Maintenance Instruction Sheet

Power-Reach

PR12 Skiploader PR18

Intacova

Sheeting System

Sheet Replacement

Roller Replacement

This maintenance instruction sheet details the procedures which must be followed when replacing the Intacova sheet and/or roller as fitted to Boughton Engineering Limited Power Reach Skiploaders.

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 instruction sheet 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.

Contents:-

SAFETY

WARNING

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

Maintenance work should always be carried out with the vehicle unladen.

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.

ALWAYS use approved spares. Non approved items may seriously affect performance and will increase the risk of a failure. These instructions apply to the fitment of Boughton Engineering Limited replacement sheets and/or rollers only.

Special tools are required to carry out this procedure. Do not attempt to replace the sheet and/or roller without using the correct tools as specified in this procedure.

This procedure will require working at height. Ensure all safety procedures for working at height are followed.

Hard hats and safety glasses must be worn throughout this procedure.

This procedure requires working with springs under tension. Care must be taken, when disassembling parts, to ensure that explosive release of tensioned components is avoided.

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

1. Intacova Sheeting System - Removal of Sheet

WARNING
The Intacova arms must be in the fully retracted (fully forward) position prior to carrying out this procedure. Do not attempt disassembly unless the sheet roller is correctly stowed.

1) Ensure that the Intacova arms are in the fully retracted (fully forward) position and correctly stowed so that the roller is supported by the sheet tray at both ends.

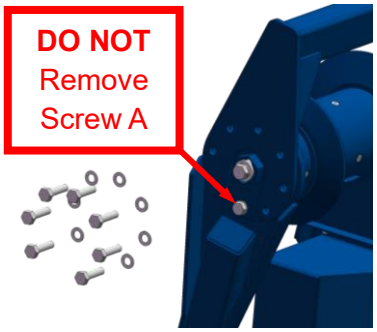
2) Remove the crossbar.

WARNING
The sheet roller spring tension is secured by a single set screw on each end of the roller. When removing the crossbar fixing screws ensure that this screw (Screw A below) is not disturbed.
The crossbar must be held in position whilst removing the screws. It is recommended that two people carry out this procedure, one to hold the crossbar whilst the fixing screws are removed.

2.1 On the vehicle nearside (left hand side) main arm undo and remove the set screws, nuts and washers holding the cross bar in place. DO NOT remove the tension securing screw (A), see right.

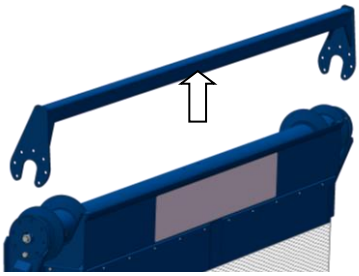
Note: Screw A does not secure the crossbar. It may be orientated differently from view on right. Make a note of actual orientation.

2.2 On the vehicle offside (right hand side) main arm undo and remove the set screws, nuts and washers holding the cross bar in place. DO NOT remove the tension securing screw (A), see right.



Note: Screw A does not secure the crossbar. It may be orientated differently from view on right. Make a note of actual orientation.

2.3 Remove the crossbar and set to one side.



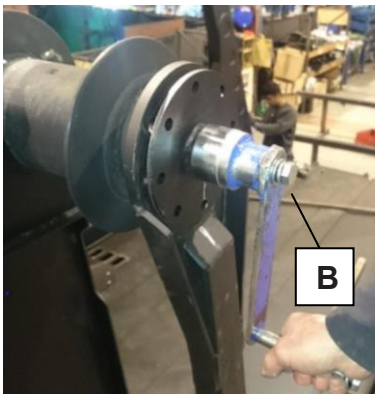
3) On the nearside main arm remove the set screw and washer securing the spring shaft anchor plate to the roller.

WARNING

DO NOT attempt to tension 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.

4) 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.

