

Abacus[®]

Leaders in Lighting

Part No: INS-RLW

Lowering Head-frame (RLW)
Masts

Applicable products:

- 275kg RLW
- 550kg RLW
- 1000kg RLW
- 1600kg RLW
- Removable powertool
- Portable winch

Product Manual

November 2022

**WE STRONGLY RECOMMEND THAT THESE
INSTRUCTIONS ARE READ CAREFULLY BEFORE
ATTEMPTING TO INSTALL, OPERATE AND MAINTAIN
THIS EQUIPMENT**

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1. Safety

WE STRONGLY RECOMMEND THAT THESE REQUIREMENTS ARE READ CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE AND MAINTAIN THIS EQUIPMENT.

- i) It is essential that all operators are trained and authorised in the safe use of the winch and power tool units.
- ii) It is recommended that certified operator training be carried out by Abacus personnel.
- iii) The winch and power tool units must only be used for the purpose intended, as described in the operating instructions. Abacus Lighting Limited will not be held responsible for any misuse or abuse of the power tool or winch unit. Similarly no repair, modification or maintenance work, other than that specified in the instructions, must be carried out unless authorised by Abacus.
- iv) The weight of floodlights or other equipment carried by the head-frame must not exceed the safe working load of the winch unit.
- v) During the lowering and raising operation of the head-frame the operator must ensure that all non-essential personnel and members of the public are kept clear from the area around the mast and the power tool operated from a 5m distance via the pendant control. This area should be clearly defined and cordoned off to prevent access.
- vi) It is important that hands and loose items of clothing are kept away from moving parts, both on the winch and power tool. Use of the remote hand held control box is essential.
- vii) Head protection must be worn at all times when working in close proximity to the mast or during the head-frame raising and lowering cycle.
- viii) When manhandling or lifting any items of equipment associated with the mast the operator should ensure that they are physically capable of carrying out the task. Ensure good manual handling techniques are employed at all times and for heavy items two people should carry out the task.
- ix) The winch and power tool unit must be visually checked, before and after use, for signs of damage or worn parts. If repairs are necessary they must be carried out prior to use.
- x) It is recommended that the power tool is stored indoors when not in use.
- xi) Under no circumstances should any attempt be made to use a power tool other than one supplied by Abacus Lighting for the intended mast. Doing so could lead to component overload resulting in internal damage or failure.
- xii) Under no circumstances should any attempt be made to use a hand crank which would position the operative below the lowering crown while it was moving.

2. Installation

2.1. General

The masts are typically used for general floodlighting applications and are available in a range of mounting heights. Each mast is supplied in kit form for on-site assembly. The foundation bolts should be cast in concrete 3 to 4 weeks prior to erection of the column to allow time to cure.

Masts are constructed from steel to EN10025 grade S275 and S355, pressed to form a tapering polygonal shaft each up to 15m in length. For export orders lengths are limited to 12m. The shafts are slotted together and require no on site welding or bolting. The mast and foundation bolts are finished galvanised with small fasteners and suspension cables being from stainless steel.

In the following instructions mention is made of the minimum permissible shaft overlap distances relating to tapered polygon shafts. In addition, because these masts are designed for specific applications it is essential that reference is made during assembly, to the drawings supplied with the mast. These will give details of the shaft design overlaps. The overlaps achieved on site will vary due to manufacturing tolerances. The minimum permissible overlap can be determined from Fig 1.

The mast, depending on its overall height, can be supplied with up to 5 shaft sections for on-site assembly. The winch unit is supplied pre-assembled in the base section. The pulley housing, head-frame and suspension cables are also supplied pre-assembled ready for on-site installation. Reference should be made to the drawings supplied with these instructions.

The electric cables pass through a clamp and are terminated on site at a weatherproof junction box on the head-frame. The suspension wires are fixed to their anchorage using bulldog grips and a thimble.

The suspension system comprises of 2 or 3 No. stainless steel wire ropes between the head-frame ring and winch attachment in the mast base compartment. The winch wire connects to the head-frame wires via a compensator bracket. Steel wire rope details are shown in the table below. Minimum breaking loads are per wire rope. The winch has a self sustaining worm drive unit of 50:1 ratio with sealed-for-life lubrication.

Capacity	Winch		Head-frame	
	Diameter	MBL	Diameter	MBL
275kg	1x5mm	1448kg	3x5mm	1448kg
550kg (single)	1x8mm	3710kg	3x5mm	1448kg
550kg (double)	2x5mm	1448kg	3x5mm	1448kg
1000kg	2x8mm	3710kg	3x7mm	2834kg
1600kg				

An air terminal for lightning protection is provided if requested.

Note that the general drawings within this manual show only the triple wire rope head-frame. The twin wire rope installation, operation and maintenance methodology is identical.

2.2. Equipment Required (not Abacus supply)

- Mobile crane (specification to be advised by Abacus Lighting or local specialists).
- Torque multiplier and wrench.

- 2 No. 3 tonne Tirfor c/w sufficient wire rope to suit the mast length.
- Various wire ropes, soft slings and shackles.
- 4 No. 30mm 'D' shackles.
- Supply of liquid soap.
- Steel beam 2m long with attachment points for 'D' shackles along its length.
- Supply of timber supports and packing.
- 14lb Hammer and hard wood packer.

2.3. Mast Assembly

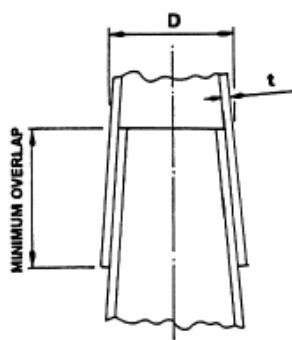
The shafts should be laid out on open ground to facilitate correct identification and their ends examined for signs of damage. The orientation of the seam welds relative to each other is not important.

Base sections with circular flanges should be supported on timbers and chocked to prevent rolling. Mark the base with both design and minimum overlaps as determined in Fig. 1. Pack the upper end of the base section so that it is clear of the ground. Position packers at least 1.5m from the open end to allow plenty of room for the next shaft to overlap. Check the overlap area for any damage, excess zinc or weld, which may impede fitting of the shafts together and rectify if necessary.

Smear liquid soap over the outside of the base for the length of the overlap and carefully slide the shaft into position. Ensure the flats do not rotate relative to each other since a shaft wedged with a corner to a flat will be very difficult to separate. See Fig. 2.

Referring to Fig. 3, attach 2 Tirfors between the flange and steel beam as illustrated. The steel beam must have timber packing placed between it and the edges of the shaft to prevent deformation. With the shaft supported by a crane, lift and feed it onto the end of the base. It is essential that the Tirfors are operated simultaneously when pulling the shaft into position. Agitate the shaft up and down to aid bedding of the shaft into position. Striking the beam across the ends of the shaft with a sledgehammer will also ease the assembly.

