



PC Target

User manual

KM Part No: UM_0097990064_06
05.05.2009

The PC Target package enables you to connect an electronic shooting target from Kongsberg Mikroelektronikk directly to a PC.

SYSTEM REQUIREMENTS

	Minimum	Recommended
Processor	Pentium 100 MHz	Pentium III 500 MHz
Memory ¹	16 MB	128 MB
Free hard disk space	15 MB	50 MB
Windows version	Windows 2000 / XP / Vista	Windows 2000 / XP / Vista
Screen resolution	800 x 600	1024 x 768
USB	1	1

- 1) Windows 2000 / XP / Vista needs minimum 64 MB RAM. We recommend minimum 128 MB on a Windows 2000 / XP / Vista system.

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1 PRODUCT INFORMATION

This product is delivered in two versions: “PC Target Short Distance” and “PC Target Long Distance”. These names imply the typical distance between the target and the PC. Normally most shooting distances can use both solutions. Choosing solution, when buying, is based on factors like power supply at the range, the target’s power consumption and signal line between target and PC.

1.1 PC Target Short Distance Package (403 0097 32 0001)

This solution is based on feeding power to the target from the stand. This is normally possible at short shooting distances for “high power consuming” targets - and medium shooting distances for “low power consuming” targets.

<p>PC-Target cable (414 0097 32 0003)</p> <p>20m long.</p>	
<p>USB-485 converter (29 02 004)</p> <p>With USB cable. Not insulated converter.</p>	
<p>Target cable (414 0097 01 0035-2m)</p> <p>2m long with 4-pole connector in the ends.</p>	
<p>Amphenol cable connector</p>	
<p>Jumpers (14 03 008)</p> <p>For setting the functionality of the target electronics.</p>	

Software CD (226 0097 32 0005)



1.2 PC Target Long Distance Package (403 0097 32 0002)

This solution is based on feeding power directly to the target. Battery is often used. The shooting distances are almost unlimited.

PC-Target cable (414 0097 32 0003)

20m long.



USB-485 converter (29 02 005)

With USB cable. Insulated converter.



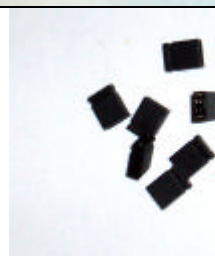
Target cable (414 0097 01 0035-2m)

2m long with 4-pole connector in the ends.



Jumpers (14 03 008)


For setting the functionality of the target electronics.



<p>Power supply cable (414 0097 32 0004)</p> <p>With 4-pole connector and 2.1mm jack (male)</p>	
<p>Battery cable (414 0097 32 0008)</p> <p>For connection of 12V battery with 4.8mm cable shoe terminals – and 2.1mm jack (female) connector.</p>	
<p>Amphenol cable connector</p> <p>1pc male connector. 1pc female connector.</p>	
<p>Software CD (226 0097 32 0005)</p>	

1.3 Other equipment for PC Target

This equipment can be bought to the PC Target package:

<p>Power supply (27 04 004)</p> <p>16V DC, 1.8A with 2.1mm jack (female)</p>	
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<p>Battery (27 02 001)</p> <p>12V, 7.2Ah lead-acid rechargeable battery</p>	
<p>Battery charger (406 0097 32 0007)</p> <p>12V with 2.1mm jack (male).</p>	
<p>Target (No depends on model)</p> <p>Exists in numerous versions - for shooting distances between 10 and 1500 metres.</p>	
<p>External target electronics (418 0097 08 0017)</p> <p>For targets without integrated target electronics.</p>	
<p>Target cable (414 0097 02 0051-5m)</p> <p>For targets without integrated target electronics. With 8-pole connectors.</p>	

2 MOUNTING THE PC TARGET

NB!

This chapter describes the physical mounting of the equipment. It is outmost important that the software is installed at the PC (look at chapter 3) before the equipment is connected to the PC first time.

NB!

Some target models can take rainfall. Others must be protected (see the "Maintenance and Technical Specifications" user manual for further information). All other equipment must be protected against rain.

2.1 The Target

All target models has a "Maintenance and Technical Specifications" user manual. These are found and downloaded at the internet www.kme.no. The manuals are occasionally updated so keep updated once in a way.

The target is mounted according to the recommendations in the mentioned manual.

