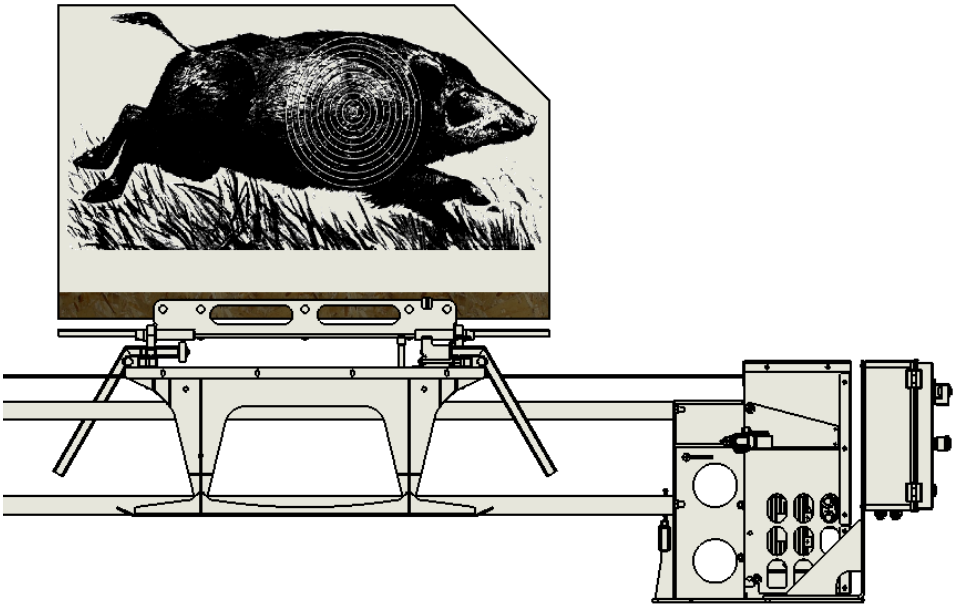
Operating Instructions
Promatic Running Target



WARNING

Automatic machinery can be dangerous and must be treated with great care at all times to avoid accidents. Never place any bodily part into the path of any mechanical piece whilst the machine is in motion or likely to be so.

This document must be read in full before attempting to operate the machine

Preface:

Every effort has been made to ensure that the information contained within this manual is complete, accurate and up-to-date. Promatic International assumes no responsibility for errors beyond its control.

Warnings & Cautions:

Warning: This section contains instructions which, if ignored or carried out incorrectly, may result in risk of personal injury**.**

Caution: This section contains instructions which, if ignored or carried out incorrectly, may result in malfunction or damage to the equipment or consumables**.**

Note: This section contains additional information which the user may find useful, but is not essential to the operation of the product.

Promatic Running Target

This product uses AC Mains power.

Internal capacitors in the motor controller may continue to hold a charge for some time after disconnection.

CAUTION

AC Mains wiring is present in this product

Great care should be taken when undertaking servicing or repair as AC mains voltage is present in several locations within the control panel cabinet, this should be properly isolated before any work commences.

Isolating the AC Mains supply may not fully prevent the risk of electric shock as the motor controller (inverter drive) may continue to hold a charge for some time after disconnection.

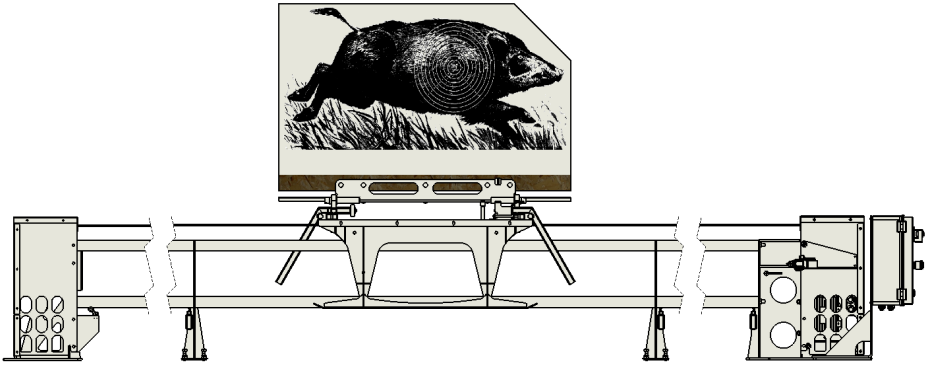
THIS EQUIPMENT MUST BE EARTHED

This appliance must be earthed (grounded). In the event of a malfunction or breakdown earthing reduces the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cable with 3 pin plug having an earth conductor.

The plug must be plugged into an appropriate outlet that is properly installed and grounded and protected in accordance with local wiring regulations and national directives.

- **If you don't have the correct outlet, consult an electrician.**

Specifications:



A running target system designed for use on 50m firing ranges having twin (directional) target boards typically depicting a running boar.

