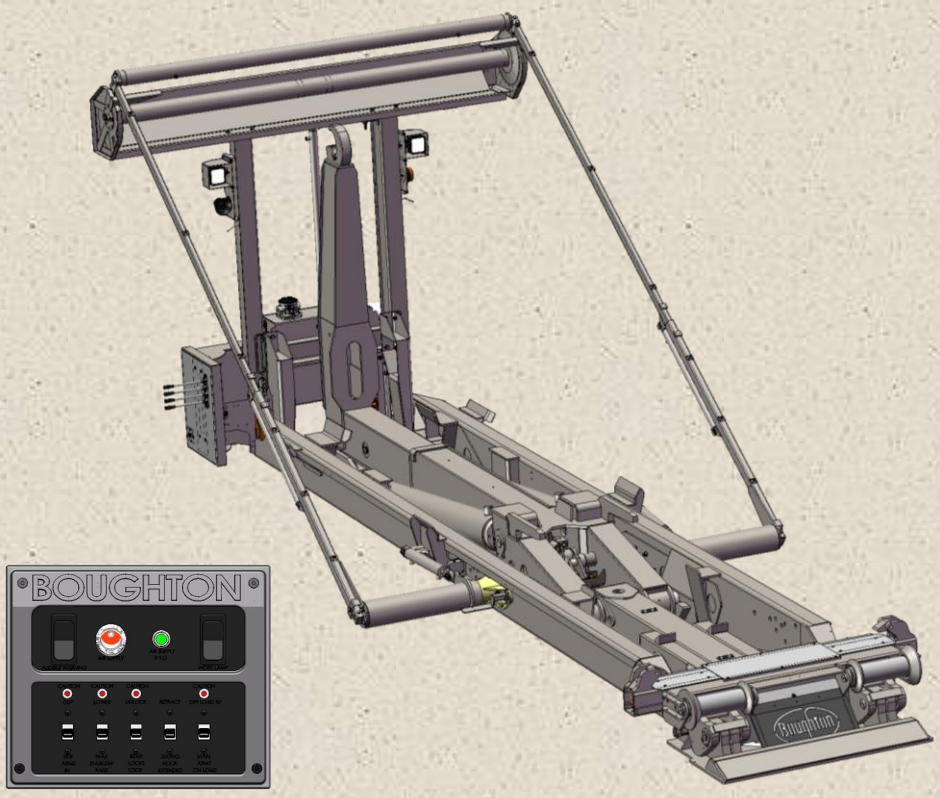
Boughton Engineering Limited



Operation & Maintenance Manual

Hook Loader System

6/26 – Six-Wheeler 26,000Kg GVW.
8/32 – Eight-Wheeler 32,000Kg GVW.

Standard Cab Control Box.

Incorporating Optional
KWIKCOVA CM and CMD Sheeting System.

TÜV NORD TÜV UK Ltd. ISO 9001 UKAS MANAGEMENT SYSTEMS 065

Original Instructions.

MADE IN BRITAIN

"Over a century of British Engineering experience"

Document – H1004-ML-285 – Issue 2 – March 2020
ERN – H1004MOD143

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- Pressing next page / previous page arrows in the toolbar.

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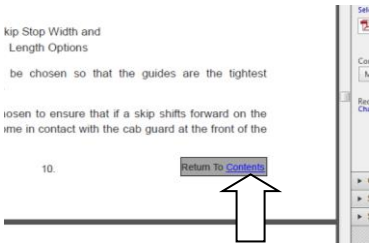

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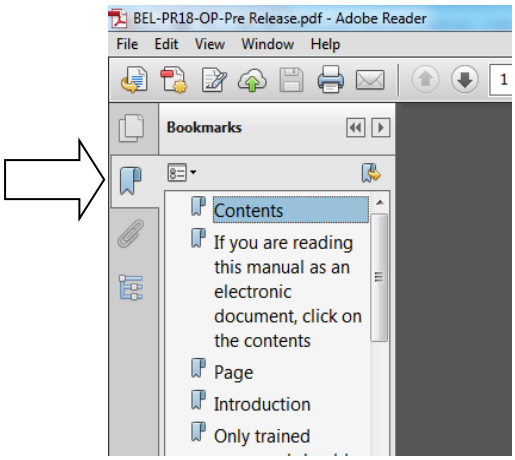

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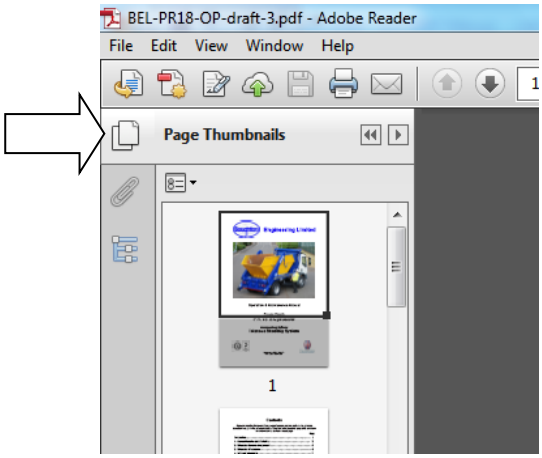

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Contents

If you are reading this manual as an electronic document, click on the contents description to go to the relevant section. To return to the contents page click on return to contents at the bottom of each page.

Introduction

This manual has been produced, by Boughton Engineering Limited, to ensure that users of the Boughton hook loader system have the information required to operate the equipment safely.

It is the responsibility of the operator's management to ensure that all health and safety requirements, relating to the use of this equipment, are assessed and that all personnel who use the equipment are aware of its functionality and limitations.

Only trained personnel should use this equipment.

A Copy of this manual should be kept in a safe place in the vehicle cab. All users of the equipment should be made aware of the location of the manual and should be instructed to read through and familiarise themselves with its contents prior to operating the equipment.

The following symbols have been used, in this publication, to bring certain items relating to safety to the attention of the user of the equipment: -

Highlights a risk to personnel or the general public which could result in serious injury or death.

Highlights a risk to the equipment due to improper use.

Please take note of these symbols and take action to avoid unsafe operation of the equipment.

The information contained in this manual is correct at the date of publication.
Boughton Engineering Limited reserves the right to modify the design and/or construction of its products, at any time.

1. General Function and Limitations

WARNING
Failure to observe the limitations of the equipment and using non approved demountable bodies may result in serious injury, death and/or damage to the equipment.
This equipment must never be used: -

- **To carry persons or animals.**
- **To raise the vehicle to change a tyre or carry out any other maintenance.**
- **To lift or pull any item other than approved demountable bodies.**

NOTE: This equipment has been designed to move bodies with demountable subframes conforming to CHEM standard T.S.8. Please ensure that only demountable bodies which meet the requirements of this specification are used with this equipment.

The Boughton hook loader is primarily designed for transporting waste materials contained in demountable containers. The equipment allows the operator to load, onto the bed of the vehicle, and unload, onto the ground, empty and loaded containers.
In addition, this equipment can be used to tip containers if they have been designed for this purpose.

This equipment also offers the versatility of handling various other demountable bodies.
Flatbed, tanker, tipper bodies etc., which incorporate the hook loader lifting system, may be transported on vehicles fitted with Boughton hook loader equipment.
Always check compatibility before attempting to lift demountable bodies.

Before lifting ensure that the container dimensions are compatible with the equipment and that the container is in sound condition.

WARNING
Failure to observe the maximum permitted payload and/or plated axle loads may result in instability of the equipment during loading and unloading and/or instability of the vehicle when driving. Serious injury, death and/or damage to the vehicle or hook loader equipment may result.

The maximum permitted payload, for which this equipment is approved to lift and carry, is quoted on the load plate.

Your hook loader has been individually load tested after fitting to the chassis. It will operate with complete safety, provided the maximum transferable load, quoted on the load plate, is not exceeded.

Due to the variety of demountable bodies that may be loaded, responsibility to ensure that the vehicle axle loads remain within the limits specified by the chassis manufacture and meet the requirements of any applicable legislation, remains with the driver.

Note: The equipment maximum transferable loads, quoted on the load plate, may exceed the maximum payload for which the vehicle is plated. Do not drive the vehicle on the highway if there is any doubt that the payload is within the limits required for the vehicle to operate legally.

Failure to observe plated and legislated axle loads may result in prosecution and /or damage to the vehicle.

This manual also includes operating instructions for the Boughton Engineering Limited Kwikcova sheeting system. This system is optional and may not be fitted to all vehicles.

The Kwikcova sheeting system is designed to make sheeting of loaded containers a quick and safe operation. Sheeting of the load is achieved remotely via the control block.

Loaded containers should be sheeted to ensure that the contents remain within the container during operation on the highway.

Boughton Engineering Limited has designed and manufactured this equipment to meet all relevant safety regulations. The equipment design has considered ease of operation and maintenance, conforms to the requirements of the EU Machineries Directive 2006/42/EC and is CE marked in accordance with this directive.

This machinery emits A-weighted sound power up to a maximum level of 110 dB measured by tests laid down in SI 2001/170.

It is recommended that, when operating this equipment for prolonged periods, ear defenders are worn.

WARNING
Always keep clear of moving parts when the hook loader equipment is operating. Failure to observe this warning may result in serious injury or death from pinching and crushing hazards.

As with all machinery, during operation there are moving parts which pose a risk of pinching or crushing. Always apply the clearance zone rule, Section 6 point 3, when operating the equipment, to ensure that any risk to the public or animals is limited. The operator of the equipment should also consider pinching and crushing hazards and keep clear of all moving parts.

WARNING
Correct maintenance of this equipment is essential for safe operation. Always maintain the equipment to the schedule prescribed in the maintenance manual.
NEVER operate the equipment if there is a known fault. Take the vehicle out of service and affect a repair before returning into service.
ALWAYS use approved spares and recommended fluids and lubricants. Non approved items may seriously affect the performance and will increase the risk of a failure which may result in serious injury, death and/or damage to the equipment.

Any maintenance required on the hook loader equipment should be carried out by a qualified technician.

Spare parts used during repair and maintenance procedures must be approved by Boughton Engineering Limited.

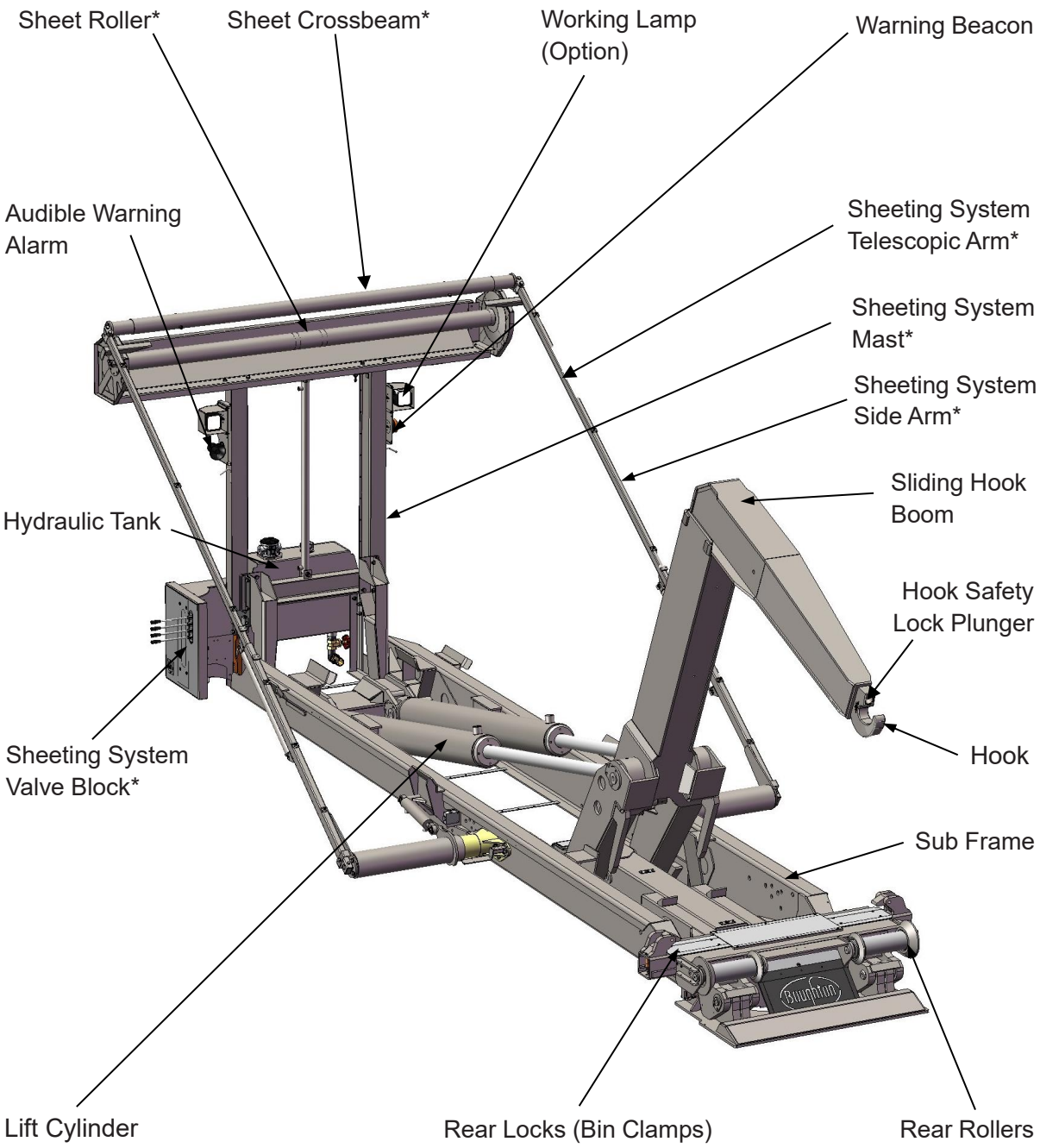
Please refer to the equipment maintenance section of this manual, Section 9, and spare parts catalogue for information on procedures for maintaining the equipment in a safe operational condition.

The operation and maintenance of optional components, fitted to your vehicle, such as towing hitches, load cells, auto-lube systems etc. are covered in the component manufacturers manuals supplied with the vehicle.

Where optional components are fitted the operator must read through the contents of these manual(s) before operation.

Refer to the optional component manuals for all maintenance schedules and procedures.

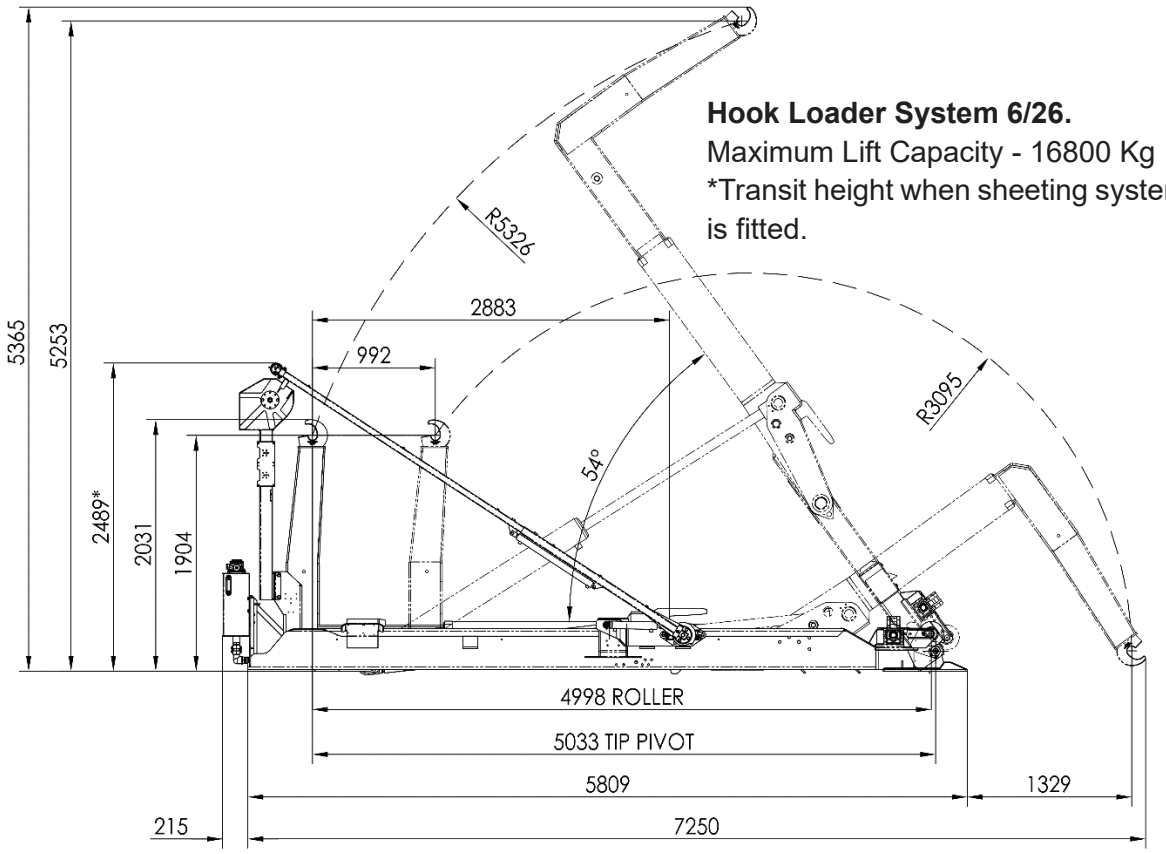
2. Hook Loader General Arrangement



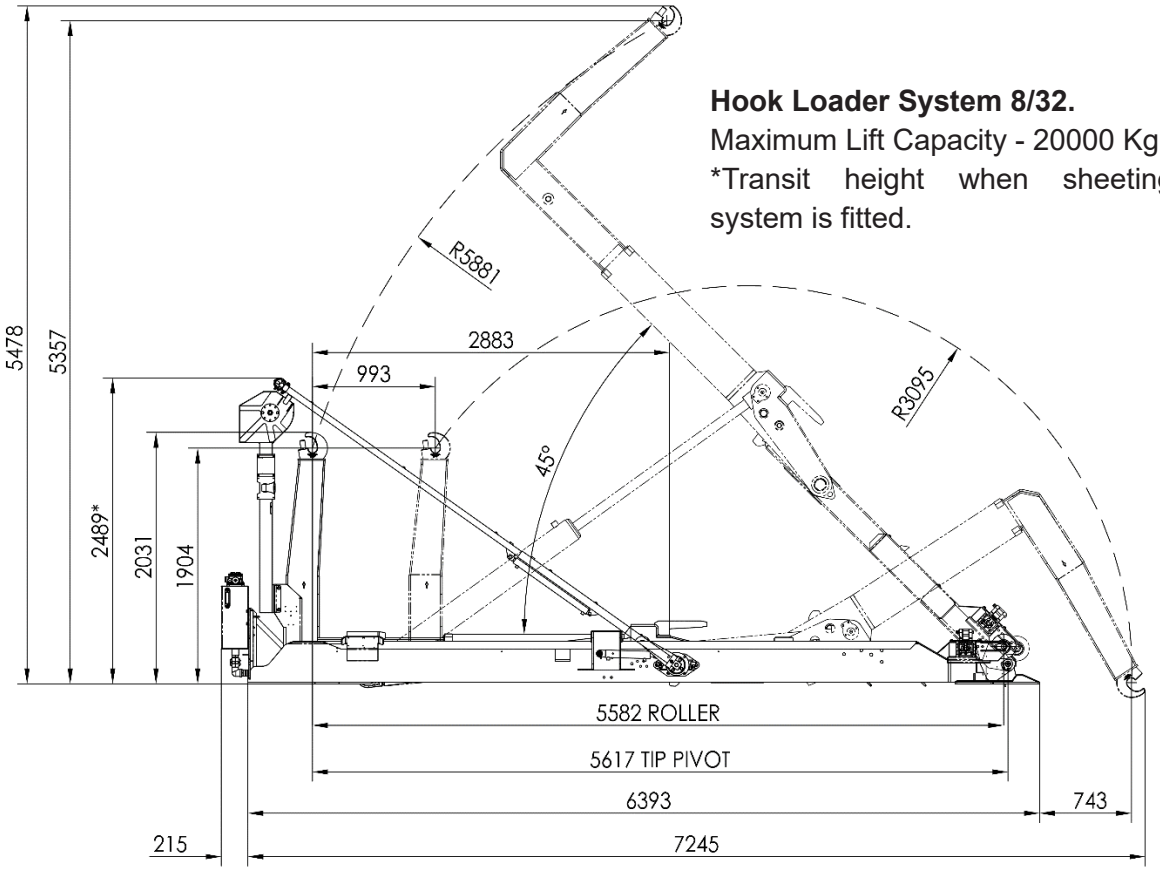
*Kwikcova Sheeting System is an optional fitment and may not be installed on your vehicle.

Note: Stabiliser (roller or stab jacks) are not shown. Stabilisers may not be installed on your vehicle depending on specification.

3. Hook Loader Weights, Dimensions & Parameters



Hook Loader System 6/26.
Maximum Lift Capacity - 16800 Kg
*Transit height when sheeting system is fitted.



Hook Loader System 8/32.
Maximum Lift Capacity - 20000 Kg.
*Transit height when sheeting system is fitted.

Operating Parameters.

The following table provides information on the limits of use of the equipment and the input and output characteristics of the systems when the equipment is operating.

Warning
DO NOT operate the equipment if the ambient temperature is above or below the maximum and minimum values specified.
Where the ambient temperature is lower than the minimum fluid working temperature, the equipment must be "warmed up" prior to any load/unload or tipping procedure being carried out.
When operating in high ambient temperatures care should be taken not to exceed the maximum fluid working temperature.
Failure to observe the temperature limits specified will adversely affect performance and may damage the equipment.
Ensure that the limits quoted are adhered to. If the equipment operates outside of these limits, use of the equipment should be suspended and the vehicle should be taken out of service and inspected, by a qualified technician, to determine the cause of any deviation from the characteristics quoted.
Continuing to operate the equipment outside operating parameters may damage the equipment and/or cause serious injury or death.

	Hook loader 6/26	Hook loader 8/32
Maximum Lift Capacity	16800kg	20000kg
Minimum Ambient Temp. - Operating	-20^{0}C	
Maximum Ambient Temp. - Operating	+40^{0}C	
Maximum Working Pressure (Hydraulic)	262bar	320bar
Maximum Fluid Working Temp. (Hydraulic)	+70^{0}C	
Minimum Fluid Working Temp. (Hydraulic)	-2^{0}C*	
Maximum Pump Flow Rate (Hydraulic)	90 litres /min	
Maximum Fluid Contamination Level (Hydraulic)	19/17/14 to ISO 4406	
Maximum Supply Pressure (Air)	10.4bar	
Minimum Supply Pressure (Air)	7bar	
Maximum Working Pressure (Air)	5bar	
Maximum Fluid Operating Temp. (Air)	+70^{0}C	
Minimum Fluid Operating Temp. (Air)	-10^{0}C*	
Maximum Flow Rate (Air)	125 litres/min	

***Operating in Low Temperatures**
Where minimum fluid working temperatures are higher than the ambient temperatures i.e. when the outside temperature is lower than the minimum fluid working temperatures, the equipment should be put through a warm-up cycle prior to carrying out any load/unload or tipping procedure.

To warm up the equipment operate the lift cylinders by operating the main arms toggle switch, see pages 8 & 9. Raise and lower the front beam, several times, to warm up the air and hydraulic fluid.
The warm-up cycle should be carried out, prior to each load/unload or tipping procedure, if the time between procedures allows the air and hydraulic fluid to cool below the minimum fluid working temperatures.

4. Main Control Overview

The main hook loader system is operated from inside the vehicle cab using the hook loader control panel.

It should be noted that, where a Kwikcova sheeting system is fitted, the in-cab control panel will only operate the side arms to push them out or pull them in. To extend the sheeting system over the bin, or to retract the sheeting system to clear the bin, the operator must leave the cab and operate the sheeting system hydraulic control block located on the vehicle left (U.K. near) side.

