

RESTECH NORWAY

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.

ALWAYS INSPECT THE LAUNCHING UNIT, ROPE AND PROJECTILE BEFORE AND AFTER USE. ALWAYS USE THE LINE RECOMMENDED BY RESTECH NORWAY REPRESENTATIVES.

MAKE SURE THAT THE AREA YOU ARE LAUNCHING TO, IS CLEARED AND SAFE.

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



Article 1005	PLT® Launching Unit	1
	1 Air Cylinder, 300bars/4350psi or 200bars/2900psi 1 Launching Unit 1 Cover for air cylinder	
Article 1303	Launching Tube Rescue 230	1
Article 2101	Projectile Rescue 230	4
	Typical shooting range with a dry and clean line of 3,2mm (Art No 2103): 230m. Breaking strength: 2000N	
Article 2200	Loading Device	1
Article 3303	Launching Tube 125/150	1
Article 7004	Projectile PLT® 150	1
Article 6201	Linebox 5mm floating line	1
	Linebox containing line art no 6109, polypropylene (120m). Breaking strength 440kg. Floats and has a very bright yellow color.	
	User Manual and USB stick included	

PLT® R 230 Basic Content



Article 1005	PLT® Launching Unit	1
1 Air Cylinder, 300bars/4350psi or 200bars/2900psi 1 Launching Unit 1 Cover for air cylinder		
Article 1303	Launching Tube Rescue 230	1
Article 2101	Projectile Rescue 230	4
Typical shooting range with a dry and clean line of 3,2mm (Art No 2103): 230m. Breaking strength: 2000N		
Article 2200	Loading Device	1
User Manual and USB stick included		

PLT[®] R 150 Content



Article 1005 PLT[®] Launching Unit	1
1 Air Cylinder, 300bars/4350psi or 200bars/2900psi	
1 Launching Unit	
1 Cover for air cylinder	
Article 3101 Projectile PLT[®] R 150	2
Article 3303 Launching Tube 150	1
Article 7004 Projectile PLT[®] 150	1
Typical shooting range with a dry and clean line with 3,2mm(Art No 2103): 140m	
Article 6201 Linebox 5mm Floating Line	1
Line box containing line art no 6109, polypropylene (120m). Breaking strength 440kg. Floats and has a very bright yellow color.	
Article 3200 Loading Device for Projectile PLT[®] R 150	1
Other options of line on request	
User Manual and USB Stick included	

How to Use the PLT[®] R 230, Basic and R 150

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 (1 yd) of the 150 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 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 included USB stick and user manual labelled on the PLT[®].

NEVER FIRE THE PROJECTILE WITHOUT THE END PLUG

How to Use the PLT[®] R 230, Basic and R 150

FIG 1



FIG 2



FIG 3



FIG 4



FIG 5



FIG 6

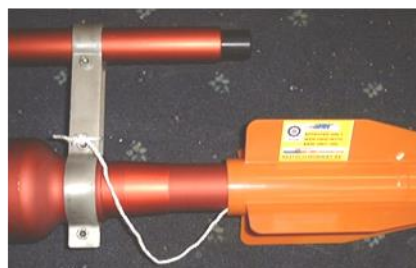
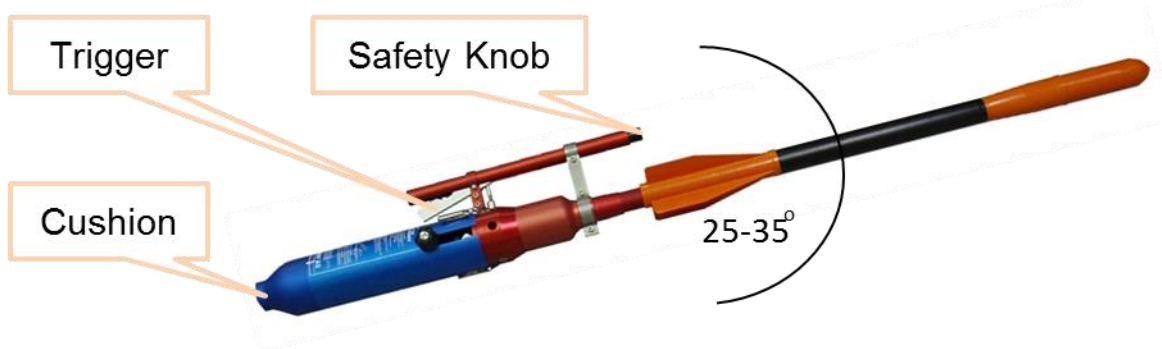


