CE
98/37/CE

RANGER TIPPER

Instruction Manual

Revision 1.0 August 2007

Models Covered: Ranger J97U Regular Cab 4x4

Body Type: J97U 1WT 07 - UKRARP002

August 2007 – on

This manual to remain with the vehicle at all times.

Read and understand this manual before attempting to operate the Tipper.

Preface

This Tipper Instruction Manual will familiarise you with the handling of the vehicle and provide details on safe every day operating procedures, advice and general care.

Regular inspection and servicing of the Tipper is mandatory to ensure its roadworthiness, safety and resale value. This manual is essential daily reference material and should be kept safe and with the vehicle at all times.

Warranty:
Full warranty for parts and workmanship for one year from date of vehicle registration, on all parts associated with the Tipper body conversion. Warranty is only valid if the Tipper is operated in accordance with the Instruction Manual and current Road Traffic Act Legislation.

Pass on this instruction manual when you resell the vehicle. It is an integral part of the vehicle.

Safety First!

WARNING
Tipping is a potentially hazardous operation. It is essential that all Operators fully understand this Manual and the Controls found on the vehicle before attempting to use this vehicle. All Health and Safety legislation must be strictly applied. UK Construction & Use Regulations must be observed when operating the vehicle on the public highway. The unladen dB level when operating the tipper is 90dB.

Before commencing Tipping operation ensure the vehicles radio is turned off.

The basis for Health and Safety law in the UK is the Health and Safety at Work Act 1974 and its amendments. However certain EU Law is now applicable; all of which must be complied with before, during and after the use of this vehicle and the Tipper bodywork supplied with it. The Tipper bodywork supplied with this vehicle is recognised as a machine, therefore Health and Safety legislation applicable to machinery must be recognised in addition to general Health and Safety law.

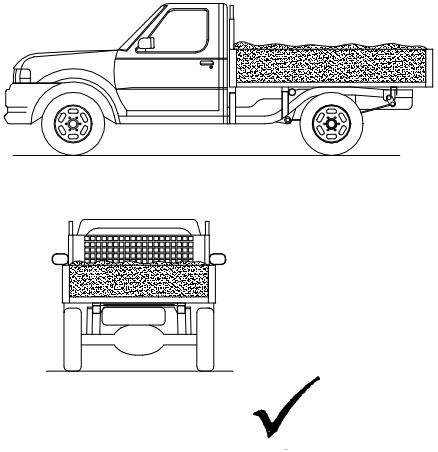
It is the responsibility of the Driver, Owner and/or Operator to establish what Health and Safety legislation applies when using this vehicle and that only persons trained and qualified in line with that legislation be allowed to use this machine.

Depending on the circumstances and the territory that the vehicle is being used, other legislation may apply. Always check that existing legislation has not been updated or superseded, and whether new legislation has been introduced.

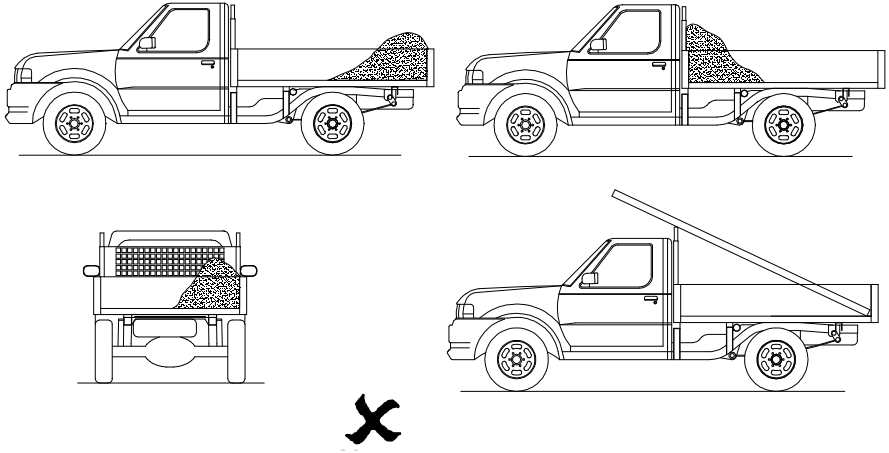
Loading the Tipper

- Prior to loading ensure that the Tipper is fully lowered.
- Ensure that the sideboards and tailboard are closed and securely latched.
- To prevent unnecessary damage always load bulk materials e.g. sand ballast etc. from the lowest practical height.
- Avoid dropping large items such as rocks, demolition debris etc. onto the Tipper bed.
- Ensure that the load is uniformly distributed across the Tipper bed.
- Do not overhang plank or sheet material forward of headboard.

CORRECT LOAD DISTRIBUTION



INCORRECT LOAD DISTRIBUTION



ROAD SAFETY

All loads must be secured and restrained before operation on the public highway. Failure to adequately restrain the payload will present a hazard to other road users and is in contravention of the UK Construction and Use Regulations.

The Tipper is designed to carry bulk loads of which there are two distinct types:

- 'Fluid' Bulk loads are loads that act similar to a fluid once in motion, for example:
  - Sand
  - Gravel
  - Type 1
  - Hardcore
  - Topsoil
  - Wood chippings

- Non-Fluid Bulk loads, for example:
  - Palletised or wrapped building materials (bricks, tiles, thermal blocks)
  - Timber
  - Sheet material (plywood, plasterboard, roofing sheets etc.)
  - Machinery
  - White goods
  - Furniture

Load retention and sheeting continued

The method of load retention will depend on the type of load being carried: -

Fluid loads:

Sheeting the load with a high strength waterproof Tarpaulin is the best form of retention especially for a dry powdery load. This will prevent the load being blown from the vehicle and prevent the load becoming waterlogged and thereby potentially overloading the vehicle.

The body is supplied with roping points at the end of each body cross-bearer under the floor. These should be used to tie off any Tarpaulins that envelope the body sides. Once fitted, the Tarpaulin should be restrained by high quality nylon rope, (minimum 8mm Diameter) specifically designed for Commercial Vehicle use.

Non-fluid loads:

All non-fluid loads must be suitably restrained using the load lashing points provided on the tipper floor. Loose loads must not be allowed to shift or roll around in the rear of the vehicle, presenting in some instances, extreme impact forces to the bodysides, tailboard and headboard, generated by cornering, braking and acceleration forces. If the load is to be tipped rather than removed mechanically or manually, the lashing must be removed immediately prior to the tipping operation.

Good quality ratchet straps or approved nylon rope should be used. For cylindrical loads or awkward shaped loads, it is imperative to chock the load with timber to enable the straps or rope to work effectively.

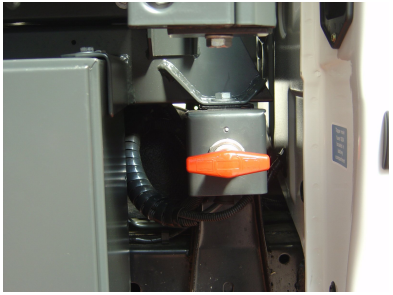
Tipper Isolation Switch

Warning
Do not drive the vehicle with the Tipper Isolation Switch in the 'ON' position

Description:
The Tipper Isolation Switch provides electrical isolation to both the electric and hydraulic systems found on the tipper, for maintenance purposes.

Location:
The switch is located on the offside subframe behind the cab.

Purpose:
To safely isolate the tipper electric and hydraulic systems from the vehicle when the tipper is not in use.



Use:

- The isolation switch must be set to 'OFF' when performing any maintenance tasks with the bed raised and propped.
- Only switch 'ON' immediately prior to tipping.
- Do not drive the vehicle with the switch in the 'ON' position.

Emergency Stop Switch

Description:
The Emergency Stop Switch ceases all Tipper operations and activates an audible alarm. The Tipper Control Panel displays “Emergency Stop Activated”.

Location:
The Emergency Stop Switch is located on the hand controller (see photo).

Purpose:
In emergency situations when the switch is activated all Tipper functions cease, until the switch is released.

To Activate:
Press in with finger or palm of hand.

To Release: Rotate clockwise and allow button to spring out.

Tipper Control

Description:
A two button switch and display panel, which allows control of the raise/lower function via the pendent switch.

Location:
The Tipper Control Panel is housed behind the drivers seat on the cab bulkhead.

Purpose:
The Tipper Control Panel enables the system and allows the operator to raise
and lower the tipper bed using the pendent hand controls.

