

PLT[®] LINE THROWER

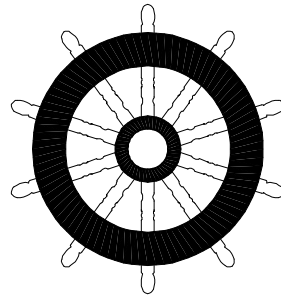


Pneumatic Line Throwers



USERS MANUAL RESCUE 230

COMPLIES WITH SOLAS 74/83



0575/05

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PLT[®] LINE THROWER

!! WARNINGS !!

THIS MANUAL SHOULD BE READ BEFORE OPERATING THE PLT[®] TO ENSURE CORRECT HANDLING AND OPERATION.

THE LICENSE HOLDER, PRODUCER AND SELLER CANNOT BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY THE PLT[®] IF NOT USED ACCORDING TO THIS MANUAL.

THE PLT[®] MUST ALWAYS BE TREATED AS A WEAPON AND MUST NOT BE POINTED AT PERSONS.

THE PLT[®] MUST NOT BE FIRED INDOORS. USE HEARING PROTECTIONS WHEN OPERATING THE PLT[®].

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT YOUR DEALER OR RESTECH NORWAY AS. Address on first page.

PLT[®] LINE THROWER

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CONTENTS OF EQUIPMENT

Art no 1005 Base Unit complete



Art no 2101 4 pcs Rescue Projectile



Art no 7004 Training Projectile



Art no 1303 Launching Tube for 2101



Art no 3303 Launching tube for 7004



Art no 6202 Linebox for training



Art no 2200 Loading device for line



Art no 1502/1503 Pivot support (optional, see page 20)

PLT[®] LINE THROWER

HOW TO USE THE RESCUE 230

1. Screw the launching tube on to the base unit (fig 1).
2. Turn the handle of the closing valve (fig 2). You will hear the air flow in to the accumulator. Shut the closing valve after 5 - 10 seconds or when you hear the airflow has stopped.
3. Pull out approx. 2 m (2 yd) of the safety line through the centre-hole of the end plug of the projectile (fig 3).
4. Insert the line in to the line track on the aluminium part of the Rescue projectile (fig 4).
5. Hold the linethrower angled between 30° to 45°. Insert the projectile in to the launching tube with the line track and line facing downwards. When inserting the projectile, the line will follow the line track all the way in (fig 5 - 6).
6. Fasten the end of the line to the linethrower or to a solid point at the launching site near the linethrower.
7. Aim over the target with an angle of approx 27°. Make sure that the PLT[®] is well supported with a Pivot Support (page 17-18) or by using the rear end of the PLT[®] as a hold (fig 7).
8. Push the safety knob (fig 7). Pull the trigger with a firm and rapid movement (fig 7). The projectile will now be launched.

Please also study the CD and users manual labelled on the PLT[®].

