

BACKEASE 600

Operators Manual

Installation, Safety, Operation, Maintenance, Guarantee.

Read these instructions fully before installing or operating
the BACKEASE 600.

Manufactured by
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Important Notice:

As the installation and operation of this crane is beyond the control of the manufacturer and/or its agents, the manufacturer and/or its agent's shall in no circumstances be liable for any loss, damage or injury of any kind whatsoever and howsoever caused or occasioned to property or persons resulting from the installation or use of this crane.

The following components are supplied

1	Hoist Boom Post
1	Hoist Base
1	Lifting Hook
1	Power Pack Bracket
1	0.5m Earth Cable (black)
1	3.5m Battery Cable (red)
1	2.5m Hydraulic Hose + Nipple
1	Hoist Boom + pins and R clips
1	Hoist Cylinder with pins, clips, Breather, Elbow fitting and Hose Burst Valve
6	½" X 2" bolts, flat & spring washers & nuts
1	Boom Storage Bracket inc Mounting Plate
2	⅜" X 1" B & N + spring washer + flat washer
1	⅜" X 2½" B & N + spring washer + flat washer
2	10mm x 20mm bolt + spring washer + flat washer
3	Hoist Support Leg Bracket
1	⅜" X 3" bolt + nyloc nut
1	Hoist Support Leg
1	Power Pack inc fittings
1	Remote Hand Control
6	Cable Ties

Tool Requirements:

Electric hand drill	7/16" and 9/16" HSS drill bits
Marking pen	Open ended spanners and shifting spanner
Hack saw	Funnel
3.5 litres of hydraulic oil Castrol Hyspin AWS32 (approximate)	

Installation Instructions: Installation takes 2 to 3 hours.

1. Position the hoist base on the corner of the tray with the sides against the cabguard and along the tray edge. Fit the Hoist Boom Post to the base, check that the base does not foul the tray dropsides or that the cab guard does not interfere with the rotation of the boom post.
2. For maximum strength the base must be bolted to the tray frame or bearers. Steel trays are usually fully welded to the frame and the base can be bolted to the tray floor adjacent to the frame. With aluminium tray, or steel framed timber-floored tray, the base should be bolted to the frame or bearers. Alternatively, use lengths of 50 mm x 10mm flat steel bar or similar (not supplied) drilling to suit and installed under the tray floor as a spreader. This will ensure that the loaded crane will not pull bolts through the floor.
3. With the base in position, mark the tray through each of the six boltholes.
4. At each marked point, drill a 9/16" hole through the tray and / or frame or bearers.