As sliding takes place periodically sight down the assembly to check for straightness. Do not stop pulling if the minimum overlap is reached. It is important that the shafts are as tight as possible as they may settle on erection and the suspension wire lengths will need to be readjusted. Remove the steel bar in readiness for pulling the next shaft into position. Remove any surplus soap from the base section.



For $t \leq 5\text{mm}$
Minimum Overlap = $1.94 \cdot D$

For $t \geq 6\text{mm}$
Minimum Overlap = $1.73 \cdot D$

Where D = A/F's of outer shaft at the top of the Design Overlap

Fig. 1 Minimum Overlaps for Shafts

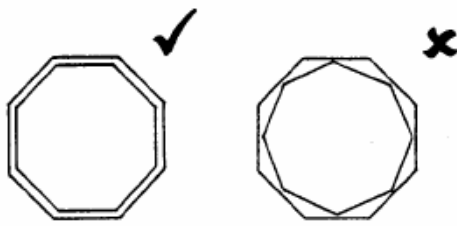


Fig. 2 Shaft Orientation

(Typically 18 sided, 8 sides shown for clarity)

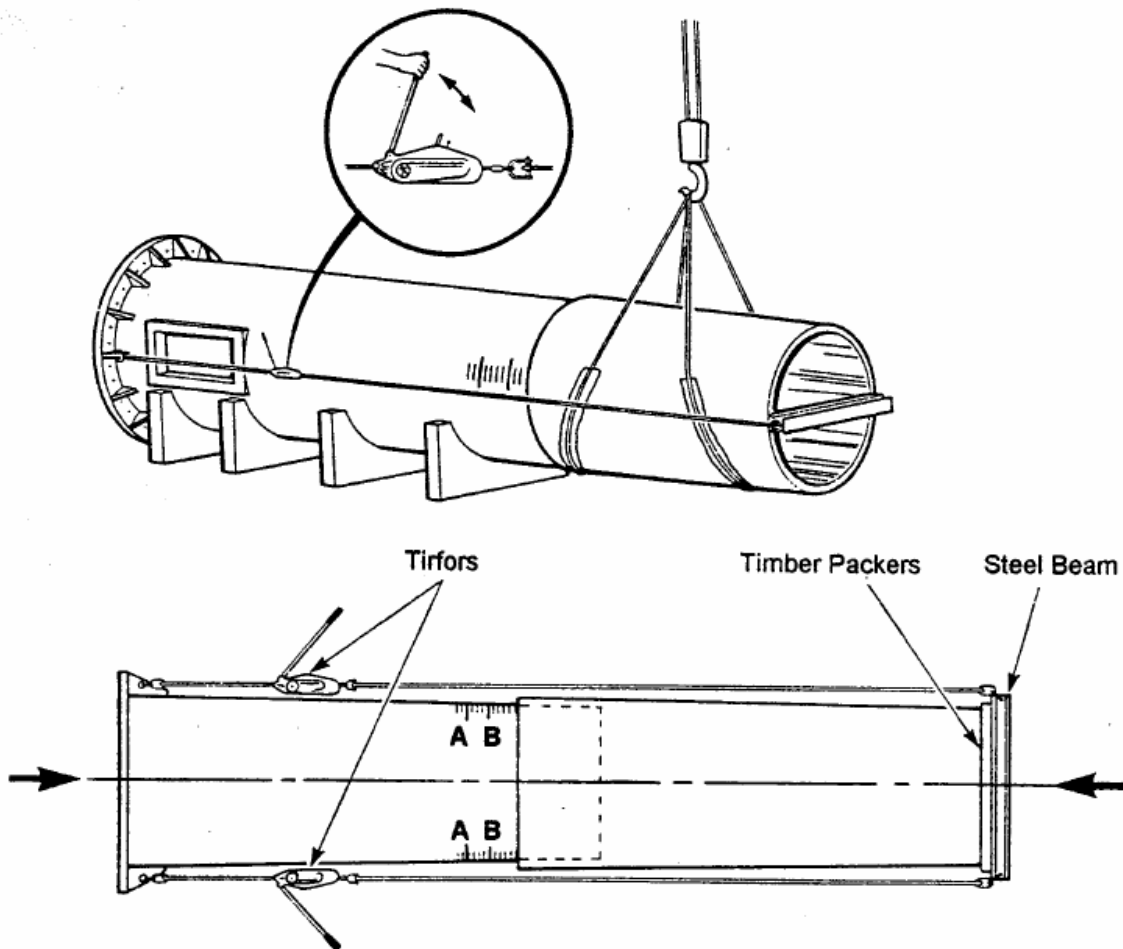


Fig. 3 Shaft Assembly

A = Design Overlap
B = Minimum Overlap

Repeat the procedure for all remaining shafts.

2.4. Head-frame Assembly

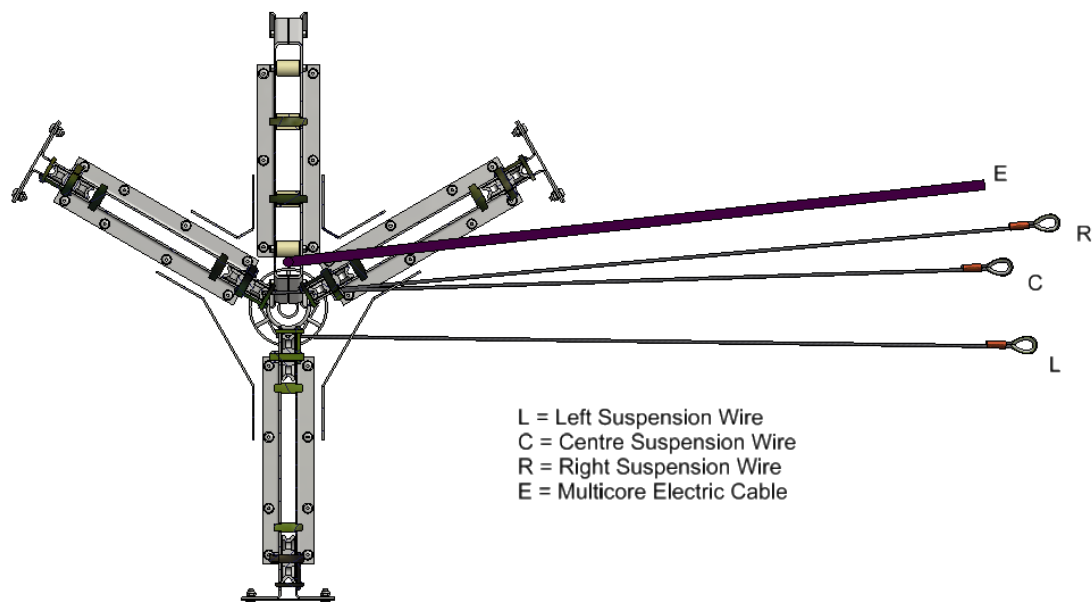
Disregard this note if the head-frame and suspension cables are supplied pre-assembled ready to be connected to the mast on site.

Support the pulley assembly upright and clear of the ground on timber trestles. Carefully uncoil the electric cables and suspension wires and lay them along the ground beside the mast. It is critical that the suspension wires are unrolled from the drums and not pulled off the sides. Any twist in the wires must be eliminated at this stage.

