

USER AND MAINTENANCE MANUAL FOR THE PLT®

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



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

The Serial number is: RN _____

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WARNING

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 SUPPLIER OR RESTECH NORWAY AS.

Description of the PLT®

By opening the closing valve, air flows from the air cylinder through the reducing valve and into the chamber 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 into 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 26). It will provide flexibility and safety to all operations.

If the air cylinder is filled to 200 bars (3000 psi), it will supply the base unit with enough air for 4 maximum range shots. If the air cylinder is filled up to 300 bars (4350 psi), it will have sufficient amount of air for 6 maximum range shots before refilling is necessary.

The air cylinder 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 1308.



PLT® R 230 Content



0575/10

USCG approval number : 160.040/EC0575/6519

1 PLT Launching Unit	Art no 1005
4 Projectile Rescue PLT 230	Art no 2101
1 Launching Tube for 2101	Art no 1303
1 Training Projectile	Art no 7004
1 Launching Tube for 7004	Art no 3303
1 Linebox 5mm floating line	Art no 6201
1 Loading Device for 2101	Art no 2200
1 CD/User Manual	
Optional	
Pivot Support	Art no 1502/1503
Storage Container	Art no 9400 or 9500

Same content for US Version

PLT® 125 content



1 PLT Launching Unit	Art no 1005
2 Projectile PLT 125	Art no 3101
1 Launching Tube for 3101 and 7004	Art no 3303
1 Projectile PLT 150	Art no 7004
1 Linebox 5mm floating line	Art no 6201
1 Loading Device for 3101	Art no 3200
1 CD/User Manual	
Optional	
Pivot Support	Art no 1502/1503
Storage Container	Art no 9300

How To Use The PLT[®] R 230 and 125

1. Screw the launching tube onto the base unit (fig 1).
2. Turn the handle of the closing valve (fig 2). You will hear the air flow into the chamber. Shut the closing valve after 5 - 10 seconds or when you hear the airflow has stopped.
3. Pull out the safety line through the centre-hole of the end plug of the projectile (fig 3). approx. 2 m (2 yd) on the 230 projectile and 1 m (1yd) of the 125 projectile.
4. Insert the line into the line track on the aluminium part of the projectile (fig 4).
5. Hold the line thrower 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 line thrower or to a solid point at the launching site near the line thrower.
7. Aim over the target with an angle between 25-35°. Make sure that the PLT[®] is well supported with a Pivot Support (page 26) or by using the cushion 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 user manual labelled on the PLT[®].

NEVER FIRE THE PROJECTILE WITHOUT THE END PLUG

How To Use The PLT[®] R 230 and 125

FIG 1



FIG 2



FIG 3



FIG 4



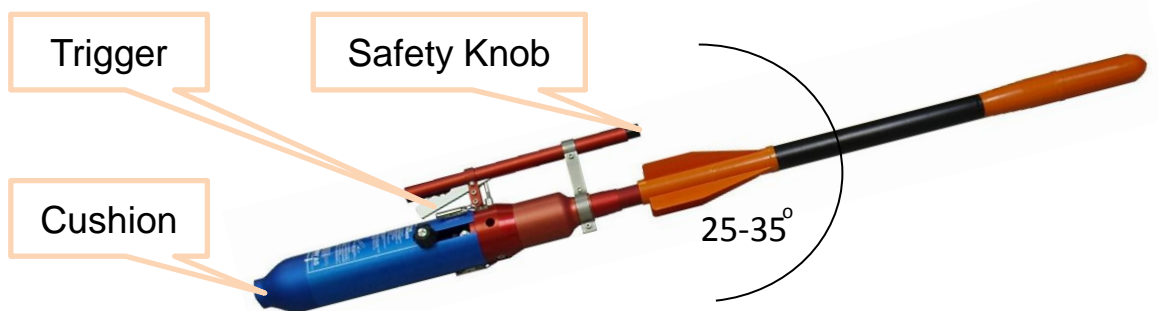
FIG 5



FIG 6



FIG 7



Reloading The Projectile PLT® R 230 and 125

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.
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 50-60cm (19-24inch) of the line into the injection hole located on top of the loading device (fig 8). Connect the loading device to a hose supplying normal 6-10 bars (90 – 140 psi) of compressed working air.
4. Press the handle of the loading device and the line will come out in the end of the centre 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). The line should be compressed into the projectile.
6. When all the line is loaded, tread the end of the line through the centre hole of the end plug and put the end plug in place (fig 12). The projectile is ready for use (fig 13).

