

## FAULT FINDING

| Problem   | Possible Causes  | Corrective Action  |
|---|--|--|
| 1<br>The Tipper fails to operate  | a) Pendant switch controller not plugged in correctly.<br>b) Pendant switch controller faulty / damaged<br>c) No electrical power (1)<br>d) No electrical power (2)<br>e) Start solenoid defective                                     | Re- plug in<br><br>Check/replace<br><br>Check the battery/ re-charge<br>Check all electrical connections and cables.<br>Check for any short circuit conditions and check start solenoid.                                 |
| 2<br>The Tipper electric motor fails to operate, but a click can be heard initially | a) Bad/ loose connection<br>b) Electric drive motor defective  | Check all electrical connections and cables.<br>Check electric motor.  |
| 3<br>The electric drive motor runs but the Tipper fails to rise.                    | a) Tipper overloaded.<br>b) Oil leak<br><br>c) Insufficient hydraulic oil in the reservoir.<br>d) Check manual lowering valve is closed<br>e) Faulty lowering solenoid valve<br>f) Hydraulic pump defective<br>g) Pump suction blocked | Reduce load.<br>Check all connections, hose and power pack.<br>Fill the reservoir to the correct level.<br>Close valve<br><br>Clean / check/ replace<br>Check<br>Remove tank clean filter re-fit tank fill with new oil. |
| 4<br>Hydraulic oil sprays from the reservoir when the Tipper is lowered             | a) Reservoir over filled<br>b) Reservoir punctured.  | Fill reservoir to correct level<br>Check/ replace  |
| 5<br>Tipper lowers when the hydraulic pump stops                                    | a) Oil leak<br>b) Defective check (non -return) valve.<br>c) Defective lowering solenoid valve.  | Check all connections, hose and power pack.<br>Check/ replace<br>Check/ replace  |
| 6<br>Tipper only rises partially  | a) Ground not level<br>b) Tipper loaded unevenly.<br>c) Insufficient oil in the reservoir  | Tip when Tipper trailer is on level ground.<br>Redistribute the load.<br>Fill the reservoir to the correct level.  |
| 7<br>Tipper will not lower  | a) Pendant switch controller not unplugged in correctly.<br><br>b) Pendant switch controller faulty / damaged<br>c) Defective lowering solenoid valve.   | Re- plug in<br><br>Check/replace<br>Check/replace  |

## TIPPER TRAILERS

### ADDITIONAL SAFETY / MAINTENANCE INFORMATION



This manual contains the information required to ensure safe operation and correct maintenance of the Tipper trailer. Before using the trailer read these instructions carefully to ensure familiarity with the Tipper controls and operating limitations. In the unlikely event of an operational problem being encountered, a diagnostic problem- solving table is included.



## **Introduction**

The tipper consists of the following:

- ❖ Trailer base.
- ❖ Tipper body.
- ❖ Hydraulic system.
- ❖ Control system.

**The Trailer base:** Constructed of structural welded steel, with heavy duty rubber torsion axles, provision for skid/ ramp option storage, road legal lighting & braking system.

**The Tipper body:** Constructed of structural welded steel with ample load lashing points, the floor comprises of an 18mm phenol high density plywood base with a one piece aluminium cladding. The body is fitted with heavy-duty Chequer plate steel: - headboard, tailboard (With top & bottom pivoting options) & sides.

**The Hydraulic system:** The three stage hydraulic ram's lower pivot point is housed in a 'bolt on' sub- frame constructed of structural welded steel mounted within the trailer base. The ram is connected to the Power Pack which is a combined hydraulic pump and oil reservoir by a hydraulic hose. The Power Pack sits on the trailer base's 'A'- frame behind a protective cowl. In the unlikely even of a hydraulic line failure the ram incorporates an Anti-Bust valve which would control the rate of descent of a laden load. Power is provided to the hydraulic pump's electric motor by a heavy duty 12v battery mounted on the aforementioned sub- frame.

**The Control system:** Is a pendant control switch with a wander lead of suitable length, which plugs into the power pack enabling the tipping operation to be monitored and controlled safely from the side of the towing vehicle. The pendant control switch is unplugged when not in use to isolate the power pack to prevent inadvertent use and should be locked away in the towing vehicle cab to prevent unapproved use.