5. Bolt the base to the tray using the six ½" x 2" bolts, flat and spring washers and nuts.
 6. Position the boom lugs on the closed end of the boom either side of the top of the boom post on the same side as the ram mounting lug and insert the pin.
 7. Position the lugs of the ram on either side of the lug on the boom post and insert the 1" pin. Push the retaining clip home. Position the rod end clevis of the cylinder to the boom in the same way. The ram ports should be on the topside of the ram.
 8. Secure the lifting hook to the boom with the pin. Push the retaining clip home.
 9. The power unit is the best installed under the tray so that load space is not reduced and the unit is protected from damage. On most vehicles the unit is installed under the front end of the tray on the same side as the base.
In choosing a position these points should be observed:
 - a) The reservoir end of the unit extends further from its mounting bracket than does its motor. When space is limited, rotating the unit and bracket may improve installation.
 - b) The unit and bracket should clear any extreme movement of the vehicle drive shaft and suspension.
 - c) The unit should be level and accessible for servicing (i.e. oil top-up). Some access difficulty is to be expected.
 - d) The position should not require excessively long lengths of hydraulic hose or power cable.
 - e) The mounting bracket can be adjusted by light bending to suit different spacings between tray bearers.
 10. With the mounting bracket in position mark the tray bearers through each of the end four holes.
 11. At each of the marked points drill a 7/16" hole through the bearer.
 12. Do steps 13 to 19 *before* installing the bracket under the tray
 13. To prevent unauthorised use of the crane the handset control should be located inside the vehicle cab. Locate a suitable rubber grommet in the cab wall behind the driver's seat and pass the control cable through the grommet. Route the control cable from the cab to where the power unit is to be installed ensuring that the control cable is protected from damage.
 14. Remove the plastic plug from the power unit pump and screw in the hydraulic nipple fitting. Connect the elbow end of the hydraulic hose and check connections for tightness.
 15. Bolt the power unit to the mounting bracket with the two 10mm bolts, flat & spring washers. Through the bottom of the bracket into the base of the pump.
 16. Fill the oil reservoir with 2.2 litres of hydraulic oil.
- Important:** For steps 17 and 20 study illustration 1.
17. For 12 Volt and 24 Volt power units:
 - (a) Remove the large nut and washer from the terminal on the side of the Start Solenoid, attach both the red wire from the Remote Hand Control and one end of the red 3.5 metre power cable, replace the washer and nut.
 - (b) Attach the black wire from the Remote Hand Control to red wire coming from the lowering solenoid using connector supplied.
 - (c) Attach the green wire from the Remote Hand Control to the small terminal on the Start Solenoid.
 18. Bolt the mounting bracket to the bearers or some suitable position.
 19. Route the power cable from the power unit, forward under the tray, along a suitable path under the cab and up to the vehicle battery, ensuring that it is protected from any damage (e.g. chaffing burning on engine manifolds). Use cable ties to retain as required.
 20. Attach the earth strap to the negative post on DC motor, as in illustration 1. Attach the other end of the earth strap to the vehicle chassis. The pump must be earthed to the

vehicle chassis through good metal to metal contact. The vehicle chassis must be earthed to the vehicle battery. If the chassis is not earthed to the battery the power pack will try to earth through the vehicle wiring, causing damage to that wiring.

21. Route the hydraulic hose from power pack unit, forward under the tray and up between the cab and cabguard to the hydraulic ram.

Important: Ensure that the routing of the hose is such that when the crane is rotated and/or the boom is raised and lowered to its extremes the hose is neither kinked, stressed nor fouled by the tray, the cab, the cabguard or any of the crane components. To prevent chaffing or damage, surplus hose should be secured with cable ties (or similar) where possible.

22. To fit the Boom Storage Bracket. See illustration 3.
First position the boom, (height and extension) against the cab guard in the position it is to be stored in. The mounting plate should be attached to the cab guard vertically with the centre of the plate lining up with the pin retaining the hook on the end of the boom. The height of the mounting plate should be such that the storage bracket can be bolted to it with the boom resting in the storage bracket. Ensure that the pin on the boom rests in the centre of the vee, the hook should slide between the mounting plate and the storage bracket. The boom storage bracket must be used in conjunction with the slew lock pin to keep the boom secure during transport.
23. Adjusting the support leg. See illustration 4.
With the vehicle on level ground place the support leg against the bracket. Mark leg with a pencil at the hole level. Add 25mm above that mark and drill a $\frac{3}{8}$ " hole through the leg, parallel to the footplate. Cut as illustrated. Bolt the leg to the bracket.
24. When satisfied that the crane has been installed in accordance with these instructions and diagrams, ensure all bolts are tensioned, and all electrical and hydraulic connections are correct and sound.
25. Connect the power cable to the positive (+) terminal on the battery.

Read Safety Instructions before Operating

Safety instructions:

- Lifting more than the SWL (Illustration 2) may result in serious personal injury and permanent damage to the crane.
- Always use the Support leg when lifting loads.
- Always use the Slew Lock when lifting loads.
- Use the crane only when the vehicle is on level ground. Use of the crane when the vehicle is not level may cause the suspended load to slew dangerously out of control.
- When practical and safe to do so, steady suspended load with one hand, whilst holding the remote toggle in the other hand. Never stand under suspended load or raised boom.
- Do not move the vehicle with the boom raised or the load suspended.
- Secure the load to the vehicle. Do not rely on the lifting hook or the lowered boom to retain loads on a moving vehicle.
- When the vehicle is left unattended, lock the remote toggle inside vehicle cab to prevent unauthorised use.
- Do not allow minors to operate the crane.
- Inspect crane components (hydraulic hose in particular) and installation regularly to check for wear, loosening of bolts etc. or damage. Replace any worn or damaged parts immediately.
- Always store boom securely using the Slew Lock and the Boom Storage Bracket and store the Support Leg in the vehicle when not in use.

