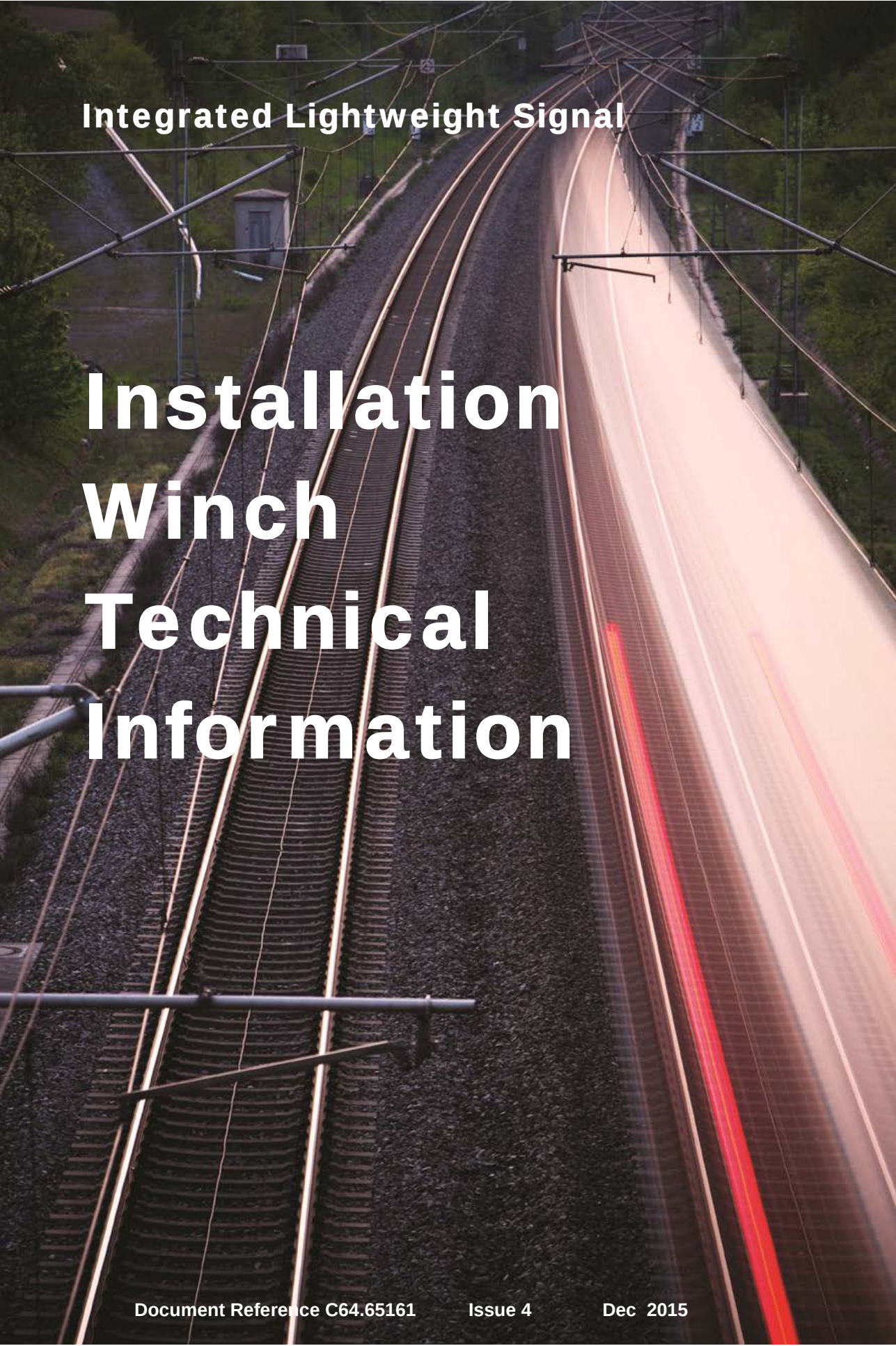




Integrated Lightweight Signal

Installation Winch Technical Information

Document Reference C64.65161

Issue 4

Dec 2015

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List of Appendices

- A – HAACON Manufacturers Winch Instructions
- B – Copy of the Unipart Dorman ISO 9001 Certificate
- C – iLS Post Lifter Certificate of Acceptance

Document Control

It is the reader's responsibility to ensure they have the correct version of this document. If in doubt, please contact Unipart Dorman to verify the current issue status. The manufacturer's instructions for the winch are shown at the end of this document and responsibility for the veracity of this publication is outside the control of Unipart Dorman. It remains the sole responsibility of the end user to ensure they are using the latest version of these instructions including the Haacon manufacture's guide by visiting the website detailed in Section 1 below.

Issue Number	Dated	Reason
1	Nov 12	Initial Issue
2	Mar 2013	Winch Approvals
3	Jan 2014	Winch Details
4	Dec 2015	Introduction of specific instructions on the inspection of and correct lay of the wire rope on the winch drum

1 Introduction

The Unipart Dorman Integrated Lightweight Signal (iLS) is a versatile yet simple signalling solution for installation in a wide variety of applications.

It is installed onto an appropriate foundation and then the signal is raised or lowered using a special to type winch kit which consists of a hand operated winch attached to a winch frame, an underframe and a tie rod.

