000	58
20	25 ppm H ₂ S/N ₂	FCG27005	58
21	40 ppm H ₂ S/N ₂	FCG27010	58
22	50 ppm H ₂ S/N ₂	FCG27015	58
Nitrogen (N₂)			
85 17 23	Nitrogen (99.99% v/v)	FCG28000	34
24	Nitrogen (99.99% v/v)	FCG28010	103
Oxygen (O₂)			
85 17 25	2% O ₂ /N ₂	FCG29000	103
26	5% O ₂ /N ₂	FCG29005	103
27	10% O ₂ /N ₂	FCG29010	103

(to be continued)

CODE	Gas Description	Fastcalgas No.	Unit Per Btl. Cylinder Size Ltr
Methane (CH₄)			
85 17 28	2% (40% LEL) CH ₄ /Air	FCG30000	34
29	2% (40% LEL) CH ₄ /Air	FCG30110	103
30	2.5% (50% LEL) CH ₄ /Air	FCG30005	34
31	2.5% (50% LEL) CH ₄ /Air	FCG30125	103
32	1.45% CH ₄ , 15% O ₂ /N ₂	FCG30010	103
33	2.5% CH ₄ , 17% O ₂ /N ₂	FCG30015	34
34	2.5% CH ₄ , 17% O ₂ /N ₂	FCG30135	103
35	50% CH ₄ /N ₂	FCG30020	34

Pentane (C₅H₁₂)			
85 17 36	0.75% (50% LEL) C ₅ H ₁₂ /Air	FCG31000	103
37	0.75% C ₅ H ₁₂ , 15% O ₂ /N ₂	FCG31005	34
38	0.75% C ₅ H ₁₂ , 15% O ₂ /N ₂	FCG31010	103

Propane (C₃H₈)			
85 17 39	0.55% (25% LEL) C ₃ H ₈ /Air	FCG32000	103
40	1.1% (50% LEL) C ₃ H ₈ /Air	FCG32005	103

Zero Air			
85 17 41	20.8% O ₂ /N ₂	FCG29015	103

Regulators			
85 17 42	For use with 34 ltr steel cylinder	FCG00713	-
43	For use with 34 ltr, 58 ltr Aluminium cylinder and 103 ltr steel cylinder	FCG00715	-

4 Gas Mixtures for Calibration from Fastcalgas

CODE	Composed of				Fastcalgas No.	Unit Per Btl. Cylinder Size Ltr
	Methane (CH ₄)	Hydrogen Sulfide (H ₂ S)	Carbon Monoxide (CO)	Oxygen Nitrogen (O ₂ /N ₂)		
85 17 46	1.45%	10 ppm	-	15%	FCG21000	58
47	1.45%	10 ppm	300 ppm	15%	FCG21005	58
48	1.45%	20 ppm	60 ppm	15%	FCG21020	58
49	2.2%	25 ppm	100 ppm	18%	FCG21045	34
50	2.2%	40 ppm	100 ppm	15%	FCG21055	34
51	2.5%	10 ppm	50 ppm	18%	FCG21010	58
52	2.5%	15 ppm	100 ppm	18%	FCG21015	58
53	2.5%	25 ppm	50 ppm	12%	FCG21030	58
54	2.5%	25 ppm	50 ppm	20.9%	FCG21035	58
55	2.5%	25 ppm	100 ppm	18%	FCG21050	58
56	2.5%	40 ppm	100 ppm	15%	FCG21060	34
57	Iso-butane (I-C ₄ H ₁₀ 0.9%)	25 ppm	50 ppm	12%	FCG21025	34
58	Propane (C ₃ H ₈) 1.1%	25 ppm	100 ppm	19%	FCG21040	58

Cyalume Lights

Luces de Cyalume サイアリューム 佩戴亮光信号

Compact, windproof, waterproof lights. The personal marker light PML is designed for use with life jackets, life vests and other similar flotation devices. Light sticks are used for illuminations or signals in case of an emergency.



PML



Stick

CODE	33 06 01	33 06 02	33 06 03
Type	PML Personal Marker Light	Stick Regular	Stick Hi-intensity
Duration	8 hours	8-10 hours	4-6 hours

Safety Handlamps, Primary Cell Powered

Linterna del Tipo Antiexplosivo Alimentado Poe Pikas Primarias
一時電池式防爆安全手提燈 主单元格的公式安全手提燈

For use in a wide range of potentially explosive gases, vapours, mists and dusts, the lamp has a highly impressive light output of up to 269 lumens and battery duration up to 45 hours.



Constructed from an anti-static, exceptionally robust and highly durable thermoplastic material, it is well able to withstand the effects of heavy industrial use. The lamp has an Ingress Protection rating of IP66.

The Wolfite Primary Cell Safety Handlamp H-4DCALED meets all relevant provisions of the 2014/34/EU Explosive Atmospheres (ATEX Equipment) Directive

CODE	33 06 07
Model	H-4DCALED
Beam Type	Spot
Output	269 lumens (maximum at source)
Power Source	LR20/R20 primary cells, to IEC 60086
Volts	4 x 1.5 volt
Light Duration	Up to 45 Hours
Dimension	132 x 140 x 188 mm
Weight (Incl. Cells)	1.5 kg (including batteries)
Approval Code	II 2GD Ex ib IIC T4 Gb Ex ib IIIB T135°C Db IP66 -10°C ≤ Ta ≤ 40°C
Type of Protection	"eb" increased safety, "ib" intrinsic safety, "tb" protection by enclosure
Area of Classification (Gases)	Zones 1 and 2, Gas Groups IIA, IIB and IIC
Temp. Classification (Gases)	T4
Area of Classification (Dusts)	Zones 21 and 22
Max. Surface Temp. (Dust)	135°C
Certificates	ATEX BAS00ATEX2176 UKEX BAS21UKEX0359 IECEx BAS 16.007
Name of Mfr	The Wolf Safety Lamp Company Ltd

Rechargeable Safety Handlamps

Lámparas de Mano Seguridad Recargable
充電式防爆安全手提燈 充電式安全手提燈

The H-251ALED Rechargeable Handlamp is ideal for use as a general-purpose safety lamp for inspection and work tasks.



With a maximum light output of up to 210 lumens, the rechargeable battery duration is up to 18 hours, and offers a convenient and cost-effective solution for Ex applications where a handlamp is frequently required for long periods. The hand lamp body and lens ring is moulded in a highly

resilient thermoplastic material able to withstand the drop and impact expected from heavy industrial use, even at sub-zero temperatures. Additionally, the material is anti-static, ensuring there is no risk of a dangerous build up of static charges.

The lamp enclosure is sealed to IP66, preventing the ingress of dust and sealing against water in all conditions except submersion.

Unit Per Pcs.

CODE	33 06 08
Model	H-251ALED
Beam Type	Spot with fringe light
Output	210 lumens (maximum at source)
Power Source	Rechargeable battery, Sealed Lead Acid
Volts	4 volt
Light Duration	Up to 18 hours
Dimension	130 x 140 x 185 mm
Weight (Incl. Cells)	1.84 kg
Approval Code	II 2GD Ex ib IIC T4 Gb (-10°C ≤ Ta ≤ +40°C) Ex ib IIIB T170°C Db*
Type of Protection	"ib" intrinsic safety
Area of Classification (Gases)	Zones 1 and 2 Gas Groups IIA, IIB, IIC
Temp. Classification (Gases)	T4
Area of Classification (Dusts)	Zones 21 and 22
Max. Surface Temp. (Dust)	170°C
Certificates	BAS00ATEX2176 BAS21UKEX0359 IECEx BAS 16.0076
Name of Mfr	The Wolf Safety Lamp Company Ltd

Battery Chargers for Safety Handlamp

Cargador de la Batería para Linterna

防爆安全手提灯用充電器

用于防爆安全手持灯的充电器



For use with the H-251A LED safety handlamp, the battery is charged internally via charging studs on the base of the handlamp. The handlamp is simply slotted into the charger and secured in place with the latch plate.

With the handlamps being held by the chargers whilst charging, the handlamps are always ready for use. It can be used at mains voltage of 230 volts or 110 volts, selectable by a voltage changeover switch.

The state of the battery charge is indicated by two coloured light emitting diodes, sequenced to show main and full charge. All chargers may be used free standing or can be bench or wall mounted.

Unit Per Pcs.

CODE	33 06 09	33 06 10
Model	C-251HV	C-251HVE
Type of Plug	UK 3 Pin	Euro 2 Pin
Apparatus Standard	EN60 335	
Insulation Class	II	
Enclosure	Polypropylene	
Input Voltage	120/ 230V AC	
Recharge Time	8 - 10 hours	
Ingress Protection	IP20	
Weight	0.75 kg	
Name of Mfr.	The Wolf Safety Lamp Company Ltd.	

Electric Safety Lamps

Lámparas de Seguridad Eléctrica 電気安全灯 安全灯



An electric safety lamp (Hand Lantern) of an approved type with minimum light duration 12 hours. Included for use with an emergency fire fighting outfit. Available in a dry battery type, white LED. This model shall be for use in explosive gas atmospheres.

Unit Per Pcs.

CODE	33 06 11
Type	1.5V Alkaline AA x 3 pcs
Bulb	White LED
Weight	About 270 g

Safety Cap Lamps

Lámparas de Seguridad para Cascos

キャップランプ 安全头灯



Hands-free safety light, providing brilliant illumination of the work site, to be used in confined space and where explosive gas is a potential danger, such as on oil tankers, chemical tankers, LNG tankers, etc.

The headlight can be easily attached to the helmet by means of bracket and headpiece clip. Lead acid power rechargeable battery is provided with belt loops.

Specifications

Headpiece & Cable

Nom. Voltage of Bulb	4.5 volt
Burning Time	11 hours
Main Bulb Rating	200 lumens
Weight of Headpiece	195 grm

33 06 18 Safety cap lamp with rechargeable battery Set

Safety LED Headtorches

Linternas de cabeza LED de seguridad

LED 型ヘッドトーチ LED 型头灯



The ATEX LED headtorch is the ideal compact headtorch for hands free lighting, particularly where access is difficult, requiring climbing or crawling and is CE marked to the ATEX directive, UKEX and IECEx certified for safe use in Zones 0, 1 and 2 potentially explosive gas and Zones 21 and 22 dust atmospheres. The approval code also covers all group II (industrial) gas apparatus groups, for potentially explosive gases up to T4 temperature class.

Unit Per Set

CODE	33 06 20
Model	HT-400Z0
Light Output	Up to 75 lumens
Approved Code (Industrial)	II 1G Ex ia IIC T4 Ga IP67 II 2D Ex ib IIIB T125°C Db
Type of Protection	"ia/ib" intrinsic safety
Area of Classification (Gas)	Zones 0,1 & 2, Gas Groups IIA, IIB, IIC
Max Surface Temp. (Gas)	T4
Ambient Temperature	-20°C to +40°C

(to be continued)

		Unit Per Set
CODE	33 06 20	
Area of Classification (Dust)	Zones 21 and 22	
Max Surface Temp. (Dust)	125°C	
Certificate	Baseefa10ATEX0067 IECEx BAS 10.0023 BAS21UKEX0436	
Power Source	3 x LR03 Alkaline AAA cells	
Light Duration	Up to 8.5 hours	
Ingress Protection	IP67	
Weight (incl cells)	0.090 kg	

Name of Mfr.: Wolf Safety Lamp Company

Light Output	High power: 600 lumen Low power: 160 lumen
Power Source	6V rechargeable NiMH battery
Operating Temperature	-20 deg C to +40 deg C
Apparatus Standard	EN50014, EN50019, EN50020, EN50281-1-1
Enclosure	High impact polyamide
Ingress Protection	IP67
Dimensions	Approx. 215(L) x 120(W) x 125 mm(H)
Weight w/battery	1.4 kg
Name of Mfr.	Atexor Oy Ltd.

Rechargeable Safety LED Head Lamps

Linternas Frontales LED de Seguridad Recargables
充電式安全 LED ヘッドライト 可充电安全 LED 头灯

Wearable, hands-free light sources designed for use in safety works. Rechargeable with USB in 2.5 hours charge time. Available functions in high spot, medium spot, low spot, high flood, low flood, and flash. IPX4 rated water-resistant design.



		Unit Per Set
CODE	33 06 78	
Model	Vision #200521	
Lamp	Advanced LED Technology	
Power Source	Lithium Polymer Batteries	
Light Duration	6 to 100 hours depends on mode	
Ingress Protection	IPX4	
Approved Code (Industrial)	UL Protection Methods UL 121201 9TH Ed CSA C22.2 NO. 213-17 3RD Ed Class I, II, III Div 2 Groups A-G T4	
Dimensions L x W x H (mm)	61 x 36 x 46	
Weight (incl batteries)	0.1 kg	

Name of Mfr.: KBS Innovations

Rechargeable Safety Handlamps

Linterna Recargable Antieexplosiva
充電式防爆安全手提燈 充電式防爆電筒

The tough, durable casing protects the advanced electronics given a product that will perform in the most demanding environments. A dual power switch allows you to obtain the ideal combination of beam power and usage time (from 8 up to 24 hours). On the emergency lamp model an emergency lighting function switches the lamp on when a power failure occurs. For this the lamp should be inserted into charging holder.



Unit Per Pcs.		
CODE	33 06 55	33 06 56
Model	IL-640 NiMH	IL-640 EM NiMH
Beam Type	Spot	
Light source	4 high luminous Cree LED's, Lifetime: L70 > 50,000h	

(to be continued)

Battery Chargers for Rechargeable Safety Handlamp

Cargador de Batería de Lámparas de Mano Seguridad Recargable
充電式防爆安全手提燈用バッテリーチャージャー^{充電式安全手提燈用充電器}

For use with the IL-640 series rechargeable safety lamps in several patterns of charging slots : for single lamp, for 3 lamps and for 5 lamps.



Single

For 3 lamps

For 5 lamps

Unit Per Pcs.			
CODE	33 06 57	33 06 58	33 06 59
Model	ILC-VAC	CR-C3	CR-C5
Mounting	Wall mounted vertical or horizontal	Wall mounted horizontal	
Enclosure	High impact PC/Aluminium	Anodised aluminium	
Input Voltage	85 ...264V AC, 47...63 Hz	100...240VAC 50-60Hz 2.4A (+ Outlet)	
Recharge Time		6 hours	
Ingress Protection		IP44	
Certification	See Remark (a)	e17*72/245 *2006/2 8*0093*02	e17*72/245 *2006/2 8*0093*02
Dimensions	153x138x88mm	510x230x110mm	850x230x110mm
Weight	860 grm	3.8 kg	5.6 kg
Name of Mfr.	Atexor Oy Ltd.		

Remark:

(a) EMC Directive 89/93/EEC

Mains adaptor: EEC-EMC Directive 93/42: EN55022, EN61000-3-2, EN61000-3-3, EN50081-1, EN50081-2, EN50082-1, EN55024

Low Voltage Directive: 72/23/EEC, IEC60950, EN60950

Amendment Directive: E93/68/EEC, IEC60950, EN60950

Mains adaptor approvals: UL/cUL, CE, TUV

High Powered LED Rechargeable Safety Handlamps

Lámparas de Mano Seguridad Recargable de LED de Alta Potencia

強力発光ダイオード型充電式防爆安全手提げ灯

強力 LED 充電式安全手提燈

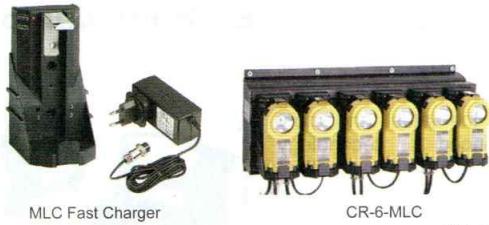
A first handlamp that uses high power LED (Light Emitting Diode) technology for explosive environments. Instead of an ordinary bulb, the lamp uses a high power LED with a service life of capacity 50,000 hours. The lamp is equipped with an environmentally friendly NiMH battery whose continuous operating time is more than seven hours. The shock resistant cover is manufactured completely of antistatic plastic and aluminium and its enclosure class is IP 65. On the emergency lamp model an emergency lighting function switches the lamp on when a power failure occurs. The lamp must be stored and charged in an exclusive charging holder. Fully compliant with the Cenelec requirements for standards EN60079-0, EN60079-11 and EN60079-28 as well as with ATEX classification II 2G Ex op is IIC T4 Gb & II 2D Ex op is IIIC T135°C Db.



ML-808 ATEX /
ML-808 ATEX EM



MICA MLC Charger



MLC Fast Charger



CR-6-MLC

Unit Per P.c.

CODE	33 06 63	33 06 64
Model	MLC Charger + IL2 Adapter	CR-6-MLC
Mounting	Wall mounted vertical or horizontal	Wall mounted horizontal
Enclosure	High impact Nylon/Aluminium	Anodised aluminium
Input Voltage	85...264VAC, 47...63Hz	100...240VAC 50-60Hz 2.4A
Recharge Time		2h 30 min
EMC Certification	Directives 72/245/EEC, 95/54/EC Cert No. e17*72/245*2006/ 28*0108*02	Directives 89/336/EEC, 72/245/EEC, 95/54/EC Cert No. e17*72/245*2006/ 28*0108*02
Dimensions	142 × 83 × 72 mm	490 × 210 × 63 mm
Weight	270 grm	3.2 kg
Name of Mfr.	Atexor Oy Ltd.	

Rechargeable LED Hand Lamps for Hazardous Areas

Linterna LED recargable

充電式 LED ハンドランプ 充电式 LED 手电筒



CODE	33 06 61	33 06 62	Unit Per P.c.
Model	ML-800 ATEX	ML-800 ATEX EM	
Beam Type	Spot Beam		
Light Source	1 high luminous Cree LED, Lifetime: 50,000hrs Light output : over 100/25 lumen		
Power Source	6V rechargeable NiMH battery		
Operating Time	Full Power : 4 hrs 30 min Low Power: 15 hours		
Approval Code	II 2G Ex op is IIC T4 Gb II 2D Ex op is IIIC T135°C Db		
Area of Operation	Gas: Zones 1 and 2 Dust: Zones 21 and 22		
Temp. Classification	Gas: T4, Dust: 135°C		
Ingress Protection	IP65		
Certification	ATEX: VTT 13 ATEX 024 issue 1		
Enclosure	Dissipative (antistatic) polypropylene + aluminium, impact resistant		
Dimensions	120 × 63 × 54 mm		
Weight with Battery	400 grm		
Name of Mfr.	Atexor Oy Ltd.		

Battery Chargers

for High Powered LED Rechargeable Safety Handlamp

Cargador de Batería de Lámparas de Mano Seguridad Recargable de LED de Alta Potencia

強力発光ダイオード型充電式防爆安全手提げ灯用バッテリーチャージャー

強力 LED 充電式安全手提燈用充電器

For use with the ML-808 series high powered LED rechargeable safety handlamps in several patterns of charging slots: for fast charging, for 6 lamps.

CODE	33 06 65	33 06 66	Unit Per P.c.
Model	IL-800 Zone 0	IL-800 EM Zone 0	
Type	Hand lamp	Emergency lamp	
Beam Type	Narrow and wide		
Light Source	3 high luminous led's Cree LED's Light output 200/80 lumen Lifetime : 50,000 hr		
Power Source	6V rechargeable NiMH battery		
Light Duration	High power output: 6 hours Low power output: 12 hours		
Ingress Protection	IP67		
Certification	ATEX : TUV 10 ATEX 7878 IECEx : IECEx TUR 11.0008		
Type of Protection	II 1G Ex ia IIC T4 Ga II 2D Ex tb IIIC 100°C IP67 Db		
Area of classification G (Gas)	Zones 0, 1 and 2 Gas groups IIA, IIB, IIC		
Area of Classification (Dust)	Zones 21 and 22 Dust groups IIIA, IIIB, IIIC		
Temp. Classification	Gas: T4 Dust 100°C		
Enclosure	Antistatic impact resistant polypropylene		
Weight with Battery	1.1 kg		
Dimensions	215 mm(L)×120 mm(W)×125 mm(H)		
Name of Mfr. :	Atexor Oy Ltd.		

Rechargeable LED Hand Lamps

Linternas Frontales de Seguridad Recargables
充電式 LED ハンドランプ 可充电 LED 手灯

Use the latest and most advanced technology to deliver excellent performance, robustness, reliability and versatility in the harshest environments and is CE marked to the ATEX directive and IECEx certified, for safe use in Zones 1 and 2 potentially explosive gas and Zones 21 and 22 dust atmospheres. A Zone 0 version is also available.



CODE	33 06 12	33 06 13	Unit Per Pcs.
Model	XT-50 Standard	XT-70 Performance	
Beam Type	Spot	Spot / Food	
Approval Code	I M2 2GD Ex ib IMB Ex ib IIIB T185°C Db IP67		
Type of Protection	"ib" intrinsic safety		
Area of Classification (Gases)	Zones 1 and 2, Gas groups IIA, IIB and IIC		
Temp Classification (Gases)	T4		
Area of Classification (Dust)	Zones 21 and 22 Dust Groups IIIA and IIIB		
Max. Surface Temp. (Dust)	185°C		
Certificate	ATEX Baseefa09ATEX0326X IECEx BAS 09.0153X UKEX BAS21UKEX0439		
Power Source	Rechargeable battery, Lithium-ion		
Light Duration Full/Half	Up to 4.0/8.0 hrs	Up to 7.5/15.0 hrs	
Ingress Protection	IP67 to EN60529 : 1992		
Weight (incl cells)	1.2 kg		
Compatible Charger	XT-200L 12-24Vdc / XT-200H 90V-254Vac		

Name of Mfr.: Wolf Safety Lamp Company

33

Safety Equipment

Battery Chargers for LED Hand Lamp

Cargadores de pilas para linternas LED
LED ハンドランプ用充電器 LED 手电用充电器

The XT-200 quick charger base can fully recharge the handlamp in 2 hours. The charge operates from 90 - 254 V AC main voltage.

33 06 14	Battery charger XT-200H for LED hand lamp Wolf XT	Pcs.
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Compressed Air/Electric Safety Lights

Luces de Seguridad de Aire Comprimido / Eléctrica
防爆型エアーライト 防爆气力式电灯

Explosion-proof, high powered compressed air driven lamp, commonly used in the oil and petrochemicals industries, for tank cleaning and pipeline inspections, offering a safer alternative to low voltage lighting in dangerously wet conditions as well as where flammable gases and vapours can accumulate in confined spaces.



A-TL45

A-TL44

Unit Per Set

CODE	33 06 37	33 06 38
Model	A-TL45	A-TL44
Beam Type	Flood or Spot	Bay light (All-around 360°illumination)
Lens	Toughened glass (15 mm)	Ball glass/ Polycarbonate dome
Area of Classification	Zones 1 and 2, Gas Groups IIA, IIB, IIC	
Ambient Temperature	-20°C to + 40°C	
Certification	CML18ATEX9374X	
Enclosure	Aluminium or brass	
Light Source; Type	Halogen filled filament bulb	
Volts	24 volt	
Watts	250 W	
Output	6,000 lm (at 24 volt)	
Air Pressure	4.0 - 8.0 bar	
Consumption	0.75 m³/min.	
Weight	7.1 or 13.5 kg	5.5 or 9.4 kg
Name of Mfr.	The Wolf Safety Lamp Company Ltd.	

Accessories for Model A-TL45 & A-TL44



CODE	Description	Size	Model	Unit
33 06 51	Compressed air hose, anti-static	12mm bore×18.3 mtr	A-179	Lgh
52	Compressed air hose, anti-static	12mm bore×36.6 mtr	A-180	Lgh
33 06 53	Air line filter	-	A-184	Pc.
33 06 54	Folding tripod stand	-	A-300	Pc.

Tank Lighting Kits

Equipos de iluminación de tanques

タンク照明セット 箱式照明套组

For Zone 1 areas

Tank Lighting kits provides a low voltage temporary lighting solution for Zone 1 Hazardous Areas, where potentially explosive gases, vapours and dusts may be present in a confined space. The kits allow for a flexible set up of high-quality task and ambient lighting to suit all working conditions in tanks and vessels, and offers operators a high level of

safety using various configurations of LED Floodlites (WF-300®XL), LinkEx™ LED Temporary Luminaires (LX-400 series) and ATEX Transformers.



Transformer

LED Floodlite

LED Temporary Luminaire

Stainless Steel Leadlamp Transformers for Tank Lighting Kit

	Unit Per Pc.		
CODE	33 19 01	33 19 02	
Model	LL-133/T3	LL-223/T3	
Volts in	110V AC	230V AC	
Approval Code		For Output Power ≤ 400VA: Ex d e IIC T3 Gb - Ex t IIIC T195°C Db (-20°C ≤ Ta ≤ +30°C) For Output Power ≤ 320VA: Ex d e IIC T3 Gb - Ex t IIIC T195°C Db (-20°C ≤ Ta ≤ +42°C)	
Type of Protection	'e' increased safety 'd' flameproof		
Area of Classification (Gas)	Zones 1 and 2, gas groups IIA, IIB and IIC		
Temp Classification (Gas)	T3		
Area of Classification (Dust)	Zones 21 and 22, Dust Groups IIIA, IIIB and IIIC		
Certificate	ATEX-LCIE02ATEX6118X IECEX-LCI 11.0008X		
Ingress Protection	IP66		
Power	320/400VA		
Volts out	24V		
Socket Arrangement	4 output sockets, ATX 110/24V 2P + E as standard		
Size	512 × 562 × 260 mm (L × W × H)		
Weight	28 kg		

Name of Mfr.: Wolf Safety Lamp Company

LED Floodlites WF-300®XL

The Linkex™ WF-300®XL LED Floodlite is a high performance, robust, lightweight and portable Floodlite for use in potentially explosive atmospheres. It delivers an outstanding level of white light and is fully compliant with the latest ATEX and IECEx standards, including OPIS - Optical Intrinsic Safety. Fitted with Wolf's unique SOVI system to ensure safe operation, the Floodlite is certified for safe use in Zone 1, T4, IIc, -40°C to +55°C ambient, hazardous gas, vapour, mist or dust environments.

	Unit Per Pc.	
CODE	33 19 05	33 19 06
Voltage	18-50V AC/DC (LV)	90-264V AC/DC (HV)
Approval Code	II 2 G D Ex eb mb op is IIC T4 Gb Ex tb op is IIIC T118°C Db T = -40°C to +55°C	
Type of Protection	'eb' increased safety 'mb' encapsulation 'tb' enclosure protection	
Area of Classification (Gases)	Zones 1 and 2, Gas groups IIA, IIB and IIC	
Temp Classification (Gases)	T4	

(to be continued)

Area of Classification (Dust)	Zones 21 and 22, Dust Groups IIIA, IIIB and IIIC
Certificate	CML 18ATEX3372X IECEx CML 18.0198X
Light Source	36 x white high power LEDs
Ingress Protection	IP66/67
Weight	7.3 kg (excluding cable)

Name of Mfr.: Wolf Safety Lamp Company

Tank Lighting Kit Configuration

Unit Per Set

CODE	Model	Transformer	Lamps	Cable
33 19 16	LL-155/T3	LL-133/T3 110V AC	4 × WF-300®XL (58W LED Floodlites)	Fitted with 20 mtr of SY cable
	LL-255/T3	LL-233/T3 230V AC		
33 19 18	LX-185/T4	LL-133/T4 110V AC	4 × LX-400 (27W LED 180° Leadlamps)	
	LX-285/T4	LL-233/T4 230V AC		

Name of Mfr.: Wolf Safety Lamp Company

LinkEx™ LED Temporary Luminaire

Unit Per Set

CODE	Product's Code	LED Temporary Luminaire	Linkable	Fitted with SY Cable	Plug & Socket
AC 110V					
33 19 21	LX-400SH	LED	No	10 mtrs 2.5 mm²	ATX plug
	LX-400SH		Yes	5 mtrs 2.5 mm²	ATX plug & Socket
33 19 23	LX-400SH/360	LED	No	10 mtrs 2.5 mm²	ATX plug
	LX-400SH/360		Yes	5mtrs 2.5 mm²	ATX plug & Socket
AC 230V					
33 19 26	LX-400SH	LED	No	10 mtrs 2.5 mm²	ATX plug
	LX-400SH		Yes	5 mtrs 2.5 mm²	ATX plug & Socket
33 19 28	LX-400SH/360	LED	No	10 mtrs 2.5 mm²	ATX plug
	LX-400SH/360		Yes	5 mtrs 2.5 mm²	ATX plug & Socket

Name of Mfr.: Wolf Safety Lamp Company

Accessories for LX-400 Series LED Temporary Luminaire

Reference Chart

LED Luminaire	Magnet Kit	Tripod	Scaffold Bracket	Protective Films (x3 pack)
LED	LX-680	LL-680 + LL-670	LL-678	LL-545/3

Remark : Tripod (LL-680) will need to be used with a Tripod Bracket (LL-670)

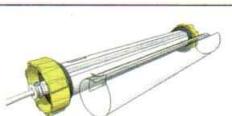
Unit Per Set

CODE	Model & Name
33 19 30	LL-680 Magnet Kit



(to be continued)

Unit Per Set

CODE	Model & Name
33 19 32	LL-680 "Tripod" 
33	LX-670 "Tripod Bracket" for Tripod LL-680 
34	LX-678 "Scaffold Bracket" 
37	LX-545/3 "Protective Films (x3 Pack)" 

Accessories for WF-300®XL LED Floodlite

Unit Per Pcs.