NEVER FIRE THE PROJECTILE WITHOUT THE END PLUG

Reloading The Projectile PLT[®] R 230 and 125

Fig 8

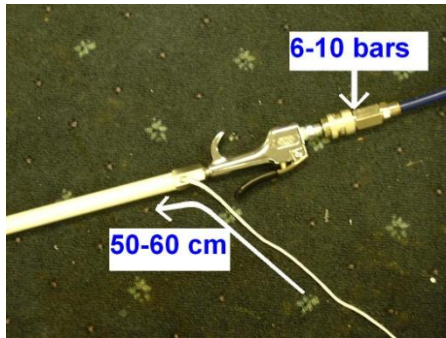


Fig 9

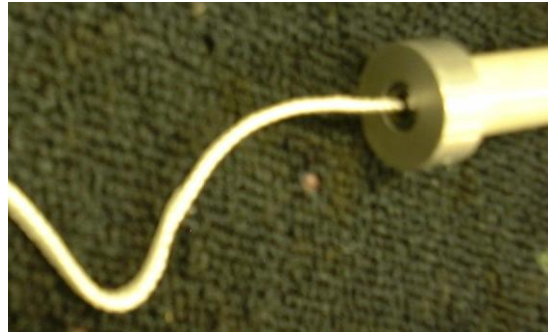


Fig 10



Fig 11



Fig 12



Fig 13



NEVER FIRE THE PROJECTILE WITHOUT THE END PLUG

Training With The PLT® R 230 And 125

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® R 230 and 125 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 8, fig 1). Never use the long launching tube for firing the training projectile.
2. Turn the handle of the closing valve (page 8, fig 2). You will hear the air flow in to the chamber. Shut the closing valve after 5 - 10 seconds.
3. Attach the line in the Linebox to the line loop of the training projectile.
4. Insert the projectile down into the launching tube allowing the line to follow the line track along the projectile.
5. Hold the Linebox with the same hand used for pushing the safety knob.
6. Shooting procedure is the same as for all PLT Projectiles.
7. Shooting length with this projectile will vary depending on the line used but is typically up to 100 meters using the Linebox.