Carefully thread the free end of the suspension wire up through the bracket pot and around the pulley, making sure the wires are below the 6mm pins around the edge of the pulley housing. Carefully thread the electric cable(s) around the electric cable rollers ensuring that it is also below the 6mm bolts. When wires and cables have been threaded around the pulleys, temporarily attach them to the pulley housing.

2.5. Fitting Head-frame and Pulley Assembly to Mast

Lay the wire and multi-core cable from the left pulley to the left and the wire and cable from the right pulley to the right. Ensure that there are no twists in the wires and that they do not cross each other at any point.



Gather up the suspension wires and secure to the “D” shackle and safety chain as shown in drawing RLW-INS-1. It may be necessary to very lightly squeeze the rope thimbles to aid assembly. Tape the multi-core cables to their respective suspension as applicable.

Push drain rods down the inside of the mast from the top to enable the wires and cables to be pulled into the mast. Tape the suspension wires to the end of the drain rods.

The orientation of the pulley housing relative to the base compartment is not important.

Attach the suspension wires to the winch wire or anchor plate as appropriate. It is essential that the winch wire is kept neatly stacked on the winch drum. The drum is supplied with the coil taped in place and to facilitate control of the winch wires during installation it is recommended that the tape be left in place.

Lift the assembled head-frame onto the end of the mast whilst feeding the rest of the cables inside. Orientate the head-frame to the desired position and tighten the grub screws to secure the pulley assembly. It is important the pulley assembly mounting tube and the shaft are concentric before the grub screws are finally tightened.

The suspension wire lengths must now be adjusted. Slacken the bulldog grips securing each wire to the head-frame ring and pull the slack wire from inside the mast. Pulling the wire as tightly as possible by hand, tighten the grips, positioning them at the centres shown in figure 4 below. It is important that, with the suspension wires taut, the compensator is positioned 200mm above the winch drum. This ensures correct operation of the safety chain.

It is important that all the wires are consistently tight otherwise the head-frame will not be horizontal when the mast is erected. It is easier to position and secure the centre of the 3 grips first. The grip adjacent to the thimble should be as tight into the thimble as possible. The orientation of the grip saddles must be as shown in figure 4 with the saddle located on the 'live' side. Tighten the nuts to the torque value shown in figure 4.

Remove the surplus wire or carefully coil it up and tape it free of any moving parts or anywhere it may snag as the mast is operated.

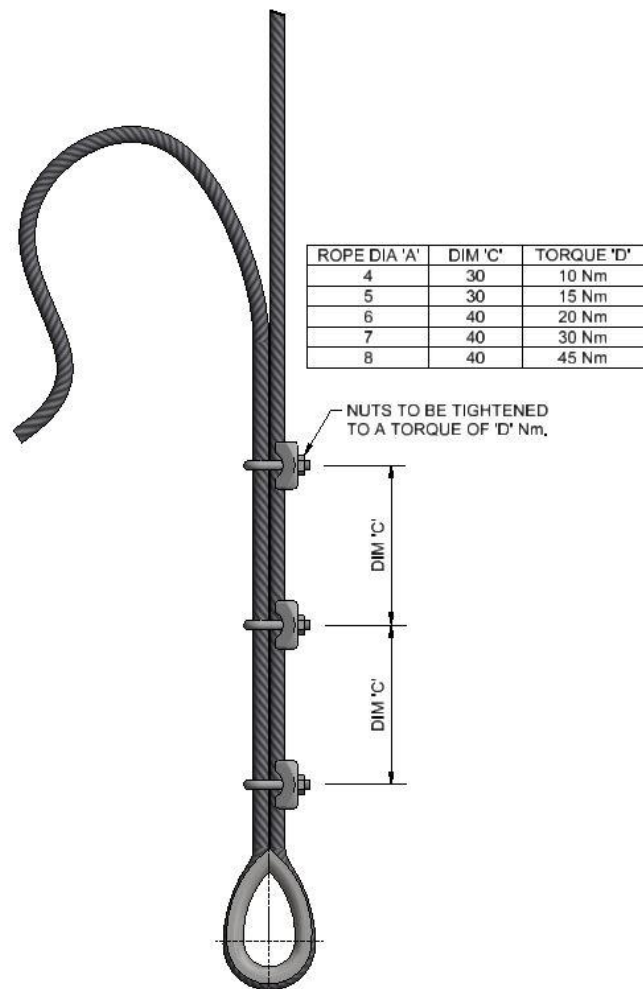


Figure 4. Wire rope termination

Remove any temporary ties used to secure the lowering ring to the pulley assembly .

The Multi-core cable must be pulled hand tight and secured by the cable strainer clamps. This adjustment can be made at either the top or bottom of the mast whichever is more convenient. Ensure that no more than 300mm of Multi-core cable is hanging below the cable strainer in the base compartment.

With the aid of a torch look up the shaft from the lower end to ensure that the cluster of wires and cables did not twist as they were pulled through the mast.

Check that all wires and cables are correctly fitted onto their pulleys.

Fit the lightning protection Air Terminal if provided.

2.6. Installing Mast Onto Foundation

The holding down bolts are each fitted with two nuts and washers. The upper nut and washer should be removed. The threads should be examined for any damage and rectified using a die nut if necessary. Position the levelling nuts down the bolts sufficiently far to allow the flange, washer and retaining nuts to be fitted plus an allowance for adjustment. The lower nuts should be set in a level plane using a steel bar and spirit level across each adjacent and each opposing pair of nuts.

Loop a sling of adequate capacity around the mast at about half the height, (See Fig. 5) and secure its lower end to the flange gusset using a “D” shackle. This is to prevent the tapered shafts pulling apart as the mast is lifted into position. Secure a second guide rope to the “D” shackle to facilitate control of the suspended mast. Tie a pair of nylon ropes greater than the mast height to each side of the head-frame ring because it may not have sufficient weight to lower unassisted until the luminaries are fitted.

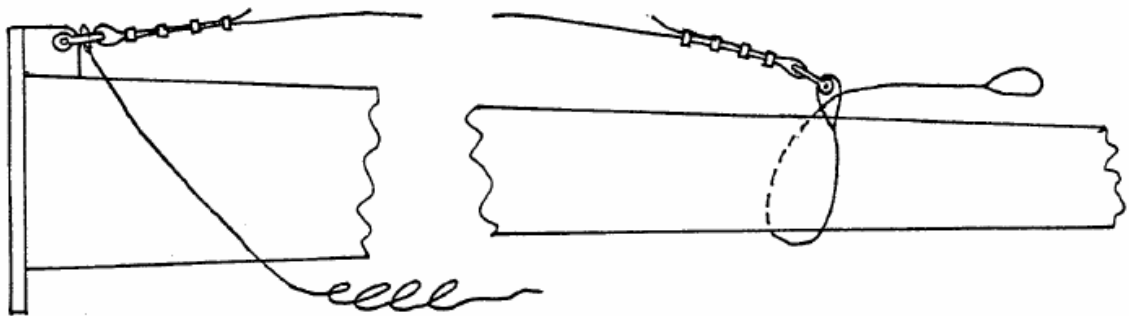


FIG. 5 : Lifting Sling Attachment

Lift the mast carefully ensuring that the jib of the crane is below the head-frame. If the position of the door opening is critical ensure that the alignment of the mast is as required before carefully lowering the mast onto the foundation bolts. Secure the mast with the upper set of retaining nuts and washers. Remove the lifting sling and tie wires.