4.1 In-cab Controls.

Air Supply On - System Operational - Red
Air Supply Off - System Deactivated - Clear

PTO Activated - Green LED Illuminated.
PTO Deactivated - Green LED Extinguished

Rocker Switch Left

Audible Warning -
Press Top DOWN - OFF

Audible Warning -
Press Bottom DOWN - ON

Rocker Switch Right

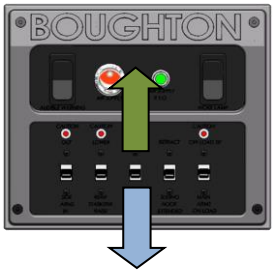
Work Lights -
Press Top Down - OFF

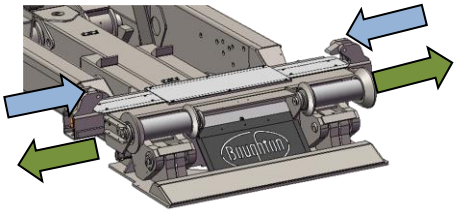
Work Lights -
Press Bottom Down - ON

Note: Work Light Switch only present when work lights are fitted to the vehicle.

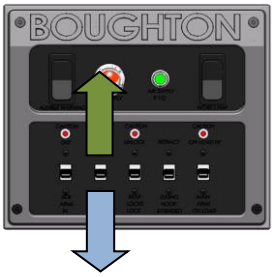
Hook Loader Functions Operated from the In-cab Control Box.

Rear Lock Toggle Switch: -
Bin Clamps UNLOCK - UP
Bin Clamps LOCK - DOWN



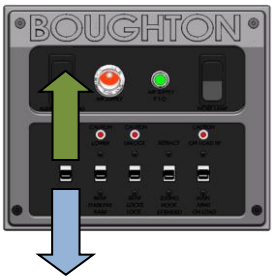


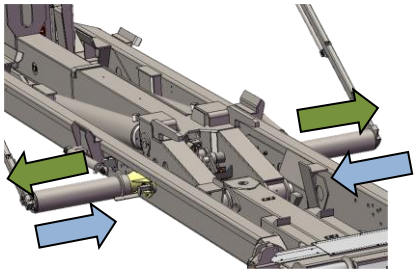
Where Stabiliser Fitted.
Stabiliser Toggle Switch: -
Stabiliser LOWER - UP
Stabiliser RAISE - DOWN



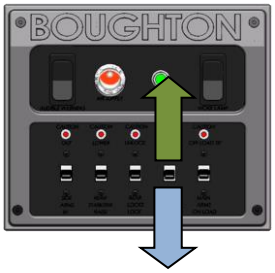
Stabilisers may be either one of two options: -
a) Stab Jacks - operating on the vehicle axles to prevent suspension compression.
b) Rear Roller - extended to the ground to prevent downward movement of the vehicle rear.
Both options operate using the stabiliser toggle switch.

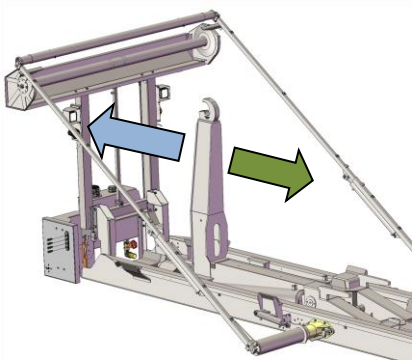
Where Sheeting System Fitted
Side Arm Toggle Switch: -
Side Arms OUT - UP
Side Arms IN - DOWN



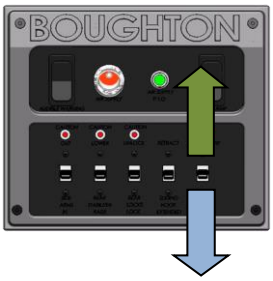


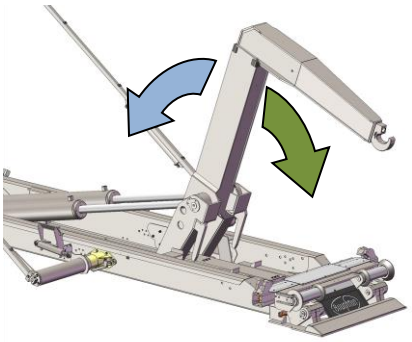
Sliding Hook Toggle Switch: -
Sliding Hook RETRACTS-UP
Sliding Hook EXTENDS-DOWN





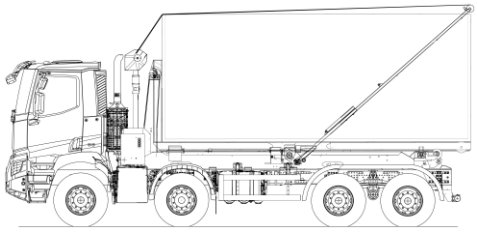
Main Arms Toggle Switch: -
Main Arms OFF LOAD/TIP - UP
Main Arms LOAD - DOWN



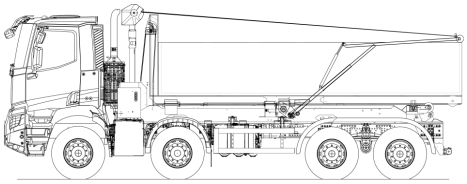


4.2 Kwikcova Sheeting System Control Block (Where Fitted).

The Kwikcova sheeting system fitted to your vehicle may be one of two types.
The CM system is equipped with main side arms which extend and retract only.
The CMD system is equipped with main side arms which extend and retract, in the same way as the CM system, but have an addition feature allowing the ends of the arms to be cranked to ensure a close fit to the rear of a low container.



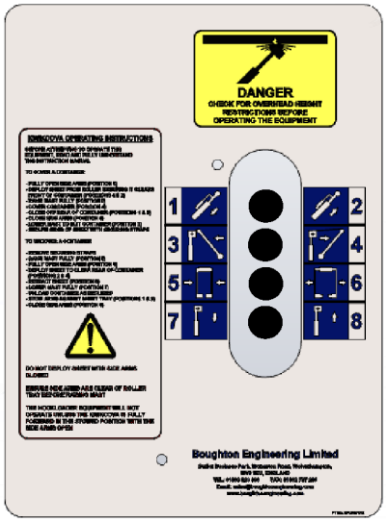
CM System – No Cranked Arm



CMD System – With Cranked Arm

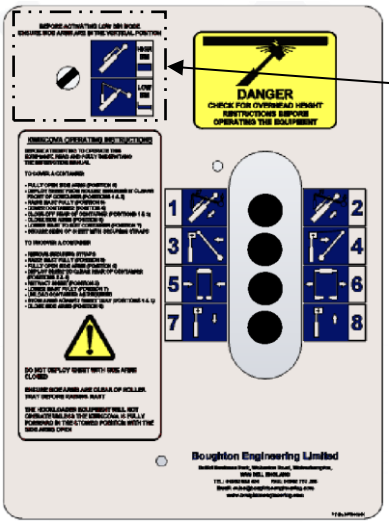
The sheeting system control panel type will depend on the Kwikcova model fitted.

CM Control Panel.

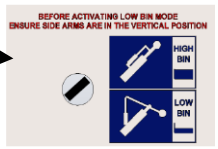


Control functions (see also Fig on next page): -
1) Telescopic arms retract.
2) Telescopic arms extend.
3) Rotate side arms forward - stow sheet – roller in.
4) Rotate side arms rearward - deploy sheet – roller out.
5) Side arms - move inboard*.
6) Side arms - move outboard*.
7) Mast lower.
8) Mast raise.

CMD Control Panel.



Switch Control function: -



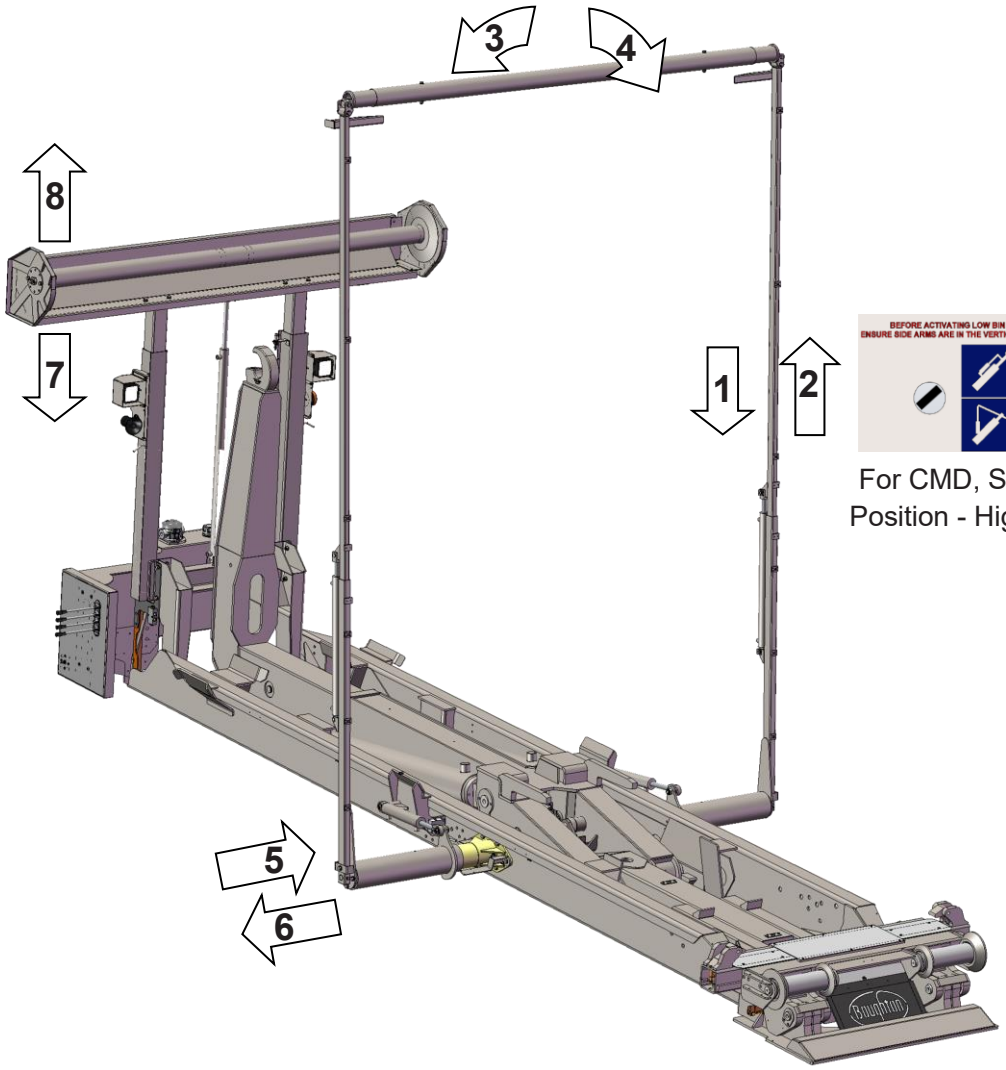
Switch pointing to “High Bin” (as shown). Cranked arm function disabled.
Switch pointing to “Low Bin”. Cranked arm function enabled.

Lever Control functions (see also Fig on next page): -
1) Telescopic arms retract/telescopic arms crank.
2) Telescopic arms extend/telescopic arms un-crank.
3) Rotate side arms forward - stow sheet – roller in.
4) Rotate side arms rearward - deploy sheet – roller out.
5) Side arms - move inboard*.
6) Side arms – move outboard*.
7) Mast lower.
8) Mast raise.

*Functions 5) and 6) are replicated on the in-cab control panel allowing the arms to be moved outward or inboard from either control station.

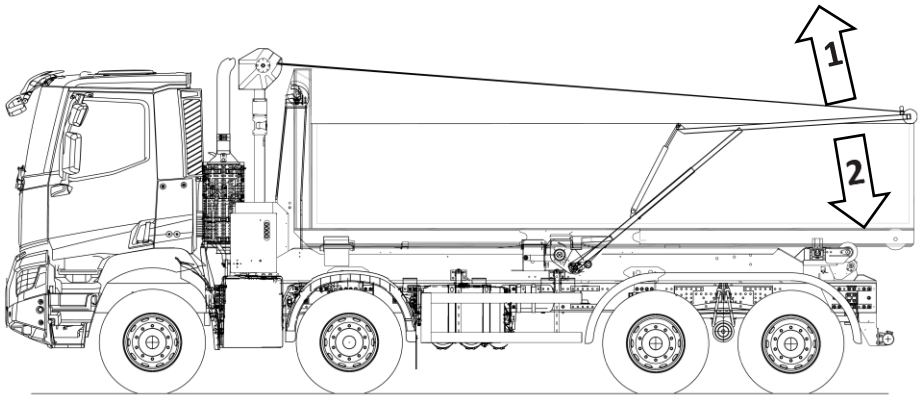
Note - A sheeting system warning lamp is incorporated into the in-cab control panel. Refer to section 5, "Warning Lamps"

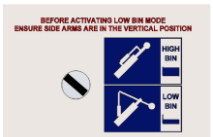
Kwikcova Functions Operated from Control Block (CM & CMD)



For CMD, Switch Position - High Bin

Additional Kwikcova Functions for CMD Only





For CMD, Switch Position - Low Bin

5. Warning Lamps

WARNING

It is the drivers' responsibility to always ensure that the vehicle is operated within overall heights, specified on the vehicle height notice located in the cab, and that before using the vehicle on the highway the sheeting system, if fitted, is in the driving position, the stabilisers are de-activated and the bin clamps are on.

Failure to ensure that the vehicle is readied for driving on the highway may result in a collision, serious injury or death, damage to the vehicle structure and/or an unstable load.

Warning lamps are included on the in-cab control panel to provide the operator with guidance relating to the position of certain parts of the equipment.

The operator MUST always make a visual check of the equipment to ensure that the vehicle is readied for driving.

Always ensure that, before driving on the highway, all warning lamps are extinguished.

The in-cab control panel is fitted with up to four warning lamps (depending of the configuration of the equipment) which are intended to give the operator/driver guidance in relation to the status/position of: -

a) Sheeting System (where fitted). b) Stabilisers (where fitted). c) Bin clamps. d) Main Arms.

Warning Lamp	Lamp 'On' Warning	Corrective Action Before Driving
(a) Sheeting System (where fitted)	**Side arms are not fully forward.**	Move arms to fully forward position.
	Side Arms are in 'Out' Position.	Move arms to fully inboard position.
	Mast is raised	Lower mast to fully down position.
(b) Stabilisers (where fitted)	**Stabilisers are lowered.**	Fully raise stabilisers to ensure suspension is free to operate correctly.
(c) Bin Clamps	**Bin Clamps are off.**	Ensure bin clamps are in 'Locked' position to ensure demountable body is secured.
(d) Main Arms	**Main Arms not fully down**	Lower main arms to fully down position, to ensure demountable body is correctly loaded onto the sub-frame of the vehicle.

Always ensure that the vehicle is not driven on the highway until all the warning lamps have been extinguished and the P.T.O is disengaged.

A further visual check of the equipment must be made by the driver before the vehicle is driven on the highway.

It is recommended that the warning lamps are checked prior to any unload/load or tipping procedure being carried out. Refer to Section 6 – “General Safety Checks Prior to Operating” point 2.

6. General Safety Checks Prior To Operating

WARNING
NEVER operate the equipment if there is a known fault. Take the vehicle out of service and affect a repair before returning into service.
Only qualified technicians should carry out repair of faulty equipment.
Continued use of faulty equipment may result in serious injury, death and/or damage to the equipment.

When operating the hook loader equipment, it is essential that all precautions are taken to ensure the safety of the driver and the general public.

It is the responsibility of operators of commercial vehicles to have procedures in place to minimize risks. These procedures should always be followed. Refer also to CHEM booklet "Code of Practice No. 4 - The Safe Operation of Ground Level Demountable Body Systems (Hook Type)".
In addition, the following safety checks are specific to hook loader operations and should be carried out prior to any lifting operations: -

1. A general visual inspect of the hook loader equipment should be undertaken. Walk around the vehicle looking for any signs of damage to components.
   Look for patches of fluid under the vehicle. If fresh fluid is detected inspect the vehicle in the area above the patch to see if there are any leaks.
   If damage or leaks are detected take the vehicle for repair by a qualified technician.

2. It is recommended that the vehicle driver carries out a check, prior to the first daily operation of the equipment, to ensure that the proximity sensors are correctly sensing the equipment part positions and providing feedback, via the warning lamps, and that the warning lamps are functioning correctly

   To check the in-cab warning lamps ensure: -

   a) the P.T.O is engaged. See page 16.
   b) where fitted, the stabilisers are extended. See pages 8 & 9.
   c) where fitted, the sheeting system telescopic arms are out. See pages 8 thru' 11.
   d) the bin clamps are unlocked. See pages 8 & 9.
   e) the main arms have started the "off load" sequence. See pages 8 & 9.

   With the equipment in this state check the warning lamps located on the in-cab control panel and cab dashboard.

   All lamps on the control box must be illuminated indicating that all the proximity sensors are detecting that the equipment is **NOT** in a state suitable for using the vehicle on the highway.

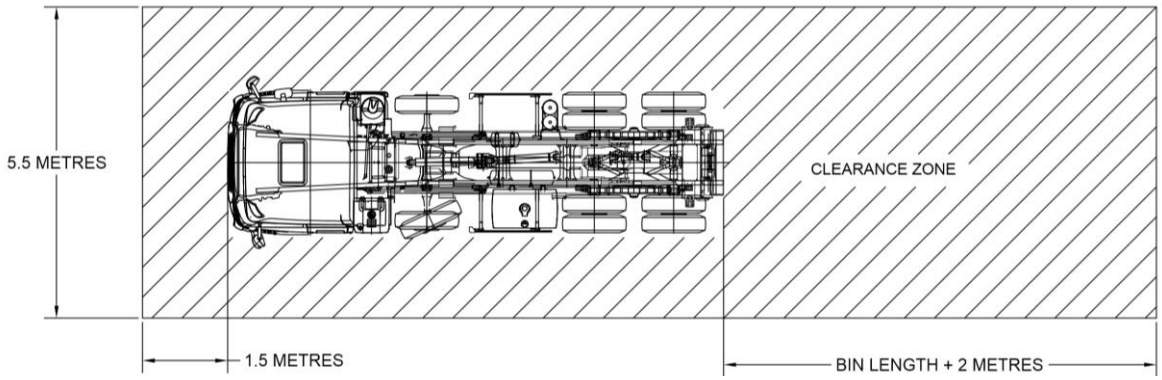
   In addition, the dashboard warning lamp should be illuminated to indicate that the main arms are not in the fully forward (down) position.

   If any lamp fails to illuminate the vehicle should be taken for repair by a qualified technician.

Refer to "Maintenance Procedure 3 – Safety Device Location & Function" – page 47, for a detailed explanation of the location, function and set up of all proximity sensors which initiate the illumination of the in-cab warning lights.

3. Before loading or unloading a demountable body check the ground onto which the vehicle must drive to ensure it is stable enough to support the loads imposed through the wheels and where fitted any stabiliser rollers.
   The ground should be essentially level. Excessive slopes may result in an unstable lift.

4. Ensure that the area around the demountable body is clear. **DO NOT** carry out a loading or unloading operation if any person or animal is close to the vehicle or demountable body. It is recommended that a 1.5 metre clearance zone, around vehicle and demountable body, is applied.



5. Check the area above the vehicle and lifting equipment. **DO NOT** lift if there is any risk of a collision.

6. When unloading ensure that there is adequate space to accommodate the demountable body. To reduce the risk of a crushing hazard it is recommended that there is space all around the demountable body when unloaded.

7. Check the demountable body, prior to lifting, to ensure that it is in sound condition and compatible with the hook loader equipment. Take particular note of the condition of the lifting bar.
   If loaded check that the load is safely inside the demountable body and cannot fall out during the lift.
   It is the operator's responsibility to ensure that a demountable body is not overloaded. Check the load. If there is any doubt that the demountable body may be overloaded **DO NOT** attempt a lift.

8. If visibility is restricted do not carry out operations without the assistance of a banksman.

9. If working in poor visibility activate work lamps, if fitted. Switch off work lamps on completion of the operation.

7. Power Take Off (P.T.O.) Instructions

7.1. Vehicles with Manual Gearbox.

DO NOT operate the designated P.T.O. control before depressing the clutch pedal. Disregarding this instruction will cause damage to the equipment and invalidate its warranty.

P.T.O. engagement/disengagement is initiated by operating the designated P.T.O. control.

To ensure that the P.T.O. is engaged/disengaged correctly and without damage the following procedure must be adopted.

1. Engage P.T.O. as follows –

1.1. Run engine at idle speed.
1.2. Depress the vehicle clutch pedal and hold down.
1.3. Wait for 10 seconds.
1.4. Operate the P.T.O. control to engage the P.T.O.
1.5. **Very slowly** release vehicle clutch pedal.
1.6. Do not exceed 1500 rpm while P.T.O. is engaged.

2. Disengage P.T.O. as follows –

2.1. Run engine at idle speed.
2.2. Depress the vehicle clutch pedal and hold down.
2.3. Operate the P.T.O. control to disengage the P.T.O.
2.4. Wait for 10 seconds.
2.5. **Very slowly** release vehicle clutch pedal.

7.2. Vehicles with Automatic Gearbox.

1. Engage P.T.O. as follows –

1.1. Run engine at idle speed and select neutral in vehicle gearbox.
1.2. Operate the designated P.T.O. control switch to engage the P.T.O.
1.3. Do not exceed 1500 rpm while P.T.O. is engaged.

2. Disengage P.T.O. as follows –

2.1. Run engine at idle speed and select neutral in vehicle gearbox.
2.2. Operate the designated P.T.O. control switch to disengage the P.T.O.

8. Operating the Hook Loader Equipment

8.1. Loading A Demountable Body.

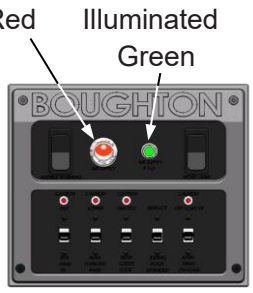
Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the proposed loading location to ensure that it is suitable.
Take particular note of the available space and stability of the ground.
Ensure that, if fitted, the Kwikcova sheeting system is in the fully forward position and the arms are in the outboard position. The hook loader system will not operate unless these conditions are met.

8.1.1. To load a Standard-Length Demountable Body.

1. Align the vehicle with the demountable body before attempting to load.

2. Engage P.T.O. drive to hydraulic pump (See PTO Instructions, Section 7).

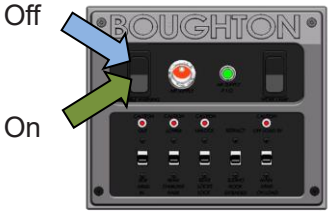
   The "Air Supply PTO" LED will illuminate when the PTO is engaged. The "Air supply" indicator to the left of the "Air Supply PTO" LED will turn red to indicate the air supply to the hydraulic controls is activated.

   The flashing beacon is automatically activated to give visual warning that the operation of the equipment is about to commence.

   If the flashing beacon does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective beacon must be repaired or replaced as soon as possible.

3. Action audible warning, by operating the rocker switch on left of the panel, when working between the hours of 7am and 11.30pm. When working between the hours of 11.30pm and 7am the audible warning must be switched off.

   If the audible warning device does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective device must be repaired or replaced as soon as possible.

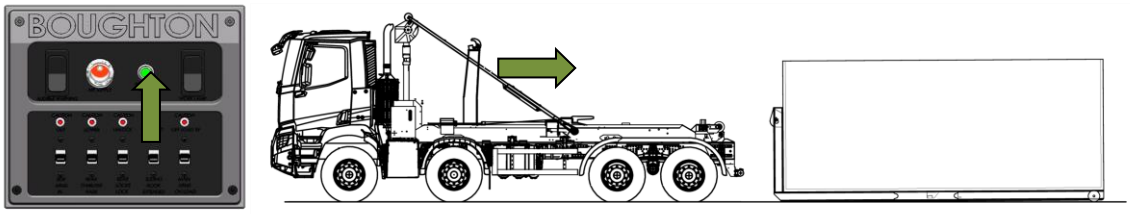
WARNING
DO NOT attempt to load the demountable body if the rear locks are engaged (in the locked position).