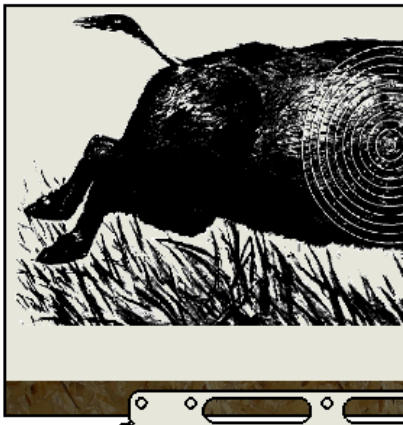
Auto turn-over at each end of run target always faces the correct direction.
Variable speed drive with upper and lower limits pre-set to ISSF Standards.

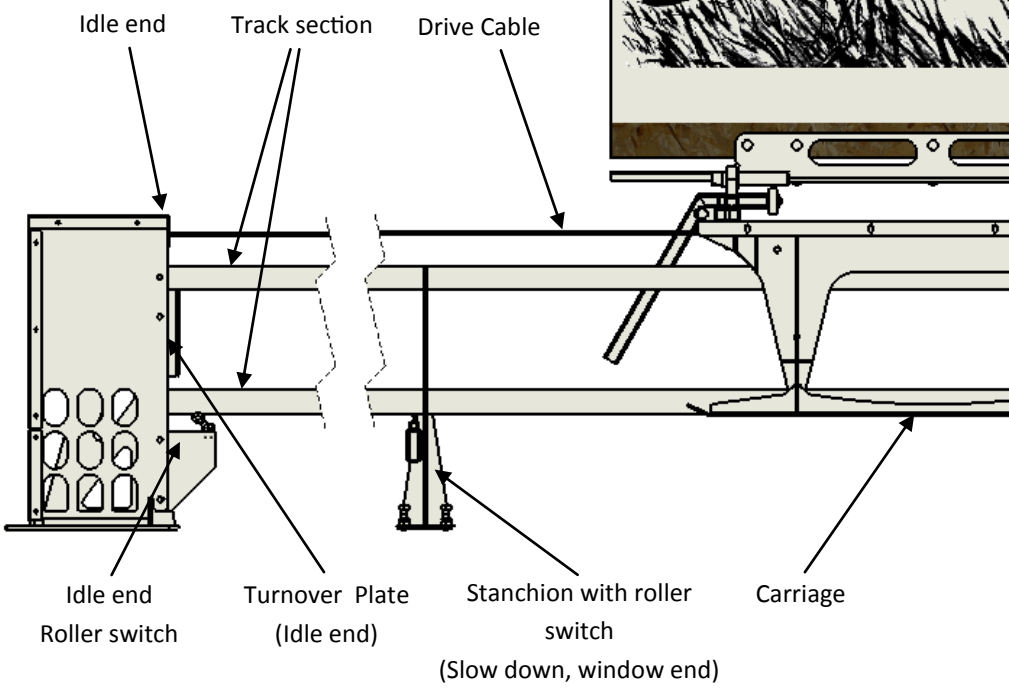
Speed range:	2.5 M/S – 5 M/S
Track length:	22m or 40m (or lengths between in 2m increments)
Max target size:	1320 x 762 (ISSF regulation target)
Target window:	10m (22m system) or 28m (40m system)
Voltage:	220-240v AC 50Hz Single Phase
Current:	16A
Drive motor:	3 phase 2.2KW via inverter drive
Motor controller:	AC Variable Inverter drive
Motor protection:	Over-current protection within inverter Internal Circuit Breakers
Track protection:	Auto creep speed at power-up Dual event switching on high speed sections Auto motor shutdown at track ends or system jammed
Personnel protection:	Cable-pull safety system providing a safety zone around the track and operating area.
General:	6mm stainless steel drive wire to carriage Full bearing carriage conveyance system Galvanised track assembled from 2m sections

The Running Target System

Key components

Note: Drive end may be installed at either end depending on location.



