CONTENTS

1.0 NAME PLATE IDENTIFICATION

RETENTION SYSTEM
POST INSTALLER for RS115 socket

CE

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Model: RS Post-Installer for RS115 socket

Year of manufacture: _____

Serial Number: _____

www.retention-system.com

The RS Post-Installer is intended for use with the RS115 socket only.
It must never be used with any other device or for any other purpose.

CAPACITY:
Maximum Load Weight: 110 kg including post (4m or 6m)

- **4m post with 4 traffic signal head assembly**
- **6m post with 2 traffic signal head assembly**

2.0 THE RS POST-INSTALLER

2.1 Normal Conditions of Use

IPL group's patented RETENTION SYSTEM is a unique method for installing posts in ductile-iron RS sockets that builds on or replaces traditional foundation methods for fast, easy installation and removal of posts.

The RS Post-Installer for RS115 socket has been developed to manage the installation of traffic signal and similar posts in RS115 sockets. The design and function of the RS Post-Installer facilitates 'on-ground-level' installation and maintenance of posts. It ensures correct post installation and safe work practices and minimises the health and safety risks normally associated with working at height. The RS Post-Installer is intended for use with the RS115 socket only. It must never be used with any other device or for any other purpose.

The RS115 socket must first be set in concrete, in accordance with Standards or good Codes of Practice for installation of posts. (Please refer to Recommended Installation Instructions.) Once the RS115 socket and the foundation are in place, the RS Post-Installer can be set up in the RS115 socket to manage the post installation procedure. Operators remain standing on the ground at all times during this procedure. Traffic signal heads are fixed to the post and cabling and electrical connections are finished while the post is in the horizontal 'workbench' position on the RS Post-Installer. Once the preparation of the post has been completed, the RS Post-Installer is used to winch the post vertical and lower it into the RS115 socket. This procedure can also be reversed: posts may be un-installed, lifted and returned to the 'workbench' position for maintenance or replacement.

2.2 User's Responsibilities

This manual provides detailed instructions as to the correct method of setting up and the safe operation of the RS Post-Installer. Each step must be followed and all safety checks must be carried out. Information is also provided for operators regarding the weights of each component and guidelines for correct handling, transport and storage.

It is the user's responsibility to ensure that all operators have access to a copy of this handbook at all times. All operators must read and understand the operational and safety procedures, and install, operate and maintain the RS Post-Installer accordingly. All statutory Health and Safety regulations should be observed at all times and this manual should be understood in conjunction with the user's, Health and Safety practices for essential safety in the working environment.

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3.0 RS POST-INSTALLER LIFTING CAPACITY

3.1 Straight Posts

Maximum Load Weight: 110 kg including post (4m or 6m)

- 4m post with 4 traffic signal head assembly
- 6m post with 2 traffic signal head assembly

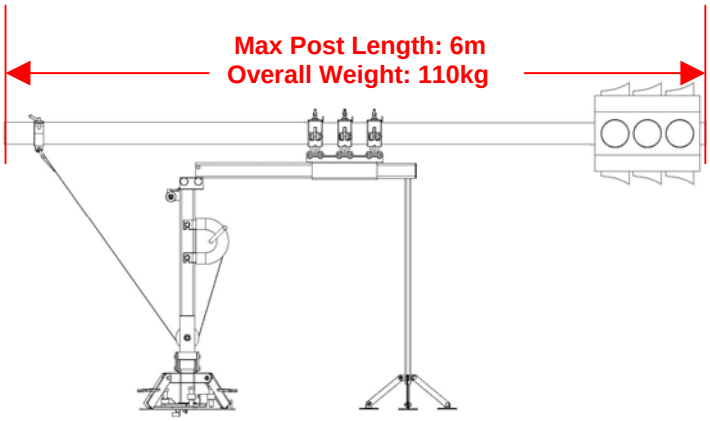


Fig. 1: The maximum post length and the maximum signal head weight.

3.2 Cranked Posts

The maximum post weight and length outlined above also apply to cranked posts. Please note that when measuring the length of cranked posts, both the horizontal and the vertical sections of the post must be included. Cranked posts must always be loaded into the RS Post-Installer as outlined in Figure 2, below. Once installed in the RS115 socket, the post can be rotated to the desired position.

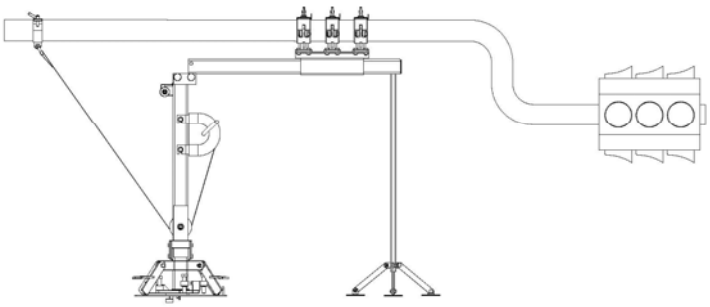


Fig. 2: The correct method of loading a cranked post into the RS Post-Installer.

	**Do NOT overload the RS Post-Installer.** **Overloading the RS Post-Installer by placing too much weight on it or by using a post that is too long may cause the device to fail.**

4.0 SAFETY AND MAINTENANCE INSTRUCTIONS

4.1 Safety Conformance

The design of the RS Post-Installer and information in this handbook is in accordance with the Machinery Directive 98/37/EC. This handbook must be made available to all persons involved in post installation using the RS Post-Installer to ensure safe and proper use of the equipment. It is essential that all RS Post-Installer operators have read and understood all instructions and comply with them at all times.

IPL group recommend that only trained and qualified persons are authorized to operate the RS Post-Installer, this is taken to mean; any person who has received direct training in the use of the RS Post-Installer from IPL group or its authorized representatives, or meets the following definition according to IEC 364: Qualified persons for reasons of their training, experience and instruction are persons who do their necessary activities without danger and who can avoid this danger due to their technical knowledge of directives, regulations for the prevention of accidents and standards. These persons are responsible for the security of the installation.