The contents of this Information Pack are designed to supplement the winch manufacturer's operation guide which can be found in Appendix A to this document

and also at:

http://www.haacon.de/media/betriebsanleitungen/094297_e_gb_hseilw_s.pdf

1.1 Compliance Matrix

Specification	Title
BS EN 13977:2011	Railway applications — Track — Safety requirements for portable machines and trolleys for construction and maintenance
NR/L2/RMVP/0200/P006 Issue 2 March 2012	Safe Use of Plant for Infrastructure Work
RIS- 1700-PLT Issue 2	Rail Industry Standard for Safe Use of Plant for Infrastructure Work
RIS- 1701-PLT Issue 2	Rail Industry Standard for Portable and Transportable Plant Used for Infrastructure Work
ISO 9001: 2008	Certificate of Registration FM14371 (compliance with the relevant standards for implementation of a Quality Management System)
LOLER	The Lifting Operations and Lifting Equipment Regulations (LOLER) 1998
PUWER	Provision and Use of Work Equipment Regulations (PUWER) 1998.



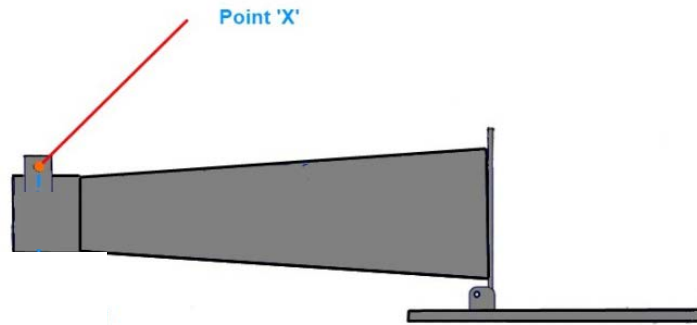
**THE WINCH DESCRIBED IN THIS DOCUMENT IS SOLELY FOR USE ON THE
UNIPART DORMAN INTEGRATED LIGHTWEIGHT SIGNAL.**

**IT SHOULD NOT BE USED FOR ANY OTHER APPLICATION OTHER THAN
RAISING AND LOWERING OF THE SIGNAL TO AND FROM THE HORIZONTAL
AND VERTICAL POSITIONS AND SHALL NOT BE USED IN ANY WAY OTHER
THAN THAT DESCRIBED WITHIN THIS DOCUMENT**

**DO NOT ATTEMPT TO MODIFY OR ALTER THE WINCH FROM THE
SPECIFICATION AND STANDARD IT WAS ORIGINALLY SUPPLIED AT**

1.2 Lifting Point 'X'

The winch Safe Working Load calculations have been derived from the force acting on a single point on the equipment to be lifted – Point 'X'. This is deemed to be the attachment point for the block used to attach the winch tie rod to the Trunnion as shown.



1.3 Safe Working Load (SWL)

There is a robust system in place whereby Unipart Dorman will not allow a signal to be ordered which would exceed this figure during the lift. An alternative lifting method would be required for signals which are outside this limit and would be determined on a case by case basis.

1.4 Corrosion Resistance

All parts of the winch frame are hot dip galvanised to BS ISO 1461:2009 before being powder coated and wherever possible all other parts of the winch kit are either stainless or galvanised steel. Care should be taken to re-apply any protective coating damaged during use to maintain the high corrosion resistance properties of the equipment.

2 Storage

The winch kit whilst reasonably weatherproof should be kept in safe custody - under cover or indoors wherever possible. The Winch Certificate and any other supplied documentation must be kept dry and readily available for use.

To maintain the correct rope lay tension on a stored winch's drum, the hook should be attached to the tie rod attachment pin on the frame as shown. Once the hook is attached to the pin, the winch should be operated to enable slight tension to be applied to the rope to prevent any unravelling between uses.



(Pin retaining lanyards removed for clarity)



**TO PREVENT ANY DAMAGE TO THE WINCH IT SHOULD NOT BE
OVERWOUND WHEN APPLYING TENSION PRIOR TO STORAGE.**

**THE ROPE IS CORRECTLY TENSIONED WHEN THERE IS APPROXIMATELY 1
INCH/25MM OF MOVEMENT AVAILABLE AT THE HOOK EYE**

3 General Information

3.1 Safety

Before commencing installation, any local safety requirements affecting the continued safe working environment of the signalling installation and/or the working railway - either directly or indirectly must be carried out. It is the user's responsibility to ensure all necessary risk assessments, permissions to work and preparatory safety activities are correctly completed, recorded as required and adhered to throughout the installation and subsequent life of the signal.

The all up weight of both the Trunnion and the signal/post assembly are clearly marked and installers should ensure that they have sufficient measures in place to undertake a safe lift.

The winching operation must only be undertaken after first setting a safety exclusion zone which only the winch operator enters and should be overseen by a lookout positioned in a place of safety. A second person may enter the exclusion zone during the winching operation to assist with the winching operation, but this person must only take instructions from the winch operator and spend the minimum amount of time in the exclusion zone possible.

All activity on the iLS and associated Winch Kit must only be carried out by staff deemed competent in their fields by their employer. It is the user's sole responsibility to ensure that the signal and/or winch kit is operated and/or maintained by certificated and competent staff.