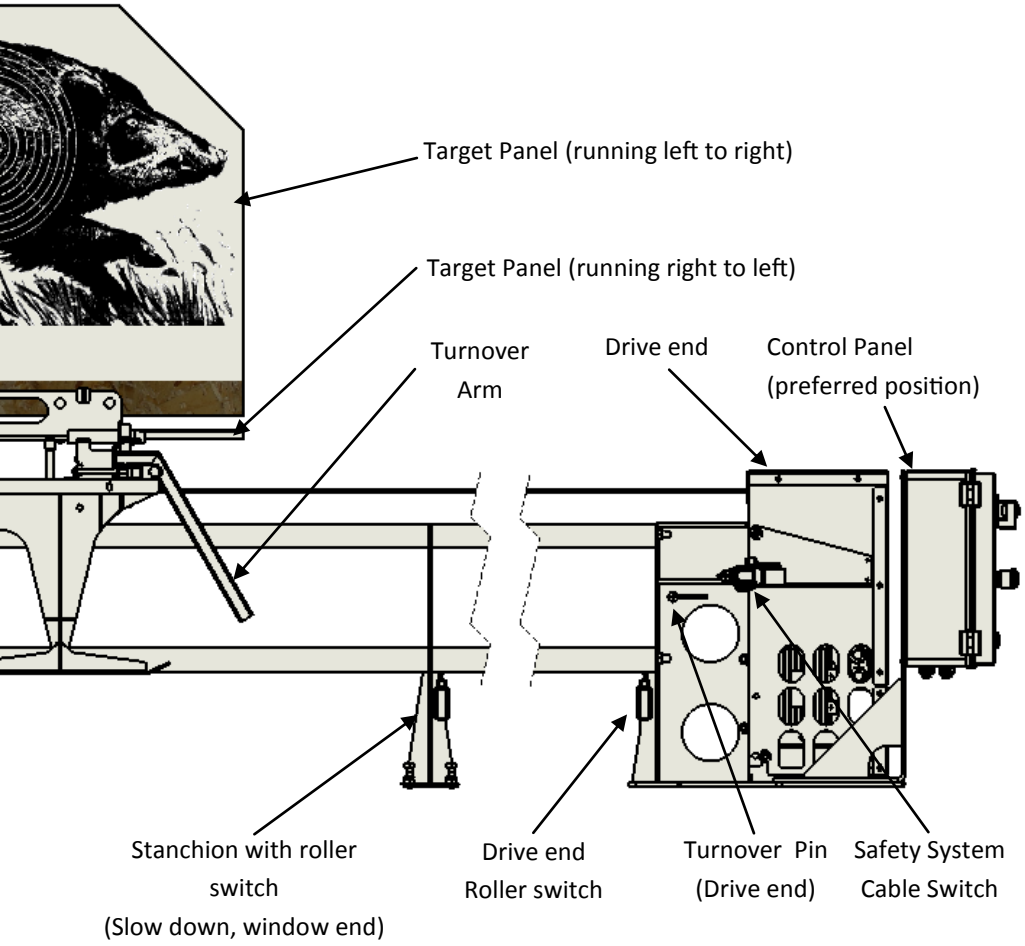


Introduction

These instructions are provided to help you to get the best possible service from your target system. To ensure that it is used safely, we strongly recommend that the instructions are read by all users and all the recommendations followed.

Please take the time to read the contents of this manual before you power up the product, or attempt to use it. It is a good idea when reading this manual, to take a tour of the system with all persons who will be using it.

Used correctly, sensibly and maintained to this handbook, your target system should give many years of safe and reliable service. If you are in doubt about any of the instructions, please contact our technical department.



SAFETY

Automatic, remote controlled machinery can be dangerous and must be treated with great care at all times to avoid accidents. You must treat the moving parts of this equipment with the same respect that you would treat a loaded gun.

Never place any bodily part into the path of any mechanical piece whilst any machine is in motion or likely to be so.

Parts of this machine use mains electricity, pay particular attention to the electrical safety warning on the first page of this manual.

A SAFETY PERIMETER AND GUARDS SHOULD ALWAYS BE IN PLACE AROUND THE MACHINE WHEN IN USE

Safety systems

The cable safety system

There are two orange safety switches located on the drive end of the system, these are connected to either one (looped) or two (individual) red safety cables. These cables form a protective zone around the carriage operating area and protect in two ways.

Should the cable be pulled at any point along its length, one or both of the safety switched will activate cutting the power to the control panel.

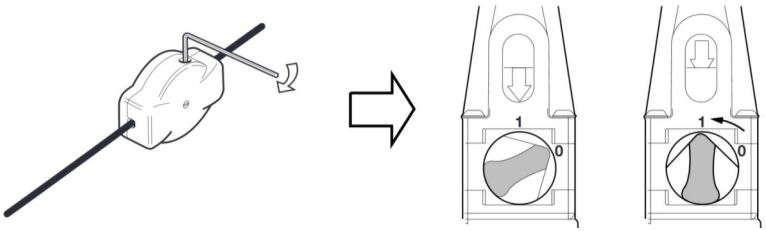
Should the cable fail - or if it has been disconnected, one or both of the safety switched will have activated, again cutting the power to the control panel.

Resetting the cable safety switch

One or both of the safety cables will be fitted with a tensioning device, this should be adjusted using the Allen key provided to set up or re-adjust the system.

It may be necessary to make a seasonal adjustment to the system, particularly during long spells of warm weather when the cable may have become slack.

If both cables have a tensioning device fitted, then each cable operates only one switch. In the case of a looped cable with only one tensioning device, one cable operates both switches.



On each switch there is a small viewing window, within this a coloured indicator arrow aligns with a line on the centre of window to show that the cable is correctly tensioned, adjust the tensioner as required to set the indicator in the correct position. To ensure the cable is correctly bedded in, operate the switch by pulling on the cable, then reset the lever and check.

The emergency stop button

Pressing the emergency stop button on the control panel will drop the control panel latch, to reset (after removing the cause of the emergency) twist the knob to release it and follow the start-up procedure to continue running.

How the safety system affects the controls

Activating the panel latches the control system on, this is then held on by the safety system and will remain activated as long as there is no emergency stop event.