PLT® 150 Content



1 PLT® Launching Unit

Art no 1005

2 Projectile PLT 150

Art no 7004

1 Launching Tube PLT 150

Art no 3303

1 Linebox 3,2mm Nylon

Art no 5202

1 CD/User Manual

Optional

Pivot Support

Art no 1502/1503

Storage Container

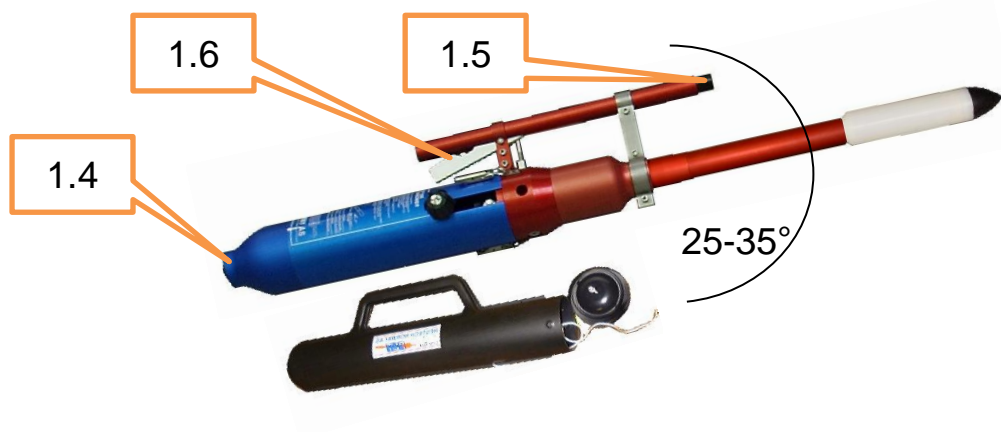
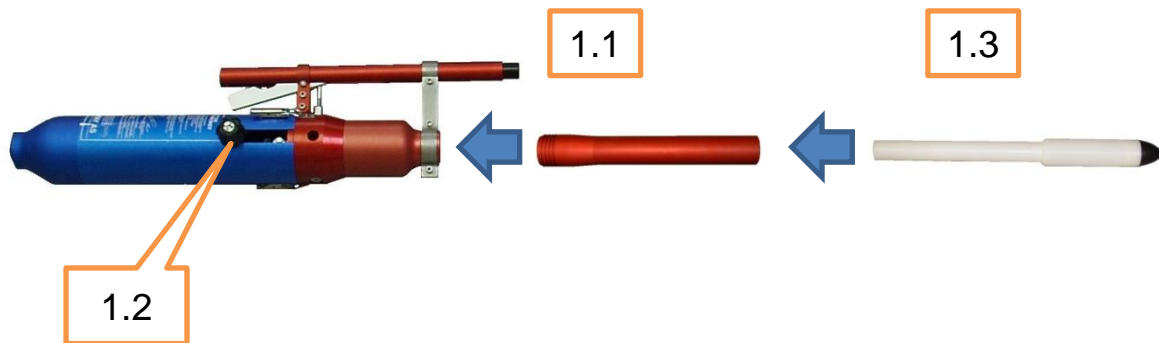
Art no 9200

How To Use The PLT[®] 150

1. Screw the launching tube onto the base unit (fig 1,1).
2. Make sure that the line is well fastened to the loop on the projectile.
3. Turn the handle of the closing valve (fig 1.2). You will hear the air flow in to the chamber. Shut the closing valve after 5 - 10 seconds.
4. Insert the line into the line track along the projectile. Insert the projectile all the way down into the launching tube (fig 1.3).
5. Attach the line in the Linebox to the line loop of the training projectile. Hold the Linebox with the same hand used for pulling the safety knob.
6. Aim over the target with an angle of approx. 25-35°. Make sure that the PLT[®] is well supported with a Pivot Support or by using cushion of the PLT[®] as a hold (fig 1.4).
7. Push the safety knob (fig 1.5). Pull the trigger with a firm and rapid movement (fig 1.6). The projectile will now be launched.

