



PW2 150 000 12 (12V)

PW2 150 000 13 (24V)

Fischio Pneumatico Omologato
(Trombe per imbarcazioni da 12m a 20m)

Approved Pneumatic Whistle
(Marine Horns for vessels between 12m to 20m in length)





Pneumatic Whistle 12V/24V

Marine Horns for vessels between
12m to 20m in length

Code

150 000 12 (12V)
150 000 13 (24V)

PRODUCT DESCRIPTION

Approved signalling whistle complete with white painted horn $\varnothing 200$ mm, with electric compressor and mounting accessories. Meets COLREG 1972 IMO class IV regulations.

Approvals: RINA, LLOYD'S REGISTER MCA and BUREAU VERITAS, NMMA ABYC A-23

TECHNICAL DATA

TYPE	PART NUMBER	V	A	dB (1/3 OCT.)(1m)	Hz	DIMENSIONS (mm)	PCS. X CARTON
PW2	150 000 12	12	20	123	630	460x200	1
PW2	150 000 13	24	10	123	630	460x200	1

INSTALLING INSTRUCTION OF THE WHISTLE

1. **Install the horn angled slightly downward (5°) in order to avoid the water stagnation within the cone.**
2. Connect the loudspeaker to the compressor through the Rilsan pipe utilizing the accessories of the kit, see the layout attached.
3. Install the oil container as shown in the photographic sequence.
4. Fix the compressor to a flat surface using M5 screws. Use the rubber vibration-damping in order to avoid any vibrations during the execution.
5. Connect in series the service switch to the red cable. On the same cable a lamellar fuse has been installed.
6. Connect the extreme part of the red cable to the positive pole of the battery (+) and the extreme part of the black cable to the negative pole of the battery (-).

ELECTRICAL TECHNICAL DATA

Lamellar fuse (40A at 12V and 30A at 24V)

Service switch supplied

Section of cables:

For connections to the battery up to 5 meters : 2,5 mmq per 24V

4,0 mmq per 12V

For the connections to the battery up to 10 meters: 4,0 mmq per 24V

6,0 mmq per 12V

PROBLEM RESOLUTIONS

In the case of a system malfunction proceed as follows :