4. Unlock the rear locks. Control panel lamp will illuminate to give visual indication when locks are disengaged.

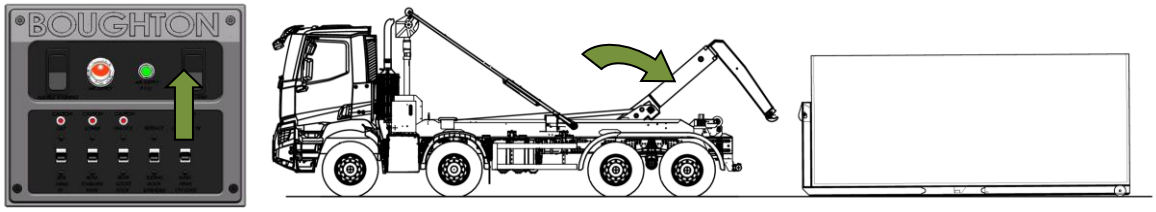
   

   Check visually, from the cab rear window, that the rear locks are disengaged

5. Fully retract sliding hook boom.



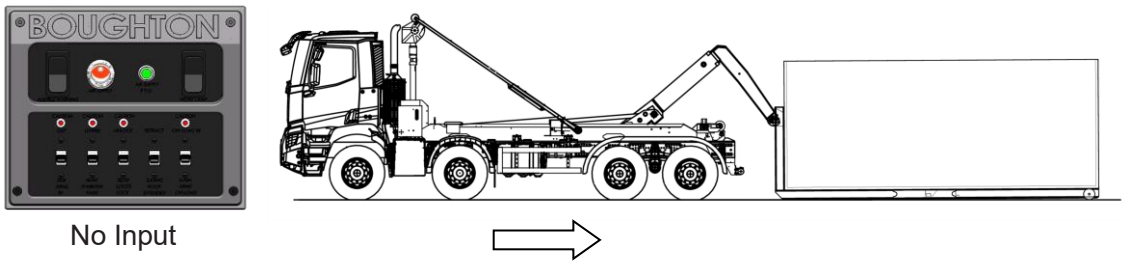
6. Extend lifting cylinders to tip sliding hook boom rearwards.



WARNING
<u>DO NOT</u> attempt to load the demountable body if the hook locking plunger is fitted and has not retracted.

7. Ensure that the hook locking plunger, if fitted, has automatically retracted before attempting to engage the hook with the demountable body.

8. Reverse truck and align hook with locating bar on demountable body. Stop truck when hook has engaged locating bar.



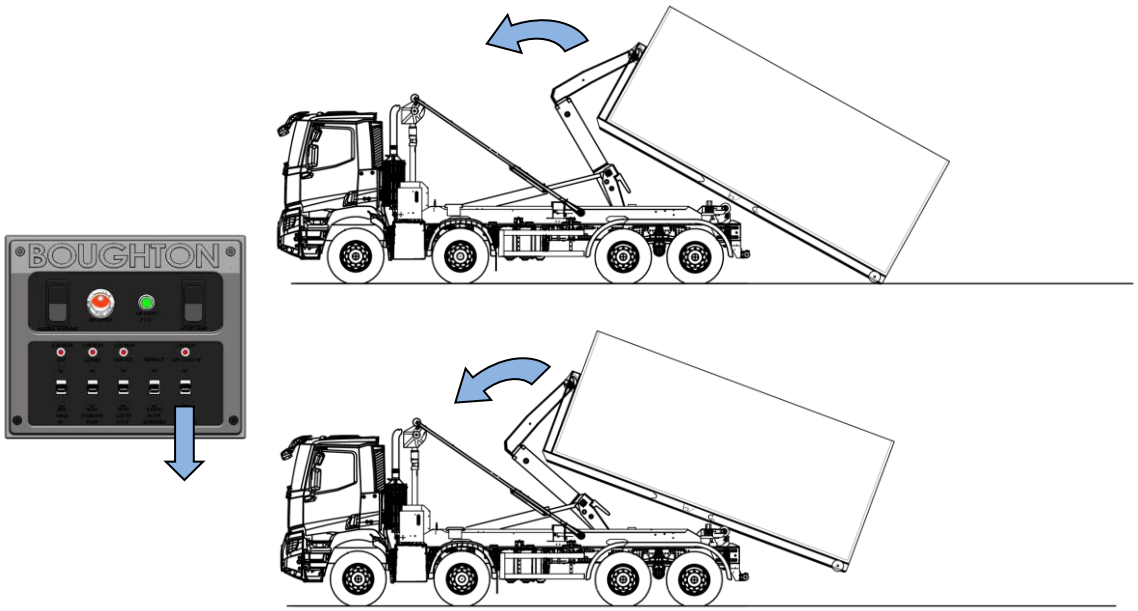
WARNING
<u>DO NOT</u> attempt to load the demountable body if the rear stabiliser (stab jacks or roller) are not extended or, where air suspension is fitted, the air suspension has been fully "dumped".

9. Lower rear stabiliser. Control panel lamp will illuminate to give visual indication that the rear stabiliser is lowered.

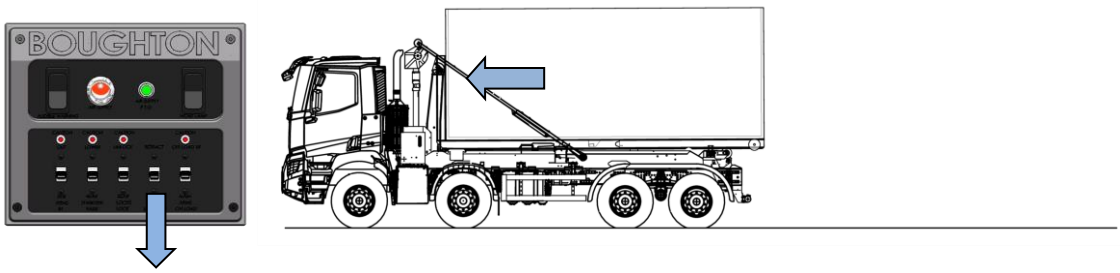
Note: Vehicles fitted with air suspension may not be fitted with rear stabilisation. For vehicles fitted with air suspension the suspension must be fully dumped prior to completing the remainder of the unloading procedure

WARNING
<u>DO NOT</u> extend sliding hook boom during lifting. If the sliding hook boom is extended the additional loads applied may damage the equipment.

10. Retract lifting cylinders to raise demountable body onto truck. Correct alignment by acting on the steering wheel with handbrake released. Ensure that demountable body side members fall vertically onto rear rollers on the truck then apply the vehicle hand brake.

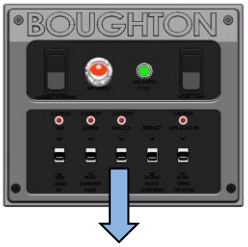


11. When the lifting cylinders are fully retracted extend the sliding hook boom to its maximum forward position.



If difficulty is experienced in sliding the demountable body to its maximum forward position extend the lifting cylinders until the demountable body runners are just clear of the sub frame by between 12mm (1/2") and 50mm (2"). Extend the sliding hook to its maximum forward position and fully retract the lifting cylinders.

12. Engage rear locks. Control panel indicator lamp extinguished.
Make a visual check from the vehicle cab to ensure that the locks are engaged



13. Raise rear stabiliser. Control panel indicator lamp extinguished.

Note: For air suspended vehicles, not fitted with stabilisation, return the rear suspension to ride height.

Ensure that the rear locks indicator lamp and the stabiliser indicator lamp on the control panel are extinguished before disengaging the P.T.O.

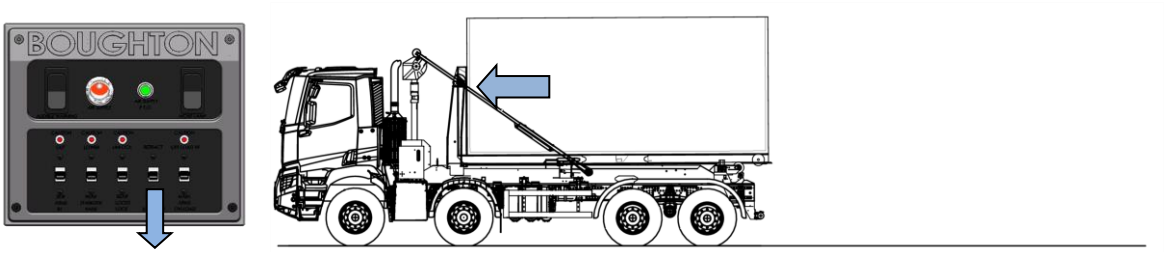
14. Disengage P.T.O. (See P.T.O. Instructions, Section 7.). Visual indication and audible warning stops. Always leave the control panel audible warning switch in the 'on' position.

8.1.2. To Load A Short Demountable Body.

When loading a short demountable body follow instructions 1 thru' 11 for a standard body, see above.

12. When the lift cylinders are fully retracted partly extend the sliding hook boom to eliminate excessive overhang.

    Ensure that the rear of the demountable body sub-frame does not travel forward of the rear rollers and that any part of the rear of the demountable body does not come in contact with the disengaged rear hooks.



13. Engage rear locks. Control panel indicator lamp extinguished.
    Make a visual check from the vehicle cab to ensure that the locks are engaged.

14. Raise rear stabiliser. Control panel indicator lamp extinguished.

    Note: For air suspended vehicles, not fitted with stabilisation, return the rear suspension to ride height.

    Ensure that the rear locks indicator lamp and the stabiliser indicator lamp on the control panel are extinguished before disengaging the P.T.O.

15. Disengage P.T.O. (See P.T.O. Instructions, Section 7.). Visual indication and audible warning stops. Always leave the control panel audible warning switch in the 'on' position.

8.2. Deploying Kwikcova Sheeting System (If Fitted).

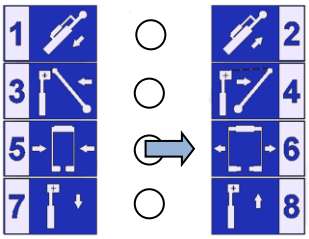
8.2.1 CM Type Sheeting System Fitted.

Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the area around the vehicle to ensure that it is suitable for carrying out this operation.

Take particular note of the available space above the demountable body and to the sides of the vehicle to ensure that there is sufficient clearance when operating.

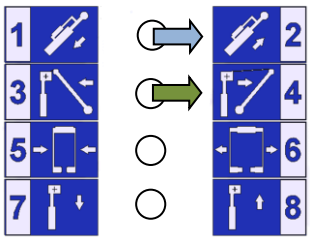
WARNING
DO NOT raise the Kwikcova mast when the arms are resting on the tray.
DO NOT extend the Kwikcova arms when they are resting on the tray.
Operating the mast and arm extension with the arms resting on the tray will apply loads into the system which may cause damage.

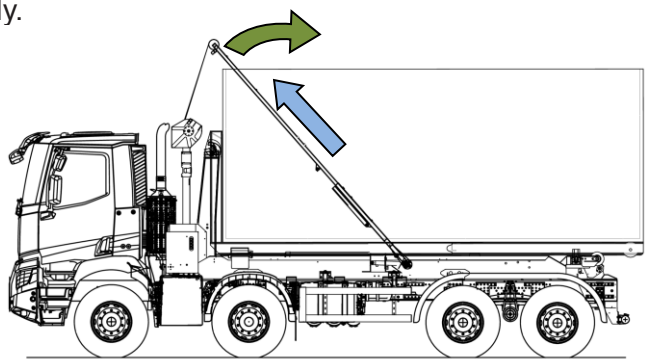
1. Operate the 'Side Arms – Move Outboard' control to move the arms out.



2. Operate both the 'Roller out' and 'Telescopic Arms Extend' controls to raise the crossbeam clear of the front of the demountable body.

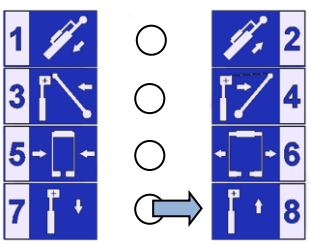
   Ensure that the crossbeam is clear of the front of the demountable body and that it is more than 1 metre from the mast assembly.

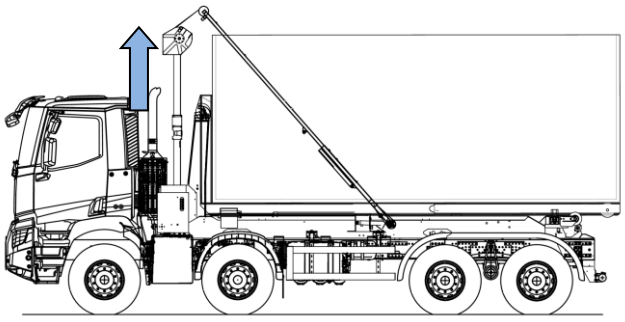




3. Raise the mast fully by operating the 'Mast Raise' control.

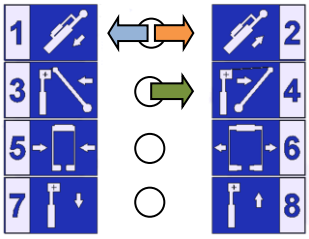
   Ensure that the mast does not come into contact with the crossbeam. Adjust arms to ensure sufficient clearance.

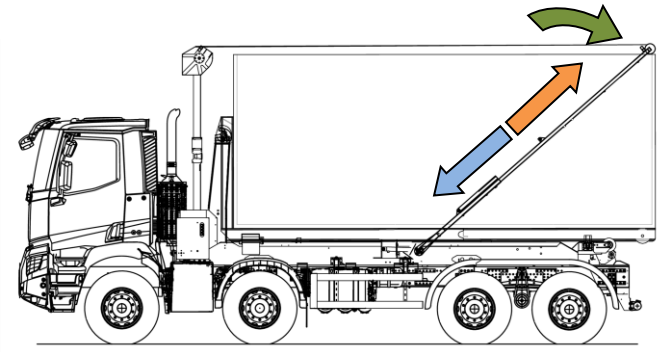




4. Operate the 'Roller Out' control and unwind the sheet.

   Check visually that there is sufficient clearance between the sheet and the demountable body when unwinding. Use the “Telescopic Arms Extend / Retract” control to adjust as required.





WARNING

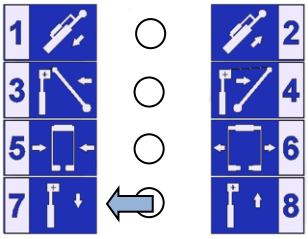
<u>DO NOT</u> exert excessive pressure between the top of the demountable body and the crossmember. Excessive pressure may damage the equipment.

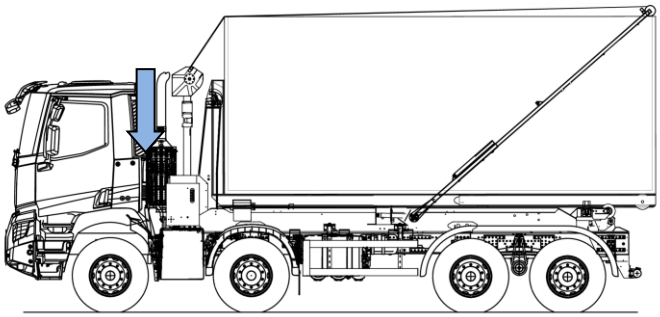
Ensure that the body door hinges at the rear do not obstruct the arms when moved inboard.

   Continue to operate both the 'Roller' and the 'Extend / Retract' controls to rest the crossbeam securely on the rear of the demountable body.

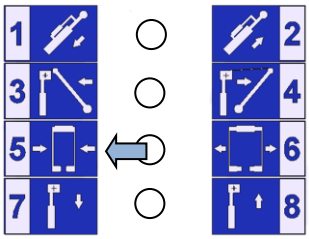
5. Operate the 'Mast Lower' control and lower the mast to fully close off the front of the demountable body.

   When lowering the mast observe that the sheet does not foul or catch on the front of the demountable body.





6. Operate the 'Side Arm – Move Inboard' control to move the arms in fully.

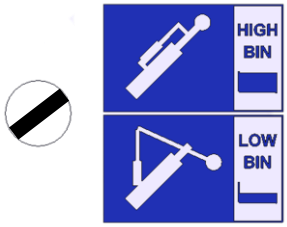


7. Secure the sides of the sheet to the container using the securing straps supplied. See Section 8.3 “Securing Kwikcova Sheeting System”.

8.2.2. CMD Type Sheeting System Fitted (Covering a High Body).

Where the CMD type system is fitted the procedure for covering a high body is the same as for the CM type system.

Throughout the procedure the Switch controlling the functions of the control levers will remain in the ‘High Bin’ Position.



With the switch correctly positioned follow instructions in 8.2.1. to deploy the Kwikcova sheeting system.

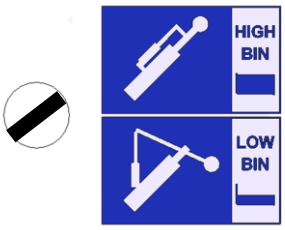
8.2.3. CMD Type Sheeting System Fitted (Covering a Low Body).

Prior to starting operation read through the “General Safety Checks Prior To Operating” Section 6, and assess the area around the vehicle to ensure that it is suitable for carrying out this operation.

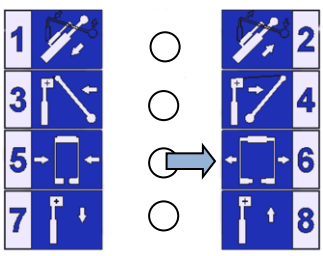
Take particular note of the available space above the demountable body and to the sides of the vehicle to ensure that there is sufficient clearance when operating.

WARNING
DO NOT raise the Kwikcova mast when the arms are resting on the tray.
DO NOT extend the Kwikcova arms when they are resting on the tray.
DO NOT switch the function control switch to the ‘LOW BIN’ position unless the arms are in the vertical position.
Operating the mast and arm extension with the arms resting on the tray will apply loads into the system which may cause damage.
Switching to ‘LOW BIN’ mode with the arms out of vertical may prevent the cranked arm locking mechanism from disengaging

1. Ensure that the switch controlling the functions of the control levers is in the ‘HIGH BIN’ position.

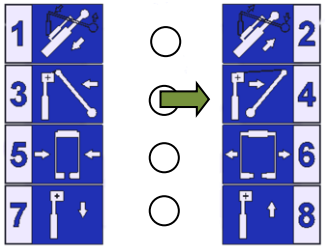


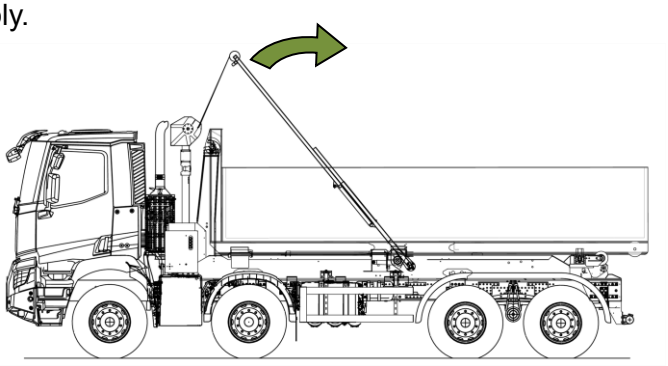
2. Operate the 'Side Arms – Move Outboard' control to move the arms out.



3. Operate both the 'Roller Out' control to raise the crossbeam clear of the front of the demountable body.

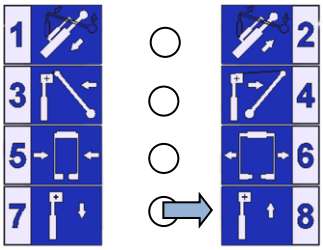
   Ensure that the crossbeam is clear of the front of the demountable body and that it is more than 1 metre from the mast assembly.

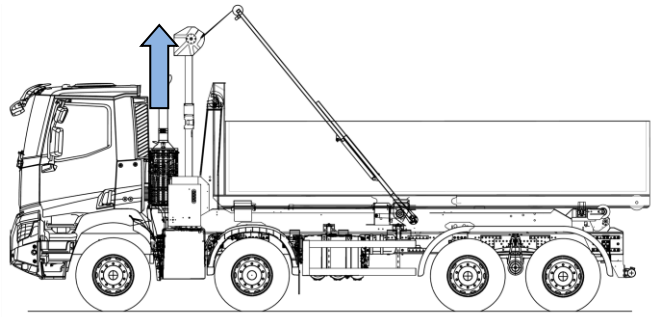




4. Raise the mast fully by operating the 'Mast Raise' control.

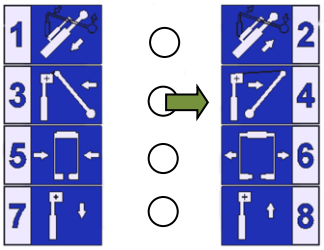
   Observe that the mast does not come into contact with the crossbeam. Adjust arms to ensure sufficient clearance.

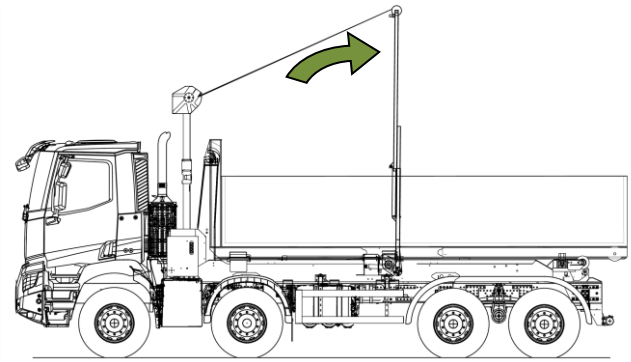




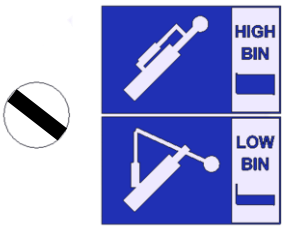
5. Operate the 'Roller Out' control and unwind the sheet.

6. Continue unwinding the sheet until the arms are in the vertical position.





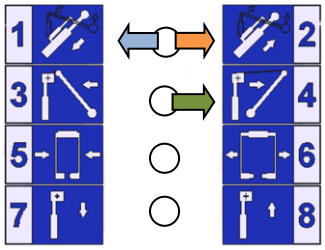
7. With the sheeter arms in the vertical position, switch the control lever function switch to the ‘LOW BIN’ position.

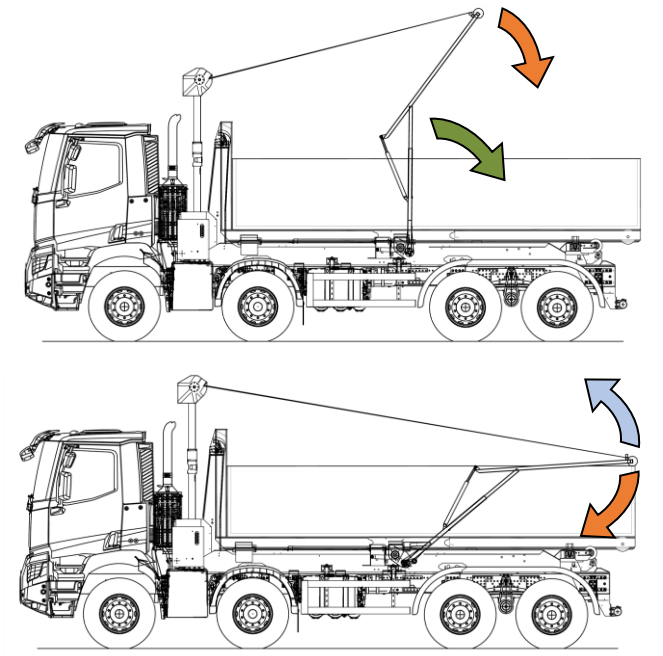


8. With the switch in the ‘LOW BIN’ position the cranked arm lock will disengage allowing the end of the arm to rotate independently.

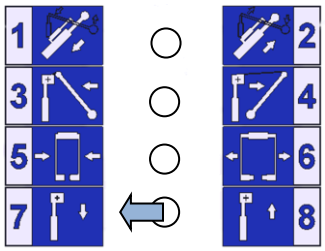
WARNING
<u>DO NOT</u> exert excessive pressure between the top of the demountable body and the crossmember. Excessive pressure may damage the equipment.
Ensure that the body door hinges at the rear do not obstruct the arms when moved inboard.