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

How To Use The PLT[®] 150



PLT® 75 Content



1 PLT® Launching Unit

Art no 1005

2 Projectile Ball

Art no 6101

1 Launching Tube PLT 75

Art no 6303

1 Linebox 5mm floating line

Art no 6201

1 CD/User Manual

Optional

Pivot Support

Art no 1502/1503

Storage Container

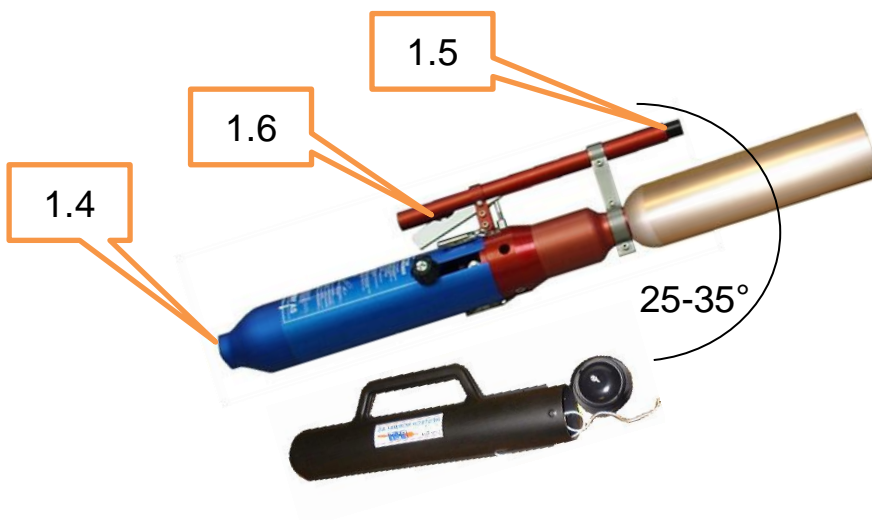
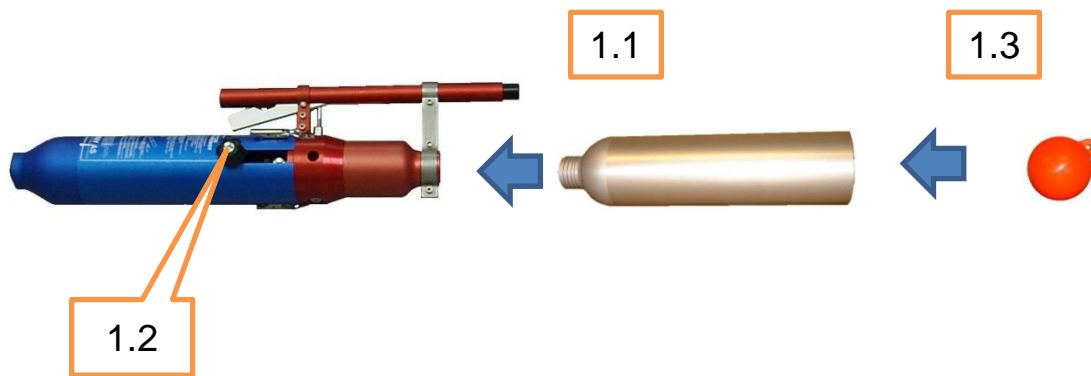
Art no 9200

How To Use The PLT[®] 75

1. Screw the launching tube on to the base unit (fig 1,1).
2. Make sure that the line is well fastened to the eye on the ball projectile.
3. Turn the handle of the closing valve (fig 1.2). You will hear the air flow in to the chamber. Shut the closing valve after 5 - 10 seconds.
4. Insert the ball projectile all the way down in to the launching tube (fig 1,3)
6. Aim over the target with an angle of approx 25-35°. Make sure that the PLT[®] is well supported with a Pivot Support or by using the cushion of the PLT[®] as a hold (fig 1.4).
7. Push the safety knob (fig 1.5). Pull the trigger with a firm and rapid movement (fig 1.6). The projectile will now be launched.

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

How To Use The PLT[®] 75



How To Reload The Line Into The Linebox

After using the line, a few steps will ensure optimal function for next use.

1. Rinse the line in fresh water and allow it to dry. A wet or salty line will affect the shooting length.
2. After drying, arrange the line so it can run freely from the coil or from a bucket.
3. Tie the end of the line to the loop inside the Linebox.
4. Put the line manually and randomly in to the Linebox. Frequently giving it a push downwards or knocking the Linebox to the floor so that the line is well packed and that all the line fit into the Linebox.
5. When all the line is loaded, tie on the ball, put the lid on and it is ready for use.

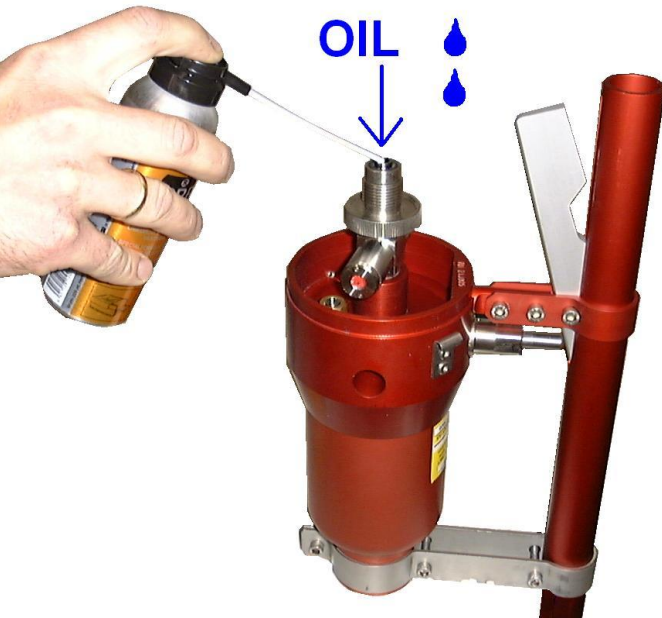
Keeping the line in a linebox ensures that the line runs out without knots or entanglement. It is also easy stored.