Check the mast for vertical alignment, noting the shaft taper, which will be given on the engineering drawings. The vertical alignment can be adjusted using the upper and lower nuts as necessary. Once the alignment is satisfactory all bolts should be tightened to the specified torque setting;

Bolt Size	Torque Setting (Nm)	
	Grade 4.6	Grade 8.8
M20	50	250
M24	160	425
M30	310	850
M36	550	1450
M42	875	2350

If the gap below the flange is to be grouted it is essential that adequate provision is made for ventilation and drainage of any water collecting inside the mast.

2.7. Commissioning of Mast

Use the support brackets above the base compartment to steady the head-frame for working. Fit lantern clamps, gear clamps, lanterns and control gear as appropriate. For asymmetric lantern arrangements balancing of the head-frame will be required and ballast weights are provided as necessary. The position of balance weights is generally indicated on the drawings supplied with these instructions.

Installers should be aware that if they chose to deviate from the suggested installation method in the previous sections, then it is their responsibility to produce a method statement, which will ensure that the mast is installed in a safe and operable manner.

3. Operation

DO NOT ATTEMPT TO LOWER THE HEAD-FRAME IF THE WIND SPEED IS 30KPH (18MPH) OR GREATER.

3.1. General

Fit the 3 support brackets into the cleats welded to the outside of the base just above the door opening.

These will be used to support the head-frame when it is in the lowered position.

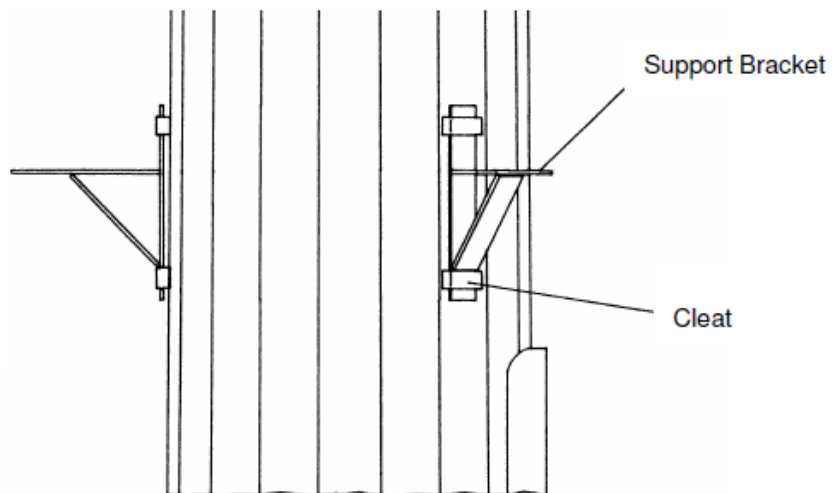


Fig. 1: Headframe Support Brackets

Remove the base compartment door cover and isolate the power supply to the light fittings. Disconnect the plug and socket to the multi-core cable within the compartment.

3.2. Winch Variants

The winch / motor assembly can be supplied in two different configurations;

- Integral winch with removable power tool (single or double drum).
- Portable winch and power tool.

The principal mechanism of the two variants is identical although the operation procedures varies slightly.

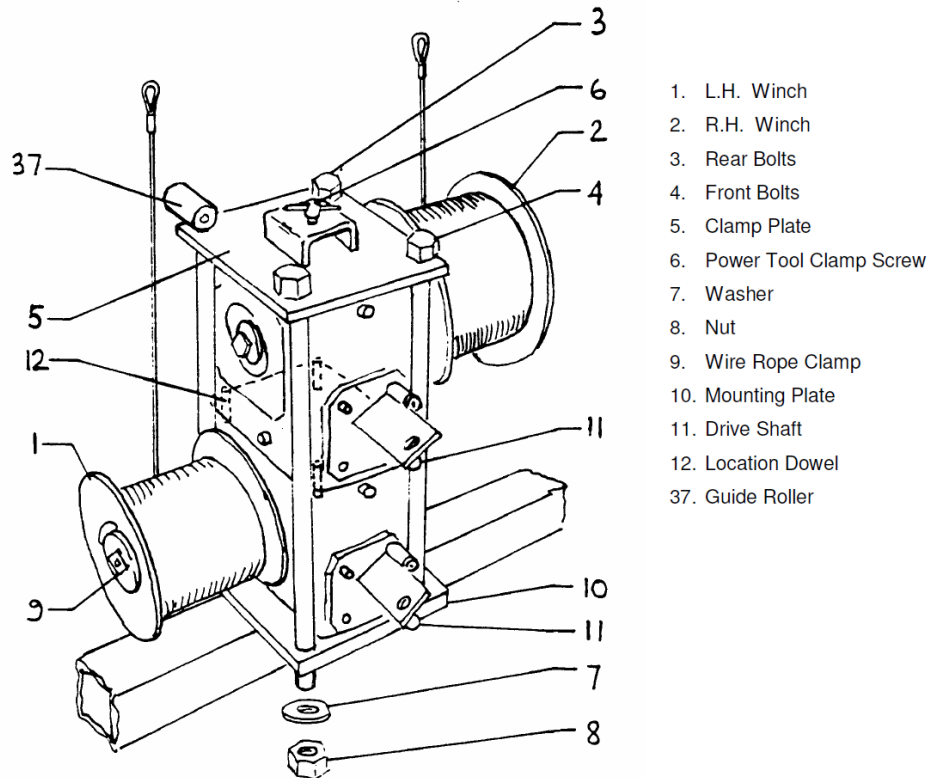
3.3. Integral Winch with Removable Power Tool

Masts can be supplied as either single winch or double winch variants.

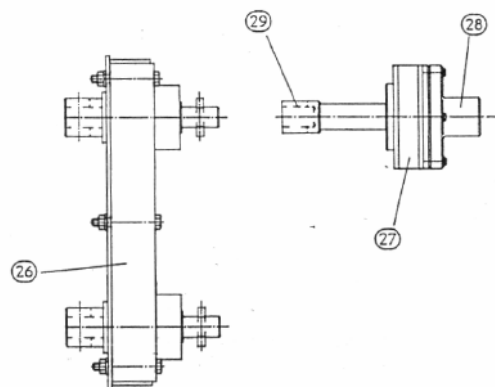
3.3.1. Double Winch Configuration

The double winch configuration comprises two identical gearbox / drum assemblies stacked vertically. The two winch cables are connected to the compensator within the mast body.