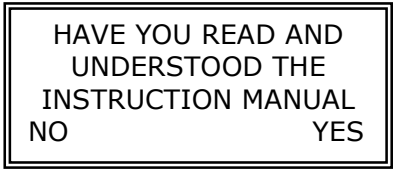
Use:
The Tipper Control Panel can be operated/read from outside the vehicle with the drivers seat back in the forward position.
To perform tipping operations follow the instructions below:

1 *Action* Park vehicle and apply handbrake.

Action Check isolation switch is set to 'ON' position.
Turn off vehicle radio.
Action Proceed to 2.

Tipper Control continued

2 *Action* Switch on Tipper Control Unit, message will display…



Action If you have read and understood the manual, press YES and proceed to 4.

Action If you have not read and understood the manual, press NO.

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3 *Action* If you pressed NO after the question, message will display...

Result After 10 seconds unit will turn off.

Tipper Control continued

4 *Action* If you answered YES to the question, message will read…

RELEASE TAILBOARD
BEFORE TIPPING

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5 *Action* If you release the handbrake after answering 'YES' to the question, a warning will sound and message will read…

ENSURE VEHICLE IS
STATIOARY AND
APPLY HANDBRAKE

Action Re-apply handbrake.

Tipper Control continued

6 **To Raise Body…**

Action Release tailboard.

Action Press RAISE button on the pendent switch to raise body.

Result Body raises with both cab and external sounders operating and display will read as shown.

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7 *Action* Release RAISE button at any time whilst body raising, message will read…

Result Body will cease rising awaiting next instruction.

Tipper control continued

8 *Action* Continue pressing RAISE until body fully raised. Message will read…

BODY FULLY RAISED

Action Release RAISE button.

---

9 **To lower body…**

Action Press LOWER to lower body.

BODY LOWERING

Result Body lowers with both cab and external sounders operating and display will read as shown.

Tipper Control continued

10 *Action* Release LOWER button at any time whilst body lowering, message will read…

BODY RAISED

Action Body will cease lowering awaiting next instruction.

---

11 *Action* Continue pressing LOWER until body fully lowered. Message will read…

BODY FULLY LOWERED ….PURGING….

Tipper Control continued

12 *Action* If the LOWER button is released before a single long tone is heard, message will read…

PRESS LOWER FOR 5 SECONDS AND SWITCH OFF

13 When body is completely lowered, message will read…

CHECK BODY STOWED SECURE TAILBOARD AND SWITCH OFF

Message displays for 60 seconds, auto shut down then takes place.

Tipper Control continued

14 **Emergency stop…**

Action At any time, all tipper functions can be ceased by pressing the Emergency Stop Button. Display will read…

EMERGENCY STOP ACTIVATED

Action Ensure it is safe to proceed and release the emergency stop button by twisting it clockwise.

Pendant Hand Controller

Description:
The pendant controller is used to control the raise/lower function of the body.

Location:
The pendant controller is stowed next to the Tipper Control Panel behind the drivers seat.

Purpose:
The pendant controller enables the operator to raise and lower the tipper bed, it also incorporates the Emergency Stop Switch.

Use:
The controller can only be used whilst standing outside of the vehicle by extending the retractable cable, always stand clear of the cab door and no further rearward than the back of the cab.

- Depressing the 'RAISE' button on the pendant controller will raise the tipper bed. Releasing the button will immediately stop the bed from raising.
- Depressing the 'LOWER' button on the pendant controller will lower the tipper bed. Releasing the button will immediately stop the bed from lowering.
- Depressing the 'RED' button, Emergency Stop Switch, will immediately cease all tipper functions until the Emergency Stop Switch is reset and the "ON" button is pressed to re enable tipping function.

The pendant controller should always stowed in its holder after use.

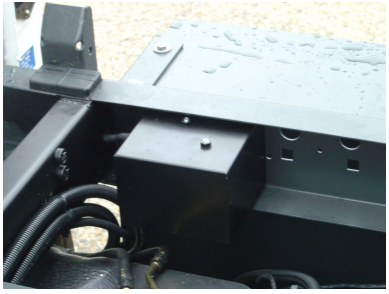
Warning LED and Buzzers

Description:
A warning LED indicates when raising or lowering body.
Warning buzzers indicate when handbrake is not applied, Emergency Stop switch is activated and when raising or lowering body.

Location:
Warning LED is located in Tipper Control Panel, left hand side.
Warning buzzers are located in Tipper Control Panel and on Tipper subframe.

Purpose:
To give warning that the tipping operation has commenced and the body is raising or lowering.

Use:
The warning devices function automatically. If a warning device fails to operate, stop immediately and refer to fault diagnosis section.

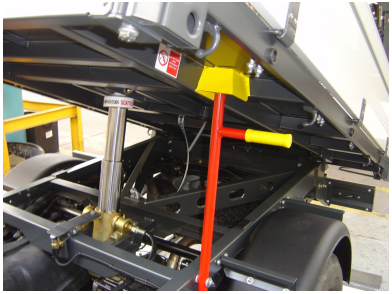


Body Prop

Never Stand or Work underneath an un-propped body.

Description:
A body prop is a safety device that is provided to ensure the safety of personnel carrying out routine checks and maintenance of components and structures underneath the body. The weight of the body is held mechanically rather than relying on the hydraulic system.

Location:
The body prop is an integral part of the subframe and is stowed on the outside of the offside subframe.



Purpose:
To provide a safe means to maintain the body in a raised position.

Use:
When to deploy the body prop:

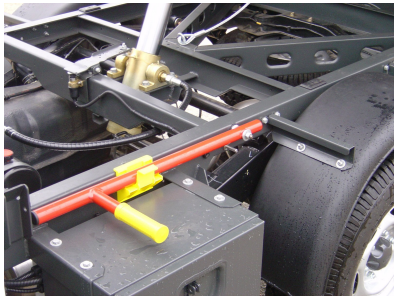
- Whenever there is a requirement to work or stand underneath the body.

Body prop continued

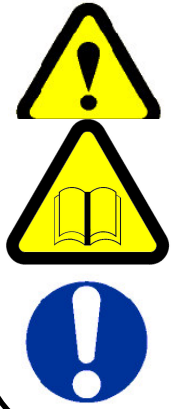
How to deploy the Body Prop:

- Park the vehicle on a firm level surface and apply the handbrake.
- Raise the Tipper bed.
- Raise the body prop by pulling up on the handle.
- Rotate the body prop past the vertical until it stops.
- Lower the body until it stops.
- Ensure the body prop locates in the socket.
- Turn the tipper isolation switch to the 'OFF' position.
- Remove the keys from the vehicle ignition.

Do not leave the vehicle with the body raised and propped for any length of time. The protective oil film on the ram will evaporate, drain away or be washed away. Corrosive elements may erode the highly finished surface of the ram, which in turn could lead to damage of the ram seals, resulting in potential oil leaks.



Tipping Mode:



HAZARD
Tailboard in lowered position obscures vehicle rear lights.
Avoid lowering the tailboard when stationary on the Public Highway.
Temporary obscuration during loading/unloading is acceptable providing other road users are warned of an obstruction in the road.

A warning triangle or similar devices are permitted to be placed in the road to warn of a temporary obstruction.

SHUT TAILBOARD
Ensure Tailboard is closed and locked before driving the vehicle.
Never drive the vehicle with the Tailboard in the lowered position.
Vehicle side lights must remain on during loading/unloading through the hours of darkness or poor visibility.

It is acceptable to obscure the rear lights temporarily with the vehicle parked during loading/unloading. However, you must take steps to warn other road users of the vehicle obstruction by using at least one of the following: -

- Warning Triangle - supplied with vehicle.
- Minimum four cones or pyramids.
- Minimum four flat traffic delineators.
- Road vehicle sign.

CAUTION

Tipping:

- Always ensure that there is sufficient clearance for the tailboard to hang without touching the ground and that there is a minimum of 6" (150mm) spare, this will allow for suspension compression as the load moves rearwards.

Location:
The Tailboard is mounted at the rear of the body, located by two latches on the upper outer edge of the corner posts and three hinges mounted on the lower edge of the tailboard.

Purpose:
To safely discharge the payload from the rear aperture of the body, created by unlatching and lowering the tailboard.

Tailboard continued

To open:

- Hold the top of the tailboard with one hand, with the other hand use an index or forefinger to release the latch, by first pulling up to approximately 90 degrees from the vertical.
- Using the palm of your hand push up on the handle until it is almost vertical and the latch is released.
- Repeat the action for the other latch. Maintain pressure on the sideboard with both hands until it is safe to lower the tailboard gently.