PLT[®] LINE THROWER



Fig 1



Fig 2



Fig 3



Fig 4



Fig 5



Fig 6

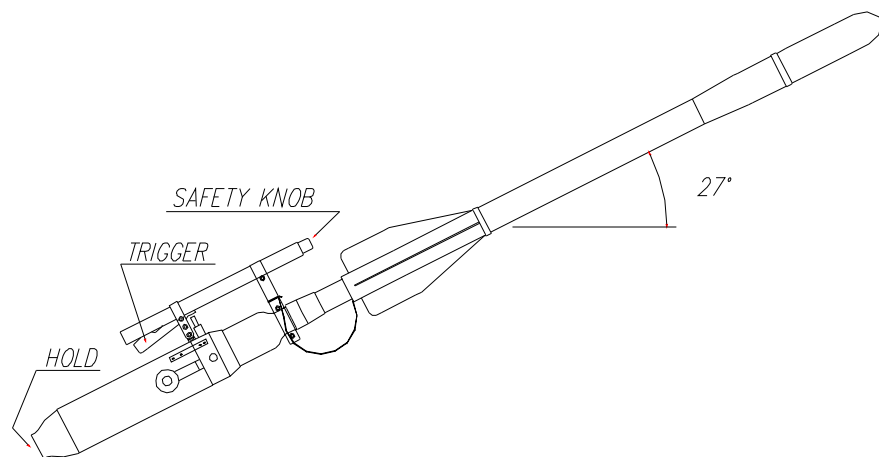


Fig 7

PLT[®] LINE THROWER

HOW TO RELOAD THE LINE IN TO THE RESCUE PROJECTILES

1. After using the projectile, untie the line from the projectile, remove the end plug from the line and coil it nicely up. Make sure to untie any knots that may have arisen.
2. Rinse the line in fresh water and allow it to dry. A wet or salty line will increase the weight of the reloaded projectile and decrease the shooting length.
3. After drying, arrange the line so it can run freely from the coil or from a bucket. Insert 50-60 cm of the line in to the injection hole located on top of the loading device. Connect the loading device to a hose supplying normal 6-10 bars (90 – 140 psi) of compressed working air (fig 8).
4. Press the handle of the loading device and the line will come out in the end of the center-hole in the end of the device (fig 9). Tie the end of the line to the projectile (fig 10).
5. Insert the loading device in to the projectile. Press the handle of the loading device. By moving the loading device up and down inside the projectile, the line will now nicely fill the projectile (fig 11).
6. When all the line is loaded, tread the end of the line through the center-hole of the endplug and put the endplug in place (fig 12). The projectile is ready for use (fig 13).

**NEVER FIRE THE PROJECTILE
WITHOUT THE ENDPLUG**

PLT[®] LINE THROWER

Fig 8

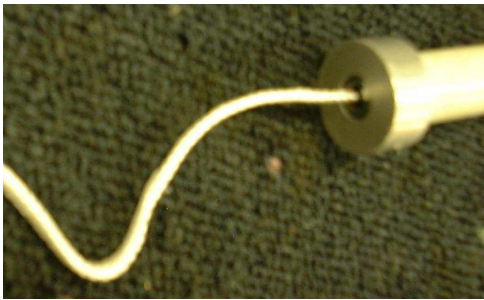
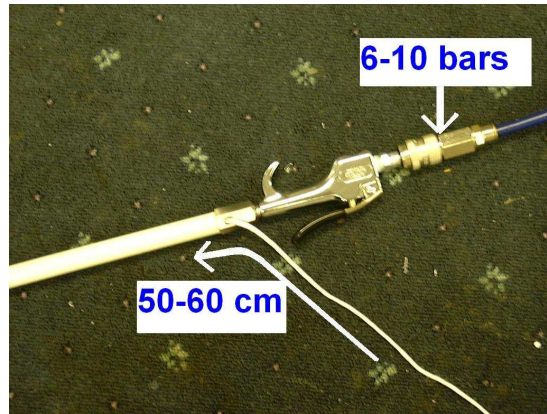


Fig 9



Fig 10



Fig 11



Fig 12



Fig 13

PLT[®] LINE THROWER

WHY TRAIN WITH THE PLT[®]?

AS FOR ALL SAFETY WORK, TRAINING CAN MEAN THE DIFFERENCE BETWEEN FAILURE AND SUCCESS.

Training the personnel in using the PLT[®] is easy and can be done without any other cost than refilling the air cylinder. The PLT[®] Rescue 230 comes with a separate training projectile, a linebox for training and a short launching tube.

HOW TO TRAIN WITH THE PLT[®]

1. Screw the short launching tube on to the base unit (see page 5, fig 1). Never use the long launching tube for firing the training projectile.
2. Turn the handle of the closing valve (page 5, fig 2). You will hear the air flow in to the accumulator. Shut the closing valve after 5 - 10 seconds.
3. Attach the line in the line box to the line loop of the training projectile.
4. Insert the projectile down in to the launching tube allowing the line to follow the line track along the projectile.
5. Hold the line box with the same hand used for pushing the safety knob.
6. Shooting procedure is the same as for the Rescue Projectiles. Please see page 4 - 5.
7. Shooting length with this projectile will vary depending on the line used but is typically 100 meters using the line box.

PLT[®] LINE THROWER



Pneumatic Line Throwers

USERS MANUAL BASE UNIT



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PLT[®] LINE THROWER

MAINTENANCE AND REFILLING OF THE AIR CYLINDER

MAINTENANCE

In general the air cylinder and closing valve are maintenance free. However if leakage is detected, please contact your dealer or RESTECH Norway A/S.

The air cylinder must periodically, depending on national rules, be inspected and tested. If national rules are not applicable, the air cylinder must be approved every 5 year by licensed authorities, or by RESTECH Norway A/S.

REFILLING THE AIR CYLINDER

Depending on national rules, the air cylinder can be filled with 200 bars (3000 psi) or 300 bars (4350 psi) compressed air. When filled to 200 bars (3000 psi), it contains sufficient amount of air for four good shots. If filled to 300 bars (4350 psi), number of good shots are six.

For filling to 300 bars (4350 psi), simply connect the bottle to a standard scuba diving (breathing air) compressor with standard 5/8" threads according to DIN 477.

For filling to 200 bars (3000 psi), normally a yoke coupling ANSI - CGAV1/1989 is used. A fitting for this standard are available from RESTECH Norway A/S as art no 1269.