CODE	Model & Name
33 19 41	WF-545 "Magnetic Set" 
33 19 42	LL-680 "Tripod"

33

Tank Lighting Kits Zone 0, 1 & 2

Kits de Iluminación para Depósitos Zona 0, 1 y 2

タンク照明セット ゾーン 0, 1, 2

水箱照明套件 0、1 和 2 区

ATEX approved for use in Zones 0, 1 & 2 potentially explosive gas atmospheres, and Zones 20, 21 & 22 potentially explosive dust atmospheres. Group I approval for use in mining applications.

Made of stainless steel with an anti-static coating, each frame incorporates hand lamp holders with a "snap-in/snap-out" function to secure the hand lamp, but quick release allows the floodlight stand of hand lamps to be manually tilted and locked in position. The hand lamps can be removed from the stand in the hazardous area and used for close inspection work or in awkward to reach locations.



FS-004



FS-006

CODE	33 19 03	33 19 04
Model	FS-004	FS-006
Area of Classification (Gas)	Zone 0, 1, and 2, Gas Groups: IIA, IIB, and IIC	
Area of Classification (Dust)	Zone 20, 21, and 22, Dust Groups: IIIA, IIIB, and IIIC	
Ex Mark	I M1 Ex ia I Ma II 1G Ex ia op is IIC T4 Ga II 1D Ex ia IIIC T135°C Da	
Ingress Protection	IP66	
Power Source	4 x LR20 (D) Alkaline Battery (Single Hand Lamp)	
Light Duration	Up to 28.3 hours	
Hand Lamp Configuration	4 pieces of EX-6100 Safety Hand Lamp	6 pieces of EX-6100 Safety Hand Lamp
Dimensions (mm)	370 x 380 x 522	370 x 510 x 522
Weight (kg, Carrying in Work)	+/-10.50 (1 piece of hand lamp stand + 4 pieces of EX-6100 with batteries)	+/-14.50 (1 piece of hand lamp stand + 6 pieces of EX-6100 with batteries)

Name of Mfr. : Fortune Protection Safety Ltd.

Accessories for Model FS-004 & FS-006

CODE	Model	Description	Launched Diameter & Height	Unit
33 19 07	B-400	Tripod Stand	D: Φ1,100 mm H: 1,348 mm	Pcs.

Name of Mfr. : Fortune Protection Safety Ltd.

Rechargeable LED Floodlights

Reflectores LED recargables 充電式 LED ライト 充电式 LED 灯

The ATEX & IECEx certified rechargeable, high output LED floodlight for use in harsh, remote applications for extended periods. It offers unique levels of light output, operational duration and robustness in a self-contained battery powered lamp.



CODE	33 19 51	33 19 52
Model	WL-80	WL-85
Light Output	Up to 3,100 lumens	
Light duration – High/Low		
Power Source Capacity	18 Ah	35 Ah
Battery Type	Rechargeable battery, sealed gel lead acid (12V)	
Approval Code	II 2 GD Ex eb ib mb op is IIC T4 Gb Ex tb op is IIIC T135°C Db	
Type of Protection	'eb' Increased Safety, 'ib' Intrinsic Safety, 'op is' optical intrinsic safety, 'mb' Encapsulation, 'tb' Enclosure Protection	

(to be continued)

Area of Classification (Gases)	Zones 1 & 2, Gas Groups IIA, IIB, IIC	
Temp. Classification (Gases)	T4	
Area of Classification (Dust)	Zones 21 and 22	
Certificate	CML 18ATEX3373X, IECEx CML 18.0199X	
Ingress Protection	IP66 and IP67 to IEC60529	
Beam Type	Spot beam with a flood of low level fringe light	
Light Source Power	18 x LEDs	
Weight	16.5 kg	23 kg

Name of Mfr.: Wolf Safety Lamp Company

LED Portable Daylight Signaling Lamps

Lámparas LED de señalización de luz solar

LED ポータブル昼間信号灯

LED 便携式日光信号灯



Installation required by SOLAS

regulations Chapter V which reads as follows: "All ships of over 150 tons gross tonnage, when engaged on international voyages, shall have on board an efficient daylight signaling lamp which shall not be solely dependent upon the ship's main source of electrical power."

< Features >

- * Long life and needless lamp exchange.
- * 2 hours or more continuous operations with incorporated rechargeable battery in main body.
- * All weather condition due to strict waterproof body.
- * Durable corrosion-proof Synthetic body.
- * Shutterless, Realized 86% lighter than existence model.
- * HK & MED approved.

Unit Per Set

CODE	33 06 50
Model	SPM-L01
Lamp	Hi glitter LED
Luminosity	100,00 cd or more
Protection	IPX7
Material	Synthetic Resin
Weight	0.97 kg
Name of Mfr	Shonan Kosakusyo Co, Ltd.

Accessories

33 06 46	Battery charger for SPM-L01 portable type
33 06 40	Carrying case for SPM-L01

Fire Hose

Manguera contra Incendios 消火ホース 消防皮龙

In cargo ships of 1,000 gross tons or more, the number of non-perishable fire hoses to be provided shall be one for each 30 mtr area of the ship and one spare.



In no case shall there be less than 5 hoses in all.

Unit Per C/L

Rubber Lined Teflon				
CODE	Nominal Size	Length per Coil	Working Pressure	
33 07 01	40	15 mtr	0.9 MPa	
02	50			
03	65			
33 07 04	40	20 mtr		
05	50			
06	65			
33 07 07	40	25 mtr		
08	50			
09	65			
33 07 10	40	30 mtr		
11	50			
12	65			

D. N. V. Approved
(Polyester yarn and coated inside with synthetic rubber)

33 07 15	40 mm	15 mtr	1.3 MPa
16		20 "	
		25 "	
33 07 17	50 mm	15 mtr	1.3 MPa
18		20 "	
		25 "	
33 07 19	65 mm	15 mtr	1.3 MPa
20		20 "	
		25 "	

U. K. DOT Approved (All synthetic rubber lined)

33 07 21	45 mm	15 mtr	1.3 MPa
24		18 "	
27		25 "	
33 07 22	50 mm	15 mtr	
25		18 "	
28		25 "	
33 07 23	65 mm	15 mtr	
26		18 "	
29		25 "	

H.K. Approved

33 07 34	45 mm	15 mtr	1.3 MPa
35		20 "	
36		25 "	
33 07 37	50 mm	15 mtr	
38		20 "	
39		25 "	
33 07 40	65 mm	15 mtr	
41		20 "	
42		25 "	

Note: Coupling excluded

Fire Hoses**M.E.D. Approved Type**

Rubber Covered Fire Hose SF-120

Outer Colour : Red

Mangueras de incendio aprobadas por M.E.D.

M E D 認証消火ホース 莢 MED 认证的消防水龙带



Features:

Tough, durable and very abrasion resistant.

Resistance to oil, fuel and a wide range of chemicals.

Resistance to heat, UV and ozone.

Excellent adhesion between rubber and textile.

No cleaning and drying required.

Applications:

Refineries, Chemical industry, Fire brigades, Marine and offshore installations and Fire hose for usage under tough conditions.

Service Temperature: -20°C up to + 100°C based on water.

Working Pressure: 20 bar

Unit Per C/L				
CODE	Type	Flat Measure	Pressure	Alligator No.
33 37 01	38 mm × 15 mtr			SF1200381
02	38 mm × 20 mtr	65 mm	20 bar	SF1200382
03	38 mm × 30 mtr			SF1200383
33 37 04	45 mm × 20 mtr	70 mm	20 bar	SF120045
33 37 05	52 mm × 15 mtr			SF1200521
06	52 mm × 20 mtr	85 mm	20 bar	SF1200522
07	52 mm × 30 mtr			SF1200523

33 37 29	45 mm × 15 mtr	70 mm	15 bar	SF1230451
30	45 mm × 20 mtr			SF1230452
31	45 mm × 30 mtr			SF1230453
33 37 32	52 mm × 15 mtr	85 mm	15 bar	SF123051
33	52 mm × 20 mtr			SF123052
34	52 mm × 30 mtr			SF1230523

Name of Mfr.: Alligator

Name of Mfr.: Alligator

**Uncoated Single Jacket Fire Hose
SF-121****Outer Colour: White****Features:**

Very lightweight and highly flexible (even at low temperature). Small coil diameter.

Excellent resistance to weathering and ozone.

Very good resistance to sea water and a wide range of chemicals.

Mildew and rotproof.

Applications:

Industrial and municipal fire brigades.

Marine firefighting.

Service Temperature: -10°C up to + 60°C based on water.

Working Pressure: 15 bar.

Fire Hose**Inner/outer Synthetic Rubber Lined**

Manguera Reforzada de Exinción

画面合成ゴム被覆強化ホース 消防皮龙



High durable fire hose with synthetic rubber reinforcement on inner and outer surface of the hose. It has excellent resistance to weather, abrasion, oil, chemical and especially to ozone attack.

Easy to clean hose surface, and easy to handle because of difficulty to kink. Nominal working pressure is 16 kgf/cm². Supplied standard length in 20 mtr. Please specify type of hose coupling if necessary to be attached.

Unit Per C/L

CODE	Nominal Size	Weight grm/mtr	Length Per Coil
33 07 31	40	335	
32	50	430	
33	65	570	20 mtr

Fire Hoses with Prefitted Coupling

Mangueras de incendio con acoplamientos preajustados

カップリング付消火ホース 带接头的消防水带

Internationally approved fire hoses with prefitted fire hose coupling, covering a vast range of patterns and sizes to suit customer's requirements from around the world. Please specify necessary class certification of fire hose when ordering.



Name of Mfr.: Alligator

**Coated Single Jacket Fire Hose
SF-123****Outer Colour: Red****Features:**

Very lightweight and highly flexible (even at low temperature). Excellent resistance to heat, weathering and ozone.

Very good resistance to sea water and a wide range of chemicals.

Hardwearing for long service life.

Mildew and rotproof.

Applications:

Industrial and municipal fire brigades.

Marine firefighting.

Service Temperature: -10°C up to + 60°C based on water.

Working Pressure: 15 bar.

Machino Type – Brass

Unit Per Lgh.

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm
Hose Colour – White				
33 37 41		15		
42		20		
43		25		
44		30		
33 37 45		15		
46		20		
47		25		
48		30		
33 37 49		15		
50		20		
51		25		
52		30		

Unit Per C/L				
CODE	Diam. × Length	Flat Measure	Pressure	Alligator No.
33 37 26	38 mm × 15 mtr	65 mm	15 bar	SF123038
27	38 mm × 20 mtr			SF1230382
28	38 mm × 30 mtr			SF1230383

(to be continued)

(to be continued)

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – Red					
33 37 53		38	15	15	65
54			20		
55			30		
33 37 56		52	15	15	85
57			20		
58			30		
33 37 59		65	15	15	105
60			20		
61			30		

Nakajima Type – Brass

Unit Per Lgh.

CODE	Size mm Lug Hose	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 37 62		38	15	10	68
63			25		
64			30		
33 37 65		52	15	10	85
66			25		
67			30		
33 37 68		65	15	10	105
69			20		
70			25		
71			30		

Hose Colour – Red

33 37 72	61	38	15	15	65
73			20		
74			30		
33 37 75	72	52	15	15	85
76			20		
77			30		
33 37 78	91	65	15	15	105
79			20		
80			30		

Nakajima Type – Aluminium

Unit Per Lgh.

CODE	Size mm Lug Hose	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 37 81		38	15	10	68
82			25		
83			30		
33 37 84	72	52	15	10	85
85			25		
86			30		
33 37 87	91	65	15	10	105
88			20		
89			25		
90			30		

Hose Colour – Red

33 37 91	61	38	15	15	65
92			20		
93			30		
33 37 94	72	52	15	15	85
95			20		
96			30		
33 37 97	91	65	15	15	105
98			20		
99			30		

Pin Lug Type – Brass

Unit Per Lgh.

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 38 00		38	15	10	68
21			20		
22			25		
23			30		
33 38 24		52	15	10	85
25			20		
26			25		
27			30		
33 38 28		65	15	10	105
29			20		
30			25		
31			30		

Hose Colour – Red

33 38 32		38	15	15	65
33			20		
34			30		
33 38 35		52	15	15	85
36			20		
37			30		
33 38 38		65	15	15	105
39			20		
40			30		

Instantaneous Type – Brass

Unit Per Lgh.

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 38 41		38	15	10	68
42			20		
43			25		
44			30		
33 38 45		52	15	10	85
46			20		
47			25		
48			30		
33 38 49		65	15	10	105
50			20		
51			25		
52			30		

Hose Colour – Red

33 38 53		38	15	15	65
54			20		
55			30		
33 38 56		52	15	15	85
57			20		
58			30		
33 38 59		65	15	15	105
60			20		
61			30		

Instantaneous Type – Aluminium

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
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Hose Colour – White

33 38 62 63 64 65	38	15 20 25 30	10	68	
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33 38 66 67 68 69	52	15 20 25 30	10	85	
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33 38 70 71 72 73	65	15 20 25 30	10	105	
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Hose Colour – Red

33 38 74 75 76	38	15 20 30	15	65	
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33 38 77 78 79	52	15 20 30	15	85	
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33 38 80 81 82	65	15 20 30	15	105	
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Storz Type - Brass

Unit Per Lgh.

CODE	Size mm Lug Hose	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
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Hose Colour – White

33 38 83 84 85 86	66	38	15 20 25 30	10	68
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33 38 87 88 89 90	66	52	15 20 25 30	10	85
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33 38 91 92 93 94	81	65	15 20 25 30	10	105
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33 38 95 96 97	89	75	15 20 30	10	130
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Hose Colour – Red

33 38 98 99 39 00	66	38	15 20 30	15	65
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33 39 01 02 03	66	52	15 20 30	15	85
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33 39 04 05 06	81	65	15 20 30	15	105
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33 39 07 08 09	89	75	15 20 30	15	130
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Storz Type – Aluminium

Unit Per Lgh.

CODE	Size mm Lug Hose	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
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Hose Colour – White

33 39 10 11 12 13	66	38	15 20 25 30	10	68
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33 39 14 15 16 17	66	52	15 20 25 30	10	85
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33 39 18 19 20 21	81	65	15 20 25 30	10	105
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33 39 22 23 24	89	75	15 20 30	10	130
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Hose Colour – Red

33 39 25 26 27	66	38	15 20 30	15	65
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33 39 28 29 30	66	52	15 20 30	15	85
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33 39 31 32 33	81	65	15 20 30	15	105
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33 39 34 35 36	89	75	15 20 30	15	130
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Guillemin Type – Brass

Unit Per Lgh.

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
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Hose Colour – White

33 39 37 38 39	45	15 20 30	10	70
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33 39 40 41 42	70	15 20 30	10	110
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Hose Colour – Red

33 39 43 44 45	45	15 20 30	15	70
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33 39 46 47 48	70	15 20 30	15	110
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Guillemin Type – Aluminium

Unit Per Lgh.

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
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Hose Colour – White

33 39 49 50 51	45	15 20 30	10	70
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33 39 52 53 54	70	15 20 30	10	110
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(to be continued)

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – Red					
33 39 55 56 57	45	15 20 30	15	70	
33 39 58 59 60	70	15 20 30	15	110	

Uni 45 Type - Brass

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 39 61 62 63	45	15 20 30	10	70	
Hose Colour – Red					
33 39 64 65 66	45	15 20 30	15	70	

Uni 70 - Brass

CODE	Hose Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
Hose Colour – White					
33 39 67 68 69	70	15 20 30	10	110	
Hose Colour – Red					
33 39 70 71 72	70	15 20 30	15	110	

Nor – Aluminium

CODE	Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
	Lug	Hose			
Hose Colour – White					
33 39 73 74 75 76	65	52	15 20 25 30	10	85
33 39 77 78 79 80	84	65	15 20 25 30	10	105

(to be continued)

CODE	Size mm	Hose Length mtr	Pressure Bar	Flat Measure mm	Unit Per Lgh.
	Lug	Hose			
Hose Colour – Red					
33 39 81 82 83	65	52	15 20 30	15	85
33 39 84 85 86	84	65	15 20 30	15	105

Fire Hose BoxesCajas para Guardar Mangueras contra Incendios
消火ホース格納箱 消防皮龙箱

Versatile box to store fire hoses of up to 20 mtrs in length with nozzles and spanner.

The box and cover are made of polycarbonate for weather and sea water resistance.

33 07 51	Fire hose box, polycarbonate, capacity 20 mtrs	Pc.
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Portable Fire Hose Binding MachinesMáquinas de fijación portable para mangueras de incendios
簡易式消火ホース金具結束機 简易式消防水带金属线捆扎机

Suitable for binding firefighting hose on hose coupling shanks using copper wire, G.I. wire or stainless steel wire. Applicable fire hoses between 25 mm to 110 mm to new hose couplings. Generally, 1.6 mm (16 SWG) galvanised wire is accepted as the binding wire.



33 07 52	Binding machine, fire hose, portable, For hose size 25 mm to 110 mm	Set
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Spanners for Hydrant

Llave de Boca de Agua 消火継手用スパナ 消防扳手

Designed for tightening or loosening of fire hose couplings. Please select suitable spanner to your hose coupling type and size.



for Nakajima



for ANSI - Pin Lug



for ANSI - Slotter

Unit Per Pcs.

CODE	Type of Hydrant	Nom. Coupling Size	Overall Length mm	Material
33 07 91 92 93	Nakajima	40A 50A 65A	270 295 330	Bronze
33 07 95 96	ANSI-Pin Lug	40A 65A	246 280	Copper
33 07 97 98	ANSI-Slotter	40A 65A	175 235	Copper

Fire Hose NozzlesLanza de Boca de Agua contra Incendios
消火ホースノズル 消防皮龙喷嘴

Wide variety of nozzle connecting types with hose couplings are available according to several standards. Some common types are as shown below.



Nakajima Coupling



ANSI Pin Coupling



Machino Coupling

Unit Per Pcs.

CODE	Nom. Size	Spout Diam.	Length	Weight
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Nakajima Coupling

33 08 01	40 mm	12 mm	350 mm	0.73 kg
03	50	16	450	1.17
04	65	20	500	1.77

ANSI Pin Coupling

33 08 06	40 mm	12 mm	350 mm	0.71 kg
08	65	20	500	1.70

Machino Coupling

33 08 09	40 mm	12 mm	350 mm	0.8 kg
10	50	16	370	1.2
11	65	20	500	2.0

Guillemin Type

33 35 61



33 35 62



33 35 63



33 35 64

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 61	45mm, Jet/Spray			ST040012
62	70mm, Jet/Spray			ST040022
63	45mm, Jet/Spray with manshield	Aluminium	Guillemin	ST040014
64	70mm, Jet/Spray with manshield			ST040024

Pontstar Type

33 35 65



33 35 66



33 35 67



33 35 68

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 65	DN40		Pontstar Robinet	ST040025
66	DN70		Diffuseur	ST040029
33 35 67	DN40		Fut de Lance Ponstar	ST040026
68	65/70 mm	Brass		ST040030

UNI 45/UNI 70 Type

UNI 45

UNI 70

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 69	45 mm, Jet / Spray	Brass	UNI 45	ST04545
70	70 mm, Jet / Spray		UNI 70	ST04560

Nakajima Type

33 08 01-04

33 35 71-73

CODE	Size	Material	Type	Alligator No.
33 08 01	1-1/2" (40A)	Brass	Nakajima	ST050012
03	Lug size 61mm 2" (50A)			ST050071
04	Lug size 72 mm 2-1/2" (65A)			ST050091
33 35 71	1-1/2" (40A)	Aluminium	Nakajima	ST051012
72	Lug size 61mm 2" (50A)			ST051071
73	Lug size 72 mm 2-1/2" (65A)			ST051091

NS / KR Type

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 74	68 mm, Jet / Spray	Brass	NS	ST056012
75	83 mm, Jet / Spray		KR	ST056021

PIN Lug Type

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 76	1-1/2" (40A) Thread: 11-1/2 TPI			ST0750200
33 08 08	Jet/Spray short 2-1/2" (65A) Thread: 7-1/2 TPI	Brass	PIN Lug	ST075032

LFB Type

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 77	2-1/2"			ST120011
78	Thread: 5-1/5 TPI 2-1/2" Thread: 5-1/5 TPI	Brass	LFB	ST120019

Instantaneous Type

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 79	2-1/2"	Brass	Instantaneous	ST230011

NOR Type

Unit Per Pcs.

CODE	Size	Material	Type	Alligator No.
33 35 80	2" (LAS 2/50A) Jet/Spray			ST250011
81	2-1/2" (LAS 1/65A) Jet/Spray	Brass	NOR	ST250021

Barcelona Type

33 35 82 33 35 83 33 35 84 33 35 85

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 35 82	DN45, Lug size 45 mm Jet/Spray			ST300012
83	DN70, Lug size 70 mm Jet/Spray			ST300022
84	DN45, Lug size 45 mm Jet/Spray with manshield	Aluminium	Barcelona	ST300014
85	DN70, Lug size 70 mm Jet/Spray with manshield			ST300024

ROTA Type

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 35 86	2-1/2", Jet/Spray	Brass	ROTA	ST320012

Storz Type

33 35 91 33 35 92 33 35 93 33 35 94

33 35 95 33 35 96 33 35 97 33 35 98

33 36 01 33 36 02

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
Multi Purpose Nozzles				

33 35 91	2", Lug size:66 mm DIN 14365		Storz-C	ST44066
92	2-1/2", Lug size: 81 mm DIN 14365	Aluminium	Storz-65	ST44081
93	3", Lug size:89 mm DIN 14365		Storz-B	ST44089
94	2", DIN 14365	BSP male		ST44099
33 35 95	2", Lug size:66 mm Nozzle with manshield		Storz-C	ST45066
96	2-1/2", Lug size: 81 mm Nozzle with manshield	Aluminium	Storz-65	ST45081
97	3", Lug size:89 mm Nozzle with manshield		Storz-B	ST45089
98	2", Nozzle with manshield	BSP male		ST45099

Fire Nozzles

33 36 01	2", with jet/spray nozzle	Brass	BSP male	ST49527
33 36 02	2", Lug size:66 mm Jet/Spray	Storz-C		ST500012
03	2-1/2", Lug size 81 mm Jet/spray	Brass	Storz-65	ST500032
04	3", Lug size 89 mm Jet/spray		Storz-B	ST500042

UNIFIRE / HS 16 Type

33 36 05 33 36 06

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 36 05	2" Thread: BSP male	Brass chrome plated PVC	UNIFIRE V16	ST550500
06	2" Thread: BSP male	UNIFIRE	V16	ST550501

SMS Type

33 36 07 33 36 08

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 36 07	2-1/2", jet/spray with manshield	Aluminium	SMS	ST62005
08	2-1/2", jet/spray			ST62010

Foam Nozzles with Ball Valve

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 36 09	2" Thread: BSP male	Aluminium	-	ST700400

Ball Nozzles

Unit Per Pc.

CODE	Size	Material	Type	Alligator No.
33 36 10	13 mm			ST954013
11	19 mm	Chromed	-	ST954019
12	25 mm			ST954025

Applicators for All Purpose Nozzle

Aplicadores para Lanzas Multiusos

オールバー・バース式ノズル用アブリケーター 多用途噴嘴

For use with all purpose nozzle.

Applicator is made of bronze with

brass coupling. Please specify

the type of coupling, Nakajima,

ANSI pin, etc., to be connected with when ordering.



Unit Per Pc.

CODE	Size	CODE	Size
BSP Male Thread Coupling			

33 07 53 50A x 1,200 mm 33 07 54 50A x 1,800 mm

Storz Coupling

33 07 55	50A x 1,200 mm	33 07 58	65A x 1,800 mm
56	50A x 1,800 mm	59	75A x 1,200 mm
57	65A x 1,200 mm	60	75A x 1,800 mm

ANSI PIN Coupling

33 07 61	40A x 1,200 mm	33 07 67	65A x 1,200 mm
62	40A x 1,800 mm	68	65A x 1,800 mm
63	40A x 3,600 mm	69	65A x 3,600 mm

(to be continued)

Unit Per Pcs.			
CODE	Size	CODE	Size
Nakajima Coupling			
33 08 15	40A x 1,200 mm	33 08 18	65A x 1,200 mm
16	40A x 1,800 mm	19	65A x 1,800 mm
17	40A x 3,600 mm	20	65A x 3,600 mm
33 08 94	50A x 1,200 mm		
95	50A x 1,800 mm		
96	50A x 3,600 mm		

Machino Coupling			
33 07 71	40A x 1,200 mm	33 07 77	65A x 1,200 mm
72	40A x 1,800 mm	78	65A x 1,800 mm
73	40A x 3,600 mm	79	65A x 3,600 mm
33 07 74	50A x 1,200 mm		
75	50A x 1,800 mm		
76	50A x 3,600 mm		

Remark: Lug distance of Storz coupling C 50A: 66 mm, Storz coupling 65A: 81 mm, Storz coupling B 75A: 89 mm, and of Nakajima coupling 40A: 61mm, 50A: 2 mm, 65A: 91mm

Fog Nozzles 3-position for Fire Hose Nozzle

Lanza Contra incendios de 3 posiciones, Latón

ホースノズル用噴霧ノズル 消防皮龍三段式噴嘴

3-position nozzles produces shut-off/spray/jet flow spray modes.

Nozzle comes with couplings suitable to connect with the hose couplings of the ship. Made of brass.

Made of Brass



Unit Per Pcs.

CODE	Type of Coupling	Size
33 08 30	BSP male	2" (50A)
33 08 42	Storz	2" (50A)
43	Nakajima	2-1/2" (65A)
33 08 31		1-1/2" (40A)
32		2" (50A)
33		2-1/2" (65A)
33 08 34	ANSI Pin	1-1/2" (40A)
35		2" (50A)
36		2-1/2" (65A)
33 08 37	Machino	1-1/2" (40A)
38		2" (50A)
39		2-1/2" (65A)

Made of Aluminium



Unit Per Pcs.

CODE	Type of Coupling	Size
33 35 50	BSP male	2" (50A)
33 35 51	PIN Lug	1-1/2" (40A)
52		2-1/2" (65A)
33 35 53	Storz	2" (50A)
54		2-1/2" (65A)
33 35 55	Nakajima	1-1/2" (40A)
56		2" (50A)
57		2-1/2" (65A)
33 35 58	Machino	1-1/2" (40A)
59		2" (50A)
60		2-1/2" (65A)

International Shore Connections

Conexiones Internacionales para Suministro de Agua desde Tierra

国際陸上施設連結具 国際通岸消防接头

Required by SOLAS regulations Chapter II Regulation 19. "Ships of 500 tons or more shall be provided with at least one international shore connection."