4.2 General Safety Advice

- The RS Post-Installer should be included in the user's register of all lifting equipment and records kept of all post installations and maintenance procedures.
- The safety exclusion zone and hazard zone (see section 4.4) should be cordoned-off and integrated into site plans for restricted access.
- Before each use of the RS Post-Installer, conduct a pre-operation safety inspection and ensure the equipment is in correct working order (see section 5.1).
- A trial lift and installation/un-installation of an unloaded post is recommended to test the RS Post-Installer setup, levels, stability, site layout, and post swing area.
- Site and weather conditions should be constantly monitored and avoid risks associated with lightning, overhead wires and congested sites.
- RS Post-Installer operators should remain vigilant of their own and others safety at all times.
- Nobody should go under a suspended load or enter the hazard zone.
- Personal protective equipment (PPE) recommended includes:
    - Safety Shoes
    - Hard Hat
    - High-Visibility Vest



- Additional PPE may be required depending on site conditions, statutory requirements and user's Health and Safety policy. (Please consult with site safety officer or supervisor).

4.3 Maintenance

Periodic thorough examination must be carried out at least every 12 months or more according to statutory regulations, frequency of use and user experience.
In addition to annual and pre-operation safety inspections (see section 5.2), regular maintenance inspections and replacement of worn parts should be performed (see Pfaff-silberblau hand winch operating instructions for further details).
Always use original components throughout the RS Post-Installer. For further information contact your RS Post-Installer distributor (see section 1.0).

4.4 Safety Exclusion Zone and Hazard Zone

- **Figure 3 shows the Safety Exclusion Zone for the RS Post-Installer.**
- **Figure 4 shows the Hazard Zone for the RS Post-Installer.**

During operation of the RS Post-Installer, only trained operators should stand inside the Safety Exclusion Zone. All other personnel must stand clear. It is recommended that the area around the installation site be cordoned off during post-installation works. The area cordoned off should be at least the size of the Safety Exclusion Zone; where possible, a larger area should be cordoned off.

During raising/lowering and tilting operations, the operator must remain beside the winch at the side of the RS Post-Installer. When operating the RS Post-Installer and when inside the Safety Exclusion Zone, the operator must remain alert for any potential dangers posed to him/her or others. Operators must stay outside of the Hazard Zone – as illustrated in Figure 4 – at all times.

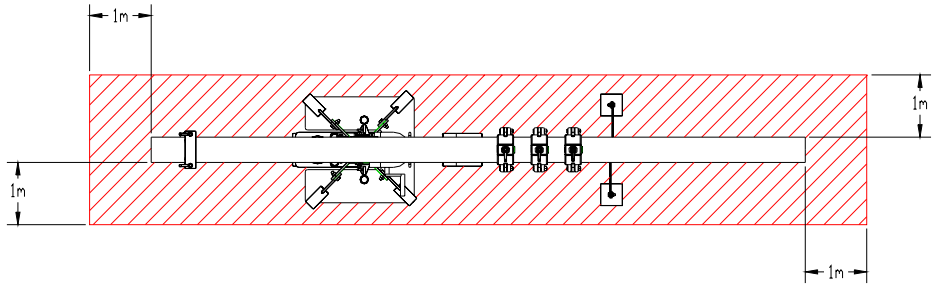


Fig.3: Safety Exclusion Zone for RS Post-Installer (viewed from above).

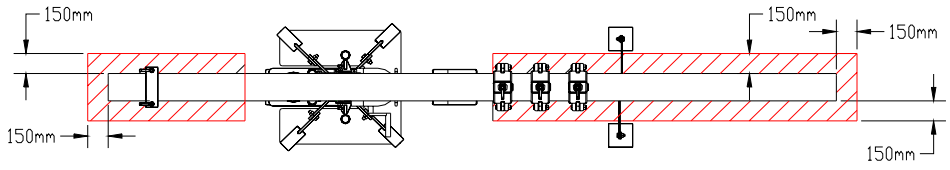


Fig.4: Hazard Zone for RS Post-Installer (viewed from above).

	**Observe the restricted access areas in the Safety Exclusion Zone & Hazard Zone.** **Never go under a suspended/raised load.**

4.5 Safety Warnings Summary

	**It is extremely important that ALL personnel have read and understood this manual BEFORE operating the RS Post-Installer.**
	**When the RS Post-Installer is being operated, only trained operators should stand inside the Safety Exclusion Zone.** **All other personnel MUST stand clear of the Safety Exclusion Zone.**
	**While carrying out raising/lowering and tilting operations, the operator must remain standing to the side of the RS Post-Installer, beside the winch. The operator must remain outside the Hazard Zone at all times and must be vigilant for any potential dangers posed to him/her or others.**
	**Before operating the RS Post-Installer, always check that:** **the RS Post-Installer is set up correctly;** **the RS Post-Installer is stable;** **the RS Post-Installer does not have any parts missing or any damage/defects;** **there is no damage to the winch, rope or shackle.**
	**Do not use the RS Post-Installer during windy or stormy weather, particularly if there is a possibility of lightning.**
	**Do not use the RS Post-Installer in close proximity to over-head powerlines or similar hazards.**
	**Always exercise due caution when operating the RS Post-Installer: be aware of its moving parts, and take care not to place hands or feet where they could be hit or crushed by any of the RS Post-Installer's moving parts.**
	**Be aware of the RS Post-Installer's stabilisers, which stick out from the main body of the device; be careful not to trip over these protruding stabilisers.**
	**Lighting in the area of the RS Post-Installer must be in accordance with local health and safety legislation.**

5.0 PRE-OPERATION SAFETY INSPECTION

5.1 General Inspection

A thorough visual inspection of the RS Post-Installer must be carried out prior to use.
Table 1, below, provides a guide for conducting visual inspections of the RS Post-Installer.