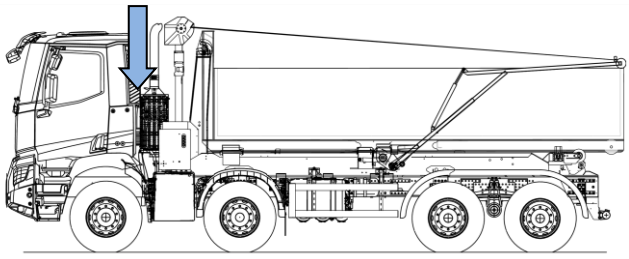
Operate the “Roller Out” and “Telescopic Arms Crank” controls to unwind the sheet and position the crossbeam on the rear of the demountable body. Use the ’Telescopic Arms Crank / Un-crank’ control to fine tune the position of the crossbar.





9. Operate the ‘Mast Lower’ control and lower the mast to close off the front of the body.

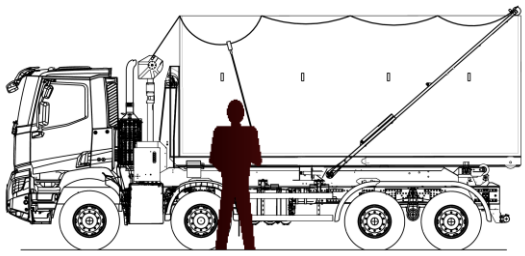




10. Secure the sides of the sheet to the demountable body using the securing straps supplied. See Section 8.3 “Securing Kwikcova Sheeting System”.

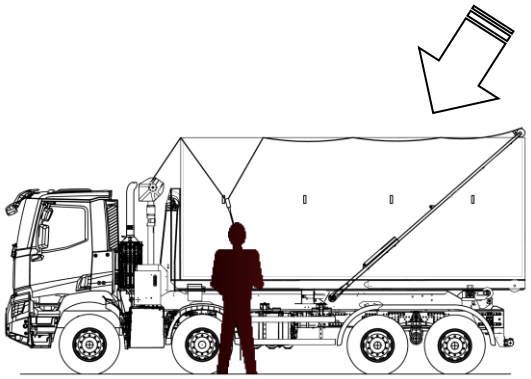
8.3. Securing Kwikcova Sheeting System (If Fitted)

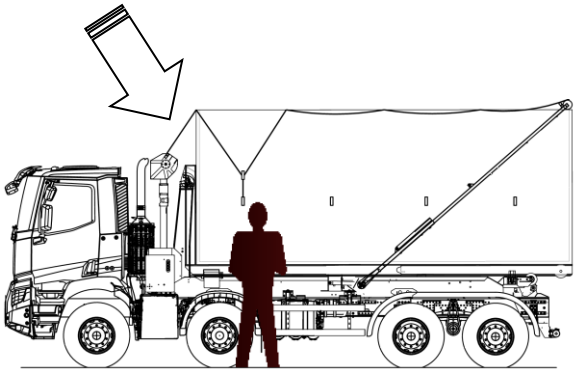
The Kwikcova sheeting system can be secured either directly to the sheeting hooks on the side of a demountable body or, where the sheeting hooks are below half-way down the body side, by using a lashing bar extension.



1. Extend cover pole

2. Hook the cover pole onto the sheets bungee rope.





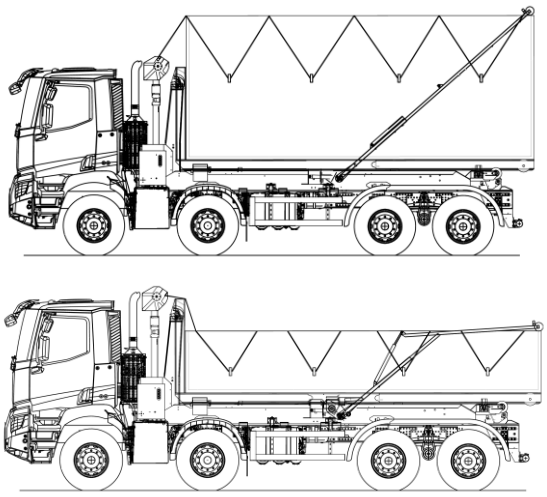
3a. For hooks above half-way down the body and low bodies pull the cover pole down and connect the bungee rope to the body hook.

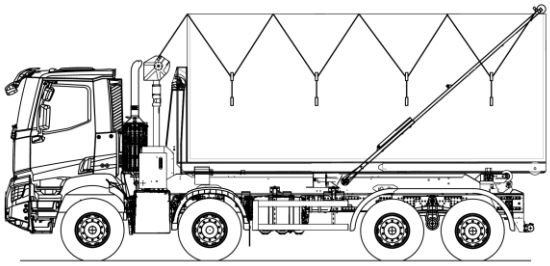
3b. For hooks below half-way down the body pull the cover pole down and connect the bungee rope to a lashing bar.

4a. Continue down, securing the bungee to the body at regular intervals.

4b. Connect the lashing bar to the body hook.

5. Continue down, securing the bungee and lashing bar to the body at regular intervals.





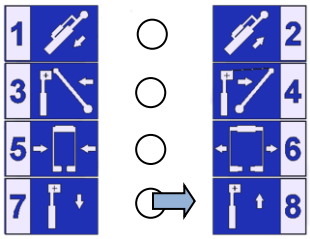
8.4. Retracting Kwikcova Sheeting System (If Fitted)

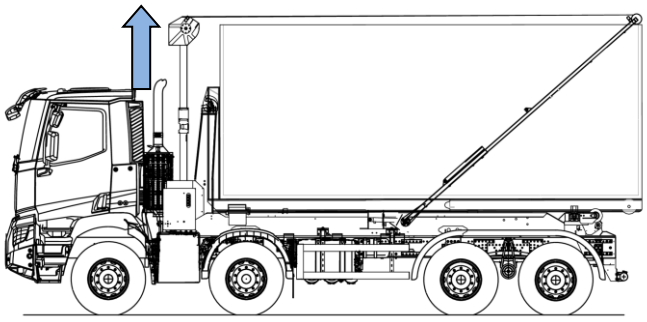
8.4.1. CM Type Sheeting System Fitted

Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the area around the vehicle to ensure that it is suitable for carrying out this operation.

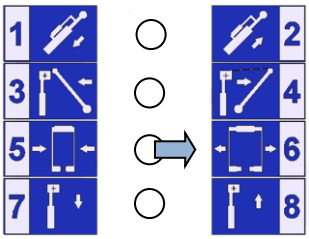
Take particular note of the available space above the demountable body and to the sides of the vehicle to ensure that there is sufficient clearance when operating.

1. Remove all securing straps retaining the sheet to the demountable body. Stow the straps.
2. Raise the mast fully by operating the 'Mast Raise' control.

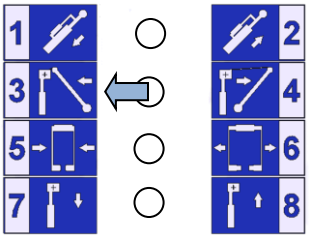


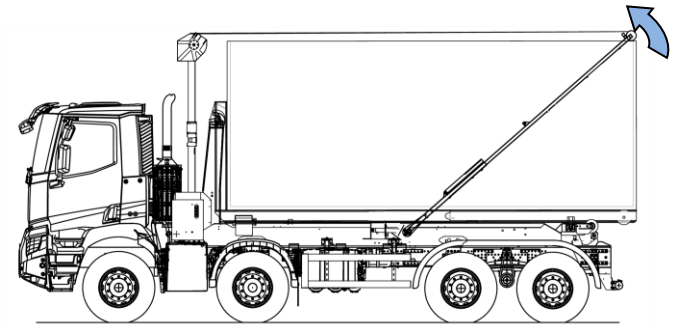


3. Operate the 'Side Arm – Move Outboard' control to move the arms out.

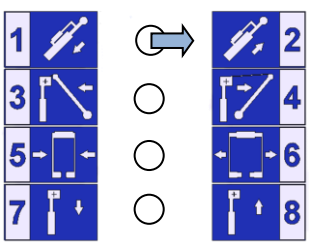


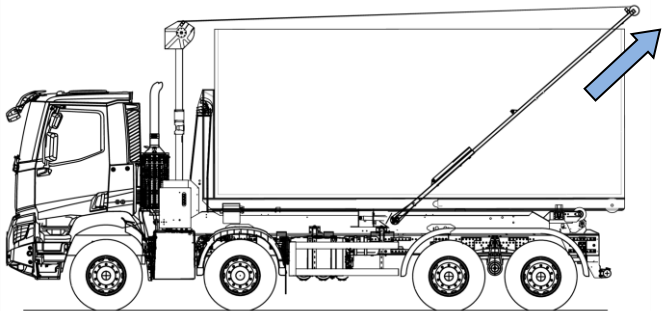
4. Operate the 'Roller Int' control to raise the crossbar clear or the rear of the demountable body.



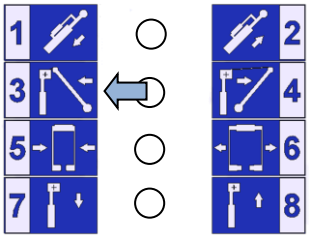


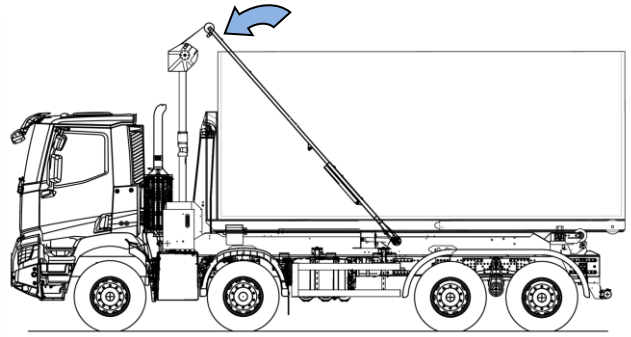
5. Operate the 'Telescopic Arms Extend' control to extend the arms out.



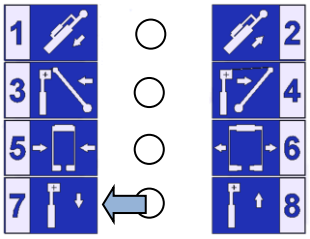


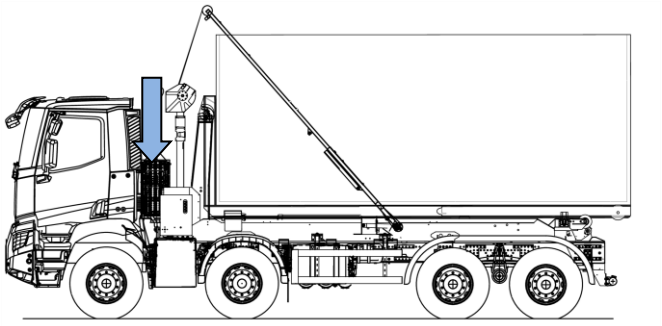
6. Wind in the sheet by operating the 'Roller In' control. Ensure that the sheet winds onto the roller evenly and remains taut throughout the process. Continue winding in until the crossbeam is in front of the demountable body and above the roller assembly on the mast.



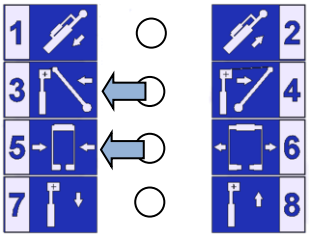


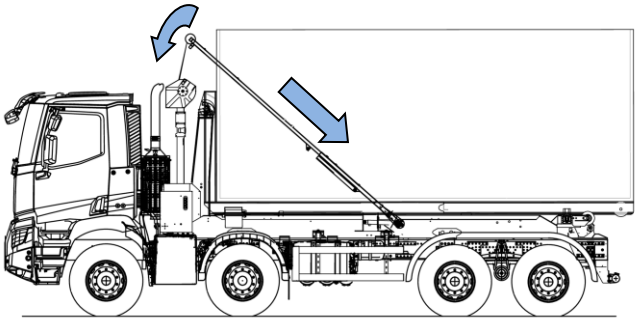
7. Lower the mast fully by operating the 'Mast Lower' control. Ensure that the sheet is clear of the front of the demountable body.



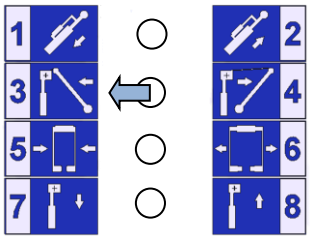


8. Position the crossbeam to within 0.5 metres of the roller using the 'Roller' and 'Telescopic Arm' controls. The arms must be fully retracted at this point.



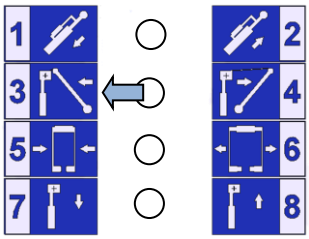


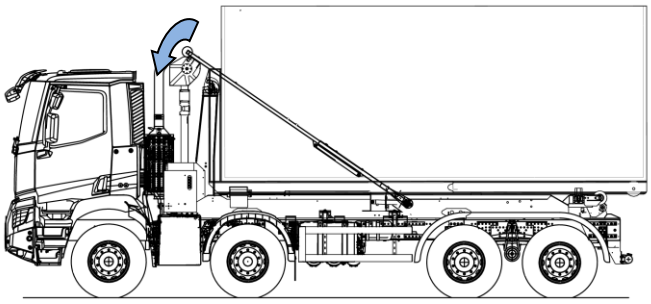
9. Operate the 'Side Arm – Move Inboard' control and move the arms in.



WARNING
<u>DO NOT</u> power the sheeting system onto the tray with excess force. Shock loads may damage the equipment.

10. Using the 'Roller In' control, lower the crossbeam so that that the arm rests locate with the tray assembly.





WARNING

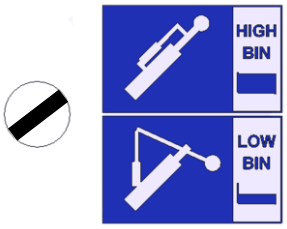
It is recommended that a demountable body is only unloaded or tipped when the sheeting system has been completely retracted. Although it may appear possible to unload or tip prior to point 10, above, this may result in the body or lift equipment interfering with and causing damage to the sheeting system.

DO NOT Drive on the highway without first checking to ensure that the sheeting system is in the transit position with the arms in and fully retracted, the mast in the lowered position and the crossbeam sitting on the tray. The Kwikcova warning light on the in-cab control panel must be extinguished.

8.4.2. CMD Sheeting System Fitted (Uncovering a High Body).

Where the CMD type system is fitted the procedure for uncovering a high demountable body is the same as for the CM type system.

Throughout the procedure the Switch controlling the functions of the control levers will remain in the 'High Bin' Position.



With the switch correctly positioned follow instructions in 8.4.1. to retract the Kwikcova sheeting system.

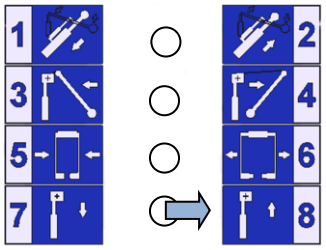
8.4.3. CMD Sheeting System Fitted (Uncovering a Low Body).

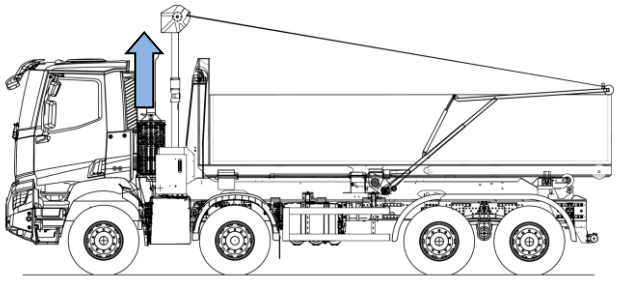
Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the area around the vehicle to ensure that it is suitable for carrying out this operation.

Take particular note of the available space above the demountable body and to the sides of the vehicle to ensure that there is sufficient clearance when operating.

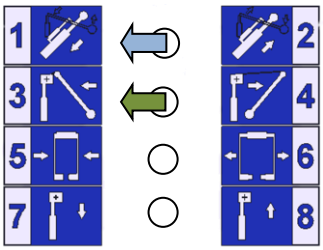
1. Remove all securing straps retaining the sheet to the demountable body. Stow the straps.

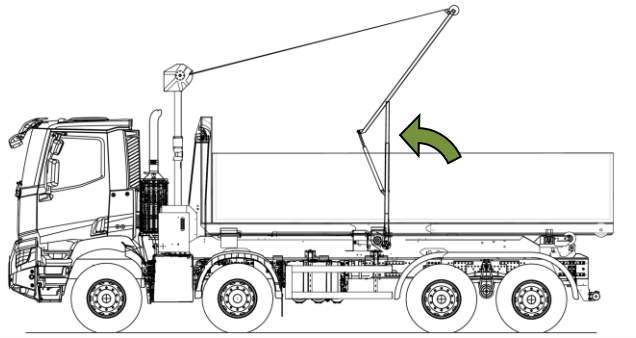
2. Raise the mast fully by operating the ‘Mast Raise’ control.

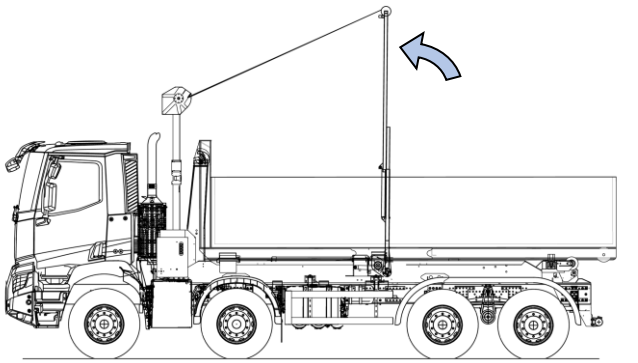




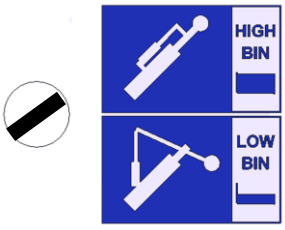
3. Operate the ‘Roller In’ and ‘Telescopic Arms Un-crank’ controls to move the side arms to the vertical position.





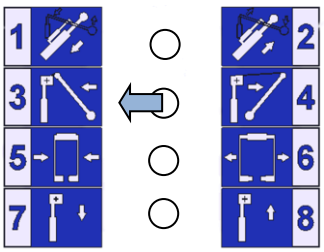


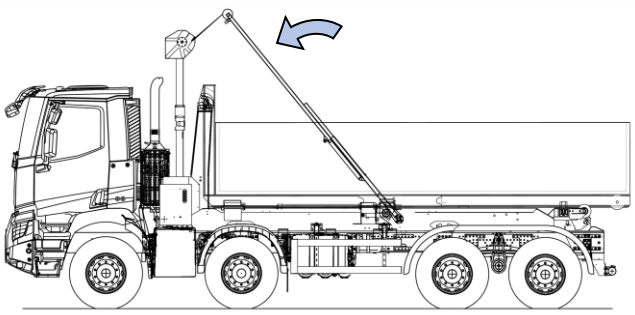
4. With the sheeter arms in the vertical position, switch the control lever function switch to the ‘HIGH BIN’ position.



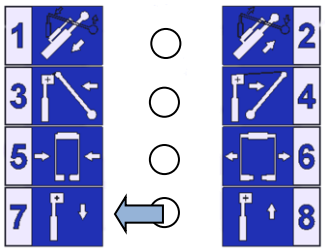
With the switch in the ‘HIGH BIN’ position the cranked arm lock will engage deactivating the independent rotation of the end of the arms and activating the retract/extend telescopic arms function.

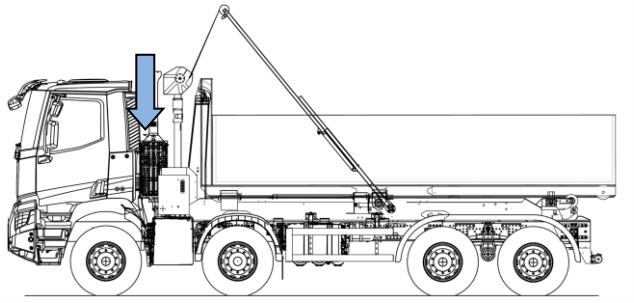
5. Operate the ‘Roller In’ control and continue winding in the sheet. Ensure that the sheet winds onto the roller evenly and remains taut throughout the process. Continue winding in until the crossbeam is in front of the demountable body and above the roller assembly on the mast.



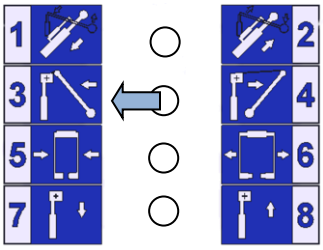


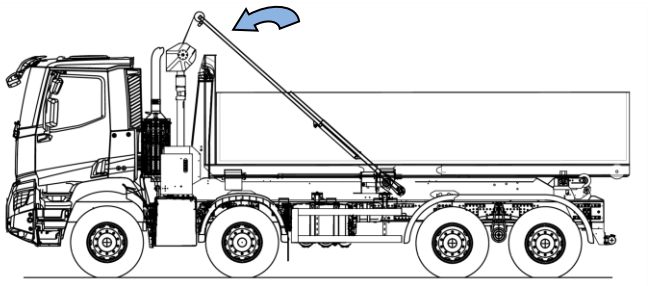
6. Lower the mast fully by operating the ‘Mast Lower’ control. Ensure that the sheet is clear of the front of the demountable body.



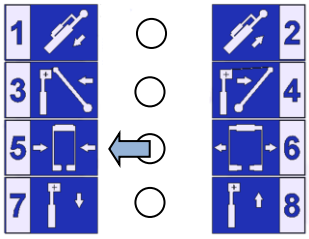


7. Position the crossbeam to within 0.5 metres of the roller using the 'Roller' control. The arms must be fully retracted at this point.



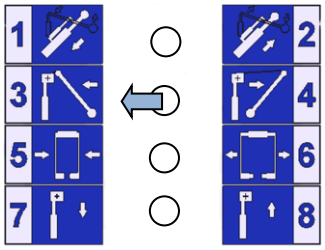


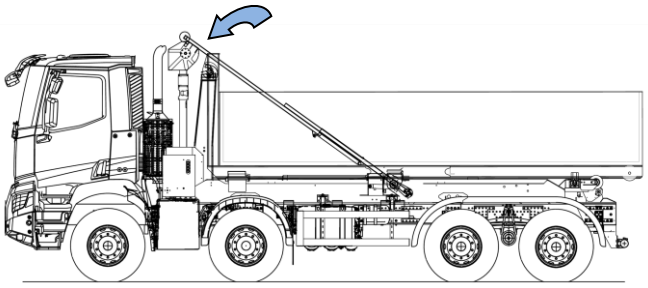
8. Operate the 'Side Arm – Move Inboard' control and move the arms in.



WARNING
<u>DO NOT</u> power the sheeting system onto the tray with excess force. Shock loads may damage the equipment.

9. Using the 'Roller In' control, lower the crossbeam so that that the arm rests locate with the tray assembly.





8.5. Unloading A Demountable Body.

Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the proposed unload location to ensure that it is suitable.

Take particular note of the available space and stability of the ground and ensure that there is adequate clearance behind the vehicle to accommodate the demountable body when unloaded.

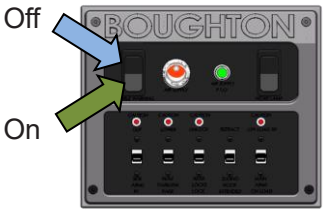
1. Align the vehicle in a position consistent with the area in which the demountable body is required to be unloaded.

WARNING
DO NOT attempt to unload a body, if a Kwikcova sheeting system is fitted, until the sheet has been retracted. Failure to observe this warning will result in serious damage to the sheeting system.