To close:

- Brush away debris from the tailboard, specifically the edges and two upper latch pins. Clear the vertical edges of the body corner and horizontal rear edge of the tipper bed.
- Grab the lower edge of the tailboard with both hands and rotate upwards to its closed position.
- Return the latches to their closed position by pushing down on the handle with the palm of one hand and supporting the weight of your body with the other against the tailboard, rotate the handle until it is parallel with the vertical face of the rear corner pillar.

CAUTION

Tow bar
If a towing attachment is fitted ensure it is in accordance with manufacturers instructions and tightened to correct torque. Ensure correct tailboard protection is fitted.
Failure to fit tailboard protection will cause significant damage to the body and or vehicle chassis.

Description:
This vehicle is fitted with a towbar designed and tested to 94/20/CE. Under NO circumstances should this towbar be altered or modified.

Accessories:
Electrical kits and a tailboard protection device are available from VFS Southampton Ltd, See parts list at the back of this manual.

Kit 1:
Plug in 7 pin Towtronic electrics, tailboard protection and standard 50mm ball attachment.

Kit 2:
Plug in 7 pin Towtronic electrics, tailboard protection and Bradley Jaw Ball and Pin attachment.

Sideboards

Description:
The sideboards are made from tough lightweight extruded aluminium held in place by two latches per side, locking the sideboard to the headboard and the rear corner pillars.

Location:
Near and offside of vehicle.

Purpose:

To provide primary restraint for fluid loads, secondary restraint for loose loads. All loose loads should be restrained using the load lashing rings provided in the floor. Sideboards are not designed to prevent un-restrained loose loads from penetrating or bursting the sideboards.

Use:
Sideboards can be lowered to aid the manual or mechanical loading of non-fluid material.

To release sideboard:

1. Remove sheeting if the load is sheeted, remove or tie-off tarpaulin safely.
2. Visually check that the load is not exerting a force on the sideboard.

Sideboards continued

3. Hold the top of the sideboard with one hand, with the other hand use an index or forefinger to release the latch, by first pulling up to approximately 90 degrees from the vertical, using the palm of your hand push up on the handle until it is almost vertical and the latch is released. Repeat the action for the other latch. Maintain pressure on the sideboard with both hands until it is safe to lower the sideboard gently.

To close sideboard:

- Brush away all debris between the sideboard and the edge of the tipper bed, including the vertical faces at the headboard and rear corner pillar. If any resistance to closing the board is felt, lower the board and remove the debris that is jamming the board – do not force it closed.

Sideboards continued

- Lift the sideboard and rotate it until shut, holding the top of the board with one hand, grasp one latch in the palm of the hand and push the latch handle home. Repeat for other latch.

- Grasp sideboard by the top edge and pull to ensure the sideboard is secure.

Tipping - General

WARNING
Tipping is a potentially hazardous operation. Ensure all other sections of this manual are fully understood and full familiarisation of the Controls have been achieved before attempting to tip a load.

Common Procedures for Tipping:

The following procedures must be observed before, during and after the Tipping operation.

Before Tipping: -

- Apply handbrake.
- Check that rear tyres are not partially or fully deflated before tipping.
- Wear protective gloves.
- Switch on hazard warning lights.
- Ensure vehicle radio is turned off.
- Establish that the ground bearing the weight of the vehicle is level and is firm enough to support the weight of the vehicle. (Maximum gradient 5%). Avoid wet or waterlogged clay, soil or sandy terrains. If available, have someone direct you to the required position taking the precautions identified above.
- Check that the area surrounding the vehicle is free from personnel, equipment and livestock, except for an assistant specifically tasked to guide you to the area where the load is to be tipped. Health and Safety (Safety Signs & Signals Regulations 1996) guidelines on verbal or hand communication must be observed.
- Ensure the area surrounding the vehicle is suitably illuminated. (night operation)
- Check overhead clearance for overhead cables and power lines, abort tip or reposition vehicle if there are any overhead cables within the vicinity.

Before Tipping continued

- If the load is sheeted, loosen the sheeting; roll back to the headboard and tie-off.
- Remove load restraints if fitted.
- Avoid tipping in high gusting winds.
- Now continue with the tipping operation.

During the Tipping operation: -

- Stay clear of vehicle and be vigilant at all times.
- Never try and shake a stuck load free, lower body fully to manually remove all or part of load with a shovel, exercise extreme caution when climbing on and off the body and when manoeuvring over loads within the body. Do not restart tipping until all personnel are clear from the vehicle.

After the load has been Tipped: -

- Clean the tipper bed with a broom to clear the floor of debris maintaining the smooth surface, essential in allowing the load to slip when tipping.
- Brush off the body edges and generally clean around the bodyside and / or tailboard apertures to ensure the side and tailboard can be closed without jamming.
- If used on muddy/dirty sites, always wash down wheels, rear tail-lights, license plate and lamps before joining the public highway. A potential traffic offence will be created it the vehicle is driven with obscured lights or license plate.
- Perform a visual check for damage.
- Re-apply sheeting (if fitted) or fold, roll and store until required.
- Switch off hazard warning lights.

Tipping

Method:

- Reverse vehicle to the position where you want to tip the load.
- Refer to the Controls section of this handbook, ensure there is no load pressing against the tailboard.
- Hold the tailboard firmly with one hand and release the tailboard latches by raising the handle to the fully raised position and lowering the tailboard gently to the hung position.

WARNING

At any time, all functions can be ceased by pressing the EMERGENCY STOP BUTTON

- Switch the Isolation Switch to the 'ON' position.
- Control the tip using the Tipper Control Panel and pendent hand controller as described in the controls section of this manual.
- Raise the body to the required height to either tip part or all of the load. The body will automatically stop tipping when the ram is fully extended. The tipping can be stopped at any time by releasing the RAISE button. A buzzer will sound when the RAISE button is pressed.
- Lower the body until the warning sounder ceases and the Tipper Control Display reads, 'CHECK BODY STOWED SECURE TAILBOARD AND SWITCH OFF'.
- Close the tailboard observing the precautions outlined in the 'Controls' section, ensuring that it is securely locked. Use a combination of a visual check and a physical tug on the tailboard to check that they are fully home and locked.

Tipping continued

Before driving the vehicle, ensure: -

- Isolation Switch is 'OFF'.
- Body is fully lowered.
- Check Tailboard is securely latched.
- Ensure rear wheels are clear of any tipped material.
- Ensure pendent controller is stowed correctly behind drivers seat.
- Ensure rear cross-member, tail-lights, and registration plate are cleared of any tipped material.
- Ensure that all precautions detailed in 'Controls' are observed.

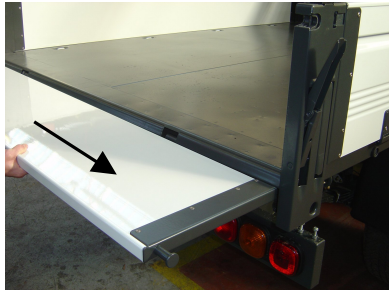
LOW VOLTAGE WARNING

If the vehicle battery voltage is below 11.5V for 60 seconds or 10V for 5 seconds when the Tipper Control unit is switched 'ON', an audible alarm will sound and the Tipper Control Display will read 'LOW VOLTAGE'. The Tipper will remain operational. The vehicle engine should be started to maintain battery charge throughout the tipping operation.

Tailboard Removal

Method:

- With the tailboard closed remove the right hand hinge from the rear of the bed using two 13mm spanners, open the left hand latch.
- Holding the right hand side of the sideboard release the right hand latch, open tailboard until horizontal and slide to the right to remove from left hand hinge.



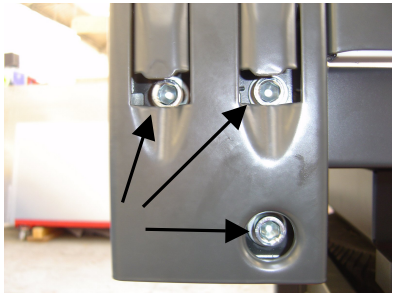
WARNING, POSSIBLE DAMAGE TO HINGES
Never allow board to drop open on a single hinge, after left and right hand latches have been released SUPPORT board level until clear of left hand hinge pin.

Tailboard removal continued

Rear Corner Pillar Removal

Method:

- Using the 18mm combination spanner and Allen key provided in the vehicle tool kit remove three cap head bolts from rear corner pillars.
- Remove rear corner pillars and store with side and tailboards.