Optionally you can use loading device 3200 for 3,2mm or 6200 for 5mm.

NEVER FIRE THE PROJECTILE WITHOUT THE LINE



Maintenance Procedure PLT[®] Launching 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 picture

Refill the air cylinder with **clean dry air** 200/300 bars (3000/4350 psi).

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 chamber of the base unit.

Other:

If the safety valve has blown, air leakage has emerged or other abnormal conditions are detected, please contact the nearest service station or Restech Norway A/S.

YOUR PLT[®] SHOULD HAVE FACTORY-MAINTENANCE AFTER 5 YEARS

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

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 4 good shots. If filled to 300 bars (4350 psi), number of good shots are 6.

For filling to 300 bars (4350 psi), simply connect the air cylinder 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 1308.

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 excessive force to close, that can damage the valve seat.

**NEVER FILL OXYGEN ON THE AIR CYLINDER.
CLEAN AND DRY AIR ONLY**

Maintenance Procedure PLT® Air Cylinder



In general the air cylinder and closing valve are maintenance free. However if leakage is detected, please contact the nearest service station 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 certified every 5 year by licensed authorities, the nearest service station or Restech Norway A/S.

If the air cylinder needs to be certified, tested or shows signs of damage, please contact the nearest service station or Restech Norway A/S

Technical Specifications PLT[®] Launching Unit

LAUNCHING UNIT:

Weight/Length	7,5 Kg / 65 cm (16.5lb / 25.5 in)
Colour	Red and Blue
Materials	Anodised Aluminium, Stainless Steel
Chamber Pressure	75 bars (1088 psi)
Average Nozzle Velocity	60m/s (200 ft/s)
Maximum Recoil	5.300 N

AIR CYLINDER :

Pressure	200/300 bars (3000/4350 psi)
Volume	1.500 cm ³ (91 in ³)
Coupling	Standard BA-Coupling DIN 477



Technical Specifications PLT® Launching Unit

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 uses the same launching unit. The launching tubes are interchangeable.

SAFETY

- No explosives, but air driven. Can be fired from and into flammable areas.
- Several installed safety features prevents accidental firing.

PERFORMANCE

- Depending on the projectile up to 230 m (755 ft) 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 reusable.
- Unlimited shelf life. With regular maintenance the PLT® will work perfectly, year after year.

Spare Parts PLT® Launching Unit



Art no 1000



Art no 1017



Art no 1013



Art no 1306/300
or 1307/200



Art no 1021



Art no 1309



Art no 1031



Art no 9002



Art no 1050



Art no 1054

When ordering parts, please use article number.

Spare Parts Launching Unit

<i>Art no</i>	<i>Description</i>
1000	PLT Launching Unit without air cylinder and cover
1013	Firing valve
1021	Reducing valve complete
1031	Safety valve
1050	Complete set of Packing and O-rings
1017	Cover for air cylinder
1306	Air cylinder complete
1307	Air cylinder complete US complete
1309	Closing valve w/ manometer
9002	Manometer w/ packing
1054	Hatch lock w. loop 2 pcs

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

Spare parts are available from your supplier or directly from Restech Norway A/S.

PLEASE NOTE THAT SERVICE ON THE PLT® MUST ONLY BE CARRIED OUT BY PERSONNEL CERTIFIED BY RESTECH NORWAY AND THAT NO ADJUSTMENT MUST BE MADE ON EITHER PART.

Pivot Support for the PLT®

Due to the heavy recoil it is necessary to have a good support for the PLT®. The back cushion of the PLT® can be placed against a solid point as support.

We recommend however using the Pivot Support (fig 1). A steel tube shown on fig 2 shall be welded at the launching area (rail, i.e.). Tubes can be installed at different places on board.



Fig 1

Art no 1502
Art no 1503



Fig 2

Pivot Support.
Tube for Pivot Support.



