

Abacus[®]

Leaders in Lighting

Part No: INS-RL

Base Hinged (RL) Columns

Applicable products:

- To41RLS(/FP)
- To51RLS(/FP)
- To61RLS(/FP)
- To81RLS(/FP)
- To58RLH(/FP)
- To68RLH(/FP)
- To88RLH(/FP)
- To67RLH(/FP)
- To87RLH(/FP)
- T107RLH(/FP)
- T127RLH(/FP)
- plus derivatives
- RLS168
- RLH168
- RLH168/COMPACT
- RLH1M
- RLH2M

Product Manual

November 2022

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

Product Manual

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1. Health and Safety Requirements

We strongly recommend that this safety information is read carefully before attempting to install, operate and maintain this equipment.

1.1.General

Operatives should be familiar with the requirements of the following documentation:-

- i) Health And Safety At Work Act: 1974
- ii) Control Of Substances Hazardous To Health Regulations: 2002
- iii) Personal Protective Equipment At Work Regulations: 1992
- iv) The Provision And Use Of Work Equipment Regulations: 1998

1.2.Safety Information

The safety device on tubular base hinged RL columns comes in two forms, either a locking screw or locking wedge.

The locking screw is found on the Ø168 base RLS and RLH columns, whereas the locking wedge is found only on Ø219 base RLH columns. Both are present to prevent unintentional rotation of the cam.

If the locking screw or locking wedge is not present there is a risk of the cam rotating, either deliberately by violent shaking of the column shaft or by action of the wind over a period of time. This could potentially result in an uncontrolled lowering of the column.

It is the responsibility of the column operator to ensure that they are trained in the correct and safe use of the equipment and that they are familiar with operating and maintenance procedures including all safety features found on both the column and counterbalance unit. Operating and maintenance procedures are covered in the instructions supplied with both the column and counterbalance unit.

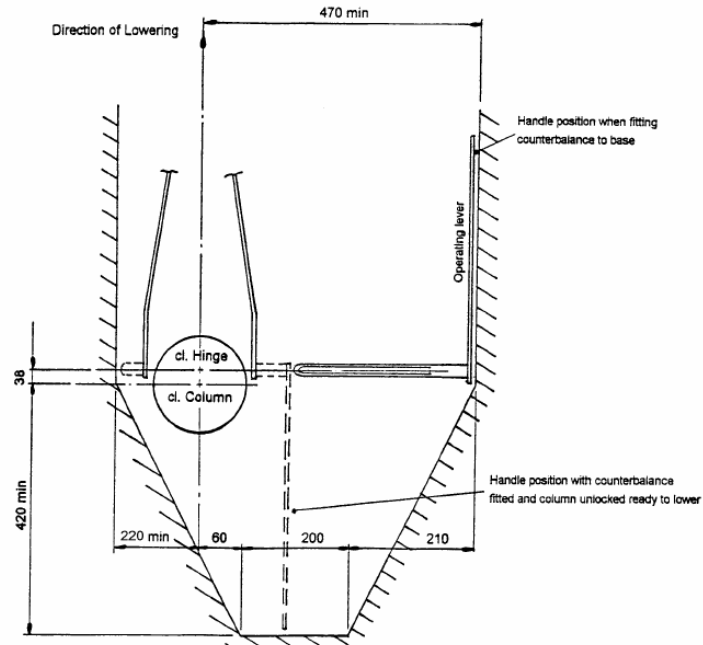
In summary;

Both the locking screw and locking wedge form an integral part of the safety system for these types of Raise & Lower column and as such they must be correctly fitted at all times. The only exception to this is when the columns are undergoing maintenance and need to be lowered.

Do NOT attempt to lower the column without using the correct counterbalance unit. The combined weight of the column and fittings is considerable and beyond what can be safely controlled by manual handling.

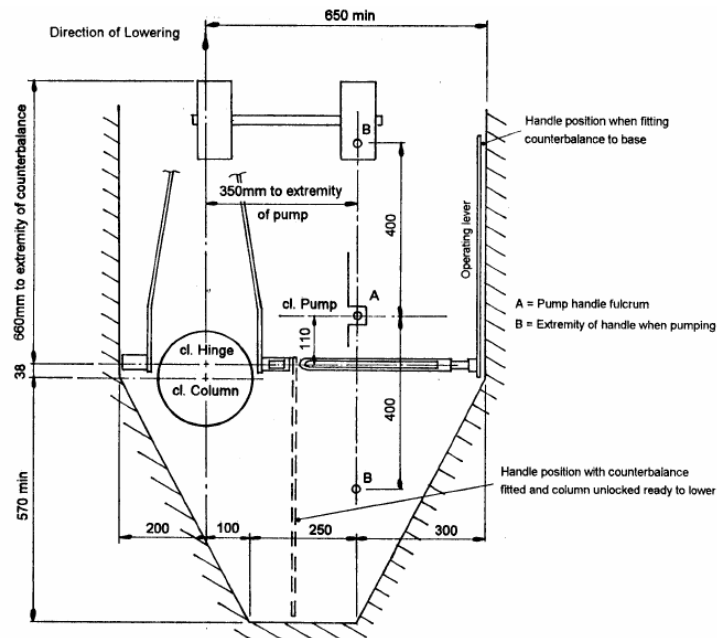
2. Column Positioning

The illustration below gives details of the minimum clearance zone that is required around the column.



Clearance Zone For Cam Type Ø168 Raise & Lower Column

Minimum height from ground level to centre line of hinge = 280mm



Clearance Zone For Ø219 Raise & Lower Column

Minimum height from ground level to centre line of hinge = 755mm

3. Installation

It is not possible to attach the counterbalance unit to a column which has been installed with its shaft in the lowered position. We would strongly advise that hinged columns are installed in the same manner as a conventional column.

Before commencement of installation examine the items and ensure that there are no missing or damaged parts.

The following items of equipment will be required (not Abacus supply). Timber supports and packers, a mobile crane for erection, typically 1.0 tonne and a torque multiplier and wrench.

Assemble the bracket to the top shaft section and secure with the screws provided. It should be noted that the power supply cable can be installed during assembly or, if preferred after assembly is completed, but prior to fixing the bracket.

While the column is on the ground, and referring to the counterbalance operating instructions, ensure that the column is in its locked position and that the locking device is in place.

3.1. Flange Plated Columns

The holding down bolts are each fitted with two nuts and washers. The upper nut and washer and template should be removed. The threads should be examined for any damage and rectified using a die nut if necessary. The nuts should be set in level plane using a steel bar and spirit level across each opposing pair of nuts.