For operation, the two gearboxes are driven from a single power tool using the supplied dual drive adaptor.



- 26 Dual Driver
- 27 Torque Limiter
- 28 Housing
- 29 Adapter



To attach the power tool, first slide the dual drive adaptor over the pair of gearbox input shafts. If the shafts are rotationally out of position relative to each other it may be necessary to use the supplied hand crank to adjust them slightly, ensuring the tension in the winch

cables remains equal. With the dual drive adaptor in place proceed with the operation as per the single drum instructions (see 3.3.2).

3.3.2. Single Winch Configuration

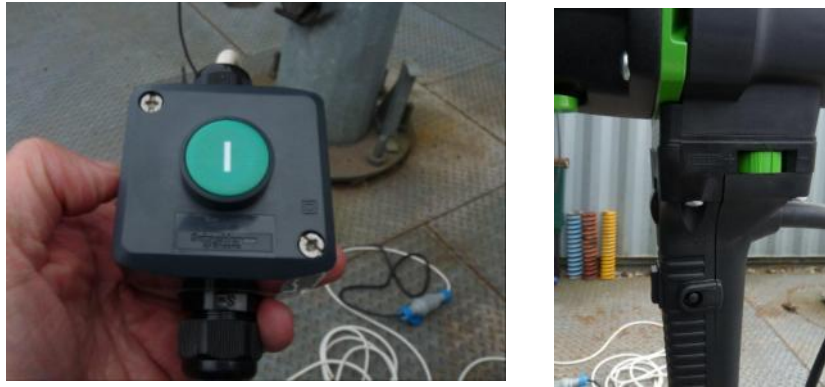
The supplied power tool is adjustable for both speed and torque. Both should be set to their maximum positions (IIII). Continual operation at lower speeds can lead to the motor overheating. If this happens the tool will stop for around 2 minutes to cool before it can be restarted.

The tool is also equipped with a mechanical two-speed gearbox. The tool should be set in the higher gear for use on a 275kg mast and the lower gear otherwise. Select the gear by pressing-in, shifting and engaging the latch on the underside of the tool. The position of the higher gear is in the direction away from the working spindle.

Offer the power tool adapter to the winch input shaft. Slide the power tool bracket into the support plate and engage the power tool onto the winch drive shaft. Rotate the adapter by hand until it engages the key of the drive shaft.



Clamp the power tool bracket into the support plate. Plug the power tool into the power supply outlet within the base. The variable speed power tool is operated from a remote lead and control box which allows the operative to stand 5m clear of the mast. The raising and lowering direction is set on the power tool body.



Operate the power tool to lower the head-frame ensuring that the multi-core cable is carefully guided into the mast without snagging any base equipment. Check that the winch wire does not become slack. As the head-frame nears the support brackets release the power tool button and let the head-frame rest onto the support brackets. Do not continue to operate the power tool such that the suspension wires become slack.

The head-frame may be fitted with a plug and socket to allow lamp testing at ground level using a test lead from within the base compartment. For masts without head-frame sockets, a trailing lead is available.

To raise the head-frame operate the power tool in the reverse direction checking that the winch wire is stacking neatly onto the winch drum. Low speed is recommended for raising the head-frame to prevent the torque limiting clutch from slipping. When the electrical plug reappears from within the mast the power tool must be stopped. Inch the head-frame up into the docked position by short applications of power to the power tool. The clutch will eventually slip indicating that the head-frame is firmly docked.

Remove the power tool, ensuring that the drive shaft flapper plate is engaged. Refit the door cover and secure with the screw provided.

3.4. Portable winch and power tool

Wheel the portable winch unit up to the mast and stand adjacent to the mast door opening.

Remove the retaining pins which secure the handle grips to the bars on the winch unit. Store the pins and grips in a convenient and safe location. Using the hand grips, manoeuvre the unit through the door opening and locate the handle bar mounting spigots into the slots in the rope attachment pedestal. Ensure that the bars on the unit are fully home in the slots and insert a retaining pin each side to secure the unit in position (see figure A).

Plug the winch unit into the power supply outlet within the base and switch on. The single speed motor is operated using non-latching buttons clearly labelled 'up' and 'down'.

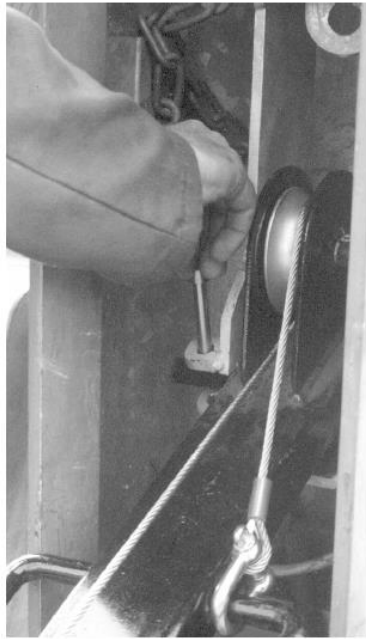


Fig. A – Insert retaining pins



Fig. B – Remove pin from anchor plate

Operate the 'down' button to release the tension in the wire and uncouple the 'D' shackle from the handle on the winch unit frame. Attach the 'D' shackle to the bottom of the anchor plate, which sits within the rope attachment pedestal. Operate the 'up' button on the winch unit and rewind the wire rope sufficient distance to allow removal of the pin from the anchor plate (see figure B). Disengage the safety chain from its bracket and allow it to hang in the base away from the winch wire and pulley wheel.

Press the 'down' button to operate the winch unit to lower the head-frame ensuring that the multi-core cable is carefully guided into the mast without snagging any equipment in the base. When the head-frame comes to rest on the support brackets do not continue to operate the power tool such that the suspension wires become slack.

The head-frame may be fitted with a plug and socket to allow lamp testing at ground level using a test lead from within the base compartment. For masts without head-frame sockets, a trailing lead is available.

To raise the head-frame press the 'up' button to operate the power tool in the reverse direction, checking that the winch wire is stacking neatly onto the winch drum. When the electrical plug reappears from within the mast, continue raising carefully until the anchor plate relocates in the rope attachment pedestal. Once in position, insert the locking pin fully through the slotted hole in the pedestal to secure the anchor plate. At the same time ensure that the safety chain is attached to its bracket in the base.

Operatives of the winch unit should satisfy themselves that the anchor plate retaining pin and safety chain are correctly fitted before carrying out any further operations.

Gently operate the 'down' button until the weight of the head-frame is fully taken by the pin. Slacken off any tension in the winch wire and release the 'D' shackle from the anchor plate. Continue extending the winch wire until it is possible to attach it to the handle on the winch

unit frame. Ensure that with the 'D' shackle attached to the frame that the winch wire is left in slight tension to ensure the wire remains neatly spooled on the drum.

Do not let go of the winch wire until it is properly secured to the frame.

Remove the two retaining pins from the rope attachment pedestal and pull the unit out of the base. Refit the handle grips to the unit, securing them with the retaining pins.

