

## COUNTERBALANCE ROUTINE MAINTENANCE

### COUNTERBALANCE REF: Raise & Lower Hydraulic (RLH1M)

**WE STRONGLY RECOMMEND THAT THESE INSTRUCTIONS ARE READ CAREFULLY BEFORE ATTEMPTING ANY MAINTENANCE ON THIS EQUIPMENT. PARTICULAR ATTENTION MUST BE PAID TO THE COUNTERBALANCE OPERATING INSTRUCTIONS AND ESSENTIAL HEALTH AND SAFETY REQUIREMENTS APPLICABLE TO THIS UNIT.**

### GENERAL

This counterbalance unit is designed for use with Ø219 cam operated lighting columns only. The unit consists of a 47mm diameter bore single acting hydraulic ram complete with steel linkage, integral wheels and manual pump unit. The pressure relief valve is set at 170bar (2500psi), giving the unit a rating of 8495Nm. **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 hydraulic ram is colour coded **green**, and can be identified as such by checking the upper end of the piston rod.

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 manufacturers column data. **Note that the safe working load for a counterbalance unit varies with column height.**



RLH1M COUNTERBALANCE  
(Weight 49kg)

The base of the ram is fitted with a flow control valve which will allow the mast to lower at a fixed rate in the event of a major hydraulic failure such as a severed hydraulic hose.

### 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 ¾ gallon/ 3.5 litres and should be topped up with **Hydran 38F SAE 10 mineral oil** (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.

## ROUTINE MAINTENANCE

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 housing and blocking loop are both present and undamaged.

Check that a column door key is available.

**CAUTIONARY NOTE: THE COUNTERBALANCE UNIT WEIGHS 49Kg. 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.**

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

## COUNTERBALANCE ROUTINE MAINTENANCE

### COUNTERBALANCE REF: Raise & Lower Hydraulic (RLH2M)

**WE STRONGLY RECOMMEND THAT THESE INSTRUCTIONS ARE READ CAREFULLY BEFORE ATTEMPTING ANY MAINTENANCE ON THIS EQUIPMENT. PARTICULAR ATTENTION MUST BE PAID TO THE COUNTERBALANCE OPERATING INSTRUCTIONS AND ESSENTIAL HEALTH AND SAFETY REQUIREMENTS APPLICABLE TO THIS UNIT.**

### GENERAL

This counterbalance unit is designed for use with Ø219 cam operated lighting columns only. The unit consists of a 57mm diameter bore single acting hydraulic ram complete with steel linkage which is loosely mounted on a trolley to which the pump unit is attached. The pressure relief valve is set at 170bar (2500psi), giving the unit a rating of 12695Nm. **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 hydraulic ram is colour coded **grey**, and can be identified as such by checking the upper end of the piston rod.

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 manufacturers column data. **Note that the safe working load for a counterbalance unit varies with column height.**



RLH2M COUNTERBALANCE  
(Weight 90kg)

The base of the ram is fitted with a flow control valve which will allow the mast to lower at a fixed rate in the event of a major hydraulic failure such as a severed hydraulic hose.

### 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 ¾ gallon/ 3.5 litres and should be topped up with **Hydran 38F SAE 10 mineral oil** (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.

## ROUTINE MAINTENANCE

Examine the trolley framework and steel linkage for damage. Particular attention should be paid to the double return springs and their attachments. 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 housing and blocking loop are both present and undamaged.

Check that a column door key is available.

**CAUTIONARY NOTE: THE HYDRAULIC RAM WEIGHS 47Kg, ENSURE THAT THE CORRECT MANUAL HANDLING TECHNIQUES ARE USED AT ALL TIMES WHEN LIFTING THE UNIT ONTO OR OFF THE LIGHTING COLUMN. THE TOTAL WEIGHT OF THE COUNTERBALANCE UNIT IS 90KG.**

**IF THE UNIT FAILS TO MEET ANY OF THE ABOVE REQUIREMENTS IT MUST NOT BE USED.**

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