2.2 PC Target Short Distance

2.2.1 At stand

Connect the USB-485 converter to the PC Target Cable. Connect the Power Supply to the little connector at the PC Target Cable.



2.2.2 To the target

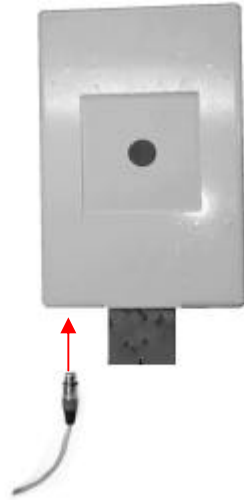
2.2.2.1 Target with integrated target electronics

If the target has integrated target electronics (it has 4-pole connectors) the PC Target Cable is put directly into the target (the left connector).

If the connector does not fit to the target (but the target connector has 4 poles) it must be replaced with the enclosed Amphenol connector. The original connector at the PC Target cable must be cut off. The Amphenol connector is mounted as follows:

Wire no	Contact point
1	1
2	2
3	3
YI/Gr	GND

PC Target Cable going to the stand



Set the target functionality if not done. Look at the "Maintenance and Technical Specifications" manual for the target and set the target electronics to be:

- a clean target (not butts server)
- terminated
- a random target number lower than 128.

2.2.2.2 Target with external target electronics

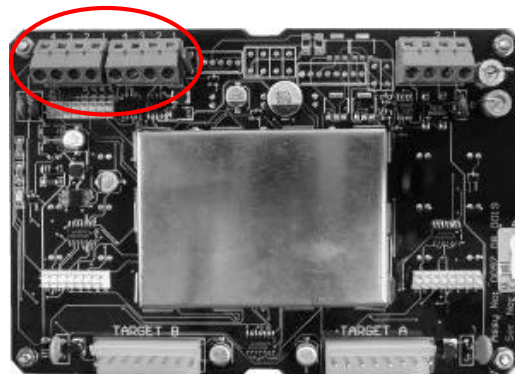
When the target is connected to an external target electronics (the target has a 8-pole connector) the 4-pole target cable has to be mounted into the target electronics. Cut the cable in two equal pieces.



Open the target electronics box and connect the cable with male connector to one of the terminals marked JP1 or JP2 as follows:

Terminal point	Leader number	Leader colour
1	1	Black
2	2	White
3	3	Red
4	Yellow/Green	Yellow

The wires are either marked with numbers or coded with different colours.



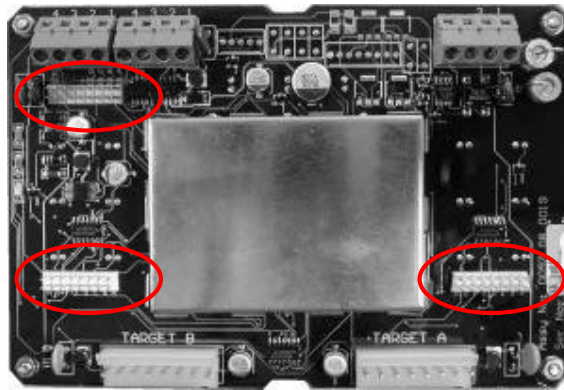
The target electronics must be set as follows:

JP7
Put jumper on **SEII**,
+ and –

SEII	CL	-	+	ID_D	ID_C	ID_B	ID_A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

JP6
No jumpers

H	G	F	E	D	C	B	A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

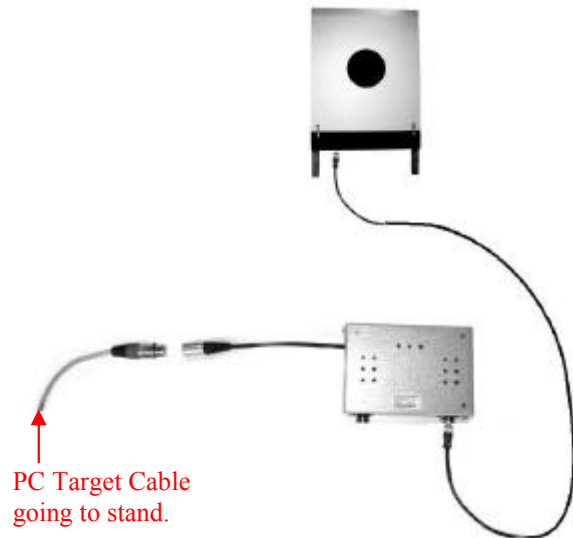


JP8
Put jumpers on **A**

H	G	F	E	D	C	B	A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Assemble the target electronic box.
Connect the PC Target Cable from stand
to the connected half of the target cable.