Disconnect the power supply to the winch and store the cable. Reconnect the multi-core cable to the power supply within the base compartment and refit the mast door.

4. Maintenance

These masts are of hot dipped galvanised steel construction with multisided shaft sections. Typically, masts over 15m in height will be assembled from shaft sections with tapering slip joints. The illustration adjacent is a typical arrangement of an RLW mast. Maintenance requirements for the mast itself are minimal but the winch, pulley assembly & associated equipment must be checked at the intervals stated.

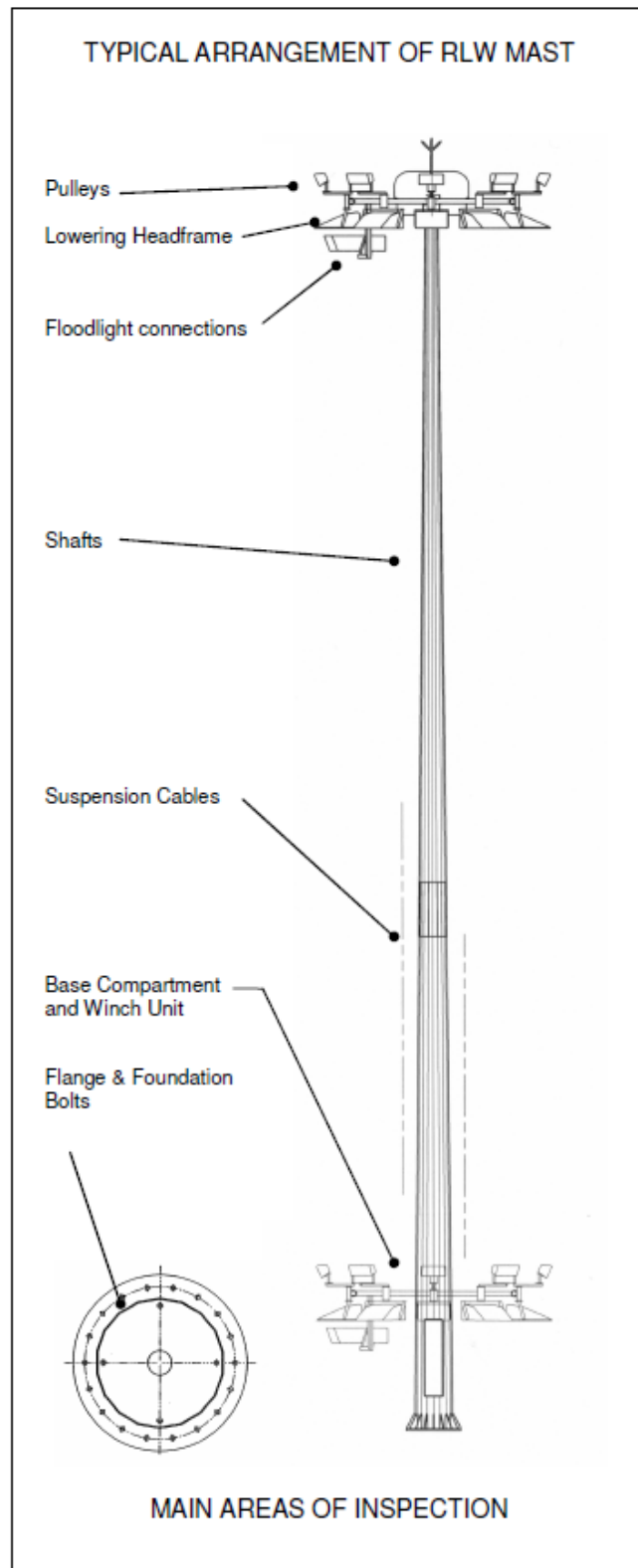
4.1. Every Time the Mast is Operated

1. Check the torque limiter is of the correct rating for the mast(see 4.4).
2. Check that the power tool, dual drive adaptor (if supplied) and torque limiter or portable winch unit is working correctly.
3. Check the door cover and seals.
4. Check the winch unit functions and there is no sign of damage to the winch, suspension wires or electric cable.
5. With the head-frame lowered check the security of the floodlights and suspension wire terminations for damage.

4.2. Every 12 Months

Annual checks must be carried out on the following items.

1. Power Tool Drive Assembly (if applicable)
2. Portable winch unit (if applicable)
3. Pulley Assembly



4. Base Compartment & Winch (if fitted)
5. Winch Wires & Electric Cable
6. Head-frame & Floodlight Connections
7. Suspension Wires and Grips
8. Check that the nuts on the foundation bolts remain fully torqued.

4.3.As Required

Paint the shafts and head-frame. Aesthetically the galvanised finish will typically last at least 5 - 7 years before painting is required. In polluted or saline environments this may be shorter and in mild climates considerably longer.

4.4.Torque Limiter Rating

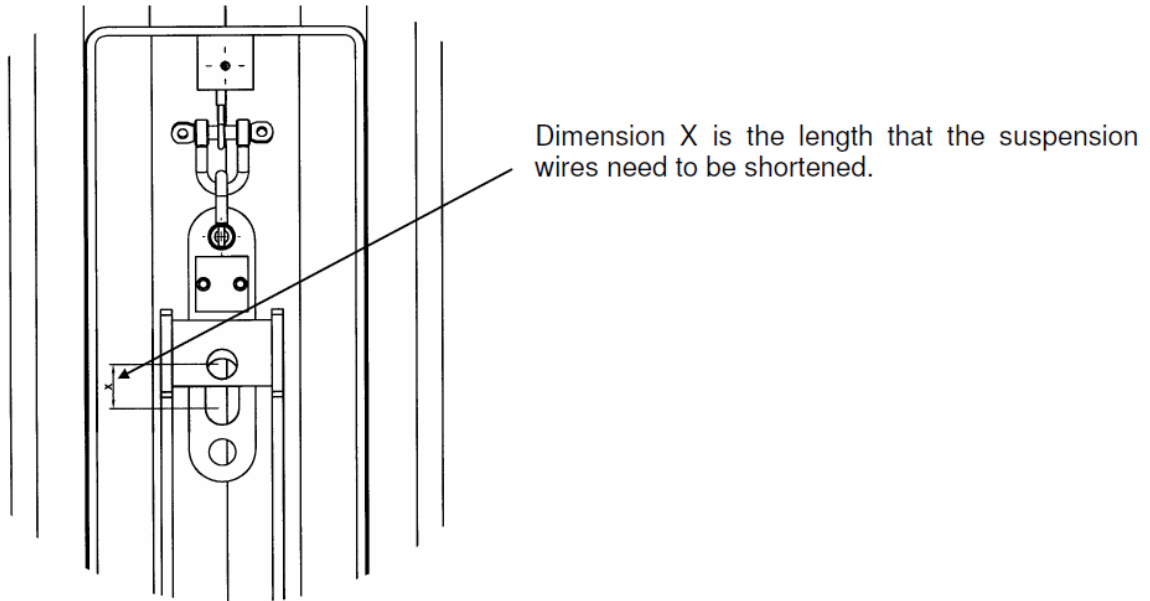
The rating of the torque limiter depends on the capacity of the mast as shown in the table below;

Capacity	Torque Limiter Setting
275kg	25 Nm
550kg	50 Nm
1000kg	100 Nm
1600kg	

4.5.Portable Winch Units

To ensure the head-frame is fully engaged at the top of the mast the suspension wire lengths must be checked and adjusted if necessary. Referring to the mast operating instructions (see section 3.4) attach the portable winch unit to the mast and connect the winch cable to the compensator bracket. Disengage the safety chain from its bracket and allow it to hang in the base away from the winch wire and pulley wheel.

