

## COUNTERBALANCE OPERATING INSTRUCTIONS

### COUNTERBALANCE REF: Raise & Lower Hydraulic (RLH168)

**WE STRONGLY RECOMMEND THAT THESE INSTRUCTIONS AND THE HEALTH & SAFETY REQUIREMENTS SHEET SUPPLIED WITH THE UNIT ARE READ CAREFULLY BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT.**

**IF THERE IS MORE THAN ONE TYPE OF HYDRAULIC RAISE & LOWER COLUMN ON SITE, THEN EACH COLUMN SHOULD BE COLOUR CODED TO MATCH THE APPROPRIATE COUNTERBALANCE UNIT.**

### GENERAL

This unit consist of a single acting hydraulic ram with integral steel linkage, pump unit and wheels. The counterbalance is individually colour coded and is used on Ø168 cam operated columns only. The operating lever when attached to the unit acts as a handle. The rating exceeds all current spring counterbalance units and it is therefore permissible to use the unit across the whole range of Abacus Ø 168 RL base hinged columns.

**RLH168** 50mm bore ram - Colour coded **black**      Rating 5500Nm      (Safe Working Load at 8m = 40kg)

The rating refers to the maximum bending moment about the hinge of the column. For details of the full range of **safe working loads** refer to the manufacturer's column data sheet supplied with the columns. **Note that the safe working load for a counterbalance unit varies with column height.**

The pump unit is manually operated with the pressure relief valve being set at 220bar (3200psi). **In the event of a hose failure a flow control valve, integral with the ram ensures that the column lowers at a safe rate.**

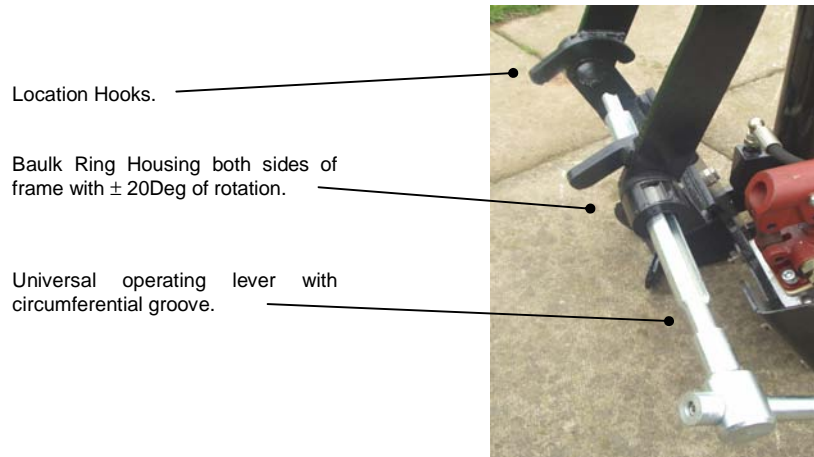


**RLH168 COUNTERBALANCE  
(Weight 40kg)**

The unit is supplied ex works with **Hydran 38F SAE 10 mineral oil** (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.

## GENERAL

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 unlocked.



**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.**

## PRELIMINARY CHECKS BEFORE USE

- 1 Examine the trolley framework and linkage for damage. Check that the wheels are operating and retained in position.
- 2 Check the baulk ring housings are present and undamaged.
- 3 Check the oil level is 30mm below the upper face of the filler port with the tank top horizontal and the ram closed.
- 4 Check the hydraulic hose for damage and loose connections.
- 5 Examine the ram, in particular the area around the seals for signs of damage and leakage of oil.
- 6 Check the flow control valve assembly at the base of the ram is present, undamaged and not leaking oil.
- 7 Examine the operating lever for damage. The keyway and the bar should both be clean and free from bruises.
- 8 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.**

**IF ANY OF THESE CHECKS ARE FAILED THE COUNTERBALANCE MUST NOT BE USED.**

## 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.**

Attach the counterbalance unit to the column by engaging the locating hooks onto the cam end washers.

**CAUTIONARY NOTE: ENSURE THE CORRECT MANUAL HANDLING TECHNIQUES ARE USED AT ALL TIMES WHEN LIFTING THE COUNTERBALANCE UNIT.**

**Grab handles are provided in the frame for this purpose.**

**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 that the lever protrudes into the baulk ring housing on the far side of the counterbalance frame.**

## LOWERING THE COLUMN

**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.



**1. Attach to counterbalance to the column**



**2. Rotate the operating lever**



**3. Open the control valve to start lowering**



**4. Column fully lowered.**

## 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.

## RAISING THE COLUMN

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.** To close the ram open the control valve and apply moderate hand pressure to the upper pad until the ram is closed.

Store the unit in a safe and weatherproof location.

**FOR FURTHER ADVICE CONTACT THE ABACUS TECHNICAL DEPARTMENT**