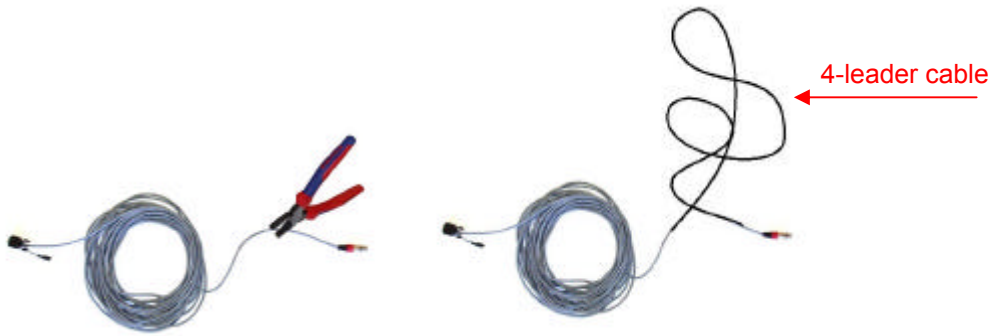
Connect the 8-pole target cable to the
target and to one of the connectors at the
target electronics.



2.2.3 Extending the cable between stand and butt

The cable between stand and butt (PC Target Cable) can be extended to a certain degree. How much depends of the target and target electronics maximum power consumption. It is recommended to extend the cable with the same type of cable that is already used (4x0.75mm² or AWG 20-22).

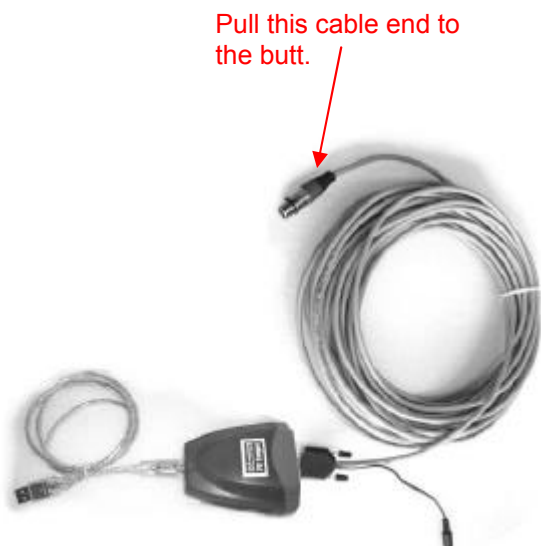
NB! The leaders must not be cross-connected when extending the cable. Leaders are marked with numbers or colour coded.



2.3 PC Target Long Distance

2.3.1 At stand

Connect the USB-485 converter to the PC Target cable.



2.3.2 To the target

2.3.2.1 Target with integrated target electronics

If the target has integrated target electronics (it has 4-pole connectors) the PC Target Cable is put directly into the target (the left connector).

If the connector does not fit to the target (but the target connector has 4 poles) it must be replaced with the enclosed Amphenol female connector. The original connector at the PC Target cable must be cut off. The Amphenol connector is mounted as follows:

Wire no	Contact point
1	1
2	2
3	3
YI/Gr	GND

PC Target cable
going to the stand →

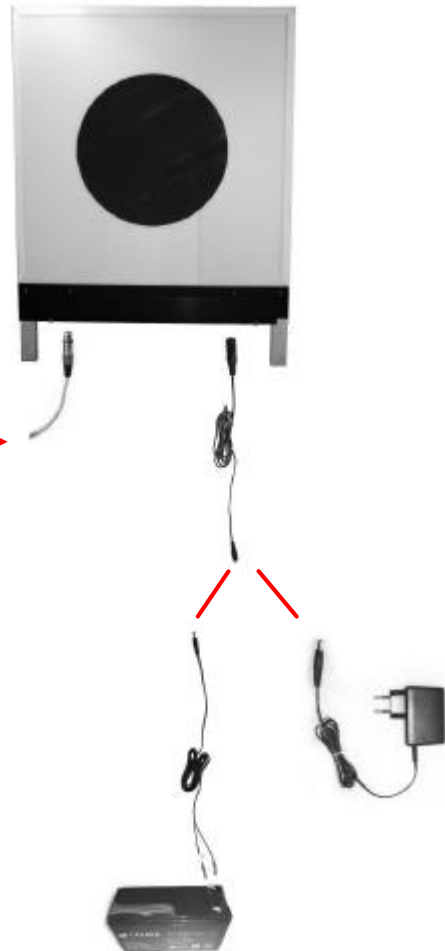
The power supply cable is connected to the right hand side connector.