Operation From the radio handset

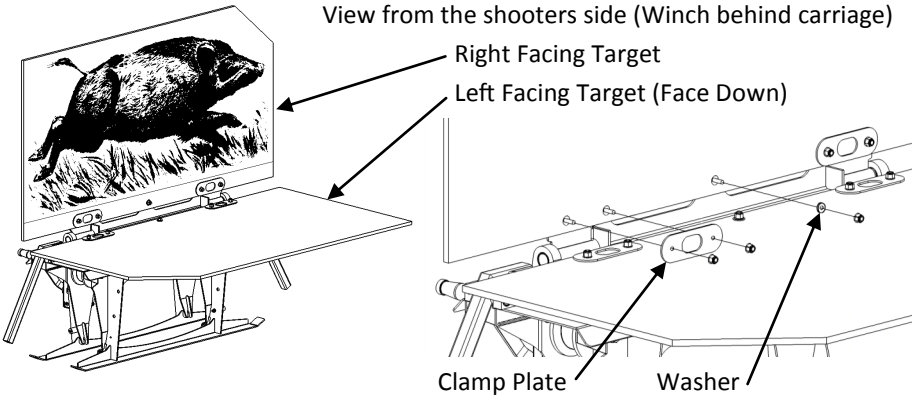
Be aware that pressing the emergency stop on the radio handset will drop the control panel latch, and this can only be reset from the control panel by following the start-up procedure.

It should be noted and made clear to all users that these emergency stop features are intended for emergency use only. Resetting after an emergency stop will require all shooting to be suspended as personnel will need to access the control panel in order to reset the equipment (after first removing the cause of the emergency stop).

Target fixing & maintenance:

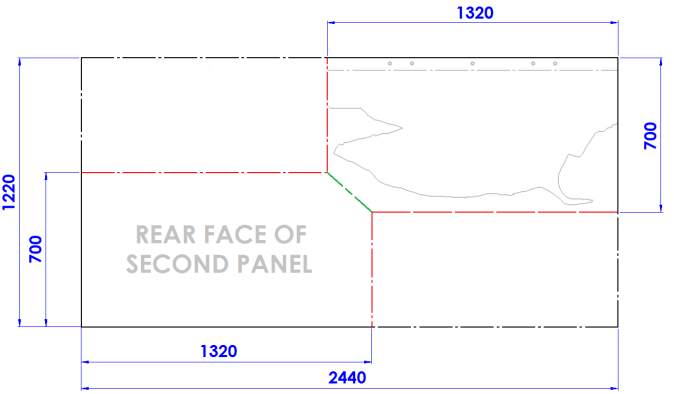
Mounting target boards

New target boards will be supplied pre-cut & drilled and will simply bolt on as shown below. On a new installation the clamp plates & washers will be pre-fitted to the turn-over bar (if no target boards have been fitted) fit boards as shown below.



Making New Target Boards

It is possible to cut a pair of target panels from a standard 1220 x 2440 (8' x 4') plywood sheet. Following the diagram, firstly mark out the two target board sizes (red lines), measuring out from opposite corners, then add the diagonal (green line) where they intersect. When cutting, remove the two waste areas first and then cut across the diagonal.



Paper targets

Target boards are designed to accept standard ISSF paper target faces with the unused upper plain paper section trimmed away. The lower edge of the paper should be mounted 50mm (2") up from the base of the plywood panel to give the correct target position. Spray flooring adhesive is usually the most effective method of attachment.

Fitting New Target Boards

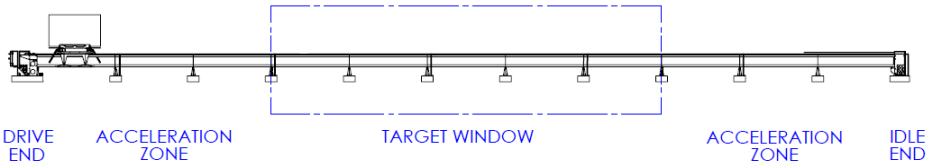
If new panels have been cut, new mounting holes will need to be drilled. The easiest method is to mark the centre of the new panel, place it face down with the centre mark positioned on the centre bolt hole and tap the back of the board to impress the fastener positions onto the face of the board, highlighting the exact drilling positions.

Target patching

Rolls of bullet hole "sticking plasters" for patching between rounds as well as printed repair centres are also available from most suppliers of the paper targets.