Table 1: Inspecting the RS Post-Installer before use.

	Date Checked													
Item	Date													
Visually inspect all parts of the RS Post-Installer for damage or defects.	✓													
Check all locking & clamping screws are present & function correctly.	✓													
Check the Shackle for signs of damage or excessive wear.	✓													
Check the rope for damage or signs of excessive wear-and-tear.	✓													
Inspect the top & bottom pulleys: the shoulders of each pulley must not be damaged & the pulleys must rotate freely & smoothly.	✓													
Check both locking pins & all safety catches are present & undamaged.	✓													
Carry out visual inspection of winch. Test the function of the winch. Test the function of the winch break.	✓													
Inspected By														

If the general inspection reveals that any part of the RS Post-Installer is missing, damaged or faulty, take the RS Post-Installer out of service immediately and report the problem to your supervisor. If further assistance is required, contact the selling agent to arrange for maintenance and repair.

5.2 Winch

The winch used on the RS Post-Installer is supplied by Pfaff Silberblau.

For details of the maintenance requirements of the winch, refer to the 'Inspection and Maintenance Instructions' section of the Pfaff Silberblau operating instruction manual attached to this Instruction Handbook (see Annex:1). Additional operating instruction manuals for the winch are available upon request.

6.0 INSTRUCTIONS FOR SET UP OF THE RS POST-INSTALLER

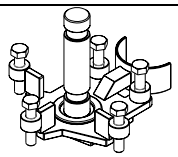
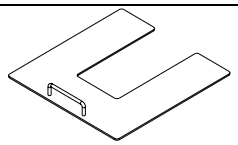
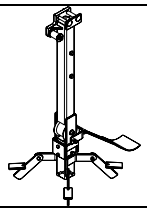
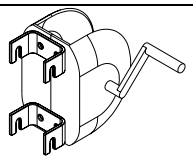
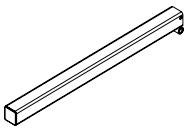
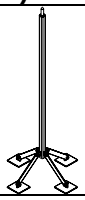
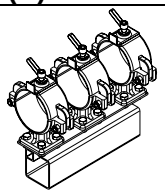
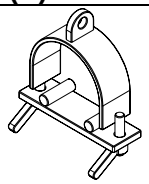
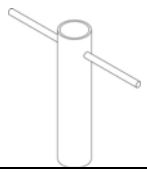
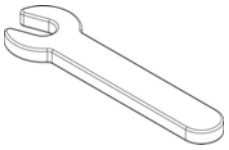
6.1 Checklist of RS Post-Installer Parts

Before beginning to set up the RS Post-Installer for use, it is important to first check that all parts are present and in good working order.

The RS Post-Installer is specifically designed for use with the RS115 socket and must only be used with the RS115 socket. Do NOT attempt to use the RS Post-Installer with any other device, or for any purpose other than that for which it is intended.

RS115 sockets must be installed in accordance with manufacturers' installation instructions. Ensure that the locking-screws in the RS115 socket are fully screwed back ready for post-installation, and that the concrete around the RS115 socket is cured fully prior to setting up the RS Post-Installer.

Fig. 5: The RS Post-Installer's parts and tools.

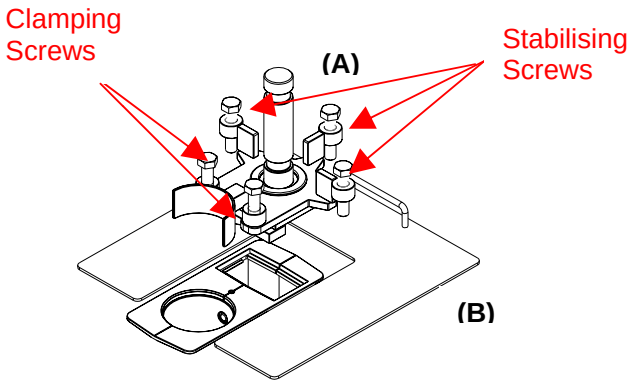
			
(A) Base	**(B) Plate**	**(C) Column**	**(D) Winch**
			
(E) Beam	**(F) Stand**	**(G) Clamp Rig**	**(H) Post Clamp**
			
(I) Post Brake	**(J) RS115 Socket Key**	**(K) Spanner**	**(L) Spirit Level**

	**It is EXTREMELY important to set up the RS Post-Installer correctly. Follow all instructions carefully. All clamping and stabilising screws must be tightened firmly.**

6.2 Setting up the RS Post-Installer

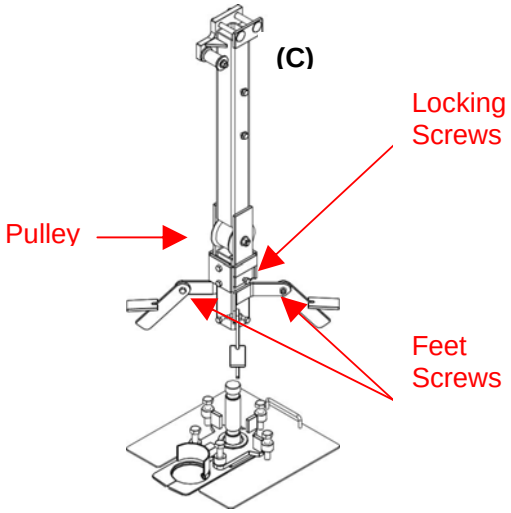
STEP 1:

- Locate and angle the **Base (Part A)** into the locking chamber of the RS115 socket.
- Clamp the base to the top of the RS115 socket by tightening both Clamping Screws, using the appropriate spanner.
- Slide the **Plate (Part B)** underneath the Base.
- Tighten all three Stabilising Screws firmly, using the appropriate spanner.