Sideboards Removal

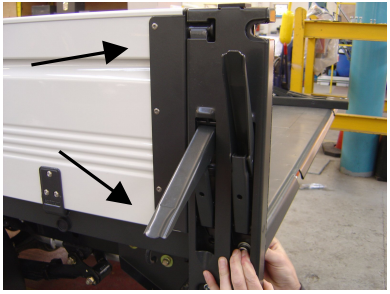
Method:

- Hold sideboards horizontal and slide off of hinge pins towards the rear of the vehicle.

Side and Tailboard Re-Fitment.

Method:

- Re-fit both sideboards to hinge pins.
- Close both front latch handles to support sideboards in closed position.
- Hang corner pillars on tailboard latch pin and half close latch to support pillars during assembly.
- Insert three M12 bolts, washers and nuts per side.
- Tighten all bolts to correct torque at earliest opportunity (for correct torque please see “specified torque settings” in the fault finding section of this manual).



Sideboard replacement continued

- Re-fit tailboard to left hand hinge pin and close both latches to support in closed position for assembly.
- Re-fit right hand hinge using two M8 bolts, washers and nuts.
- Tighten all bolts to correct torque at earliest opportunity.
  (for correct torque please see “specified torque settings” in the faultfinding section of this manual).
- Never use hinge pin for load retention, always use correct tie down points.

WARNING,

Damage to hinge pins will prevent side and tailboard re-fitment.

Driver Checks and Maintenance Items:

It is imperative that the recommended Driver Checks and Maintenance be carried out to ensure the safe and efficient operation of the Tipper.

The driver, regardless of ownership of the vehicle must perform the following checks and vehicle maintenance.
If the driver does not own the vehicle, the owner of the vehicle must satisfy themselves that the driver to whom the vehicle has been allocated will carry out these essential checks.
The driver must be made aware of their responsibilities to read and understand the INSTRUCTION MANUAL including the Daily, Weekly and Monthly Maintenance.

Daily checks - before use:

- Check Instruction Manual is complete and located in a safe position within the cab.
- Check tipper load deck for damage, clean and remove any material that has stuck to it, ensure the surface is smooth and free from debris that may snag loads.
- Check hydraulic lines for signs of fluid leaks.
- Check security of all side and tailboard latches.
- Check all safety signs are present, and ensure they are legible and not damaged.
- Check rear lights and license plate to ensure any site debris or mud thrown up from the rear wheels has not obscured them.

Weekly checks:

- Check hydraulic reservoir oil level and top up if required with hydraulic oil ISO 32.V.H.V.I.
- Check electrical cable fixings and ensure that no chaffing has occurred.
- Check operation of warning buzzers and LED.
- Check vehicle tyres are correctly inflated to manufacturers specifications.

Monthly maintenance checks:

- Inspect and grease lower ram and gimble bearings with general-purpose grease.
- Inspect and grease tailboard upper latches with general-purpose grease.
- Inspect and grease rear body pivot bearings with general-purpose grease.
- Inspect and grease sideboard latches with general-purpose grease.
- Check security of rear corner pillars.

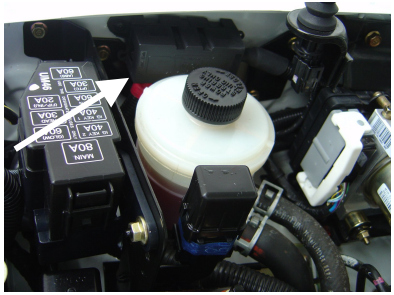
WARNING
Any maintenance carried out on the electric/hydraulic systems, must only be performed when the body is propped and the Isolation Switch set to OFF. The body will lower without warning in an uncontrolled manner if hydraulic pressure is lost e.g. the hydraulic hose splits or a union is loosened.

Specified Torque Figures

Description	Torque Value (Nm)
Tipper sub-frame to vehicle chassis fixings.	90
Rear corner pillar mounting fixings.	125
Headboard securing fixings.	125
Fender mounting bracket fixings.	25
Rear tailboard hinge fixings.	25
Towbar mounting fixings M12.	80
Towing attachment fixings M16.	200
Rear light bar fixings M8.	25

Main Fuse Access

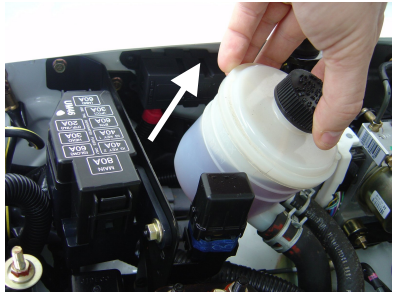
The Tipper main 150A fuse holder is located behind the power steering fluid reservoir in the engine compartment.



WARNING ELECTRICAL HAZZARD
Always disconnect battery before attempting to replace main tipper fuse.

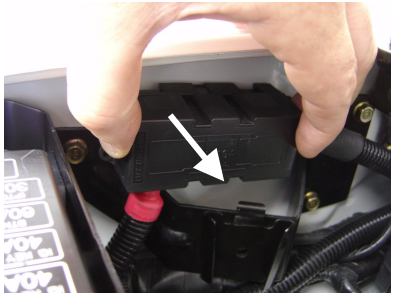
Method:

- To access the fuse holder remove the power steering fluid reservoir by lifting it up and out of its dovetail holder (no tools required) until clear of fuse holder.



Main fuse access continued

- To remove fuse holder cover and expose and fuse and terminal Connections hold from above with thumb and forefinger and pull gently until it is unclipped from fuse holder base.



Fault Finding

	Problem	Possible Causes	Corrective Action
1.	The Tipper fails to operate.	a) Chassis mounted isolation switch, switched OFF.	Switch ON isolation switch.
		b) Emergency stop switch defective.	Replace emergency stop switch.
		c) No electrical power (1).	Check fuse in engine compartment (150A).
		d) No electrical power (2).	Check the fuses inside the chassis mounted junction box 10.0A & 3.0A.
		e) No electrical power (3).	Check all electrical connections and cables.
		f) Stroke end switch defective.	Replace stroke end switch.
		g) Insufficient hydraulic oil in the reservoir.	Fill the reservoir to the correct level.
		h) Electric drive motor defective.	Replace the drive motor/pump unit.
2.	The electric drive motor runs but the Tipper fails to rise.	a) Tipper overloaded.	Reduce load.
		b) Hydraulic pump defective.	Replace the drive motor/pump unit.