General system operation

The Running Target system has three separate control zones, an acceleration zone, the target window then a deceleration zone (the acceleration zone the other way)



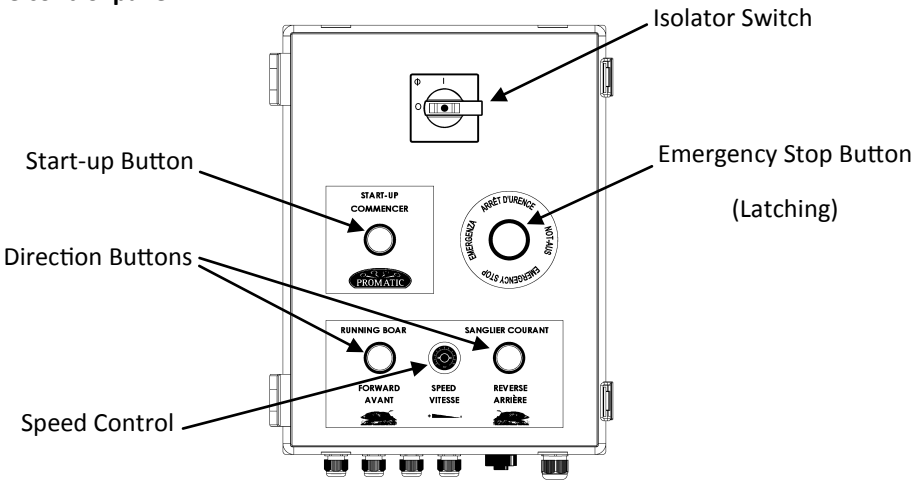
The carriage operates between the drive end and idle end at varying speeds. When the command is given the inbuilt motor controller accelerates the carriage from the starting position up to a set speed, which is achieved before the start of the target window and then regulated until the carriage reaches the end of the window. Once clear of the window the carriage is electronically braked to a safe creep speed, at which it continues until it reaches the turnover and parking position.

Control panel positioning

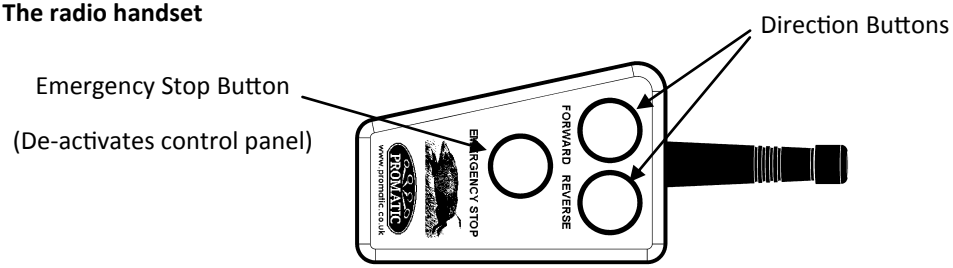
The main control panel may be mounted on the drive end of the system, wall mounted or on legs near to it.

The system can be operated from either the main control panel (If safe to do so) or via the radio remote control handset.

The control panel



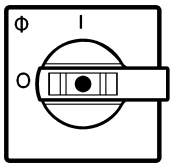
The radio handset



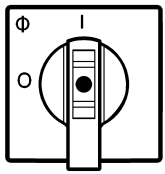
Powering up the system

With the system connected to a suitable power supply or a suitable generator, turn the Isolator to the ON position as shown.

If the emergency stop button has previously been pressed it should be rotated to allow the release mechanism to spring out before the system can be activated.



OFF



ON

Enabling the panel & First forward run

Before the system can be run the panel must be activated, this can be achieved by pressing the start-up button which will illuminate and activate the controls (provided that the carriage is correctly parked at an end position)

Press the Forward button to run the system forwards (towards the idle end) or the Reverse button to bring it back home (towards the drive end).

If the carriage is not properly parked then the start-up button will not operate (this is a safety feature to prevent a fast run being started with the carriage near the end of the track). In this case simultaneously press the start-up button and a direction button to start up in creep mode and drive the carriage slowly towards one end until it is safely parked ready to begin a full speed run.

How the panel remains enabled

Activating the panel latches the control system on, this is indicated by the start-up button remaining illuminated, the panel is now latched through the safety system and will remain activated as long as there is no emergency stop event. Having completed a run the system will remain enabled and now has a confirmed carriage position, therefore from this point only the direction buttons are required to begin a run in whichever direction is required.

Starting subsequent runs

With the carriage parked at the idle end press the reverse button to begin the return run, likewise with the carriage parked at the drive end press the forward button to begin the next forward run. When a run is in progress the appropriate direction button will remain illuminated until the carriage reaches the other end and parks.

Emergency stop

Any emergency stop event (Stop button being pressed on panel or radio handset or the safety fence triggered) will cause the control panel latch to be dropped, cutting power to the motor and disabling the controls on the panel and the radio. To re-enable the system the start-up procedure must be followed, after removing the reason for the emergency and resetting the control i.e. reset the guard wire or rotate the main emergency stop button to reset if this has been pressed.

Operation From the radio handset

The direction buttons on the radio will activate forward & reverse runs in the same manner as the main control panel (except that the buttons are not illuminated).

Be aware that pressing the emergency stop on the radio handset will drop the control panel latch, and this can only be reset from the control panel by following the start-up procedure.

It should be noted and made clear to all users that these emergency stop features are intended for emergency use only. Resetting after an emergency stop will require all shooting to be suspended as personnel will need to access the control panel in order to reset the equipment (after first removing the cause of the emergency stop).