Operate the winch to raise the head-frame until the torque limiter clutch begins to slip. Ensure that the winch and suspension wires remain in tension and measure the distance from the centre of the hole in the anchor pedestal to centre bottom of the slot in the compensator bracket. If this distance is greater than 10mm then the suspension wires need to be shortened by the measured length as shown below.



Operate the winch to fully lower the head-frame until it sits on the support brackets. The 2 suspension wires can now be adjusted. Mark the position of the free end of the suspension cable and use this as a guide. Slacken the bulldog grips securing each wire to the head-frame ring and pull the wire by an amount corresponding to the distance 'X', previously measured. Ensure the cable remains tight and secure the grips as shown in Fig. 4. It is important that both cables are adjusted by the same amount to ensure the head-frame will be horizontal.

Operate the winch to raise the head-frame. If the adjustment has been successful the hole in the anchor pedestal and the bottom of the slot in the compensator bracket should be in alignment. If they do not align then further adjustments will have to be made by repeating the process previously described.

5. Mast Assembly and Operation Drawings

Notes:

1. First angle Projection
2. All standards and specifications are to the latest revision.
3. Remove all sharp edges and burrs
4. Item No. CAT034 (Thimble) and Item No. CAT041 (5mm S/Steel wire rope grips) to be fitted with reference to drawing number RLW201/20.

PARTS LIST		
ITEM	QTY	PART NUMBER
1	9	CAT041 (Bull dog grip)
2	3	CAT034 (Thimble)
3	3	CAT032 (5mm Wire rope)
4	1	Compensator Bracket
5	6	CAT027 ("D" Shackle)
6	1	DRUM CABLE
8	1	RLW/CHAIN (Fixing chain)
9	2	SS013F (M6x50 Hex Hd)
10	4	WA000F (M6 Washer)
11	2	NUT060F (M6 Nut)
12	2	ELF231