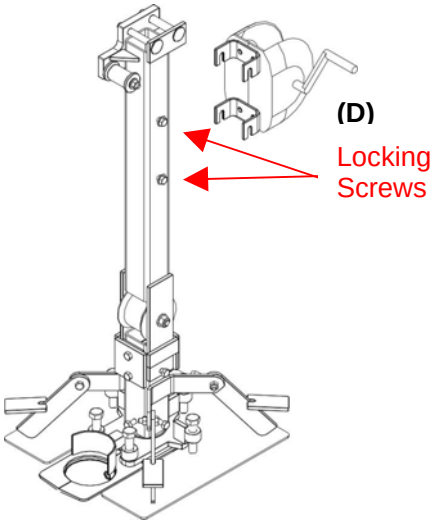
STEP 2:

- Lower the **Column (Part C)** onto the Base.
- Ensure the Pulley faces in towards the post-hole of the RS115 socket.
- Use a spirit level to check that the Column is vertical.
- Tighten all three Locking Screws, using the appropriate spanner.
- Lower the drop-down feet against the Plate and tighten all four Feet Screws firmly, using the appropriate spanner.



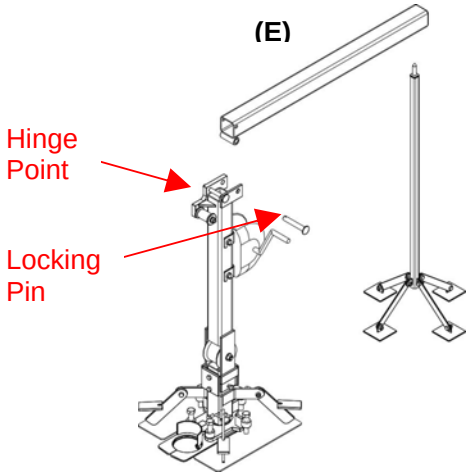
STEP 3:

- Slot the **Winch (Part D)** onto the Column so that the winch brackets pick up all four Locking-Screws.
- Secure the Winch to the Column by tightening all four locking screws, using the appropriate spanner.



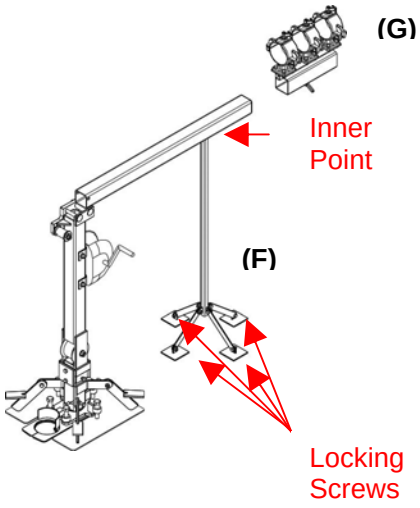
STEP 4:

- Attach and hinge the **Beam (Part E)** to the Column by inserting the Locking-Pin at the Hinge Point.
- Fix the locking-pin in place by inserting the safety catch into the locking pin, then close securely.



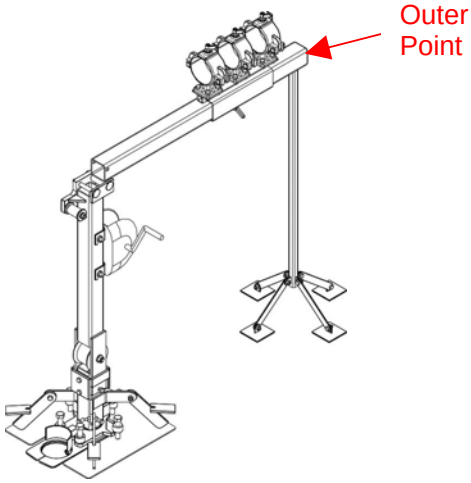
STEP 5:

- Set-up and position the **Stand (Part F)** to hold the Beam at the Inner Point by inserting the pin that is on top of the Stand into the hole on the underside of the Beam.
- Firmly fix all Stand feet in place by tightening the four Locking-Screws, using the appropriate spanner.
- Slide the **Clamp Rig (Part G)** onto the Beam, ensuring the lever is on the underside.



STEP 6:

- Re-position the Stand so that it holds the Beam at the Outer Point.
- Fix the Clamp Rig in place by tightening the lever.



7.0 INSTRUCTIONS FOR INSTALLING A POST USING THE RS POST-INSTALLER

7.1 The Installation Procedure and Checks

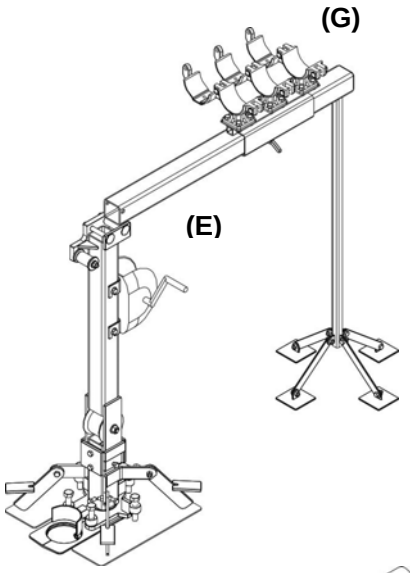
There are three stages in the installation procedure: fixing the post to the RS Post-Installer; tilting the post into vertical position; lowering the post into RS115 socket.

When the RS Post-Installer is set up, and before use, carry out these final checks; Check all screws are sufficiently tight; Check that the RS Post-Installer is stable; Check the RS Post-Installer for damage or defects.