FIG 7



Reloading the PLT[®] R 230 & R 150 Projectile

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 PLT[®] R 230 and R 150 Projectile

Fig 8

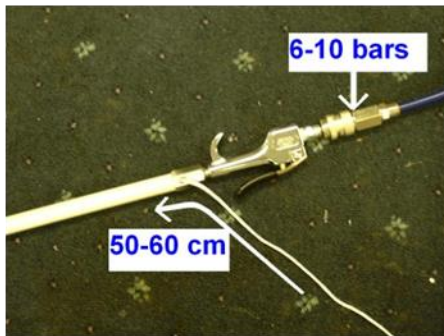


Fig 9

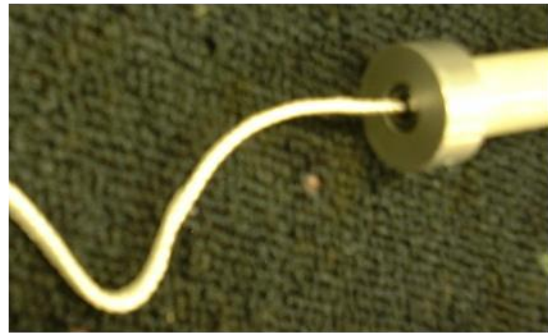


Fig 10



Fig 11



Fig 12



Fig 13



NEVER FIRE THE PROJECTILE WITHOUT THE END PLUG

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 R 150 comes with a separate training projectile, a line box 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 airflow in to the chamber. 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 into 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 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 line box.

PLT[®] 150 Content



Article 1005	PLT[®] Launching Unit	1
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1 Air Cylinder, 300bars/4350psi or 200bars/2900psi
1 Launching Unit
1 Cover for air cylinder

Article 3303	Launching Tube 150	1
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Article 7004	Projectile PLT[®] 150	2
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Typical shooting range with a dry and clean line with
3,2mm(Art No 2103): 140m

Article 5202	Linebox 3,2mm nylon	1
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Linebox containing 150m (164 yd) of 3,2mm (0.13 in)
(Art No 2103) of line. Used for maximum range for
projectile Art no 7004. Breaking strength : 200kg

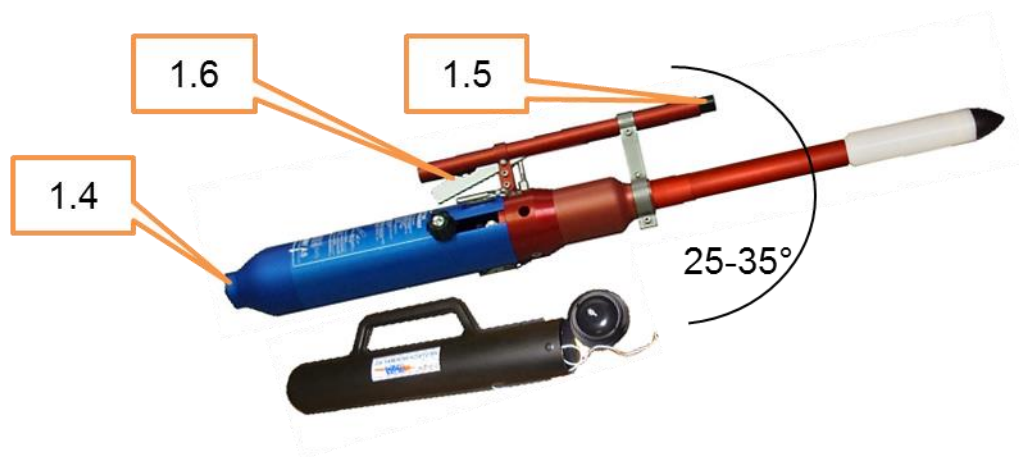
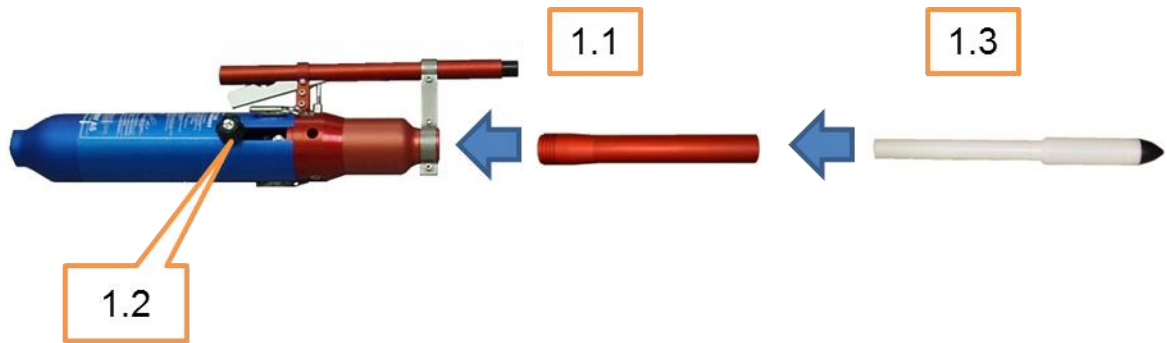
Other options of line on request
User Manual and USB Stick included