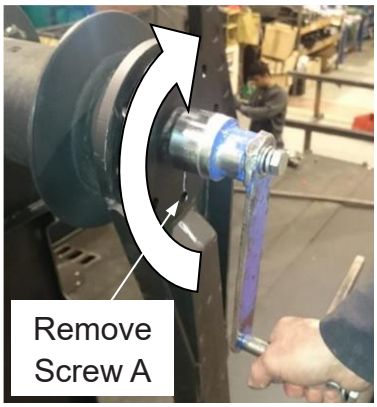


WARNING

The spring tension must be held, using the Boughton Engineering Limited spring tensioning tool, before the tension securing screw 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.

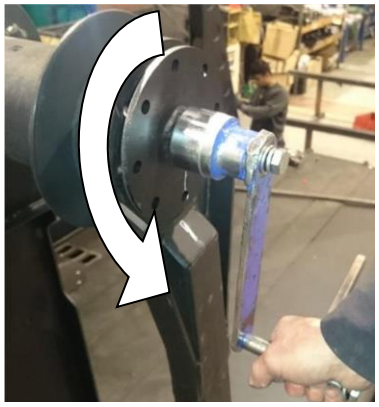
5) Rotate the tool **clockwise** until spring tension is held by the tool allowing removal of tension securing screw A.

The tensioning tool must be held at all times during this part of the procedure.



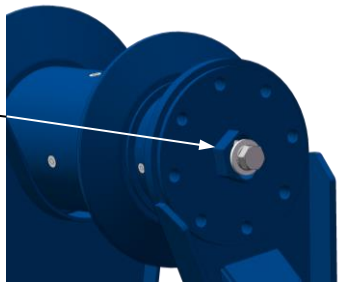
6) With the tension securing screw removed keep a secure hold on the tensioning tool handle and allow it to slowly rotate **anticlockwise** to release the tension in the spring.

Continue rotating until spring tension is eliminated.



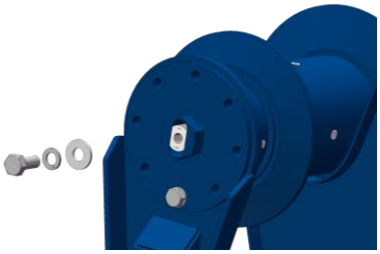
7) Remove the tensioning tool from the spring shaft anchor plate and refit the set screw and washers into the end of the spring shaft. Hand tighten only.

The set screw on the nearside **MUST** be fitted prior to continuing onto step 8.



WARNING
Do not remove the offside set screw, securing the spring shaft anchor plate to the spring shaft, unless the nearside set screw has been refitted. Failure to observe this instruction may result in the roller and sheet assembly detaching completely from the main arms.

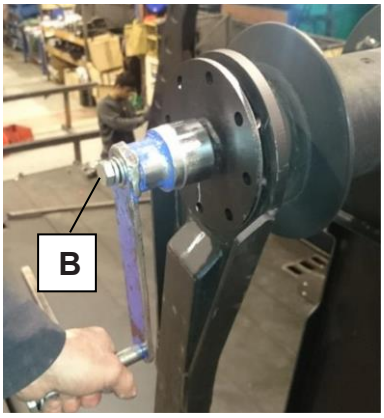
8) On the offside main arm remove the set screw and washer securing the spring shaft anchor plate to the roller.



WARNING
DO NOT attempt to tension 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.

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.

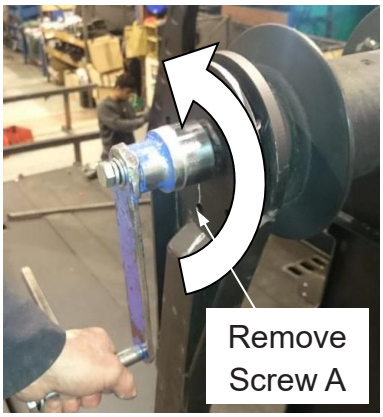


WARNING

The spring tension must be held, using the Boughton Engineering Limited spring tensioning tool, before the tension securing screw 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.