2. If fitted ensure that the sheeting system is fully retracted, Refer to Section 8.4.
3. Engage P.T.O. drive to hydraulic pump (See PTO Instructions, Section 7).

The "Air Supply PTO" LED will illuminate when the PTO is engaged. The "Air supply" indicator to the left of the "Air Supply PTO" LED will turn red to indicate the air supply to the hydraulic controls is activated.
The flashing beacon is automatically activated to give visual warning that the operation of the equipment is about to commence.

If the flashing beacon does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective beacon must be repaired or replaced as soon as possible.



4. Action audible warning, by operating the rocker switch on left of the panel, when working between the hours of 7am and 11.30pm. When working between the hours of 11.30pm and 7am the audible warning must be switched off.

If the audible warning device does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective device must be repaired or replaced as soon as possible.

WARNING
DO NOT attempt to unload the demountable body if the rear locks are engaged (in the locked position).

5. Unlock the rear locks. Control panel lamp illuminates to give visual indication when locks are disengaged.

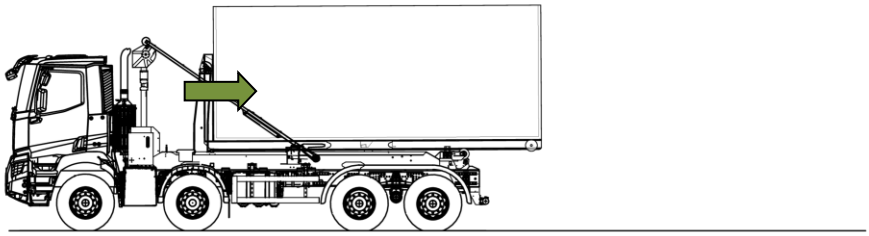
Check visually, from the cab rear window, that the rear locks are disengaged.

6. Lower rear stabiliser. Control panel light 'on' to give visual indication that the rear stabiliser is lowered.

Note: Vehicles fitted with air suspension may not be fitted with rear stabilisation. For vehicles fitted with air suspension the suspension must be fully dumped prior to completing the remainder of the unloading procedure.

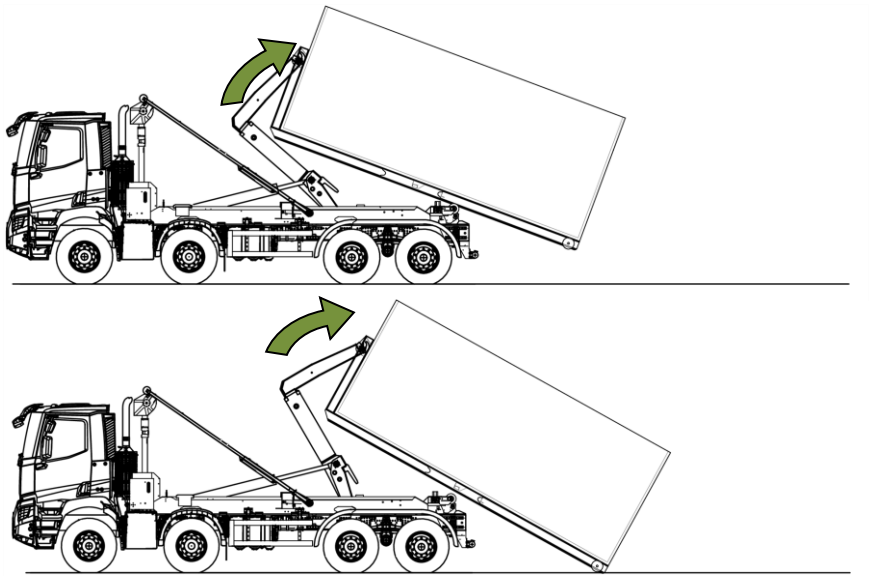
WARNING
Do not fully retract the sliding hook boom while the lifting cylinders are extended. Fully retracting the sliding hook boom, while the lifting cylinders are extended, may damage the tipping locks and leave the vehicle in an unsafe condition resulting in a potential future hazard which may cause serious injury or death.

7. Fully retract sliding hook boom.

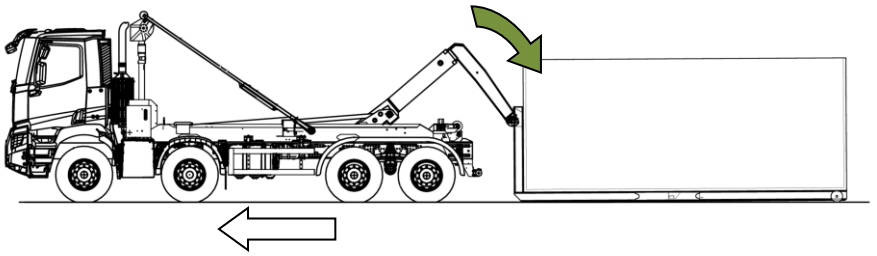


If difficulty is experienced, in sliding the demountable body to the rear position, extend the lifting cylinders until the demountable body runners are just clear of the sub frame by between 12mm (1/2") and 50mm (2"). Retract the sliding hook boom to no further than the rear of the front side guides (a maximum of 800mm from its fully forward position). **DO NOT** fully retract the sliding hook boom with the lifting cylinders extended i.e. with the demountable body lifted off the subframe. Before the sliding hook boom has reached 800mm from its fully forward position retract the lifting cylinders to lower the body back onto the subframe. The sliding hook boom can now be fully retracted.

8. Extend lift cylinders to tip the sliding hook boom toward rear.

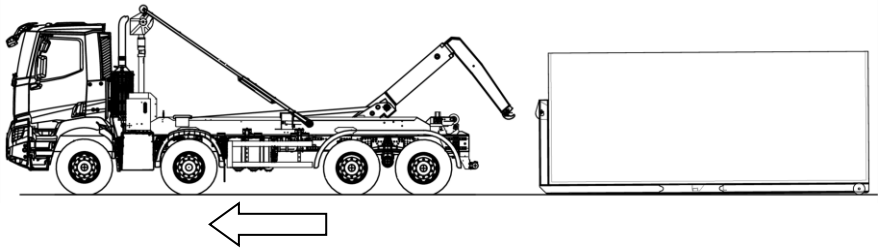


9. When the demountable body touches the ground allow the vehicle to move forward by releasing the handbrake while continuing to unload.

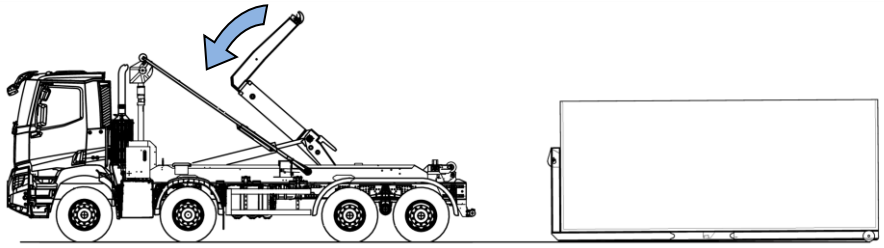


10. When the demountable body has been fully grounded disengage hook and drive the vehicle forward. Ensure that, if fitted, the locking plunger has automatically retracted to allow correct disengagement.

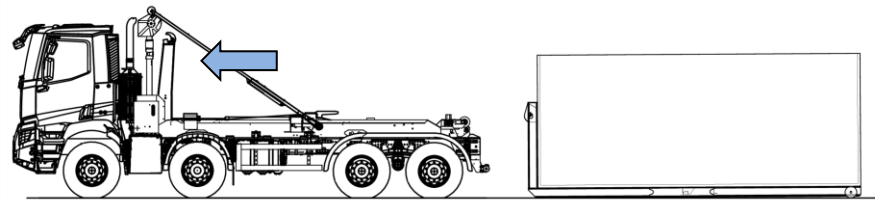
No Input



11. Fully Retract the lift cylinders.



12. Extend the sliding hook boom to its extreme forward position.



13. Engage rear locks. Control panel indicator lamp extinguished.

Make a visual check from the vehicle cab to ensure that the rear locks are engaged.

14. Raise rear stabiliser. Control panel indicator lamp extinguished.

Note: For air suspended vehicles, not fitted with stabilisation, return the rear suspension to ride height.

Ensure that the rear locks indicator lamp and the stabiliser indicator lamp on the control panel are out before disengaging the P.T.O.

15. Disengage P.T.O. (See P.T.O. Instructions). Visual indication and audible warning stops. Always leave the control panel audible warning switch in the 'on' position.

8.6. Tipping A Demountable Body

Prior to starting operation read through the "General Safety Checks Prior To Operating" Section 6, and assess the proposed tipping location to ensure that it is suitable.
Take particular note of the available space and stability of the ground.

WARNING
During the tip cycle, if the load does not discharge, under no circumstances should anyone attempt to dislodge the load manually with the demountable body in the tipped condition. Return the body to the horizontal position and repeat the tip cycle.
Do not walk behind the vehicle at any time when tipping.
Unexpected discharge of the demountable body load may result in serious injury or death.

8.6.1. Tipping a Standard-Length Demountable Body.

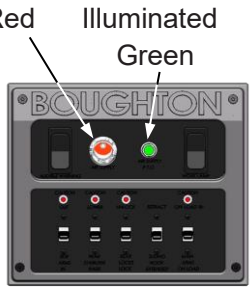
1. Position the vehicle in preparation to tip.

2. If fitted ensure that the sheeting system is fully retracted, Refer to Section 8.4.

WARNING
When opening the demountable body rear door take care and be aware that the contents of the body may spill out.
Unexpected discharge of the demountable body load may result in serious injury or death.

3. Open the demountable body rear door and secure in the open position.

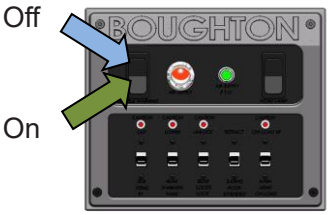
4. Engage P.T.O. drive to hydraulic pump (See PTO Instructions, Section 7).



The "Air Supply PTO" LED will illuminate when the PTO is engaged. The "Air supply" indicator to the left of the "Air Supply PTO" LED will turn red to indicate the air supply to the hydraulic controls is activated. The flashing beacon is automatically activated to give visual warning that the operation of the equipment is about to commence.

If the flashing beacon does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective beacon must be repaired or replaced as soon as possible.

5. Action audible warning, by operating the rocker switch on left of the panel, when working between the hours of 7am and 11.30pm. When working between the hours of 11.30pm and 7am the audible warning must be switched off.



If the audible warning device does not operate, due to a malfunction, a competent third party must be employed to ensure safety around the vehicle during operations. The defective device must be repaired or replaced as soon as possible.

6. Lower rear stabiliser. Control panel lamp illuminates to give visual indication that the rear stabiliser is lowered.

Note: Vehicles fitted with air suspension may not be fitted with rear stabilisation. For vehicles fitted with air suspension the suspension must be fully dumped prior to completing the remainder of the unloading procedure.

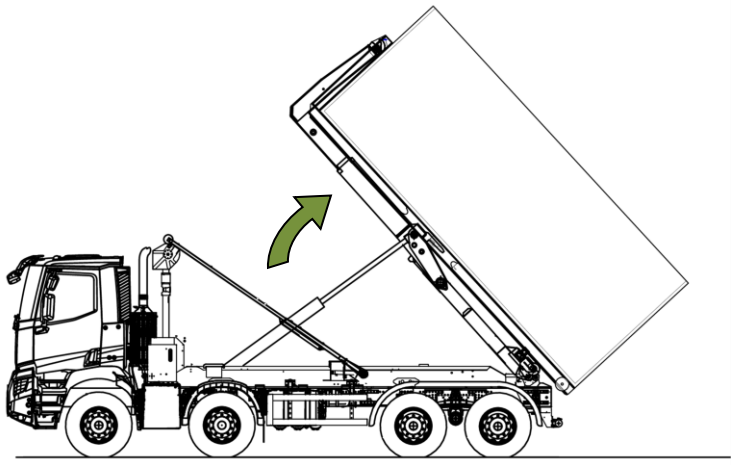
WARNING

<u>DO NOT</u> attempt to tip the demountable body if the rear locks are disengaged (in the open position). Check that the warning lamp on the control panel is NOT illuminated.

<u>DO NOT</u> attempt to retract the sliding hook boom while tipping. The sliding hook boom must always be positioned to ensure that the tipping lock is engaged. Check that, before tipping, the sliding hook boom is NOT fully retracted. A fully retracted sliding hook boom will mean a disengaged tipping lock.

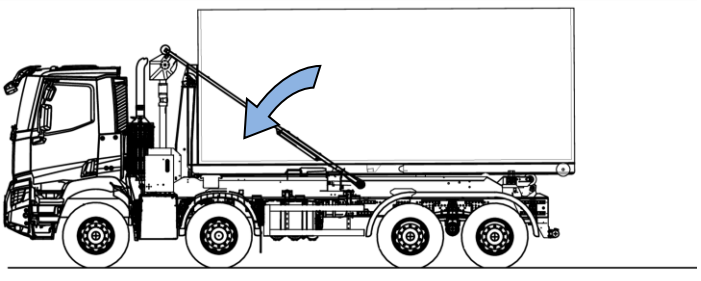
Tipping with the rear locks disengaged or with the tipping lock disengaged will result in an unstable load and the possibility that the tipping beam will "break" at the central pivot point causing the container to fall from the vehicle resulting in potential serious injury or death and/or damage to the equipment.

7. For standard demountable bodies, with the sliding hook boom in the full extended position, fully extend the lifting cylinders to tip the body.



8. Slowly drive the vehicle forward to allow the contents of the body to discharge.

9. When tipping is completed fully retract the lifting cylinders.



10. Raise rear stabiliser. Control panel indicator light extinguished.

Note: For air suspended vehicles, not fitted with stabilisation, return the rear suspension to ride height.

Ensure that the rear locks indicator lamp and the stabiliser indicator lamp on the control panel are extinguished before disengaging the P.T.O.

11. Disengage P.T.O. (See P.T.O. Instructions, Section 7). Visual indication and audible warning stops. Always leave the control panel audible warning switch in the 'on' position.

12. Close demountable body rear door(s) and lock in closed position.

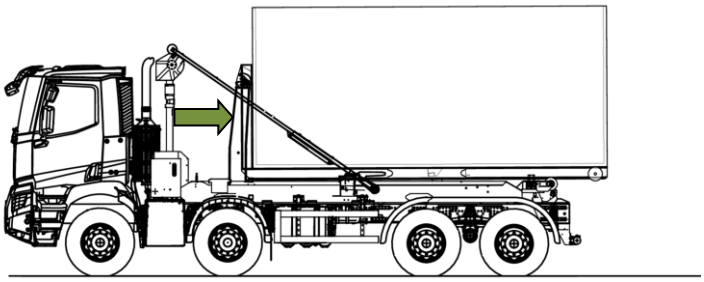
8.6.2. Tipping a Short Body Using The 'Bale Back' Procedure

The 'Bale Back' tipping procedure is used when tipping shorter demountable bodies. In this procedure the body is moved rearward, before the tip sequence is started, to give sufficient tipping clearance.

Follow steps 1 thru' 7 above.

8. Unlock the rear locks. Control panel indictor light illuminated.

9. Retract the sliding hook boom to move the demountable body rearwards. The sliding hook should be retracted no further than the rear of the front side guides (800m maximum form the fully extended position)

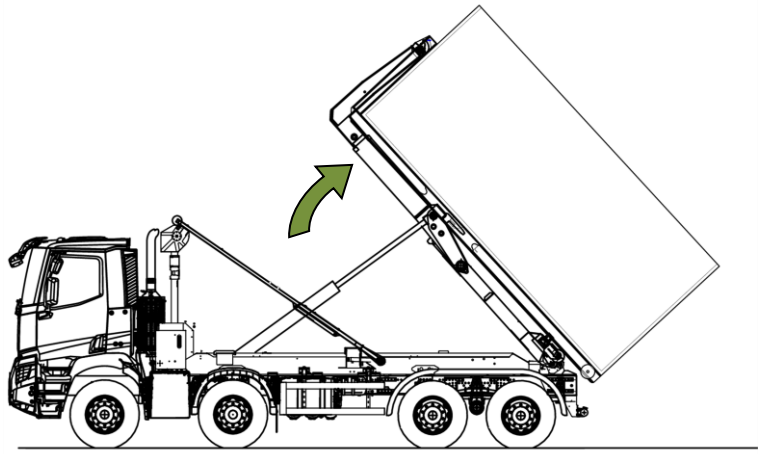


WARNING
<u>DO NOT</u> attempt to tip the demountable body if the rear locks are disengaged (in the open position). Check that the warning lamp on the control panel is NOT illuminated.

<u>DO NOT</u> attempt to retract the sliding hook boom while tipping. The sliding hook boom must always be positioned to ensure that the tipping lock is engaged.
Check that, before tipping, the sliding hook boom is NOT fully retracted. A fully retracted sliding hook boom will mean a disengaged tipping lock.
Tipping with the rear locks disengaged or with the tipping lock disengaged will result in an unstable load and the possibility that the tipping beam will "break", at the central pivot point, causing the demountable body to fall from the vehicle resulting in potential serious injury or death and/or damage to the equipment.

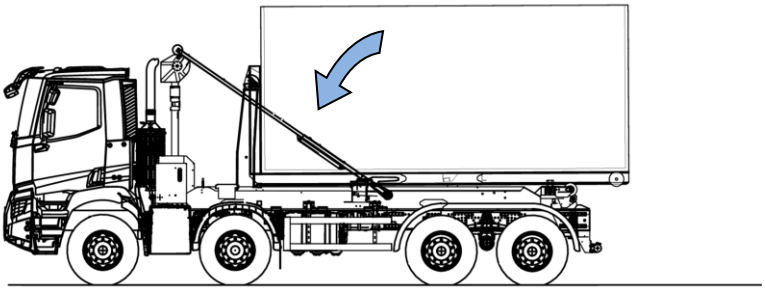
10. Engage the rear locks. Control panel indicator light extinguished.

11. Fully extend the lifting cylinders to tip the demountable body.



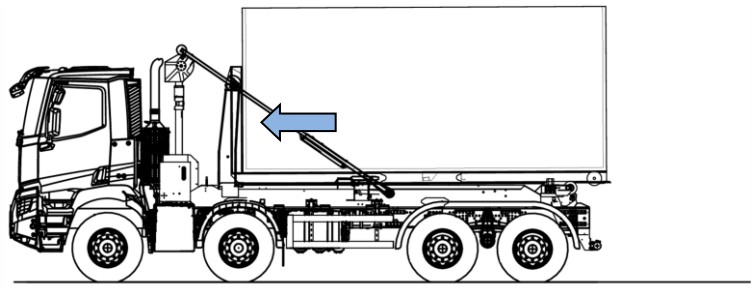
12. Slowly drive the vehicle forward to allow the contents of the body to discharge.

13. When tipping is completed fully retract the lifting cylinders.



14. Disengage the rear locks. Control panel indictor lamp illuminated.

15. Extend sliding hook boom to its travel position



16. Engage rear locks. Control panel indicator lamp extinguished.

Make a visual check from the vehicle cab to ensure that the rear locks are engaged.

17. Raise rear stabilise. Control panel indicator light extinguished.

Note: For air suspended vehicles, not fitted with stabilisation, return the rear suspension to ride height

Ensure that the rear locks indicator lamp and the stabiliser indicator lamp on the control panel are out before disengaging the P.T.O.

18. Disengage P.T.O. (See P.T.O. Instructions, Section 7.). Visual indication and audible warning stops. Always leave the control panel audible warning switch in the 'on' position.

WARNING
DO NOT travel with demountable body door(s) open or unlocked.
DO NOT travel with the demountable body in the tipping position except for short distances when discharging the load.
Failure to observe these restrictions may result in serious injury, death and/or damage to the equipment.

9. Maintenance

SAFETY

WARNING

Correct maintenance of this equipment is essential for safe operation. Always maintain the equipment to the schedule prescribed.

Only trained technicians should be permitted to carry out maintenance and repair work on the hook loader equipment.

NEVER operate the equipment if there is a known fault. Take the vehicle out of service and affect a repair before returning into service.

DO NOT carry out any modification or adjustment (not described in this manual) to the hook loader equipment without obtaining written consent from Boughton Engineering Ltd.

Maintenance work should always be carried out with the vehicle unladen. In the event of emergency repairs, by the roadside, all efforts must be made to remove any load prior to commencing work.

When working on the equipment ALWAYS ensure that it is disabled to prevent accidental operation of moving parts. Remove the vehicle ignition key unless a test on the equipment is to be run. Ensure that the area around and under the vehicle is clear before activating and operating the equipment. Ensure that, if working undercover, there are NO height restrictions above the vehicle.

Work should be carried out with rams in the closed position wherever possible. If the main rams are extended and the beam is in the tip position any maintenance work MUST only be carried out with props positioned to support the raised beam.

Under NO circumstances should the sliding hook boom be retracted with the equipment in the tip position. Retracting the sliding hook boom will disengage the tip lock causing an un-propped beam to collapse.

ALWAYS ensure that hydraulic systems are unpressurised before disassembly.
When working with hydraulic fluids care must be taken to avoid contact with the skin and/or ingestion.

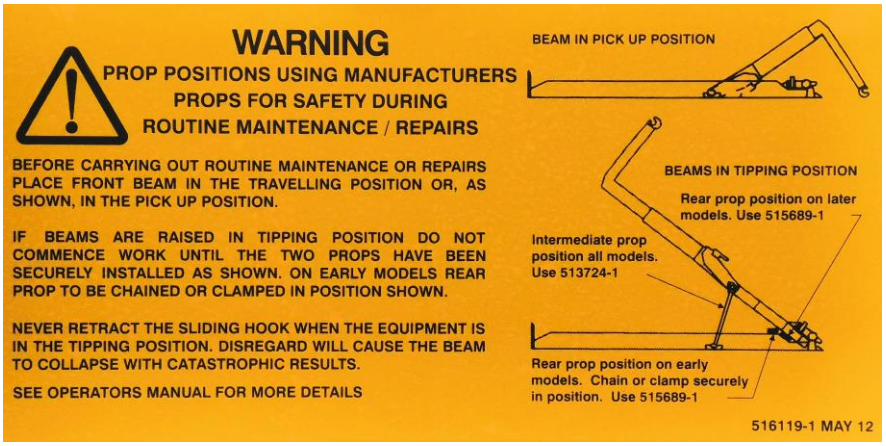
DO NOT retighten leaky seals, nuts etc while the hydraulic system is under pressure. Hydraulic fluid can be harmful to the environment. ALWAYS wear protective gloves, when working with hydraulic fluid, and clean up any spillages immediately and dispose of any waste fluid conscientiously

Prior to carrying out any welding procedure the vehicle battery and alternator MUST be disconnected.

All excessive heat sources must be kept away from the alternator, road springs and nylon piping.

ALWAYS use approved spares and recommended fluids and lubricants. Non approved items may seriously affect the performance and will increase the risk of a failure.

After carrying out maintenance or repair work a check should be made to ensure that all safety devices operate correctly.



Prop Beam Warning Decal

Schedule

Safety, life expectancy and performance of the hook loader equipment is significantly enhanced if maintenance is carried out as prescribed.

The vehicle and hook loader equipment should be washed regularly (recommend washing weekly and more frequently if the type of operation demands). A build-up of tipped materials on the lift beams, or around all moveable parts, can cause damage. In particular pay attention to the hydraulic cylinders, pivot points and stabiliser leg. Wipe, with a clean cloth, all exposed piston rods.