The connection is fitted with a coupling to match the hose couplings on the ship.

Please specify the required type of ship's coupling: Nakajima, ANSI Pin, etc. when ordering. Connections come with bolts, nuts, washers and gaskets.

Basic Dimensions

Outside Diam.	: 178 mm	Inside diam.	: 64 mm
P. C. D.	: 132 mm	Flange Thick	: 14.5 mm
Slots in Flange			: 19 mm diam x 4 holes
Bolts and Nuts			: 16 mm diam x 50 mm length x 4 pcs.

33 08 41	International shore connection fitted with couplings to match hose coupling on ship	Pc.
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Keeping Box for International Shore Connection

Made of polyester reinforced with glass fibre. The outside is smooth finished.



33 08 40	Keeping box for international shore connection, polyester, red coloured, 290 x 290 x 170 mm	Pc.
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Name of Mfr.: Alligator

Fire Hose Couplings

Acoplamientos de mangueras de incendio

消火ホース継ぎ手 灭火水龙带接头

A wide variety of types are available as per the illustration below. Made of Brass or Aluminium are available, and used for shipboard fire fighting.



Unit Per Pr.				
Brass				
CODE	Size	Type	Standard	Connection
33 08 51 52 53	40A(1-1/2) 50A(2) 65A(2-1/2)	Nakajima	JIS F-7335	Interlocking
33 08 54 55 56 57 58	25A(1) 40A(1-1/2) 50A(2) 65A(2-1/2) 75A(3)	Machino	JIS B-9911	Inserting
33 08 59 60 61	40A(1-1/2) 50A(2) 65A(2-1/2)	John Morris	B.S.336	Inserting
33 08 62 63 64	40A(1-1/2) 50A(2) 65A(2-1/2)	Nor	Norwegian	Interlocking
33 08 65 66	1-1/2" 2-1/2"	(USA) ANSI Pin	NH (NST)	Screw Connecting
33 08 69 70	1-1/2" 2-1/2"	(USA) ANSI Slotteer	NH (NST)	
33 08 73 74	40A(1-1/2) 65A(2-1/2)	French	NF-S61-704 NF-S61-705	Interlocking
33 08 75 76	52C(2) 75B(3)	Storz	DIN 14302 DIN 14303	Interlocking
33 08 77 78 79 80	25A(1) 40A(1-1/2) 50A(2) 65A(2-1/2)	BSP & PF	BSP 21 JIS B-0202	Screw Connecting
- Not illustrated -				
Aluminium				
33 08 88 89 90	40A(1-1/2) 50A(2) 65A(2-1/2)	Nakajima	JIS F-7335	Interlocking
33 08 82 83	40A(1-1/2) 65A(2-1/2)	Machino	JIS B-9911	Inserting
33 09 31 32 33	40A(1-1/2) 50A(2) 65A(2-1/2)	John Morris	B.S.336	Inserting

Rubber Packings for Hose Coupling

Juntas de Goma para Racores de Manguera

ホース接手用ゴムパッキング 消防皮龙接头备用橡皮垫圈

Please specify the type and nominal size of hose coupling to be attached.



How to order: 33 - 08 - 86

Rubber packing for hose coupling, TYPE of HOSE COUPLING, NOMINAL SIZE

Unit Per Pcs.			
CODE	Size	CODE	Size
For Nakajima Coupling			
33 08 45 46	1-1/2" 2"	33 08 47	2-1/2"
For ANSI PIN Coupling			
33 08 48 49	1-1/2" 2"	33 08 50	2-1/2"
For Machino Coupling			
33 08 97 98	1-1/2" 2"	33 08 99	2-1/2"

Screw Thread Information for the above

Standard	Size	Thread Per Inch	Basic O.D. Male Part.
USA NH (NST)	1-1/2" 2" 2-1/2"	9 8 7-1/2	1.990" 2.5156" 3.0686"
British BSP Japan PF/PT	1-1/2" 2" 2-1/2"	11 11 11	47.803 mm 59.614 mm 75.184 mm

Reducing Hose Couplings

Racores Reducidos para Manguera 段落ち接头 异径皮龙接头

Made of brass. Designed for connecting hoses of different size. Furnished in individual pieces.



Nakajima



Machino



ANSI Pin

Unit Per Pcs.

CODE	Coupling Type	Size	
		Connection	Hose End
33 08 84 91 85	Nakajima	2"	1-1/2"
		2-1/2"	1-1/2" 2"
		2-1/2"	1-1/2" 2"
33 08 92 87	Machino	2-1/2"	1-1/2" 2"
33 08 93 33 09 00	ANSI Pin	2-1/2"	1-1/2" 2"

Fire Hose Couplings Y Piece

Pieza de conexión en Y para mangueras de incendio

消防ホース継ぎ手 Y字型 人字形灭火水龙带接头



33

33 08 81 | Coupling fire hose, brass, Y piece, Inlet 2" male | Pcs.

Fire Hose Couplings

Pieza de conexión en Y para mangueras de incendio

消防ホース継ぎ手 人字形灭火水龙带接头

Guillemin Type



33 18 01-03



33 18 06-14



33 18 16-19



33 18 21-24



33 18 26-29



33 18 31

CODE	Size	Material	Type	Alligator No.
Fire Hose Couplings with Locking Ring Unit Per Pcs.				
33 18 01	Hose end 45 mm Lug size 45 mm			SM044045
02	Hose end 38 mm Lug size 70 mm	Aluminium	Guillemin	SM044063
03	Hose end 70 mm Lug size 70 mm			SM044070

CODE	Size	Material	Type	Unit Per Pcs.
Adapters Unit Per Pcs.				
33 18 06	2" BSP female, Lug size 45 mm			SM046045
07	2" BSP female, Lug size 70 mm	Aluminium	Guillemin	SM046070
08	2-1/2" BSP female, Lug size 70 mm			SM046071
09	1-1/2" R female, Lug size 45 mm			SM046044
10	2" R female, Lug size 50 mm			SM046050
33 18 11	1-1/2" BSP male, Lug size 45 mm			SM046043
12	2" R male, Lug size 45 mm	Aluminium	Guillemin	SM046046
13	2" R male, Lug size 50 mm			SM046051
14	2-1/2" R male, Lug size 70 mm			SM046073
33 18 16	2-1/2" BSP female, Lug size 70 mm			SM047071
17	2" R female, Lug size 45 mm	Brass	Guillemin	SM047047
18	2" R female, Lug size 70 mm			SM047072
19	2-1/2" R female, Lug size 70 mm			SM047074

CODE	Size	Material	Type	Unit Per Pcs.
33 18 21	Lug size 45 mm	Aluminium	Guillemin	SM048045
22	Lug size 70 mm			SM048070

CODE	Size	Material	Type	Unit Per Pcs.
Rubber Rings Suction/Delivery Unit Per Pcs.				
33 18 26	Suction/Delivery 45 mm			SM049045
27	Suction/Delivery 70 mm	Rubber	Guillemin	SM049070
28	Delivery 45 mm			SM049046
29	Delivery 70 mm			SM049071

CODE	Size	Material	Type	Unit Per Pcs.
33 18 31	for all size	Brass	Guillemin /DSP	SM05010

UNI 45 / UNI 70 Type



CODE	Size	Material	Type	Alligator No.
Hose Couplings Unit Per Pcs.				
33 18 41	45 mm	Brass	UNI 45	SM06045
42	70 mm		UNI 70	SM06070
Rubber Rings Unit Per Pcs.				
33 18 43	-	Rubber	UNI 45	SM06145
44			UNI 70	SM06170
Adapters Unit Per Pcs.				
33 18 51	45x 2" (UNI female x BSP female)		UNI 45	SM065040
52	70x 2" (UNI female x BSP female)	Brass	UNI 70	SM065060
53	70x 2-1/2" (UNI female x BSP male)		UNI 70	SM065065
54	70x 2-1/2" (UNI female x BSP female)		UNI 70	SM065066
33 18 55	45x 2" (UNI male x BSP female)		UNI 45	SM06569
56	70x 2" (UNI male x BSP female)	Brass	UNI 70	SM06570
57	70x 2-1/2" (UNI male x BSP female)		UNI 70	SM06571
58	70x 2-1/2" (UNI male x BSP male)		UNI 70	SM06572
59	45x 70 (UNI male x UNI female)		UNI 45/ UNI 70	SM06575
Caps Unit Per Pcs.				
33 18 61	-	Brass	UNI 45	SM07045
62			UNI 70	SM07070
Spanners Unit Per Pcs.				
33 18 63	-	Brass	UNI 45-70	SM075045

Machino/Nakajima Type



CODE	Size	Material	Type	Alligator No.
Adapters				
33 18 71	1-1/2"(40A) female Thread: 2" BSP female			SM082040
72	1-1/2"(40A) male Thread: 2" BSP female	Brass	Machino	SM082055
33 18 73	2" (50A) female Thread: 2" BSP female			SM082045
74	2" (50A) male Thread: 2" BSP female	Brass	Machino	SM082056
33 18 75	2-1/2" (65A) male Thread: 2" BSP female			SM082060
76	2-1/2"(65A) female Thread: 2" BSP female	Brass	Machino	SM082050
77	2-1/2"(65A) female Thread: 2-1/2" BSP female			SM082047
Caps				
33 18 78	1-1/2" (40A)			SM08405
79	2" (50A)	Brass	Machino	SM08407
80	2-1/2" (65A)			SM08410
Adapters				
33 18 81	1-1/2" (40A) Lug Size: 61 mm Thread: 2" BSP female			SM09861
82	2" (50A) Lug Size: 72 mm Thread: 2" BSP female	Brass	Nakajima	SM09872
83	2-1/2" (65A) Lug Size: 91 mm Thread: 2" BSP female			SM09891
84	2-1/2" (65A) Lug Size: 91 mm Thread: 2-1/2" BSP female			SM09895
33 18 86	1-1/2" (40A) Lug Size: 61 mm Thread: 2" BSP female			SM09897
87	2" (50A) Lug Size: 72 mm Thread: 2" BSP female	Aluminium	Nakajima	SM09898
88	2-1/2" (65A) Lug Size: 91 mm Thread: 2" BSP female			SM09899
Caps				
33 18 91	1-1/2" (40A) Lug size: 61 mm			SM099061
92	2" (50A) Lug size: 72 mm	Aluminium	Nakajima	SM099072
93	2-1/2" (65A) Lug size: 91 mm			SM099091
33 18 96	1-1/2" (40A) Lug size: 61 mm			SM10061
97	2" (50A) Lug size: 72 mm	Brass	Nakajima	SM10072
98	2-1/2" (65A) Lug size: 91 mm			SM10091

KR/NS Type

CODE	Size	Material	Type	Alligator No.
Fire Hose Couplings				

33 32 01	63 mm Lug size: 84 mm Hose end: 63 mm	Brass	KR	SM138065
33 32 02	50 mm Lug size: 68 mm Hose end: 50 mm	Brass	NS	SM140050

CODE	Size	Material	Type	Alligator No.
Adapters				

33 32 03	2" Lug size: 68 mm Thread: BSP female	Brass	NS	SM141050
33 32 04	2" Lug size: 84 mm Thread: BSP female	Brass	KR	SM141084

CODE	Size	Material	Type	Alligator No.
Caps				

33 32 05	2", Lug size: 68mm	Brass	NS	SM142050
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PIN Lug Type

CODE	Size	Material	Type	Alligator No.
Caps				

33 32 06	1-1/2" (40A) Thread: 9 TPI female			SM158380
07	2-1/2" (65A) Thread: 7-1/2 TPI female	Brass	PIN Lug	SM158650

CODE	Size	Material	Type	Alligator No.
Hose Couplings				

33 32 11	2-1/2" (65A) Hose end: 38 mm Thread: 7-1/2 TPI			SM174380
12	2-1/2" (65A) Hose end: 50 mm Thread: 7-1/2 TPI	Brass	PIN Lug	SM174500
33 08 66	2-1/2" (65A) Hose end: 65 mm Thread: 7-1/2 TPI			SM174630

CODE	Size	Material	Type	Alligator No.
Hose Couplings				

33 32 15	1-1/2" (40A) Hose end: 38 mm Thread: 7-1/2 TPI			SM175380
16	2" (50A) Hose end: 50 mm Thread: 7-1/2 TPI	Aluminium	PIN Lug	SM175500
17	2-1/2" (65A) Hose end: 65 mm Thread: 7-1/2 TPI			SM175630

LFB/LRT Type

CODE	Size	Material	Type	Alligator No.
Hose Couplings				
33 32 21	2-1/2" (65A) Hose end: 38 mm Thread: 5-1/5 TPI			Unit Per Pr. SM204380
22	2-1/2" (65A) Hose end: 50 mm Thread: 5-1/5 TPI	Brass	LFB	SM204500
23	2-1/2" (65A) Hose end: 63 mm Thread: 5-1/5 TPI			SM204630
Adapter				
33 32 24	2-1/2" (65A) 5-1/5" female thread x 2-1/2" BSP female thread	Brass	LFB	SM204631
Caps				
33 32 26	2-1/2"	Brass	LFB	SM205650
File Hose Couplings				
33 32 27	2-1/2" Hose end: 63mm	Brass	LRT	SM206630

Instantaneous Type



CODE	Size	Material	Type	Alligator No.
Fire Hose Couplings				
33 08 59	Lug size 2-1/2" Hose end: 40 mm			Unit Per Pr. SM395238
32 29	Lug size 2-1/2" Hose end: 45 mm	Brass	Instantaneous	SM395245
08 60	Lug size 2-1/2" Hose end: 50 mm			SM395252
08 61	Lug size 2-1/2" Hose end: 65 mm			SM395265
33 32 31	Lug size 2-1/2" Hose end: 38 mm			SM396038
32	Lug size 2-1/2" Hose end: 52 mm	Aluminium	Instantaneous	SM396050
33	Lug size 2-1/2" Hose end: 63 mm			SM396063
Adaptors Female				
33 32 34	2-1/2" Thread: 2" BSP female	Brass	Instantaneous	SM410050
35	2-1/2" Thread: 2-1/2" BSP female			SM410065

33 32 36	2-1/2" Thread: 2" BSP female			Unit Per Pr. SM411050
37	2-1/2" Thread: 2-1/2" BSP female	Aluminium	Instantaneous	SM411065

Adapters Male

33 32 38	2-1/2" Thread: 2" BSP female			Unit Per Pr. SM415050
39	2-1/2" Thread: 2-1/2" BSP female	Brass	Instantaneous	SM415065

33 32 41	2-1/2" Thread: 2" BSP female			Unit Per Pr. SM416050
42	2-1/2" Thread: 2-1/2" BSP female	Aluminium	Instantaneous	SM416065

33 32 43	2-1/2" Thread: 2" BSP male			Unit Per Pr. SM417050
44	2-1/2" Thread: 2-1/2" BSP male	Aluminium	Instantaneous	SM417065

Caps Male

33 32 45	2-1/2" male	Brass	Instantaneous	Unit Per Pcs. SM420065
46	2-1/2" female			SM420080

33 32 47	2-1/2" male	Aluminium	Instantaneous	Unit Per Pcs. SM421065
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Rubber Rings

33 32 48	2-1/2"	Rubber	Instantaneous	Unit Per Pcs. SM425066
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NOR Type



CODE

Size

Material

Type

Alligator No.

Hose Couplings

33 08 62	1-1/2" (40A) Hose end: 38 mm			Unit Per Pr. SM530138
32 51	2" (LAS 2) Hose end: 38 mm			SM530238
08 63	2" (50A) Hose end: 50 mm	Brass	NOR	SM530250
32 52	2-1/2" (LAS 1) Hose end: 38 mm			SM530638
08 64	2-1/2" (65A) Hose end: 65 mm			SM530665
32 53	2-1/2" (LAS 1) Hose end: 50 mm			SM530650

Adapters

33 32 55	2" (LAS 2) Thread: 1-1/2" BSP female			Unit Per Pcs. SM530538
56	2" (LAS 2/50A) Thread: 2" BSP female			SM535050
57	2-1/2" (LAS 1) Thread: 2" BSP female	Brass	NOR	SM535065
58	2-1/2" (LAS 1/65A) Thread: 2-1/2" BSP female			SM535070

(to be continued)

(to be continued)

CODE	Size	Material	Type	Alligator No.
Adapters Unit Per Pcs.				
33 32 60	2" (LAS 2/50A) Thread: 2" BSP male			SM540050
61	2-1/2" (LAS 1) Thread: 2" BSP male	Brass	NOR	SM540065
62	2-1/2" (LAS 1/65A) Thread: 2-1/2" BSP male			SM540070
Caps Unit Per Pcs.				
33 32 63	2" (LAS2/50A)	Brass	NOR	SM542050
64	2-1/2" (LAS 1/65A)			SM542065
Coupling Spanners Unit Per Pcs.				
33 32 65	2" - 2-1/2"	Steel	NOR	SM543015
Rubber Rings Unit Per Pcs.				
33 32 66	2"	Rubber	NOR	SM545050
67	2-1/2"			SM545065

Barcelona Type

33 32 86	DN45, Lug size 62 mm, Thread: 2" BSP female			SM556005
87	DN70, Lug size 85 mm, Thread: 2" BSP female	Brass	Barcelona	SM556010
88	DN70, Lug size 85 mm, Thread: 2-1/2" BSP female			SM556070
89	DN70, Lug size 85 mm, Thread: 2-1/2" BSP male			SM556071

Caps Unit Per Pcs.				
33 32 91	DN45 Lug size: 62 mm	Aluminium	Barcelona	SM560045
92	DN70 Lug size: 85 mm			SM562070
Rubber Rings Unit Per Pcs.				
33 32 94	DN45	Rubber	Barcelona	SM570045
95	DN70			SM570070

GOST Type

33 32 96/97 33 33 01-03 33 33 04/05

CODE	Size	Material	Type	Alligator No.
Hose Couplings Unit Per Pcs.				
33 32 71	DN45 Hose end 45 mm Lug size 62 mm			SM550035
72	DN70 Hose end 63 mm Lug size 85 mm	Aluminium	Barcelona	SM550063
73	DN70 Hose end 70 mm Lug size 85 mm			SM550070
33 32 74	DN70 Hose end 38 mm Lug size 85 mm			SM552039
75	DN70 Hose end 52 mm Lug size 85 mm			SM552050
76	DN70 Hose end 63 mm Lug size 85 mm	Brass	Barcelona	SM552063
77	DN70 Hose end 70 mm Lug size 85 mm			SM552070

CODE	Size	Material	Type	Alligator No.
Adapters Unit Per Pcs.				
33 32 81	DN45, Lug size 62 mm, Thread: 2" BSP female			SM555005
82	DN70, Lug size 85 mm, Thread: 2" BSP male			SM555009
83	DN70, Lug size 85 mm, Thread: 2" BSP female	Aluminium	Barcelona	SM555010
84	DN70, Lug size 85 mm, Thread: 2-1/2" BSP female			SM555070

CODE	Size	Material	Type	Alligator No.
Hose Couplings Unit Per Pcs.				
33 32 96	2" Hose end: 52 mm Lug size: 79 mm			SM640050
97	2-1/2" Hose end: 64 mm Lug size: 96 mm	Brass	GOST 2 LUGS	SM640065
Adapters Unit Per Pcs.				
33 33 01	2", Lug size 79 mm Thread: 2" BSP female			SM641050
02	2-1/2", Lug size 96 mm Thread: 2" BSP female			SM641065
03	2-1/2", Lug size 96 mm Thread: 2-1/2" BSP female	Brass	GOST 2 LUGS	SM641070
Caps Unit Per Pcs.				
33 33 04	2", Lug size 79 mm			SM642050
05	2-1/2", Lug size 96 mm	Brass	GOST 2 LUGS	SM642065

ROTA 3 LUGS Type

(to be continued)

CODE	Size	Material	Type	Alligator No.
Hose Couplings Unit Per Pcs.				
33 33 06	2"			SM660035
07	Hose end: 50 mm 2-1/2"			SM660038
08	Hose end: 38 mm 2-1/2"	Brass	ROTA 3 LUGS	SM660050
09	Hose end: 50 mm 2-1/2"			SM660065
Adapters Unit Per Pcs.				
33 33 11	2". Thread: 2" BSP female			SM665035
12	2-1/2", Thread: 2" BSP female	Brass	ROTA 3 LUGS	SM665050
13	2-1/2", Thread: 2-1/2" BSP female			SM665065
Caps Unit Per Pcs.				
33 33 14	2"	Brass	ROTA 3 LUGS	SM666035
15	2-1/2"			SM666065
Rubber Rings Unit Per Pcs.				
33 33 16	2-1/2", Inside dia 62 mm Outside dia 74 mm Thick 16mm	Rubber	ROTA	SM667065

Storz Type



CODE	Size	Material	Type	Alligator No.
Hose Couplings Unit Per Pcs.				
33 33 21	Lug size: 52 mm Hose end: 25 mm			SM700525
22	Lug size: 52 mm Hose end: 32 mm	Aluminium	Storz	SM700532
23	Lug size: 52 mm Hose end: 38 mm			SM700538
33 33 24	Lug size: 66 mm Hose end: 25 mm			SM700625
25	Lug size: 66 mm Hose end: 32 mm	Aluminium	Storz-C	SM700632
26	Lug size: 66 mm Hose end: 38 mm			SM700638
27	Lug size: 66 mm Hose end: 45 mm			SM700645
28	Lug size: 66 mm Hose end: 52 mm			SM700650
33 33 31	Lug size: 81 mm Hose end: 38 mm			SM700838
32	Lug size: 81 mm Hose end: 52 mm	Aluminium	Storz-65	SM700850
33	Lug size: 81 mm Hose end: 65 mm			SM700865
34	Lug size: 81 mm Hose end: 75 mm			SM700875
33 33 35	Lug size: 76 mm Hose end: 65 mm	Aluminium	Storz China	SM700880
33 33 36	Lug size: 89 mm Hose end: 52 mm			SM700950
37	Lug size: 89 mm Hose end: 65 mm	Aluminium	Storz-B	SM700965
38	Lug size: 89 mm Hose end: 75 mm			SM700975
Adapters Unit Per Pcs.				
33 33 41	1-1/2" Lug size 66 mm Thread: BSP female			SM705645
42	2" Lug size 66 mm Thread: BSP female	Aluminium	Storz-C	SM705650
43	2-1/2" Lug size 66 mm Thread: BSP female			SM705665
33 33 44	2" Lug size 81 mm Thread: BSP female			SM705850
45	2-1/2", Lug size 81 mm Thread: BSP female	Aluminium	Storz-65	SM705865
33 33 46	2" Lug size 89 mm Thread: BSP female			SM705950
47	2-1/2", Lug size 89 mm Thread: BSP female	Aluminium	Storz-B	SM705965
48	3" Lug size 89 mm Thread: BSP female			SM705975
33 33 51	1-1/2" Lug size 66 mm Thread: BSP male			SM710654
52	2" Lug size 66 mm Thread: BSP male	Aluminium	Storz-C	SM710655
33 33 53	2" Lug size 81 mm Thread: BSP male			SM710855
54	2-1/2" Lug size 81 mm Thread: BSP male	Aluminium	Storz-65	SM710860
33 33 55	2-1/2" Lug size 89 mm Thread: BSP male	Aluminium	Storz-B	SM710890

(to be continued)

CODE	Size	Material	Type	Alligator No.
Reducing Pieces				
33 33 61	66 x 44 mm	Aluminium	Storz	SM712044
62	81 x 66 mm			SM712081
63	89 x 66 mm incl. swivel			SM712089
64	89 x 81 mm			SM712091
65	115 x 66 mm			SM7120911
66	133 x 89 mm			SM712092
Caps				
33 33 71	1-1/2", Lug size 52 mm	Aluminium	Storz	SM715052
72	2", Lug size 66 mm		Storz-C	SM715660
73	2-1/2", Lug size 81 mm		Storz-65	SM715881
74	3", Lug size 89 mm		Storz-B	SM715889
75	4", Lug size 133 mm		Storz	SM715895
Y Piece with Cocks				
33 33 76	Inlet 89 mm Outlet 66 mm	Aluminium	Storz	SM716750
77	Lug size 81 mm			SM716760
78	Lug size 66 mm			SM716770
Hose Couplings				
33 33 81	Lug size: 44 mm Hose end: 19 mm	Brass	Storz	SM720420
82	Lug size: 44 mm Hose end: 25 mm			SM720425
83	Lug size: 44 mm Hose end: 32 mm			SM720432
84	Lug size: 52 mm Hose end: 25 mm			SM720525
85	Lug size: 52 mm Hose end: 32 mm			SM720532
86	Lug size: 52 mm Hose end: 38 mm			SM720538
33 33 87	Lug size: 66 mm Hose end: 25 mm	Brass	Storz-C	SM720625
88	Lug size: 66 mm Hose end: 32 mm			SM720632
89	Lug size: 66 mm Hose end: 38 mm			SM720638
08 75	Lug size: 50 mm Hose end: 50 mm			SM720650
33 90	Lug size: 66 mm Hose end: 45 mm			SM720645
91	Lug size: 66 mm Hose end: 63 mm			SM720663
33 33 92	Lug size: 81 mm Hose end: 38 mm	Brass	Storz-65	SM720838
93	Lug size: 81 mm Hose end: 50 mm			SM720850
94	Lug size: 81 mm Hose end: 75 mm			SM720875
33 33 95	Lug size: 76 mm Hose end: 63 mm	Brass	Storz-China	SM720865
33 33 96	Lug size: 89 mm Hose end: 38 mm	Brass	Storz-B	SM720938
97	Lug size: 89 mm Hose end: 50 mm			SM720950
98	Lug size: 89 mm Hose end: 63 mm			SM720963
08 76	Lug size: 89 mm Hose end: 75 mm			SM720975
Adapters				
33 34 01	1-1/2", Lug size 66 mm Thread:BSP female	Brass	Storz-C	SM725062
02	2", Lug size 66 mm Thread:BSP female			SM725066

(to be continued)

33 34 03	2", Lug size 81 mm Thread:BSP female	Brass	Storz-65	SM725081
04	2-1/2", Lug size 81 mm Thread:BSP female			SM725082
33 34 05	2", Lug size 76 mm Thread:BSP female	Brass	Storz-China	SM725085
33 34 06	2", Lug size 89 mm Thread:BSP female	Brass	Storz-B	SM725089
07	2-1/2", Lug size 89 mm Thread:BSP female			SM725090
33 34 11	1-1/2", Lug size 66 mm Thread:BSP male	Brass	Storz-C	SM727062
12	2", Lug size 66 mm Thread:BSP male			SM727066
33 34 13	2", Lug size 81 mm Thread:BSP male	Brass	Storz-65	SM727080
14	2-1/2", Lug size 81 mm Thread:BSP male			SM727081
33 34 15	3", Lug size 89 mm Thread:BSP male	Brass	Storz-B	SM727089
Caps				
33 34 21	44 mm	Brass	Storz	SM735044
22	52 mm			SM735052
23	66 mm	Brass	Storz-C	SM735066
20	76 mm	Brass	Storz-China	SM735076
24	81 mm	Brass	Storz-65	SM735081
25	89 mm	Brass	Storz-B	SM735089
Chain & S-Hook				
33 34 26	30 cm	Steel	-	SM736100
Spanners				
33 34 27	2" - 2-1/2"	Brass	Storz	SM755650
28	3-1/2"	Iron Steel with PVC Handle	Storz-BC	SM760760
29	4", 3", 2"	Iron	Storz-ABC	SM760770
30	4", 3", 2"	Steel with PVC Handle	Storz-ABC DIN 14822	SM760780
Rubber Rings Delivery				
33 34 36	66 mm	Rubber	Storz-C	SM790066
37	81 mm			SM790081
38	89 mm			SM790089
Rubber Rings Suction/Delivery				
33 34 41	31 mm	Rubber	Storz	SM845031
42	44 mm			SM845044
43	52 mm			SM845052
44	133 mm			SM845133
45	66 mm	Rubber	Storz-C	SM845066
46	81 mm	Rubber	Storz-65	SM845081
47	89 mm	Rubber	Storz-B	SM845089
Locking Rings				
33 34 51	44 mm	Steel	Storz	SM847044
52	52 mm			SM847052
53	66 mm	Steel	Storz-C	SM847066
54	81 mm	Steel	Storz-65	SM847081
55	89 mm	Steel	Storz-B	SM847089
Rubber Rings				
33 34 61	48x37x3 mm (1-1/2")	Rubber	-	SM84948
62	60x47x3 mm (2")			SM84960
63	75x54x3 mm			SM84972
64	76x66x3 mm (2-1/2")			SM84976
65	88x78x3 mm (3")			SM84988

**SMS Type**

CODE	Size	Material	Type	Alligator No.
Dual Nipples				
33 34 66	1-1/2" x 1-1/2"			Unit Per Pcs.
	Thread: ANST male			SM900040
67	2-1/2" x 2-1/2"			
	Thread: BSP male	Brass	-	SM900066
68	2" x 2"			
	Thread: BSP male			SM902050

CODE	Size	Material	Type	Alligator No.
Reducing Nipples				
33 34 71	2" x 1" BSP male			Unit Per Pcs.
72	2-1/2" x 1-1/2" BSP male			SM905025
73	2-1/2" x 2" BSP male			SM905065
74	2-1/2" x 2" ANST male x BSP male	Brass	-	SM905066
75	2-1/2" x 2-1/2" ANST male x BSP male			SM905067
76	2-1/2" x 2" ANST male x VP male			SM905068
33 34 81	2-1/2" x 1-1/2" BSP male x BSP female			SM910065
82	2-1/2" x 2" BSP male x BSP female			SM910066
83	2-1/2" x 2" ANST male x BSP female	Brass	-	SM910067
84	2-1/2" x 2-1/2" ANST male x BSP female			SM910068
85	2-1/2" x UNI70 ANST male x female			SM910070

CODE	Size	Material	Type	Alligator No.
Reducing Sockets				
33 34 91	1-1/2" x 2" ANST female x BSP female			Unit Per Pcs.
92	2-1/2" x 1-1/2" BSP female			SM915065
93	2-1/2" x 2" BSP female			SM915066
94	2-1/2" x 2-1/2" ANST female x BSP female	Brass	-	SM915067
95	2-1/2" x 2" ANST female x BSP female			SM915068
96	2-1/2" x 2-1/2" ANST female x BSP female			SM915069

CODE	Size	Material	Type	Alligator No.
Reducing Socket Swivel				
33 35 01	1-1/2" x 2" ANST female x BSP female			Unit Per Pcs.
02	1-1/2" x 1-1/2" ANST female x ANST female			SM917038
03	2-1/2" x 2" ANST female x BSP female	Brass	-	SM917040
04	2-1/2" x 2-1/2" ANST female x ANST female			SM917065

CODE	Size	Material	Type	Alligator No.
Reducing Nipples				
33 35 11	2" x 1-1/2" BSP female x BSP male			Unit Per Pcs.
12	2-1/2" x 2" BSP female x BSP male			SM920050
13	2-1/2" x 2" ANST female x BSP male			SM920065
14	2-1/2" x 2-1/2" ANST female x BSP male	Brass	-	SM920066
15	2-1/2" x 1-1/2" ANST female x ANST male			SM920067
16	2-1/2" x 1-1/2" ANST female x 9THR			SM920069
				SM920070

Water Mist Lance and Mobile Water Monitor

Lanza de nebulización y control de agua móvil

ウォーターミストランプ・移動式水噴射装置

水雾枪及移动式消防水炮

The SOLAS (SOLAS II-2/10 7.3) amendments requires the following additional firefighting systems for ships designed to carry container on or above the weather deck, and keel laid on or after 1 January 2016.