In rough seas the Pivot will help personnel to keep balance and focus on aiming.

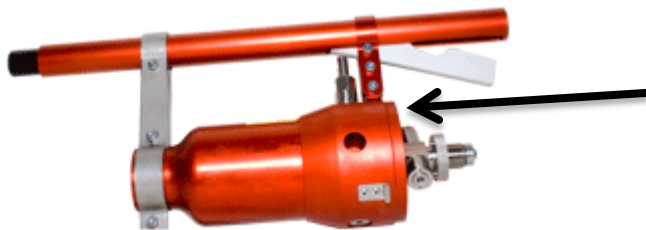
Register Your PLT®

As part of our efforts, and as part of our Quality Assurance System, we have developed a questionnaire in order to improve our service and products.

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 material.



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

The Serial number is: RN _____

Projectiles for the PLT®

Launching Tubes



R-230 Launching distance up to 230-250 meters with internal line, art no 2101



PLT 125 Launching distance up to 150-160 meters, art no 3101



PLT 150 launching distance up to 140-150 meters, art no 7004



PLT Line Pick-up Launching distance up to 90 meters, art no 7002



PLT Life Buoy Launching distance up to 90 meters, art no 4105



PLT 75 Launching distance up to 80-90 meters, art no 6101

Projectiles for the PLT® Mini



PLT Mini 100, 95 m.
Art no 4101



PLT Mini rubber, 80 m.
Art no 4102



PLT Mini Rubber tip,
'95 m.
Art no 4106



PLT Mini Line Pick-up
Grapple, 70 m
Art no 4114



PLT Mini-sharp grapple,
70 m.
Art no 4103



PLT Entry Grapple,
50 m.
Art no 4115



PLT Mini-Rescue Buoy,
80 m. Art no 4105



PLT Mini Launching Unit
The PLT Mini can be used either
with CO2 cartridges
(art no 4006) or by compressed
air.

Certificates For The PLT®



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 2009/26/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-6519**

This is to certify that the
Line-throwing appliances (pyrotechnics)


with type designation(s)
Pneumatic Line Thrower Rescue 230

Manufacturer
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 and 2000 HSC Code 8

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

Høvik, 2010-10-21
for Det Norske Veritas AS


Eivind Mykland
Head of Department



Notified Body No.: **0575**

DNV local office:
Bodø

This Certificate is valid until
2014-06-09


Øyvind Hoff
Surveyor



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.

DET NORSKE VERITAS AS, Veritasveien 1, NO-1322 Høvik, Norway, Tel.: +47 67 57 99 00, Fax: +47 67 57 99 11, Org.No. NO 945 748 931 MVA www.dnv.com
Form No.: MED.Ba Issue: April 2010 Page 1 of 2



Pneumatic Line Throwers

RESTECH NORWAY AS

Certificates For The PLT®




Certificate No.: MED-D-1184
 Item No.: A.1/1.11
 Job Id.: 344.1-001913-4

APPENDIX, REV. NO. 1

QS - Certificate of Assessment – EC, Certificate no. MED-D-1184

Type designation	EC Type-Examination Certificate No.	Expiry date	QS Assess. Report dated	USCG approval number
Pneumatic Line Thrower Rescue 230	MED-B-6519	2014-06-09	2009-06-09	160.040/EC0575/6519

The manufacturer complies with the Council Directive 96/98/EC on Marine Equipment and is allowed to affix the Mark of Conformity followed by the DNV identification number 0575 and the two last digits of the number of the year in which the product is produced.

Example:  0575/10

The manufacturer shall issue a Declaration of Conformity for each product with reference to the EC Type-Examination Certificate and this QS – Certificate of Assessment – EC.

USCG Approval

Based on the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of certificates of conformity for marine equipment" signed 17 October 2005, the manufacturer is allowed to affix the U.S. Coast Guard approval number mentioned in the table above (when applicable).

Place and date: **Høvik**, 2010-10-21

for **DET NORSKE VERITAS AS**



Øyvind Hoff

Surveyor

Name in block letters:
 ØYVIND HOFF



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