7.2 Fixing the Post to the RS Post-Installer

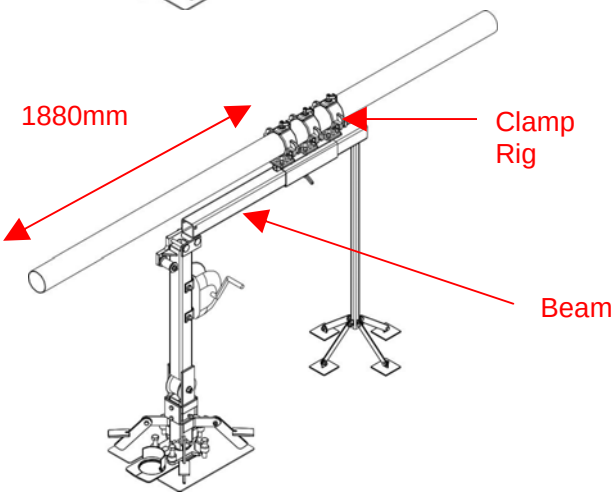
STEP 1:

- Ensure the **Clamp Rig (Part G)** is in position at the end of the **Beam (Part E)**.
- Open all three clamps.



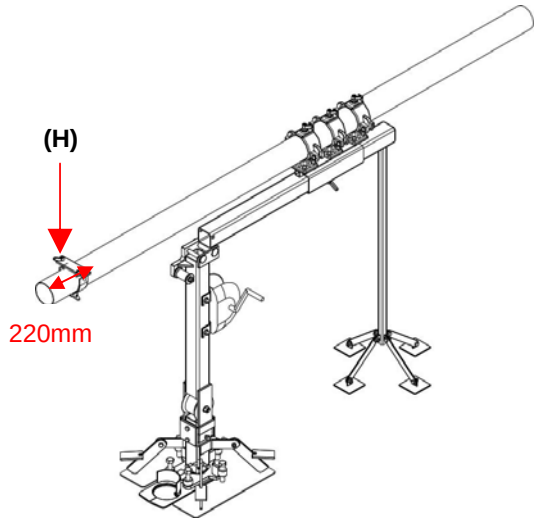
STEP 2:

- Manually lift the post above the Beam and insert it into the Clamp Rig.
- Push the post through the Clamp Rig so that the end of the post is 1880mm from the start of the Clamp Rig.
- Close all three clamps, ensuring the protective covers are engaged on the Clamp Rig and around the post.
- Tighten all three clamps, using the levers, so that they firmly grip the post.
- Tighten the Clamp Rig to the Beam using the lever.



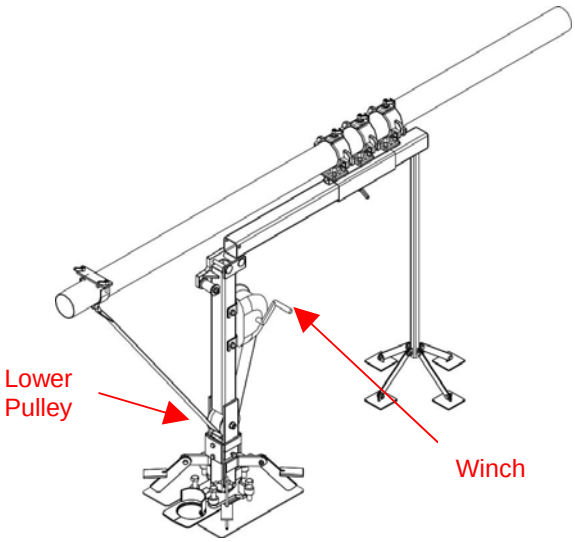
STEP 3:

- Position the **Post Clamp (Part H)** onto the post 220mm from the end of the post.
- Tighten the Post Clamp using the levers.



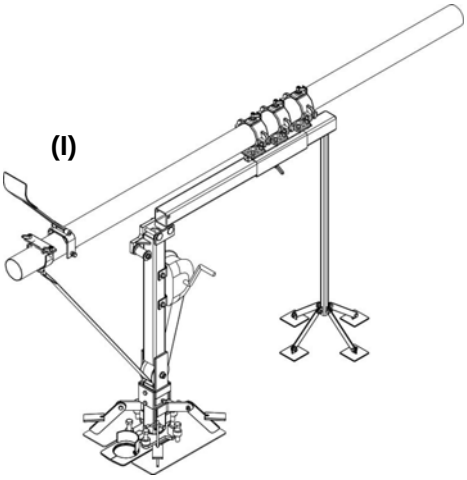
STEP 4:

- Wind out the strap from the Winch.
- Pull the strap under the Lower Pulley and up to the Post Clamp.



STEP 5:

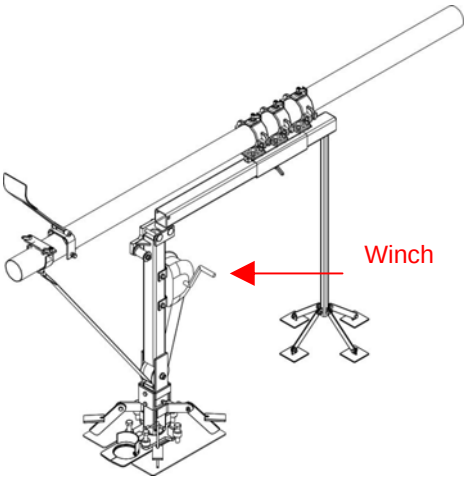
- Attach the **Post Brake (Part I)** to the post so that it extends beyond the end of the post.
- Attach safety chain to the Winch when not in use.