- (i) Water mist lance (at least one should be installed on board), which is a device to penetrate a container wall and produce water mist inside containers.
- (ii) Mobile water monitor (only for a ship designed to carry five or more tiers of containers on or above the weather deck), which is a portable device to spray water to the top tier of containers on deck. Ships with breadth less than 30m: at least two mobile water monitors to be installed, ships with breadth of 30m or more: at least four mobile water monitors to be installed.

Water Mist Lance

It complies fully with the IMO's Maritime Safety Committee's 93rd session and SOLAS regulation



II-2/10.7.3. Mist Lance consists of a tube with a piercing nozzle which is capable of penetrating a container wall and producing a water mist inside the container when connected to the fire main.

Unit Per Set

CODE	33 08 12
Max. Working Pressure	20 bar
Water Consumption	72 ltr/min at 4 bar (K-Facter : 34.6)
Throwing Distance	Approx. 10 mtr
Inlet Connection	1" BSP female thread
Dimension L × W × D	530 × 150 × 28 mm
Weight	Approx. 2 kg (w/o Hydraulic coupling)

Special Hammer for Water Mist Lance

A heavy hammer for making an opening for extinguishing lances in doors, steel tanks, roller shutters, roofing tiles etc. Made from galvanized steel, solid welded-on impact tip and non-slip handle. Dimension: 480 mm x W165 mm. Weight: 2.8 kg.



33 08 13	Hammer galvanized for making an opening for water mist lance	Pc.
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Mobile Water Monitor

In addition to SOLAS amendment, MSC.1/Circ.1472 was also approved to set design and performance standards of a mobile water monitor. It is water discharge device of portable type, consisting of inlet fitting, monitor water way, swivel fitting, discharge nozzle and a shut-off device.



Highly maneuverable, operating like hand line nozzles while delivering much more wear. Simple to set up for quick attack operations, and can be left unmanned at the fire scene to conserve manpower. Horizontal range of 0 degree from 250 degree, and vertical swivel range of 0 degree from 90 degree. Ground spikes at the base is resistant to long-term wear and provide excellent ground stability.

Flow Rate and Discharge Length ± 5% tolerance

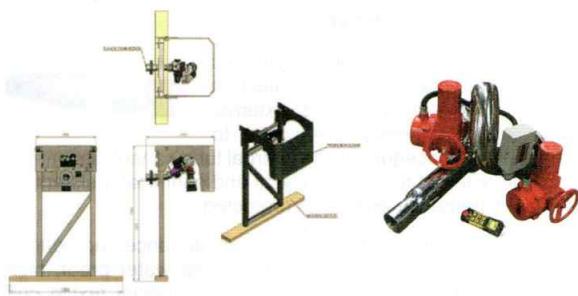
Monitor Inlet Pressure	Flow Setting	Flow Rate	Straight Stream Reach	
			Effective	Overall
4	Bar	Nozzle Tip	LPM	Meters
	4	1,140	800	38
	4	1,900	1,300	43
7	4	2,660	1,870	46
	7	1,140	1,080	46
	7	1,900	1,805	54
9	7	2,660	2,525	56
	9	1,140	1,200	52
	9	1,900	2,010	60
	9	2,660	2,820	60
				63
				63

Unit Per Set	
CODE	33 08 14
Model	WM-80M
Material	Body : Stainless steel 316 Jet spray nozzle: Bronze
Working Pressure	Max. 16 bar
Flow Rate	Over 1,300 ltr/min @4 bar
Discharge Length	Over 40 mtr @4 bar
Connection	2" PT female threads
Overall Dimension	Approx. 760 × 420 mm
Weight	Approx. 22 kg w/o coupling
Note :	Hydrant coupling for option
Certificate	KR & MED approval

Anti-Piracy Water Jet Cannons

Cañones de agua antipiratería 海賊対策水射出器 反海盜水槍

A water jet cannon is based on the use of high quality oscillating water cannons, which are installed on several points on the ship and prevent any boarding attempt when activated. The system is sent to the ship as a modular package that is installed by the crew without any required external help. Training will be given to operate the system and a user manual will enable smooth operation of the system.



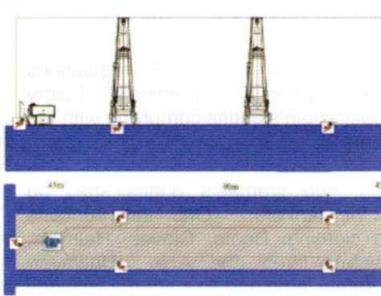
The installation of the system is divided into 2 main categories.

A – Engine room related installation

- Ensure existing pump has enough capacity.
- Else, in case the capacity is not available, connect engine room pumps to on deck diesel powered booster pump.
- Connection of hoses from pump (via engine room or deck).

B – Deck related installation

- Install water cannons on deck or railing, using supplied connection kit.
- Run 6" feeder hoses from main pump outlet / manifold.
- Run 4" hoses from feeder to water cannon.



System Components

- Storage container.
- High quality oscillating water cannons, (a modified type of the systems used by fire fighting departments).
- Special fittings to temporarily attach the cannons to deck or railing.
- Hoses, supplying water from pump to water cannons.
- Ballistic shields to protect water cannons from direct small caliber fire arms.

Typical Installation Pattern per Ship's Overall Length

Overall Length	No. of Cannon	Water Supply	
		ltr/min.	m ³ /hr
200 mtr	5 cannons	10,000	600
280 mtr	7 cannons	14,000	840
360 mtr	9 cannons	18,000	1,080

Performance of Water Jet Cannon

- | | |
|-------------------------------------|--|
| • Ultra compact | • Left right radius between -180 degrees to +180 degrees |
| • Weight : just 11.4 kg | • Up down radius between -45 degrees to +90 degrees |
| • Totally adjustable | • 12/24V electro motor |
| • Capacity 2,000 ltr/min at 5.5 bar | • Remote control option with joystick |
| • Range 50 – 55 meters | • 10 year warranty |
| • High quality aluminium | |
| • Includes manometer | |

Water Supplying Hose

Made from thick woven synthetic thread with a bac PVC/Nitril protection coating. The internal and external tubes are seamlessly interwoven to long levity. Consequently the internal tube cannot disconnect from the external tube. Totally oil and chemical resistant as well as extreme UV and Ozon protected.



Long levity, remains flexible, no maintenance, no rotting, temperature range -35°C to +100°C, sea water proof, high resistance to tearing and bending, and special textile cuff protect connector areas.

Couplings & Connectors

High quality aluminium connectors with fast connect and release system, as used by fire fighting department worldwide.



How to order: 31 - 41 - 21

Water jet cannon system, With further details

Fireman's Outfits

Trajes de Bombero 消防員裝具 消防服

Required according to SOLAS regulations Chapter II Regulation 17. "All ships shall carry at least two fireman's outfits complying with the requirements."

In addition, two fireman's outfits shall be provided for tankers. One set contains Protective clothing, Boots, Gloves, Helmets, Electric safety lamp and Axe. However, Electrical safety lamp and Axe are not included in the unit.



Unit Per Set

CODE	33 09 01	33 09 11	33 09 21	33 09 41
Approved	H. K.	U. K. DOT	N. M. D.	MED

Individual Order

Items	Approval				Unit
	H.K.	U.K. DOT	N.M.D.	MED	
Helmet	33 09 02	33 09 14	33 09 22	33 09 42	Pc.
Coat	03	12	23	43	Pc.
Trousers	06	17	26	44	Pr.
Boots	04	16	24	45	Pr.
Gloves	05	15	25	46	Pr.

Fire Blankets

Mantas Protectoras contra Incendios
防火毛布 防火毯



Flameproof blanket can envelop a worker from head to foot to extinguish burning clothes. Should be located in any fire-hazard area to provide instant protection when clothing catches fire.

Unit Per Set

CODE	Material	Size	Case
33 09 50	Fibreglass with silicone rubber coating	1.8 x 1.2 mtr	PVC
51	Flame-retardant wool	82" x 62"	Metal

Water-Jel Fire Blankets and Sterile Burn Dressings

Mantas Protectoras ContraIncendios "Water-Jel" y Apóstitos contra Quemaduras "Sterile Burn Dressings"

ウォータージェル防火毛布 水凝胶防火毯

When placed on a victim, this unique fire blanket helps stop burn progression, relieve the pain, cool the skin, and protect against airborne contamination all in one easy step.

The gel-soaked blankets can also be used to extinguish flames on a victim, protect a rescuer from heat and flames, and extinguish small fires.



Fire Blankets

Unit Per Pk.

CODE	Size mm	CODE	Size mm
33 09 53 54	460 x 200 910 x 760	33 09 55 56	1,830 x 1,520 2,440 x 1,830

Sterile Burn Dressings

Sterile burn dressings help stop burn progression, relieve the pain, cool the skin, and protect against airborne contamination. These water-soluble dressings will not stick to the wound and are easy to store, carry, and use.



Unit Per Pkt

CODE	Size mm	CODE	Size mm
33 09 57 58	50 x 150 100 x 100	33 09 59	100 x 400

Name of Mfr.: Water-Jel Technologies

Fire Axes

Hachas para Bombero 消防斧 消防斧

Required with fire fighting gear by SOLAS regulation Chapter III Number 17. "The axe shall have a pick head with a wood or insulated handle."



33 09 61 62	Fire axe pickhead with wood handle Fire axe pickhead with insulated handle	Pc. "
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Emergency Door Key Case

Caja de llaves para puertas de emergencia

緊急用キーケース 紧急门钥匙盒

Polyester Door Key Case to put around the locked door. In case of emergency, break the glass case and take the key for evacuation.



Size 110×132 mm, coloured.

33 09 68	Emergency Door Key Case	Pc.
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Fireproof Lifelines

Guia Socorro-cinturón Bombero

命綱 防火救生绳

Combination rope of wire and nylon or hemp rope, complete with safety snap hook. Available 15 to 50 mtr lengths.



CODE	Line			Hook	Unit Per C/L
	Diam.	Length	Construction		
33 09 69 70	8 mm	15 mtr 21 mtr	Wire & Hemp	Safety Snap Hook	
71		30 mtr			
72		40 mtr	Wire & Nylon		
73		50 mtr			
74		40 mtr	Wire & Hemp		

Chemical Protection Suits

Trajes de Protección contra Productos Químicos

耐薬品スーツ 防化服

A limited-use chemical protective suit for operations on board that involve a gaseous, liquid or solid hazardous substance.

The suit material is resistant against the chemical substances listed below in accordance with EN 943-1:2002 1b, EN943-2:2002(ET), SOLAS II-2, Reg.19.



Note: Breathing apparatus and boots are excluded from the set.

Chemical Substance	Breakthrough time in min.	Chemical Substance	Breakthrough time in min.
Acetone	> 480	Hydrogen Chloride	> 480
Acetonitrile	> 480	Methanol	> 480
Ammonia	> 480	Methyl Chloride	> 480
1,3 Butadiene	> 480	n-Heptane	> 480
Carbon Disulfide	> 480	Caustic Soda 40%	> 480

(to be continued)

Chlorine	> 480	Sulphuric Acid 96%	> 480
Dichloromethane	> 480	Tetrachloethylene	> 480
Dimethylamine	> 480	Tetrahydrofuran	> 480
Ethyl Acetate	> 480	Toluene	> 480
Ethylene Oxide	> 480		

Type	Chemical protection suits complete with socks		
Model	CPS5800		
Shelf Life	10 years		
Weight	2.2 kg		
Approvals	EN943 1: 2002 type 1b EN943 : 2002 (ET) SOLAS II-2, Reg 19 ISO 16602:2007		

Name of Mfr.: Draeger

Unit Per Set					
CODE	Size (mtr)	No.	CODE	Size (mtr)	No.
33 09 81 78	M:1.6-1.75 L:1.7-1.85	R57787 R57788	33 09 79 80	XL :1.8-1.90 XXL:1.85-2.0	R57789 R57790

Gas Protection Suits

Trajes de Protección contra Gases

耐ガススース 耐瓦斯裝具



The ideal disposable, gas-tight chemical protective suit for hazmat incidents. Where complete protection against hazardous gases, liquids and particles is of the utmost priority, this lightweight garment is the suit of choice.

The suit material is resistant to the chemical substances listed below in accordance with EN 943-1:2002 1a, EN943-2:2002(ET), SOLAS II-2 Reg.19 and NFPA 1994: 2007.

Note: Breathing apparatus and boots are excluded from the set.

Chemical Substance	Breakthrough time in min.	Chemical Substance	Breakthrough time in min.
Acetone	> 480	Methanol	> 480
Acetonitrile	> 480	Methyl Chloride	> 480
Ammonia	> 480	Mustard Gas (HD)	> 480
1,3 Butadiene	> 480	n-Heptane	> 480
Carbon Disulfide	> 480	Sarine (GB)	> 480
Chlorine	> 480	Sodium Hydroxide 40%	> 480
Dichloromethane	> 480	Soman (GD)	> 480
Dimethylamine	> 480	Sulphuric Acid 96%	> 480
Ethyl Acetate	> 480	Tetrachloethylene	> 480
Ethylene Oxide	> 480	Tetrahydrofuran	> 480
Hydrogen Chloride	> 480	Toluene	> 480
Lewisite (L)	> 480	VX	> 480

Type	Gas protection suits complete with socks		
Model	CPS5900		
Shelf Life	10 years		
Weight	3 kg		
Approvals	EN943 1: 2002 type 1b EN943-2: 2002 (ET) NFPA 1994: 2007 SOLAS II-2, Reg 19 ISO 16602:20071		

Name of Mfr.: Draeger

Unit Per Set					
CODE	Size (mtr)	No.	CODE	Size (mtr)	No.
33 09 82 83 84	S:1.5-1.65 M:1.6-1.75 L:1.7-1.85	R57781 R57782 R57783	33 09 85 86	XL :1.8 -2.0 XXL:1.95-2.1	R57784 R57785

Disposable Gas Protection Suits

DuPont™ Tychem®10000

Trajes Desechables de Protección Contra Gases
使い捨て耐ガススーツ 一次性气体防护服

Designed for disposable (limited or single use) Chemical Protection Suits for gas, liquids, solid chemicals. Overwhelmingly light weight, high mobility and comfort than general rubber protective clothing. Comply with Bureau Veritas Rules for the Classification of Steel Ships SOLAS II-2, Reg19. IGC Code. IBC Code. EN943:2002. EU Category: Type 1a.



Note: Breathing apparatus, boots are excluded from the set.

DuPont™ Tychem®10000

Chemical Substance	Break-through time in min.	Chemical Substance	Break-through time in min.
Acetone	>480	Chloromethane	>480
Acetonitrile	>480	Nitrobenzene	>480
Ammonia Gas	>480	Sodium Hydroxide 50%	>480
1,3 Butadiene	>480	Sulfuric Acid 98%	>480
Carbon Disulfide	>480	1122 Tetrachloroethylene	>480
Chlorine Gas	>480	Tetrahydrofuran	>480
Dichloromethane	>480	Toluene	>480
Diethylamine	>480	Tabun	>480
N,N-Dimethylformamide	>480	Sarin	>480
Ethyl Acetate	>480	VX Gas	>480
Ethylene Oxide Gas	>480	Mustard Gas	>480
N-Hexane	>480	Lewisite	>480
Hydrogen Chloride	>480		
Methanol	>480		

Model	DuPont™ Tychem®10000
Application	Protection against toxic, corrosive gases, liquids, solid chemicals.
Weight	Approx 4,000g (XL size, without boots)
Approvals	EN943:2002 SOLAS II-2, Reg 19

Unit Per Set

CODE	Size (mtr)	Chest (cm)	CODE	Size (mtr)	Chest (cm)
DuPont™ Tychem®C					
33 09 75	M:1.68-1.76	92-100	33 09 77	XL:1.8-1.88	108-116
76	L:1.74-1.82	100-108	99	XXL:1.86-1.94	116-124

Name of Supplier.: Takashina
DuPont™, Tyvec®, Tychem® are trademarks or registered trademarks of E.I. du Pont de Nemours and Company.

Disposable Chemical Protection Suits

DuPont™ Tyvek® 600 Plus

Traje de protección química desecharable

使い捨て耐薬品スーツ 一次性化学防护服

Designed for disposable (limited or single use) Chemical Protection Suits for sprays, solid particles and fibers tight. Suitable for Cleaning and maintenance on-board, Spray painting, Asbestos, Dismantling of a ship (Dioxins). Comply with Bureau Veritas Rules for the Classification of Steel Ships SOLAS II-2, Reg. EN 14605:2005+A1:2009. EU Category: Type 4.5.6.



Note: Breathing apparatus are excluded from the set.

Model	DuPont™Tyvek® 600 Plus	
Weight	Approx 300 grm (without gloves and boots)	
Approvals	EN 14605:2005+A1:2009 SOLAS II-2, Reg 19 Biological protection: EN 14126:2003	

Unit Per Set					
CODE	Size (mtr)	Chest (cm)	CODE	Size (mtr)	Chest (cm)
33 09 87	M:1.68-1.76	92-100	33 09 89	XL:1.8-1.88	108-116
88	L:1.74-1.82	100-108	90	XXL:1.86-1.94	116-124

Name of Supplier.: Takashina

DuPont™ Tychem®2000C/DuPont™ Tychem®6000F

Designed for disposable (limited or single use) Chemical Protection Suits for liquids, sprays, solid particles and fibers tight. Overwhelmingly light weight, high mobility and comfort than general rubber protective clothing. Comply with Bureau Veritas Rules for the Classification of Steel Ships SOLAS II-2,Reg.IGC Code. IBC Code. EN14605: 2005+A1:2009. EU Category: Type 3.4.5.6.

Note: Breathing apparatus are excluded from the set.



DuPont™ Tychem®C DuPont™ Tychem®F

DuPont™ Tychem®2000C	DuPont™ Tychem®6000F		
Chemical Substance	Break-through time in min.	Chemical Substance	Break-through time in min.
Hydrochloric Acid (37%)	265	Acetone	> 480
Sulfuric Acid (>95%)	> 480	Acetonitrile	> 480
Sulfuric Acid Fuming (30%)	82	Aniline	> 480
Nitric Acid (70%)	> 480	Diethyl Ether	> 480
Phosphoric Acid (85%)	> 480	Vinyl Chloride	> 480
Hydrofluoric Acid (48%)	17	Chlorine(gaseous)	> 480
Perchloric Acid (70%)	> 480	Xylene, mixed isomers	> 480
Hydrogen peroxide (50%)	> 480	Ethyl Acetate	> 480
Sodium Hydroxide (50%)	> 480	Mercury	> 480
Sodium Hypochlorite (15%)	> 480	Styrene	> 480
Potassium Chromate (sat)	> 480	Toluene	> 480
Mercuric II Chloride (sat)	> 480	Phenol (85%)	> 480
Formaldehyde (10%Liquid phase)	> 480	Butanol, n-	> 480
		Benzene	> 480
		Methanol	117

Model	DuPont™Tychem®2000C	DuPont™Tychem®6000F
Application	Protection against numerous inorganic chemicals.	Protection against numerous organic and highly concentrated inorganic chemicals.
Resistance	Resists liquid splashes up to 2 bar.	Resists liquid splashes up to 5 bar.
Weight	Approx 450 g (without gloves and boots)	Approx 650 g (without gloves and boots)
Approvals	EN 14605:2005+A1:2009 SOLAS II-2, Reg 19 Biological protection: EN 14126:2003	

Unit Per Set					
CODE	Size (mtr)	Chest (cm)	CODE	Size (mtr)	Chest (cm)
DuPont™ Tychem®2000C					
33 09 91	M:1.68-1.76	92-100	33 09 93	XL:1.8-1.88	108-116
92	L:1.74-1.82	100-108	94	XXL:1.86-1.94	116-124
DuPont™ Tychem®6000F					
33 09 95	M:1.68-1.76	92-100	33 09 97	XL:1.8-1.88	108-116
96	L:1.74-1.82	100-108	98	XXL:1.86-1.94	116-124

Name of Supplier.: Takashina

DuPont™, Tyvec®, Tychem® are trademarks or registered trademarks of E.I. du Pont de Nemours and Company.

Asbestos Safety Kit

Equipo de seguridad para asbestos
アスベスト保護キット 石棉保护套件

The asbestos safety kit is used by vessel's crew to remove asbestos materials during operation/at sea. The kit is accompanied by an instruction how to use the PPE, the equipment including vacuum cleaner. The kit is usually part of an Asbestos Management Plan. In this Plan the locations of asbestos are indicated and preventive measures to avoid exposure to the asbestos fibres. The kit is not to be used for large scale asbestos removal works e.g. during docking.

Each item in the kit is according to EU quality standard for asbestos removal, and approved by a certified company (such as Kiwa Oesterbaai) for Inventory of Hazardous Materials (DNV, Rina, Bureau Veritas, Lloyd's Register).

Asbestos Safety Kit contains:

- HEPA vacuum cleaner with vacuum cleaner bags
- PPE
- Asbestos waste bags
- Asbestos warning stickers
- Duct tape
- Glue spray
- Spray bottle with impregnating fluid
- Full instruction
- Certified

33 09 67	Asbestos safety kit	Set
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Name of Mfr.: Alligator



Fire Extinguishers

Extintores Contra incendios 消火器 灭火器

Ships of 1,000 gross tons or more shall carry at least 5 portable fire extinguishers as required by 1974 SOLAS Chapter II Regulation 6 amended 1983.

Table for General Extinguishing Agents Required

Class of Fire	Type of Hazard	Agents				
		Water	Foam	ABC Dry Chemical	CO ₂	Halon
A	Ordinary Combustible Wood, Cloth, Paper, Rubbish	Yes	Yes	Yes	No	No
B	Flammable Liquids and Grease, Gasoline, Oil, Paint Grease, Natural Gas, Manufactured Gas	No	Yes	Yes	Yes	Yes
C	Electrical Equipment Wiring, Controls, Panels, Motors	No	No	Yes	Yes	Yes

(To be continued)

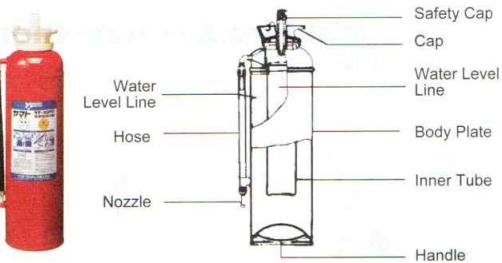
A + B	Combination of Ordinary Combustible and Flammable Liquids and Gases	No	No	Yes	No	No
A + C	Combination of Ordinary Combustible and Electrical Equipment	No	No	Yes	No	No
B & C	Combination of Flammable Liquids & Gases and Electrical Equipment	No	No	Yes	Yes	Yes
A, B & C	Combination of Ordinary Combustible and Flammable Liquids & Gases and Electrical Equipment	No	No	Yes	No	No

Chemical Foam Fire Extinguishers

AB Type

Extintores de Espuma Tipo AB 化学泡灭火器 AB型泡沫灭火器

Class AB foam fire extinguisher for flammable or combustible liquid and wood, cloth, paper, rubber, etc, Not for use in fires of electrical origin.



Unit Per Pk.					
CODE	Water Capacity	Discharge Duration	Weight	Remark	
33 10 01	9 ltr	App. 70 sec.	14 kg	Portable	
02	45 "	110 "	100 kg	Movable	
03	150 "	240 "	275 kg	Stationary	

Refills AB Type

for Chemical Foam Fire Extinguisher

Cargas para Extintores de Espuma Tipo AB

詰替用泡灭火剂 泡沫灭火机药粉



A & B in twin pack, chemical refill and lead sealing plate for foam extinguisher.