Unipart Dorman strongly recommends the use of second nuts to lock the securing nuts on both the Trunnion mounting and movable section securing studs.

Unipart Dorman strongly recommends that the lifting winch is not operated when wind speeds gust in excess of 26mph.



BEFORE THE COMMENCEMENT OF ANY ACTIVITY, ARRANGEMENTS SHALL BE APPLIED TO PROTECT THE WORKING RAILWAY.



Winching Safety

IF ANY DOUBT EXISTS ON THE SERVICEABILITY OR OPERATION OF THE WINCH YOU SHOULD CONTACT UNIPART DORMAN IMMEDIATELY.

IF YOU DO NOT FEEL YOU ARE SUFFICIENTLY CONFIDENT TO CARRY OUT ANY ASPECT OF THE OPERATIONS DESCRIBED IN THIS DOCUMENT YOU SHOULD STOP WORK IMMEDIATELY AND INFORM YOUR SUPERVISOR



Activities identified as needing extra care are highlighted using the Caution Symbol



Activities which are or have the potential to be hazardous to personnel and/or equipment are highlighted with the Warning Symbol

3.2 Tooling

The winch kit can be assembled and dismantled without the use of hand tools. It is recommended that adequate PPE is provided for all personnel engaged in the winching operation.

3.3 Pre Use Checks

Prior to leaving the depot it is strongly recommended that the following checks are carried out:

- The Winch Test Certificate is valid and 'in date' as shown in Section 3.4.
- There is no sign of damage to any of the equipment.
- The winch and frame assembly should be free from corrosion.
- The winch rope has been examined in accordance with the instruction in Section 3.3.4
- A copy of these instructions is readily available and anyone required to operate the winch is to be fully conversant with them and deemed sufficiently competent and where necessary properly certified, to undertake the task.
- The Winch Kit is complete and the two locking pins and R Clips are securely fastened to the frames with the lanyards intact.
- The handle is securely fixed to the winch and the grasp section is free to rotate.
- The snap clip on the hook is functioning correctly

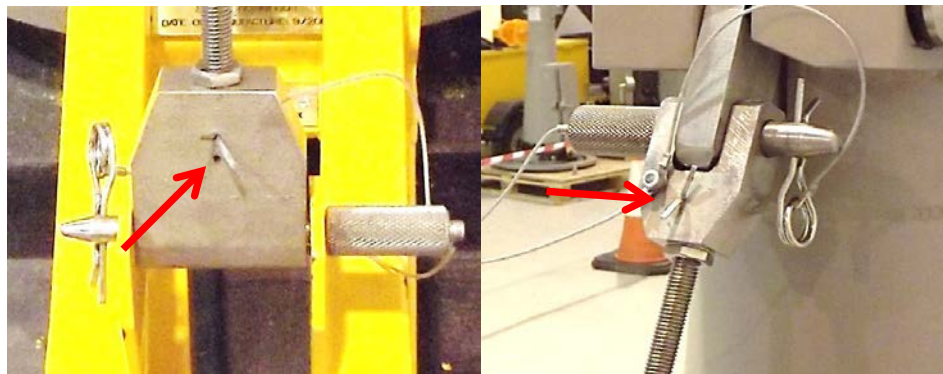
- The Tie Rod ends are 'in safety' determined by the visual check of the Split Pins described in Section 3.3.1
- The marker paint used as witness marks to indicate the nut/bolt has not become loose is intact on all fasteners

3.3.1 Tie Rod End Safety



Do not attempt to adjust the length of the tie rod. A check that the end fittings are 'In Safety' as defined in this section shall be carried out prior to using the winch kit.

The end fittings on the winch tie rod shall have a minimum of 30mm of tie rod inserted. To ensure this a split pin is fitted in each end fitting as indicated by the red arrows and the tie rod is only deemed to be 'in safety' if these split pins are securely fitted.



3.3.2 Handle Force and Operation

The following force values are only applicable when the winch handle is in its normal operating position not stowed.

The maximum forces needed to operate the winch are:

Raising a signal – 33.5 Nm

Lowering a signal – 25 Nm

If the handle force is +/- 5% of these values or if the operator considers the handle forces to be incorrect winching should be terminated and an investigation into the cause carried out.



Winch handle shown in stowed position (to stow/unstow, pull the grasp section of the handle towards you and fold as required)

When the handle is operated in a clockwise direction as shown when looking at the winch handle and there is a ratcheting sound the cable will be wound onto the drum and the signal/trunnion will be raised. Reversing the turning direction will allow the signal/trunnion to lower. (It should be noted that when unwinding the rope from the drum there will be no ratcheting noise).

3.3.3 Nut and Bolt Witness Marks

All nuts and bolts on the winch kit leave the factory with marker paint applied to them acting as witness marks as shown in the example below. If the paint is not intact an investigation should be carried out and once the fastener torque has been correctly established the paint can be re-applied.