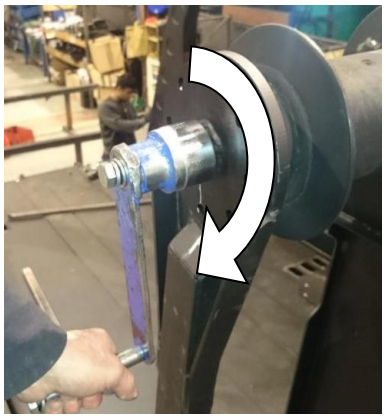
10) Rotate the tool **anticlockwise** until spring tension is held by the tool allowing removal of tension securing screw A.

The tensioning tool must be held at all times during this part of the procedure.



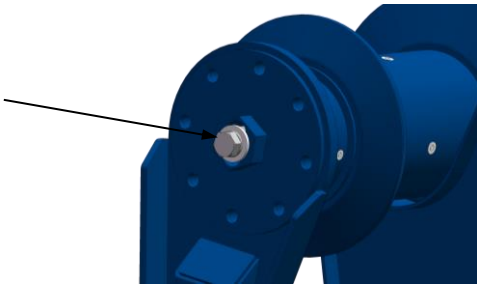
11) With the tension securing screw removed keep a secure hold on the tensioning tool handle and allow it to slowly rotate **clockwise** to release the tension in the spring.

Continue rotating until spring tension is eliminated.



12) Remove the tensioning tool from the spring shaft anchor plate and refit the set screw and washers into the end of the spring shaft. Hand tighten only.

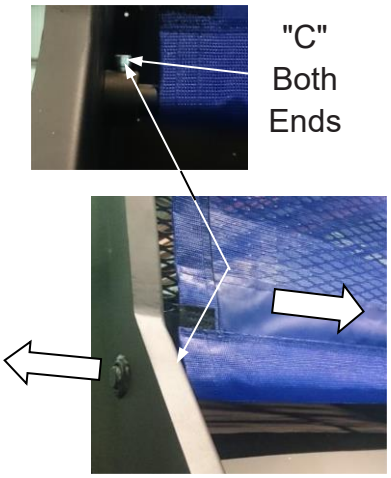
Check that the spring shaft anchor plate securing screws are fitted on both the nearside and offside before continuing on to step 13.



13) Remove the sheet anchor tube to release the bottom end of the sheet.

    The tube is held in position by socket head set screws, "C", which pass through the tube location bosses and clamp onto the tube.

    Slacken of the set screws and slide the bar out far enough to allow the sheet to be detached.



14) The old sheet can now be unrolled from the sheet roller.

15) When the sheet is fully unrolled the end secured to the sheet roller can be detached by sliding the ends towards the centre of the roller and removing from the sheet rails.

If it is intended to remove and replace the sheet roller follow the instructions in the next section, section 2. “Intacova Sheeting System – Roller Replacement”.

If the existing roller does not require replacement and a sheet is to be re-fitted, follow the instructions in section 3. “Intacova Sheeting System – Fitting New Sheet”.

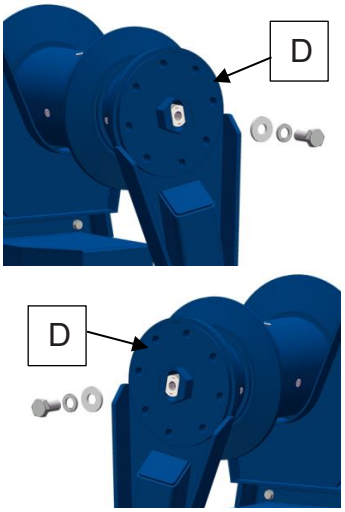
2. Intacova Sheeting System – Roller Replacement

If it is intended to replace the roller follow the procedure in section 1. "Intacova Sheeting System – Removal of Sheet".

With the sheet removed the following procedure should be followed to remove and replace the roller.