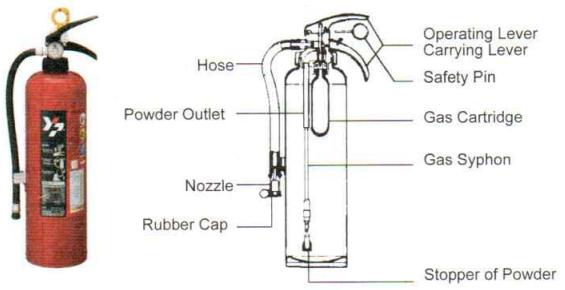
Unit Per Pkt				
CODE	For	Unit	Remark	
33 10 06	9 ltr	650 grm	x 2 (A & B)	-
08	9 ltr	650 grm	x 2 (A & B)	w/lead plate
09	45 ltr	3.5 kg	x 2 (A & B)	-
10	150 ltr	11 kg	x 2 (A & B)	-
33 10 11	9 ltr		Lead seal plate only (Pc.)	

Dry Chemical Fire Extinguishers

ABC type

Extinguidores de Polvo Tipo ABC ABC粉末消火器 ABC干粉灭火器

Class ABC chemical powder fire extinguisher for flammable liquid, wood, cloth, paper, rubber, etc. Also applicable for use in fires of electrical origin.



CODE	Power Content	Discharge Duration	Weight	Remark	Unit Per Pc.
33 10 15	1.2 kg	App. 10 sec.	2.9 kg	Portable	
16	3.5 "	14 "	6.5 "	"	
17	5.0 "	15 "	9.1 "	"	
18	6.0 "	16 "	10.1 "	"	
33 10 19	20.0 kg	35 Sec.	46.0 kg		
20	23.0 "	42 "	47.0 "	Wheeled	

Dry Chemical Fire Extinguishers

Pressurized, ABC Type

Extintor de incendios de polvo químico, presurizado, tipo ABC
蓄压式ABC粉末消火器 贮压式ABC干粉灭火器



The universal designed Fire Extinguisher, with only 1/3 of power to squeeze the lever compared to a regular extinguisher. Since this cylinder is already pressurized, there are no worries about bursting at the time of operation (burstless). Maintenance check is quite simple to check the pressure gauge pointer is in green zone. Also it is in compliance with PRTRs (Pollutant release and transfer register).

CODE	Powder Content	Discharge Duration	Weight	Remark	Unit Per Pc.
33 10 04	5.0 kg	App. 14 sec.	8.3 kg	Portable	
05	6.0 kg	18 sec.	9.3 kg	Portable	
14	23.0 kg	42 sec.	42.0 kg	Wheeled	

Name of Mfr.: Hatsuta Seisakusho Co. Ltd.

Refills for Dry Chemical Fire Extinguisher and Spare CO₂ Gas Cartridges

Cargas para Extintores de Polvo Tipo ABC y Repuesto de Cartucho de CO₂
詰替え用 ABC 粉末消火剤及び予備炭酸ガス入りカートリッジ
ABC 干粉灭火器药粉

ABC powder refill and carbon dioxide gas cartridges for dry chemical extinguisher.



Refills

CODE	Contents	CODE	Contents	Unit Per Pkt
33 10 26	1.2 kgs	33 10 24	3.5 kgs	
27	1.5 "	22	5.0 "	
28	2.0 "	25	6.0 "	
23	3.0 "	29	15.0 "	

Spare CO₂ Gas Cartridges

CODE	Contents	For		Unit Per Btl.
		Powder Contents	Fire Extinguisher	
33 10 21	B17 grm	1.2 kg	CSP-4SA	
	C30 grm		SSA-4L	
	B30 grm		SSA-4S	
33 10 34	C60 grm	3.5 kg	SDP-10SA	
	SA-10L		SDP-10SA	
	SA-10R		SDP-10SA	
33 10 30	D105 grm	4.5 kg	SDP-15SA	
33 10 39	D155 grm	6.0 kg	SDP-20SA	
33 10 40	D450 grm	20 kg	SA-50	
	23 kg	23 kg	SA-50S	
	23 kg		SDP-55	
33 10 54	3.4 ltr (N ₂)	40 kg	SDP-100	
	13.4 ltr (N ₂)		SA-100F	
33 10 60	13.4 ltr (N ₂)	45 kg	SDP-100HP	
			SA-100H	

Remark: CSP and SDP from Hatsuta/SSA and SA from Yamato

Spare CO₂+ N₂ Mixed Cartridges

CODE	Contents	For		Unit Per Btl.
		Powder Contents	Fire Extinguisher	
33 10 57	D61 grm	4.5 kg	SA-15NR	
	(CO ₂ + N ₂)		SA-17NR	
33 10 58		6.0 kg	SA-20NR	

Carbon Dioxide Fire Extinguishers BC Type

Extintores de CO₂ Tipo BC
二酸化炭素消火器 二二氧化碳灭火器



Class BC carbon dioxide fire extinguisher for fighting flammable liquid and electrical fires.

CO₂ is a clean, dry gas and does not conduct electricity. It leaves no residue and can be used on delicate electronic equipment.

CODE	CO ₂ Content	Discharge Duration	Weight	Remark	Unit Per Pc.
33 10 41	2.3 kg	16 sec.	8.5 kg	Portable	
42	5.0 "	27 "	15.5 "	"	
43	6.8 "	30 "	21.1 "	"	
44	23.0 "	40 "	100.0 "	With wheel	

Refilling

for Carbon Dioxide Fire Extinguisher

Cargas para Extintores de CO₂

二酸化炭素消火器ガス充填 二二氧化碳灭火器填充

Empty cylinders can be refilled with carbon dioxide gas as dictated by the High Pressure Gas Safety Regulations. When refilling, the Pressure Test Certificate of the cylinder may be required.

CODE	CO ₂ Content	Unit
33 10 46	2.3 kg	Time
47	5.0 "	"
48	6.8 "	"
49	23.0 "	"

Specifications

Foam Ejecting Capacity	: Not less than 1.5 m ³ /min.
Foam Expansion Ratio	: Not less than 6 times
Water Solved Foam	: Not less than 250 ltr/min.
Ejecting Capacity	
Foam Liquid Applied	: 3% regular
Foam Liquid Quantity	: 20 ltr × 2 containers

33 10 76	Portable foam applicator unit complete (Please specify type of hose coupling, using on board)	Set
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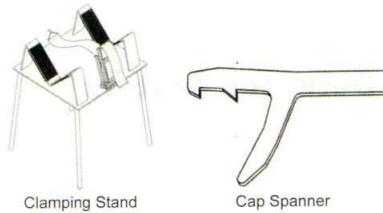
Maintenance Equipment

for Fire Extinguishers

Cargas para Extintores de CO₂

消火器用保守器具 灭火器维护设备

To be provided on board for testing, inspection and service apparatus.



Clamping Stand

Cap Spanner

CODE	Description	Unit
33 10 55	Clamping stand	Set
56	Cap spanner	Pc.

U.K. DOT Approved Fire Extinguishers

Extintores Contraincendios Aprobados por U.K. DOT

U.K. DOT 承認消火器 DOT 确认水灭火器

Here listed is one of the classified fire extinguishers by U.K. DOT for your reference.



Unit Per Pcs.

CODE	Model	Agent	Contents	Application
33 10 61	CW 9	Water	9 ltr	Class A
33 10 62	CF 9	Foam	9 ltr	Class B
63	TF 45		45 "	"
64	TF 135		136 "	"
33 10 65	CD 10	CO ₂	4.5 kg	Class B, C
66	CD 15		6.8 "	"
33 10 67	SP 3	Powder	3.0 kg	Class A, B, C
68	SP 6		6.0 "	"
69	SP 9		9.0 "	"

Name of Mfr.: Chubb Fire Limited

Portable Foam Applicators

Aplicadores Portátiles de Espuma

持運び式泡放射器 便携式泡沫发射器

Installation required by SOLAS 1983 Chapter II, Regulation 6. It shall consist of an air-foam nozzle of an inductor type capable of being connected to the fire main by a fire hose. It is a portable tank containing at least 20 ltr of foam-making liquid and 1 spare tank.



Safety Equipment

ABC Fire Extinguishers of Self-activating Chemical

Extintores Tipo ABC, Activados Químicamente

ABC 自動拡散型粉末消火器

ABC 自动扩散粉末消化器

The fire extinguisher works similarly to a sprinkler and is suitable for installation on the wall, near the ceiling, in the engine room, store room or empty cabin where people cannot identify the outbreak of fire. The fire extinguisher is fitted with a sensor capable of identifying atmospheric temperature over 95°C. ABC chemical powder is automatically radiated to extinguish a fire at the early stages.



Specifications

Applicable Class of Fire	ABC
Applicable Room Volume	8 m ³
Powder Contents	1.5 kg
Sensor Reaction	Over 95°C
Time of Radiation	Approx. 6 sec.
Size W x D x H	102 × 107 × 475 mm
Weight	4.1 kg
33 10 79	ABC fire extinguisher, self-activating type with bracket
	Set

33

Foam Concentrates

Espuma Concentrada 消火泡原液 泡沫浓缩液

For inflammable liquid fires it is essential to choose the foam concentrates suitable for the specific fire. The following foam concentrates are available for various fires.

No.	Name of Foam Concentrates
1	Fluoroprotein Foam
2	A.F.F.F. (Aqueous Film Forming Foam)
3	Protein Foam
4	Alcohol Resistant Fluoroprotein Foam
5	Alcohol Resistant A.F.F.F.
6	Synthetic Foam

Suggested Foam Application Methods for Various Hydrocarbon Fires.

Oil Fire

Type of Fire	Foam Concentrate	Expansion Ratio	Foam Generators
Oil Tank	1 Fluoroprotein Foam	Low Expansion Foam	• Foam Monitor • Foam Chamber
	2 A.F.F.F.		
	3 Protein Foam		
Oil Tank Sub-surface Injection	Fluoroprotein Foam A.F.F.F.	Low Expansion Foam (2-4times)	• High back pressure Foam Generator

(to be continued)

Type of Fire	Foam Concentrate	Expansion Ratio	Foam Generators
Polar Solvents	Alcohol Resistant Fluoroprotein Foam	Low Expansion Foam	Pour gently foam on surface of Liquid
	Alcohol Resistant A.F.F.F.		
L.N.G. L.P.G.	Synthetic Foam	High Expansion Foam	• High Expansion Foam Generator
		Medium Expansion Foam	• Medium Expansion Foam Generator
Fat Oil	A.F.F.F.	Low Expansion Foam	• Fog Foam
Engine Room Bilge	A.F.F.F.	Low Expansion Foam	• Foam Sprinkler • Fixed Foam
	Synthetic Foam	High Expansion Foam	• High Expansion Foam Generator
Sea Spill Fire *Ships *Birth *Tanker	Fluoroprotein Foam Protein Foam A.F.F.F.	Low Expansion Foam	• Foam Monitor
Offshore Rigs & Platforms	1% Concentration A.F.F.F.	Low Expansion Foam	• Monitor
Spill of Hazardous Materials	Air Foam Alcohol Resistant A.F.F.F.	Low Expansion Foam	• Foam nozzle

Precautions in Storage

- (1) Exposure to direct sun light should be avoided.
- (2) The frequency of contact with air must be reduced as much as possible.
- (3) Blending with different types of concentrates or liquids or contamination of a new product by an old one should be avoided to ensure the safety and effectiveness of the foam concentrates.

CODE	Name of Foam Concentrate	Concentration	Unit Per Can	
			Poly Can	Drum
33 10 81	Fluoroprotein Foam	3%	20 Ltr	
33 10 82				200 Ltr
33 39 87		1%	20 Ltr	
33 39 88				200 Ltr
33 10 83		3%	20 Ltr	
33 10 84				200 Ltr
33 10 85		6%	20 Ltr	
33 10 86				200 Ltr
33 10 87		3%	20 Ltr	
33 10 88				200 Ltr
33 10 89	Protein Foam	6%	20 Ltr	
33 10 90				200 Ltr
33 39 89		3%	20 Ltr	
33 39 90				200 Ltr
33 10 91	Alcohol Resistant Fluoroprotein Foam	6%	20 Ltr	
33 10 92				200 Ltr
33 10 93	Alcohol Resistant A.F.F.F.	6%	20 Ltr	
33 10 94				200 Ltr
33 10 95	Synthetic Foam	3%	20 Ltr	
33 10 96				200 Ltr

Synthetic Foam Concentrate for High Expansion Foam System

High expansion foam system is specially used for engine room and pump room. The types of foam concentrate are designated by each F.F.S manufacturer's specification in

related to Class approval and cannot use the general synthetic foam concentrate. Please specify the manufacturer, type of F.F.S. model and type of Class approval when ordering.

CODE	Manufacturer of Fire Fighting System	Concentrate Model No.	Class	Content
33 39 91	Kashiwa Tech Ltd.	STHAMEX SV2% F-6 #9242	NK	50L/drum 200L/drum
33 39 95		STHAMEX SV-HT2%F-10 #9273		NK, LR, DNVGL, BV
33 39 96	Survitec Group Ltd.	HiEx Foam FC High Expansion 2% F-10 IAF PD9272	NK, CCS	20L/can
33 39 92				200L/durm

Heat Detector Testers

Probador de Detector del Calor
热感知器用テスター 感熱器測試儀



Designed to provide quick and reliable testing of heat detector with a maximum of safety regardless of the number of units to be tested.

33 10 71 Heat detector tester

Set

Heat Detector Testers for Explosion-proof Area

Probador de detectores de temperatura para zona a prueba de explosiones
热感知器用加熱試驗器 热感应器用加热测试器



Used for carrying out the operation test of the heat detector by utilizing chemical reaction of quicklime and water to generate the high temperature vapor. The tester can also be used at explosion-proof area, because it does not use fire during the operation test. After the vapor generation is finished, wait about 10 minutes before removing the heat generating material from the container because the heat generating material is hot.

In case of using the tester in the explosion-proof area, the applicable gases are limited to Grade IIB, T4 or less according to Gas Classification (Ministry of Labour, Research institute of Industrial Safety Japan) and those having the ignition temperature of 425°C or over. The tester is the approved product of Fire Protection Equipment & Safety Center of Japan, and it is required to be calibrated every 10 years. (The calibration label should be checked.) Support rods are sold separately.

Unit Per Pcs	
CODE	33 10 45
Model	FTH011
Type	TH-004
Approval No.	
Max. Temperature	100°C

(to be continued)

CODE	33 10 45
Applicable Detector	Heat detector except for line type detector Fixed temperature type detector: 90°C or less Compensation type detector: 100°C or less Typical explosion-proof type heat detectors are as follows; Model FDL116-IW-75 / FDL916-IW-65/ FDL120-E-60/FDL120-E-80/FDL120-E-90/ FDL120-E-100/FDP219 -I/FDP216-I/FDP214-I/FDP114-I
Weight	Approx. 900 grm
Accessories	Push stick (Made of wood φ18), M5 screw (for fitting the support rod)
Support Rod (Sold separately)	ZER-S2 : Min.980 mm – Max.2,700 mm ZER-L2 : Min.1,725 mm – 6,000 mm

Name of Mfr.: Nohmi Bosai Ltd.

Smoke Detectors

Detector de Humo 煙感知器 偵煙探測器

A device for detecting smoke emerged by potential fire, and raising an alarm and flickering LED light to alert. Normally the smoke detectors are mounted on the ceiling or on a wall near the ceiling. The detector is powered by lithium battery and which life lasts for about 10 years, but depends on environmental condition where it is mounted. A little blip and indicator light notify you the end of battery lifetime.



Unit Per Pcs.

CODE	33 10 72
Alarm Sound	More than 70 dB
Alarm Light	LED Red
Size	100 mm diam. × 44 mm thick
Weight	160 grm

Name of Mfr.: Nippon Dry-Chemical Co.,Ltd.

Intrinsically Safe Smoke Detectors

Detectores de humo intrinsecamente seguros

本質安全防爆煙探知器 本质安全型防爆烟雾探测器

Intrinsically safe optoelectric smoke detectors for detecting smoke emerged by potential fire, especially in hazardous area. This will be mounted on the ceiling and once it detects the smoke, it will flicker the warning indicator light.



Unit Per Pcs.

CODE	33 11 00
Rated Voltage/Current	DC16V / 100 mA
Alarm Light	LED Red
Approved Class	Ex ib B T5
Weight	240 grm

Smoke Detector Testers

Detectores de Humo 煙感知器用テスター 烟感式探测器

For testing ionization and photoelectric detector at sight for smoke detection fire alarm system on the ceiling. Test gas is separate order.



33 10 73	Smoke detector tester	Set
74	Spare test gas for smoke detector tester, Tin 350 grm/tin	

Smoke Detector Test Spray

Pulverizador para pruebas de detectores de humo

煙感知器用テストスプレー 烟感探测器测试喷雾

For secure testing of optical or photoelectrical smoke detectors without the need of additional testing instruments. Safe and easy to use, gentle on electronic instruments, evaporation without residues, can content lasts for up to 150 applications, and free of silicone.



Shake can before use and spray test spray for about 5 seconds and with a distance of approx. 30 cm towards the smoke detector. The functioning of the smoke detector has to be tested on a regular basis, and recommended testing period is two inspections per year.

Unit Per Can

CODE	Contents ml	CODE	Contents ml
33 10 75	150	33 10 77	250

Name of Mfr.: Weicon GmbH & Co. KG

Smoke & Heat Detector Tester (combined / dual unit)

Detector verificador de humo y calor

煙・熱感知器用マルチテスター 烟 / 热检测器用检测

A combined smoke & heat detector tester in one tool, suitable for testing;

(a) Optical and ionization smoke detectors, and (b) Heat detectors (fixed temperature or rate-of-rise).

The detector can be either conventional or analogue addressable. Also, this enables testing of multi-detectors or multi-criteria detectors from a single test unit.



Test Mode

Normal Heat	To test rate-of-rise and fixed temperature heat detectors up to 90°C.
Hi Heat	To test rate-of-rise and fixed temperature heat detectors up to 100°C.
Smoke	A simulated smoke generated internally using a miniature heat exchanger and a harmless liquid from the smoke capsule.
Clearing	Clean air is blown to remove previously applied smoke.

Also, execute programmed testing, such as simultaneously, sequentially, combined simultaneous and sequentially.

Safety Features:

- Battery over-current cut-out.
- Default 2 minutes maximum test duration timeout.
- Auto power off after 5 minutes of non-use.

Operating Features:

- Colour coded LED user feedback.
- Automatic infrared sensing of the detector.
- Adjustable multi-position head.

CODE	33 10 80	Unit Per Pcs.
Model	NITTAN-Testifire 1001	
Heat Detector Testing	4 – 6A rms	
Smoke Detector Testing	< 0.5A rms	
IP (Ingress Protection) Rating	IP20 (Rated according to IEC 60529)	
Battery Baton	Nominal 7.2V 2.2Ah NiMH rechargeable battery pack	
Battery Charger	Using 100 – 230VAC or 12 VDC input	
Weight	0.99 kg	
Accessories	2 Batteries, 1 charger, 1 capsule for smoke detector testing	

Name of Supplier(Contact): Consilium Nittan Marine Ltd, Tokyo

Cartridge Type Capsules for Smoke & Heat Detector Tester (combined/dual unit)

Cápsulas tipo cartucho para comprobador de detectores de humo y calor
煙・熱検知テスター用カートリッジ式カプセル
用于烟热探测器测试仪的盒式胶囊



33 10 97 Capsule, cartridge type for smoke & heat detector Pcs.

Accessories for Smoke & Heat Detector (combined/dual unit)

Accesorios para detectores de humo y calor
煙・熱検知器用アクセサリー 烟热探测器配件



Battery Baton

Battery Charger

Unit Per Pcs.

CODE	Description	Remark
33 14 21	Battery baton	Nominal 7.2V 2.2 Ah NiMH rechargeable battery pack
22	Battery charger	100 – 230 VAC or 8.4 VDC input

Access Poles

for Smoke & Heat Detector Testers (combined/dual unit)

Postes de Acceso Postes de Acceso
煙・熱感知器用マルチテスター用伸縮ポール
用于烟雾和热量探测器多重测试仪的伸缩杆



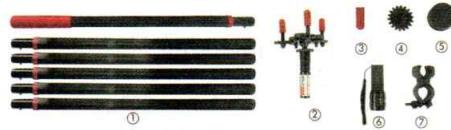
Unit Per Pcs.

CODE	Type	Max. Length
33 14 23	Telescopic	2.2 mtr
24		4.5 mtr
25	Extension	1.1 mtr

Smoke & Heat Detector Removal Kits

Kits de Extracción de Detectores de Humo y Calor
煙・熱感知器取り外しキット 烟雾和高温探测器拆除套件

Suitable for removal, inspection and replacement of most smoke, CO and heat detectors. Two types of grabbers suit different types of detectors, simply grab and twist the detector, and the stable spring joint allows the tool to remain parallel with the ceiling. It can be used for the removal of detectors installed in sloping ceilings. Can be used in conjunction with access pole.



Unit Per Set

CODE	33 14 20
Model	RT700M
Content	Access Pole x 6 Detector Removal Tool Cylinder Grabber x 3 Star Grabber x 3 Height Adjusting Magnet x 3 Glare Flashlight Flashlight Holder

Photoelectric Smoke Detector

Detector de Humo Fotoeléctrico
光電式煙探知器 光电烟雾探测器



Photoelectric smoke detector for detecting smoke emerged by potential fire, especially in accommodation area and engine room. This will be mounted on the ceiling and once it detects the smoke, it will turn on the alarm indicator (Red LED).

Unit Per Pcs.

CODE	33 14 01
Rated Voltage/Current	DC24V/100 mA
Alarm Indicator	LED Red
Detector Class	EN54-7
Weight	148 grm

Flame Detectors Infrared type

Detectores de llamas de tipo infrarrojo
赤外線式炎探知器 红外线式火焰探测器



A sensor designed to detect the presence of a flame or fire. Flame will be detected by Infrared type sensor, and unit will be mounted on the ceiling in the room. Once it detects a flame, it will flicker the warning indicator light.

Unit Per Pcs.

CODE	33 11 03
Rated Voltage/Current	DC30V/100 mA
Alarm Light	LED Red
Detecting Class	Class 1 (EN54)
Weight	210 grm

Fixed Temperature Heat Detector

Detector de Calor de Temperatura Fija
定温式热感知器 固定温度热探测器



Fixed temperature heat detector for detecting heat emerged by potential fire, especially in Galley or workshop, unsuitable

locations for smoke detector installation. This will be mounted on the ceiling and once it detects the heat, it will turn on the alarm indicator (Red LED).



Unit Per Pcs.

CODE	33 10 00
Nominal Operating Temperature	60°C
Rated Voltage/Current	DC24V/100 mA
Detector Class	EN54-5 A2S
Weight	82 grm

Testing Device

for Infrared Spot Type Flame Detector

Dispositivo de pruebas para detector de llamas de tipo de punto infrarrojo
赤外線スポット型感知器作動試験器 点型红外线火焰探测器测试器

An operation-testing device for infrared spot type flame detector. The testing device is capable of providing 2 ranges of emission of spectrums that are required to operate infrared flame detector: the spectrum similar to CO₂ spikes immersion region by using an infrared filters over a source and the flickering similar to a flame by using a flashing lamp.



Available two type of testing methods depends upon the testing site environments. (a) Using the Test Initiation Switch (Normally use in this method), or (b) Using the Manual Test Switch (use this method if the (a) is not possible).

This testing device is mandated to calibrate at every 10 years.

The testing rod (Total length: 3,990 mm) is sold separately.

Unit Per Pcs.

CODE	33 09 10
Applicable Detector	Infrared Spot Type Flame Detector Model 2RA-P
Light Source	Bulb 4.8V 0.5A
Battery	AA × 4 (Matsushita LR6 (G) or equivalent)
Dimension/ Weight	110 (W) × 148 (H) × 153 (D), Weight: Approx. 600 grm
Accessories	Carry bag, Battery (4 pcs), Spare lamp (1 pc Placed inside), Cotton swab (4 pcs), Manual

Marine Fire Stop Systems

Sistemas cortafuegos navales

舶用火災防御システム 船用火灾防范系统

Marine firestop products are always designed specifically fast, safe, and simple to install. Additionally, the products are easy to retrofit for existing penetrations. Sealants are resilient, tough and vibration resistant while fire-rated cable pathways facilitate cable changes without compromising the integrity of the sealed opening, providing continuous savings over the lifetime of the structure or vessel.

The marine firestopping products are fully tested to applicable standards to maintain the integrity of the decks and bulkheads they are rated to such as A0, A15, A30, A60, B0, B15, and B30, as well as hydrocarbon testing for H-Class divisions.

MDM: Marine Fire Rated Cable Pathways

For conditions where cable changes will be frequent and water pressure tightness is not a requirement, the EZ-Path® Marine Cable Pathway is the fastest and most reliable solution. The steel raceway contains a self-sealing system comprised of compressible foam pads installed to form an arch. As the cables pass through the device, the pads retract and allow them to pass while gently squeezing the bundle to provide a functional smoke and air seal. Device modules can be installed individually, or ganged to increase cable capacity. Accessory plates allow for easy mounting to bulkheads or decks.



Features & Benefits:

- Provides sealing function to restrict the passage of fire, smoke, hot gases and conditioned air.
- Easily installable and retrofittable around existing cables with split plate kits.
- No specialty tools required to install.
- Smooth edges protect cable jacketing during install.
- Easily installed into a roughly cut openings, no welded or specialized sleeves required.
- Vibration resistant.

Applications:

- Accessories adapt the pathways to ganged configurations, thicker walls, retrofit with previously installed cables.
- No putty or sealant required.

Unit Per Pcs.

CODE	Model No.	Descriptions	Weight
Cable Loading Area / Pathway: 39cm ² (6.0 in. ²)			
33 14 26	MDM300A	Marine 300 EZ-Path with integrated solid plate	2.0 kg (4.4 lbs)

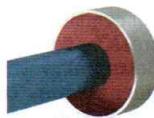
Cable Loading Area / Pathway: 82cm² (12.7 in.²)

33 14 27	MDM400A	Marine 400 single solid plate kit and pathway unit	3.9 kg (8.6 lbs)
33 14 28	MDM400B	Marine 400 single split plate kit and pathway unit	3.9 kg (8.6 lbs)
33 14 29	MDM400C	Marine 400 two-gang solid plate kit with two pathway units	6.7 kg (14.9 lbs)
33 14 30	MDM400D	Marine 400 two-gang split plate kit with two pathway units	7.8 kg (17.2 lbs)
33 14 31	MDM400G	Marine 400 four-gang solid plate kit with four pathway unit	12.3 kg (27.3 lbs)

Name of Mfr.: Specified Technologies Inc.

MFS: Marine Firestop Sealant

An advanced hybrid polymer sealant designed for use in H60, A0-A60 and B0-B30 Class divisions in marine and offshore construction around both cable and pipe penetrations. Marine firestop sealant cures in the presence of atmospheric moisture to form a durable elastomeric seal. This excels in applications where a high-degree of water resistance is required, and complies with International Maritime Organization (IMO) standards.



Features & Benefits:

- Non-corrosive, non-conductive.
- Fast curing, ozone and UV resistant.
- Excellent chemical resistance protects in polluted or corrosive environments.
- Provides superior sealing function to prevent the passage of fire, smoke, hot gases, sound, conditioned air, and water.
- No specialty conduit frames, bolts, nuts, tools, or precision fitting required to install.
- No need to plan or engineer out multiple cable or pipe penetrations.
- No need to layout cables and install individual parts around each cable.

Applications:

- Can be used to form flexible, vibration-resistant seals around pipes and cables in bulkheads and decks.
- Can be used for interior or exterior applications and bonds well to a variety of materials commonly used in marine and offshore construction.
- Can be used in watertight decks and bulkheads.

Unit Per Pcs.

CODE	Model No.	Description	Weight
33 14 32	MFS100	Marine firestop sealant, 9.5 oz. tube (281 ml, 17.1 cu.in.)	0.5 kg (1.18 lbs)

Name of Mfr.: Specified Technologies Inc.