3.3.4 Mandatory Check of the Winch Rope Prior to Use

Prior to every winch operation the following check shall be carried out:

The hook is disconnected from its stowage point on the frame and the rope is to be **completely** unwound from the drum in a straight line. A minimum of TWO people are required to unwind the rope, one to operate the winch handle and the second person to apply sufficient tension on the rope to ensure it unwinds easily. It should be

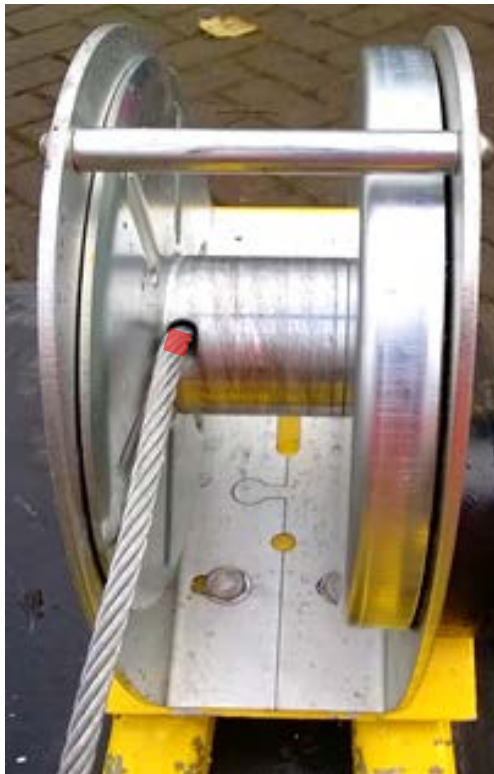
noted that there are approximately 4 metres of rope and sufficient space should be provided to unwind it in a straight line.



The person applying the tension to the rope should ensure that the area where the unwound rope may lie is clean and free from contaminants and should ensure that whilst pulling the rope taught that they do not walk backwards and avoid any slip, trips or falls

Once the rope is completely unwound, its entire length should be examined preferably in daylight but otherwise using a suitable light source. Start the inspection at the hook end and pay particular attention to signs of kinks, fraying, wear, splaying or flattening. It should also be free from dirt/corrosion. Any damage should be reported and if necessary the winch should be quarantined prior to return for remedial action.

When the rope has been examined along its full length a final check is made to ensure the end is secured in the drum as shown by the red painted witness mark which should align with the entry point into the drum. If the witness mark is not present or it is not immediately adjacent to the drum entry, the winch should be rejected and not used.





An absent or misaligned witness mark means that the end of the rope is potentially disconnected from the drum and renders the winch unsafe for use

The rope can then be wound back onto the drum by one operative winding the handle and the second applying just enough tension to the rope to ensure that it is laying correctly on the drum and adjacent windings and it is spooling evenly across the drum without any binding or bunching as shown in the picture below.



Failure to carry out this check may compromise the winch's integrity and could result in catastrophic winch failure

Once the inspection is complete the hook should be attached to the tie rod attachment pin on the frame as shown. When the hook is attached to the pin, the winch should be operated to enable slight tension to be applied to the rope to prevent any unravelling in storage.



(Pin retaining lanyards removed for clarity)



TO PREVENT ANY DAMAGE TO THE WINCH IT SHOULD NOT BE OVERWOUND WHEN APPLYING TENSION PRIOR TO STORAGE.

THE ROPE IS CORRECTLY TENSIONED WHEN THERE IS APPROXIMATELY 1 INCH/25MM OF MOVEMENT AVAILABLE AT THE HOOK EYE

3.4 Winch Certification

This example of a Winch Test Certificate is shown with the date of its next test highlighted. If the winch is required outside of this date no lifting operation is to be undertaken, the winch shall not be used and is to be returned to Worlifts Ltd using the details shown on this example certificate for recertification.



Serving the Railway Maintenance Infrastructure

Tel: +44 (0)121 460 1113
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E-mail: info@wor-rail.co.uk
Website: www.wor-rail.co.uk

Report of Thorough Examination of Lifting Equipment

This report complies with the requirements of the Lifting Operations and Lifting Equipment Regulations 1998

CUSTOMER DETAILS: UNIPART DORMAN WENNINGTON ROAD SOUTHPORT MERSEYSIDE PR9 7TN		SITE ADDRESS: UNIPART RAIL LTD- DORMAN Wennington Road Southport Merseyside PR9 7TN		REPORT NO. 003250-1	DATE OF EXAMINATION 24 Aug 2012
		EXAMINATION TYPE: F. Initial Upon Supply <i>Types: Initial, 6 Monthly, 12 Monthly, Under A Scheme, After Exceptional Circumstances</i>			
Job No 009200	Report Date: 07/09/2012	Prev. Exam Date	Next Exam Date 23.02.2013	Page 1 of 1	
DESCRIPTION, IDENTIFYING NO/MARK, MANUFACTURER & MANUFACTURE DATE OF THE EQUIPMENT EXAMINED					
Plant No. 9200	Description WINCH FRAME ASSEMBLY C/W WIRE ROPE SLING (as per drawing B20.19327) Wire Rope Sling - T34388 Hand Winch 0937120	SWL / SWP 460 Kgs X=794 @ 460kgs			
Serial No T343877/0937120	Model Details	Location Preston			
Manufacturer	Manufacture Date August 2012	Exam Frequency 6 MONTHLY			
EXAMINATION DETAILS					
Type of Examination/Test Carried Out: Proof Load Test		Examination Result \ Equipment Status: No Defects Found		Safe For Use ✓ Yes	
(A) Defects In Need of Attention To Prevent Immediate Failure & Details of Action Required to rectify Defects: None		(B) Defects to be Kept Under Observation, Date When Defects Must Be Rectified By and Parts Required: None			
Particulars of Any Tests Carried Out as Part of the Examination: (None)		Additional Comments Made As Part of This Examination:			