The power supply cable is either connected to the power supply or a battery (also using the battery cable). If the connector at the PC Target cable was replaced, the power supply cable also needs a connector change. Mount the male Amphenol connector to the power supply cable as follows:

Wire	Contact point
White marked	3
Unmarked	4

Set the target functionality if not done. Look at the "Maintenance and Technical Specifications" manual for the target and set the target electronics to be:

- a clean target (not butts server)
- terminated
- a random target number lower than 128.



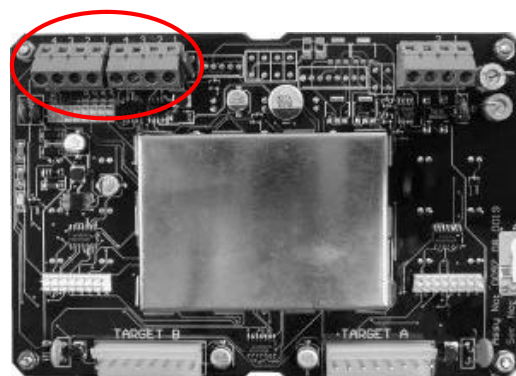
2.3.2.2 Target with external target electronics

When the target is connected to an external target electronics (the target has a 8-pole connector) the 4-pole target cable has to be mounted into the target electronics. Cut the cable in two equal pieces.



Open the target electronics box and connect the cables to each of the terminals marked JP1 or JP2 as follows:

Terminal point	Leader number	Leader colour
1	1	Black
2	2	White
3	3	Red
4	Yellow/Green	Yellow

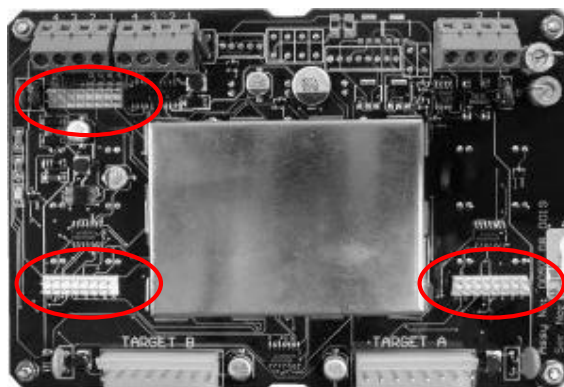


The wires are either marked with numbers or coded with different colours.

The target electronics must be set as follows:

JP7 Put jumper on SEII , + and –							
SEII	CL	-	+	ID_D	ID_C	ID_B	ID_A

JP6 No jumpers							
H	G	F	E	D	C	B	A



JP8 Put jumpers on A							
H	G	F	E	D	C	B	A

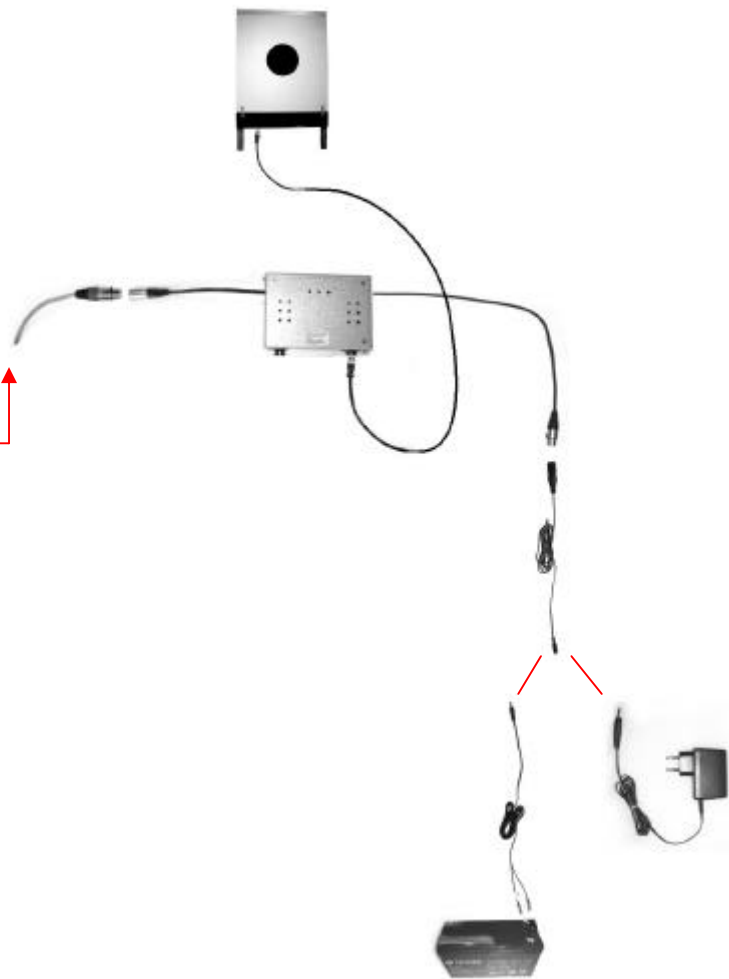
Assemble the target electronic box. Connect the PC Target Cable from stand to the target cable with 4-pole male connector.

Connect the 8-pole target cable to the target and to one of the connectors at the target electronics.

PC Target cable
going to the stand

The power supply cable is connected to the target cable with 4-pole female connector.

The power supply cable is either connected to the power supply or a battery (also using the battery cable).



2.3.3 Extending the cable between stand and butt

The cable between stand and butt (PC Target Cable) can be extended up to 1000metres. Extension can be made with any signal cable, but we recommend a twisted pair with screen. The PC Target Cable has four leaders. Only two of these + ground need to be extended at the long distance solution – those marked with number 1 and 2 or colour coded black and white.

NB! The wires must not be cross-connected when the cable is extended.

The yellow/green or yellow leader (signal ground) should be connected to the shield of the extending cable. If the extending cable is not shielded a third wire should be used.



2.4 PC Target with Radio

It is possible to extend the distance between stand and firing line with radio.

The radio has to support RS-485 and it is an advantage if it accepts at least 12VDC to 16VDC, then standard power supply to targets can be used.

Cut the PC -Target Cable (414 0097 32 0003) in two and connect it to the corresponding terminal at the radio modem, see table under for signal description.

Wire (labelled or coloured)		Signal	Description
1	Black	A (-)	RS-485 inverting signal
2	White	B (+)	RS-485 non-inverting signal
3	Red	+12VDC to +16VDC	Standard power to target
Yellow/Green	Yellow	GND	Signal and power ground

3 SOFTWARE INSTALLATION

NB!

It's important to do the installation in the order shown in this guide.

3.1 Install software

- Insert the enclosed CD in the CD drive. The installation will start automatically (if it does not start automatically, run the file Setup.exe found on the CD)

or

- If the installation is downloaded as a file from internet, the installation is started by running the file Setup.exe found in the installation files.

3.2 Install PC Target and driver for the USB-converter



- Make sure that the logged on user have "Administrator" rights.
- Plug in the USB converter into one USB port on the pc.
- The connection brings up "Found new hardware wizard". Windows Vista will usually not show this message.

Windows XP	Windows 2000
Select "Cancel"	Select "Cancel"

- Start "Setup.exe". It is important that the USB converter is connected while running the installation of PC Target and the driver for the USB converter.
- Follow the installation wizard for PC Target.
- If the "Found new hardware wizard" appears during installation. Choose "Cancel".
- When the installation wizard is complete both the USB converter driver and PC Target will be installed and ready to be used.

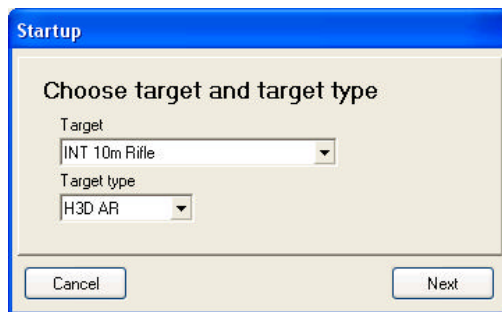
4 HOW TO USE THE PROGRAM

Make sure the USB converter is connected to the PC, the target/target electronics is connected to the USB converter and power supply is connected to mains.