7.3 Tilting the Post into Vertical Position

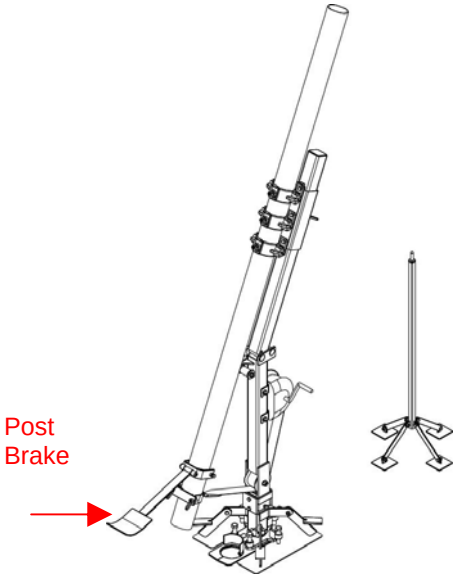
STEP 1:

- Holding the handle of the Winch, undo the safety chain.
- Carefully begin to wind in the Winch, tilting the post into vertical position.



STEP 2:

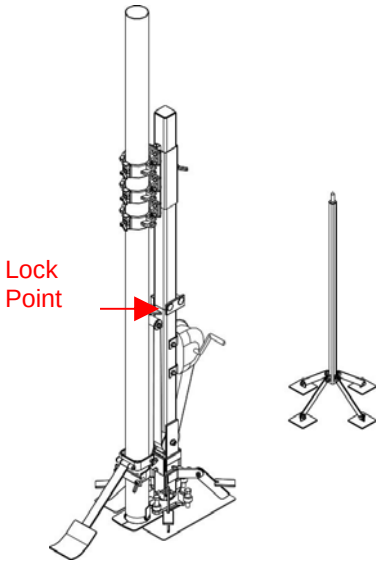
- As the post approaches vertical position, ensure the Post Brake runs along the ground in order to absorb and reduce any potential jolt.
- If required, operator can use his/her foot to further tension the Post Brake.



	**Only trained operators may enter the Safety Exclusion Zone.** **Operators must ensure that all other personnel stand outside, and remain outside, the Safety Exclusion Zone.**
	**Trained operator(s) must remain alert to any potential dangers during the post-installation process.** **Never walk under the post when tilting is in progress.**

STEP 3:

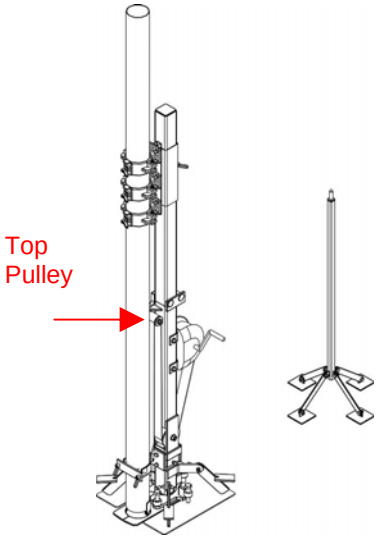
- Insert the locking-pin at the Lock Point.
- Fix the locking-pin in place by inserting the safety catch into the locking pin, then close securely.
- Attach safety chain to the Winch when not in use.



7.4 Lowering the Post into RS115 Socket

STEP 1:

- Remove the Post Brake.
- Unwind the Winch so the strap may be lifted up and over the Top Pulley.
- Ensure the strap is centred between the pulley shoulders.

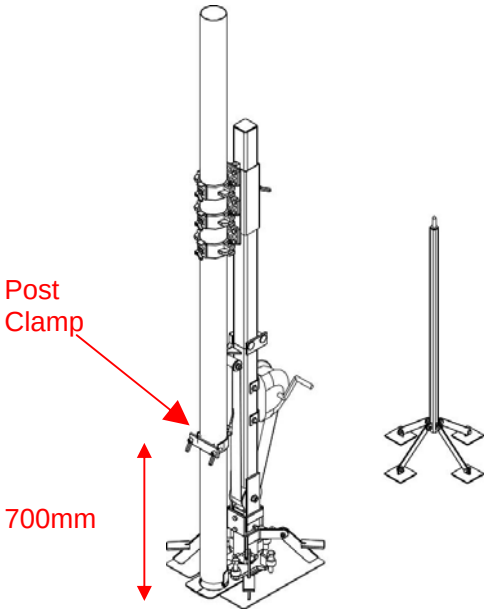


RS Post-Installer with post loaded.

	**NEVER leave the RS Post-Installer unattended when it is in vertical position.**
	**Perform all of the safety checks outlined in this manual. Ensure all locking pins are in place at the Hinge Point and Locking Point, and also that Clamp Rig is fixed tightly to Beam and is attached tightly to post.**

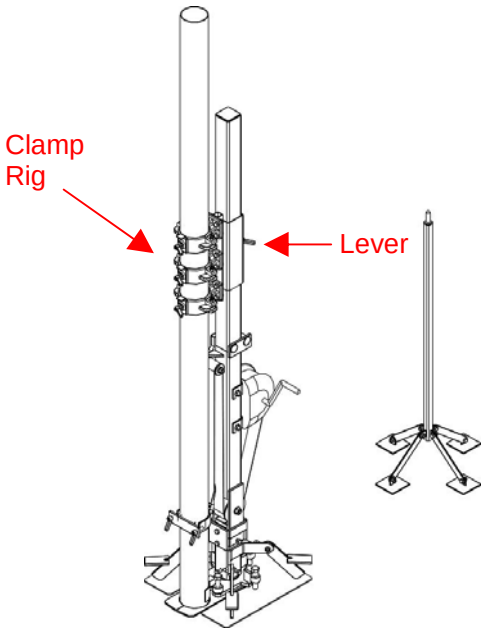
STEP 2:

- Loosen the Post Clamp and re-position it further up the post, at 700mm from the end of the post.
- Tighten the Post Clamp using the levers.
- Wind the Winch to pull the strap taut.



STEP 3:

- Loosen the Clamp Rig using the Lever so that it is free to move on the Beam.
- Wind the winch to lower the post into the RS115 socket.