Examination Carried Out By	Examiner Details	Signatory for Worlifts Limited
Worlifts Limited Guild House, Sandy Lane, Wildmoor, Bromsgrove Worcestershire, B61 0QU	Name Alan Taylor Position Service Engineer	Name Mark Whitehouse Date 07 Sep 2012 Signature



ISO 9001 2000
Certificate No. GB00245

Worlifts Limited

Company Registered Address: Guild House, Sandy Lane, Wildmoor, Bromsgrove, Worcestershire, B61 0QU
Company Registration No. 1282246 Registered in England VAT Registration No. GB 300 0964 11

Sales • Service • Repair • Examination • Testing • Certification • Calibration • Training

3.5 Parts List

ITEM No	QTY	DESCRIPTION	DORMAN PART No
1	1	WINCH MOUNTING FRAME	B20.19327 SHEET 2
2	1	WINCHING UNDERFRAME	B20.19327 SHEET 3
3	1	TIE ROD END	B20.19327 SHEET 4
4	1	CLEVIS LINK	B20.19327 SHEET 4
5			
6	1	TIE ROD	B20.19327 SHEET 4
7	1	CLEVIS PIN	B20.19327 SHEET 5
8	1	WINCH FRAME PIN	B20.19327 SHEET 5
9	1	UNDERFRAME PIN	B20.19327 SHEET 5
10	1	STEEL ROPE AND HOOK ASSEMBLY	B20.19327 SHEET 5
11	1	TIE ROD END CLEVIS PIN	B20.19327 SHEET 5
12			
13			
14			
15	2	M12 HEX NUT	
16	4	M10 x 30 LONG HEX. HEAD SETSCREW	
17	4	M10 HEX FULL NUT	
18	8	M10 PLAIN WASHER	
19	4	M10 SPRING WASHER	
20	8	M5 SOCKET HEAD CAP SCREW x 6 LONG	
21	8	M5 PLAIN WASHER	
22	1	RETAINING PIN - DOUBLE COIL TYPE- SPRINGMASTERS CODE No:-89701	
23	2	LANYARD - COBURG ENGINEERING LIMITED CAT No:-FPC-120 (12" LONG)	
24	4	LANYARD - COBURG ENGINEERING LIMITED CAT No:-FPC-110 (8" LONG)	
25	1	RETAINING PIN - DOUBLE COIL TYPE- SPRINGMASTERS CODE No:-89700	
26	1	HAND WINCH - SUPPLIED BY:- LIFT TURN MOVE (LTM) LTD. TYPE KWV1250	
27			
28			
29	2	M12 SPRING WASHER	
30			
31	2	IDENTIFICATION PLATE	B20.19327 SHEET 4
32	2	WEIGHT PLATE	B20.19327 SHEET 4
33	8	Ø3,2 STEEL RIVET x 12 LONG	
35			

4 Installation of the Winch



Winching Safety

These Instructions should be consulted before using the winch

IF ANY DOUBT EXISTS ON THE SERVICEABILITY OR OPERATION OF THE WINCH YOU SHOULD CONTACT UNIPART DORMAN IMMEDIATELY

Slide the underframe unit between the bottom of the Trunnion Mount and the top of the foundation base and secure it in place using the lockpin.



Remove all Locknuts from the movable section of the Trunnion Base studs and slacken the four Trunnion assembly nuts in preparation for fitting the winch frame.



DO NOT REMOVE THE NUTS COMPLETELY AT THIS STAGE (leave at least one stud thread showing above the nut)

IF ALL FOUR NUTS ARE REMOVED, EVEN A SLIGHT BREEZE WILL CAUSE AN UNCONTROLLED LOWERING OF THE SIGNAL RESULTING IN CATASTROPHIC DAMAGE TO THE TRUNNION/SIGNAL AND GRAVE RISK OF DEATH OR SERIOUS INJURY TO ANYONE IN THE PATH OF THE SIGNAL AS IT FALLS

This will allow the Trunnion moving section to be tipped back sufficiently to fit the winch frame assembly which should also be secured with the lockpin provided.



Warning

ROCKING THE TRUNNION BACK TO FIT THE WINCH FRAME EXPOSES A SIGNIFICANT TRAPPING HAZARD.

NEVER ALLOW FINGERS/HANDS OR TOOLS ETC. TO BE INTRODUCED BETWEEN THE TWO PLATES

Connect the winching cable to the underframe unit, ensuring the snap link on the hook is firmly engaged to prevent the hook becoming detached. The hook should only be fitted such that the snap link portion faces away from the signal attachment end of the frame.