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 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 USB and user manual labelled on the PLT[®]

How to Use the PLT[®] 150



PLT[®] 75 Content



Article 1005	PLT [®] Launching Unit	1
	1 Air Cylinder, 300bars/4350psi or 200bars/2900psi	
	1 Launching Unit	
	1 Cover for air cylinder	
Article 6303	Launching Tube PLT [®] 75	1
Article 6101	Projectile Ball	2
	Typical shooting range with a dry and clean line with 5mm (art no. 6109): 90m	
Article 6201	Line box 5mm floating line	1
	Line box containing line art no 6109, polypropylene (120m). Breaking strength 440kg. Floats and has a very bright yellow color.	
	Other options of line on request	
	User Manual and USB stick included	

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)
5. Aim 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).
6. 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.

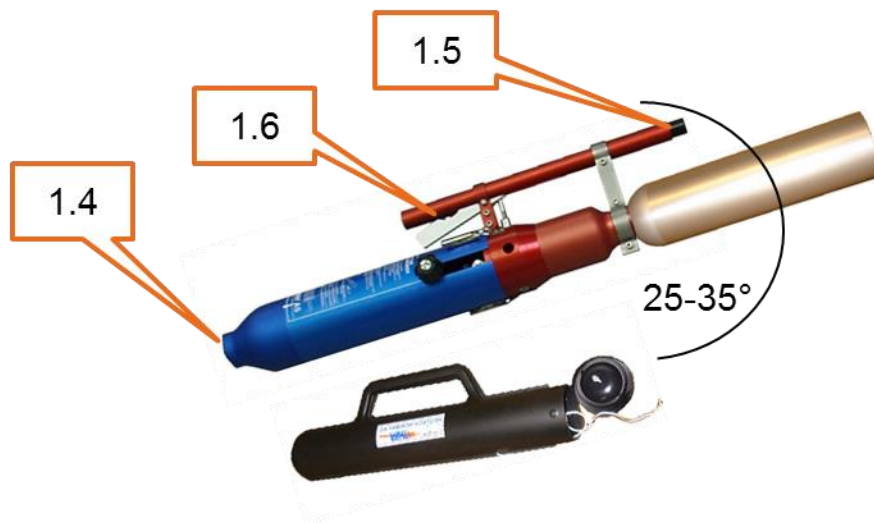
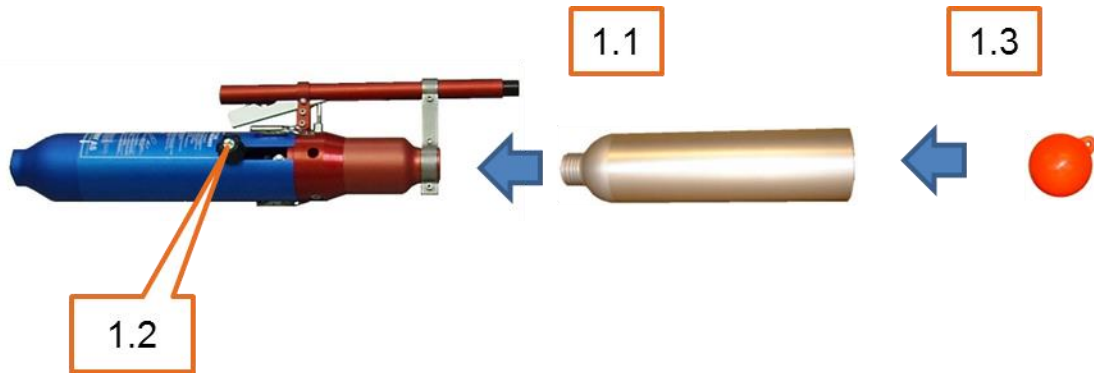
NOTE!