Filling the air cylinder follows national rules and should be carried out by skilled personnel. After filling make sure that the closing valve is closed. Do not use force to close it that only ruins the valve seat.

**NEVER FILL OXYGEN ON THE AIR
CYLINDER CLEAN, DRY AIR ONLY**

**YOUR PLT[®] SHOULD HAVE FACTORY-
MAINTENANCE AFTER 8 YEARS OR 500 SHOTS
WHATEVER COMES FIRST.**

PLT[®] LINE THROWER

TECHNICAL SPECIFICATIONS BASE UNIT

WEIGHT / LENGTH, Base UNIT..... 7,5 Kg / 65 cm (16.5lb / 25.5 in)
COLOURRed and Blue
MATERIALSAnodised Aluminium and Stainless Steel
ACCUMULATOR PRESSURE75 bars (1088 psi)
AVERAGE MUZZLE VELOCITY.....60m/s (200 ft/s)
RECOIL, MAX5.300 N
AIR CYLINDER :PRESSURE200/300 bars (3000/4350 psi)
VOLUME1.500 cm³ (91 in³)
COUPLINGStandard BA-Coupling DIN 477

THE PLT[®] SYSTEM

The PLT[®] system is a line throwing system driven by compressed air. You may choose from several kinds of projectiles for different purposes. All models are based on the same base unit. The launching tubes are interchangeable.

SAFETY

- Air driven -no explosives. Can be fired from and into inflammable areas.
- Safety knob, which prevents accidental firing.

PERFORMANCE

- Depending on the projectile used – up to 230 m (755 ft) throwing distance.
- All projectiles are propelled to maximum speed before leaving the launching tube. This ensure high precision and it is only slightly effected by cross-wind.

ECONOMY

- Low cost use. Refilling of compressed air after 4/6 shots are only costs.
- All projectiles and lines are re-useable.

Unlimited shelf life. With regular maintenance, the PLT[®] will work in the same way, year after year.

PLT[®] LINE THROWER



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MAINTENANCE PROCEDURE BASE UNIT

AFTER USE:

- To prevent oxidation and salt layers, clean the PLT[®] with fresh water and dry it with a piece of clothing.
- Lubricate the air inlet on the regulator with 2-3 drops of oil. (see figs on page 12)
- Refill the air cylinder with **clean dry air** 200/300 bars (3000/4350 psi).

GENERAL MAINTENANCE:

Monthly check:

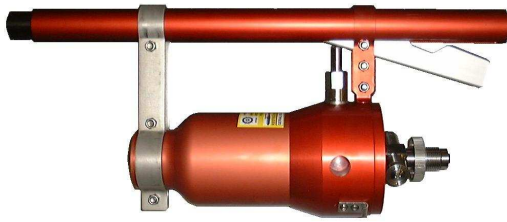
- Ensure that the pressure of the air cylinder are minimum 200 bars (3000 psi), maximum 300 bars (4350 psi).
- Push the safety knob and pull the trigger to ensure that it moves smoothly. This test should be carried out outdoors in case there is left-over air in the accumulator of the base unit.

Other:

- If the safety valve has blown, air leakage has emerged or other abnormal conditions are detected, please contact your dealer or RESTECH NORWAY AS.
- The air cylinder should be undamaged and controlled within the period of validity according to national rules. If the bottle needs to be re-stamped, tested or shows signs of damage, please contact your dealer or RESTECH NORWAY AS.

The PLT[®] line thrower must be stored in a dry and safe place.

PLT[®] LINE THROWER



Art no 1000



Art no 1017



Art no 1013



Art no 1306



Art no 1021



Art no 1307



Art no 1031



Art no 9002



Art no 1050



Art no 1054

PLT[®] LINE THROWER

SPARE PARTS BASE UNIT

<i>Art no</i>	<i>Description</i>
1000	Base complete without air cylinder
1013	Firing valve complete
1021	Reducing valve complete
1031	Safety valve complete
1050	Packing and O-rings complete
1017	Cover complete
1306	Air cylinder w/ closing valve
1307	Closing valve w/ manometer
9002	Manometer w/ packing
1054	Hatch lock complete

When ordering parts, please use part number and description. Complete parts are not split for sale due to safety reasons.

Parts are available from your dealer or directly from Restech Norway A/S. Address on the front page.

PLEASE NOTE THAT SERVICE ON THE PLT[®] MUST ONLY BE CARRIED OUT BY SKILLED PERSONNEL AND THAT NO ADJUSTMENT MUST BE MADE ON EITHER PART.