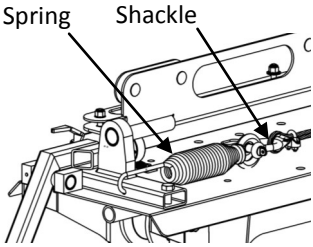
Replacing the drive cable (later units with winch fitted)

First turn off and isolate the electrical system

Park the carriage so that the winch side of the carriage is nearest to one of the fixed ends (depending on your installation orientation this may be either the drive or idle end). If the carriage is not in the correct position it may be easier to remove the old cable first, then manually push the carriage to the required position.

Remove the old cable

Remove the top covers from the drive and Idle ends, If a worn cable is to be removed its tension should first be released using the winch, the connection to the carriage can be removed by releasing the shackle that connects the cable end to the spring (retain the spring and shackle for re-use) pass the fitted cable end down through the hole in the carriage deck. (Standard cable clamps or pre-crimped cables should fit through this hole although a little manipulation may be required to fully release it)

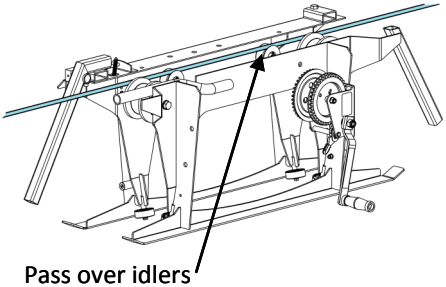


The cable along with any old jointing hardware and remnants of frayed or damaged strands should now be carefully removed, The remainder of the cable can now be unwound from the winch until the cable clamp connection at the winch can be undone.

Feed in and terminate the cable

Pass the end of the cable through the shooters side of the carriage as shown so that it passes over the main axles and sits within the two idler wheel(s) located on that side.

Next loop the cable around the pulley on the fixed end and pass through the hole in the carriage deck as shown.



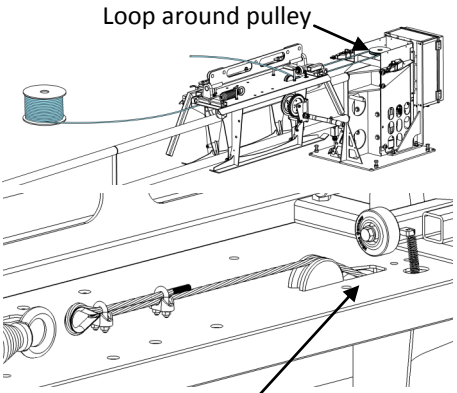
Prepare the cable end

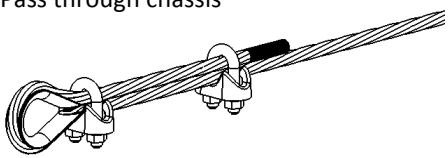
Form a loop around the thimble and allow for 150mm (6”) overlap on the cable, secure the thimble in place within the loop using two cable clamps as shown, ensuring that the cast base of each clamp sits against the main cable (and not the short piece) as shown.

Using the shackle that was removed earlier attach the newly prepared cable end to the spring and re locate the spring in its hole on the carriage beam.

With the carriage still in place walk the cable drum along the length of the track, looping around the pulley wheel at the far end and returning to the carriage. As you go, rest the cable on top of the track roller switches to avoid it becoming caught under them later.

With the cable looped around both pulleys and held against the winch side of the carriage pull the slack from the cable (but not too tight, so that it is still just sitting on the roller switches), mark a section of rope just beyond the winch, Tape and cut the cable at this point (tape before cutting to prevent fraying then tape over sharp edge after cut).



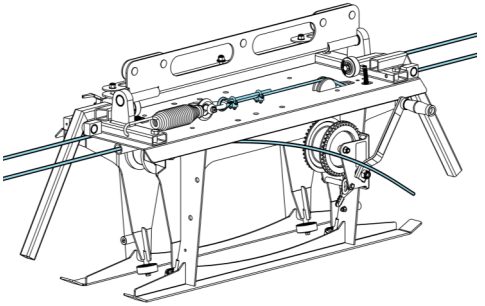


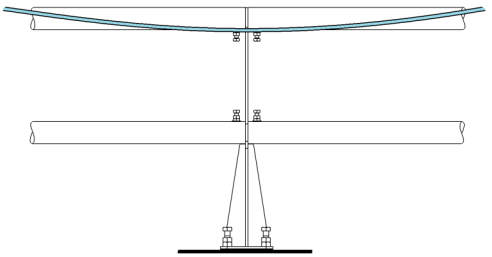
Prepare the cable end

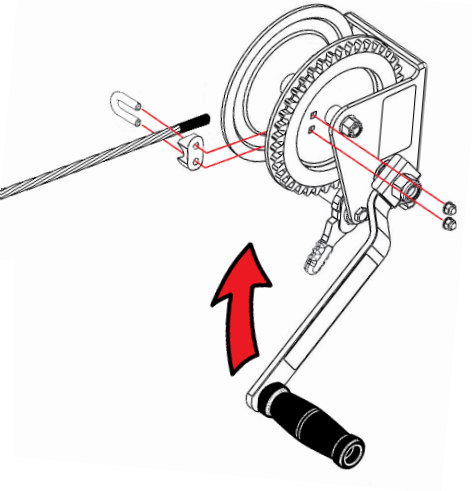
Pass the cut end through the pipe and on towards the winch, using a new cable clamp make the attachment to the winch drum as shown below.