Daily Checks by the Vehicle Operator (Driver)

Check	Check	Action
Check for hydraulic leaks.	**Visual**	Immediately report any leaks for investigation and repair.
Check hydraulic tank level. Use sight gauge – cylinders must be closed.	**Visual**	Immediately report low levels for rectification – Maintenance Procedure 1.
Check Hydraulic fluid filter is not blocked.	**Visual**	Immediately report a blocked filter for rectification – Maintenance Procedure 2.
Check for pneumatic leaks.	**Audible**	Immediately report any leaks for investigation and repair.
Check operation of the in-cab warning lights.	**Operation**	See Section 6 for warning light checks. Report for investigation and repair if warning lights fail test or warning lights do not extinguish.
Check operation of flashing beacon	**Visual**	Immediately report any failure for investigation and repair.
Check operation of audible warning	**Audible**	Immediately report any failure for investigation and repair.
Check condition of hydraulic hoses.	**Visual**	Immediately report any damage for investigation and repair.
Check condition of all structural parts of lift equipment.	**Visual**	Immediately report any damage for repair.
Check operation of bin locks to ensure that they free moving and clear of debris	**Operation**	Immediately report any defects for investigation and repair.
Where Kwikcova is fitted: - With no container on the hook loader system fully unwind the Kwikcova sheet and check for damage such as tears or chaffing.	**Visual**	Immediately report any excessive damage for investigation and repair. For Replacement see Maintenance Procedure 9.
Where hook safety lock is fitted: - Check that the plunger is free of dirt and retracts when the sliding hook boom is pivoted to the rear of the vehicle.	**Operation**	Immediately report any defects for investigation and repair.
Where optional equipment, i.e. towing hitches, load cells, auto-lube…… is fitted check for correct operation.	**See Right**	Refer to operation and maintenance instructions provided in additional manuals supplied with your vehicle.

Maintenance Schedule – Workshop

WARNING
During maintenance of the equipment:
DO NOT remove or restrict the operation of any of the proximity (safety) devices. DO NOT change any pressure relief valve settings.
The proximity (safety) devices and pressure relief valves are installed to protect the equipment from misuse and to ensure the safety of the operator and the general public. Failure to observe these restrictions may result in serious injury, death and/or damage to the equipment.

The following schedule and procedures should be carried out by a qualified technician in a workshop environment.

RECOMMENDED HYDRAULIC OIL

Hydex 32 (OE Specification) *
Mobil D T E 24*
Shell Tellus 46
BP Energol HLP 46
Castrol Hyspin AWS 46
Mobil D T E 25

RECOMMENDED GREASE

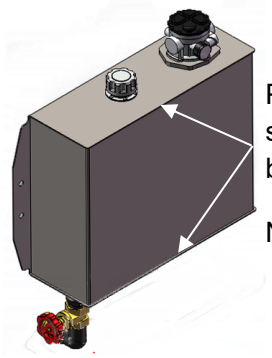
Fuchs (Century Oils) Renolit MP3
BP Energrease L2
Mobilgrease MP
Shell Alvania R3
Castrol Spheerol AP3
Any good quality Lithium EP2 multi-purpose grease.

*Preferred oils for use in lower temperature environments.

	6 Weekly	6 Monthly	Annually	Procedure
Daily Checks – See Above	x	x	x	1 & 2
Grease all grease points	x	x	x	4
Where fitted grease Kwikcova arms	x	x	x	5
Check nut and bolt torque values	x	x	x	6
Replace hydraulic fluid filter	*See Note	x	x	2
Renew hydraulic fluid			x	7
Renew suction filter (where fitted**)			x	8
Optional Equipment, i.e. towing hitches load cells, auto-lube……	Refer to the maintenance instruction provided in additional manuals supplied with your vehicle			

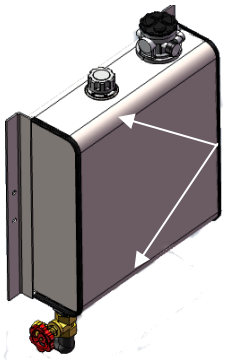
*Note - Due to initial component bedding in, the hydraulic fluid filter must be changed at the first 6 weekly maintenance check. Thereafter filters should be changed every 6 months.

**Note - The hydraulic tank suction filter is fitted to vehicles manufactured from 2020. Vehicles manufactured prior to 2020 do not have a suction filter fitted.



Pre-2020 - tank with squared off top and bottom edges.

No suction filter fitted.



2020 and later - tank with rounded off top and bottom edges.

Suction filter fitted.

Maintenance Procedure 1 – Check and Fill Hydraulic Tank

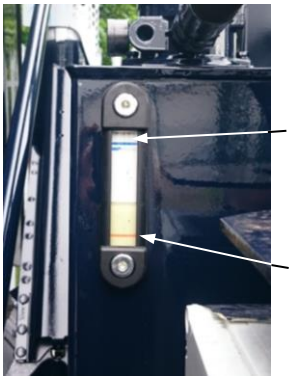


Fig 1.1. Hydraulic Tank Site Gauge

The level of fluid in the hydraulic tank can be checked using the site glass situated on the tank nearside.

Prior to checking the fluid levels ensure that all hydraulic cylinders are in the full closed position.

The fluid level must be between the maximum and minimum indicator lines.

If the level of fluid is near to or below the min line, then the fluid must be topped up.

Note: Topping up of the hydraulic should be carried out by a qualified technician in the workshop: -

WARNING

Accessing the top of the hydraulic tank must be carried out by suitably trained person using an appropriate secured platform. Failure to observe may result in injury or death.

Always use new fluid when topping up the hydraulic tank. Old fluid will be contaminated and will adversely affect the performance of the equipment. To avoid fresh contamination, ensure that the top of the tank is clean and the working environment dry, before opening the filler cap.

1) Unscrew the tank filler cap (fig. 1.2.).

2) Top up the tank to the maximum level line, on the site glass (fig. 1.1.), using recommended fluid types.

3) Check that the tank filler cap vents are clear before replacing filler cap.

Fig. 1.2 Tank Filler Cap

Maintenance Procedure 2 – Filter Check/Change

Fig 2.1. Filter Housing with Pressure Gauge

To check to ensure that the hydraulic fluid filter is not blocked the PTO must first be engaged.

View the filter housing, located on the top of the hydraulic fluid tank, from the vehicle offside.

The gauge on the side of the housing indicates the line pressure in the return line.

The gauge must show a pressure reading in the green zone.

If the reading is in the red zone this indicates a blockage and the filter should be removed and replaced

Note: Changing the hydraulic fluid filter should be carried out by a qualified technician in the workshop: -

WARNING
Accessing the top of the hydraulic tank must be carried out by suitably trained person using an appropriate secured platform. Failure to observe may result in serious injury or death.
To avoid fresh contamination, ensure that the top of the tank is clean and the working environment dry, before opening the filler cap.

1) Ensure PTO is disengaged.
2) Access the top of the hydraulic tank (fig. 2.2.).
3) Turn the filter cap anticlockwise to remove and gain access to the filter (fig. 2.3.).

   Note: The filter cap is sprung against the filter and will be pushed away from the housing when the threads disengage.
4) Remove the filter from the housing (fig. 2.4.).
5) Fit a new filter (fig. 2.5.).
6) Replace filter cap. Note: Push the filter cap down, to compress the filter spring, and turn clockwise to engage the threads (fig. 2.6.).

Fig. 2.1.

Fig. 2.2.

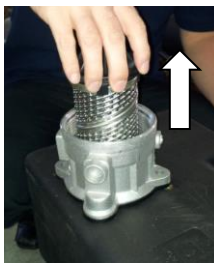


Fig. 2.3.

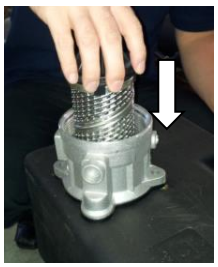


Fig. 2.4.

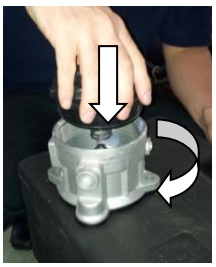


Fig. 2.5.

Maintenance Procedure 3 – Safety Device Location & Function

The hook loader and Kwikcova sheeting systems are fitted with safety devices which signal the location of moving parts and either prevent an incorrect operation of the equipment and/or send a signal to illuminate/extinguish warning lights.

WARNING

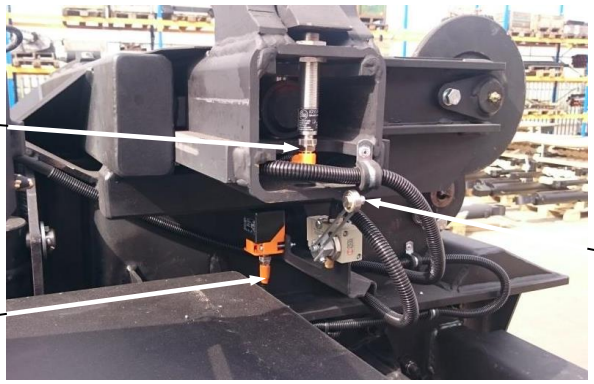
Ensure that the safety devices are cleaned regularly to avoid obstructions which may prevent the sensors from detecting the equipment.

In the event of a failure of any safety device take the vehicle out of service and replace the part immediately. DO NOT attempt to operate the equipment with faulty safety devices.

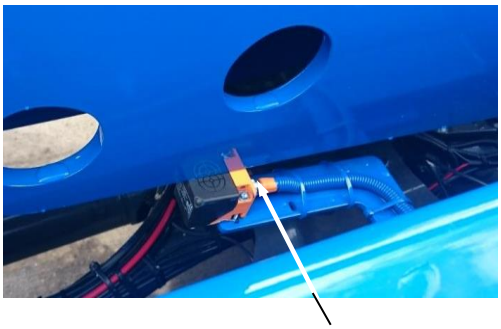
Under no circumstances should the equipment be used with safety devices which have been disabled or modified.

Failure to observe these warnings may result in serious damage to the equipment and/or serious injury or death.

Hook Loader Safety Devices



Air Switch Sensor H1 - Detects bin clamps when open.
Proximity Sensors H2 & H3 - Detects bin clamp flipper when in the unclamp position.
Proximity Sensor H4 - Detects rear frame when in the down position.



Proximity Sensor H5 - Detects front lift beam when in the down position.
Proximity Sensor H6* - Detects tipping gravity lock is engaged.

*Note – Proximity sensor H6 is fitted to vehicles delivered after July 2017. Vehicles supplied prior to this date vehicles will not be fitted with proximity sensor H6.

Function: -
The hook loader equipment proximity sensors work in combination to prevent or allow certain functions to take place and/or to illuminate/extinguish in cab warning lamps: -

Moving Sliding Hook - Sensor H1 must sense that the bin clamp is unlocked.
Sensors H2 & H3 must sense that the bin clamp flippers are NOT clamping a body - Cab control box warning lamp illuminated.

Load/Unload a Body - When following the correct procedure, the bin clamps will be unlocked.
Sensor H2 & H3 will sense that the bin clamp flippers are NOT clamping a body - Cab control box warning lamp illuminated.
When front beam is raised to load/unload: -
Sensor H5 will sense raised beam – In-cab control box warning lamp illuminated.

Tipping a Body - When following the correct procedure, the bin clamps will be locked.
Sensor H1 will sense bin clamps are locked - The sliding hook function is disabled during the tipping sequence.
Sensor H2 & H3 will sense that the bin clamp flippers are clamping onto a body - Cab control box warning lamp extinguished.
When tipping commences: -
Sensor H5 will sense raised beam – Dashboard and In-cab control box warning lamps illuminated. The lamp will extinguish when the beam is in the down position providing that, if fitted, the Kwikcova mast sensor is not sensing a raise mast.
Sensor H6 will sense that the tip gravity lock is engaged – If the lock is not engaged the frame will be allowed to raise approximately 200mm before the sequence will be disabled. In the event of the tipping sequence being suspended, due to the gravity lock not being engaged, the frame must be lowered, and the sliding hook should be extended. The tipping sequence can then be re started.
Sensor H4 will sense that the rear frame has raised - The sliding hook function is disabled during the tip sequence even in the event of a failure of sensor H1.

Proximity Sensor (H) Settings

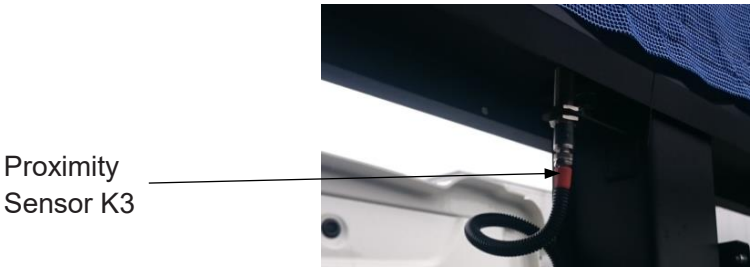
For the proximity sensors to correctly signal the position of parts of the equipment the distance between the nose of the sensor and the surface being sensed must not exceed the maximum sensing range. Sensors H2, H3 and H6 can be adjusted if the maximum sensing range is exceeded. Where resetting of the proximity sensors is required the sensor nose to sensed surface should be set to the Boughton setting distances quoted below: -

Sensor Position H2 –	Maximum sensing range – 5mm.	Boughton setting distance 2.5mm.
Sensor Position H3 –	Maximum sensing range – 5mm.	Boughton setting distance 2.5mm.
Sensor Position H4* –	Maximum sensing range – 20mm.	Boughton setting distance 10mm.
Sensor Position H5* –	Maximum sensing range – 20mm.	Boughton setting distance 10mm.
Sensor Position H6 –	Maximum sensing range – 4mm.	Boughton setting distance 2mm.

*Note: Sensors H4 & H5 are fixed at the Boughton setting distance and cannot be reset.

Kwikcova Safety Devices (Fitted to CM & CMD Sheeting Systems)

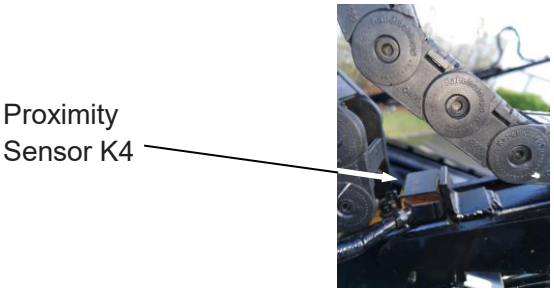
Proximity Sensor K1 - Detects Kwikcova arms when in the fully forward position.
Proximity Sensor K2 - Detects Kwikcova arms when in the outboard position.



Proximity Sensor K3 - Detects mast when in the down position.

Function: -
Proximity sensors K1 and K2 detect the position of the sheeting system arms. The hook loader controls on the in-cab control panel will only operate when these sensors detect that the arms are in the fully forward and the outboard position i.e. the Kwikcova has been positioned for loading/unloading or tipping operations.
Proximity sensor K2 also controls the status of the in-cab control box warning lamp. The lamp is illuminated when the sensor detects that the Kwikcova arms are in the outboard position.
Proximity sensor K3 illuminates the dashboard and the in-cab control box warning lamp when it detects that the Kwikcova mast is in the raised position. The lamps are extinguished when the mast is fully down i.e.in the driving position, providing the raised beam sensor (H5) is not sensing a raised beam.

Kwikcova Safety Devices (Only Fitted to CMD Sheeting Systems)



Function: -
Proximity sensors K4 detect the position of the telescopic arms. The sensor detects that the arms are retracted and allow the cranked arm lock to be disengaged when the control lever function switch is in the “LOW BIN” position.
Proximity sensor K4 works in conjunction with proximity sensor K1. Disengagement of the cranked arm lock is only possible when sensor K1 detects that the main arms are in the vertical position.

Proximity Sensor (K) Settings

For the proximity sensors to correctly signal the position of parts of the equipment the distance between the nose of the sensor and the surface being sensed must not exceed the maximum sensing range. Sensor K3 can be adjusted if the maximum sensing range is exceeded. Where resetting of the proximity sensors is required the sensor nose to sensed surface should be set to the Boughton setting distances quoted below: -

Sensor Position K1* – Maximum sensing range – 20mm. Boughton setting distance 10mm.
Sensor Position K2* – Maximum sensing range – 5mm. Boughton setting distance 10mm.
Sensor Position K3 – Maximum sensing range – 5mm. Boughton setting distance 2.5mm.
Sensor Position K4*- Maximum sensing range – 4mm. Boughton setting distance 2mm.

*Note: Sensors K1, K2 & K4 are fixed at the Boughton setting distance and cannot be reset.

Stabiliser Safety Devices (Where fitted).

For Vehicles Fitted with Stab Jacks

Proximity Sensor S1

For Vehicles Fitted with Rear Roller

Proximity Sensor S1 - Detects stabiliser when in the raised position.

Function: -
Proximity sensor S1 illuminates the in-cab control box warning lamp when the stabiliser is in the lowered position.

Proximity Sensor (S) Settings

For the proximity sensors to correctly signal the position of parts of the equipment the distance between the nose of the sensor and the surface being sensed must not exceed the maximum sensing range. Sensor S1 can be adjusted if the maximum sensing range is exceeded. Where resetting of the proximity sensor is required the sensor nose to sensed surface should be set to the Boughton setting distances quoted below: -

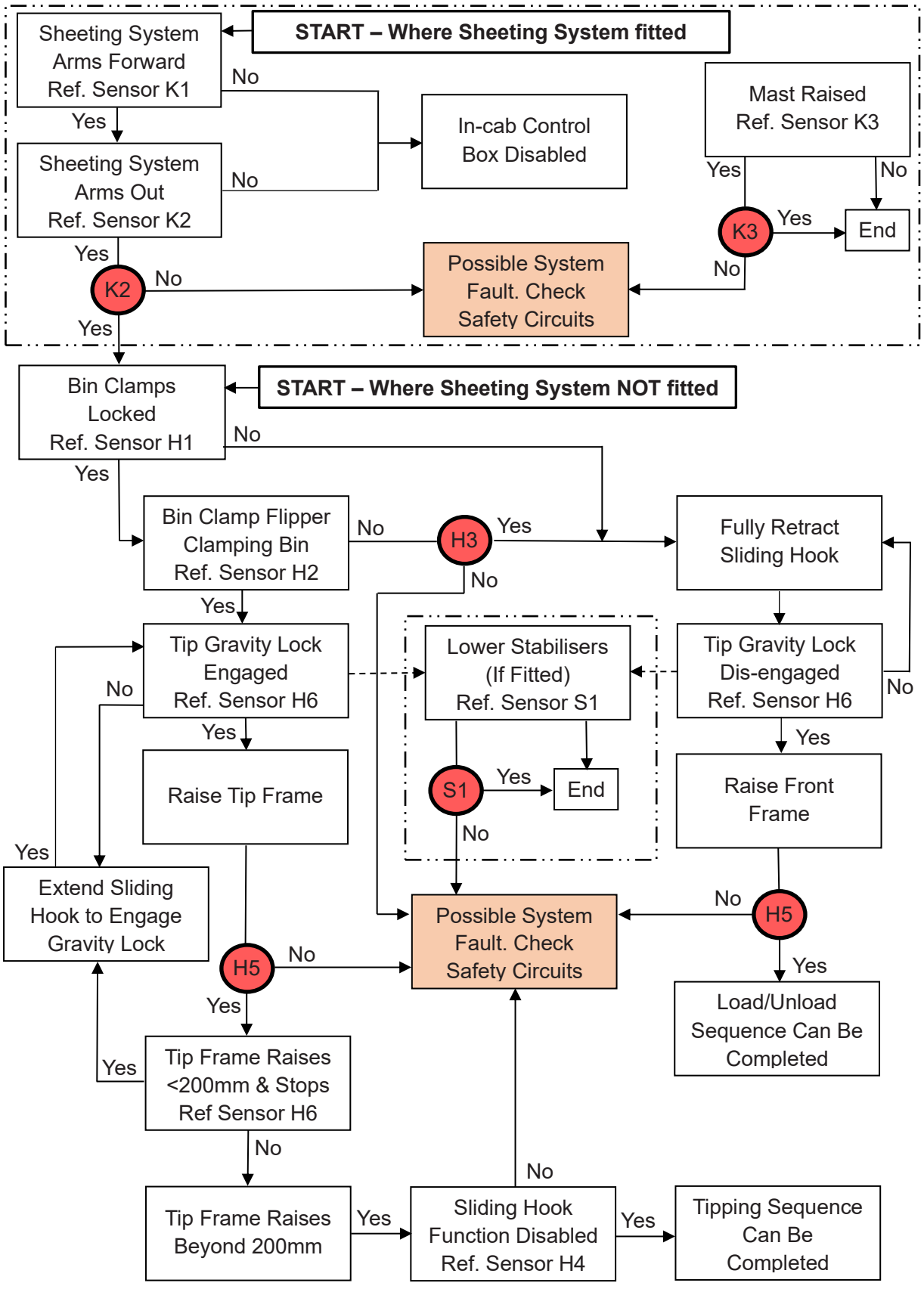
Sensor Position S1 – Maximum sensing range – 8mm. Boughton setting distance 4mm.

Proximity Sensor – Logic Sequence – Loading/Unloading & Tipping

Indicates that the in-Cab warning lamps should illuminate.

?? If the lamps do not illuminate, after a function has been initiated, a check of the related proximity sensor and/or lamp LED is required.

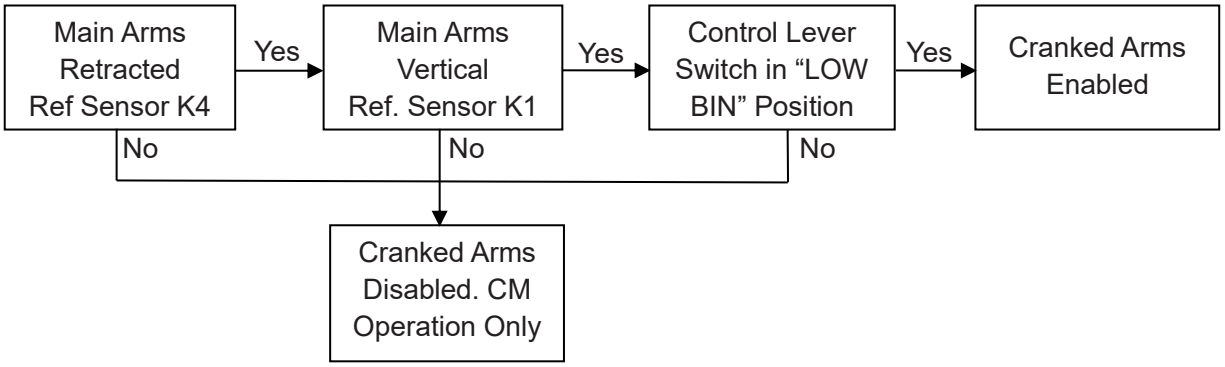
?? indicates the proximity sensor which initiates the illumination of the lamp.