BY SKILLED PERSONNEL MEANS PEOPLE THAT HAS UNDERGONE TRAINING SUPERVISED BY RESTECH NORWAY AS.

PLT[®] LINE THROWER

DESCRIPTION OF THE PLT[®]

By opening the closing valve, air flows from the air cylinder through the reducing valve and into the accumulator of the base unit. The pressure in this chamber is 75 bars (1088 psi).

When the trigger is pulled, a small amount of air is evacuated to activate the shutter mechanism that allows the 75 bars (1088 psi) of compressed air to flow in to the launching tube. The shooting force brought to the rear end of the projectile is 7630 N.

Due to the heavy recoil of 5300N it is essential that the PLT[®] is well supported. The rear end of the PLT[®] can be held against a solid point that withstands this force during operation. However we recommend the use of Pivot Support (page 17 - 18). This give flexibility and safety to all operations.

If the bottle is filled to 200 bars (3000 psi), it will supply the base unit with enough air for four maximum range shots. If the bottle is filled up to 300 bars (4350 psi), it will have sufficient amount of air for six maximum range shots before refilling is necessary.

The bottle can be refilled from a standard high-pressure compressor for breathing air. In some countries an additional yoke coupling for refilling the air cylinders is needed. This is available under article no 2920.

PLT[®] LINE THROWER

PIVOT SUPPORT



Fig 1

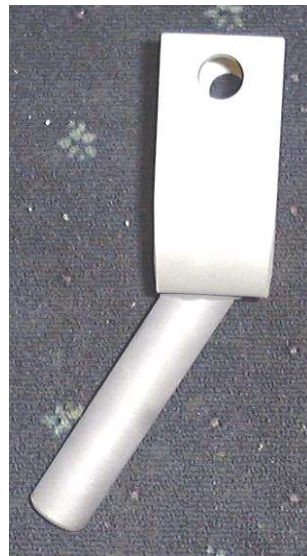


Fig 2

Due to the heavy recoil it is necessary to have a good support for the PLT[®]. The back of the PLT[®] can be used as support.

But we will recommend use of the Pivot Support (fig 1). With the Pivot Support come pivot pins, nylon washers and screws for fastening it to the PLT[®] according to fig.3 on next page.

A steel tube shown on fig 2 shall be welded or clamped at the launching area (rail, i.e.), to a secure point that withstands recoil up to 5300 N. Tubes can be installed at different places on board.

Art no 1502 Pivot Support incl. pivot pins, nylon washers and screws.

Art no 1503 Tube for Pivot Support.