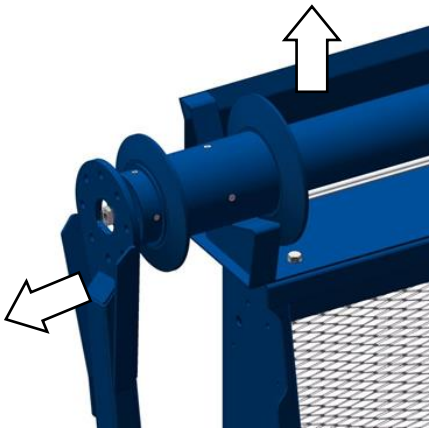
WARNING
The roller assembly is heavy and long. To carry out the removal and replacement process two people will be required to avoid the posibility of injury and/or damage to the equipment.

1) Remove the tension bolts and spring shaft anchor plate ("D") from both the offside and nearside of the vehicle. This procedure **MUST** be carried out by two people with one person at each end of the roller. The tension bolts should be hand tight ref. points 7) and 12) in the sheet removal instructions and when removed the spring shaft anchor plate will slide off the end of the spring shaft.

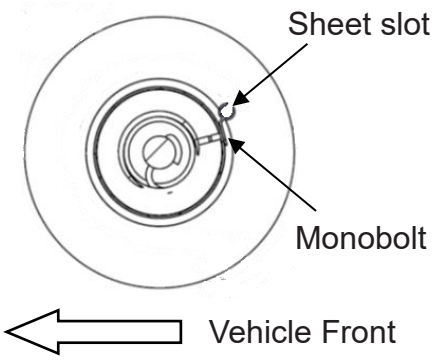


WARNING
With the two tension bolts and the roller assembly removed care must be taken to avoid leaning on the sheeting system arms. The arms could be forced inboard, if any load is exerted, and this may cause damage to the equipment.

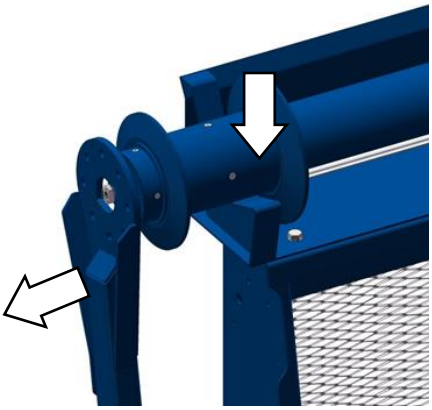
2) Remove the old roller assembly. This process should be carried out by two people, with one person at each end of the roller.
Pull the sheeting system main arms outwards, so that the they are just clear of the end of the spring shaft and lift the roller upwards until clear of the sheet tray.
Lift both sides of the roller, clear of the sheet tray, at the same time.
Allow the main arms to return to position after the roller is clear.



3) Prior to fitting the roller assembly check the orientation of the extrusions which secure the end of the sheet.
Viewed from the load bed of the vehicle and looking forward, with the extrusions at the back of the roller the monobolt fixings must be below the slot into which the sheet is fixed

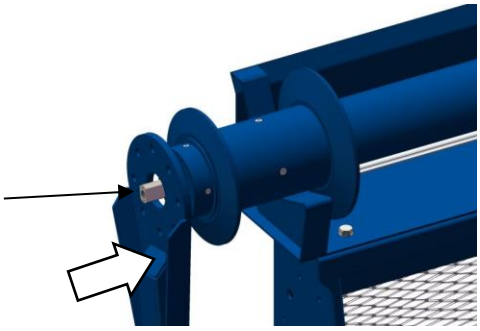


4) Fit the new roller assembly. This process should be carried out by two people, with one person at each end of the roller.
Pull the sheeting system main arms outwards, so that the they are just clear of the end of the spring shaft and lower the roller until it rests on the sheet tray.

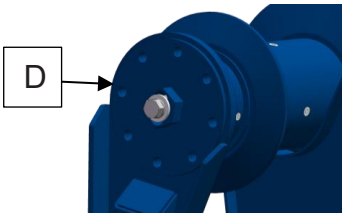


Lower both sides of the roller, onto the sheet tray, at the same time.