Operating:

The boom can be raised and lowered by using the Remote Hand Control. The boom is raised by the pump generating hydraulic pressure and is lowered by the activation of the lowering solenoid allowing the weight of the boom and load to force oil out of the ram and back to the reservoir at a regulated rate.

It is normal for the initial crane action to be "spongy". This is due to trapped air introduced into the system by the hose, fittings and ram. The sponginess will disappear after several raising and lowering actions. When sponginess has disappeared check oil level.

Maintenance Instructions: Maintenance recommended at least every time the vehicle is serviced.

1. Never operate crane with insufficient or unsuitable oil. Check oil level when the boom is lowered. Overfilling of the reservoir is unlikely to cause damage but will lead to loss of excess oil. Check quality of oil.
2. Check integrity of all electrical connections. Check routing of and condition of control cable, power and earthing cables. Ensure there is no chafing or rubbing through on any cables as damaged cables can cause serious damage and even uncontrolled lifting of boom.
3. Check routing of and condition of hydraulic hose.
4. Check condition of lifting hook and lifting hook pin and retaining clip regularly.
5. Grease collar at top of crane base unit. Boom post can be lifted right out to grease if required.
6. Check all mounting bolts are securely tightened.
7. Small squirt of oil into cylinder breather to lubricate dry end of cylinder.

Trouble Shooting:

If the crane has been installed in accordance with these instructions and illustrations then it will provide many years of satisfactory service. If the crane does not function correctly check the following points.

Symptom:	Crane will not operate.
Cause	no oil
Remedy	fill reservoir with hydraulic oil.
Cause	faulty electrical connections.
Remedy	check electrical connections to battery. check that power unit/tray is earthed to chassis check electrical connections to the power unit. rectify faulty connections.
Symptom:	Crane will not lower after being partially raised.
Cause	Lowering solenoid not operating correctly.
Remedy	Check wiring to lowering solenoid. If okay, listen for a click from the solenoid as you press and release toggle switch to down position. If there is no click then the solenoid may not be operating. Contact manufacturer.
Symptom:	Crane lowers from partially raised position but will not lower from fully raised position i.e. - jams at top.
Cause	The Hose Burst Valve has locked shut due to back pressure in the hydraulic circuit. Given time it will release. If the problem reoccurs contact the manufacturer.
Symptom:	Crane ceases to operate. Vehicle taillights cease to function.
Cause	Power unit is not separately earthed to chassis. (Temporary earthing was possibly achieved through tail light wiring).
Remedy	Earth power unit to chassis with earthing cable supplied. Check taillight wiring for damage. Replace lighting fuse if blown.

Guarantee:

1. Subject to and in accordance with the provisions of this Guarantee Heiniger Australia (the "Company") warrants the crane against defects in materials and manufacture for a period for twelve (12) months from the date of purchase.
2. In the event of a defect occurring within the Guarantee period which prevents the designed or safe use of the crane the Company or its nominated representative (its "Agent") will repair or make good the defect or, at the Company's option, replace same free of charge, provided the defective component is delivered to the Company or at the direction of the Company to its Agent, freight to your account and prepaid both ways by you.
3. This Guarantee shall only apply where the crane has been installed, operated and maintained in accordance with the instructions and diagrams provided by the Company.
4. This Guarantee does not extend to or cover any part of the crane which in the opinion of the Company is worn by fair wear and tear or has been damaged or rendered defective by wilful act, abuse, misuse, negligence, inadequate or improper care or the reliability or condition of which has been affected by any alteration or repair carried out other than by the company or at the direction of the Company by its Agent.
5. No employee or Agent of the Company shall have the authority to add to or alter any of the provisions of this Guarantee.
6. This Guarantee is issued only to the initial retail purchaser of the crane and is not transferable or assignable.
7. This Guarantee shall be read and construed as being subject to the provisions of any applicable Federal and/or State Consumer Protection Legislation from time to time, with the intent and purpose that the provisions hereof shall be read and construed in such a manner and will be modified to such extent as may be necessary to ensure the provisions hereof do not breach any such legislation as aforesaid.
8. Save as aforesaid the Company, its employees or Agents shall in no circumstances be liable for any loss damage or injury of any kind whatsoever caused or occasioned to property or persons. In no event shall the liability of the Company, its employees or Agents ever exceed in total the amount of the purchase price of the crane paid by you.