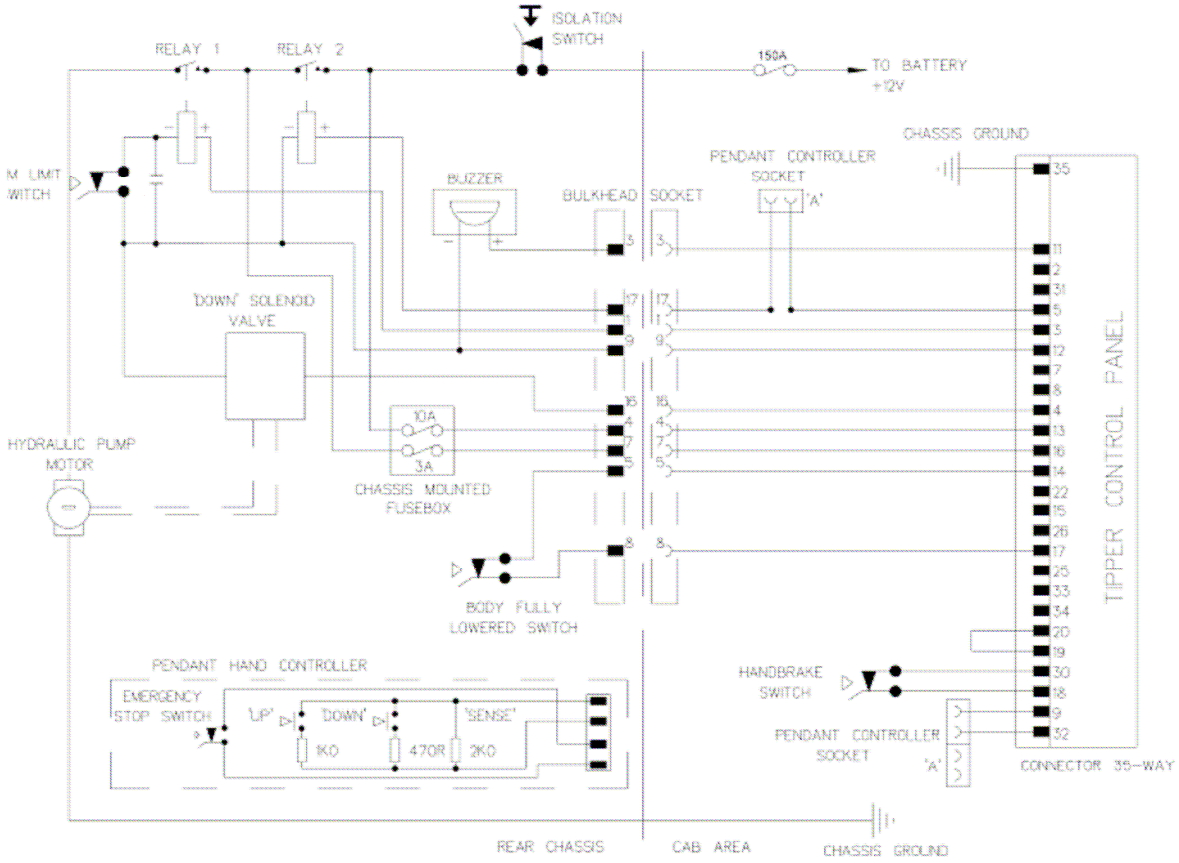
3.	Hydraulic oil sprays from the reservoir when the Tipper is lowered.	a) b)	Reservoir over filled. Reservoir punctured.	Fill reservoir to the correct level. Replace reservoir.
4.	Chassis mounted buzzer fails to operate.	a) b)	Buzzer defective. No electrical power.	Replace buzzer. See items a - d in 1 above.
5.	The Tipper lowers when the hydraulic pump stops.	a) b) c)	Defective non-return valve. Defective pressure release valve. Hydraulic oil leak.	Replace non-return valve. Replace pressure release valve. Inspect hydraulic system, replace parts as required.
6.	Tipper only rises partially.	a) b) c) d)	Vehicle not on level ground. Tipper loaded unevenly. Insufficient oil in the reservoir. Pressure relief valve defective.	Tip when the Tipper is on level ground. Redistribute the load. Fill reservoir to the correct level. Replace pressure relief valve.
7.	Tipper fails to lower.	a) b) c)	Solenoid defective. Solenoid valve defective. Body fully lowered switch defective.	Replace solenoid. Replace solenoid valve. Replace switch.

Record of Repair and Servicing

Date	Nature of Repair	Carried Out By

Record of Repair and Servicing

Date	Nature of Repair	Carried Out By

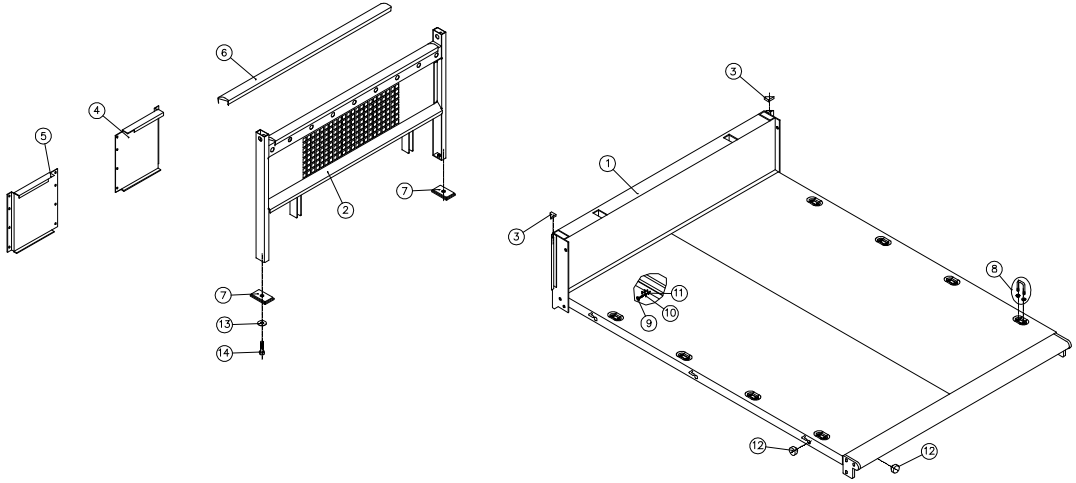

ISOLATION SWITCH
RELAY 1
RELAY 2
150A
TO BATTERY +12V
CHASSIS GROUND
PENDANT CONTROLLER SOCKET
'A'
M. LIMIT WITCH
BUZZER
BULKHEAD SOCKET
'DOWN' SOLENOID VALVE
HYDRAULIC PUMP MOTOR
10A
3A
CHASSIS MOUNTED FUSEBOX
BODY FULLY LOWERED SWITCH
TIPPER CONTROL PANEL
PENDANT HAND CONTROLLER
EMERGENCY STOP SWITCH
'UP'
'DOWN'
'SENSE'
1KΩ
470Ω
2KΩ
HANDBRAKE SWITCH
PENDANT CONTROLLER SOCKET
'A'
CONNECTOR 35-WAY
REAR CHASSIS
CAB AREA
CHASSIS GROUND

Spare Parts List

Tipper spare parts are available from:

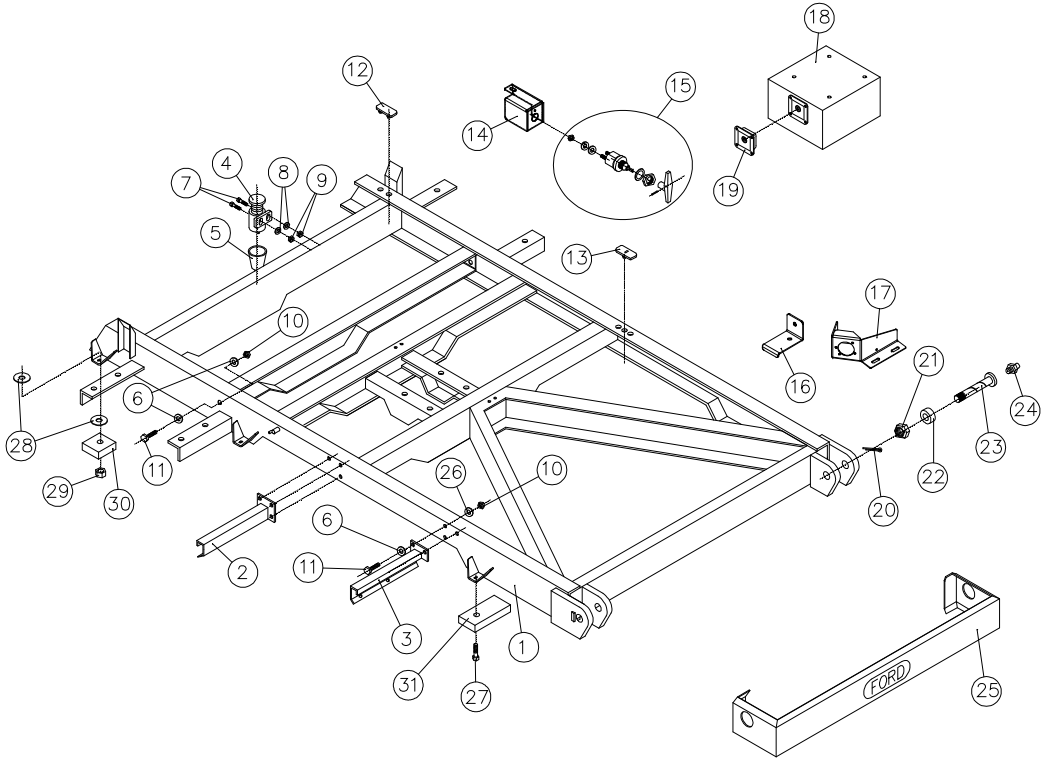
VFS (Southampton) Ltd.
Unit 8
Barton Park Industrial Estate
Chickenhall Lane
Eastleigh
SO50 6RR
☎Phone 023 8065 1704
☎Fax 023 8062 0999
Email: parts@vfs.co.uk