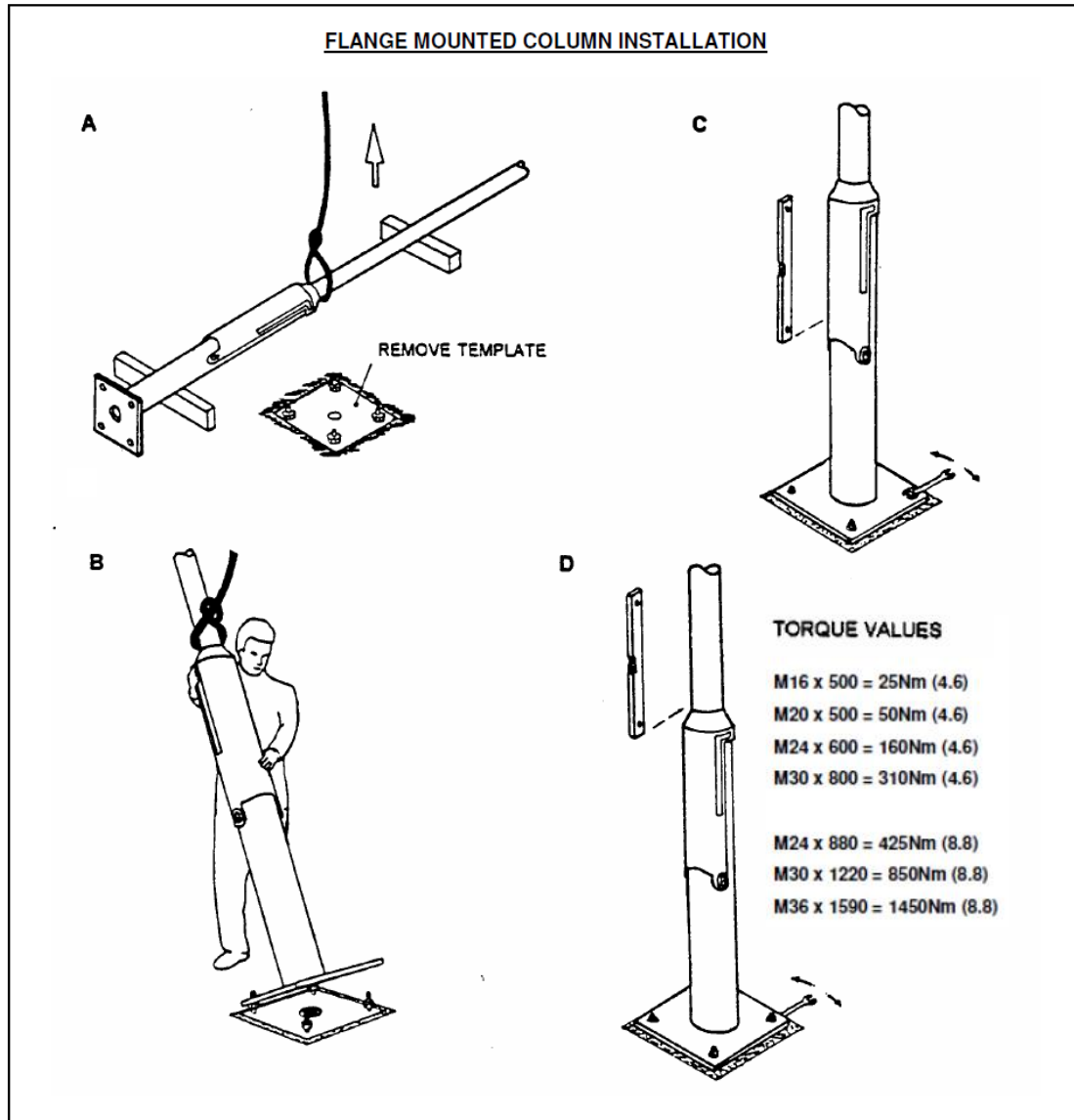
Using a crane lift the column and place carefully over the foundation bolts and on to the lower set of nuts.

Ensure the direction of lowering is as required and that the column will clear any obstructions. Secure the column with the upper set of retaining nuts and washers and roughly plumb up the base section.

After completion of the installation check for vertical alignment. This can be adjusted using the upper and lower nuts as necessary. Once the alignment is satisfactory all bolts should be tightened to the required torque setting.

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 base.

The column can then be commissioned.



3.2. Root Mounted Columns

Using a crane lift the column and place the root section in the previously prepared foundation hole. Ensure that the direction of lowering is as required and that the column will clear any obstructions.

Appropriate allowance on the embedment should be made if future resurfacing is envisaged. **It should be noted that the minimum distance from ground level to the pivot centre line for counterbalance operation is 280mm.**

Roughly 'plumb up' the base section and back fill the hole either with concrete or excavated material to just below the cable entry slot. All back filling using excavated material should be placed in 150mm thick layers and must be well compacted.

Chock the column using wooden wedges in the space between column and foundation sidewall. By adjusting these wedges accurately 'plumb up' the column using the shaft as the reference plane, not the base section.

Back fill the remaining hole with either concrete or excavated material and ram well in, removing wedges as encountered.

A duct, equal in size to the cable entry slot, should be formed through the back fill material using a suitable pre formed lining tube to allow for the insertion of electric cables.

Leave the column for a minimum of four days for any concrete to harden. The column can then be commissioned.

ROOT MOUNTED COLUMN INSTALLATION

The diagram is divided into four stages:

- A:** A cable is shown being inserted into a duct that is supported by a wooden beam. An upward arrow indicates the direction of the cable.
- B:** A person is shown lifting a large, cylindrical column into a square concrete foundation. A label 'Cable Duct' points to a slot on the side of the column.
- C:** The column is now in the foundation. A level is used to adjust its verticality. The space between the column and the foundation is being filled with concrete. A label 'Level of concrete' points to the top surface of the concrete.
- D:** The column is fully installed and vertical. A hand is shown using a tool to finish the concrete at the base of the column.

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4. Operation

<p>DO's ✓</p> <p>Ensure that a counterbalance unit is used to raise and lower the lighting column/mast.</p> <p>Follow and adhere to these instructions for the equipment.</p> <p>Make sure that the correct counterbalance unit is suitable for the column type and headload to be operated.</p> <p>Check that you have been trained and certified by Abacus for the range of columns to be raised and lowered.</p> <p>Risk assess your knowledge and experience in operating such equipment.</p>	<p>DON'Ts ✗</p> <p>Do not leave the lighting column without fitting its locking features to prevent operation.</p> <p>Do not engage the hinge mechanism with the operating lever only, failure to comply may result in the column falling.</p> <p>Do not bypass and shortcut proven safe systems of operation. Operate as per these instructions.</p> <p>Do not operate the lowering mechanism using an under rated counterbalance. If in doubt consult these instructions.</p>
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For instructions on lowering and raising the column please refer to the section for the relevant counterbalance (spring or hydraulic).