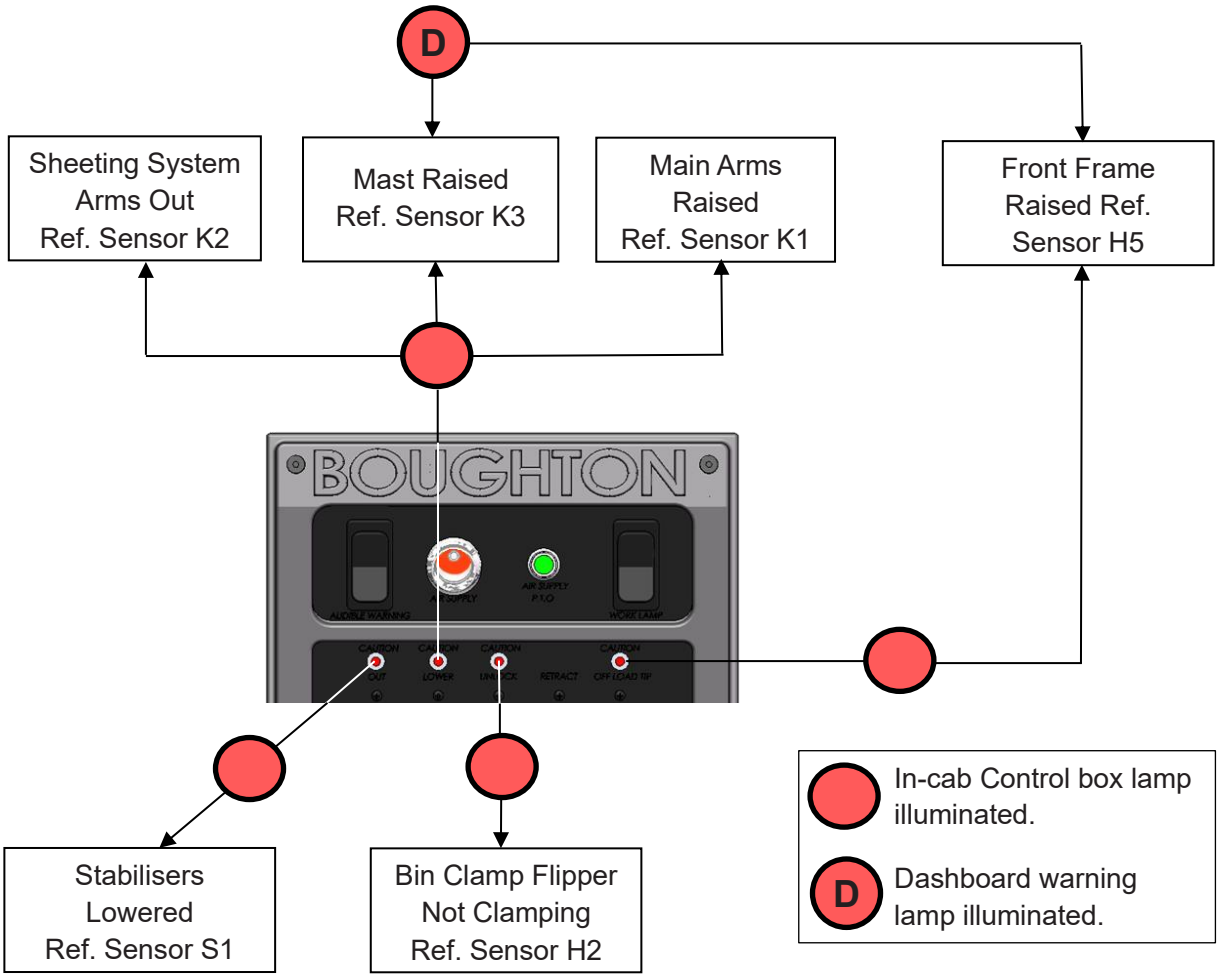
Proximity Sensor – Logic Sequence – Sheeting System.

CM Sheeting System – The CM sheeting system does not incorporate any function limits, controlled by proximity sensors, other than the In-cab control box enabled/disabled interlock (see previous page).
When using the external sheeting system control levers no functions are disabled.

CMD Sheeting System – The CMD sheeting systems incorporate function limits, controlled by proximity sensors, which enable/disable the cranked arm function.



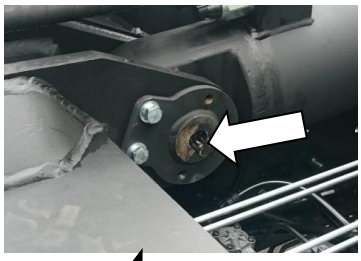
In Cab Warning Lamp – Logic Sequence



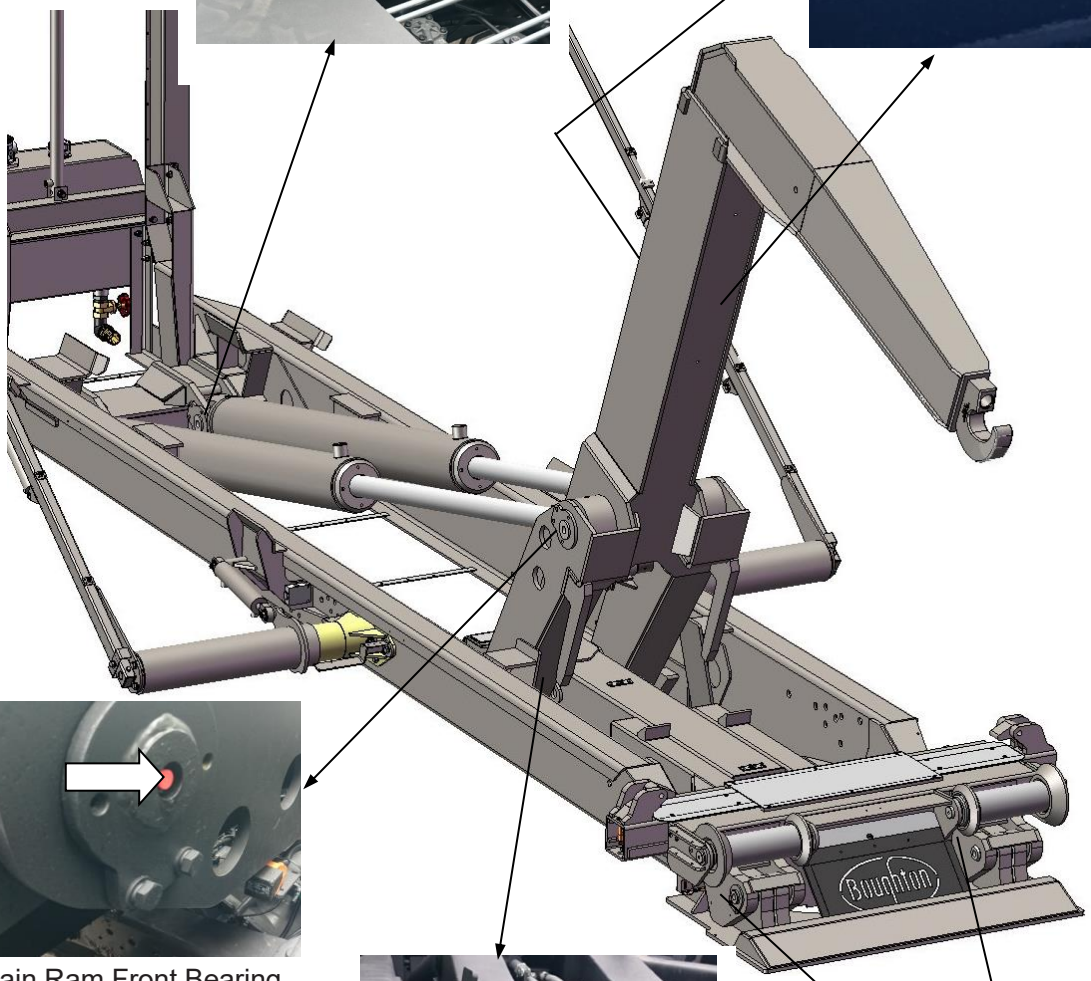
Maintenance Procedure 4 - Grease Points

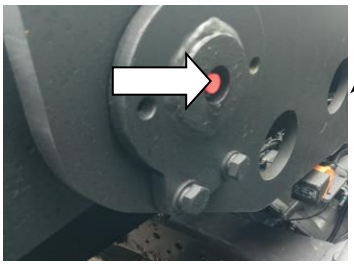
Grease points are located as shown in the diagram below.
Use a grease gun to apply grease to the bearing surfaces at these locations.

Main Ram Front Bearing



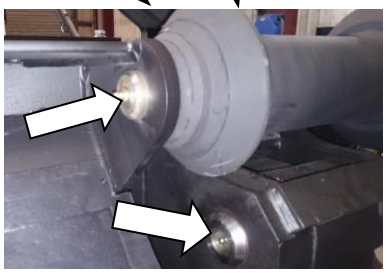
Sliding Hook Boom





Main Ram Front Bearing

Load/Unload Pivot Bearing



Roller & Tipping Pivot Bearing

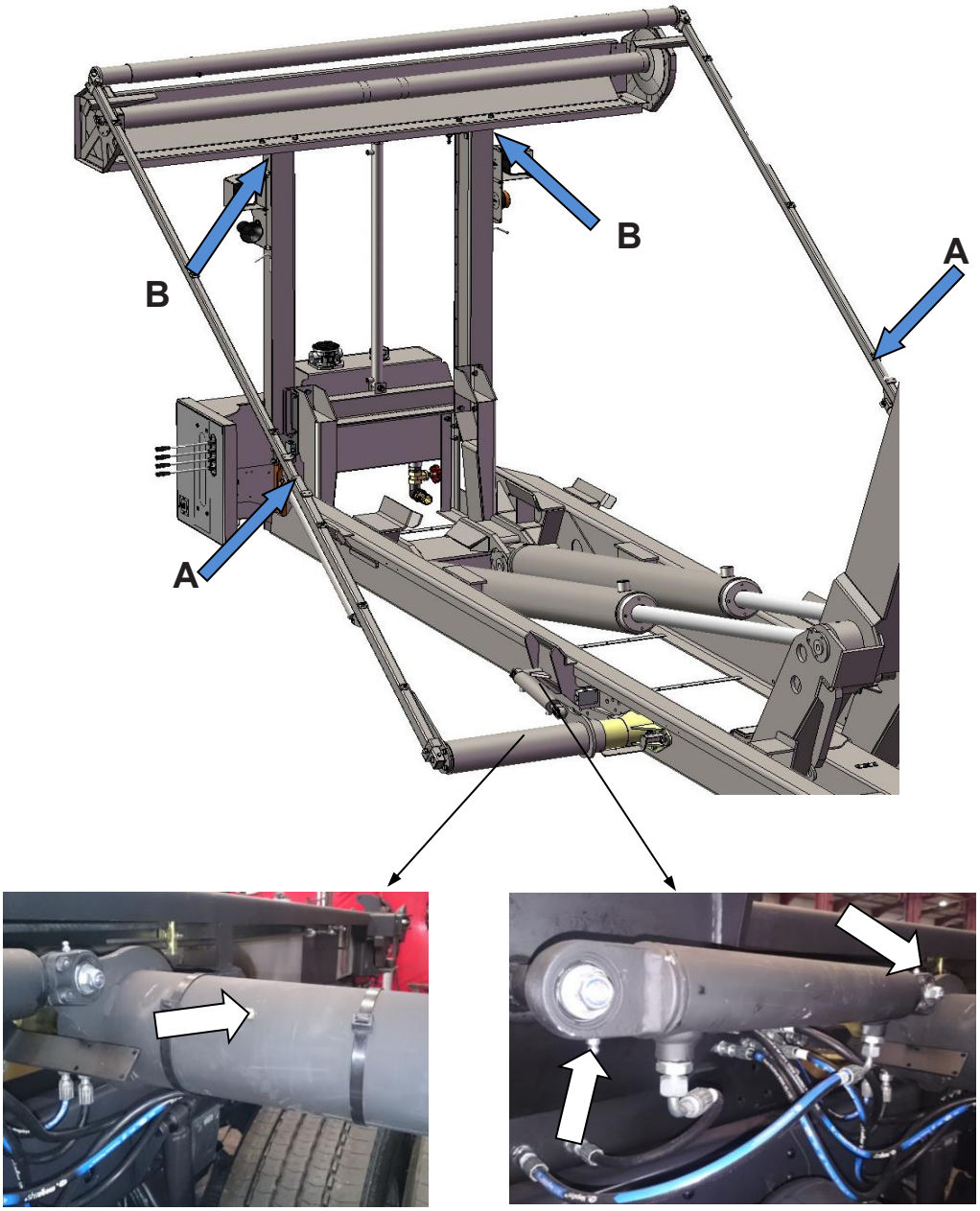
Lift Equipment Pressurised Grease Points

Maintenance Procedure 5 – Grease Kwikcova

The Kwikcova sheeting system has 6 pressurised grease points, see below. In addition to the grease points the telescopic arms and telescopic mast should be greased.

With the telescopic arms extended clean the inner box face faces where they mate with the outer box, see A in Fig. below
Apply recommended grease to the mating faces where the inner box slides in the outer box.

With the telescopic mast extended clean the inner sliding member.
Apply the recommended grease to the surfaces of the inner sliding member, see B in Fig. below.



Kwikcova
Pressurised Grease Points

Maintenance Procedure 6 – Check Nut & Bolt Torque Values

All nuts and bolts should be checked to ensure that they are at the correct torque.
Use a calibrated torque wrench set to the required torque.

Unless torque values are quoted elsewhere, use the following table which gives recommended tightening torques for various metric bolts.

Quoted ‘U’ torque values are for self-colour un-lubricated bolts and zinc plated bolts into un-plated holes and nuts.

Quoted ‘P’ torque values are for zinc plated bolts into zinc plated nuts.

For cap screws use grade 10.9 torque values.

Nominal Bolt Size	Grade 8.8 ‘U’ Torque Nm		Grade 8.8 ‘P’ Torque Nm		Grade 10.9 Torque Nm	
	Course	Fine	Course	Fine	Course	Fine
M6	10.9	-	12.7	-	15	-
M8	25.8	27.7	31	33.2	36.3	38.9
M10	51.2	54	61.4	64.8	72	76
M12	89.3	97.6	107.2	117.1	125.7	137.1
M14	142.1	154.5	170.5	185.4	199.5	217.1
M16	221.7	235.9	266	283.1	312	331.4
M18	305.1	343.2	366.1	411.8	429	482.6
M20	432.5	480.2	519	576.2	609.1	675.1
M22	588.4	646.7	706.1	776	827.1	909.8
M24	747.8	813.5	897.4	976.2	1051.3	1143.6
M27	1083.9	1182.1	1312.7	1418.5	1538.3	1662.2

Maintenance Procedure 7 – Renew Hydraulic Fluid

Hydraulic fluid is hydroscopic and over time will absorb water. Contaminated fluid will reduce the performance of the hydraulic system. Frequent changes of the fluid, see schedule, are essential to maintain optimum performance.

During the change procedure old fluid must be drained from the hydraulic fluid tank. A suitable container, with a capacity of approximately 100 litres, will be required to drain the fluid into. The container will be positioned underneath the vehicle and must be shallow enough to fit in the space available.

Note: The following hydraulic fluid change procedure must be carried out with all hydraulic cylinders in the closed position.

WARNING

Accessing the top of the hydraulic tank must be carried out by suitably trained person using an appropriate secured platform. Failure to observe may result in injury or death.

Always use new fluid when topping up the hydraulic tank. Old fluid will be contaminated and will adversely affect the performance of the equipment. To avoid fresh contamination, ensure that the top of the tank is clean and the working environment dry, before opening the filler cap.

1) Ensure PTO is disengaged.
2) Shut off the stop cock on the hydraulic fluid suction line. The stop cock is located underneath the hydraulic fluid tank (see fig. 7.1).
3) Disconnect the suction line at the hydraulic pump, located on the back of the PTO (see fig. 7.2).
4) Position the detached end of the suction line in the container into which the old fluid will be drained.
5) Remove the hydraulic tank filler cap (see fig. 7.3).
6) Open the stop cock on the hydraulic fluid suction line. The hydraulic fluid will drain from the tank into the container.
7) When the hydraulic fluid tank is empty shut off the suction line stop cock.
8) Re-connect the suction line to the hydraulic pump.
9) Fill the tank with new hydraulic fluid to the recommended specification. The tank should be filled to the maximum line on the tank sight gauge (see fig. 7.4).
10) Re-place the tank filler cap.

Fig. 7.1
Stop Cock

Fig. 7.2
Suction Tube

Fig. 7.3
Filler Cap

Fig. 7.4
Hydraulic Tank
Site Gauge

After completing the fluid change clean up any spilt hydraulic fluid.
Old fluid must be disposed of responsibly.

Maintenance Procedure 8 – Renew Suction Filter

The suction filter is located in the bottom of the tank and can only be replaced with the tank drained of hydraulic fluid. Change the suction filter when renewing the hydraulic fluid to avoid having to drain the tank unnecessarily.

Prior to removing the old suction filter carry out sections 1 to 6 in "Maintenance Procedure 7 – Renew Hydraulic Fluid".

1) With the hydraulic tank drained, remove the suction tube from the elbow fitting on the stop cock outlet (fig. 8.1).

2) Unscrew the stop cock from the suction filter (fig. 8.2).

3) Unscrew and remove the suction filter from the tank (fig. 8.3).

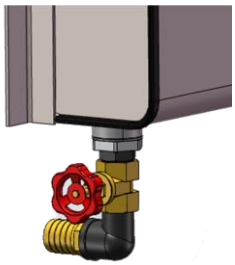


Fig 8.1.

Fig 8.2.

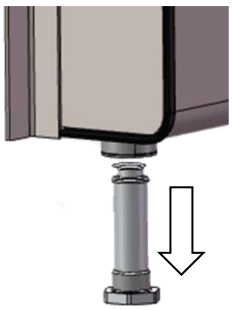


Fig 8.3.

4) Screw the new suction filter into the bottom of the tank (fig. 8.4).

5) Screw the stop cock into the suction filter (fig. 8.5).

6) Replace the suction tube onto the elbow fitting on the stop cock outlet.

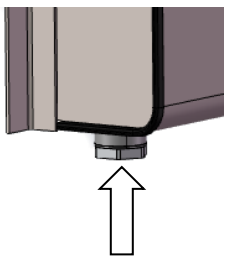


Fig. 8.4.

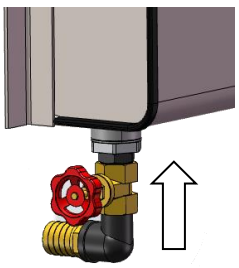


Fig. 8.5.

With the new suction filter fitted carry out sections 7 to 10 in "Maintenance Procedure 7 – Renew Hydraulic Fluid" to refill the hydraulic tank.

Maintenance Procedure 9 – Kwikcova Sheet/Roller Replacement

9.1. Sheet Replacement with Roller Spring Tension Released.

This procedure describes the method used to remove and replace the Kwikcova sheet if the sheet roller tension has been released.

If sheet roller tension is maintained refer to Maintenance Procedure 9.2.

WARNING
Hard hats and safety glasses must be worn throughout the replacement of the sheet.
It will be necessary to use steps to reach fixings areas while replacing the sheet. Take the necessary precautions to ensure that the steps and foot walks remain stable.
Do not attempt to remove the sheet with a container on the vehicle.
Failure to observe these warnings may result in serious injury or death.

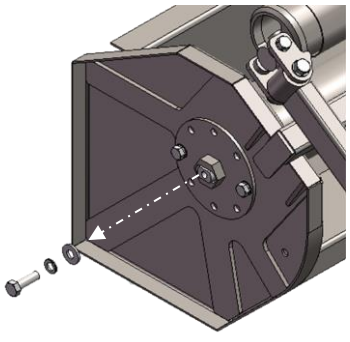
WARNING
During parts of this procedure the roller springs will be under tension.
ALWAYS use the Boughton Engineering Limited spring tensioning tool when indicated in the instructions.
DO NOT release the spring tensioning tool after the spring shaft anchor plate retaining bolts have been removed unless the spring tension has been released. The tension of the springs will be transferred to the tensioning tool when the spring shaft anchor plate retaining screws are removed. Be prepared to take the force transmitted to the tool.
Failure to observe these warnings may result in serious injury or death.

9.1.1. Sheet Removal.

1) Observe all **User** and **Maintenance Safety** instructions.

2) The arms must be in the fully forward position with the sheet wound fully on the roller and the vehicle engine switched off.

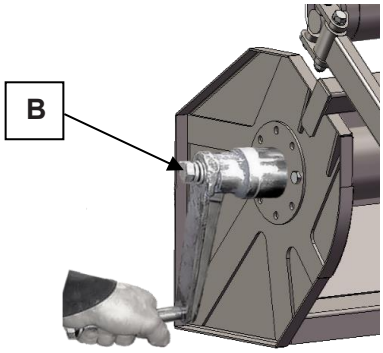
4) On the nearside (left side) of the vehicle remove the screw and washer securing the spring shaft anchor plate to the roller shaft.



WARNING
DO NOT attempt to release tension in the roller tension spring without installing the Boughton Engineering Limited spring tensioning tool. This tool must be correctly secured to the end of the spring shaft. Failure to use and correctly secure the specified tool may result in the tool detaching, whilst under load, causing an explosive release of the tension springs which may result in serious injury or death.

5) Install the Boughton Engineering Limited spring tensioning tool onto the hexagonal boss on the spring shaft anchor plate.

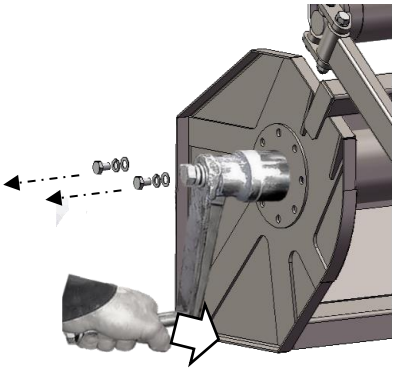
With the tool in position, over the boss, screw the securing bolt (B) into the end of the spring shaft.



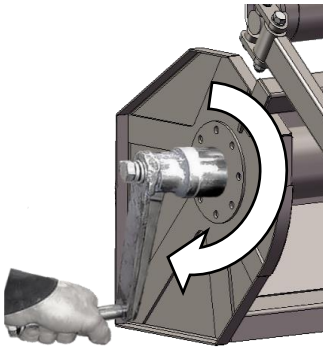
WARNING

The spring tension must be held, using the Boughton Engineering Limited spring tensioning tool, before the tension securing screws can be removed. DO NOT let go of the tensioning tool until the spring tension has been released. If the tool is released, with tension in the spring, the tool will rotate at speed and can cause serious injury or death.

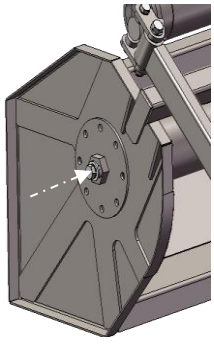
6) Apply pressure on the tensioning tool handle, in an anticlockwise direction, and remove the two bolts securing the spring shaft anchor plate.
With the bolts removed the tensioning tool is holding the spring tension. **Under no circumstances should you let go of the tensioning tool.**



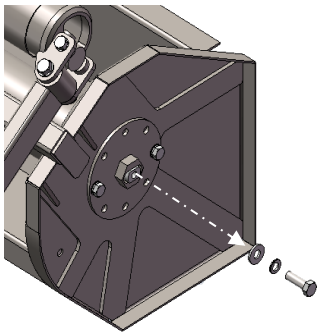
7) With the two bolts, securing the spring shaft anchor plate, removed keep a secure hold on the tensioning tool handle and allow it to slowly rotate in a clockwise direction to release the tension in the spring.



8) To retain the spring shaft anchor plate in position, remove the tensioning tool and refit the screw and washer securing the plate to the roller shaft. Hand tighten only.



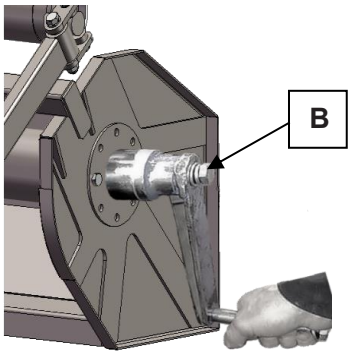
9) On the offside (right side) of the vehicle remove the screw and washer securing the spring shaft anchor plate to the roller shaft.



WARNING
DO NOT attempt to release tension in the roller tension spring without installing the Boughton Engineering Limited spring tensioning tool. This tool must be correctly secured to the end of the spring shaft. Failure to use and correctly secure the specified tool may result in the tool detaching whilst under load causing an explosive release of the tension springs which may result in serious injury or death.

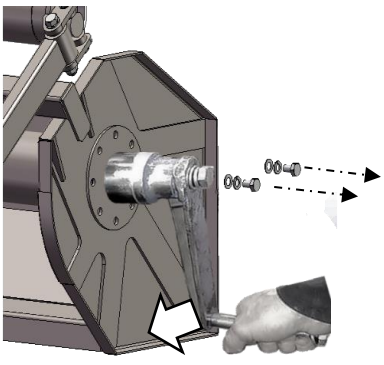
10) Install the Boughton Engineering Limited spring tensioning tool onto the hexagonal boss on the spring shaft anchor plate.

With the tool in position, over the boss, screw the securing bolt (B) into the end of the spring shaft.

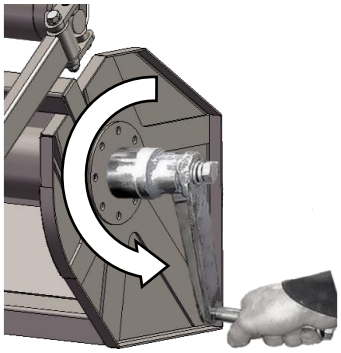


WARNING
The spring tension must be held, using the Boughton Engineering Limited spring tensioning tool, before the tension securing screws can be removed. DO NOT let go of the tensioning tool until the spring tension has been released. If the tool is released, with tension in the spring, the tool will rotate at speed and can cause serious injury or death.