Open the Start-menu in Windows and start Kongsberg PC Target.

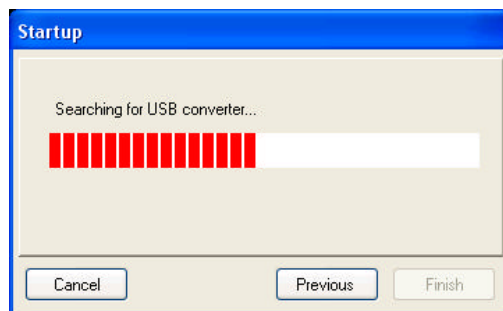
4.1 Choose target

- When the program is started, target has to be selected. First, choose target (e.g INT 50m Rifle or INT 10m Pistol) and then click next to proceed.



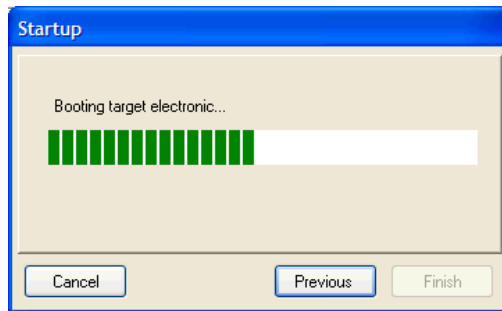
AR – Air Rifle
AP – Air Pistol
SBR – Small Bore Rifle (cal .22)
SBP – Small Bore Pistol (cal .22)
BBP1 – Big Bore Pistol 1 (cal .32 , .38 and 9mm)
BBP2 – Big Bore Pistol 2 (cal .375 MAG and .45)

- The program will search for the USB converter



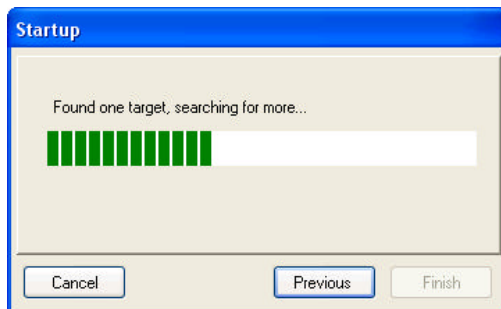
If the program can't find the USB converter, check that the USB converter is connected and the driver is installed correctly.

- The program will next search for targets / electronics...

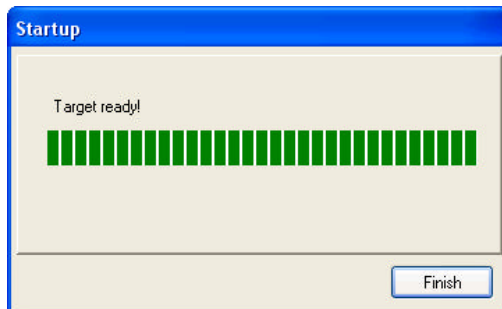


If the program can't find any targets, check the connection to target and the power supply.

- When the program finds the first target, it will continue searching for more targets.



- If everything is ok, the following message will appear:

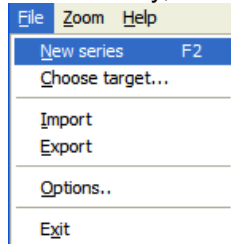


The program and the target are now ready. Click *"Finish"* to continue.

- If the target being used has the feature with red/green light (pistol target), this feature has to be configured in the Setup menu. Look in the "Program setup" chapter and the sub chapter "Target Light"
- If the target being used has the feature with automatic feeding of rubber/paper, this feature has to be configured in the Setup menu. Look in the "Program setup" chapter and the sub chapter "Rubber/paper feeding"
- If the target being used has the feature with target lift, this feature has to be configured in the Setup menu. Look in the "Program setup" chapter and the sub chapter "Target lift"

4.2 New series

Press F2 key, click the  icon or select "File" + "New series"



The new series window will now appear.



Test shot

- Yes – The series will not be summed up in the total field and a triangle will be displayed in the upper right corner that indicates test shots.
- No – The series will be registered, and the shots will be summed up in the total-field.

Mark shot(s)

- After every shot – Each shot is marked consecutively
- After finished series – The shots are not marked until the "Mark series" button is clicked.