PLT[®] LINE THROWER

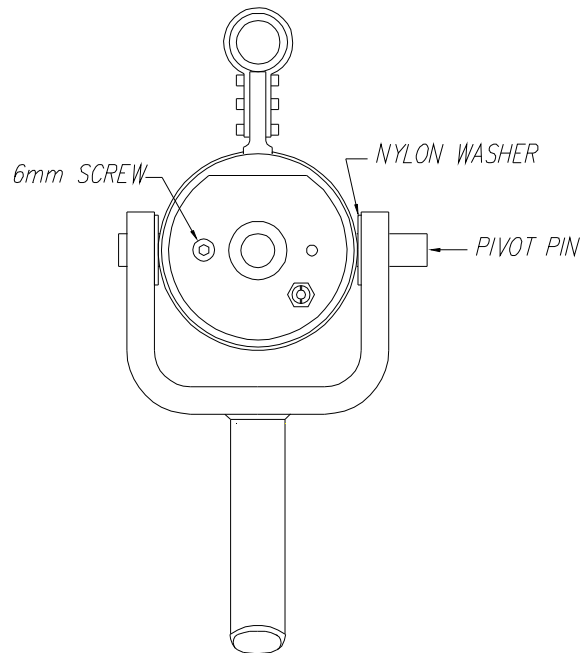
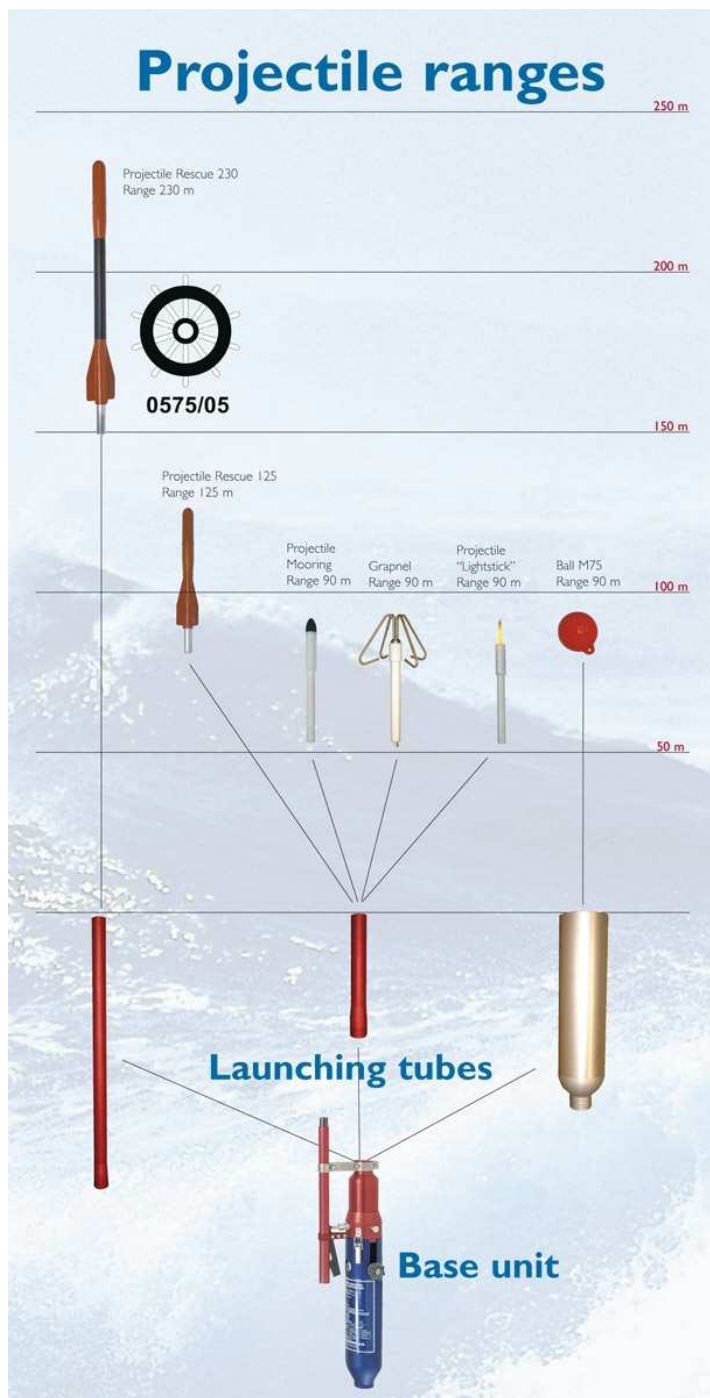


Figure 3 showing how the Pivot Support is mounted. The cover and air cylinder is removed. Pivot pins, Nylon Washers and 6mm Screws are included in the Pivot Support, art no.1502. The screws must be fastened by using thread glue as Loctite-270, or similar.



PLT[®] LINE THROWER



Picture showing present standard projectiles that can be used with the PLT[®] linethrower.

We also deliver special projectiles for special needs.

For more information, please contact your dealer or RESTECH NORWAY AS.

PLT[®] LINE THROWER



DET NORSKE VERITAS

EC TYPE-EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2002/75/EC, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. MED-B-2416

This Certificate consists of 2 pages

This is to certify that the product

Line-throwing appliances (pyrotechnics)

with the type designation(s)

Pneumatic Line Thrower Rescue 230

Manufactured by

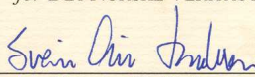
Restech Norway AS

BODØ, Norway

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/1.11 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation III/4, III/18, III/34 & X/3, LSA Code, 2000 HSC Code, 8.1, 8.8.

Further details of the product and conditions for certification are given overleaf.

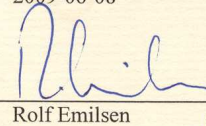
Place and date
Høvik, 2004-06-08
for DET NORSKE VERITAS AS


f/ Henning B. Karlsen
Manager, MTPNO370
Department Systems & Components



Notified Body No. 0575

This Certificate is valid until
2009-06-08


Rolf Emilsen
Surveyor



DNV local office:
DNV Harstad

Notice: The certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.

The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS AS

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PLT[®] LINE THROWER

REGISTER YOUR PRODUCT

As part of our efforts, and as part of our Quality Assurance System, we have developed a questionnaire so that we will be able to develop in to a better company for you and for us. We hope that you will find the time to answer these few questions which is found on our web site under product registration. Address of the web site is www.restech.no

On the web site you will also find latest news, user manuals, user videos and other useful stuff. By registering your mail address you will receive newsletter.

All those answering the questions on our web site will receive a small personal gift as thank for helping us.

For easy registering, the information you need is the serial number for your PLT Linethrower.

The Serial number is: RN _____

THANK YOU!