MPU: Marine Firestop Putty



Designed to seal small to medium size openings in H60, A0-A60 and B0-B30 Class divisions in marine and offshore construction for pipes and cables. Marine Firestop Putty is a non-hardening, moldable compound that can be hand-packed into openings for permanent or temporary sealing. Complies with International Maritime Organization (IMO) standards.

Features & Benefits:

- Non curing properties to allow for removal and re-installation, for cable removal or addition.
- Provides superior sealing function to prevent the passage of fire, smoke, hot gases, sound, conditioned air, and water.
- Easily repairable, retrofittable, and installable.
- No specialty tools required to install.

Applications:

- Can be used to form flexible, vibration-resistant seals around pipes and cables in bulkheads and decks.

Unit Per Pcs.

CODE	Model No.	Description	Weight
33 14 33	MPU28	Marine firestop putty bar, 458.8 ml, (28 cu.in.)	0.8 kg (1.85 lbs)
33 14 34	MPU52	Marine firestop putty coil, 15.9 ltr (3.5 gallon), packaged in pail	13.9 kg (30.8 lbs)

Name of Mfr.: Specified Technologies Inc.

MRF: Marine Firestop Foam



A two-component RTV silicone foam that features excellent crack-and-void filling capabilities. Marine Firestop Foam exhibits uniform cell structure, assuring reproducible, smoke-tight, fire resistant installations. The elastic properties of the foam readily accommodate minor vibration of the pipe, conduit, etc. without loss of system integrity. Used in a 1:1 mix ratio, Marine Firestop Foam, when properly mixed, expands 2 to 4 times its original volume, filling available spaces and forming an effective barrier against fire, smoke and water penetration.

Features & Benefits:

- High resilience allows movement due to expansion, contraction, or vibration.
- Excellent water resistance for water-tight sealing.
- Uniform cell structure ensures reproducible results every time. No charts to check.
- Excellent adhesion to most building substrates.
- Excellent smoke seal.

Applications:

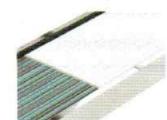
- Designed as a seal for both deck and bulkhead penetrations against the passage of fire, smoke or other hot gases.
- Applied in liquid form (with proper damming) and then foams in place, readily sealing around penetrating items such as conduits, cables, duct work or mechanical piping.
- Useful in sealing areas such as control rooms against infiltration of airborne contaminants such as coal dust, dirt, etc.
- Ideal product for use as a thermal or acoustical insulation, or for vibration dampening.

Unit Per Pcs.

CODE	Model No.	Description	Weight
33 14 35	MRF500	Marine firestop foam kit, 45.4 kg (100 lbs), part A and B	45.3 kg (100 lbs)
33 14 36	MRF520	Marine firestop foam, dual cartridge, 600 ml (20 oz), part A and B	0.95 k (2.10 lbs)

Name of Mfr.: Specified Technologies Inc.

MCC: Marine Cable Coating



A latex-based coating designed to protect grouped electrical cables against the propagation of fire. This material will limit flame spread along cables and cable trays. Marine Cable Coating will adhere well to virtually all cable jacketing materials. Application of material is achieved using airless spray equipment or by brush.

Features & Benefits:

- Water-based - easy installation, cleanup and disposal.
- Endothermic fillers - absorb heat and release water.
- High solids formula - no shrinkage!
- Sandable and paintable (when dry).
- Safe - low VOCs (Volatile Organic Compound), no solvents, non-halogenated.
- Excellent smoke seal.

Applications:

- Offers protection of grouped electrical, data, or communications cables in cable tray or racked cable applications.

Unit Per Pcs.			
CODE	Model No.	Descriptions	Weight
33 14 37	MCC105	Marine cable coating, 19 ltr (1,155 cu.in.)	24.9 kg (55 lbs)

Name of Mfr.: Specified Technologies Inc.

MFC: Marine Firestop Collars

Designed for use in A0-A60, B0-B30, and H0-H120 Class divisions to protect plastic pipes in marine and offshore construction. The heavy gauge stainless steel shell is lined with a molded, intumescent insert and provided with a marine grade, mild steel flange for attachment to the bulkhead or deck.



Features & Benefits:

- Heavy gauge, chromium rich 316 stainless steel construction.
- Resistant to aging and weathering, no soluble or hygroscopic ingredients.
- High volume of char.
- Provides sealing function to restrict the passage of fire, smoke, and hot gases.
- Easily installable and retrofittable around existing non-metallic pipes.
- Maintenance free.
- Tested and approved for use with USCG Approved SeaCor® and SeaDrain Plus® piping as well as other non-metallic and metallic pipes. (SeaCor® and SeaDrain Plus® are registered trademarks of Georg Fischer).
- Will not damage outside of pipe.

Applications:

- Sized to fit common pipe sizes.
- Applications were tested for common pipes including PVC, PVDF, CPVC, Pb, PE, PE-AL-PE, ABS, GRE, uPVC, Cu and Steel.

Unit Per Pcs.

CODE	Model No.	Description	Weight
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Marine traditional firestop collar

33 14 38	MFC16	16 mm	0.09 kg (0.20 lbs)
39	MFC20	20 mm	0.10 kg (0.23 lbs)
40	MFC25	25 mm	0.12 kg (0.26 lbs)
41	MFC32	32 mm	0.16 kg (0.35 lbs)
42	MFC40	40 mm	0.19 kg (0.41 lbs)
33 14 43	MFC50	50 mm	0.51 kg (1.10 lbs)
44	MFC60	60 mm	0.60 kg (1.31 lbs)
45	MFC63	63 mm	0.61 kg (1.32 lbs)
46	MFC75	75 mm	0.70 kg (1.53 lbs)
47	MFC90	90 mm	0.79 kg (1.75 lbs)
33 14 48	MFC110	110 mm	0.92 kg (2.03 lbs)
49	MFC115	115 mm	0.95 kg (2.09 lbs)
50	MFC125	125 mm	1.51 kg (3.30 lbs)
51	MFC140	140 mm	1.64 kg (3.62 lbs)
52	MFC160	160 mm	1.83 kg (4.04 lbs)
33 14 53	MFC169	169 mm	2.13 kg (4.70 lbs)
54	MFC200	200 mm	4.20 kg (9.26 lbs)
55	MFC219	219 mm	4.60 kg (10.12 lbs)
56	MFC225	225 mm	4.97 kg (10.96 lbs)
57	MFC273	273 mm	5.90 kg (12.99 lbs)
33 14 58	MFC324	324 mm	6.94 kg (15.30 lbs)

Name of Mfr.: Specified Technologies Inc.

MFC-W: Watertight Marine Firestop Collars

Water-tight, factory-manufactured, intumescent device for use as a penetration seal in fire-rated bulkheads and decks.

Features & Benefits:

- Tested to IMO A.754 FTP (Class A0-A60, B0-B30, and H0-H120 Bulkheads and Decks).
- Provides water-tightness up to 4 bar and gas-tightness up to 1 bar.
- Rapid intumescent expansion under fire conditions quickly seals off the path for fire, gases, and smoke.
- Stainless steel body with mild steel flange for weld-attachment.
- Solid design requires pipe to be inserted through the watertight bushing.
- Flexible intumescent liner accommodates vibration and will not damage pipe.



Applications:

- Applications were tested for common plastic pipes, including PVC, PVDF, CPVC, Pb, PE, PE-AL-PE, ABS and GRE, through pressure rated bulkheads and decks.

Unit Per Pcs.

CODE	Model No.	Description	Weight
33 14 59	MFC16W	16 mm	0.09 kg (0.20 lbs)
60	MFC20W	20 mm	0.10 kg (0.23 lbs)
61	MFC25W	25 mm	0.12 kg (0.26 lbs)
62	MFC32W	32 mm	0.16 kg (0.35 lbs)
63	MFC40W	40 mm	0.19 kg (0.41 lbs)
33 14 64	MFC50W	50 mm	0.51 kg (1.10 lbs)
65	MFC60W	60 mm	0.60 kg (1.31 lbs)
66	MFC63W	63 mm	0.61 kg (1.32 lbs)
67	MFC75W	75 mm	0.70 kg (1.53 lbs)
68	MFC90W	90 mm	0.79 kg (1.75 lbs)
33 14 69	MFC110W	110 mm	0.92 kg (2.03 lbs)
70	MFC115W	115 mm	0.95 kg (2.09 lbs)
71	MFC125W	125 mm	1.51 kg (3.30 lbs)
72	MFC140W	140 mm	1.64 kg (3.62 lbs)
73	MFC160W	160 mm	1.83 kg (4.04 lbs)
33 14 74	MFC169W	169 mm	2.13 kg (4.70 lbs)
75	MFC200W	200 mm	4.20 kg (9.26 lbs)
76	MFC219W	219 mm	4.60 kg (10.12 lbs)
77	MFC225W	225 mm	4.97 kg (10.96 lbs)
78	MFC273W	273 mm	5.90 kg (12.99 lbs)
33 14 79	MFC324W	324 mm	6.94 kg (15.30 lbs)

Name of Mfr.: Specified Technologies Inc.

MFC-T: Transitional Marine Firestop Collars

Designed for use in A0-A60 and B0-B30 Class divisions to protect transitions between steel and plastic pipes in marine and offshore construction. The heavy gauge stainless steel shell is lined with a molded, intumescent insert and provided with a marine grade, mild steel flange for attachment to steel pipes.



Features & Benefits:

- Heavy gauge, chromium rich 316 stainless steel construction.
- Resistant to aging and weathering, no soluble or hygroscopic ingredients.
- High volume of char.
- Provides sealing function to restrict the passage of fire, smoke, and hot gases at transitions from plastic pipes to steel pipes or scuppers.
- Easily installable and retrofittable around existing pipes.
- Will not damage outside of pipe.
- No sealant or welding required.

Applications:

- Offers protection of connections between steel pipes or scuppers to plastic pipes in non-pressure systems.
- Applications were tested for common plastic and steel pipes or scuppers.
- Easily retrofittable around existing, mated pipes.
- No pre-planning or staging necessary with split closure design.

Unit Per Pcs.

CODE	Model No.	Description	Weight
33 14 80	MFC50T	50 mm steel & plastic pipe	0.54 kg (1.20 lbs)
33 14 81	MFC56T	50 mm steel pipe/60 mm plastic pipe	0.59 kg (1.30 lbs)
33 14 82	MFC75T	75 mm steel & plastic pipe	0.77 kg (1.70 lbs)
33 14 83	MFC79T	75 mm steel pipe/90 mm plastic pipe	0.91 kg (2.00 lbs)
33 14 84	MFC90T	90 mm steel & plastic pipe	1.00 kg (2.20 lbs)

Name of Mfr.: Specified Technologies Inc.



is for fall arrest attached on the most harnesses. The chest-D ring enables connection to a ladder climbing safety system. Please specify if any additional attachment points or specifications are required.

- Durable polyester web construction.
- light and compact Pass-Thru buckle.
- Quick Connect buckles enhance adjustability.

Unit Per Pcs.

CODE	Size	Attachment Point	Part No. EU/US/JP
		Back, Chest	

Buckle Type: Pass-Thru

31 15 11	S	1B	1161600/1161570/1161648
12	M/L		1161601/1161571/1161649
13	XL		1161602/1161572/1161650

Buckle Type: Quick-Connect

31 15 26	S	1B	- /1161524/1114080
27	M/L		- /1161525/1114081
28	XL		- /1161526/1114101
31 15 20	S	1B, 1C	1161615/1161556/1114102
21	M/L		1161616/1161557/1114103
22	XL		1161617/1161558/1114104

Name of Mfr.*: 3M Company

Safety Belts & Hooks

Cinturones de Seguridad y Ganchos

安全ベルト及びフック 安全带及安全钩

General use safety belt with lifeline and hook.



33 11 01



33 11 02

33 11 01	Safety belt with lifeline & hook	Pcs.
02	Lifeline & hook 10 mmφ x 1,500 mm	

33

Harnesses**Fall Protection Range**

Cinturón de Seguridad 作業用安全帯 工業用安全帶

Designed and used to prevent accidents at work or to protect against consequences of accidents at work.

Statistics prove, year after year, that lack of fall protection is a leading factor in job fatalities and injuries. The Fall Protection product lines enable your company to provide optimum quality, comfortable fall arrest systems for your workers. It combines quality, comfort, and value.

Approval: Most harnesses have compliance for each region depending on the delivery location, such as OSHA, ANSI, JP industrial standard, etc.

- Excellent value / Optimum quality / Reliable protection / Practical operation / User-friendly design / Comfortable

3M Full Body Harnesses for General Fall Arresting

A full body harness is personal protective equipment worn to prevent falls when working at heights and provide both high safety and comfort to support on-site work. The back D-ring

3M Work Positioning Products

Positioning D-rings located on the hips are used with positioning devices and allow workers to use both hands. While work positioning belts may be used in conjunction with a harness you already have, they must never be used for personal fall arrest.



- Durable polyester web construction.
- Adjustable work positioning rope is ideal for work positioning while pole climbing.

Unit Per Pcs.

CODE	Size	Attachment Point	Part No. EU/US/JP
		Back, Hip	

Harness integral with WP belt

31 15 29	S	1B, 2H	1161624/1161304/1161651
30	M/L		1161625/1161305/1161652
31	XL		1161626/1161306/1161653

WP belt*

31 15 32	S	2H	- /1091014/1112988
33	M		- /1091015/1112989

WP rope*

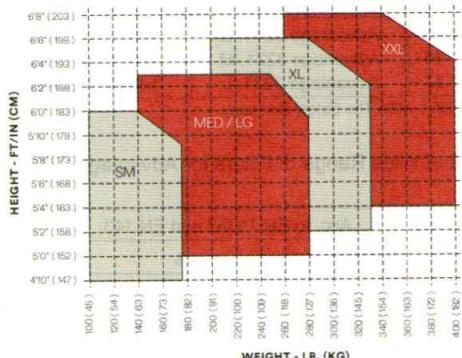
31 15 34	2.0~3.0 m	-	1200317/1234083/1112992
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Name of Mfr.*: 3M Company

*For right-handed

Harness Size Information

Here is the example of right fitting harness charts provided by 3M company, based on the height and weight. Sizes may be different by models and manufacturers, so please make sure to check the right size through your local supplier.

3M™ Protecta® Harness Sizing Guidance**Lanyards**

Lanyards ランヤード 挂绳

A rope or strap made of synthetic fiber with hooks, carabiners, shock absorbers to connect with safety harnesses as lifeline. Single leg or twin leg are available. Twin-lanyards provide 100% tie-off, allowing users to stay protected when changing locations.

Elastic Type Lanyards

Elastic type fall protection lanyard with shock absorber, elastic leg stretches in reaction to users movements. It is compact and foldable when not in use. Furthermore, it extends and effectively absorbs the impact during a fall event.



Single



Twin

Unit Per Pc.

CODE	31 15 35	31 15 36
Type	Single	Twin
Working length	1.7 m or longer	
Weight Capacity	130 kg or more	

Rope/Strap Lanyards

Rope lanyard type of fall protection equipment with pack-style shock absorber. It is compact and foldable when not in use. It dissipates energy, limiting the forces on the body by absorbing component in a fall event.



Single



Twin

Unit Per Pc.

CODE	31 15 37	31 15 38
Type	Single	Twin
Working length	1.8 m or more	
Weight Capacity	100 kg or more	

Self-Retracting Lanyard

It is designed to activate self-lock system when it detects the fall event to minimize the falling distance. It is very lightweight and easy to use. It is ideal fall protection equipment for workers under 5 meters height. Single or twin types are available.



Single



Twin

Unit Per Pc.

CODE	31 15 39	31 15 40
Type	Single	Twin
Working length	1.8 m or longer	
Weight Capacity	128 kg or more	

Fall Arrester Retractable Type

Dispositivo Autocaido, Cable de Acero

墜落防止器 自锁救生索

The self-locking mechanism reduces the impact force and automatically stops the fall when a worker slips or falls with a sudden tension. Housing is made of durable glassfibre and drum-wound lifeline is made of stainless steel. Work load is less than 130 kg. Workers using fall arrester must work directly under the anchorage to prevent swing fall injuries.



Unit Per Pc.

CODE	Length of Wire	Diam. of Wire	Max. Load Capacity	Weight
33 11 05	10 mtr			4.6 kg
06	12 "			4.9 kg
07	15 "	4.76 mm	130 kg	9.8 kg
08	20 "			9.8 kg
09	25 "			10.3 kg

Dust Protecting Masks

Masacilla para Protección del Polvo, 1 Filtro 防塵マスク 防尘口罩

Designed to prevent the inhalation of dust. Two types of filtering systems are available: a Mechanical Type which filters fumes and dust through a filter cartridge, and an Electrostatic Type which collects fumes and dust over the filter by static electricity.

It must be noted that these masks are not effective for poisonous gases or vapours. Also to avoid risk, it must never be used in circumstances where the Oxygen (O₂) concentration is lower than 18 %.



Single Filter



Twin Filter



Full Face Twin Filter

Unit Per Pcs.			
CODE	Size	Preventive Efficiency	Weight grm
Single Filter			
33 11 11	M/L	97.4% (ave)	96
Twin Filter			
33 11 16	M	99.9% (ave)	125
17	L		129
Full Face Twin Filter			
33 11 65	M	99.96% (ave)	415
74	L		420

* These products meet requirements for a minimum 95% filtration efficiency.
Applicable laws and regulations vary by region.

Replacement Filters for Dust Protecting Masks

Please specify the original maker and model name of dust protecting mask in use.

Unit Per Pcs.

CODE	33 11 18	33 11 20
Filter Type	Mechanical	Electrostatic

Respirators Advantage 200 LS

Mascarillas Advantage 200 LS 防毒マスク 防毒面具

The Advantage 200 LS Respirator provides a better looking, lighter, and softer face piece, which is made from a translucent "Ocean Blue" formulation of thermoplastic rubber:



The MSA patented MultiFlex®

System – a soft, pliable combination of rubber and plastic that provides a virtually customized fit. In addition, the highly effective AnthroCurve™ Sealing Surface instantly conforms to each wearer, equalizing pressure on the face seal area and eliminating annoying pressure points. The unmatched fit exceeds all previous levels of comfort.

This half mask type respirator features a twin filter cartridge with large area and capacity to provide for low breathing resistance and long life.

Not for use in atmospheres containing less than 19.5% oxygen.

CODE	Size	PT/No. US/EU	Unit
33 11 21	Small	815696 / 430356	Pc.
22	Medium	815692 / 430357	"
23	Large	815700 / 430358	"

Name of Mfr. : MSA The Safety Company

Fullface Respirators Advantage 3200

Respiradores Enteras 全面防塵防毒マスク 全面防尘防毒面具

New generation of lightweight air-purifying full face respirator offers a comfortable fit. The face piece lens has been engineered to be optically correct, giving you superior visibility and peripheral vision. The wraparound scratch-resistant polycarbonate face piece lens provides a wide distortion-free field of vision.



The lens meets all requirements of ANSI Z87.1 including the high-impact performance requirements.

Requires only routine filter replacement and approved according EN136 class 2. As well approved by NIOSH (The National Institute for Occupational Safety and Health) according 42 CFR, part 84.

Unit Per Pcs.		
CODE	Type	Part No. US/EU
33 12 45	Advantage 3211, S	10031340 / 10027727
46	Advantage 3221, M	10031309 / 10027726
47	Advantage 3231, L	10083791 / 10027728

Name of Mfr. : MSA The Safety Company

Excerpt of Wide Range of Filters for Advantage 200LS and 3200

Filter Type	Acc. to EN 14387 and EN 143	Part No.
A2	Organic gases and vapors	430371
K2	Ammonia	-
A1B1E1	Organic, Inorganic, Sulfur Dioxide and Acid gases and vapors	-
A2B2E1K1	Organic, Inorganic, Sulfur Dioxide, Acid gases and vapors and Ammonia	430373
A2-P3 R	Organic gases and vapors and Particles	430372
K2-P3 R	Ammonia and Particles	10107165
A1B1E1-P3	Organic, Inorganic, Sulfur Dioxide, Acid gases and vapors and Particles	10144828
A2B2E1K1-P3 R	Organic, Inorganic, Sulfur Dioxide and Ammonia gases and vapors and Particles	430374
P2 R	Particle filter with medium efficiency plus adapters	10011347
P3	Particle filter with high efficiency	430375

Name of Mfr. : MSA The Safety Company

Filter Type	Acc. to NIOSH (to 42 CFR, Part 84)	Part No.
GMA	Organic gases and vapors	815355
GMA-P100	Organic gases and vapors and Particles	815362
GMB	Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride and Hydrogen Sulfide	815356
GMB-P100	Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide and Particles	815363
GMC	Organic gases and vapors, Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride and Hydrogen Sulfide	815357
GMC-P100	Organic gases and vapors, Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide and Particles	815364
GMD	Ammonia and Methylamine	815358
GMD-P100	Ammonia, Methylamine and Particles	815365
GME	Organic gases and vapors, Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide, Ammonia and Methylamine	815359
GME-P100	Organic gases and vapors, Chlorine, Sulfur Dioxide, Chlorine Dioxide, Hydrogen Chloride, Hydrogen Sulfide, Ammonia, Methylamine and Particles	815366
P100	Filter with 99.97% efficiency, against all particulate aerosols	815369

Respirators

Máscarillas 2 Filtros 防毒マスク 防毒面具

Half mask type respirators which feature a twin filter cartridge with large area and capacity to provide for low breathing resistance and long life. Not for use in atmospheres containing less than 19.5% oxygen.



Filter Type	EU according EN141 and EN143	Part No.
A2	Organic gases and vapors with boiling point > 65°C	430159 box of 12
A2-P3	Organic gases and vapors with boiling point > 65°C and particles	430162 box of 6
A1B2E1K1	Organic gases and vapors with boiling point > 65°C and inorganic gases and vapors, Sulfur Dioxide, Hydrogen Chloride and other acid gases, Ammonia and Ammonia derivatives	430299 box of 10
A1B2E1K1-P3	Organic gases and vapors with boiling point > 65°C and inorganic gases and vapors, Sulfur Dioxide, Hydrogen Chloride and other acid gases, Ammonia and Ammonia derivatives and particles	430302 box of 6
Pre-filter	Protection of particle filter	816661 box of 50
P3	Particle filter with high efficiency	430158 box of 12

Application of Respirator Cartridges

PT/No.	Acid Gases	Filter Type
GMA PT/ No.464031	Organic vapor	R95 & N95
GME PT/ No.92790	Organic vapor, Chlorine, Sulfur dioxide, Chlorine dioxide, Hydrogen chloride, Hydrogen sulfide, Ammonia, Methylamine, Formaldehyde, Hydrogen fluoride	R95 & N95

Remark: R95 – Particular filter (95% filter efficiency level) effective against all particulate aerosols; time use restrictions may apply.
N95 – Particular filter (95% filter efficiency level) effective against particulate aerosols free of oil; time use restrictions may apply.

33 11 24	Respirator, Comfo Classic, with respirator filter GME	Set
33 11 25 27	Respirator filter GMA, PT/No.464031 Respirator filter GME, PT/No.492790	Pc. "

Twin Filter Half Mask Respirators

X-plore 3500

Respiradores de media mascara de doble filtro
ツインフィルター型防毒マスク 双过滤防毒半面罩

Twin gas and vapor filter cartridge half masks combine practicality of use with comfort. The use of new materials coupled with a modern, attractive design guarantees maximum comfort and user acceptance. Tested and certified according to EN 140 and NIOSH.



Not for use in atmospheres containing less than 19.5% oxygen.

Unit Per Pcs.

CODE	Size	Part No.	CODE	Size	Part No.
33 12 91 92	Small Medium	R55351 R55350	33 12 93	Large	R55352

Name of Mfr.: Draeger

Twin Filter Cartridge for Respirator X-plore 3500

Twin filter cartridge for Draeger X-Plore 3500 offers large area and capacity to provide for low breathing resistance and long life. Approved to EN141 and EN143.

Not for use in atmospheres containing less than 19% oxygen.

CODE	Filter Type	EU according EN 141 and EN 143	Part No.	Unit Per Box
33 12 94	A2	Organic gases and vapors with boiling point > 65°C	6738873 (20 pcs/box)	
95	A2-P3	Organic gases and vapors with boiling point > 65°C and particles	6738875 (14 pcs/box)	
96	A1B1E1K1	Organic gases and vapors with boiling point > 65°C and inorganic gases and vapors, Sulfur Dioxide, Hydrogen Chloride and other acid gases, Ammonia and Ammonia derivatives	6738816 (20 pcs/box)	
97	A1B1E1K1 - Hg-P3	Organic gases and vapors with boiling point > 65°C and inorganic gases and vapors, Sulfur Dioxide, Hydrogen Chloride and other acid gases, Ammonia and Ammonia derivatives and particles, Mercury	6738817 (14 pcs/box)	
98	Pre-Filter	Protection of particle filter	6738001 (20 pcs/box)	
99	Pre-Filter Retainer	Securing Pre-filter	6738038 (12 pcs/box)	
33 13 00	P3	Particle filter with high efficiency	6738011 (22 pcs/box)	

Dust Mask Disposable

Máscarillas Desechables para Polvo
使い捨て防塵マスク 一次性防尘口罩



Protects against non-toxic dust, powders, and spray particles.

Comfortable, efficient, lightweight, and low cost, disposable mask.

33 11 28 30	Dust mask disposable " , 50's/pkt	Pc. Pkt
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Dust Mask Disposable EN149 FFP2/FFP3 Standard

Máscaras Desechables FFP2/FFP3 Estándar
使い捨てマスク FFP2/FFP3 規格
一次性口罩 FFP2/FFP3 标准



Protects against non-toxic dust, powders, and aerosol particles.

Meets European Standard EN 149:2001 with following classes.

FFP2: Minimum 94% filtration percentage and maximum 8% leakage to the inside. Mainly used for variety of industry including healthcare against influenza viruses, SARS, new coronavirus etc.

FFP3: Minimum 99% filtration percentage and maximum 2% leakage to the inside. The finest filtering mask of the FFPs.

33 11 77	Dust mask disposable, FFP2/N95/DS2 standard	Pc.
78	Dust mask disposable, FFP3/N99/DS3 standard	Pc.

Fire Resistant Face Mask

Mascarilla Resistente al Fuego 耐火・耐熱マスク 防火口罩

Reliable, reusable masks that will shield you from workplace heat hazards. This fire-resistant mask defends well against heat hazards such as flash fires and sudden flames. An anti-bacterial inner layer makes it suitable for blocking microbial hazards. Made of Nomex IIIA fabric, renowned for its comfort, fire resistant and moisture wicking properties. Suitable for utilities, manufacturing, oil & gas and chemical industrial work.



Notice for use:

- Wash the mask frequently to ensure that no greases, oily soils or other flammable contaminants are present during use.
- Ensure that the masks are clean and in proper condition before each wearing.
- Retire any mask with visible holes, rips, and/or tears or contamination from flammable materials.

33 12 02	Fire resistant face mask	Pc.
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Paint Spray Respirators

Máscarillas para Pintura 塗装用防毒マスク 喷漆防毒面具

Low concentration single filter half face gas mask used as a respirator for low concentrations of gases, such as when painting with sprayers. Never use when the oxygen concentration in the atmosphere is less than 18 %.



33 11 31	Paint spray respirator, half mask single filter cartridge	Pc.
32	Replacement filter cartridge for paint spray respirator	Pc.

Fullface Respirators

Advantage 1000

Respiradores Enteras 全面防塵防毒マスク 全面防尘防毒面具

Lightweight air-purifying respirator offers a comfortable fit with increased vision due to the wrap-around flexible lens. Requires only routine filter replacement and approved by NIOSH (The National Institute for Occupational Safety and Health) and MSHA (Mine Safety and Health Administration).



Unit Per Pc.