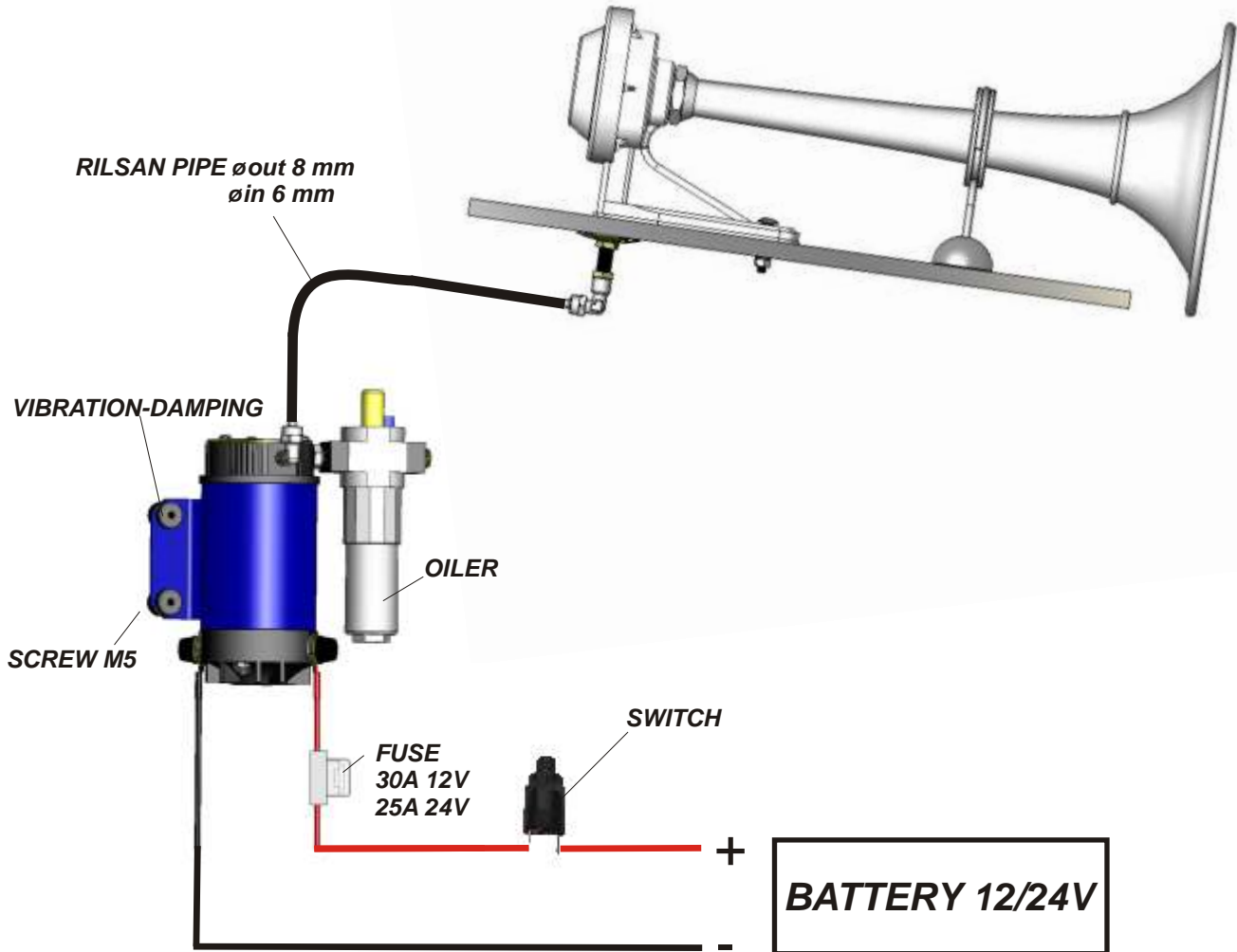
1. Check the continuity of the fuse and eventually change it.
2. Check that the oil container is set correctly. If there is an excessive amount of oil, its impurities can reach the membrane blocking the normal performance of the whistle. In this case dismantle the horn, clean the membranes and re-assemble.
3. Small solid bodies such as filings of metal can cause the same problem . In this case clean the membranes as said above.
4. Excessive lubrication causes a stoppage of the compressor and of the pipe which connects the compressor with the horn. In this case disconnect the pipe from the horn and run dry the Compressor to dispose of the excess lubrication.

WARNING

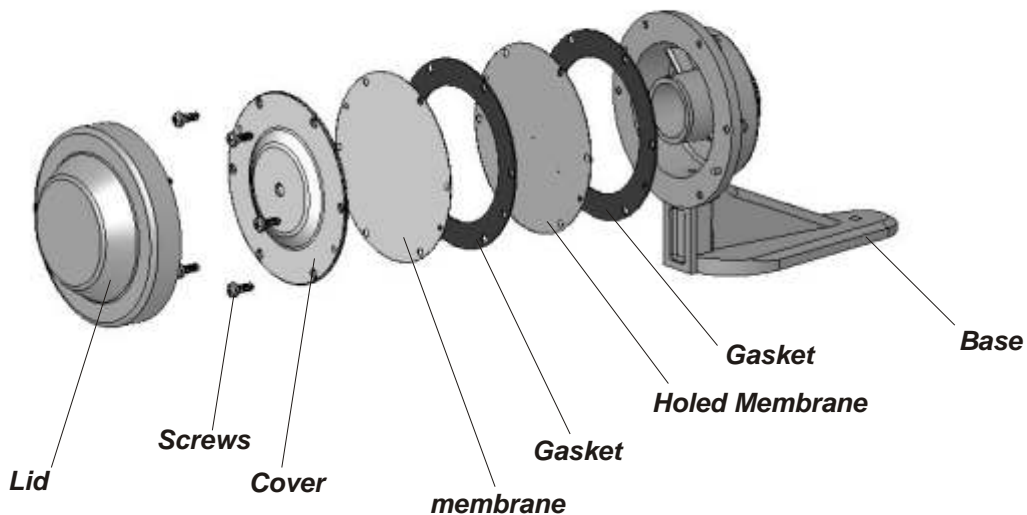
Within the horn, two membranes have been installed in sequence. Whenever the whistle has been opened to clean the membranes it has to be reassemble following the drawing quoted underneath. The lid, which closes the horn, is pressured.