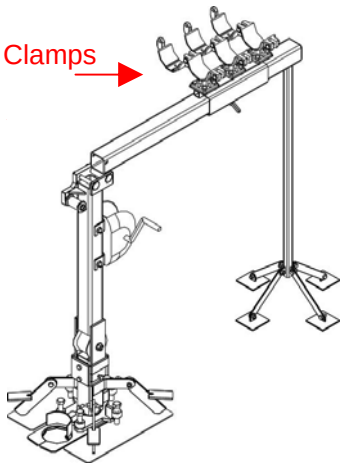
8.0 INSTRUCTIONS FOR UN-INSTALLING A POST USING THE RS POST-INSTALLER

8.1 Setting up the RS Post-Installer

Once the RS Post-Installer has been set up, with the beam in horizontal position, the post-installation procedure can begin. If a post is already installed in the RS115 socket, the RS Post-Installer can be set up with the Beam in vertical position, ready to un-install the post. To set up the RS Post-Installer in vertical position, these additional steps are required:

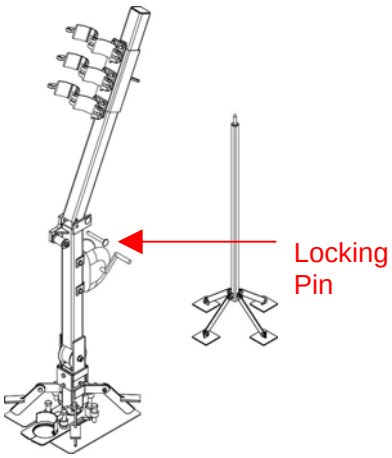
STEP 1:

- Open all three Clamps on the Clamp Rig.



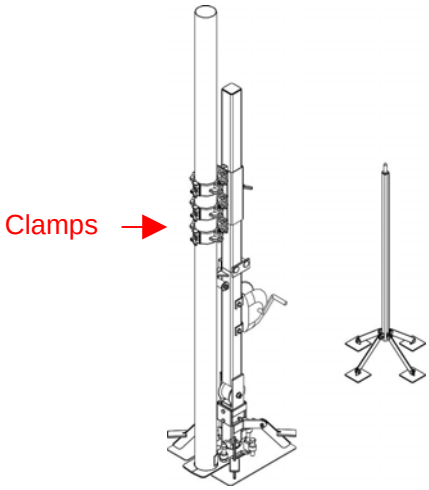
STEP 2:

- Manually lift the beam into vertical position.
- Insert the Locking-Pin at the lock point.
- Fix the locking-pin in place by inserting the safety catch into the locking pin, then close securely.



STEP 3:

- On the Clamp Rig, close all three Clamps, ensuring the protective covers are engaged around the post.
- Tighten all three clamps using the levers.
- Tighten the Clamp Rig to the Beam using the Lever.



8.2 The Un-installation Procedure

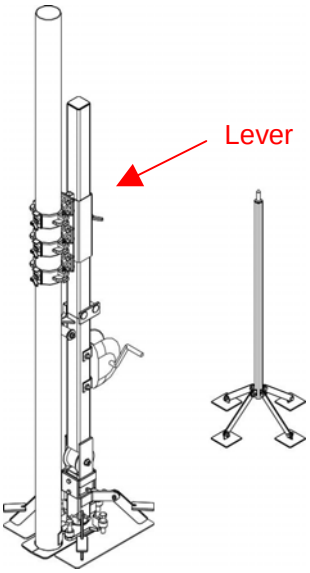
Once the RS Post-Installer has been set up in vertical position (see steps 7–9 in Section 6.0, 'Pre-check and Set-up'), the un-installation procedure can begin.

There are three stages in the un-installation procedure; fixing the post to the RS Post-Installer; raising the post out of RS115 socket; tilting the post to horizontal position.

8.3 Fixing the Post to the RS Post-Installer

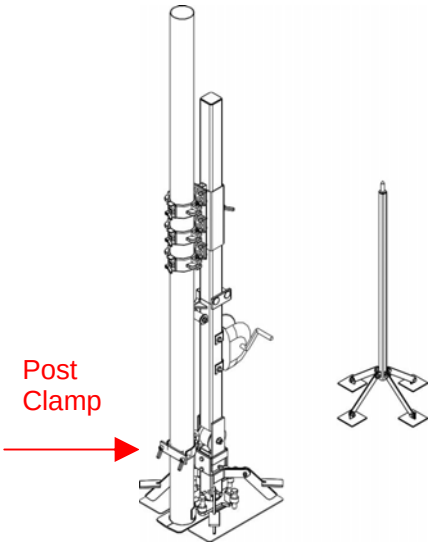
STEP 1:

- Loosen the Clamp Rig on the beam using the Lever.
- Position the Clamp Rig low on the Beam so that it is free to slide upwards.



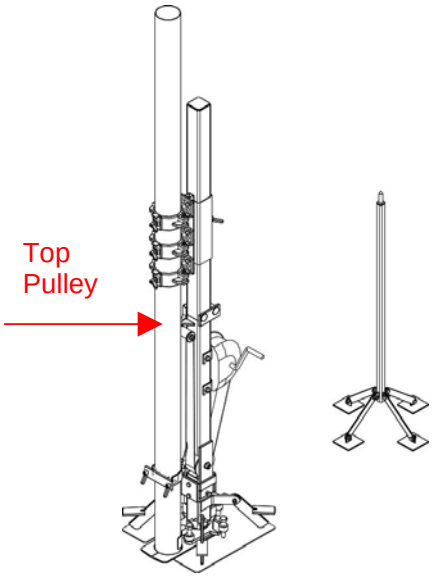
STEP 2:

- Position the Post Clamp onto the Post so that it is level with the bottom pulley.
- Tighten the Post Clamp using the levers.