Always inspect the ball, the rope eye and the line itself before using it.

We recommend changing the Ball Projectile after 100 shots, unless damages are found before this point. Make sure that the area you are launching is cleared and safe to launch into. Always use the line recommended by Restech Norway representatives.

Please also study the USB 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 Article 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. You may use a thin, full synthetic acid- and water free oil.

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 leftover 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 AS.

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

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

Year						
Service Launching Unit						
Pressure Test Air cylinder						
Serial # Launching Unit	RN					
Serial # Air Cylinder	RN					

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 AS 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 AS.

The air cylinder must be periodically, depending on national rules, 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 AS.

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

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 use 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 crosswind.

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 PLT[®] 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
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 AS.

PLEASE NOTE!

**SERVICE ON THE PLT[®] MUST ONLY BE CARRIED OUT BY PERSONNEL
CERTIFIED BY RESTECH NORWAY
ADJUSTMENT MUST NOT BE MADE ON EITHER PART.**

Pivot Support for the Big 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 or clamped at the launching area (rail, i.e.). Tubes can be installed at different places on board.



Fig 1



Fig 2



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

Projectiles for the PLT[®]



PLT[®] R-230 Launching distance up to 230-250 meters with internal line



PLT[®] R 150 Launching distance up to 150-160 meters



PLT[®] 150 launching distance up to 140 meters



PLT[®] Line Pick-up Grapple
Launching distance up to 85 meters



PLT[®] Rescue Buoy Launching distance up to 120 meters



PLT[®] Ball Launching distance up to 80-90 meters

Projectiles for the PLT® Mini



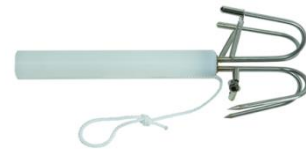
PLT® Mini 100
100 meters



PLT® Mini Rubber
90 meters



PLT® Mini Line Pick-up
Grapple 70 meters



PLT® Mini Sharp-
Grapple 70 meters



PLT® Rescue Buoy
Inflates in 2 sec.
80 meters



PLT® Mini Rubber tip
95 meters



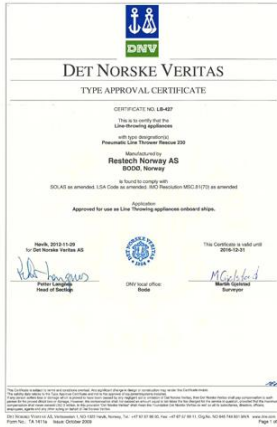
PLT® Entering Grapple 3
30-65 vertical meters



PLT® Mini Launching Unit
The PLT Mini can be used either
with CO2 cartridges
or with compressed air.

Certificates

Type Approval Notifying Body is DNV 0575



MED-B-9174 Notifying Body is DNV 0575



QSA Certificate N° MED-D-1929 Notifying Body is DNV 0575



USCG Approval Notifying Body is DNV 0575



ISO 9001:2008 Notifying Body is DNV 0575



Certificate of Approval United States Coast Guard



MPA Approval Maritime and Port Authority of Singapore



Certificate Of Type Approval Notifying Body CCS



DGS Approval Directorate General Of Shipping



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