To fix the horn two threaded pipes are supplied in two different measurements. Cut part of the pipe off if shorter piped is required. Make sure to clean the pipe properly afterwards in order to eliminate any metal remains. Thereafter tighten it to the base of the loudspeaker.

CONNECTION LAYOUT



MEMBRANE ASSEMBLING SEQUENCE



OILER ASSEMBLING SEQUENCE



OILER REGULATION



The lubrication is regulated by means of this small screw. Unscrewing the brass screw, using a screwdriver increases the oil flow and consequently the lubrication of the membranes. While screwing the brass screw, decreases the oil flow and therefore the lubrication of the membranes is reduced. For the first time filling use the oil supplied in the kit. For future refilling use lubricator specific oils or, alternately, ISO VS32 type oil or SAE 30 automotive oil.

WARRANTY

- 1) The Warranty period is 2 years from date of purchase on production of the appropriate sales invoice.
- 2) Should the original sales invoice not be available, then the 2 year warranty period will be valid from date of production.
- 3) The Warranty becomes null and void in the case of incorrect utilization or disregard of the instructions contained herein.
- 4) The Warranty only covers original production defects.
- 5) The Warranty does not cover any related installation costs involved.
- 6) Transport costs are refundable only in the case where warranty has been duly recognized and accepted by Marco Spa. These costs will be limited to the actual shipment costs between Marco Spa warehouse and the client's delivery Address.
- 7) No credit notes or replacement items will be issued prior to the receipt and

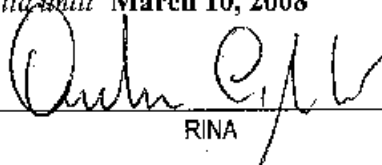
TYPE APPROVAL CERTIFICATE
No. ELE87903CS/2



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	SHIP'S WHISTLE
<i>Type</i>	5.412/S
<i>Applicant</i>	MARCO SPA VIA MAMELI 28 25014 CASTENEDOLO (BS) ITALIA
<i>Manufacturer</i>	MARCO SPA
<i>Place of manufacture</i>	VIA MAMELI 28 25014 CASTENEDOLO (BS) ITALIA
<i>Reference standards</i>	International Regulations for preventing collisions at sea, 1972 referred to Italian Law 27th December 1977 no. 1085.

Issued in **Genova** on **March 10, 2003**. *This Certificate is valid until* **March 10, 2008**



RINA

Andrea Cogliolo

This certificate consists of this page and 1 enclosure





TYPE APPROVAL CERTIFICATE

No. **ELE87903CS/2**

Enclosure - Page 1 of 1
5.412/S

Reference documents

Drawing no. 5.412/S stamped by RINA on 13 April 1988.

Field of application

Vessels L < 20 metres in length.

Feeder

Compressed air.

Air pressure supply : from 0,152 to 0,304 MPa.

Remarks

The present certificate annuls and supersedes the previous no. ELE/35398/2 dated 03 April 1998.

Genova March 10, 2003

CERTIFICATO DI OMOLOGAZIONE DI TIPO
N. ELE118208CS/002



Si **certifica** che il seguente prodotto soddisfa alle prescrizioni delle norme RINA per l'omologazione di tipo.

<i>Descrizione</i>	SEGNALE A FISCHIO
<i>Tipo</i>	PW2
<i>Richiedente</i>	MARCO SPA VIA MAMELI, 10 25014 CASTENEDOLO (BS) ITALIA
<i>Fabbricante</i>	MARCO SPA
<i>Luogo di produzione</i>	VIA MAMELI, 10 25014 CASTENEDOLO (BS) ITALIA
<i>Norme di riferimento</i>	Norme Internazionali per prevenire gli abbordi in mare del 1972; di cui alla Legge 27 Dicembre 1977 N° 1085.