4.1. Spring Counterbalances

4.1.1. General

These units consist of a colour coded compression spring mounted within a frame with integral steel linkage and wheels to allow the unit to be manoeuvred. The springs are individually colour coded, to ensure that the correct unit is selected for the column to be lowered. They are used on Ø168 RLS cam operated columns only. The column locking screw key is located in the operating lever handle.

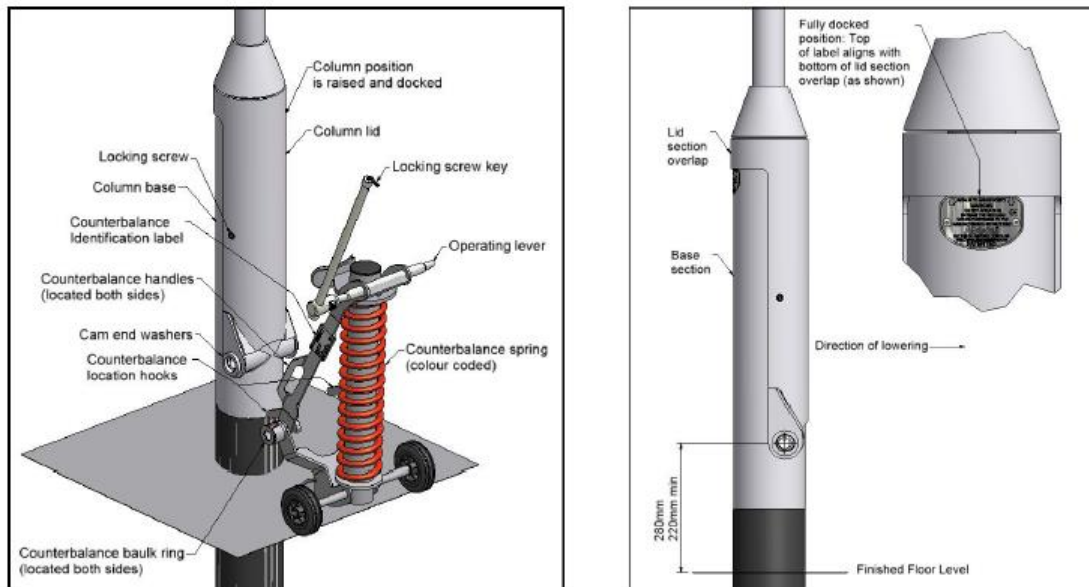
There are four spring counterbalance units available, the selection of which depends on column, column height and head-load.

The units are as follows:-

Model	Colour	Rating	Unit's weight
RLSO	Yellow	1,128 Nm	22.0 Kg
RLSOX	White	1,500Nm	23.0 Kg
RLS1	Red	1,960 Nm	23.5 Kg
RLS2	Blue	2,550 Nm	25.0 Kg
RLS3	Green	3,180 Nm	26.5 Kg

The rating refers to the maximum moment about the hinge of the column. The safe working load for a counterbalance unit varies with each column and column height. A limited selection is given in section 0. For details of the full range of safe working loads refer to the manufacturer's column data sheet supplied with the columns.

4.1.2. Preliminary Checks Before Use



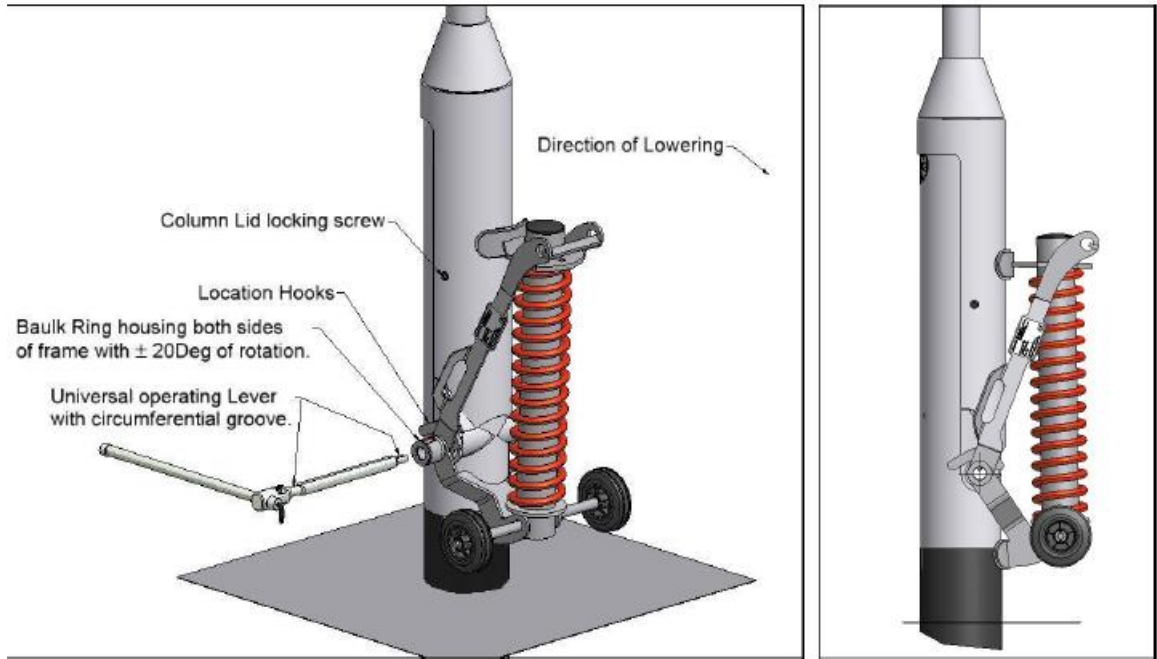
Due to the irregular use of a counterbalance it is difficult to specify a periodic maintenance schedule for the equipment, however we do recommend as a minimum that the following simple checks be carried out prior to use and annually. If any items are found to be defective they must be replaced before the unit can be used.