**The Towing Vehicle:** All references to the Towing Vehicle\* are deemed to mean a vehicle which the vehicle manufacturer states is suitable for towing a trailer of this plated gross mass. For specific details contact the towing vehicle manufacturer or dealer.

## **Cleaning**

- a) Do not spray a power washer jet or hose pipe directly on the power pack and in particular the black plastic cover (Electric motor cover).
- b) Do not clean with solvents. Only water & car body soaps / shampoos.

## **Recommended Weekly Maintenance**

- a) **Hydraulic oil:** - With the Tipper fully lowered check that level of the oil is at the maximum level of the decal. If the level is low top up to the recommended level using Valvoline Ultramax HLP 32 or an equivalent mineral based hydraulic oil with a viscosity of SAE10-20w (ISO 32).
- b) **Visual Inspection:** - Carry out a visual inspection of the hydraulic hose, hydraulic ram and power pack for signs of leakage. Inspect all electrical cables and fittings and the Trailer structure for general damage.
- c) **Battery:** - The battery may require re-charging if it has been used, recharge at no more than 9.5 amps until it reaches trickle charge or until the voltage across the terminals is approximately 12.6 volts on a new battery. This can be done with the battery clamped in the chassis and the battery cables connected provided the pendent switch controller is unplugged from the power pack cowl socket.

If the Tipper trailer does not operate smoothly, or it's performance appears reduced or you have any concerns at all take it to a Tipper trailer specialist for further investigation.

## **Recommended Bi-Monthly Maintenance**

(To be carried out in addition to weekly maintenance)

- a) **Battery:** - The battery will require re-charging until it reaches trickle charge or until the voltage across the terminals is approximately 12.6 volts on a new battery. This can be done with the battery clamped in the chassis and the battery cables connected provided the pendent switch controller is unplugged from the power pack cowl socket.
- b) **Visual Inspection:** - Visually inspect the hydraulic ram pivots and rear tipper body pivots ensuring they are free from foreign objects and that they are not damaged.

## **Recommended 12 Monthly Maintenance**

(To be carried out in addition to the bi-monthly maintenance)

- a) **Visual Inspection:** - Carry out a visual inspection of the entire trailer and check the correct functioning of all moving parts.

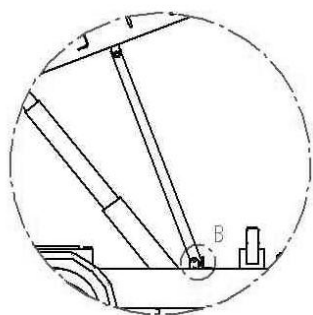
## Maintenance and Servicing

It the Tipper body needs to be raised for carrying out maintenance activities it must be correctly supported using the integral Tipper body prop provided only when **fully un-laden**.

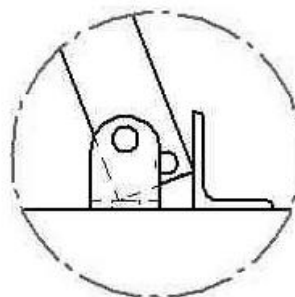
- 1) See safety information.
- 2) Raise the Tipper fully.
- 3) Unclip the prop, swing it forward and hold it above the chassis mounted bracket.
- 4) Lower the Tipper body until the prop is fully seated in the bracket see figures (1 & 2) below.
- 5) Unplug the pendant control switch and store safely away.

It is now safe for a competent person to carry out maintenance activities beneath the Tipper body. On completion of the maintenance activity:

- 6) Plug in the pendant control switch to the power pack socket mounted to the side of the cowl.
- 7) Raise the Tipper body fully.
- 8) Stow the Tipper body prop.
- 9) Lower the Tipper body.
- 10) When the Tipper body is fully lowered sitting on the rubber buffers/pads unplug the pendant control switch stow safely away.