Rilasciato a **Genova** il **5 Marzo 2008**. Questo Certificato è valido fino al **5 Marzo 2013**



RINA

Valerio Bonanni

Questo Certificato e' composto di 1 pagina e di 1 allegato





CERTIFICATO DI OMOLOGAZIONE DI TIPO

N. ELE118208CS/002

Allegato - Pagina 1/1

PW2

...Documenti di Riferimento

Disegno no. 5.412/S vistato dal RINA in data 03 Giugno 1988.

Campo di applicazione

Navi di lunghezza $L < 20$ metri.

Alimentazione

Aria compressa.

Pressione di funzionamento : da 0,152 a 0,304 MPa.

Osservazioni.

Il presente certificato annulla e sostituisce il precedente no. ELE87903CS/2 datato 10 marzo 2003.

Genova 5 Marzo 2008

TYPE APPROVAL CERTIFICATE
No. ELE118208CS7002



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	SHIP'S WHISTLE
<i>Type</i>	PW2
<i>Applicant</i>	MARCO SPA VIA MAMELI, 10 25014 CASTENEDOLO (BS) ITALY
<i>Manufacturer</i>	MARCO SPA
<i>Place of manufacture</i>	VIA MAMELI, 10 25014 CASTENEDOLO (BS) ITALY
<i>Reference standards</i>	International Regulations for preventing collisions at sea, 1972 referred to Italian Law 27th December 1977 no. 1085.

Issued in **Genoa** on **March 5, 2008**. *This Certificate is valid until* **March 5, 2013**

Valerio Bonanni

RINA

Valerio Bonanni

This certificate consists of this page and 1 enclosure





TYPE APPROVAL CERTIFICATE

No. **ELE118208CS7002**

Enclosure - Page 1 of 1

PW2

Reference documents

Drawing no. 5.412/S stamped by RINA on 13 April 1988.

Field of application

Vessels L < 20 metres in length.

Feeder

Compressed air.

Air pressure supply : from 0,152 to 0,304 MPa.

Remarks

The present certificate annuls and supersedes the previous no. ELE87903CS/2 dated 10 March 2003.

Genoa March 5, 2008

CERTIFICATE OF TYPE APPROVAL

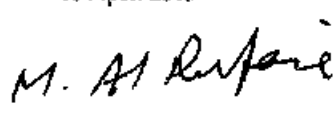
This is to certify that

LLOYD'S REGISTER, specified as a "person" under the terms of The Merchant Shipping (Delegation of Equipment Approval) Regulations 1996, did undertake the relevant type approval procedures of the equipment identified below which was found to be in compliance with the essential Life Saving Appliance requirements subject to any conditions in the Design Appraisal Document hereto.

Producer Address	Marco SpA Via Mameli 10 25014 Castenedolo Brescia Italy
Equipment Description	SHIPS SOUND SIGNAL (WHISTLE) AIR OPERATED
Type	PW2 in versions: PW2 12V supply PW2 24V supply
Specified Standard	International Regulations for Preventing Collisions at Sea 1972, Consolidated Edition 2002, Annex III, 1(a) to (d) inclusive.

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid up to the expiry dated unless cancelled or revoked, or until such date where it is superseded by the requirements of the Marine Equipment Directive whichever is the earlier, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

Date of issue	12 July 2008	Expiry date	10 April 2013
Certificate No.	MCA 0300010/M1	Signed	
Sheet No	1 of 2	Name	M.H.A. Ruffaie Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify the nominated body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.



Maritime and Coastguard Agency

An Executive Agency of the Department for Transport

This certificate is issued under the authority given in Merchant Shipping Notice No MSN 1735 (M+F) as amended to date.

DESIGN APPRAISAL DOCUMENT

Date 12 July 2008	Quote this reference on all future communications LDSS/PAS/TAE/W01644471/MHR/O-92578
----------------------	---

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. MCA 0300010/M1

The undernoted documents have been appraised for compliance with the relevant International Conventions and UK legislation for the Type Approval of Marine Equipment for use on Merchant Ships Registered in the United Kingdom.

This Design Appraisal Document forms part of the Certificate that is issued under the authority given in the MCA Merchant Shipping Notice No MSN 1735.