CODE	Type	MSA No.
33 12 30	Black, S, w/speaking diaphragm	805414
32	Black, M, w/speaking diaphragm	805408
33	Black, L, w/speaking diaphragm	805420
33 12 34	ESP-II Amplifier Kit	10026265

Name of Mfr.: MSA The Safety Company

Filter Cartridges

for Advantage 1000 Fullface Respirator

Cartuchos Filtrantes フィルターカートリッジ 过滤器滤筒

Filter cartridges are a separate order.

CODE	Type of Filter Cartridge	Respiratory Hazards	Unit Per Pcs.
			MSA No.
33 12 41	F	For dusts & mists having a TWA not less than 0.05 mg/m³ or 2 million particles/feet³.	802498
42	H	For dusts, fumes & mists having a TWA less than 0.05 mg/m³, asbestos-containing dusts & mists.	806564
43	GME	For Organic vapors, Chlorine, Hydrogen chloride, Sulfur dioxide, Ammonia, Methylamine, Pesticides, Paint, Lacquer & Enamel mists, Chlorine dioxide, Hydrogen sulfide, Formaldehyde, or Hydrogen fluoride gases	806942
44	GME-H	For Organic vapors, Chlorine, Hydrogen chloride, Sulfur dioxide, Ammonia, Methylamine, Pesticides, Paint, Lacquer & Enamel mists, Chlorine dioxide, Hydrogen sulfide, Formaldehyde, or Hydrogen fluoride; Dusts, Fumes and Mists having a TWA less than 0.05 mg/m³, asbestos	802244

Fullface Respirators

Advantage 3100

Respiradores Enteras 全面防塵防毒マスク 全面防尘防毒面具

New generation of lightweight air-purifying full face respirator offers a comfortable fit. The face piece lens has been engineered to be optically correct, giving you superior visibility and peripheral vision. The wraparound scratch-resistant polycarbonate face piece lens provides a wide distortion-free field of vision.



Requires only routine filter replacement and approved according EN136 class 3. Suitable for European filters with thread according EN 148. As well approved by NIOSH (The National Institute for Occupational Safety and Health).

CODE	Type	Part No. US/EU	Unit Per Pcs.
			MSA No.
33 12 38	Advantage 3111, S	10031343 / 10027724	
39	Advantage 3121, M	10031342 / 10027723	
40	Advantage 3131, L	10031344 / 10027725	

Name of Mfr.: MSA The Safety Company

Excerpt of Wide Range of Filters for Model 3100

To be used with MSA 3S, MSA Ultra Elite and MSA Advantage 3100 full face mask ranges and MSA Advantage 410 half mask. Thread Connector according EN 148-1.

Filter type [old]	p/n	Filter type [new]	p/n
87 A	D1040000	90 A	10115187
87 AX	D1051000	90 AX	10108408
87 B	D1041000	90 AB	10098113
87 E	D1042000	90 E	10115349
87 K	D1045000	90 K	10115320
87 ABEK	D1040713	90 ABEK	10098114
87 ABEK 2	D1051700	90 ABEK2	10098112
88 A / St	D1061000	92 A / St	10115188
88 B / St	D1062000	92 AB / St	10097994
88 ABEK / St	D1061702	92 ABEK / St	10097995
88 ABEK2 / St	D1061703	92 ABEK2 / St	10097996
89 A / St	D1106000	93 A / St	10115189
89 AX / St	D1070708	93 AX / St	10108409
89 B / St	D1070000	93 AB / St	10097993
89 K / St	D1112000	93 K / St	10115190
89 Hg / St	D1071000	93 Hg / St	10115201
89 ABEK Hg / St	D1070705	93 ABEK / St	10097231
89 ABEK2 Hg / St	D1070707	93 ABEK2 / St	10097232
89 ABEK CO NO Hg/St	D1018700	93 ABEK CO NO Hg/St	10160507
89 CO NO / St	D1018905	93 CO NO / St	10115314
999 P3	D1010700	P3 PlexTec	10094376

Full Facemask Respirators

Máscara Entera 全面防塵防毒マスク 全面型防尘防毒面罩

A fullface respirator which is light and comfortable to wear, even for long periods of time without becoming tired or stressed. A wide sealing edge provides a snug fit to the face and adjusts easily for wearer comfort. Can be worn with a helmet and hearing protectors.



The facemask has a wide field of vision with inhalation air directed across the inside of the visor to prevent misting. One can talk clearly with the respirator on because of a protected speech diaphragm. The exhalation valve is of a secure construction and keeps the carbon dioxide level inside the mask at a minimum.

The facemask materials are resistant to a wide range of chemicals. Applicable filters are a separate order.

Unit Per Pcs.

CODE	33 11 35	33 11 36	33 11 37
Material	Natural Rubber	Chloroprene Rubber	Silicons Rubber
Heat Resistance	100°C	120°C	250°C
Weight grm	560	600	550

Safety Filters for Full Facemask

Filtro de Recambio para Máscara

替フィルター 全面型防毒面罩用安全滤片

Each type of filter has various applications and resistance to different hazardous vapors and particles. When ordering, please ask your supplier for detailed information about the main area of application for each filter.

Unit Per Pcs.

CODE	Filter Type
33 11 38	For particle w/filtering capacity low, medium or high.
39	For gas, with name of gas _____
40	For particle & gas, with name of gas _____



Power Assisted Respirators

Respiradores con Ayuda de Fuerza

ファン付き防塵・防毒マスク 风扇式防尘防毒面罩

Full face respirators which are comfortable to wear, light in weight, easy to decontaminate and maintain and compact with no impending hoses. 1.5 kg total weight including the fitted battery power pack and the only connection is an extending coil cord from the battery to the integral fan/motor unit in the mask.



Low profile facemask gives the wearer a panoramic field of vision through an optically corrected high-impact and chemically resistant visor. Air flow is directed over the inside of the visor to prevent misting and provide a cooling effect to the face making the respirator more comfortable to wear for long periods.

The assistance of the fan provides low resistance gives benefits to protection. The negative pressure induced inside of the facemask is much lower than in other respirators.

Specifications

Facemask	Silicone elastomer with panoramic visor complete with optical and impact requirement of BS 2092 Grade 1	
Blower	Airflow : 120 ltr/min. (Minimum rate)	Motor Life : 1,000 hours
Battery	Life : 500 recharge cycle	Duration : 10 hours minimum.
Charging : approx. 14 hours required.		
Component	Complete with facemask, fan/motor unit, battery, filter, airflow tester & manual	
33 11 45	Respirator, power assisted with AC 110 volt battery charger	Set
46	Respirator, power assisted with AC 220 volt battery charger	"

Hose Adaptors for Power Assisted Respirator

Adaptadores de Manguera para Respiradores

ファン付き防塵・防毒マスク用ホースアダプター

风扇式防尘防毒面罩用软管适配器

By connecting a lightweight belt-mounted adaptor with flexible hose, two screw-in filters can be used in place of the normal single filter. This means that filters can be oriented away from the source of contamination, and two filters used in parallel to provide extended filtration capacity.



33 11 47 Hose adaptor for power assisted respirator

Set

Power Assisted Respirators

Respiradores Asistidos パワーアシスト呼吸器 电动辅助呼吸器

If your job demands long-term breathing protection, the OptimAir 3000 PAPR [Powered Air Purifying Respirator] is the way to go. Your breathing remains easy and free from resistance even after hours of work.



A maximum in safety, flexibility and ease-of-handling lets you concentrate on your work, knowing that your health is not being compromised.

The OptimAir 3000 PAPR system allows you to breathe normally while you work. Your comfort, well-being and ability to perform effectively are greatly enhanced. Filters also last longer. The microprocessor controlled, variable-speed motor guarantees an optimum amount of air in your head top [mask or hood] – even as your breathing rate changes during more strenuous tasks. In many situations it is not even necessary to maintain an airtight seal.

The pressure differential causes airflow to travel continuously from your face to the outside environment, preventing unfiltered air from entering your head top.

Unit Per Set		
CODE	33 11 33	33 11 34
Product	OptimAir 3000 (3000A)	OptimAir 3000 EX (Ex-proof)
Content	Turbo Filtering Device, including comfortable OptiBelt, OptiCharge [standard] battery charger, OptiBat battery [NiMH] (Decon Belt, OptimAir Mask with Hose, Particle Filter [pck of 10])	Turbo Filtering Device Ex proof, including comfortable OptiBelt, OptiCharge Ex proof battery charger, OptiBat Ex proof battery [NiMH]
Air Flow	With use of Hood: Approx. 130 ... 150 L/Min With use of Full Face Mask: Approx. 110 L/Min (160 ... 185 L/Min)	With use of Hood: Approx. 130 ... 150 L/Min With use of Full Face Mask: Approx. 110 L/Min
Energy Supply	NiMH Battery-pack [one click battery change]	NiMH Battery-pack ATEX [one click battery change]
Service Time	With Particle Filters: > 8 hours With Combination Filters: > 4 hours	
Filter Choice	Gas Filters / Particle Filters / Combination of Gas Filters and Particle Filters [stackable system]	
Calibration	Automatic self test and calibration at switching on	
Calibration Time	Approx. 8 seconds	
Alarms	Optical and acoustic: · non inserted filter for calibration · exhausted filter · empty battery · flow error · no hood, or mask connected	
Ingress Protection	IP54 according EN 60529	
Approvals	EC-type certified, according PPE Directive 89/686/EC [including 93/68/EC, 93/95/EC and 96/58/EC] and according EMC Directive 89/336/EC, EN12941:2004 TH2 - Hoods and Visors TH3 - Hooded Helmet EN12942:2003 TM3 - Full Face Mask	EC-type certified, according PPE Directive 89/686/EC [including 93/68/EC, 93/95/EC and 96/58/EC] and according EMC Directive 89/336/EC, EN 61000-6-2 EN 61000-6-4 BVS 07 ATEX E 38 II 2G Ex ib IIB T4 II 2D Ex ibD 21 T130°C Type of protection: EN 60079-0; 2006 EN 60079-11; 2007 EN 61241-0: EN 61241-11: EN 12942:2003 TM3 - Full Face Mask
Product Number	10049557 (10049558)	10049559
Dimensions [HxWxD]	With Flat Cap for particle, or gas filters: 200 x 270 x 110 mm With High Cap for combination of filters: 200 x 270 x 130 mm	
Weight	1.28 kg including Particle Filters 1.7 kg including Combination Filters	

Name of Mfr.: MSA The Safety Company

OptimAir Filters

OptimAir Filter A p/n 10049637 [10 pck]	Vapours from organic compounds with a boiling point higher than 65°C.
	A: brown: Filter Class 1: Vapours from organic compounds with a boiling point higher than 65°C.
Optim Air Filter ABEK p/n 10049635 [10 pck]	B: grey: Filter Class 1: Inorganic gases and vapours, e.g. Chlorine, hydrogen sulphide, hydrogen cyanide (not carbon monoxide). E: yellow: Filter Class 1: Sulphur dioxide, hydrogen chloride, acid gases.
Optim Air Filter P3 p/n 10049632 [10 pck]	K: green: Filter Class 1: Ammonia and organic ammonia derivatives. P: white: Filter Class 3: Particle

Single Filter Cartridge Full Face Respirator

X-plore 6300

Respiradores Entera 全面防塵防毒マスク 全面型防尘防毒面罩

The efficient yet low-cost full face breathing mask. This mask has proven itself over decades of use worldwide - redesigned and improved with fresh colours and an integrated bar code.



Outstanding protection factor:

- Double layered face seal with triple sealing action.
- Two sizes in one mask => one size fits all.

Proven quality & reliability:

- Proven quality under hardest conditions: used by fire brigades all over the world for decades.
- All parts available as spare part.

Excellent field of vision:

- Excellent field of vision as visor is close to the face.

Requires only routine filter replacement and approved according EN136 class 3. Suitable for European filters with thread according EN 148-1 as well approved by NIOSH (The National Institute for Occupational Safety and Health) according 42 CFR, part 84.

Unit Per Pcs.		
CODE	Type	Part No.
33 12 71	X-plore 6300 w/o speech diaphragm**	R55800
72	X-plore 6530 w/speech diaphragm**	R55810

Name of Mfr.: Draeger

** BAFA Export License application is required for use onboard ship.

Single Filter Cartridge for Full Face Respirator

X-plore 6300

Respiradores Entera 全面防塵防毒マスク 全面型防尘防毒面罩

With standard thread connection in accordance with EN 148-1:

- Extensive range of filter types for all major areas of application.
- Conforming to EN 148-1.
- EN 14387, EN 143:2000, EN 371 CE approved (EN 141:2000).
- Filter with aluminium housing to ensure reliable recognition of possible damage.
- Individually packaged for optimum protection of the unused filter.
- Re-sealable for longer use.
- Shelf life (from date of production): 6 years for gas and combination filters & 12 years for particle filters.



Unit Per Pcs.					
CODE	Type	Part No	CODE	Type	Part No.
33 12 73	A2	6738855	33 12 81	A2B2E2K1-P2	6738803
74	A2-P2	6738857	82	A2B2E2K1Hg-P3	6738815
75	A2-P3	6738860	83	A1B2E2K1Hg-	6738801
76	K2	6738856	84	CO20-NO-P3	
77	K2-P2	6738858	85	A2B2E2K2Hg-	
				CO20-NO-P3RD	
				AX	6738863
33 12 78	A2B2	6738779	33 12 86	AXB2	6738782
79	A2B2-P2	6738780	87	AX-P3	6738862
80	A2B2E2K1	6738802			

Filter Colour Code

Colour	Type	Main Application
Brown	AX	Gases and vapours of organic compounds. Boiling point $\leq 65^{\circ}\text{C}$
Brown	A	Gases and vapours of organic compounds. Boiling point $> 65^{\circ}\text{C}$
Grey	B	Inorganic gases and vapours e.g. chlorine, hydrogen, Sulphide, hydrocyanic acid
Yellow	E	Sulphur dioxide, hydrogen chloride
Green	K	Ammonia
Black	CO	Carbon monoxide
Red	Hg	Mercury vapour
Blue	NO	Nitrous gases including nitrogen monoxide
Orange	Reactor	Radioactive iodine incl. radioactive iodide
White	P	Particles

Twin Filter Cartridge Full Face Respirator

X-plore 5000

Respiradores de rostro entero con cartucho de doble filtro

全面防塵防毒マスク 全面型防尘防毒面罩



Outstanding protection factor:

- Double layered face seal with triple sealing action.
- Two sizes in one mask \Rightarrow one size fits all.

Proven quality & reliability:

- Proven quality under hardest conditions: used by fire brigades all over the world for decades.
- All parts available as spare part.
- Excellent field of vision as visor is close to the face.

Requires only routine filter replacement and approved according EN136 class 3 and NIOSH 42 CFR, part 84.

Unit Per Pcs.		
CODE	Type	Part No.
33 12 89	With Polycarbonate Lens	R55270
90	With Triplex Lens	R56655

Name of Mfr.: Draeger

Plastic Chipping Goggles

Gafas protección contra el Polvo
防塵眼鏡 塑料防尘眼罩



Made of plastic, worn to protect the eye when chipping or scaling metal or other objects that may chip or fragment.

33 11 41	Chipping goggle plastic, standard	Pr.
42	" " " , anti-fog	"

Faceshields

Pantallas Protección Facial 防災面 面平及支架

For protection of the face against abrasive particles, flying objects, and chemical splashes.

The faceshield stays in the up or down position as required with friction pivot hinges.



Standard



with Forehead Protection

33 11 43	Faceshield, standard	Pc.
44	Faceshield, with forehead protection	Pc.
48	Spare shield, polycarbonate, for forehead protection type faceshield	Pc.

Ear Muffs

Protectores de Oido イアーマフ 耳罩

Highly efficient ear muffs for protection of loud noises of all pitches in factories and areas where air compressors and turbines are used.



MSA left/RIGHT



ScanSilence L3

MSA left/RIGHT

The MSA left/RIGHT, with a new headband with improved comfort, individual ear cups -left and right- and more space for the outer ear, this unique and careful design gives a wider range of protection. Approved according EN 352.

Unit Per Pr.			
CODE	Type	Colour	Part No.
33 12 51	Low applications	White	10087436
52	SNR 24 - H/M/L 27/22/14	Yellow	10087434
53		Blue	10087435
33 12 54	Medium applications	White	10087427
55	SNR 28 - H/M/L 32/26/17	Yellow	10087425
56		Blue	10087426
33 12 57	High applications	White	10087421
58	SNR 33 - H/M/L 33/31/21	Yellow	10087399
59		Blue	10087400

Name of Mfr.: MSA The Safety Company

ScanSilence L3

Protection against very high noise level and loud sounds. Using Omnitfit reflective headband, light weight, and limited contact pressure for all-day comfort. Cups are 360° rotating anti-scratch and its height is adjustable. Attenuation: H=38 dB, M=34 dB, L=36 dB. Signal-to-noise ratio: 36 dB.

Standards: CE Approved / EN 352-1

33 12 60	Ear muff, ScanSilence L3	Pr.
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Name of Mfr.: Scandia Gear

Ear Cup Kits

Kits de Auriculares イヤーカップキット 耳罩套件

Designed for easy attachment to any types of helmet.



Standard



MSA left/RIGHT



ScanSilence ML3

Unit Per Pr.

CODE	Type	Colour	Part No.	Applicable Type of Helmet	Unit Per Pr.
33 11 66	Ear cup kit, Standard	-	-	Standard	
33 12 61	Left/RIGHT, low applications	White	10087439		
62		Yellow	10087437		
63	SNR 25-H/M/L 27/22/15	Blue	10087438	V-Gard	
33 12 64	Left/RIGHT, medium Applications	White	10087430	Super	
65		Yellow	10087428		
66	SNR 28-H/M/L 29/25/17	Blue	10087429	V-Gard	
33 12 67	Left/RIGHT high applications	White	10087424	Linesman	
68		Yellow	10087422		
69	SNR 31-H/M/L 32/28/21	Blue	10087423		

Name of Mfr.: MSA The Safety Company

ScanSilence ML3

Protection against very high noise level and loud sounds. Light weight, and limited contact pressure for all-day comfort. Cup is anti-scratch and its height is adjustable. Attenuation: H=37 dB, M=32 dB, L=24 dB. Signal-to-noise ratio: 35 dB.

Standards: CE Approved / EN 352-1

33 12 70	Ear cup kits, ScanSilence ML3	Pr.
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Name of Mfr.: Scandia Gear

Ear Plugs

Tapones para Oido 耳栓 耳塞

Three types of ear plugs are available. Made of silicon-rubber for general noise from high-pitched to low-pitched noises or only for high-pitched noises. Made of flexfit, self-expandable and self-adjusting foam.



Silicon Rubber



Self-fit Foam

33 11 56	Ear plug silicon rubber for hi-low pitch noise	Pr.
57	Ditto for hi pitch noise	"
33 11 58	Ear plug self-fit foam	Pr.

Safety Helmets

Cascos de Seguridad 安全帽 安全帽

A lightweight safety helmet made of glass fibre reinforced polyester resin. Adjustable in size. Easy replacement of the suspension. Weight: approx. 380 grm.

33 11 59	Safety helmet, polyester resin, white	Pc.
60	Safety helmet, polyester resin, yellow	"



Slotted V-Gard Safety Helmets

Cascos de Seguridad 安全帽 安全帽



Economical, lightweight, comfortable headwear. Made of high-density polyethylene in a variety of molded-in colours ideal for general industry and construction. Suspension, sweat band and nape strap form the complete protective system. Cap with slots to hold accessories. When ordering, specify colour.

		Unit Per Pc.
CODE	Description Helmet Shell	Part No. US/EU
33 11 62	White	463942 / 262250
	Yellow	463944 / 262251
	Blue	463943 / 262252
	Green	463946 / 262253
	Orange	463945 / 262254
	Red	463947 / 10002901
	Grey	463948 / ---
33 11 63	Gold	464852 / ---
33 11 64	Helmet Suspension Helmet Chin Strap	454230 / 262239 258213 / 262153

Name of Mfr.: MSA The Safety Company

Work Vests

Chalecos de Trabajo 作業用ベスト 安全作业背心

Flotation work vest:

Made from multiple foam inserts and nylon outer shell, and orange color with phosphorescent white stripes provides high visibility for day and night. One size fits all.

Hazard warning vest:

Made from vinyl in yellow colour with reflective tape.



33 11 71



33 11 72

33 11 71	Flotation work vest Hazard warning vest	Pc.
72		"

Whistles

Sibatos 笛 救生艇哨笛

Produces loud and clear tone, and used for signalling, warning., etc.

Available in plastic or steel.



Plastic

Steel

33 11 75 76	Whistle, plastic Whistle, steel	Pc. "
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Anti-Slip Tapes

Cintas Anti-caídas 滑り止めテープ 防滑帶

Gives safe, slip free footing anywhere falls could be a problem. Designed especially for stairs, kitchens, around pools, in food service areas, wheel chair ramps and lobbies.



Diamond-hard mineral provides positive grip. Easy to apply backed adhesive-sticks at a touch.

Type	Surface	Back	Application
A For Rugged Surface	Mineral Grain	Alum. Foil	Vehicles' Steps
B For General Purpose	Mineral Grain	Polyester Film	Stair Steps
C For Interior Purpose	Plastic	Plastic	Interior room, Gymnasium
D For Interior Purpose	Plastic	Plastic	Pool, Bath, Shower Room

Unit Per Rls.			
CODE	Type	Size W x L	Color
33 11 81	A	10 cm x 18 mtr	Black
86	A	10 cm x 18 mtr	Green
89	A	10 cm x 18 mtr	Yellow
33 11 82	B	10 cm x 18 mtr	Black
83	B	10 cm x 18 mtr	Red
90	B	10 cm x 18 mtr	Green
97	B	10 cm x 18 mtr	Grey
33 11 84	C	10 cm x 18 mtr	Black
85	C	10 cm x 18 mtr	Grey
33 12 00	D	10 cm x 18 mtr	White

Remark: Other sizes of width with 18 mtrs length are also available on request.

Anti-Slip Safety Products

Cintas Anti-caídas 滑り止め防止製品 防滑产品

An anti-slip safety products incorporate the unique Scotgrip® high-traction anti-slip safety surface which gives a sound foot-holding in the most extreme conditions. By installing anti-slip walkway & deck products not only is this slip hazard eliminated but the lifespan of the underlying material is greatly increased. These tough & durable products are manufactured under BS EN ISO 9001:2008 quality controlled conditions comprising of a reinforced composite base and a graded aggregate surface. As a Scotgrip® quality standard, these products are fire rated, spark and friction tested.



Scotgrip® Anti-slip Stair Nosings (SSN)

By installing Scotgrip® anti-slip stair nosings not only is this slip hazard eliminated but the lifespan of the step is greatly increased. These heavy duty safety products are easily fitted onto open grating/grille, chequered plate/flat steel, concrete or wood. Colour coded in a wide range of colour schemes to suit individual locations, but Safety Yellow colour one will be supplied if any colour code is not specified.

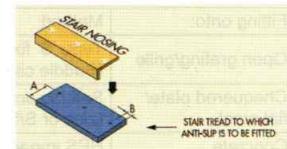
Designed for quick and secure fitting, either by mechanical fixings or bonding to existing surfaces. These products are pre-drilled where required for quick installation.

Surface Grades:

Coarse grade: 1 - 3 mm aggregate (1/16" – 1/8" approx.)
Extra coarse grade: 3 - 5 mm aggregate (1/8" – 3/16" approx.)

Fitting Data

Fitting onto:	Method
Open grating/grille	Type 'S' fixings (zinc or S/S) (Saddle clip assemblies)
Chequered plate/ Flat steel	Self tap screws or nut, bolt and washer (zinc or S/S)
Concrete	HPS impact fixings (zinc or S/S)
Wood	Screws (zinc or S/S) or adhesive



Unit Per Sh.

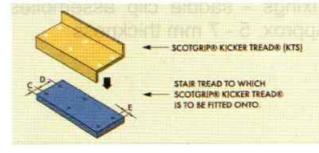
CODE	Breadth mm Inch	Length mm Inch	CODE	Breadth mm Inch	Length mm Inch
33 45 01	40	450 18	33 45 21	160 6	450 18
		600 24			600 24
		750 30			750 30
		900 36			900 36
		1,200 48			1,200 48
33 45 06	80	450 18	33 45 26	200 8	450 18
		600 24			600 24
		750 30			750 30
		900 36			900 36
		1,200 48			1,200 48
33 45 11	100	450 18	33 45 31	260 10	450 18
		600 24			600 24
		750 30			750 30
		900 36			900 36
		1,200 48			1,200 48
33 45 16	130	450 18			450 18
		600 24			600 24
		750 30			750 30
		900 36			900 36
		1,200 48			1,200 48

Name of Mfr.: Scotgrip International.

Anti-slip Kicker Tread (KTS)

Designed to fit onto existing step

Anti-slip Kicker Tread® has all the same safety advantages of anti-slip stair nosings but has the added feature of a safety 'Kicker' incorporated at the rear of the tread to prevent objects being dropped or kicked over the back of it & falling below. These heavy-duty products are easily fitted onto open grating/grille, chequered plate/flat steel, concrete or wood.



Standard Size of Kicker Tread

Breadth (or Depth) of Step	Length
Up to 200 mm (8" approx.)	Supplied to the exact length of your steps. (Please deduct 10mm (3/8" approx.) from length of steps to allow for proper seating.)
Up to 250 mm (10" approx.)	
Up to 300 mm (12" approx.)	

Surface Grades

Coarse grade	1 - 3 mm aggregate (1/16" - 1/8" approx.)
Extra coarse grade	3 - 5 mm aggregate (1/8" - 3/16" approx.)

Coarse surface grade will be supplied if any surface grade is not specified.

Colour Code:

Colour coded in a wide range of colour schemes to suit individual locations. Available colours are: Safety yellow, Black/safety yellow, Black, Green, Grey, Blue, Red, White. Photoluminescent making is available.

Manufactured to customer specification:

Supplied to your requirements as the tread needs to be fairly snug with the stairway stringers.

Fitting Data

Fitting onto:	Method
Open grating/grille	Type 'S' fixings (zinc or S/S) (Saddle clip assemblies)
Chequered plate/ flat steel	Self tap screws or nut, bolt and washer (zinc or S/S)
Concrete	HPS impact fixings (zinc or S/S)
Wood	Screws (zinc or S/S) or adhesive

How to order: 33 - 45 - 36 (Sht)

Please specify the following:

Size (Breadth x Length), Surface grade (Coarse, extra coarse), Colour code (Safety yellow or any others), Pre-drill of fixing hole position (if necessary)

Name of Mfr.: Scotgrip International

Walkways/Decks

Walkways/decks/flooring can be made from various materials including the following: flat steel, open grating/grille, aluminium, concrete or wood. These tiles are installed onto your walkway/deck surfaces and secured by either mechanical fixing, welding or bonding with adhesive.

Surface Grades:

Coarse grade: 1- 3 mm aggregate (1/16" - 1/8" approx.)

Extra coarse grade: 3 - 5 mm aggregate (1/8" - 3/16" approx.)

Colour Code:

Colour code in a wide range of colour schemes to suit individual locations. Available colour codes are: Safety yellow, Black/safety yellow, Black, Green, Grey, Blue, Red, White. Photoluminescent making is available.

Anti-slip Grating Cover Tile (SGCT)

Designed for all open grating/grille surfaces (secured by Type 'S' Fixings - saddle clip assemblies). Approx. 5 - 7 mm thickness.



Unit Per Sh.

CODE	Breadth		Length		CODE	Breadth		Length	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch
33 45 41			500	20	33 45 61			500	20
42			1,000	40	62			1,000	40
43	500	20	1,500	59	63	900	36	1,500	59
44			2,000	79	64			2,000	79
45			2,500	98	65			2,500	98

(to be continued)

33 45 46			500	20	33 45 66			500	20
47			1,000	40	67			1,000	40
48	600	24	1,500	59	68	1,000	40	1,500	59
49			2,000	79	69			2,000	79
50			2,500	98	70			2,500	98
33 45 51			500	20	33 45 71			500	20
52			1,000	40	72			1,000	40
53	700	28	1,500	59	73	1,200	48	1,500	59
54			2,000	79	74			2,000	79
55			2,500	98	75			2,500	98
33 45 56			500	20					
57			1,000	40					
58	800	32	1,500	59					
59			2,000	79					
60			2,500	98					

Name of Mfr.: Scotgrip Internashonal.