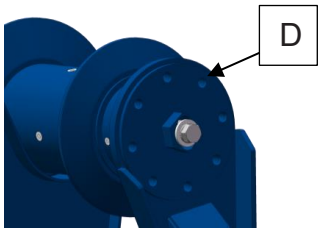
Allow the main arms to return to position, ensuring that the spring shaft passes through the centre hole in the main arm bolt plate.



5) Refit the spring shaft anchor plate “D”, set screw and washers into the end of the spring shaft. Hand tighten screw only.



Check that the spring shaft anchor plate and securing screws are fitted on both the nearside and offside before continuing.



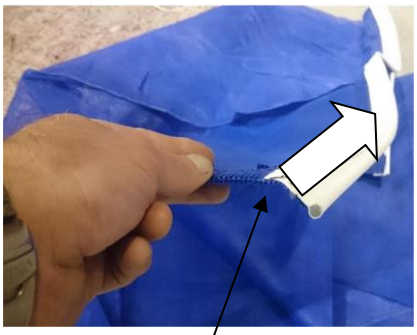
For instructions on fitting a new sheet onto the roller assembly refer to section 3. “Intacova Sheeting System – Fitting New Sheet”.

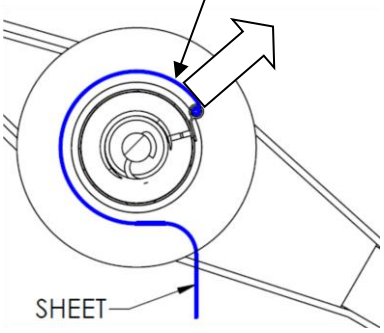
3. Intacova Sheeting System - Fitting New Sheet

1) Attach the new sheet to the sheet roller.

   The ends of the sheet must be slid onto the sheet rails.

   Slide each end of the sheet in from the centre of the roller ensuring that the sheet is routed correctly and sheet bead is on the upper face (see fig right).



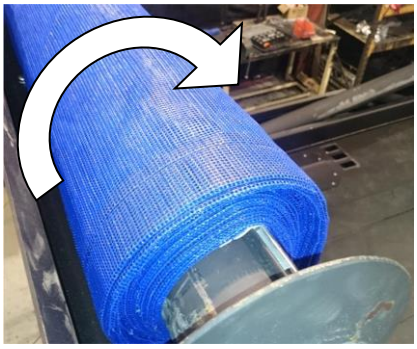


View From Left Hand Side

2) Roll the sheet onto the sheet roller.

   The roller can be rotated manually to allow the sheet to be rolled on.

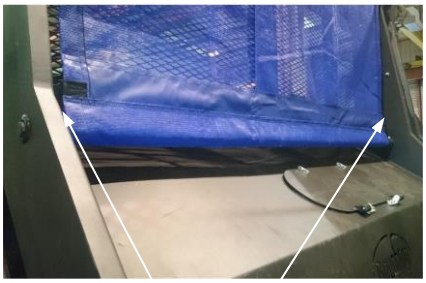
   Ensure that the sheet goes onto the roller squarely and does not go slack.



3) Before the sheet is completely rolled onto the roller the anchor tube should be refitted to secure the fixed end of the sheet.

   Ensure that the tube is passed through the pocket at the fixed end of the sheet and locates correctly in bosses.

   Secure by refitting the two socket head screws, "C", into the bosses and tightening them up onto the tube.

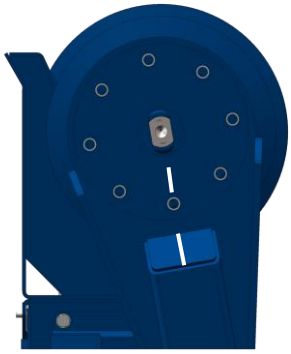


"C" Both Ends

4) Rotate the sheet roller to take out any slack in the sheet.