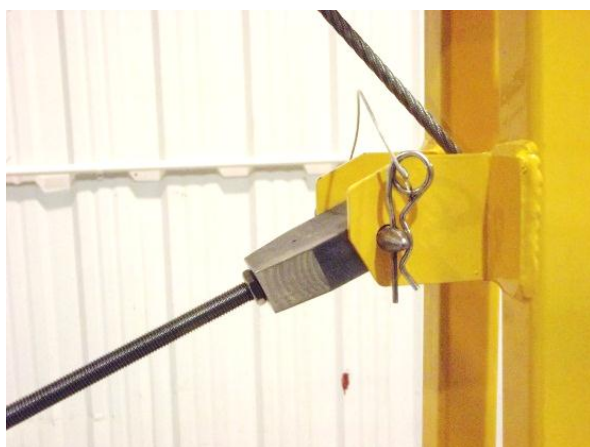


Warning

PRIOR TO USING THE TIE ROD ASSEMBLY CHECK THAT THE SPLIT PINS MENTIONED IN THE PRE-USE CHECKS ARE CORRECTLY FITTED

DO NOT ATTEMPT TO ADJUST THE TIE ROD LENGTH BY ALTERING THE POSITION OF THE END FITTINGS

Connect both ends of the tie rod and secure the clevis pins with the R Clips as shown.





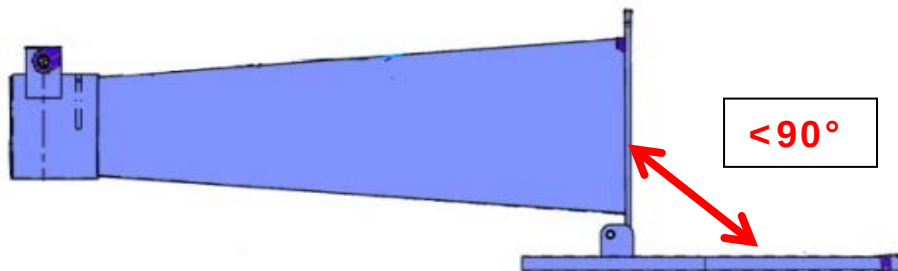
Once the winching operation is in progress the only person who should enter an exclusion zone defined by the swept area of a lowered signal is the winch operator. However, the winch operator can call upon a second person to assist as required. The assistant shall remain under the sole authority of the winch operator and is to be inside the exclusion zone for the shortest practicable time. During its operation, the safety zone should be overseen by lookouts positioned in a place of safety

The Trunnion / Trunnion and Signal should then be lowered to the horizontal position which is defined as **not greater** than 90° between the bottom of the moveable portion of the Trunnion and the fixed baseplate.



During the initial part of the winching operation it is highly recommended that a second person lightly pushes on the trunnion to initiate the lowering operation.

Particular attention should be paid to maintaining slight tension in the winch rope until it is past its tipping point to ensure it unwinds evenly



NEVER LOWER THE TRUNNION/TRUNNION AND SIGNAL PAST THE HORIZONTAL (NOT EXCEEDING 90° AS SHOWN ABOVE) AS THIS MAY COMPROMISE THE FUNCTIONALITY OF THE WINCH AND CAUSE THE TUBULAR SECTION OF THE TRUNNION TO BE DAMAGED AS IT IS FORCED AGAINST THE BASE PLATE

Once the Trunnion/Signal is in the position required it should be supported and the weight taken off the winch cable without delay.



NEVER WORK ON A TRUNNION OR SIGNAL WHICH IS ONLY SUPPORTED BY THE WINCH.

DUE TO THE SIGNIFICANT LEVERAGE FORCES WHICH CAN BE INDUCED ON THE WINCH WHEN A SIGNAL IS IN THE HORIZONTAL POSITION, IT IS VITAL THAT NO ADDITIONAL FORCE IS APPLIED TO THE SIGNAL IN ANY DIRECTION, AND THAT IT IS SUPPORTED - WITH ALL TENSION TAKEN OFF THE WINCH ROPE - AS SOON AS PRACTICABLE

When erecting a signal, as soon as the Trunnion has been winched sufficiently over the base plate studs, fit a nut plus 1 x flat and 1x spring washer with at least one thread visibly protruding above the nut to each stud, winching can then be stopped and the winch kit removed.



Do not delay fitting all four nuts to the base studs

Removing the winch kit is a reversal of the fitting procedure



Warning

ROCKING THE TRUNNION BACK TO REMOVE THE WINCH FRAME EXPOSES A SIGNIFICANT TRAPPING HAZARD.

NEVER ALLOW FINGERS/HANDS OR TOOLS ETC. TO BE INTRODUCED BETWEEN THE TWO PLATES

Finally ensure locknuts are applied and correctly torque loaded to the Trunnion base and movable section mounting studs/nuts.

5 Winch Failure Mitigation

There are only two catastrophic winch failure modes, one where the winch fails and the load subsequently free falls; and one where the winch ceases to operate in either lifting or lowering mode.

In the first case, the establishment of an exclusion zone when the winch is in operation will prevent injury as described in Section 3.1. If the signal impacts the ground or any structure as it falls, it should not be installed as there may be unseen damage to the post/head, the trunnion and/or the winch which may not be apparent.

If the winch jams, do not try to force the handle as this may lead to the first type of failure. Depending on the size and weight of the signal being lifted, the Person in Charge should organise an alternative lifting method.

If a winch fails in either manner it should be quarantined and contact made with Unipart Dorman as soon as possible.

6 Service and Repair

The winch kit shall only be maintained and have its mandatory testing requirements met by Worlifts Ltd.