illustration 1

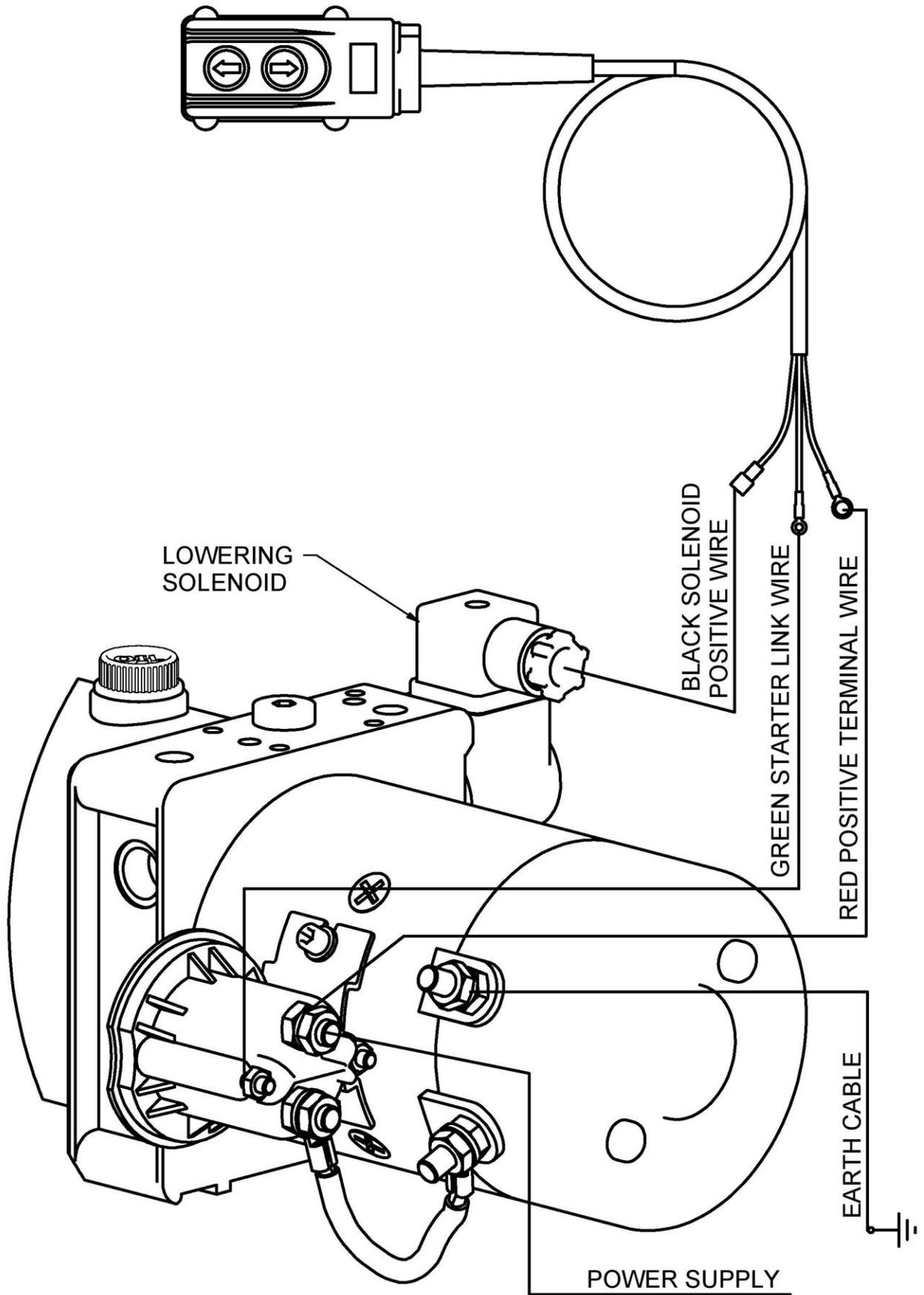