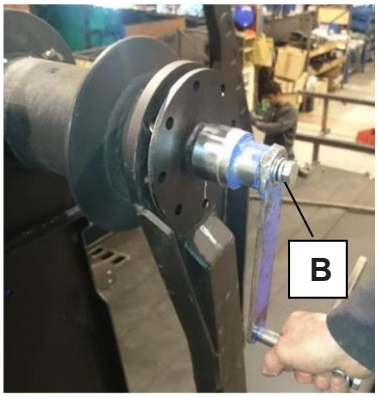
5) On the nearside main arm remove the set screw and washer securing the spring shaft anchor plate to the roller.

6) On the nearside main arm draw a chalk line parallel with the slot in the hexagonal boss on the spring anchor plate and on the top of the main arm box section, as shown in fig right.



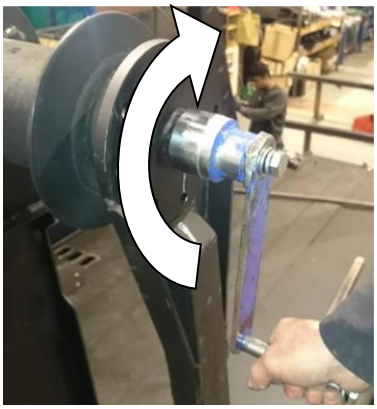
7) Install the Boughton Engineering Limited spring tensioning tool onto the hexagonal boss on the spring shaft anchor plate.

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



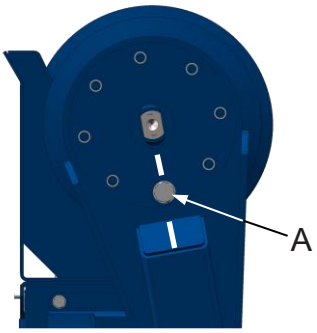
WARNING
When tensioning the spring DO NOT let go of the tensioning tool until the securing screw has been installed. If the tool is released, with tension in the spring, the tool will rotate at speed and can cause serious injury.

8) Turn the tensioning tool **clockwise** until resistance is felt i.e. the spring is starting to be tensioned, then rotate the tool 17 times in a **clockwise** direction ensuring that the tool is not released at any point.



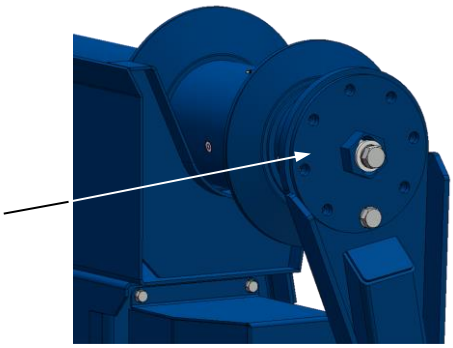
9) After completing the tensioning and before releasing the tool, align the two marks made in step 5.

Insert the tension securing screw A. The screw must be refitted into the same hole from which it was removed, as noted in "1. Sheeting System - Removal of Sheet" step 2.1.



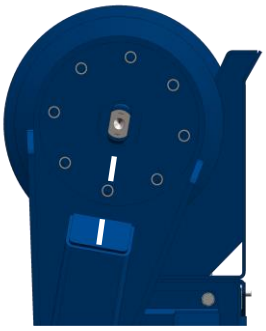
10) Prior to re-installing the securing screw, for the spring shaft anchor plate, apply thread lock.

Insert the set screw and washers into the end of the spring shaft and "nip" up. **DO NOT** over tighten.



11) On the offside main arm remove the set screw and washer securing the spring shaft anchor plate to the roller.

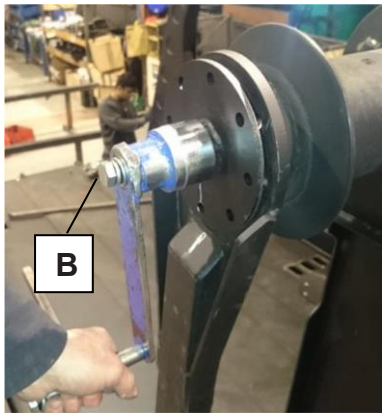
12) On the offside main arm draw a chalk line parallel with the slot in the hexagonal boss on the spring anchor plate and on the top of the main arm box section, as shown in fig right.