**Figure 1**



DETAIL B

**Figure 2**

## **Safety Advice**

- The area beneath a raised Tipper must be kept clear of personnel at all times unless the Tipper body is completely **un-laden** & correctly supported using the integral prop supplied.
- Do not stand or allow other people to stand at the back or front of the trailer during tipping.
- Although the trailer can be safely tipped free standing with the trailer handbrake on, on flat level firm concrete surfaces with our standard jockey wheel down and optional heavy duty rear props / jacks it is **strongly recommended** that the trailer remains coupled for road legal towing (Jockey wheel clear of the ground) to a suitable towing vehicle\* during all tipping operations whether with or without the aforementioned rear props/ jacks.
- Do not operate the Tipper when parked on loose or uneven surfaces.
- Ensure the towing vehicle handbrake is fully applied before tipping or loading the trailer.
- Evenly distribute load on the Tipper trailer.
- Never exceed the permitted load.
- Check for overhead obstructions, especially **Power Cables** prior to raising the Tipper.
- Always ensure that the intended tip site is clear before commencing the tip.
- Always tow the trailer with the Tipper body in the fully lowered position sitting on the rubber buffers.
- Do not operate the Tipper in strong/gusting wind conditions.
- On completion of a tip ensure the body is fully lowered and isolated by unplugging the pendant controller from the trailer.
- Only tip suitable loads e.g. aggregates etc.
- Only use the optional ramps / skids with rear props/ jacks when the Tipper in the fully lowered position sitting on the rubber buffers and never attempt to operate the tipping function.
- The oil in hydraulic system may constitute a fire hazard if the oil contacts a hot vehicle exhaust and should be kept away from all hot surfaces in general.

## **Loading the Tipper trailer with a load to be tipped**

- 1) See safety information.
- 2) Ensure that the trailer is coupled to a suitable towing vehicle\* with the vehicle's handbrake fully on.
- 3) If optional rear props/ jacks are to be used adjust them evenly to just touch the ground.
- 4) Prior to loading ensure the tipper is fully lowered sitting on the rubber buffers/ pads.
- 5) Ensure that the sideboards and tail board/ gate are closed and securely latched.
- 6) To prevent unnecessary damage always load bulk materials e.g. sand ballast from the lowest practical height.
- 7) Avoid dropping large items such as rocks, demolition debris etc. onto the Tipper bed.
- 8) Ensure that the load is uniformly distributed across the Tipper body.
- 9) After loading, retract the rear props / jacks (if used) and reposition the removable pin to store them approximately parallel to the ground.

## **Un-loading the Tipper trailer with a load to be tipped**

- 1) See safety information.
- 2) Ensure that the trailer is coupled to a suitable towing vehicle\* before commencing tipping with the vehicle's handbrake fully on.
- 3) If optional rear props/ jacks are to be used adjust them evenly to just touch the ground before beginning the tip.
- 4) Decide whether a 'Tip-thru' operation is required thus removing only the two lower /bottom lynch pins of the rear tailboard or release only the two upper/ top lynch pins of the rear tailboard to lower it by hand by pivoting about the bottom pivot.
- 5) Plug in the pendant control switch to the power pack socket mounted to the side of the cowl.
- 6) Press and hold the up direction button to raise the tipper body on the pendant switch. Releasing the button will immediately stop the tipping operation.
- 7) As the tipping angle increases ensure that the load leaves the Tipper smoothly and not restricted in any way.
- 8) The Tipper's hydraulic ram will stop when reaches the end of it's travel at the maximum angle of elevation release the pendant up button at this point to avoid unnecessary operation of the power pack's pump.
- 9) It may be necessary to move the towing vehicle and trailer slightly forward after tipping, but first unplug the pendant control switch, check for overhead obstructions, check that any rear props/jacks are clear of the ground then move forward a sufficient distance slowly to allow the tipped load to clear.
- 10) Re-plug in the pendant control switch to the power pack socket mounted to the side of the cowl.
- 11) To lower the Tipper body press and hold the down direction button on the pendant switch. Releasing the button will immediately stop the lowering operation.
- 12) When the Tipper body is fully lowered sitting on the rubber buffers/ pads unplug the pendant control switch and stow safely away in the towing vehicle.
- 13) Ensure that the sideboards and tail board/ gate are closed and securely latched.
- 14) If used retract the rear props / jacks and reposition the removable pin to store them approximately parallel to the ground.