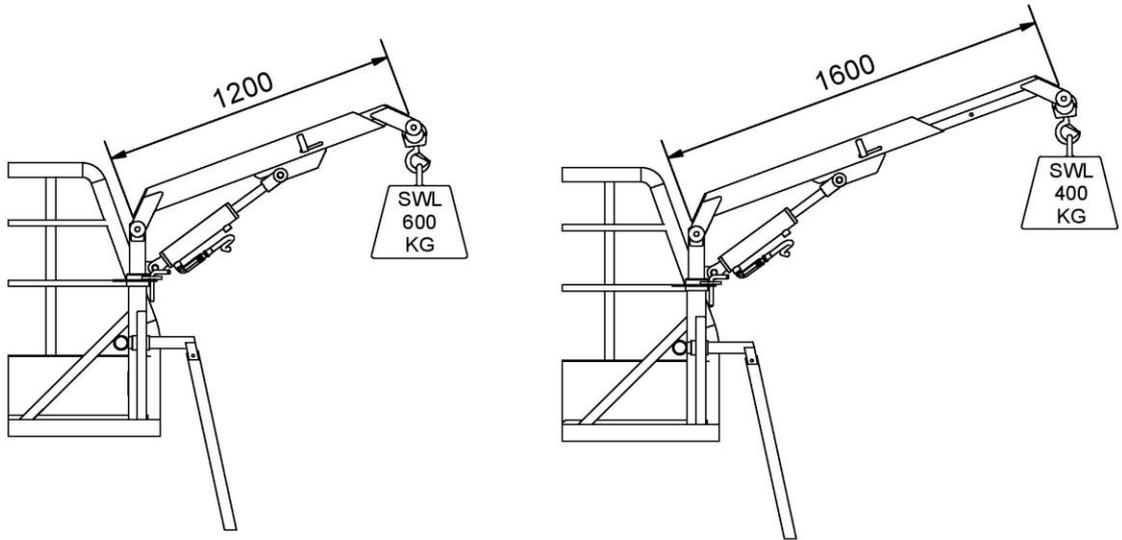