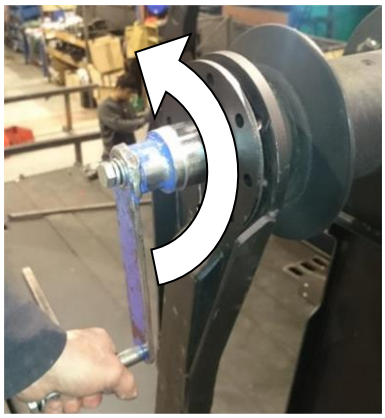
WARNING
When tensioning the spring DO NOT let go of the tensioning tool until the securing screw has been installed. If the tool is released, with tension in the spring, the tool will rotate at speed and can cause serious injury.

13) 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.

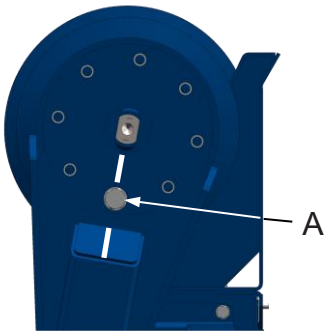


14) Turn the tensioning tool **anticlockwise** until resistance is felt i.e. the spring is starting to be tensioned, then rotate the tool 17 times in an **anticlockwise** direction ensuring that the tool is not released at any point.



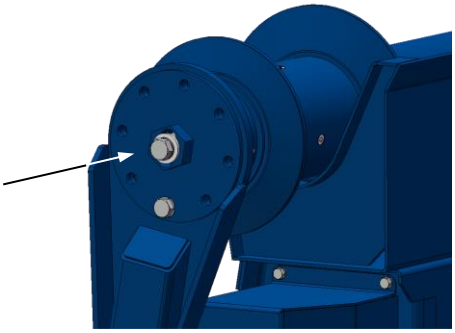
15) After completing the tensioning and before releasing the tool, align the two marks made in step 12.

Insert the tension securing screw A. The screw must be refitted into the same hole from which it was removed, as noted in "1. Sheeting System - Removal of Sheet" step 2.2.

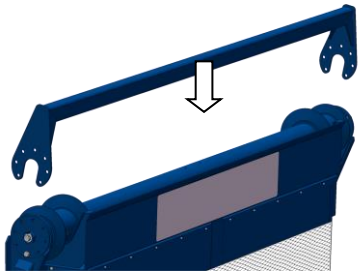


16) Prior to re-installing the securing screw for the spring shaft anchor plate apply thread lock.

Insert the set screw and washers into the end of the spring shaft and "nip" up. **DO NOT** over tighten.

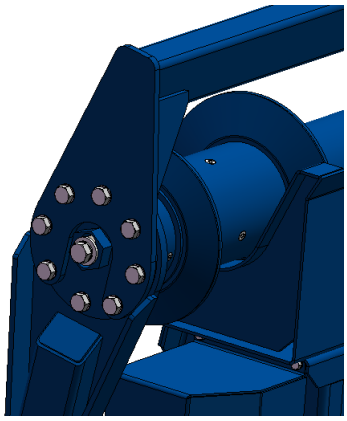


17) Reposition the crossbar.



18) Re-fit the screws washers and nuts to secure the crossbar to the main arms.

    Ensure that all screws are fitted (7-off each side) and torque to 50 Nm



On completion of this procedure and before putting the vehicle back into service, the equipment **MUST** be checked to ensure that the sheeting system works correctly.,

Operate the equipment and check that the sheet unfurls evenly when the main arms are rotated toward the rear and that the system does not twist.

When the main arms are rotated back to the forward (stowed position) check that they return evenly and that the sheet is pulled tightly onto the roller throughout the stowage sequence.

Further Information

For further information or assistance in operating the Boughton Engineering Limited Skiploader and Intacova Sheeting System contact:-

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