- Examine the counterbalance for damage. Check that the wheels are operating and retained in position. Check the condition of the pressure pads. Ensure the counterbalance location hooks are secure, undamaged, the correct profile and have a suitable internal width to fit to the column cam end washers without excess lateral freedom.
- Examine the operating lever for damage. The keyway and the bar should both be clean and free from bruises.
- Check that the spring has not taken a permanent set by measuring the free length of the spring. This is 508mm with a tolerance of +6mm to -3mm. Springs with a free length less than 500mm must not be used.
- Check when the operating lever is correctly inserted into the counterbalance the lever is free to rotate.

If any of these checks fail or give cause for concern the counterbalance must not be used or the column operated.

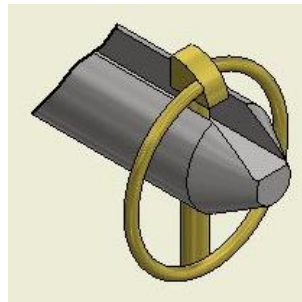
4.1.3. Installing the counterbalance onto the column

The general view below shows a typical RLS column with the RLS1 counterbalance unit located using the location hooks to sit the counterbalance on the column cam end washers; this removes the need for the operator to fully support the counterbalance weight when inserting the operating lever. Note: The operator must ensure the counterbalance location hooks remain located at all times on the cam end washers, the location hooks will allow some lateral movement and if uncontrolled could in some extreme circumstances allow one side to disengage.



Insert the operating lever through the counterbalance and column pivot assembly noting the orientation of the keyway inside the cam. Ensure the lever is fully inserted and protrudes beyond the counterbalance frame on the opposite side.

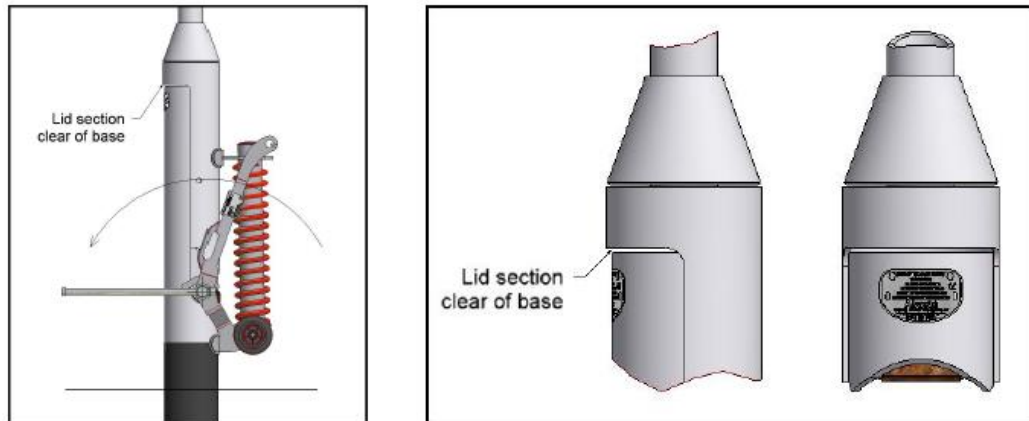
Insert the lynch pin through the hole in the end of the lever as shown below. This ensures the lever has been fully inserted and prevents it from been accidentally withdrawn.



4.1.4. Lowering the column

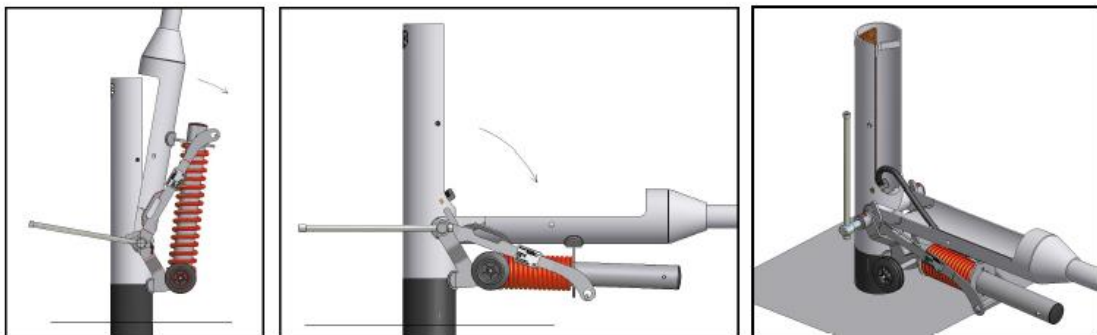
Remove the locking screw with the special security key located in the operating lever handle, if the screw has signs of wear or damage then replace. It is critical that this locking screw is replaced on completion.

Rotate the operating lever upwards and through 180° towards the opposite side of the column while ensuring the column cannot commence lowering by holding the column's shaft.



Pull the column gently forward onto the counterbalance unit ensuring that as lowering commences the operative(s) are at the greatest distance from the pivot relative to their height while still being able to control the column during lowering. Move along the column as lowering progresses to minimize the support that the operator has to provide. The operator will have to support some of the column weight during lowering. When fully lowered, the column's resting angle will depend on the head-load, counterbalance type etc. and may not be exactly horizontal.

The operating lever may rotate during lowering. This will not adversely affect the column but will require returning to the undocked position before the column can be raised and re-docked.



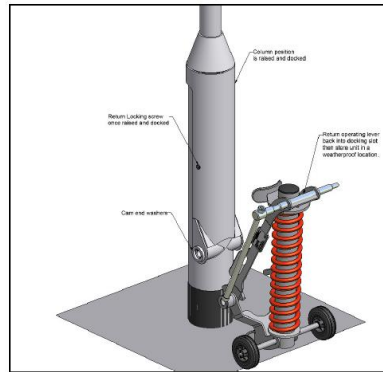
4.1.5. Raising the column

Depending on the head-load it may be necessary to assist the raising operation by lifting the shaft and walking the column back to the vertical position. During the lowering and raising operation, the cam may have rotated back slightly. This will be evident by the angle of the operating lever (lever not in the same position as when it was initially undocked) and if the lid section interferes with the base section when nearly vertical, rotation of the operating lever back to the same position as undocked will permit the lid section to locate correctly.

To close the column rotate the operating lever 180 degrees in the opposite direction to the undocking operation, ensuring the arrows on the warning label on the base section are aligned with the bottom edge of the lid.

It is essential that the column locking screw is refitted after maintenance is carried out. If the column locking screw is not refitted there could be a risk of movement of the cam. This could potentially lead to the uncontrolled lowering of the column, which could represent a serious hazard.

Withdraw the operating lever and remove the counterbalance unit. Store the unit in a safe and weatherproof location.