illustration 2



Extension Boom SWL				
Length (m)	1.8	1.6	1.4	1.2
Kgs	300	400	500	600
Lift Above Tray (mm)	2160	2160	1865	1720

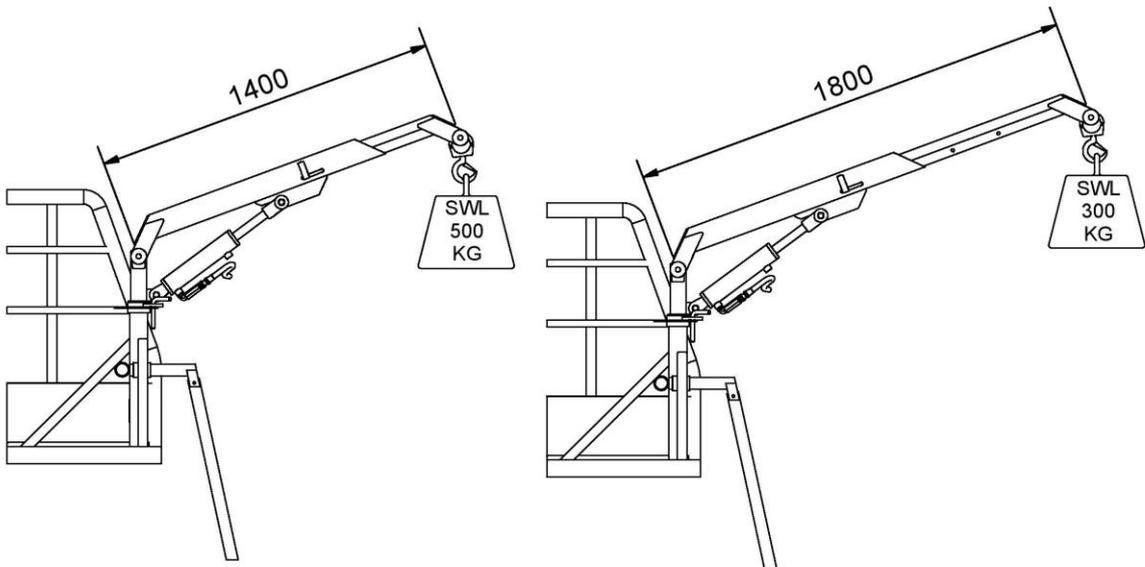


illustration 3

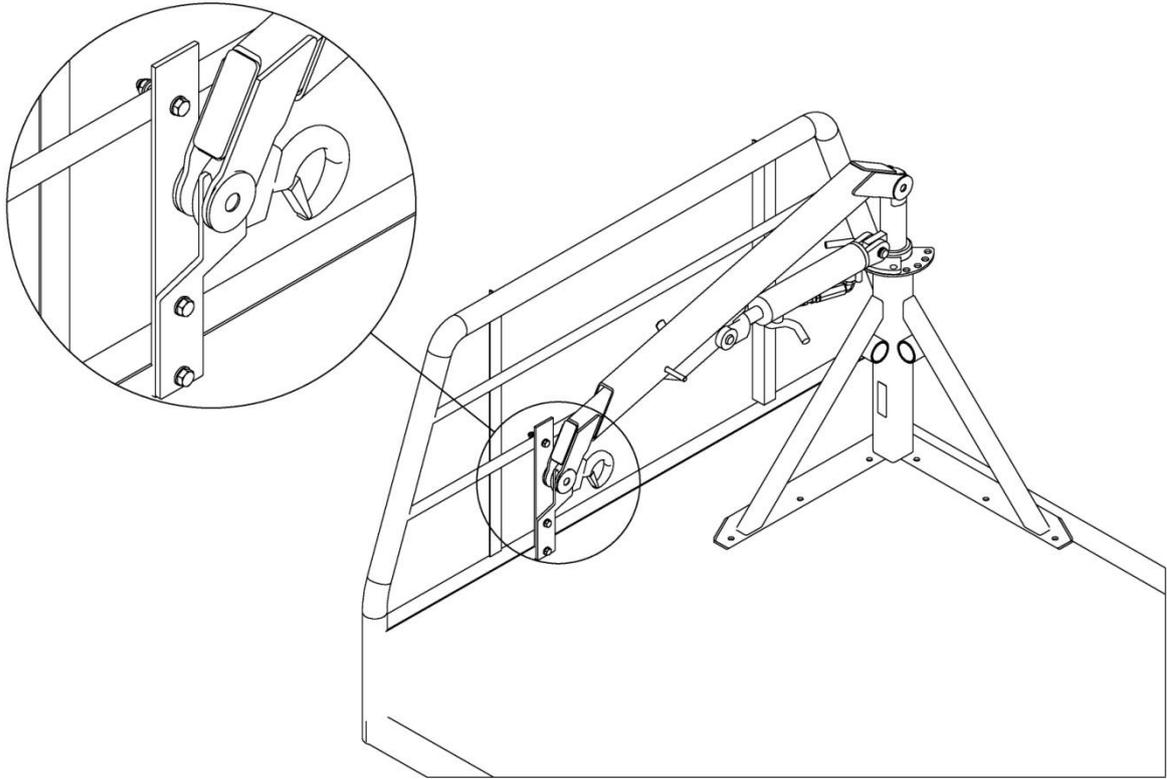


illustration 4