Compensator and cable arrangement

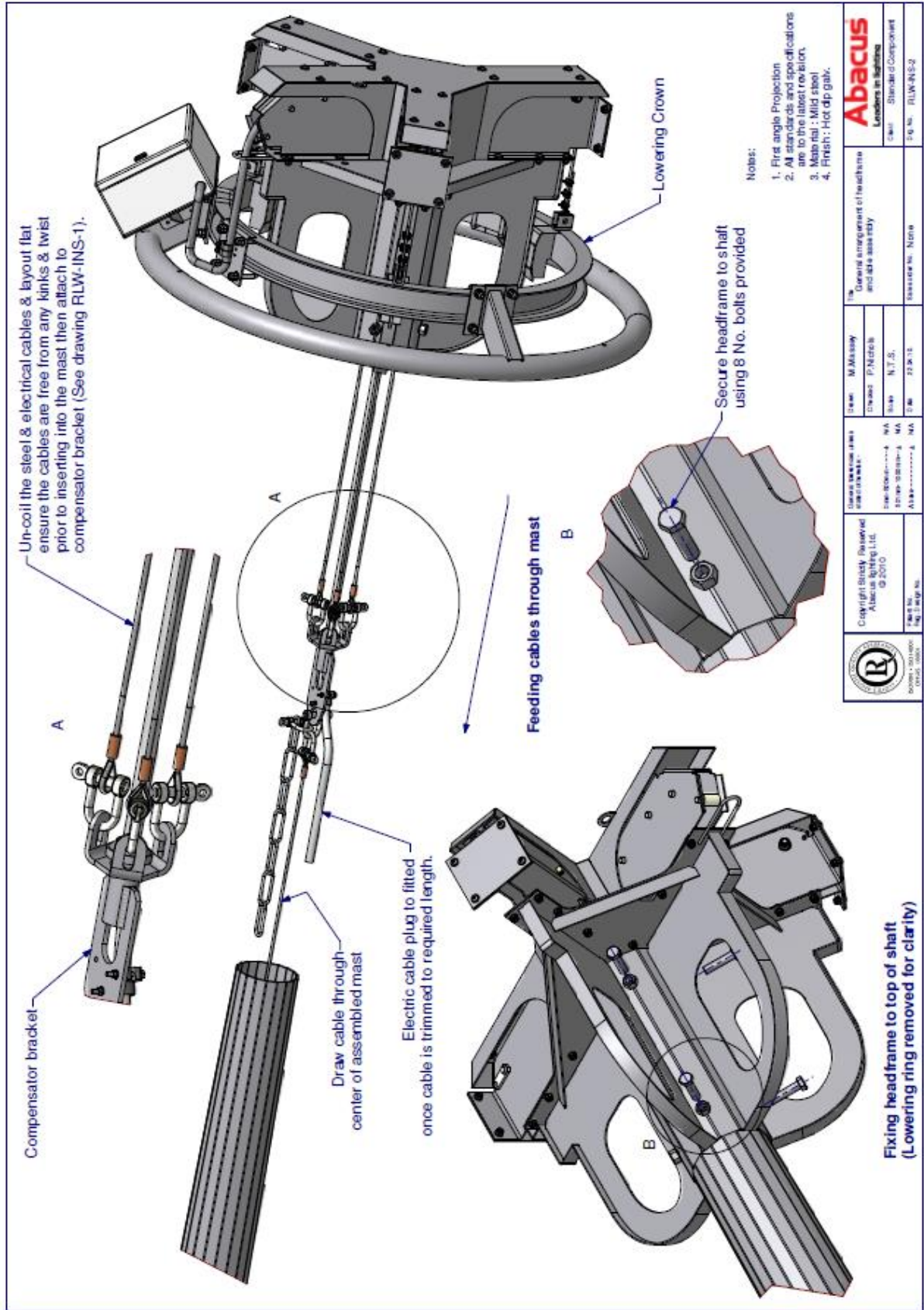
Winch drum cable

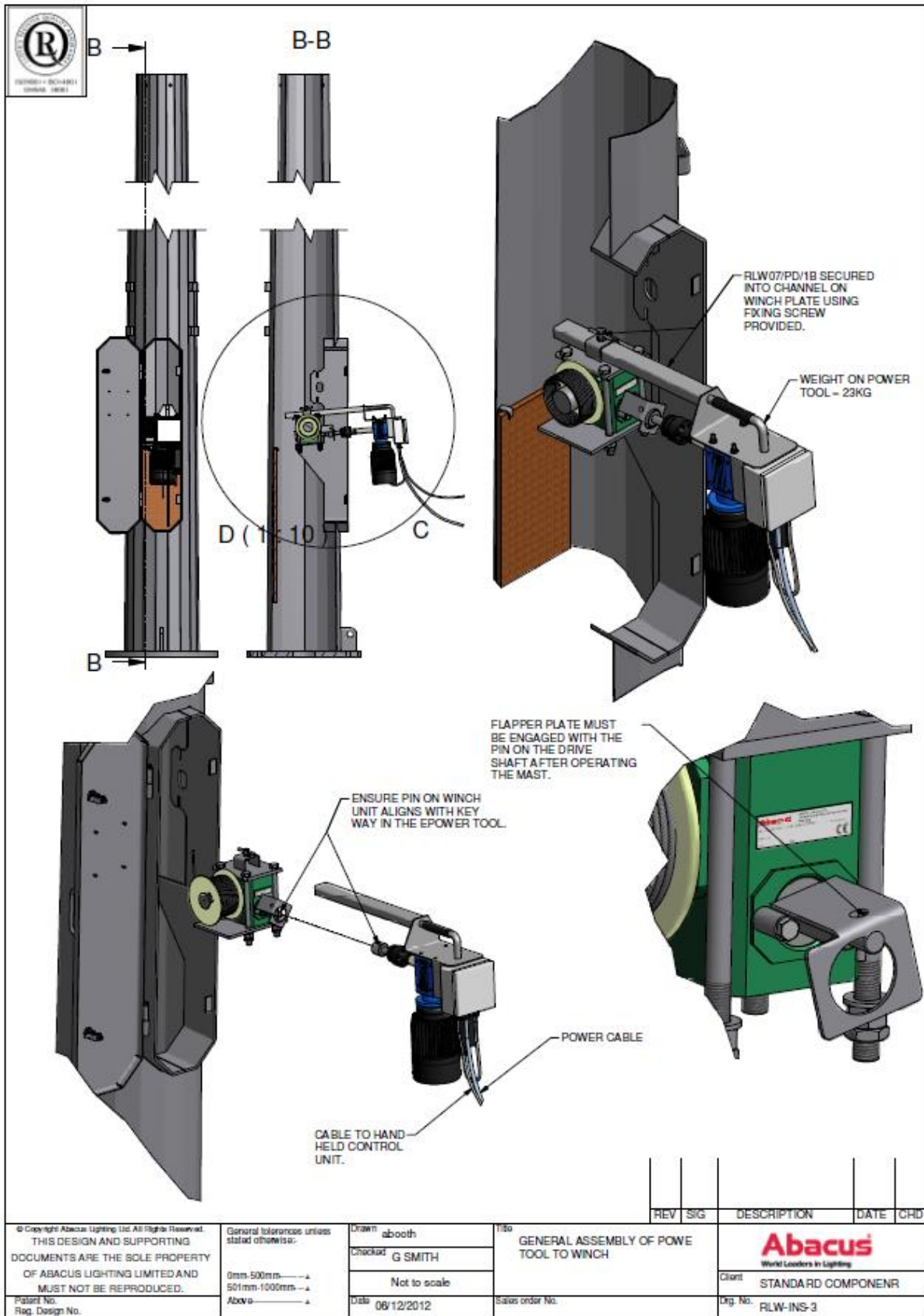
Abacus
Leaders in Lighting
Client: Standard Components
Dp. No.: RLW-INS-1

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General tolerances unless stated otherwise:
 Over 400mm: ± 0.15
 100 to 400mm: ± 0.10
 Above: ± 0.05

Drawn: M. Massey
 Checked: P. Nichols
 Scale: N.T.S.
 Date: 22.03.10
 Sales order No.: None





6. EN 1090 Certificate of Conformity

Certificate of Conformity of the Factory Production Control GB14/91485

In compliance with the Construction Products Regulation 2011 (retained EU law EUR 2011/305) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020, this certificate applies to the construction product(s)

Execution of steel structures and aluminium structures.

placed on the market under the name or trademark of

Abacus Lighting Ltd

Oddicroft Lane Sutton in Ashfield Nottinghamshire NG17 5FT United Kingdom

and produced in the manufacturing plant(s)

Abacus Lighting Ltd

Oddicroft Lane Sutton in Ashfield Nottinghamshire NG17 5FT United Kingdom

has been assessed and certified as meeting the requirements of

EN 1090-1:2009+A1:2011

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s) under system 2+ for the performances set out above are applied and that the factory production control fulfils all the prescribed requirements for these performances.

This certificate is valid from 01 August 2022 until 01 August 2025 and will remain valid as long as the test methods and/or factory production control requirements included in the designated standard, used to assess the performances of the declared essential characteristics, do not change, and the construction product and the manufacturing conditions in the plant are not modified significantly, unless suspended or withdrawn by the factory production control certification body.

Issue 6. Certified since 06 June 2014.

Authorised by



H. Crick – UK Business Manager

SGS United Kingdom Ltd Approved Body 0120
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
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Certificate of Conformity of the Factory Production Control
GB14/91485, continued

Abacus Lighting Ltd

EN 1090-1:2009+A1:2011


Issue 6	
Description	Execution of steel structures and aluminium structures.
Steel Type	Steel in grades: S235, S275, S355
Complementary designated Standard of Technical Requirements	EN 1090-2:2018
Execution Class	EXC2
Method of Declaration acc. to table A.1 of EN 1090-1	Method 2, 3b
Welding Process	111, 131, 141
Durability	No performance declared



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7. CE Marking

 0120	
Abacus Lighting, Oddicroft Lane, Sutton-in-Ashfield, Nottinghamshire, NG17 5FT, UK 14 GB14/91485, GB14/91821, GB14/91819	
EN 1090-1:2009+A1:2011 RLW mast	
Tolerances:	EN1090-1
Weldability:	S275 & S355
Fracture toughness:	27J at 0°C
Reaction to fire:	Class A1
Release of cadmium:	NPD
Emission of radioactivity:	NPD
Durability:	Galvanised
<u>Structural characteristics:</u>	
Standards:	ILP PLG07
Load bearing capacity:	See calculations
Deformation at SLS:	See calculations
Fatigue strength:	NPD
Resistance to fire:	NPD
Calculation reference:	RLW-RANGE
Manufacturing:	EN1090-2: EXC2

8. Equipment Classification

The winch mechanism of an RLW mast is an integral part of the mast which may sometimes be partly or wholly situated on a removable unit. The primary function of the product, including sub-components, is as a mast for lighting purposes or otherwise. The raising component of the mast cannot be readily altered. It should not therefore be considered as 'lifting equipment' in the normal sense of the term (such as a crane, fork lift truck or accessories such as chains, slings or eye bolts) and as such does not fall under the Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.

Abacus appreciates however that some customers may make an internal decision to classify the equipment, either partly or wholly, under LOLER 1998 in order to maintain continuity with existing asset management protocols. If this is the case then Abacus can supply the necessary Safe Working Load signage and advise on the requisite maintenance.