4.2. Hydraulic Counterbalances

4.2.1. General

The units consist of a single acting hydraulic ram with integral steel linkage, pump unit and wheels. The counterbalances are individually colour coded and are used on Ø168 and Ø219 cam operated columns only. The selection of the correct unit depends on the column type, height and head-load. The units are as follows:



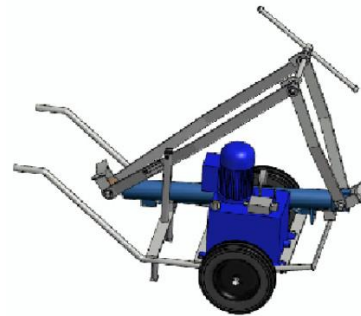
RLH168 COUNTERBALANCE
(Weight 40kg)



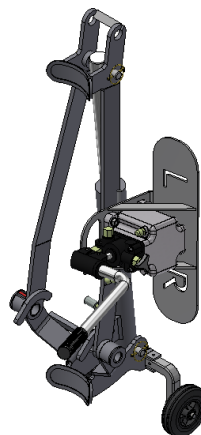
RLH1M COUNTERBALANCE
(Weight 49kg)



RLH2M COUNTERBALANCE
(Weight 90kg)



RLH2M/H/E COUNTERBALANCE
(Weight 140kg)



RLH168/COMPACT COUNTERBALANCE
(WEIGHT 36kg)

Column	Counterbalance	Bore	Nm	Bar	Colour
168RL	RLH168	50	5500	220	Black
	RLH168/COMPACT	50	5500	220	Black
219RL	RLH1M	47	8495	170	Green
	RLH2M	57	12695	170	Grey
219RLH	RLH2M/H	76	22500	170	Blue
	RLH2M/H/E	76	22500	170	Blue

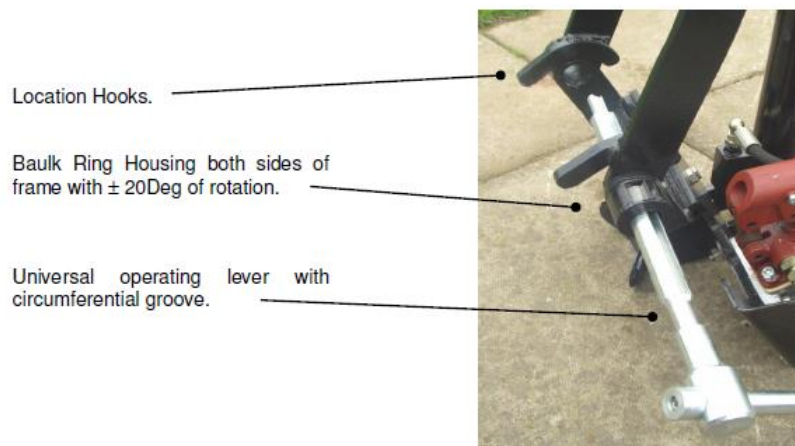
On the RLH168 the operating lever when attached to the unit acts as a handle. Note that the rating of the RLH168 exceeds that of all spring counterbalance units and it is therefore permissible to use the unit across the whole range of Abacus Ø 168 RL base hinged columns.

The rating refers to the maximum moment about the hinge of the column. The safe working load for a counterbalance unit varies with each column and column height. A limited selection is given in section o. For details of the full range of safe working loads refer to the manufacturer's column data sheet supplied with the columns.

The pump unit is manually operated with the pressure relief valve being set at the pressure shown in the table above. In the event of a hose failure a flow control valve, integral with the ram ensures that the column lowers at a safe rate.

The unit is supplied ex works with Renolin Hydraulic Oil CL Range Ref CL46 (or equivalent) in the tank. For export units have the oil packaged separately and the tank must be filled before use. Tank capacity is 1.0 litres and the correct oil level is 30mm below the upper face of the filler port with the tank horizontal. Note that if this level is exceeded with the ram extended, oil will be ejected during operation of the equipment. The pump incorporates a breather unit/filler port in the top of the tank and when not in use the counterbalance should be stored with the tank in an upright position to avoid leakage.

This unit incorporates a number of safety features comprising baulk ring housings on both sides of the frame for universal operation and location hooks. The universal operating lever also incorporates a circumferential groove. The purpose of the baulk ring is to prevent the user from rotating the operating lever unless it is fully engaged. It also prevents withdrawal of the lever once the cam is rotated and the column lifted.



Note that the counterbalance unit cannot be fitted to a column which has been installed with the shaft in the lowered position. If this is the case a small crane or Hiab will be required to lift the shaft into the upright position. Once in this position the cam can be rotated using the lever

only to lock the column. The counterbalance can now be used in accordance with the following instructions.

4.2.2. Preliminary Checks Before Use

- Examine the trolley framework and linkage for damage. Check that the wheels are operating and retained in position.
- Check the baulk ring housings are present and undamaged.
- Check the oil level is 30mm below the upper face of the filler port with the tank top horizontal and the ram closed.
- Check the hydraulic hose for damage and loose connections.
- Examine the ram, in particular the area around the seals for signs of damage and leakage of oil.
- Check the flow control valve assembly at the base of the ram is present, undamaged and not leaking oil.
- Examine the operating lever for damage. The keyway and the bar should both be clean and free from bruises.
- Check the dimension from centre line of pivot to finished floor level which should ideally be 280mm. However this dimension must not be less than 240mm to ensure safe operation of the counterbalance unit.
- Ensure the operator is trained in the use of the equipment.

If any of these checks are failed the counterbalance must not be used.

4.2.3. Lowering The Column (refer to the illustrations that follow the text)

Do not attempt to lower the column if the wind speed is 30kph (18mph) or greater.

On Ø 219 RL columns, before attempting to lower the column it will be necessary to disengage the safety feature which comes in two versions depending on the age of the column. In both cases the column door should be removed first. Pre 1980 columns have a locking lever, which can be removed by reaching in through the door opening and twisting the 'butterfly' latch on the locking lever to a horizontal position. The locking lever can then be removed by pulling from the outside. If the lever is tight, insert the operating lever through the cam and carefully push it out from the opposite side. Post 1980 columns have a locking wedge which can be released by reaching into the door opening and raising the vertical strip so that it rests on the horizontal door bar. It may at times be necessary to release the wedge by tapping upward with a hammer.

Attach the counterbalance unit to the column by engaging the locating hooks onto the cam end washers. Grab handles are provided in the frame for this purpose. Note that the ram must be fully extended so that the hooks are rotated into a position whereby they hold the counterbalance to the column.