GENERAL ARRANGEMENT DRAWING - DECK AND HEADBOARD

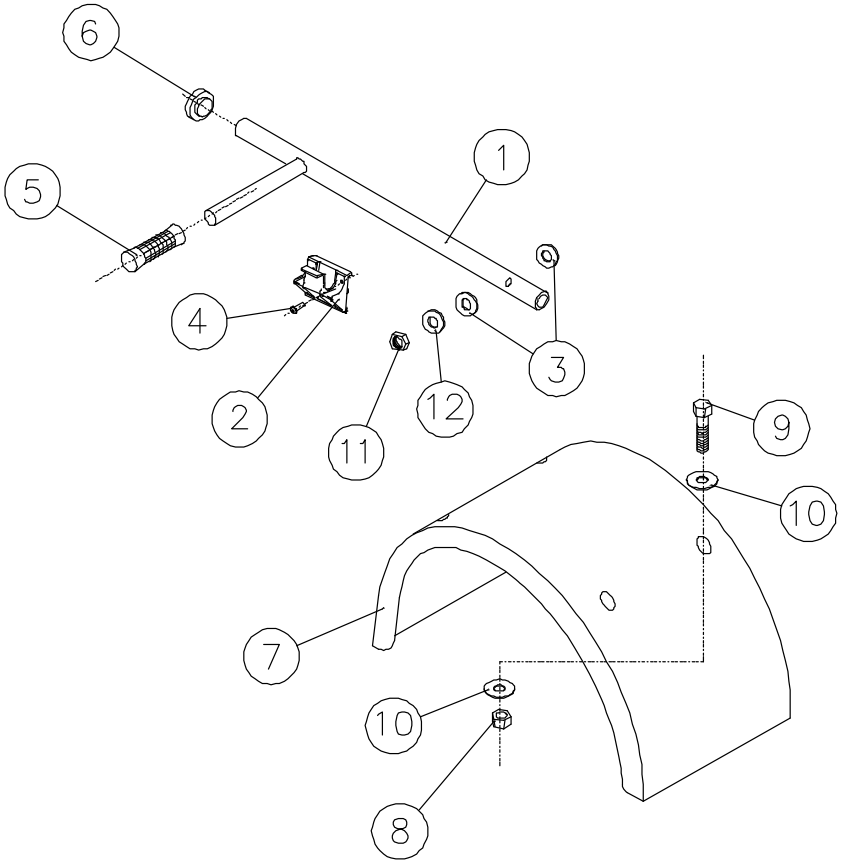


Item Number	Description	Part Number
1	Tipper Bed	UKRAVR01L6
2	Head Board	UKRAPR001
3	Bumper Rubber	150223/sx – 150223/dx
4	Plate Upper RH Headboard Protection	UKRACOPR02L6
5	Plate Upper LH Headboard Protection	UKRACOPR03L6
6	Cab Protection Rubber	151113
7	Headboard Fixing Plate	UKRAPRAC00L6
8	U-Bolt & Flanged Nut M10	732020
9	Screw TSPEI M8 x 20	101668
10	Plate Teflon Bumper	151160
11	Spacer for Teflon Plate	LADECRSU00L6
12	Bumper Rubber	150269
13	Washer ∅12mm	103843
14	Screw TE M12 x 100	100930

GENERAL ARRANGEMENT DRAWING - SUBFRAME



Item Number	Description	Part Number
1	Sub Frame	UKRACR01L6
2	Bracket LH Fender Support	UKRAPGSU01L6
3	Bracket RH Fender Support	UKRAPGSU00L6
4	Switch Stroke End	120754
5	Boot Rubber Protection	120756
6	Washer ∅8mm	103835
7	Screw M4 x 16	100706
8	Washer ∅4mm	104060
9	Nut M4	103565
10	Nut M8 Self Locking	100973
11	Screw TE M8 x 20	100714
12	Rubber Pad	160662
13	Plate Bumper (Faist)	151196
14	Bracket Isolator Switch	UKRACRSU08L6
15	Isolator Switch	120755
16	Bracket Evaporator	UKRACRSU14L6
17	Bracket Mounting Filler Neck	UKRACRSU09L6
18	Toolbox	SCGECA06L6
19	Toolbox Lock & Handle	110203
20	Split Pin ∅4 x 50	109612
21	Nut Castle M24 x 20	103736
22	Spacer	701794
23	Pin Rear Hinge Pivot	110195
24	Nipple Grease M10	151302
25	Guard Rear	UKRACRTR04L6
26	Washer ∅8 x 24mm	103837
27	Screw M12 x 55mm	W500742 S439
28	Washer ∅12mm x 36mm x 2.5mm	103843
29	Nut M12 Flanged Self Locking	W520515 S440
30	Spacer – Subframe – Square	UKRACRAT 01 L6
31	Spacer – Subframe – Rectangular	UKRACRAT 02 L6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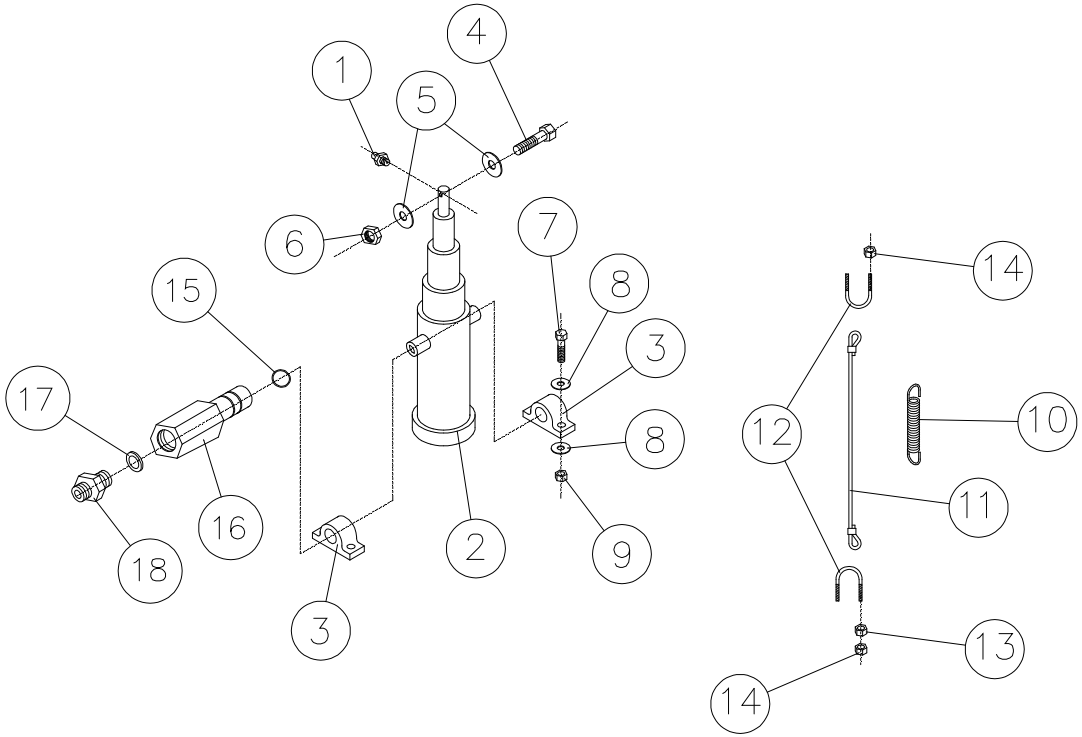
Item Number	Description	Part Number
1	Body Prop	FDRACRPS00L6
2	Clip Retaining Body Prop	151126
3	Spacer 15.2 ∅ Nylon Body Prop	103963
4	Rivet 4.8 ∅	107922
5	Grip Hand Body Prop	151190
6	Stop End Body Prop	151117
7	Fender	111046
8	Nut M8 Self Locking	100973
9	Screw TE M8 x 20	100714
10	Washer ∅8 x 24mm	103837
11	Nut M10 Self Locking	100992
12	Washer ∅10/30mm	103841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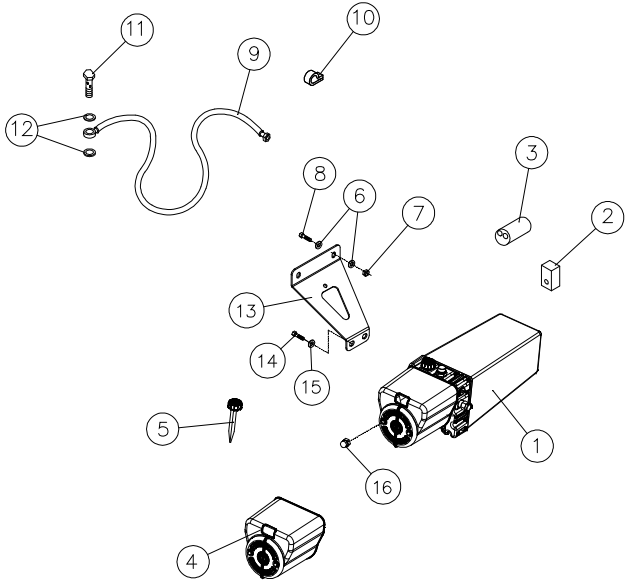
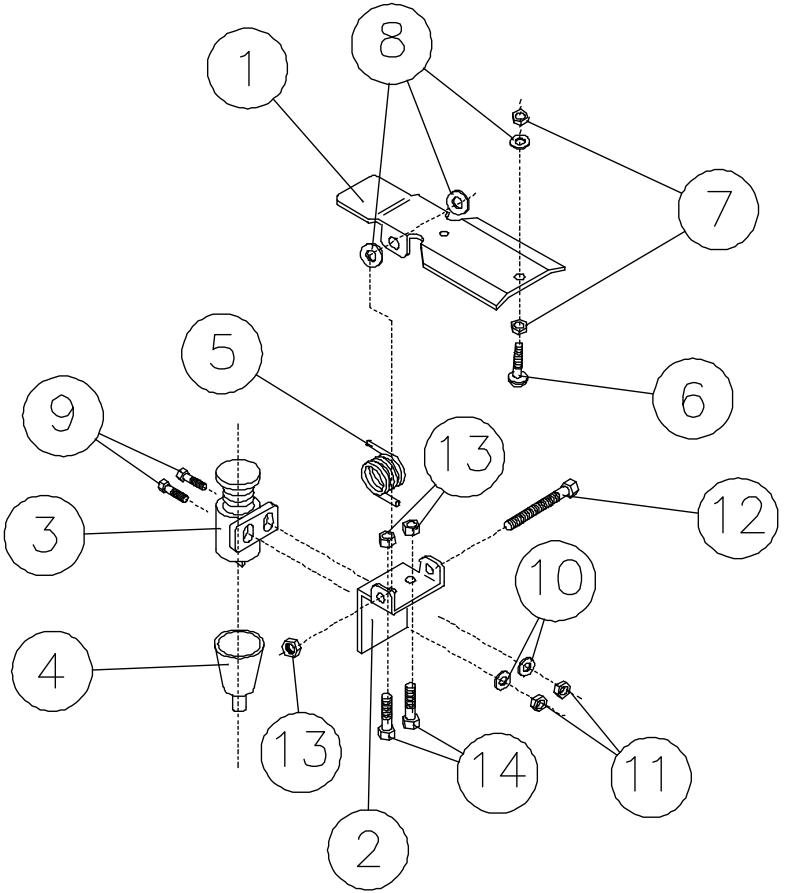
Item Number	Description	Part Number
1	Nipple Grease M10	151302
2	Cylinder Hydraulic	135943
3	Ram Support	110400
4	Screw TE M18 x 90	100928
5	Washer ∅18mm	103855
6	Nut M18 Self Locking	101050
7	Screw TE M12 x 40	100748
8	Washer ∅12mm	103843
9	Nut M12 Self Locking	100993
10	Spring	150702
11	Safety Cable	160716
12	U-Bolt M10 x 50	201844
13	Nut M10	103576
14	Nut M10 Self Locking	100992
15	O-Ring Seal	151617
16	Parachute Valve - UKRARP003 body On	UKRAVAPR00L7
17	½" CU Washer - UKRARP003 body On	103992
18	Hex Nipple	131461