STEP 3:

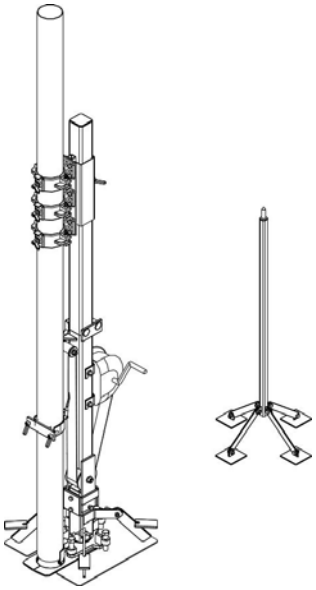
- Unwind the Winch so that the strap may be lifted up and over the Top Pulley.
- Ensure the strap is centred between the pulley shoulders.



8.4 Raising the Post out of RS115 Socket

STEP 1:

- Wind the Winch to raise the post out of the RS115 socket.
- Tighten the Clamp Rig to the beam using the lever.
- Attach safety chain to the Winch when not in use.

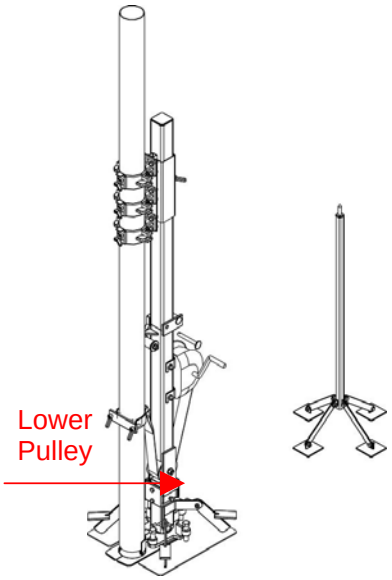


Warning! 	**Only trained operators may enter the Safety Exclusion Zone.** **Operators must ensure that all other personnel stand outside, and remain outside, the Safety Exclusion Zone.**
Warning! 	**Trained operator(s) must remain alert to any potential dangers during the post-installation process.** **Never walk under the post when tilting is in progress.**

8.5 Tilting the Post to Horizontal Position

STEP 1:

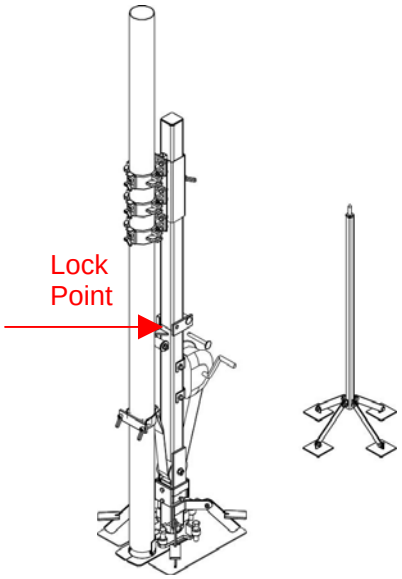
- Wind out the strap from the Winch.
- Pull the strap under the Lower Pulley and connect it to the Post Clamp.
- Wind in and tension the strap.



RS Post-Installer with post loaded.

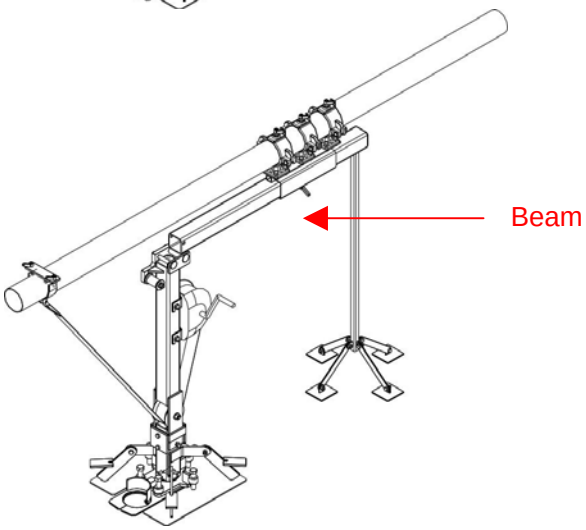
STEP 2:

- Holding on to the handle of the Winch at all times, undo the safety chain.
- Remove the locking-pin at the Lock Point.



STEP 3:

- Manually start to tilt the post.
- Wind the Winch to tilt the post to horizontal position.
- Position the Stand to hold the Beam at the outer point.



9.0 INSTRUCTIONS FOR DISMANTLING, TRANSPORTING AND HANDLING THE RS POST-INSTALLER

9.1 Dismantling the RS Post-Installer

To dismantle the RS Post-Installer, open all three clamps on the Clamp Rig so that the post is free from the RS Post-Installer. Remove the Post Clamp. Dismantle it by reversing the procedure outlined in section 5.3. Once dismantled, load all parts of the RS Post-Installer into their respective transport boxes.

9.2 General Handling Instructions

The RS Post-Installer is designed to be assembled and dismantled by hand, without the use of any mechanical lifting or handling equipment.

The RS Post-Installer is delivered in three purpose-made transport boxes for easy storage and transportation. The labels on each box list which parts should be placed in that box and the total weight of the box when loaded. Each transport box is designed to be lifted and carried by two people. The approximate weight of each transport box is outlined in section 9.3, below.

9.3 Weight of Transport Boxes

The weights of the RS Post-Installer and its three transport boxes are as follows:

Model	Weight
RS Post-Installer Total weight	107kg
Transport Box No. 1	40kg approx.
Transport Box No. 2	40kg approx.
Transport Box No. 3	40kg approx.

9.4 Storage

When not in use, the RS Post-Installer must be stored in a location that is protected from the elements. It is recommended that the RS Post-Installer is stored indoors to prolong its working life.

Safe manual-handling techniques must be applied when lifting components of the RS Post-Installer and its transport boxes.