Do not attempt to insert the operating lever whilst the ram is retracted. Close the control valve and operate the pump handle to extend the ram until the upper pad is within 5mm of the column shaft. Do not over extend the ram as this exerts adverse pressure on the cam unit

making it difficult to rotate. Sight through the pivot and align the baulk ring and cam keyways so that the operating lever can be inserted. The lever is correctly inserted when the baulk ring key is free to rotate in the circumferential groove on the lever. The counterbalance is universal so the lever can be inserted from either side. It is vital that the lever protrudes into the baulk ring housing on the far side of the counterbalance frame.

Remove the column locking screw before operating the counterbalance unit.

Rotate the operating lever 180 degrees anti clockwise, if operating the column from the side shown, or 180 degrees clockwise if operating from the opposite side. This will raise the lid and shaft clear of the base section to give a clearance of up to 5mm. If this is not achieved rotate the operating lever each way until such clearance is obtained.

Open the control valve and apply hand pressure to the shaft to start lowering. Ensure that as lowering commences that the shaft and upper ram location pad are in contact. To ensure a smooth descent keep the control valve open slightly until the column shaft is in the desired position, then close the valve. Note that on a $\text{Ø} 219$ RL column it is important not to rotate the operating level while the column is lowering. Doing so may cause the locking wedge to become displaced.



1. Attach counterbalance to column



2. Rotate the operating lever



3. Open the control valve to start lowering



4. Column fully lowered

4.2.4. Raising the Column

Close the control valve and pump the handle until the column is vertical. During the lowering and raising operation, the cam may run back slightly, evidence of this will be that the lid section will either interfere with the base when nearly vertical (no clearance), or will not seat properly. Rotation of the operating lever will permit the lid to locate correctly.

To close the column, rotate the operating lever 180 degrees in the opposite direction to that used when lowering the column, ensuring the arrows on the warning label are aligned with the bottom edge of the lid. Remove the operating lever whilst the ram is extended. It may be necessary to rotate the baulk ring to align the keyways to facilitate removal.

If the counterbalance is to be used again immediately, open the control valve and gently ease the upper pad away from the shaft about 150mm. Tilt the unit away from the column to disengage the location hooks and wheel the counterbalance to the next column. Insert the safety locking screw and tighten.

If the counterbalance is to be stored it is easier to close the ram with the unit mounted on the column, but with the operating lever removed. The method for closing the ram depends on the counterbalance model in use;

- On the RLH168 and RLH1M open the control valve and apply moderate hand pressure to the upper pad until the ram is closed.
- On the RLH2M open the control valve and the return springs will close the ram automatically.
- On the RLH2M/H and RLH2M/H/E the ram is double acting so the control valve is turned to the close position and the pump operated to close the ram.

On Ø 219 RL columns, ensure that the cam locking devices are in place before securing the column door. On pre 1980 columns insert the locking lever through the pivot, making sure that the butterfly latch inside the base is turned to a vertical position. For post 1980 columns the locking wedge should be eased off the door bar and allowed to drop vertically. If the cam is not correctly positioned the door screw hole may not align with the hole in the locking wedge tail. To align the holes, use the operating lever in a clockwise direction only to rotate the cam slightly. It is imperative that when aligning, the locking the lever is not turned anti-clockwise as this procedure could possibly open the column and cause the column to lower unaided.

Check that the door screw hole is aligned with the hole in the locking wedge tail before securing the door with the screw provided.

Store the unit in a safe and weatherproof location.

4.3. Counterbalance Safe Working Loads

Model	Light Duty Columns - Safe Working Load (kg)			
	4m	5m	6m	8m
RLS0	18	11	-	-
RLS0X	28	19	11	-
RLS1	38	28	19	-
RLS2	53	40	29	11
RLS3	-	-	-	17
RLH168	53	40	29	17

Model	Medium Duty Columns - Safe Working Load (kg)		
	5m	6m	8m
RLH168	90	70	40

Model	Heavy Duty Columns - Safe Working Load (kg)			
	6m	8m	10m	12m
RLH1M	120	68	40	18
RLH2M	185	112	76	48

Model	Extra Heavy Duty Columns - Safe Working Load (kg)		
	13.5m		
RLH2M/H	140		
RLH2M/H/E	140		

5. Column Maintenance

These columns are of galvanised steel construction with tubular base and shafts and require minimal maintenance. The following checks should however be made at the intervals stated.

5.1. Every time column is lowered

- Check that all the hinge components are present and undamaged before lowering the column.
- Check safety features (locking wedge / screw) are present and properly engaged.
- Check that the flexible conduit is not damaged.
- Examine the operating lever for damage.

5.2. Every 12 months

- Check that all hinge components are present and undamaged.
- Check that the column locking wedge / screw is present and fitted correctly. Lightly grease the threads.
- If the column is flange mounted check that the foundation bolts have not worked loose. The torque settings are as follows:

Bolt Size	Torque Setting (Nm)	
	Grade 4.6	Grade 8.8
M16	25	160
M20	50	250
M24	160	425
M30	310	850
M36	550	1450

- Check the warning label is attached to the base.
- Check that the minimum distance from pivot centre to ground level of 280mm has not become obstructed, making counterbalance operation difficult.

5.3. Major maintenance at 15 years

- Conduct a detailed examination of all critical areas on the mast.
- Repair and replace components as necessary.
- Carry out non destructive test on foundation bolts if applicable.

5.4. As required

Paint the shafts and base. 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 a mild climate considerable longer.

Lubrication of the cam unit is not recommended.

6. In-Situ Column Drilling Guidance

It is always preferable that all requisite cable entry holes in columns are formed at the time of manufacture thus ensuring that structural integrity is not compromised and full corrosion protection is maintained.