GENERAL ARRANGEMENT DRAWING – HYDRAULIC PUMP



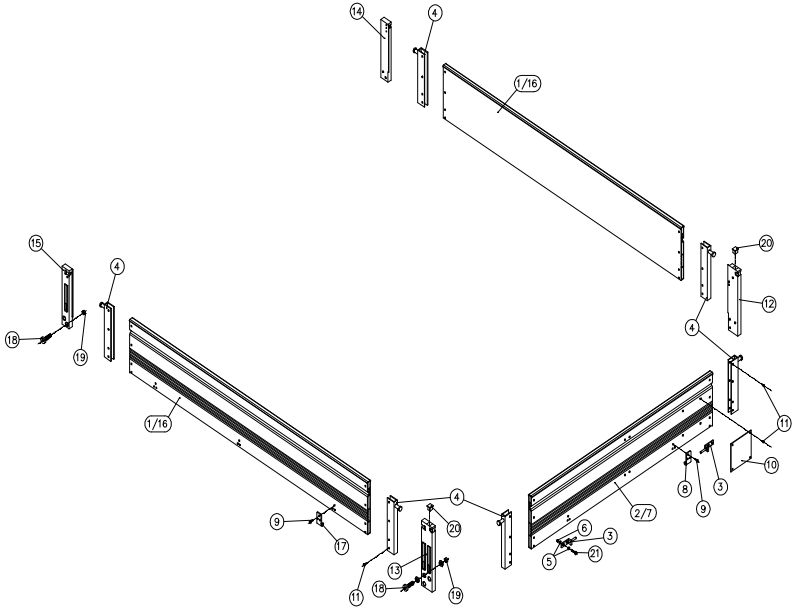
Item Number	Description	Part Number
1	Pack Power 12V Hydraulic	135842
2	Solenoid	135737
3	Solenoid	120770
4	Motor Cover	135839
5	Oil Filler Cap	135840
6	Washer ∅8mm	103835
7	Nut M8 Self Locking	100973
8	Screw TE M8 x 20	100714
9	Pipe Hydraulic	130512
10	Strap Iron-Rubber	130280
11	HPP Banjo Bolt	130137
12	HPP Copper Seal Washer	103968
13	Mounting Bracket	UK84CRAT03L6
14	Screw M10 x 20	100715
15	Washer ∅10mm	103839
16	Nut M6 Special	103777

GENERAL ARRANGEMENT DRAWING - BODY RAISED SWITCH



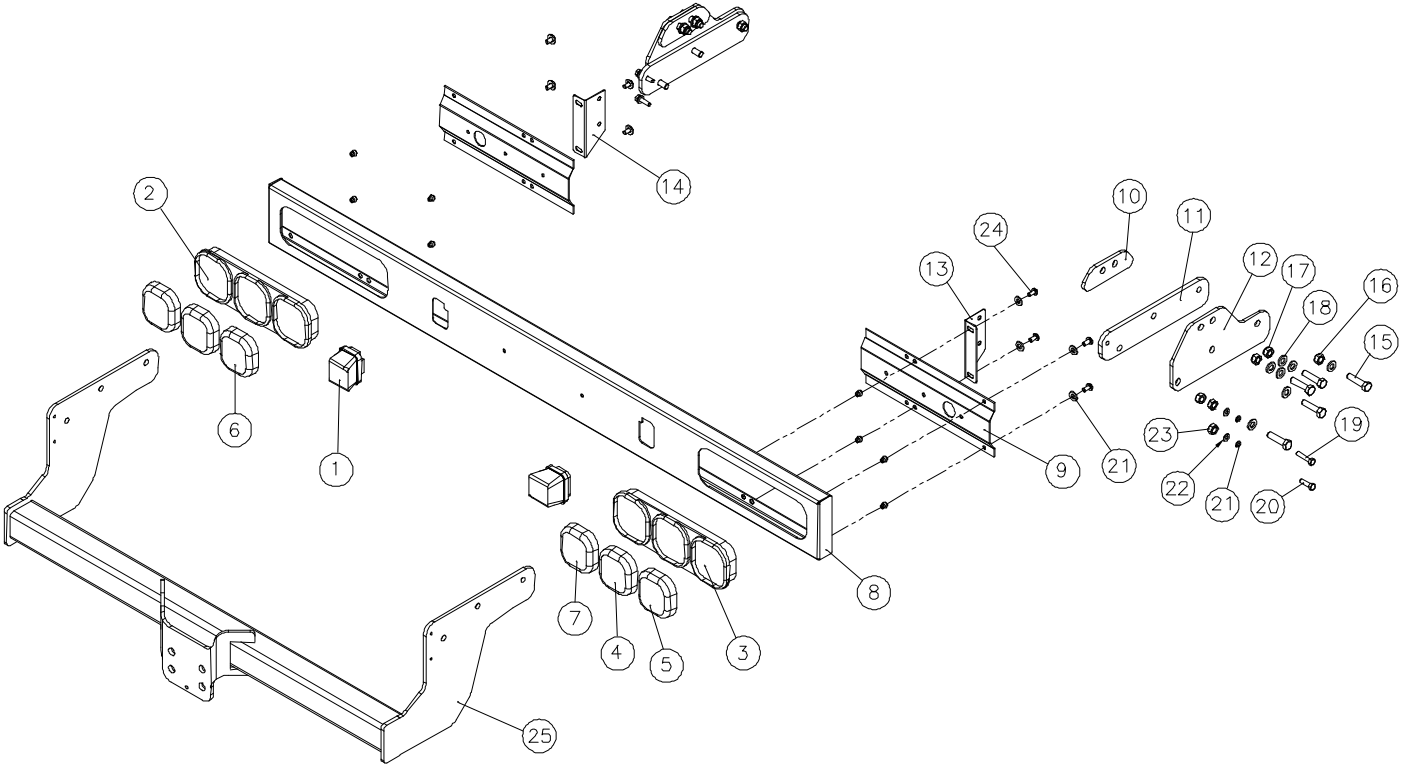
Item Number	Description	Part Number
1	Lever Stroke End	UKRACRSU13L6
2	Support Stroke End	700327
3	Switch Stroke End	120754
4	Boot Rubber Protection	120756
5	Spring	150782
6	Screw TT M8 x 35	101022
7	Nut M8	103572
8	Washer ∅8mm	103835
9	Screw M4 x 16	100706
10	Washer ∅4mm	104060
11	Nut M4	103565
12	Screw TE M8 x 90	100933
13	Nut M8 Self Locking	100973
14	Screw TE M8 x 20	100714