ADDITIONAL APPROVAL DOCUMENTATION

Request form	10.02.2008
J.R Brescia email	11.03.2008
Marco letter	10.03.2008

TEST REPORTS

TQNet Certificate No. CH-21294	07.02.2006
SQS Certificate No. 21294	07.02.2006

Also all the documentation listed on Design Appraisal Document associated with MCA Certificate No. 0300010



M.H.A. RUFALIE
Lead Specialist
Product Approval / London Design Support Services
Tel: +44 (0) 20 7423 1849 (Direct line)
Email: product-approval@lr.org
Web: www.lr.org

MARINE DIVISION
17 Bis Place des Reflets - La Défense 2
92400 Courbevoie - France
Tel. 33 1 42 91 53 48
Fax 33 1 42 91 28 94



Published on <http://www.veristar.com>

Certificate N°:

14450/A0 BV

The attached Schedule forms part of the certificate

File Number : NAV 39/1469/02

Product Code : 4005D

**BUREAU
VERITAS**

CERTIFICATE OF TYPE APPROVAL

This is to certify that the product identified below was found to be in compliance with the relevant hereunder stated Regulations & standards

SHIP'S SOUND SIGNALS (WHISTLES)

5412/S Whistle and 5413 Whistle

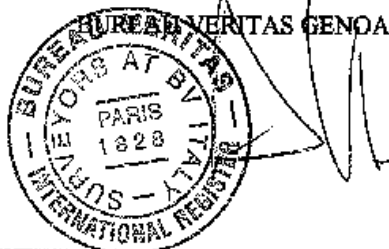
MANUFACTURED BY:

MARCO SpA
Brescia - ITALY

SPECIFIED REGULATIONS & STANDARDS :

COLREG 1972, as amended by IMO Resolution A.910(22), IMO Resolution A.694(17) - IEC 60945 (1996).

The Approval is valid until : 31/01/2010



At Paris la Défense, on : 31/01/2005

J. BENOFF
For the Secretary

This Certificate remains valid until the date stated on, hereunder, unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory into service.

This Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.

This Certificate is not valid without the stamp of the above mentioned BUREAU VERITAS Inspection Center.

The manufacturer should notify BUREAU VERITAS of any modification or changes to the equipment in order to obtain a valid Certificate.

The latest published Regulations or Standards referred to, above, and the Marine Division General Conditions are applicable.



**BUREAU
VERITAS**
MARINE DIVISION

File Number : NAV 39/1469/02

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

SHIP's Sound Signals (Whistles)

Specifications:

Types	Frequency	Sound pressure level (1 m)	Lenght of vessels
Air whistle type 5412/S	630 Hz	123dB	< 20 m
Air whistle type 5413	630 Hz	132dB	20 = < L < 75 mm

2. DESIGN DRAWINGS and/or SPECIFICATIONS

- According to Manufacturer's specifications filed in NAV 39/1469/02.

3. TYPE TEST REPORTS / LABORATORY RECOGNITION STATUS

Items 5412/S

- Department of Trade Marine Directorate Certificate of Inspection and Tests.
- EMIT Vibration test report RP 712 FIA 86.
- City University London report on measurement sound output.

Items 5413

- Department of Trade Marine Directorate Certificate of Inspection and Tests.
- City University London report on measurement sound output.

4. MATERIALS and/or COMPONENTS REQUIRED TO BE TYPE APPROVED

Nil.

5. OTHER MATERIALS and/or COMPONENTS

Nil.

6. APPLICATION / LIMITATION OF USE

Air whistle type 5412/S vessels < 20 m in lenght
Air whistle type 5412 vessels 20 = < L < 75 m in lenght

7. PRODUCTION SURVEY REQUIREMENTS

7.1 - Arrangements shall be made for a Society's Surveyor to carry out, on a periodic basis, visits of the Manufacturer's premises and product audits.

7.2 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

8. ON BOARD INSTALLATION & MAINTENANCE REQUIREMENTS

According to the specified regulations and standard stated on the front page of the certificate.



9. MARKING FOR IDENTIFICATION

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested.

10. OTHERS

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the Whistles at any time and that **MARCO SpA, 25014 Castenedolo (BS) - Italia**, will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

**** Last page (End of Document) ****

BUREAU VERITAS GENOVA



[Handwritten signature]