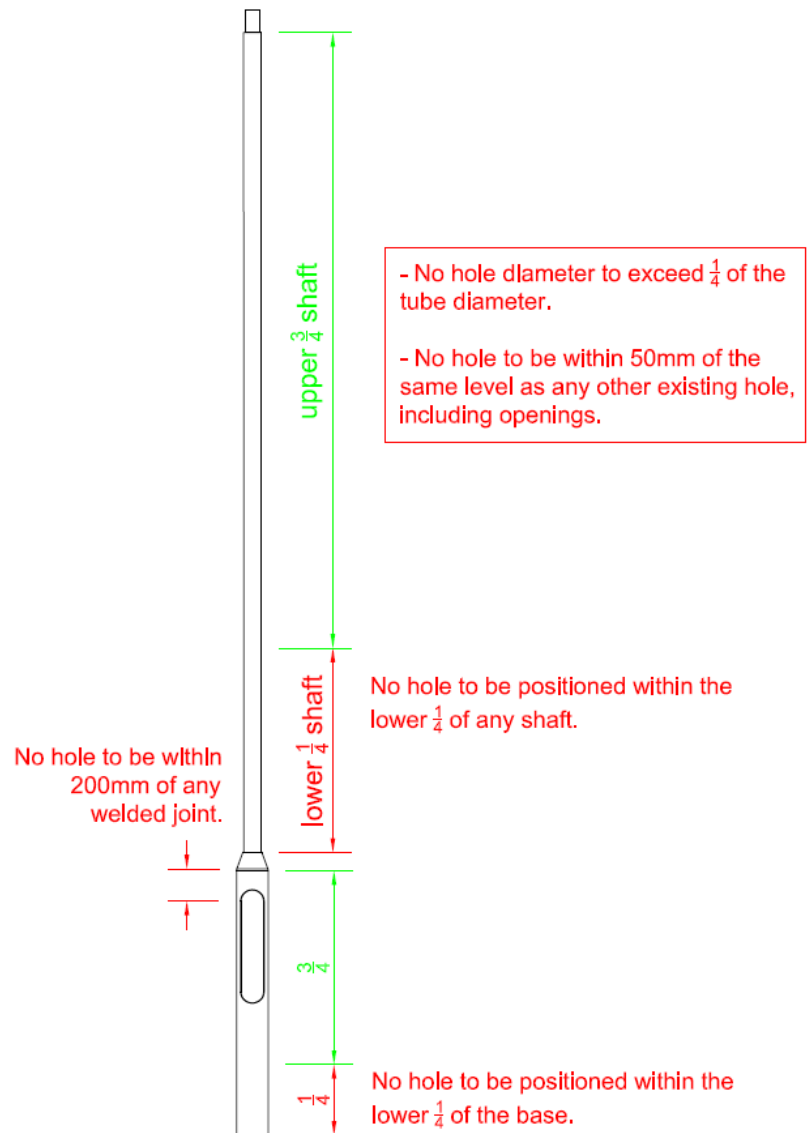
Possible problems caused by on site drilling are as follows;

- Loss of material weakens column.
- Poorly formed holes can act as fatigue cracking initiation points.
- Galvanizing protection is broken potentially leading to corrosion issues.
- Unsealed holes can lead to water ingress.

If there is no alternative however then the guidelines below should be followed before drilling;

- Hole sizes and positions must be strictly within the limits identified in the adjacent diagram.
- Holes shall only ever be drilled and all burrs and nicks removed.
- Any exposed steel shall be treated with a zinc rich paint system applied in accordance with the product manufacturer's instructions.
- Holes shall be sealed against water ingress by using suitable cable glands or similar.

Any in-situ drilling undertaken remains the owner's responsibility. Any future issues arising as a result of such a modification will not be covered by any Abacus warranty that may be in place.



7. Hydraulic Counterbalance Maintenance

7.1. Routine Maintenance

Due to its irregular usage it is difficult to specify a periodic maintenance schedule. However we do recommend the following simple checks be carried out at 12 monthly intervals and any defective items replaced.

Check the oil level in the tank. This should be carried out with the tank as near horizontal as possible and with the ram fully closed. Remove the breather valve assembly from the centre of the top plate. The oil level should be approximately 30mm from the top of the tank. Tank capacity is 1.0 litres and should be topped up with Renolin Hydraulic Oil CL Range Ref CL46 (or equivalent). Note that if the oil level is exceeded with the rams extended, oil may be expelled from the filler cap during lowering of the column.

Examine the hydraulic hose that links the ram to the pump unit and ensure that the coupling and connection is firm, intact and free from leaks. Refer to 7.2 for detailed information on hose inspection and replacement.

Examine the trolley framework and steel linkage for damage and also check that the wheels are operative and retained in position. Check the condition of the top and bottom rubber pressure pads.

Check and examine the top and bottom ram location pins for damage and to ensure they are retained in position by cotter pins or other means.

Examine the ram, in particular the area around the seals for signs of damage and leakage of oil.

Check that the flow control valve assembly at the base of the ram is present, undamaged and not leaking oil.

Check that the pump unit is rigidly attached to the trolley unit and that the gasket between the pump and tank is not leaking oil.

Check the operation of the flow control valve. Close the control valve on the pump unit and pump the handle to extend the ram approximately 300mm. Open the control valve one turn, and by exerting hand pressure, close the ram. This will require a considerable amount of force on the ram to do this.

When the ram is fully extended and before attaching the unit to the column, check the area around the seals for signs of damage and leakage of oil. Check the piston rod and examine the polished surface for signs of bruising and corrosion pitting. Either will cause failure of the gland seals.

Check that the baulk ring housings are both present and undamaged.

Check that a column door key is available.

The counterbalance unit weighs 40kg. Ensure the correct manual handling techniques are used at all times when lifting the unit onto or off the lighting column.

If the unit fails to meet any of the above requirements it must not be used.

7.2. Hydraulic Hoses

Hydraulic hoses have a finite life and must be inspected, tested and replaced in accordance with the table below;

Age	Recommendation
Up to 3 years	Use without further testing
3 to 5 years	Use after representative samples subjected to a proof pressure test.
5 to 8 years	Use after representative samples subjected to proof, impulse and burst pressure tests and cold bend and electrical tests.
Over 8 years	Scrap

8. EN40 Certificate of Conformity

Declaration of Performance (DoP) – Lighting Columns

No. GB13/89393

1. Unique identification code of the product-type:
Base hinged, fixed, octagonal, conical and straight tubular steel root and flangeplate mounted lighting columns (and there derivatives) with the prefix T0, TB, F0, CS and S0.
2. Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4) of the CPR:
Identification label bearing item no, order no. and date of manufacture affixed to internal access compartment.
3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
**Post top base hinged and fixed steel lighting columns up to 20 mtr in height.
Post top base hinged and fixed steel lighting columns for side entry lanterns up to 18 mtr in height.**
4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):
Abacus Lighting Ltd, Oddicroft Lane, Sutton-in-Ashfield, Nottinghamshire, NG17 5FT
5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):
Mr Steve Lamb, Abacus Lighting Ltd, Oddicroft Lane, Sutton-in-Ashfield, Nottinghamshire, NG17 5FT
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V:
System 1
7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:
BS EN 40-5:2002
SGS United Kingdom Ltd – Notified Body Number: 0120 performed the initial inspection of the manufacturing plant and of factory production control and the continuous surveillance, assessment and evaluation of factory production control, and issued the certificate of constancy of conformity of the factory production control.