Target lift (only if target lift is enabled)

- Target lift moves to selected position.

NB!

If target is H3D, correct positions have to be configured in "Setup"

Target light (only if target light is enabled)

- Red/green light will show selected sequence. The most common sequence-programs are defined and can be selected in "New series" menu. In "Setup" it is possible to define your own sequence-program.

Delete total score

- Enable this to delete total score.



1. Shot value
2. Direction of the shot or time of the shot (time only available if a target with target light is in use)
3. Shot status (only available if a target with target light is in use)
4. Last shot value or selected shot value. Select the shot by clicking on the shot value in the list.
5. Shot information.
6. Sub total score of the series
7. Total score of all series
8. Hit marking
9. Hit marking of the last shot or the selected shot. Select shot by clicking on the shot value in the list
10. Average hit point
11. Communication messages
12. Communication quality. When wire is used between USB converter and target, this value should normally be 100%. When used with radio (wireless) this value will change according to the quality of signal. A signal level of 80-100% is a recommended. Under 50% will usually cause a unstable system.

Shot status

1	X,6	3.58 s	T
2	9,3	1.26 s	
3	8,3	5.27 s	C
4	*,5	0.59 s	
5	0,0	0.55 s	

If a target with target light is in use (e.g. H3D), shots there are not accepted will be marked as shown below:

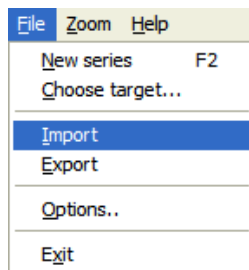
- T – The shot is not within the green light period.
- C – More shots within a green sequence than the program allows.
- M – Shot hit the armoured steel plate

Shot information

The following information can be shown:

- X & Y – X and Y coordinate on the last shot / selected shot
- Xm & Ym – Average hit point
- H+W – Height and width dispersal
- C-C – Centre to centre dispersal. Distance between the two shots furthest apart from each other

4.3 Import / Export



Series can be exported to file with the “export” feature, and brought back with the “import” feature. This can be done from the “File” menu.

4.4 Zoom target

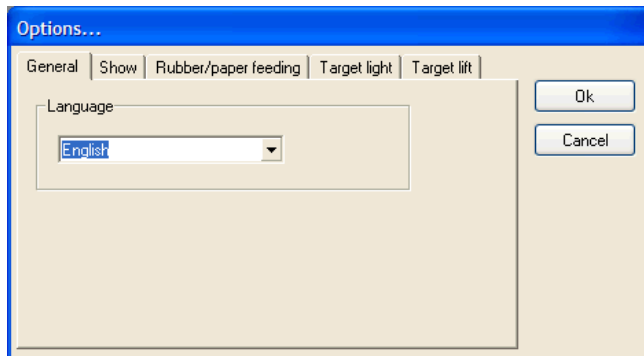
If the mouse is fitted with scroll wheel, use this to zoom the target. First right click on the target, and then use the scroll wheel.

Or use these keys:

- F5 – Zoom in
- F6 – Zoom out
- F7 – Zoom whole target

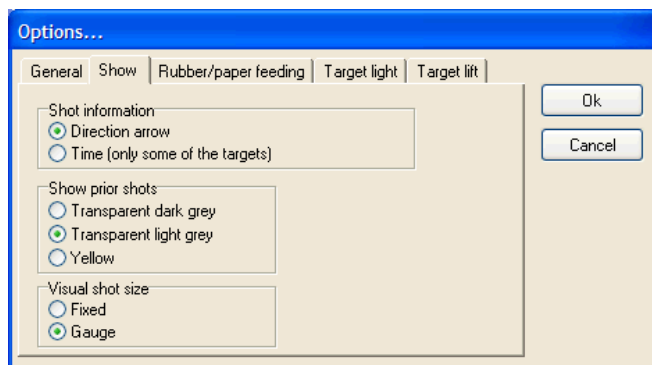
5 Program setup

5.1 General




Choose preferred language and menus and dialogs will be translated to chosen language.

5.2 Show



5.2.1 Shot information:

Choose between different presentations of the shot information.