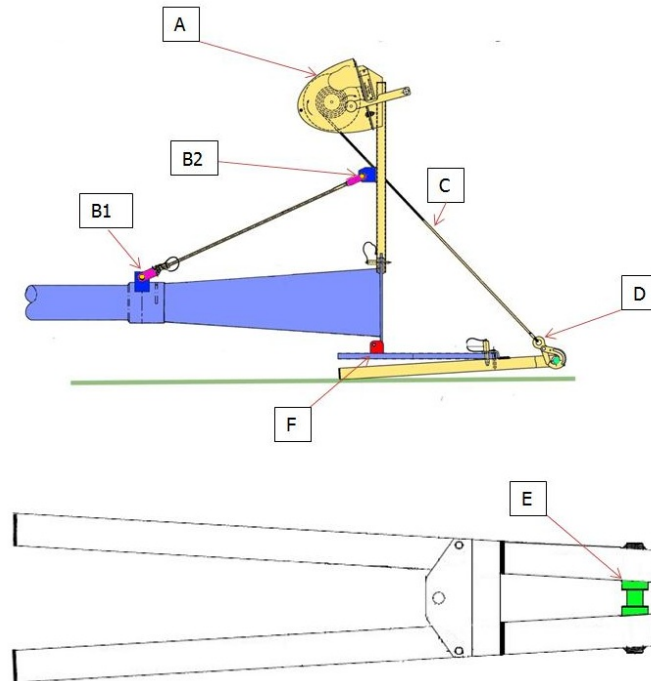
When the pre-planned maintenance/certification process is correctly managed and usage is factored in, the winch kit will be available for use for at least 95% of the calendar year which will obviate any requirement to purchase a backup winch.

7 End of Life Disposal

The Unipart Dorman iLS Winch Kit shall be disposed of in accordance with the relevant local and national requirements in force at the time of the withdrawal from service.

8 Component Safety Factors

Safety Factors have been calculated for the following components as shown on the accompanying diagram:



A) Hand winch = 3:1

B1) Tie Rod Clevis Pin = 21:1

B2) Tie Rod Clevis Pin = 11.6:1

C) Wire rope = 4.7:1

D) Hook = 5:1

E) Shackle pin = 73:1

F) Trunnion hinge pin = 7.6:1

(All figures are calculated using Ultimate Tensile Strength)



These safety factors are only applicable when the Trunnion is between the horizontal and vertical positions. That is, at an angle of less than 90° between the top face of the fixed portion of the Trunnion and the movable portion

9 Winch Risk Assessment

The following pages show a sample risk assessment form for the Unipart Dorman Winching Kit. It is not to be used as a substitute for a site specific assessment.

Severity (S) 1 to 5, Likelihood (L) 1 to 5, Risk (R) = S x L

- 1: Very Unlikely – No Injury
2: Unlikely – First Aid required
3: Likely – Off Work for up to 7 Days
4: Very Likely – Major Injury
5: Almost Certain – Disability/Fatality

Ref	Hazard	Consequence	Pre Control Risk Ranking			Controls	Post Control Risk Ranking		
			S	L	R		S	L	R

	Design								
D1	No specification for winch.	Unconstrained design produced.	3	1	3	Specification agreed with client and constraints of design briefed to designers.	1	1	1
D2	Non competent staff involved in design.	Poor and potentially unsafe design.	4	1	4	Competent designers employed	1	1	1
D3	Design issued unchecked	Errors enter into manufactured items. Remedial actions required in manufacturing process increasing cost and timescales.	3	1	3	Quality process in design activities used. E.g. BS EN 9001 Independent review of design.	1	1	1
D4	Intricacies of design produce manufacturing difficulties.	Costs and delays introduced into manufacturing process.	1	2	2	Modelling of proposed design before manufacture. Manufacturing process including jigs and fixtures considered at design stages.	1	1	1
D5	Change of designer	Lack of continuity and project knowledge.	2	1	2	Technical Construction File (TCF) implemented and regularly updated and reviewed	1	1	1
D6	Design not accepted by client.	Increased cost and redesign required.	1	2	2	Client engaged with Technical Queries as and when reqd. Design independently verified against specifications by third party assessor.	1	1	1
D7	Bespoke conditional requirements.	Increased cost and redesign required.	2	1	2	Unique requirements identified and designed out. e.g. Individual signal base design / ground conditions etc.	1	1	1

	Manufacturing								
M1	Poor manufacture / incorrect assembly sequence of equipment.	Increased cost due to reworks and replacement of material.	3	2	6	Pre-production assembly verification. Trained, briefed and correctly equipped manufacturing staff familiar with equipment assembly instructions. Calibrated tools and test equipment	3	1	3

						used. Quality processes used in manufacturing. e.g. BS EN 9001			
M2	Integration of third party design	Increased cost due to reworks and replacement of material	2	2	4	Specifications agreed with third party and briefed to designers and assembly staff. .	1	1	1
M3	Assembled equipment working incorrectly	Equipment damage. Increased cost due to reworks and replacement of material	1	2	2	Logical testing and certification process used. Certificate of compliance (C of C) issued. Equipment tested by competent staff.	1	1	1
M4	Assembled equipment not tested prior to despatch.	Serious injury to users	4	3	12	Winch cable subject to Statutory proof load testing and certification	4	1	4