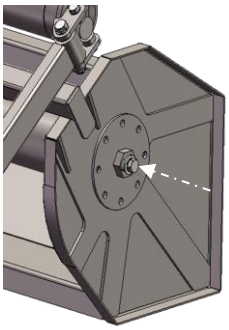
11) Apply pressure on the tensioning tool handle, in a clockwise direction, and remove the two bolts securing the spring shaft anchor plate.
With the bolts removed the tensioning tool is holding the spring tension. **Under no circumstances should you let go of the tensioning tool.**



12) With the two bolts, securing the spring shaft anchor plate, removed keep a secure hold on the tensioning tool handle and allow it to slowly rotate in an anticlockwise direction to release the tension in the spring.



13) To retain the spring shaft anchor plate in position, remove the tensioning tool and refit the screw and washer securing the plate to the roller shaft. Hand tighten only.



14) Move the arms outboard and power to the rear of the vehicle, as far as they will go. The sheet will unroll from the roller.

15) Remove the sheet from the crossbeam. The sheet bead fits into extrusions on the sheet crossbeam. Two jubilee clips, one at each end of the crossbeam, secure the sheet in position. Remove the jubilee clips and slide the sheet ends towards the centre of the crossbeam and remove from the extrusions.

16) Remove the sheet from the roller. The sheet bead fits into an extrusion on the sheet roller. Slide the sheet ends towards the centre of the roller and remove from the extrusion.

17) Put sheet to one side, if refitting, or discard old sheet if replacing.

9.1.2. Sheet Installation.

1) If a sheet is fitted refer to "9.1.1. Sheet Removal" for instructions on how to remove.

2) Move the arms outboard and power to the rear of the vehicle, as far as they will go.

3) Unfold the sheet to be fitted and fit its widest end to the crossbeam. Each end of the sheet bead should be fed into the fixing extrusions from the centre of the crossbeam.

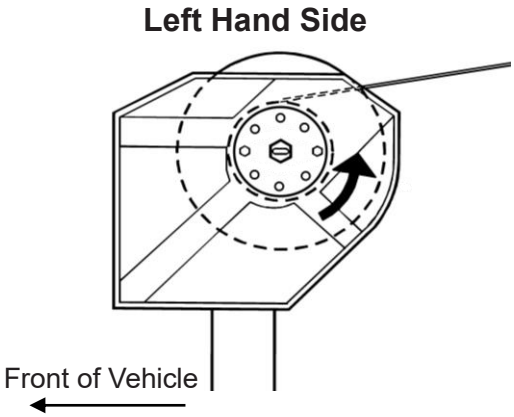
4) Secure each end of the sheet to the crossbeam with the jubilee clips removed in 9.1.1. section 13, or new clips supplied with a replacement sheet.

5) Fit the front of the sheet to the roller. Each end of the sheet bead should be fed into the fixing extrusions from the centre of the roller assembly.

Care must be taken so that the beading located on the front of sheet is not snagged or ripped when inserted into the tracking.

6) With the assistance of a third party manually feed the sheet onto the roller as the arms are brought slowly forward. Manually rotate the roller and feed the sheet in as evenly and tightly as possible.

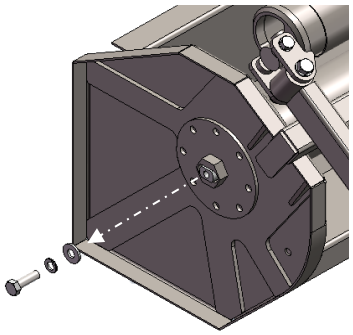
The sheet is **OVERWIND** only i.e. it **MUST** be fed in over the top of the roller when winding in.



7) Continue feeding the sheet onto the roller until the sheeter arms are in the fully forward position.

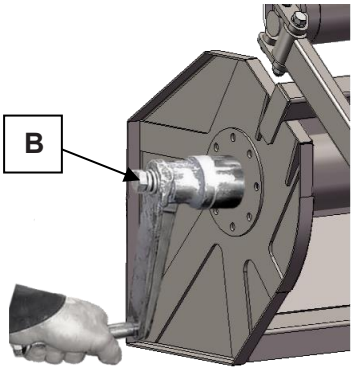
WARNING
ALL necessary safety precautions must be taken while tensioning the springs.
DO NOT release the spring tensioning tool before securing the spring shaft anchor plates after pre-loading the springs.
DO NOT exceed the maximum stated number of turns required to tension the roller.
ENSURE that each spring is pre-tensioned and rotated in the correct direction.
Failure to observe these warnings may result in serious damage to the equipment and/or serious injury or death.

8) On the nearside (left side) of the vehicle remove the screw and washer securing the spring shaft anchor plate to the roller shaft.



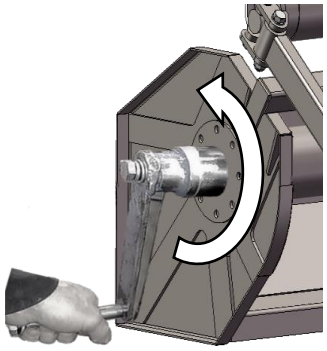
9) Install the Boughton Engineering Limited spring tensioning tool onto the hexagonal boss on the spring shaft anchor plate.

With the tool in position, over the boss, screw the securing bolt (B) into the end of the spring shaft



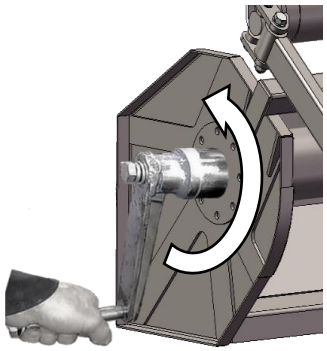
10) Rotate the spring tensioning tool in an anticlockwise direction until all slack is taken up.

Keeping hold of the tensioning tool at all times, when some resistance is felt to the rotation allow the tensioning tool to return, under control, to a neutral position with no slack and no pre-tension.

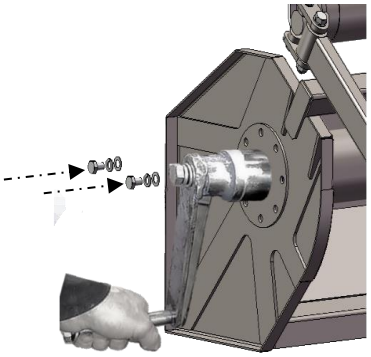


WARNING
DO NOT attempt to pre-tension roller tension spring without installing the Boughton Engineering Limited spring tensioning tool. This tool must be correctly secured to the end of the spring shaft. Failure to use and correctly secure the specified tool may result in the tool detaching whilst under load causing an explosive release of the tension springs which may result in serious injury or death.

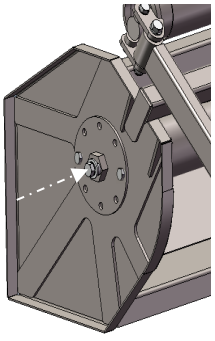
11) From the neutral position, established in 10), rotate the spring tensioning tool 15 turns, in an anticlockwise direction, to pre-tension the spring.



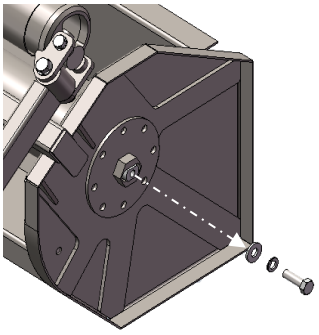
12) Rotate the spring tensioning tool so that two holes in the spring shaft anchor plate line up with the two holes in the roller tray end plate. With the holes lined up, fit the washers and screws to secure the anchor plate and hold the spring tension.



13) Remove the spring tensioning tool and refit the washer and screw to secure the spring shaft anchor plate to the spring shaft.
Torque to specified value.

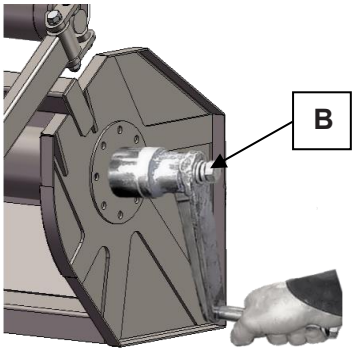


14) On the offside (right side) of the vehicle remove the screw and washer securing the spring shaft anchor plate to the roller shaft.



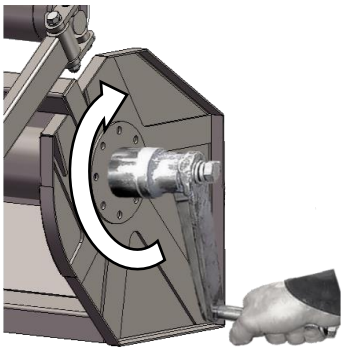
15) Install the Boughton Engineering Limited spring tensioning tool onto the hexagonal boss on the spring shaft anchor plate.

With the tool in position, over the boss, screw the securing bolt (B) into the end of the spring shaft.



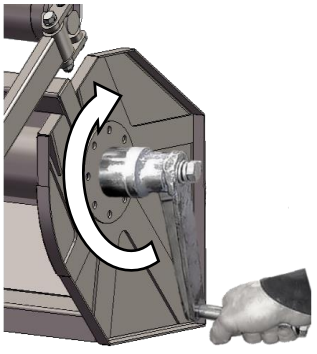
16) Rotate the spring tensioning tool in a clockwise direction until all slack is taken up.

Keeping hold of the tensioning tool at all times, when some resistance is felt to the rotation allow the tensioning tool to return, under control, to a neutral position with no slack and no pre-tension.

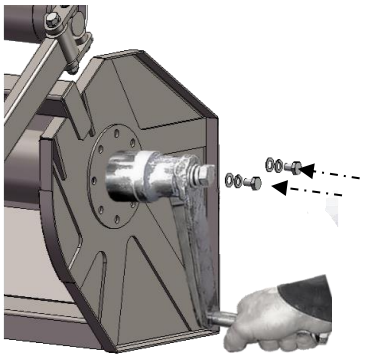


WARNING
DO NOT attempt to pre-tension roller tension spring without installing the Boughton Engineering Limited spring tensioning tool. This tool must be correctly secured to the end of the spring shaft. Failure to use and correctly secure the specified tool may result in the tool detaching whilst under load causing an explosive release of the tension springs which may result in serious injury or death.

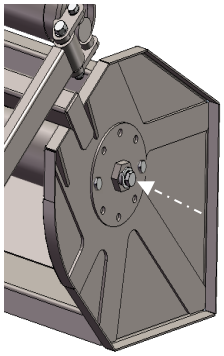
17) From the neutral position, established in 16), rotate the spring tensioning tool 15 turns in a clockwise direction to pre-tension the spring.



18) Rotate the spring tensioning tool so that two holes in the spring shaft anchor plate line up with the two holes in the roller tray end plate. With the holes lined up, fit the washers and screws to secure the anchor plate and hold the spring tension.



19) Remove the spring tensioning tool and refit the washer and screw to secure the spring shaft anchor plate to the spring shaft. Tighten to specified torque.



WARNING
When unwinding the sheet ensure that it unwinds evenly and smoothly, and that the crossbeam is not bowed.
If the sheet is excessively taut and the crossbeam is bowed this indicates that the springs have been over tensioned.
Immediately stop unwinding the sheet and operate the "Roller" control to return the arms to the fully forward position.
Failure to comply with these instructions will damage the equipment and/or produce excessive wear and strain on the components of the Kwikcova assembly.

20) Unwind the sheet by operating the "Roller" control checking that the sheet unwinds evenly and smoothly.

21) If the sheet does not unwind smoothly and/or the crossbeam is bowed re-tension the springs, as described in the preceding instructions, until the correct sheet tautness is achieved.

9.2. Sheet Replacement with Roller Spring Tension Maintained.

This procedure describes the method used to remove and replace the Kwikcova sheet if the sheet roller tension has been maintained.

If sheet roller tension has been released refer to Maintenance Procedure 9.1.

WARNING
Hard hats and safety glasses must be worn throughout the replacement of the sheet.
It will be necessary to use steps to reach fixings areas while replacing the sheet. Take the necessary precautions to ensure that the steps and foot walks remain stable.
Do not attempt to remove the sheet with a container on the vehicle.
Failure to observe these warnings may result in serious injury or death.

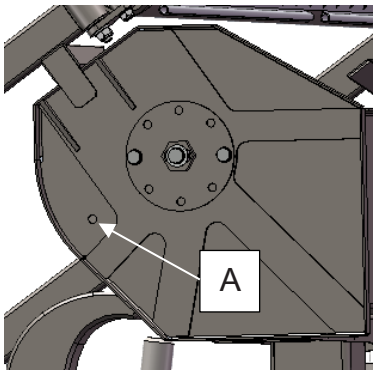
9.2.1. Sheet Removal.

1) Observe all **User** and **Maintenance Safety** instructions.

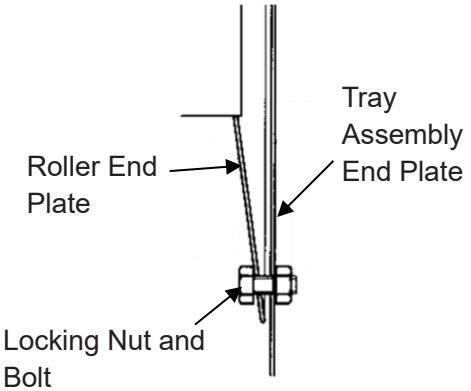
2) Move the sheeter arms outboard, fully extend the arms and power to the rear of the vehicle so that the sheet is fully unwound.

WARNING
The roller tension springs are under tension. Ensure that the locking bolts and nuts are secure.
Failure to observe these warnings may result in serious injury or death.

3) With the sheet fully unwound it is necessary to lock the sheet roller in position. On the roller tray end plates locate hole 'A'.
Using hole 'A' as a guide drill a hole, to accommodate an M10 bolt, through the roller assembly end plate.



4) With the newly drilled hole in the roller end plate aligned with the hole in the roller tray end plate insert a M10 bolt, minimum length 30mm, through both holes screw on a nut and tighten to lock and prevent rotation of the roller assembly



5) Repeat 3) and 4) for opposite side of the vehicle.

6) With bolts locking both sides of the roller in place, fully retract the sheeter arms and allow the sheet to go slack.

7) Remove the sheet from the crossbeam. The sheet bead fits into extrusions on the sheet crossbeam. Two jubilee clips, one at each end of the crossbeam, secure the sheet in position. Remove the jubilee clips and slide the sheet ends towards the centre of the crossbeam and remove from the extrusions.

8) Remove the sheet from the roller. The sheet bead fits into an extrusion on the sheet roller. Slide the sheet ends towards the centre of the roller and remove from the extrusion.

9) Put sheet to one side, if refitting, or discard old sheet if replacing.

9.2.2. Sheet Installation.

1) If a sheet is fitted refer to "9.2.1. Sheet Removal" for instructions on how to remove.

2) Unfold the sheet to be fitted and fit its widest end to the crossbeam. Each end of the sheet bead should be fed into the fixing extrusions from the centre of the crossbeam.

3) Secure each end of the sheet to the crossbeam with the jubilee clips removed in 9.1.1. section 13, or new clips supplied with a replacement sheet.

4) Fit the front of the sheet to the roller. Each end of the sheet bead should be fed into the fixing extrusions from the centre of the roller assembly.

Care must be taken so that the beading located on the front of sheet is not snagged or ripped when inserted into the tracking.

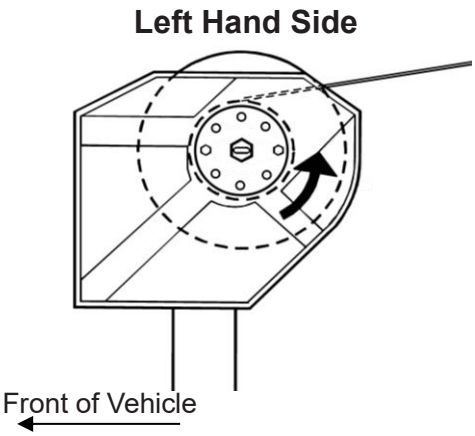
5) Fully extend the sheeter side arms until the sheet is taut.

6) Remove the bolts and nuts locking the sheet roller in position. Note that the sheet must be tight enough to have taken the load off the bolts to enable easy removal.

WARNING
When unwinding the sheet ensure that it winds/unwinds evenly and smoothly, and that the crossbeam is not bowed.
If the sheet does not wind and/or unwind evenly and smoothly and/or the crossbeam is bowed the fitment procedure may not have been carried out correctly.
Repeat the procedure in this section, 9.2.2. and refit the sheet.
Failure to comply with these instructions will damage the equipment and/or produce excessive wear and strain on the components of the Kwikcova assembly.

7) Using the “Roller” control wind in the sheet by bringing the sheeter arms fully forward. Ensure that the sheet winds onto the roller evenly and smoothly and that the crossbeam is not bowed

   The sheet is **OVERWIND** only i.e. it **MUST** be fed in over the top of the roller when winding in.



8) Unwind the sheet using the “Roller” control and taking the sheeter arms to the rear of the vehicle. Check that the sheet unwinds evenly and smoothly, and that the crossbeam is not bowed.

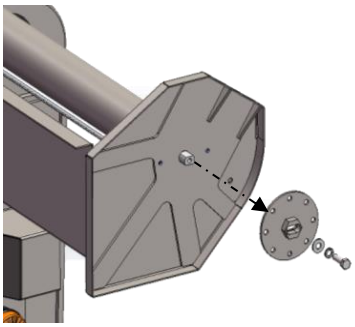
9.3. Sheet Roller Replacement.

WARNING
Hard hats and safety glasses must be worn throughout the replacement of the roller.
It will be necessary to use steps to reach fixings areas while replacing the roller. Take the necessary precautions to ensure that the steps and foot walks remain stable.
Do not attempt to remove the roller with a container on the vehicle.
Failure to observe these warnings may result in serious injury or death.

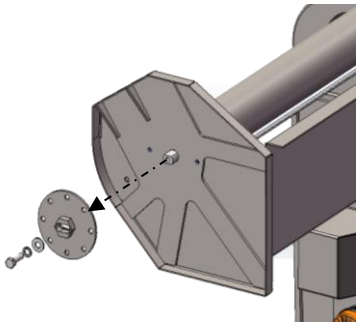
9.3.1. Roller Removal.

1) The roller tension springs tension must be released prior to the removal of the sheet roller. It is recommended that the sheet roller is removed with the sheet removed. Follow the procedure in section “9.1.1. – Sheet Removal” to remove the sheet and release the tension in the tension springs.

2) On the nearside (left side) of the vehicle take out the bolt and washers holding the spring shaft anchor plate onto the spring shaft. Remove the spring shaft anchor plate.

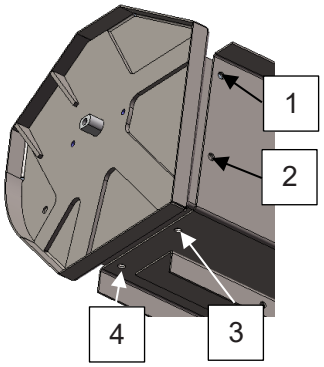


3) On the offside (right side) of the vehicle take out the bolt and washers holding the spring shaft anchor plate onto the spring shaft. Remove the spring shaft anchor plate.

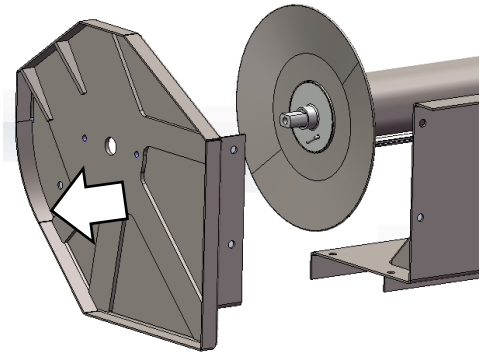


Two people will be required to carry out the next steps of the process.

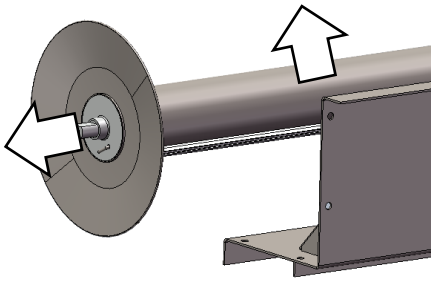
4) On the offside of the vehicle, support the end of the roller assembly and remove the 4 bolts fixing the roller tray end plate to the roller tray.



5) Continue to support the end of the roller assembly and remove the roller tray end plate.



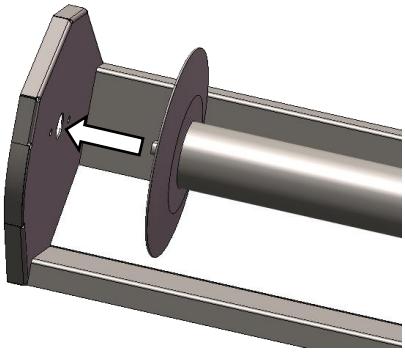
6) With a person at each end of the roller assembly pull the assembly clear of the nearside roller tray end plate and remove the roller assembly.



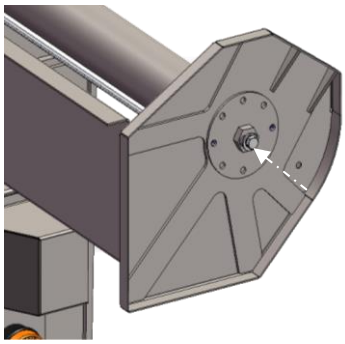
9.3.2. Roller Installation.

A minimum of two people will be required to install the roller assembly.

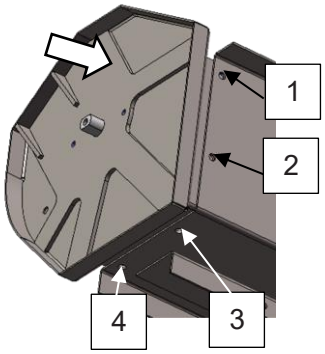
1) With a person at each end of the roller assembly position the assembly over the tray and feed the roller spring shaft through the hole in the nearside roller tray end plate.



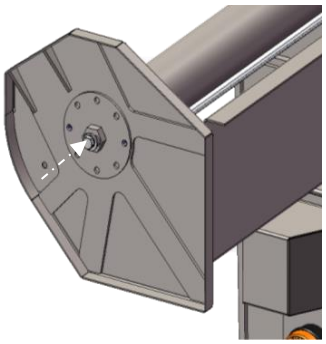
2) Ensure that the spring shaft is correctly located through the hole in the roller tray end plate, refit the spring shaft anchor plate and secure with the anchor plate screw and washers.
If it is intended to refit the sheet hand tighten the screw only.



3) On the vehicle offside fit the roller tray end plate. Ensure that the spring shaft passes through the hole in the end plate and secure with the 4 nut, bolt and washer sets removed in 9.3.1. point 4.

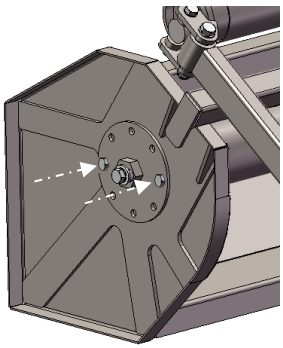


4) Ensure that the spring shaft is correctly located through the hole in the roller tray end plate and refit the spring shaft anchor plate and secure with the anchor plate screw and washers.
If it is intended to refit the sheet hand tighten the screw only.



5) Install and tension the sheet. Follow the procedure in section "9.1.2. Sheet Installation".

If it is intended to replace the sheet at a later time, line up two of the holes in the anchor plate with the two holes in the roller tray end plate and refit the screws and washers which prevent rotation of the spring shaft anchor plates.
Tighten all bolts, screws and nuts including the central anchor plate screw.



10. Further Information

For further information or assistance in operating the Boughton Engineering Limited Hook loader and Kwikcova Sheeting System contact: -

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