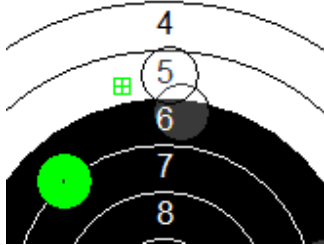
2	5.3		
2	5.3	0.57 s	

Direction arrow,

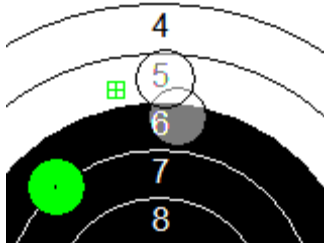
Time (only some of the targets)

5.2.2 Show prior shots:

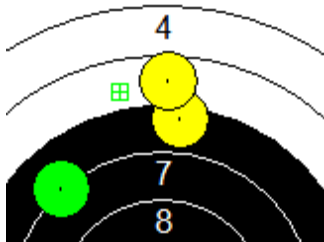
Choose how prior shots shall be presented.



Transparent dark grey.



Transparent light grey.



Yellow.

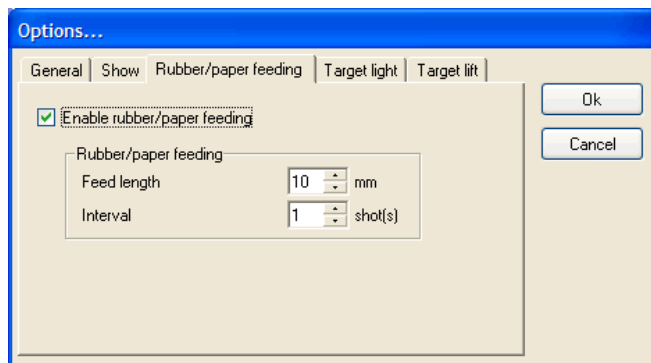
5.2.3 Visual shot size

Choose preferred size of the hit marking.

Fixed: Hit marking independent by gauge. Show best visual hit marking.

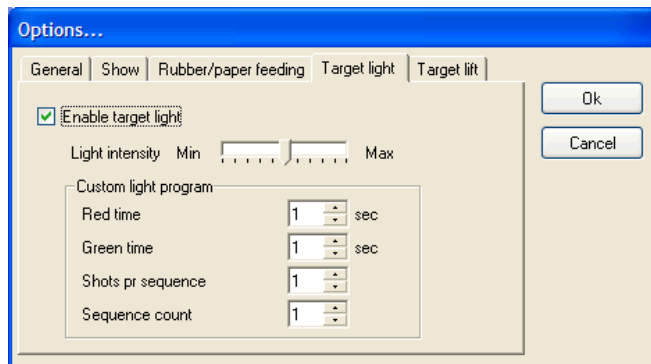
Gauge: Show hit marking same size as the gauge. ("Projectile")

5.3 Rubber/paper feeding



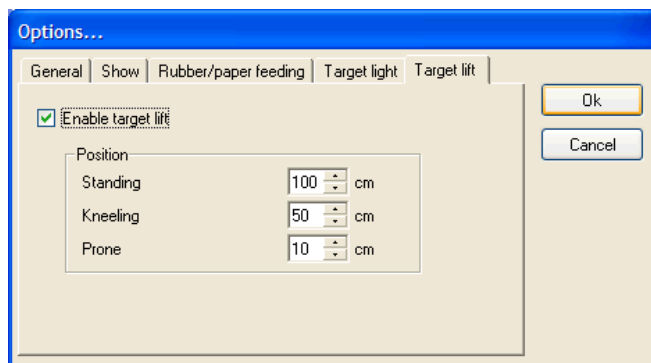
Option to enable/disable rubber/paper feeding. This option should only be enabled if the target supports automatic feeding of rubber/paper. Adjust the feed length and interval according to the target specification.

5.4 Target light



Option to enable/disable target light. This option should only be enabled if the target in use has red and green light attached (pistol target). Adjust the light intensity, and if wanted, define your own sequence program. The custom defined program can be chosen in the “new series” dialog under “Target light”.

5.5 Target lift



Option to enable/disable target light. This option should only be enabled if the target in use has this feature. Adjust the height for each position.

NB!

Do not enable rubber/paper feeding, target light or target lift if the target does not have this feature.

6 DISCONNECTION AFTER USE

After use the following should be done to prevent damage due to lightning and electromagnetic discharges:

- Disconnect the PC Target Cable from the USB-485 converter.
- Disconnect the PC Target Cable from the target / target electronics.
- Disconnect the Power Supply.