	Storage and Transportation								
T1	Winch poorly protected and packaged.	Equipment damage. Increased cost due to reworks and replacement of material	3	2	6	Protection offered by means of suitable packaging.	3	1	3
T2	Winch poorly loaded, carried, and unloaded on to/from transport	Injury to staff and public,	2	2	4	Equipment secured correctly on transport vehicle.	2	1	2
T3	Winch stored incorrectly / unprotected	Acute damage to equipment and latent defects potentially introduced.	3	4	12	Design observant of environment Equipment protective packaging not removed. Manufacturer's recommendation in Winch Information Pack describing storage procedure.	2	1	2

	Use								
U1	Poor planning of work activities	Increased costs and project delays	4	3	12	Process analysis conducted and reviewed.	2	1	2
U2	Unsafe worksite conditions	Serious injury to all staff.	5	5	25	Separate HAZOP conducted and risk controls implemented. e.g. Competent and identified staff Site management Site lighting Site plant and machinery Environmental management Waste management Storage and use of consumables	5	1	5
U3	Use of winch by untrained or not competent staff	Serious injury to staff on site.	5	5	25	Staff to attend training event. Competence requirements are defined in Winch Information Pack. Use of customer competence system monitors ongoing staff competence.	5	1	5
U4	On site handling of winch	Injury to installation staff. Damage to equipment.	2	3	6	Competent staff used to transport/ assemble & disassemble/ inspect (prior to use) winch. Winch Information Pack details pre-use checks and equipment assembly	2	1	2
U5	Mass [weight] of winch.	Injury to installation staff. Note : Assembled winch mass is 45kg. It is assembled from two component parts of 30kg and 15kg. These component parts may be handled separately.	3	3	9	Use sufficient fit and competent staff used to transport/inspect (prior to use) assemble & disassemble/winch.	3	1	3
U6	On site handling and erection of post / signal head	Injury to installation staff.	5	5	25	Correct number of staff used to manhandle post / signal head. Use of lifting equipment employed as required	5	1	5
U7	Operation of winch	Serious injury to all staff.	5	5	25	Competent staff used to operate winch. On site work plan to identify lifting zone to be kept clear of non-	5	1	5

						essential staff. Winch Information Pack gives guidance on winch activity and setting up safety exclusion zones during operation			
U8	Catastrophic failure of component(s) resulting in uncontrolled descent of signal post	Serious injury to staff. Damage to equipment.	5	5	10	Design of winch includes maximum loading and safety factors. SWL Marked on winch. Mandatory Pre Use Checks as detailed in the Winch Information Pack Use of winch within design parameters Note: The Winch Information Pack and Training Course detail the limitations regarding over extension and forces applied to signals only supported by the winch equipment. Periodic inspection of safety critical components as per items M1 and U4	5	1	5
U9	Failure of component(s) resulting in failure to raise or lower post.	Unable to raise or lower post. Delays to operation.	3	3	9	Design of winch includes maximum loading and safety factors Use of winch within design parameters Periodic inspection of safety critical components as per items M1 and U4 Winch Failure Mitigation Procedure as detailed in the Winch Information Pack is used.	3	1	3
U10	Winch Rope Handling	Risk of injury	5	5	25	Pre-Use Inspections carried out to ensure the rope is intact Rope Handling to be carried out by personnel using correct PPE as detailed in the Winch Information Pack	5	1	5
U11	Signal to be installed exceeds the Winch SWL	Risk of Winch Failure	5	5	25	The ordering method for the signal makes an automatic signal mass calculation prior to the order being accepted for manufacture. If the signal is likely to exceed the SWL of the winch, the order is rejected and cannot be processed.	5	1	5

	Maintenance								
M1	No or incorrect maintenance applied to winch	Potential Injury to staff.	5	5	25	Maintenance requirements determined by design and applied at manufacturer's recommended frequencies by competent staff. Winch cable and ratchet assemblies inspected and certified by competent inspector at Statutory frequencies	5	1	5
M2	Planned replacement of component	Minor performance risk to operations whilst winch under maintenance	1	2	2	Replacement of component by manufacturer or authorised maintenance facility	1	1	1

	Decommissioning & Disposal								
D1	Environmental damage	Risk to flora and fauna	2	2	4	Recycling / Reuse / Disposal of components in accordance with Legislation	2	1	1

10 Safe and Correct Operation Overview

Unipart Dorman offers a comprehensive presentation and demonstration covering the Safe and Correct Operation of the winch which covers:

- Certification and pre use requirements
- LOLER/PUWER requirements
- Safety and Risk Management
- Mounting and demounting the Winch Equipment
- Winch Operation
- Bespoke training as required by individual customers
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A copy of the syllabus is available under separate cover from Unipart Dorman. This can be carried out on site or at the Unipart Dorman Southport Facility, please contact Unipart Dorman for the latest information on dates and availability.

11 Contact Us

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Appendix A

Haacon Winch

Instruction Leaflet

Please ensure that you have the latest version of this leaflet by visiting the Haacon Webpage:

http://www.haacon.de/media/betriebsanleitungen/094297_e_gb_hseilw_s.pdf

Appendix B

ISO 9001 Certificate

Please ensure that you have the latest version of this Certificate by visiting the Unipart Dorman Website:

<http://www.unipartdorman.co.uk>

Appendix C

iLS Winch

Approval Certificate

Please ensure that you have the latest version of this Certificate by contacting Unipart Dorman:

<http://www.unipartdorman.co.uk>