Set the ratchet to allow clockwise rotation of the winch and wind on a few turns to lightly tension the cable, as doing so check that it spools up evenly on the winch drum.

Check that the cable is still sitting correctly in the groove at each end pulley and is not fouling the roller switches, then apply some more tension to the cable.







Tension the cable until (when viewed at the centre of the run) the cable sits level with or slightly below the lower edge of the upper track pole

Drive cable settlement & Seasonal adjustment

During warmer weather the cable may sag and require re-adjustment, this is simply achieved using the on-board winch.

Temporary removal of carriage

If the carriage is to be temporarily removed from the system for any reason the drive cable may be slackened off using the winch and the end loop of cable lifted from the pulleys at each fixed end, after removing a pair of lower steady wheels (either pair as long as they are from the same side) the carriage may be lifted off (two man lift) complete with the attached cable.

When the carriage is re-fitted this process can be simply reversed and the cable re-tensioned.

After fitting or changing a cable

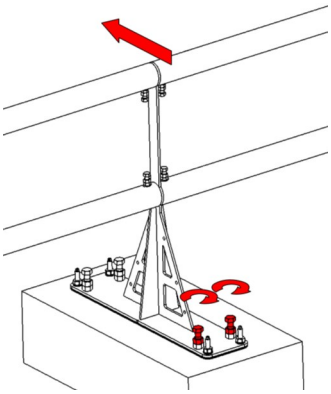
Replace the top covers on the drive and Idle ends and ensure all retaining bolts are re-fitted.

Track adjustment

Although the track will have been levelled and straightened at install time, some movement may occur due to ground settlement some time later.

Adjustment bolts have been incorporated into the stanchions and end units in order to make minor adjustments which allow you to straighten and level the track**.**

It is generally not necessary to touch the fixing bolts, turning the adjustment bolts lifts or lowers the base plate at one edge, introducing a slight bend just before the fixing bolts. There is enough clearance built into the fixing holes to allow the plate to move slightly under the nuts as it is adjusted.



To make adjustments:

Ideally have an assistant standing at one end, sighting along the track and directing as to which stanchion needs to be adjusted - and in which direction.

Working on one stanchion at a time, begin by loosening the locknuts on all four adjustment bolts.

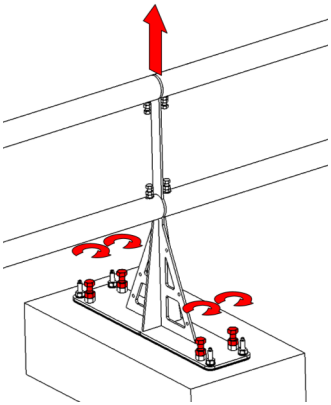
Hand tighten each bolt to ensure that it is in contact with the shim plate beneath the stanchion.

Tightening any pair of adjustment bolts on one side will move the track away from you.

Tightening all four adjustment bolts by the same amount will lift the track up .

The Drive and Idle end assemblies have the same type of adjustment bolts fitted and are adjusted in the same way.

After adjustment, tighten down the locknuts to prevent future movement.



Periodic Maintenance

The following points should be attended to at least annually.

Turnover arms

Apply some light oil each side of the pivot point and work the arm in and out a few to times to ensure it moves freely and the oil penetrates into the bush upon which the arm pivots. If the mechanism is too stiff to do so, then release the locking screw and tap out the pivot pin, clean as necessary, re-assemble the pivot and re-lubricate.

Check that the arm moves freely using light hand pressure and is pulled back by the return spring.

Turnover assembly on carriage

The pivot points at each end should be lubricated with light oil and the target turned over by hand a few times to distribute the oil and check that the mechanism moves freely.

Turnover contact points

The round pin assembly (Drive end) & angle plate (idle end) which contact the carriage arms should be cleaned and fresh grease applied to the contact faces.

Drive End

(Top and upper back cover plate will need to be removed for access). Using a grease gun, apply grease to both bearing units. Check that the locking screws to the shaft are all secure.

Check also the tightness of the pulley bolts, bearing unit mounting bolts and the motor coupler bolts. Clean around the pulley, shaft and motor area removing any debris, leaves etc.. which may have accumulated.

Idle End

(Top and upper back cover plate will need to be removed for access). Check that the Upper seal on the shaft is secure. Using a grease gun, apply grease to the nipple on the hub unit.