**Anti-slip Deck Tile (SDT)**

Designed for walkways/decks/access ramps. This product maintains a certain flexibility to conform to un-even deck surfaces (secured by mechanical fixings/bonding with adhesive). Approx. 3 - 5 mm thickness. installation.

Unit Per Sh.									
CODE	Breadth		Length		CODE	Breadth		Length	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch
33 45 76			500	20	33 45 96			500	20
77			1,000	40	97			1,000	40
78	500	20	1,500	59	98	900	36	1,500	59
79			2,000	79	99			2,000	79
80			2,500	98	33 46 00			2,500	98
33 45 81			500	20	33 46 01			500	20
82			1,000	40	02			1,000	40
83	600	24	1,500	59	03	1,000	40	1,500	59
84			2,000	79	04			2,000	79
85			2,500	98	05			2,500	98
33 45 86			500	20	33 46 06			500	20
87			1,000	40	07			1,000	40
88	700	28	1,500	59	08	1,200	48	1,500	59
89			2,000	79	09			2,000	79
90			2,500	98	10			2,500	98
33 45 91			500	20					
92			1,000	40					
93	800	32	1,500	59					
94			2,000	79					
95			2,500	98					

Name of Mfr.: Scotgrip International.

Anti-slip Weld Deck Tile (SWDT)

Designed for walkways/decks/access ramps. This product is manufactured with steel plates built into the product base (secured by welding the steel plates to the deck). Approx. 4 - 6 mm thickness.



Unit Per Sh.									
CODE	Breadth		Length		CODE	Breadth		Length	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch
33 46 11			500	20	33 46 31			500	20
12			1,000	40	32			1,000	40
13	500	20	1,500	59	33	900	36	1,500	59
14			2,000	79	34			2,000	79
15			2,500	98	35			2,500	98
33 46 16			500	20	33 46 36			500	20
17			1,000	40	37			1,000	40
18	600	24	1,500	59	38	1,000	40	1,500	59
19			2,000	79	39			2,000	79
20			2,500	98	40			2,500	98

(to be continued)

CODE	Breadth		Length		CODE	Breadth		Length		Unit Per Sht.	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch	mm	Inch
33 46 21			500	20	33 46 41			500	20		
22			1,000	40		42		1,000	40		
23	700	28	1,500	59		43	1,200	48	1,500	59	
24			2,000	79		44		2,000	79		
25			2,500	98		45		2,500	98		
33 46 26			500	20							
27			1,000	40							
28	800	32	1,500	59							
29			2,000	79							
30			2,500	98							

Name of Mfr.: Scotgrip International.

Anti-slip Ladder Rung Covers for Vertical Ladders

By installing Ladder rung covers (square, round or diamond) not only is this slip hazard eliminated but the lifespan of the ladder rung is greatly increased. These heavy-duty safety products are easily fitted onto existing ladder rungs using adhesives. Standard safety yellow ladder rung covers highlight each rung when climbing or descending the ladder. Surface grade: Coarse grade: 1 - 3 mm aggregate (1/16" - 1/8" approx.).



Square (LRCS)



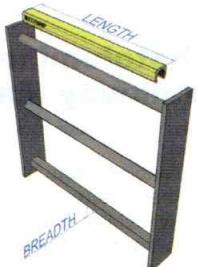
Diamond (LRCD)



Round (LRCR)

Specifications

Tensile Strength	26 Mpa
Tear Strength	85 kN/m
Hardness	95 Shore A rating

**For Square Bar (LRCS)**

Unit Per Pcs.

CODE	Breadth		Length		CODE	Breadth		Length		Unit Per Pcs.	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch	mm	Inch
33 47 01			300	12	33 47 11			300	12		
02			350	14		12		350	14		
03	20	3/4	400	16		13		400	16		
04			450	18		14		450	18		
05			500	20		15		500	20		
33 47 06			300	12	33 47 16			300	12		
07			350	14		17		350	14		
08	22	7/8	400	16		18		400	16		
09			450	18		19		450	18		
10			500	20		20		500	20		

Name of Mfr.: Scotgrip International.

For Diamond Bar (LRCD)

Unit Per Pcs.

CODE	Breadth		Length		CODE	Breadth		Length		Unit Per Pcs.	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch	mm	Inch
33 47 71			300	12	33 47 81			300	12		
72			350	14		82		350	14		
73	20	3/4	400	16		83		400	16		
74			450	18		84		450	18		
75			500	20		85		500	20		
33 47 76			300	12	33 47 86			300	12		
77			350	14		87		350	14		
78	22	7/8	400	16		88		400	16		
79			450	18		89		450	18		
80			500	20		90		500	20		

Name of Mfr.: Scotgrip International.

For Round Bar (LRCR)

Unit Per Pcs.

CODE	Breadth		Length		CODE	Breadth		Length		Unit Per Pcs.	
	mm	Inch	mm	Inch		mm	Inch	mm	Inch	mm	Inch
33 47 21			300	12	33 47 31			300	12		
22			350	14		32		350	14		
23	20	3/4	400	16		33		400	16		
24			450	18		34		450	18		
25			500	20		35		500	20		
33 47 26			300	12							
27			350	14							
28	25	1	400	16							
29			450	18							
30			500	20							

Name of Mfr.: Scotgrip International.

Stepmate Bridges & Ramps

Designed to be placed over the potential hazards of pipes, cables & hoses in the workplace. These products are easily placed into position and can be used as both a temporary measure or as a more permanent fixture. Designed for pedestrian and light equipment use only. Standard colour is safety yellow which highlights the safe walking route over any potential hazards. Also have a wide range of colours to suit your individual location.

**Surface Grades:**

Coarse grade: 1 - 3 mm aggregate (1/16"-1/8" approx.)

Extra coarse grade: 3 - 5 mm aggregate (1/8" - 3/16" approx.)

Coarse surface grade will be supplied if any surface grade is not specified.

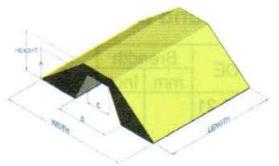
Pipe/Cable Bridge
(PCB1 - PCB5)General Purpose Ramp
(GP1 - GP4)**Pipe/Cable Bridges**

Size mm (inch)

Type	PCB1	PCB2	PCB3	PCB4	PCB5
Width	380 (15")	610 (24")	750 (30")	900 (36")	1,100 (43")
Height	80 (3")	110 (4")	140 (5-1/2")	155 (6")	200 (8")
Length	1,000 (40")	1,000 (40")	1,000 (40")	1,000 (40")	1,000 (40")
No. of Slots	3	3	3	3	3
Size	A 35 (1-3/8")	65 (2-1/2")	100 (4")	115 (4-1/2")	150 (6")
of	B 45 (1-3/4")	85 (3-3/8")	115 (4-1/2")	140 (5-1/2")	175 (7")
Slot	C 45 (1-3/4")	85 (3-3/8")	115 (4-1/2")	140 (5-1/2")	175 (7")
Weight kg	10	18	24	29	36
Unit Per Pcs.					
CODE	Type	CODE	Type	CODE	Type
33 47 51	PCB1	33 47 54	PCB4		
52	PCB2	55	PCB5		
53	PCB3				

Name of Mfr.: Scotgrip International.

General Purpose Ramp



Size mm (inch)

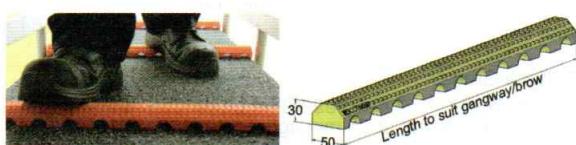
Type	GP1	GP2	GP3	GP4
Width	410 (16")	450 (18")	500 (20")	600 (24")
Height	100 (4")	125 (5")	150 (6")	180 (7")
Length	1,000 (40")	1,000 (40")	1,000 (40")	1,000 (40")
A	75 (3")	90 (3-1/2")	115 (4-1/2")	140 (5-1/2")
B	175 (7")	180 (7")	200 (8")	230 (9")
C	100 (4")	100 (4")	100 (4")	100 (4")
Weight kg	12	14	15	17

Unit Per Pcs.

CODE	Type	CODE	Type
33 47 56 57	GP1 GP2	33 47 58 59	GP3 GP4

Name of Mfr.: Scotgrip International

Gangway Treads



Marine gangways are renowned for being extremely dangerous, especially when the angle of the gangway is steep and the surface is wet or oily or both. Some gangways have metal or wooden spars across the surface which can be a trip hazard in itself. By installing this gangway treads not only is this slip hazard eliminated but the lifespan of the underlying material is greatly increased.

Gangway tread will provide a sound foot holding even in the most extreme conditions. Colour coded in a wide range of colour schemes to suit individual locations: safety yellow, orange, red. Other colours are available upon your request.

Extremely durable and will remain highly effective for many years. Gangway treads are manufactured and supplied to the exact length required for your gangway/brow. Designed for quick and secure fitting, gangway treads can also be easily cut/shaped on site if required. Designed for quick and secure fitting, simply place on top of the existing surface & secured with mechanical fixings.

Specifications

Tensile Strength	26 MPa
Tear Strength	85 kN/m
Hardness	95 Shore A rating
Weight	1.2 kg/m length

How to order: 33 - 47 - 62

Gangway tread, specify the required length and
Colour Code (Safety Yellow, Orange, Red or any other colour).

Name of Mfr.: Scotgrip International.

Anti-slip Pipewalkers

Pasa-tuberías antideslizante

滑り止めパイプウォーカー 管上行走防滑垫

Pipewalkers will provide a sound foot-holding even in the most extreme conditions and will help eliminate "Slips and Trips" in your working environment. Tough, durable, and easy to handle, and can be placed into position quickly and easily due to their flexibility and light weight construction. There are different types ; short tread and long tread. Standard colours black and yellow, and manufactured under BS EN ISO 9001: 2008 quality controlled condition using highly compatible raw materials.

Surface Grade:

Available in the following surface grade;
Fine profile – 1 mm aggregate (1/16" approx.)



Short Tread



Long Tread

CODE	Type	Size width x length	Weight	Scotgrip No.
33 47 65 66	Short tread Long tread	700 x 3,300 700 x 3,300	24.5 kg	STP LTP

Name of Mfr.: Scotgrip International

Photoluminescent Wayfinding Walkway Matting

Cintas Fotoluminosas para Guia 萤光誘導マット 萤光诱导地毯

For engine room safety in the event of darkness caused by a sudden power loss or low visibility caused by smoke. A durable hardwearing extruded PVC matting, which incorporates a central 100 mm wide photoluminescent wayfinding strip to show an escape path in sudden darkness. The material is non slip, shock absorbing, self draining and comfortable underfoot. It is resistant to most oils, acids, etc. which are used in the marine industry.



CODE	Width	Length
33 11 87 88	600 mm 910 mm	10 mtr "

Hazard Warning Reflective Tapes (Reflective Tiger Tapes)

Cintas Reflectivas para Advertencia de Peligro 反射虎テープ 虎斑带

Self adhesive black and yellow striped tape used to warn against hazards.

It can adhere to any reasonably clean surface and can be easily removed. Highly reflective for visibility at night or in a dark area.



CODE	Width	Thick	Length	Unit Per Rls.
33 11 91	45 mm	0.24 mm	10 mtr	
92	90 "			
93	150 "			
94	970 "		33 mtr	
33 11 95	50 mm			

Barrier Tapes

Cinta para Prohibir el Paso

バリケード・テープ 封鎖帶

Strong, non-adhesive polyethylene barrier tape ideal for warning of danger areas or simply diverting the public etc. Normally striped in Black and Yellow.



Unit Per Rls.

CODE	Width mm x L mtr	CODE	Width mm x L mtr
33 11 98	80 x 50	33 11 99	75 x 500

Arm Bands

Brazaletes 腕章 臂章

Made of felt covered by vinyl. For identification of person on duty, or appealing each other for caution to the hazards. Available various colours and notices upon request. Please specify colours, letters, symbols or signs when ordering.



How to order: 33 - 11 - 96

Arm band, COLOR, LETTER, SYMBOLS or SIGNS

Alcohol Screening Devices

Dispositivos de detección de alcohol

アルコールクリーニング装置 酒精筛选设备

An instrument to perform a breath alcohol test with speed and precision. It is also possible to measure alcohol in the ambient air (passive), in which case a mouthpiece isn't required.



All measurement functions can be operated with just one button to make it easier for you to perform the test. The large back-lit display is easy to understand due to its full-text messages which guide you securely through the alcohol test. An LED and audible signal complement the display and indicate the end of a measurement process.

CODE	33 12 21	33 12 24	Unit Per Set
Model	Alcotest 5820	Alcotest 6820	
Sensor	Electrochemical Dräger sensor for 1/4" technology; alcohol-specific		
Measuring Range	0 to 2.5 mg/L		
Temperature Range	-5 to +50°C/23 to 122°F		
Display	Graphic backlit LCD display; 32 x 22 mm	Graphic LCD display; 41 mm x 24 mm	
Datalogger	Storage of last 100 tests with test numbers	Space for saving the last 5,000 tests with test number, date and time	

(to be continued)

Power Supply	1 x CR123A-Battery	2 x AA batteries or NiMH batteries
Dimensions (W x H x D),	50/60 x 141 x 31 mm	147 x 65 x 39 mm
Weight	150 grm incl. battery	approx. 260 grm
CE Marking Norm	2014/30/EU (electromagnetic compatibility)	Directive 89/336/EEC (electromagnetic compatibility)
Norm	EN 15964, NHTSA, FDA Conformity, depending on configuration	Meets EN 60068-2-6, EN 60068-2-27, EN 60068-2-64, MIL-STD 810F
Protection type	IP54	
Including	3 mouthpieces, 1 battery, hand loop, plastic transportation case.	Test unit, 3 Mouthpieces, 2 Batteries, Hand strap, Plastic case strap, Plastic case

Name of Mfr.: Draeger

Accessories

CODE	Description	No.	Unit
33 12 26 18 19	Dräger Alcotest mouthpiece (Slide'n'click)		
	Package with 100 pieces	68 10 690	Pkt
	Package with 250 pieces	68 10 825	"
	Package with 1,000 pieces	68 10 830	"
33 12 22	PSU (power source) 600 mA, 11 V, for charging NiMH batteries (for Alcotest 6820 only)	83 16 991	Pc.
33 12 20	Battery (for Alcotest 5820 only)	45 43 808	Pc.

Portable Breath Analyzers

Analizador de aliento Portátil

アルコールチェックー 捷帶式酒精測試器



A portable alcohol tester offers PRISM* technology, let you avoid re-calibration process. Simply swap an old sensor with a new one, and you are instantly ready to get back to testing. Sensor requires to get replaced every 200 tests or every 12 months, whichever comes first.

Tester can be operated with a mouthpiece (included in package) for single use. If the "Flo" or "Flow" message is displayed while in use, this warns "insufficient airflow", and you are not blowing enough. Unit has range of 0.00 to 0.40% BAC (Blood Alcohol Content).

*PRISM (Pre-calibrated Replaceable Intelligent Sensor Modules)

US Patent No. 7,841,224,B2, and also globally patented.

CODE	33 12 23	33 12 28	Unit Per Set
Model	Alcomate Prestige AL-6000	Alcomate Premium AL-7000	
Alcohol Sensor	Semiconductive Oxide Sensor		
Display	3-digit clear LCD	4-digit LED	
Detection Range	0.00% - 0.40% BAC		
Sensor Accuracy	DOT Approved for Law Enforcement (Accuracy +/- 0.01 at 0.10% BAC)		
Device Lifetime	Perpetuate (5 to 10 years with diligent maintenance)	Perpetuate (5 to 10 years with diligent maintenance)	
Breath Sampling Time	3 sec. (fast mode) / 5 sec. (normal mode)	2 Seconds or less up to 0.100% BAC	

(to be continued)

CODE	33 12 23	Unit Per Set
CERTIFICATION	US DOT/NTHSA/ USCG	US DOT/NTHSA/ USCG
SIZE mm	137 x 73 x 44	108 x 51 x 191
WEIGHT grm	51 (w/o battery)	48 (w/o battery)

Remark: NTHSA denotes National Traffic & Highway Safety Administration (USCG recognize USDOT approval).

Name of Mfr.: AK GlobalTech Corporation

Spare Sensor for Portable Breath Alcohol Tester

Spare sensor is also available as replacement, with PRISM Technology on AlcoMate Premium and Prestige Breath Alcohol Tester.

33 12 17	Sensor for portable breath analyzer	Pc.
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Wall-mount Breath Alcohol Tester

Alcoholímetro de Montaje en Pared

壁掛け式アルコールチェックター 壁挂式呼气酒精测试仪

A compact wall mounted breathalyser used extensively around the world. Following the on-screen instructions, donor inserts a mouthpiece into the sample port and blows steadily until the results appear. Uses premium grade platinum electrochemical fuel cells for accuracy. Test 100% of personnel prior to start of work. Patented modular system enables calibration to be completed on-site in 60 seconds increasing device availability for testing. Operates 24 hours per day in conditions from -10C to 55C. Easy installation. Optional data management system is available.



Unit Per Set

CODE	33 12 15	Unit Per Set
Model	Centurion Quantum	
Test type	BrAC (Use Straw)	
Data log capacity	10,000 + tests	
Analysis Time	1 second for zero result	
Calibration Period	12 months	
Power Source	240 V	
Certification	NHTSA/DOT/USCG AS3547:2019	
Size mm	410 mm(H) x 210 mm (W) x 110 mm (D)	
Weight kg	5 kg	

Name of Mfr.: Alcolizer Technology

*BrAC denotes Breath Alcohol Concentration

Portable Drug Tester

Analizador de Drogas Portátil

ポータブルドラッグテスター 便携式药物测试仪

A fast, accurate saliva drug testing device for law enforcement and industrial workforces. A patented Optical Filtering System delivers accurate and fast drug test results and detects a variety of drug groups configured to target concentrations as specified under Australian Standards AS/NZS 4760:2019.



CODE	33 12 16	Unit Per Set
Model	Druglizer LE5	
Test Options	Amphetamine, Benzodiazepines, Cannabis (THC), Cocaine, Methamphetamine, Opiates, Oxycodone	
Sensor Type	Linear array with patented Optoelectronic sensor	
Display	Transreflective colour graphics LCD screen	
Analysis Time	90 seconds	
Calibration Period	Module exchange system for one-site calibration every 6-12 months based on location	
Power Supply	Rechargeable Li-ion battery	
Operating Temperature	+15°C to +38°C	
Standard	Australian Standards AS/NZS 4760:2019	
Size mm	H196 x W66 x D43	
Weight	310 grm	

Name of Mfr.: Alcolizer Technology

Drug Testing Cups

Vaso para la Prueba de Medicamentos

ドラッグテストカップ 藥物検驗杯

A fully self contained drug screening cup for detecting drugs and drug metabolites in urine. Fully integrated design eliminates handling of the urine. Only the collector can activate the test, thus eliminating donor manipulation. Label hides test result from those who do not need to view results. The test is a fast visual, competitive panel immunoassay that can be used for the simultaneous, qualitative detection of a specific drug metabolite in human urine. Flat surface makes documenting result easy. The cup has easy Xerox feature where cup can be laid down on its side.

Features & Benefits

- FDA (U.S. Food and Drug Administration) 510(K) cleared.
 - CLIA (Clinical Laboratory Improvement Amendments) waved.
 - Up to 99% accurate.
 - Adheres to the SAMHSA (Substance Abuse and Mental Health Services Administration) cutoffs.
 - Shelf-life of 18 – 24 months.
 - No more turning, simply put the key in and push.
 - Easy to open top for the confirmation lab.
 - The collector retains control of the chemistry & can time the results to insure proper interpretation.
 - Tests for 5 drugs
- Marijuana (THC) 50 ng/ml
 Cocaine (COC) 300 ng/ml
 Amphetamine (AMP) 1,000 ng/ml
 Phencyclidine (PCP) 25 ng/ml
 Morphine / Opiates (MOR) 2,000 ng/ml

33 12 27	Drug testing cup	Set
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Oxygen/Gas Detectors from Various Manufacturers

Type	CODE	Model	O ₂ (% by vol)	Combustible Gas			Toxic Gas			Available Sensors
				CH4	HC	LEL Combustible	H ₂ S (ppm)	CO (ppm)	CO ₂	
Riken Keiki										
Oxygen	33 05 06	OX-08	0-25							
Combustible Gas	33 05 21	GX-8000 (Type LEL)			0-100%LEL					
2 Gases	33 05 37	RX-8000		0-100% LEL to 100 vol %	0-100% LEL to 100 vol %					
	33 05 XX	RX-8000 (HC)	0-25		0-100% LEL to 100 vol %					
	33 05 XX	RX-8000 (CH ₄)	0-25	0-100% LEL to 100 vol %						
3 Gases	33 05 80	RX-8700	0-25		0-100% LEL, 2-100% vol		Low: 0-100 High: 0-1,000			
4 Gases	33 05 27	GX-Force	0-40	0-100%LEL	0-100%LEL	0-100% LEL	0-30	0-500		
	33 05 20	GX-3R	0-40	0-100%LEL	0-100%LEL	0-100% LEL	0-100	0-500		
	33 05 21	GX-8000	0-40	0-100%vol 0-100%LEL	0-100%vol 0-100%LEL	0-100% LEL	0-30	0-500		
	33 05 37	RX-8500	0-25	0-100% LEL, 5-100% vol				0- 1,000	0-2vol% 2-5vol%	
5 Gases	33 05 09	GX-3R Pro	0-40	0-100% LEL	0-100% LEL	0-100% LEL	0-100	0-500	0-5vol% 0-10,000 ppm	NO ₂ , HNN, PH ₃ , NH ₃
6 Gases	33 05 XX	GX-6000	0-25	0-100% LEL	0-100% LEL		0-30	0-150	0-10vol%	VOC, SO ₂ , NO ₂ , HCN, NH ₃ , Cl ₂

New Cosmos Electric

Type	CODE	Model	O ₂ (% by vol)	Combustible Gas			Toxic Gas			Available Sensors
				CH4	HC	LEL Combustible	H ₂ S (ppm)	CO (ppm)	CO ₂	
Oxygen	33 05 16	XP-3380II	0-25							
	33 05 17	XO-326IIaA	0-25							
	33 05 18	XO-326IIaB	0-25							
	33 05 19	XO-326IIc	0-25							
	33 05 81	XP-3318II	0-25		0-100%LEL					
	33 05 36	Tankscope II	0-25	0-25%vol	0-100%LEL		0-200	0-999		

MSA The Safety Company

Type	CODE	Model	O ₂ (% by vol)	Combustible Gas			Toxic Gas			Available Sensors
				CH4	HC	LEL Combustible	H ₂ S (ppm)	CO (ppm)	CO ₂	
Single Gas	33 05 XX	Altair	0-25				0-100	0-500		
	33 05 XX	Altair Pro	0-25				0-200	0-1,500		NCN, Cl ₂ , ClO ₂ , SO ₂ , NO ₂ , NH ₃ , PH ₃
	33 05 XX	Altair 2X					0-200	0-1,999		ClO ₂ , NH ₃ , SO ₂
	33 05 XX	Altair 2X-P					0-200			
Two Toxic Gases	33 05 XX	Altair 2X-T					0-100			SO ₂ (0-20 ppm)
Single or Multi Gas (2 Gas / 3 Gas / 4 Gas / 5 Gas / 6 Gas, including IR and PID)	33 05 98	Altair 4X	0-30	0-4.4/5 vol %	Butane 1.4 Vol% Hydrogen 4.0 Vol% Nonane 0.7 Vol% Pentane 1.1 Vol% Propane 1.7/2.1 Vol% Heavy Carbons	0-100% LEL	0-200	0-1,999		NO ₂ : 0-50 ppm SO ₂ : 0-20 ppm
	33 05 96	Altair 5X	0-30	0-4.4/5 vol%	Hydrogen 4.0 Vol% Pentane 1.1 Vol%	0-100%LEL	0-200	0-1,999		Cl ₂ , ClO ₂ , HCN, NH ₃ , NO, NO ₂ , PH ₃ , SO ₂
	33 05 97	Altair 5X-1R	0-30	0-100 vol%			0-200	0-1,999	IR:0-10 Vol%	Cl ₂ , ClO ₂ , HCN, NH ₃ , NO, NO ₂ , PH ₃ , SO ₂
Toxic Gases and Vapors	33 05 XX	Altair 5X PID	0-30				0-200	0-1,999	PID 0-2,000 ppm	Cl ₂ , ClO ₂ , HCN, NH ₃ , NO, NO ₂ , PH ₃ , SO ₂

Draeger

Type	CODE	Model	O ₂ (% by vol)	Combustible Gas			Toxic Gas			Available Sensors
				CH4	HC	LEL Combustible	H ₂ S (ppm)	CO (ppm)	CO ₂	
Single Gas	33 05 XX	Pac 6000	0-25				0-100	0-500		
	33 05 XX	Pac 6500	0-25				0-100	0-500		
	33 05 84	Pac 8000	0-25				0-100	0-500	0-5vol%	Cl ₂ , HCN, NH ₃ , NO ₂ , PH ₃ , SO ₂
Combus- tible Gas	33 05 82	X-am 2500	0-25	0-5vol% 0-100%LEL		0-100% LEL	0-100	0-2,000		
	33 05 XX	X-am 2800 Bluetooth	0-25	0-100vol%/ LEL		0-100%LEL	0-200	0-2,000		
Multi Gas	33 06 74	X-am 5000	0-25	0-100vol%/ LEL		0-100% LEL	0-200	0-2,000	0-5vol%	NO, NO ₂ , SO ₂ , PH ₃ , HCN, NH ₃ , Cl ₂ , H ₂ , OV
	33 06 75	X-am 5600	0-25	0-100vol%/ LEL		0-100% LEL	0-200	0-2,000	0-5vol%	NO, NO ₂ , SO ₂ , PH ₃ , HCN, NH ₃ , Cl ₂ , H ₂ , OV
	33 05 83	X-am 8000	0-25	0-10%LEL	0-100vol%/ LEL Butane	0-100% LEL	0-100	0-2,000	0-5vol%	Amine, Cl ₂ , ClO ₂ , COCl ₂ , H ₂ , HCN
				0-100vol%	0-100vol%/ LEL Propane				0-100 vol%	Hydride, NH ₃ , NO, NO ₂ , Odorant, OV, PH ₃

Gas Clip Technologies

Type	CODE	Model	O ₂ (% by vol)	Combustible Gas			Toxic Gas			Available Sensors
				CH4	HC	LEL Combustible	H ₂ S (ppm)	CO (ppm)	CO ₂	
Single Gas	33 05 XX	SGC-H					0-100			
	33 05 XX	SGC-C						0-300		
	33 05 XX	SGC-O	0-30							
Multi Gas	33 05 XX	MGC-IR Pump	0-30	0-5vol%		0-100%LEL	0-100	0-300		
	33 05 XX	MGC-P Pump	0-30	0-5vol%		0-100% LEL	0-100	0-300		
	33 05 XX	MGC	0-30	0-5vol%		0-100% LEL	0-100	0-300		
	33 05 XX	MGC-P	0-30	0-5vol%		0-100% LEL	0-100	0-300		
	33 05 XX	MGC-S	0-30	0-5vol%		0-100% LEL	0-100	0-300		
2 Gases	33 05 XX	MGC-2	0-30	0-5vol%		0-100% LEL				
	33 05 XX	MGC-2-P	0-30	0-5vol%		0-100% LEL				