8. Declared performance:

Essential characteristics	Performance	Harmonised technical specification
Resistance to horizontal loads	Dead Load = Pass Wind Load = Pass Welding procedures to comply with EN 288-1 and EN 288-2 – Pass Design verification carried out by Initial Type Calculation –ITC - Pass	BS EN 40-5:2002
Performance under vehicle impact (passive safety)	BS EN 12767 Passive class 0 - NPD	
Durability: Against corrosion	Hot dip galvanised to BS EN ISO 1461:2009 – Pass	

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by Mr Steve Lamb – Managing Director - Abacus Lighting Ltd – 14/08/2013

S. A. Lamb

Registered Office: Oddicroft Lane, Sutton in Ashfield, Nottinghamshire, NG17 5FT, UK
Registered in England No. 8494722



9. Environmental Requirements

HYDRAULIC COUNTERBALANCE UNITS ONLY

WE STRONGLY RECOMMEND THAT THIS ENVIRONMENTAL INFORMATION IS READ CAREFULLY BEFORE ATTEMPTING TO OPERATE AND STORE THIS EQUIPMENT.

Operatives should be familiar with the requirements of the following documentation

- i) Pollution Prevention and Control Regulations
- ii) Control of Pollution (Oil Storage) Regulations
- iii) Control of Substances Hazardous to Health Regulations
- iv) Hazardous Waste Regulations
- v) Environmental Protection Act

Hydraulic counterbalances incorporate the use of hydraulic oil to successfully raise and lower a range of Abacus Lighting columns and masts.

Each counterbalance unit will have an oil reservoir, whether this will be separate on a trolley (usually for raising and lower bigger masts) or on the same assembly as the hydraulic ram. Each reservoir will have a 'breather cap' on top of the tank which is required for using a hydraulic system, the breather cap will leak out oil if the unit is tipped at any point therefore it must be kept upright to prevent this from happening.

Before use ensure that all the hydraulic hoses are connected properly to prevent any spillages when in use.

If you store or use oil you should be prepared for any spillages, keeping a stock of absorbent materials and ensuring the operatives are trained to deal with any spills that may occur. If there is a spill immediate action should be done to prevent the oil from entering any drains or water courses.

If absorbents are used to combat a spill, they may well be classified as hazardous waste and should be treated as such.

10. Column Carrier (optional)

10.1. General

The Abacus column carrier is designed to transport and aid the installation of root mounted spring raise and lower columns up to 6m mounting height. It will enable a column to be safely transported to its installation location and provide a stable platform for the column to be worked on prior to erection.

The column carrier comprises a galvanized steel square hollow section frame with support gussets. The rubber tyres are designed for use on various terrain types.

The foundation hole should be excavated to the size and depth stated in the manufacturers data sheet, appropriate to the ground conditions on site. This information is contained in the 'Important Documents Enclosed' envelope which is sent with the columns to site.

The ground area where the frame rests as the column is lifted vertical must be firm and level. Use wooden planks to achieve this if necessary.

10.2. Restrictions On Use

- The carrier must only be used with root mounted 168 diameter Raise and Lower columns of the spring operated type.
- The carrier must not be used with columns greater than 6m mounting height.
- Two trained operatives must be used when raising the column and carrier to a vertical position.
- The carrier must not be used for installation when the wind speed on site exceeds 30kph.

10.3. Preliminary Checks Before Use

- Examine the carrier framework for damage.
- Check that the wheels are operating and secured in position with their retaining clips.
- Ensure that the universal operating lever is present and undamaged.

10.4. Column Carrier Operation

(Refer to the illustrations that follow the text).

- i) Before commencing with the installation it will be necessary to locate the column on the carrier. The unit should be positioned adjacent to the lorry with the universal operating lever removed.
- ii) Using a Hiab, or other suitable lifting device, transfer the column from the lorry onto the carrier with the hinge to the bottom. Secure using the universal operating lever, ensuring that it protrudes through the hole on the far side of the frame.
- iii) With the column secure, get a firm grip of the shaft end and lower to a horizontal position. The column weight should be balanced about the pivot position making it easy to manoeuvre. Push the unit from the shaft end until the previously prepared foundation hole is reached.

- iv) Position the root end of the column adjacent to the hole. Remove the locking screw in the lid and rotate the universal operating lever to release the base section of the column. Ensure that the direction of column lowering is as required and that the column will clear any obstructions.
- v) Using two operators, lower the shaft and manoeuvre the carrier so that the base section is placed inside the previously prepared foundation hole. It is essential that the depth of foundation hole matches the length of column root.
- vi) Again using two operators lift and rotate the column shaft so that it is in a vertical position. Note that it will be necessary during and after this operation to centralise the base section in the foundation hole.
- vii) Rotate the operating lever to close the base, ensuring that full overlap of the lid is achieved.
- viii) With the base fully closed check that the ground level marker on the column is at or just above finished floor level. If not, it will be necessary to adjust the position of the carrier until this is achieved. Minimum distance from pivot to finished floor level is 280mm. Refit the column locking screw.
- ix) With the column correctly positioned chock the column using wooden wedges in the space between the column and foundation sidewall. With the column secure remove the operating lever and refit it to the carrier for safe keeping.



Figure 10-1 - Column installed on the carrier



Figure 10-2 - Carrier and column ready for moving



Figure 10-3 - Lowering the root section into the foundation hole



Figure 10-4 - Raising the column to a vertical position



Figure 10-5 - Rotate the operating lever to close the lid



Figure 10-6 - Column installed

11. EN40 Certificate of Constancy of Performance

Certificate of Constancy of Performance GB13/89393.00

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)

Fixed, Based Hinged & Tapered Steel & Aluminium Lighting Columns.

Note: All products must have a valid ITT report placed on the market under the name or trademark

Abacus Lighting Ltd

Oddicroft Lane Sutton in Ashfield Nottinghamshire NG17 5FT United Kingdom

and produced in the manufacturing plant

Abacus Lighting Ltd

Oddicroft Lane Sutton in Ashfield Nottinghamshire NG17 5FT United Kingdom

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

EN 40-5:2002, EN 40-6:2002

under system 1 for the performances set out in this certificate are applied and that the construction product(s) 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 9. Certified since 01 August 2013.

Authorised by



H. Crick – UK Business Manager

SGS United Kingdom Ltd Approved Body 0120
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12. Equipment Classification

The counterbalance for use with a base hinged column should be considered as an integral part of the column which may sometimes be partly or wholly situated on a removable unit. The primary function of the product, including sub-components, is as a column for lighting purposes or otherwise. The raising component of the column 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.