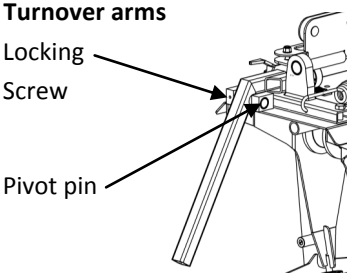
Drive Cable

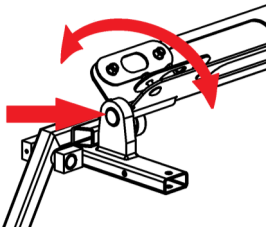
The drive cable should be checked for broken strands, excessive corrosion or damage from kinking. A cable that appears to be damaged in any way should be replaced (refer to the appropriate section of this manual for full details).

Roller Switches

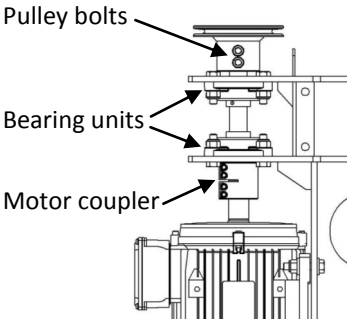
Check that each roller switch moves freely though its full arc of movement both ways, if any stiffness is noted or the switch jams at the end of its travel, clean and lubricate the action and operate both ways several times to free it off. Any roller switch which has a very stiff action, is damaged or jams easily should be replaced. It would be wise to occasionally check the function electrically using a multi-meter.

Turnover arms

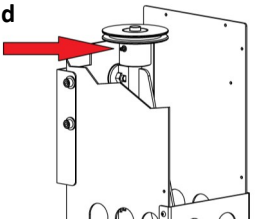




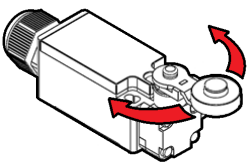
Drive end



Idle end



Roller switch



Track

The track needs very little maintenance other than checking that it remains free of damage, dents & obstructions, occasional levelling or re-alignment may be required due to settlement (refer to the appropriate section of this manual for full details).

Radio Handset

Ideally as part of annual maintenance checks and to ensure continued reliability, the handset batteries should be replaced.

Troubleshooting

No power apparent on control panel (Not starting and no lights on panel)

Check that the power supply is working, and the system is properly connected.

Check if the emergency stop button has been pressed, if so twist to release.

Check if the emergency pull cord has been activated, if so reset the safety switch.

Check that isolator is in “on” position, if the panel has been opened for any reason ensure that the extended shaft is properly engaged into the panel knob and that the door is properly closed and latched before turning back to the “on” position.

System does not respond to Radio (but still operates from the control panel)

The most likely cause will be dead or very low power batteries in the radio handset.

Carriage runs at creep speed (one way)

If the system moves slowly towards one end upon starting and fails to accelerate, but works normally the other way, then suspect a faulty roller switch at the starting end.

Carriage does not slow down and drives into the idle/drive end hard

In this case both roller switches at the end of the window (the end being driven into) are jammed or broken.

System stops after parking at one end

In this case the roller switches at the end where the carriage has stopped may be faulty, the carriage has not been detected causing the system to over run. When the motor controller detects the motor stalled it will switch off showing an overload error.

Target fails to turn over

If nothing has changed electrically (i.e. a different generator) then this may be due to stiffness in the pivot point of the turnover mechanism or arm assemblies (refer to maintenance section)

Where a roller switch problem is suspected - Turn off the isolator, repair/replace the switch and reset the panel (by powering off for a few minutes) to clear any error codes.

If you are in doubt about system operation, please contact our technical department.

Barclay Phelps CE Marking Consultants, 29/8 City Mill Lane, Gibraltar 646, Europe

CERTIFICATE & DECLARATION OF CONFORMITY FOR CE MARKING

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Promatic International Ltd. declares that their:
Clay Target Launchers listed as the following models
Elite, Hawk, Superhawk, Harrier, Harrier ABT/Wobble, Eagle, Eagle Battue, Falcon, Hobby / Merlin, Ranger 8, Osprey/All American Ranger, Ranger Battue, Ranger ABT/Wobble, Sporter 400TT, Sporter 400TT ABT/Wobble, Super Sporter Battue, Super Sporter, Super Sporter Downhill Thrower, Super Sporter ABT/Wobble, Rabbit, Squirrel, Ranger Chondell, Chondell, Hunter Wobble, Huntsman, Huntsman XP, Fieldsman, Club Skeet, Pro Skeet, Int Skeet, Olympic Trap, Club 275 DTL/ATA, International DTL/ATA, Pro ABT/Wobble, Auto Trap DTL/ATA/ABT/Wobble, International Doubles DTL/ATA/Wobble and Sporter Doubles DTL/ATA/Wobble

are classified within the following EU Directives:
Machinery Directive 2006/42/EC
Electromagnetic Compatibility Directive 2004/108/EC

and further conform with the following EU Harmonized Standards:
EN 12100-1:2003+A1:2009 EN 12100-2:2003+A1:2009
EN 61000-6-3:2007 EN 61000-6-1:2007

Dated: 19 April 2011
Position of signatory: Group Technical Director
Name of Signatory: Graham Stephen Fair
Signed below:
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