GENERAL ARRANGEMENT DRAWING – SIDE AND TAILBOARDS



Item Number	Description	Part Number
1	Side Board Assy	UKRASL001
2	Rear Board Assy	UKX7SP001
3	Pin Tail Board Hinge	110169
4	Caps End Tail And Side Board	UKRASLTS00L6
5	Washer ∅4mm	104060
6	Nut M8 Self Locking	100973
7	Tailboard Drilled	UKRASPBA01L1
8	Tailboard Hinge	110112
9	Rivet ∅6, 4 x 14.6	107988
10	Decal Plate	UKRASPAC00L6
11	Rivet ∅4.8 Stainless Steel	108027
12	Pillar Rear RH	110236
13	Pillar Rear LH	110237
14	Pillar Front RH	110238
15	Pillar Front LH	110239
16	Sideboard Drilled	UKRASLBA01L1
17	Hinge Sideboard	110117
18	Screw TCEI M12 x 1.25 x 30	101051
19	Nut Flanged M12 x 1.25	101045
20	Bung Rear Pillar	151148
21	Screw TE M8 x 25	100721

GENERAL ARRANGEMENT DRAWING – TOWBAR AND LAMPS



Item Number	Description	Part Number
1	Lamp Assy – Licence Plate	VFS01-14-115A
2	Lamp Assy LH with Reverse Lamp	VFS01-14-116A
3	Lamp Assy RH with Fog Lamp	VFS01-14-117A
4	Lamp Lens Stop / Rear Position	VFS01-14-118A
5	Lamp Lens Direction Indicator	VFS01-14-119A
6	Lamp Lens Reverse	VFS01-14-120A
7	Lamp Lens Fog	VFS01-14-121A
8	Bar Rear Light	VFS01-14-052B
9	Plate Backing Rear Light Bar	VFS01-14-052B
10	Spacer – Tipper Bed Reinforcement	VFS01-14-159A
11	Spacer – Towbar to Chassis	VFS01-14-156A
12	Plate – Sub Frame Reinforcement	VFS01-14-144B
13	Bracket – Mounting Lightbar RH	VFS01-14-154B
14	Bracket – Mounting Lightbar LH	VFS01-14-155B
15	Bolt M12 x 50mm x 1.25mm	VFSH02-0115
16	Nut M12 x 1.25mm	VFSH04-0100
17	Nut M12 Nyloc x 1.25mm	VFSH04-0093
18	Washer ∅12mm	VFSH03-0034
19	Screw M8 x 40mm	VFSH01-0111
20	Screw M8 x 30mm	VFSH01-0112
21	Washer ∅8mm	VFSH03-0036
22	Spring Washer ∅8mm	VFSH03-0037
23	M8 Nut	VFSH04-0094
24	Screw M8 x 15	VFSH01-0005
25	Towbar Assembly	VFS01-14-171A

Item Number	Description	Part Number
1	Main Fuse – 150 amp	VFSH12-0002
2	Power Cable - battery to fuse	VFS01-14-075A
3	Power Cable - fuse to switch	VFS01-14-076A
4	Power Cable - switch to relay	VFS01-14-077A
5	Power Cable - relay to motor	VFS01-14-078A
6	Earth Cable - motor to earth	VFS01-14-079A
7	Loom Control Assy – cab harness	VFS01-14-083A
8	Loom Control Assy – chassis harness	VFS01-14-084A
9	Box Rear Chassis - relay assy	VFS01-14-081A
10	Box Rear Chassis - mounting bracket	VFS01-11-051
11	Box Rear Chassis - alarm assy	VFS01-14-080A
12	Pendent – Wander lead assembly	VFS01-14-085A
13	Down Solenoid Loom Assy	VFS01-14-082A
14	Tipper Control Unit	VFS01-14-172A
15	Plate Identification	VFS01-14-093A
16	Badge - "Tipper"	VFS01-11-013A
17	Decal Set	VFS01-14-066A
18	Switch Handbrake	VFS01-11-058A
19	Triangle Warning	VFSG21-0030
20	'P'-Clip 21mm (Hydraulic Hose)	298-8110
21	Bracket Cable Support	VFS01-14-112A
22	Bracket Handbrake switch	VFS01-14-098D

Item Number	Description	LOCATION	Part Number
1	Decal – 250Kg	Left hand upper headboard	VFS01-14-057B
2	Decal – Do not stand under	Underside tipper bed	VFS01-14-059B
3	Decal – Hazard tailboard	Right hand rear tailboard	VFS01-14-060C
4	Decal – Tipper isolation switch	Right hand front upper headboard	VFS01-14-061B
5	Decal – Main fuse 150A	Right hand lower rear cab	VFS01-14-062B
6	Decal – Beware overhead	Right & left hand front upper headboard	VFS01-14-064B
7	Decal – Slippery load bed	Right hand upper rear headboard	VFS01-14-065B
8	Decal – Before tipping ensure	Cab bulkhead decal plate	VFS01-14-088A
9	Decal – 90 dB	Right hand subframe at toolbox	VFS01-14-089A
10	Decal – TUV ID	Right & Left hand Side headboard	VFS01-14-091A
11	Decal – Keep hands clear	1 x LH & 2 x RH lower edge tipper bed	VFS01-14-114A
12	Decal – Do not overhang	Left of centre upper headboard	VFS01-14-173A
13	Decal – 150Kg MAX	Right of centre upper headboard	VFS01-14-181A
14	Decal – Risk of damage	Right hand upper edge of towbar	VFS01-14-185A
15	Decal – Body prop	Left hand subframe top edge at prop	VFS01-14-188A
16	Decal – Do not walk under	Centre outside cab bulkhead	VFS01-14-189A
17	Decal – Hydraulic oil level	Forward edge of oil Reservoir	VFS100-107

Kit Number	Description	Part Number
1	Plug in 7 pin Towtronic electrics, tailboard protection and standard 50mm ball.	VFS01-14 – 190A
2	Plug in 7 pin Towtronic electrics, tailboard protection and Bradley jaw ball and pin.	VFS01-14-191A

Your Total 'One Stop' Solution Provider For Vehicle Conversion

EC Declaration of Conformity

In accordance with BS EN ISO 17050-1:2004.

We	VFS (Southampton) Ltd.
of	Unit 8 Barton Park Industrial Estate, Chickenhall Lane, Eastleigh, Hampshire, SO50 6RR, UK

declare that:

Equipment	Ford Ranger Chassis Cab installed with a Tipping Body
Serial Number	
Model Number	UKRARP002
Chassis Number	

is in accordance with the following Directive(s):

98/37/EC	Machinery Directive
72/245/ECC	Electromagnetic Compatibility Directive and its amending directives

and has been designed and manufactured to the following specifications:

UNI 10692	Tipping equipment
UNI 10693	Tipping equipment
UNI 10694	Tipping equipment
UNI 10695	Tipping equipment

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The equipment complies with all applicable essential requirements of the Directives.

Signed by: .....

Name:	Barry Whittaker
Position:	Quality Director
Installed at:	Eastleigh, Southampton
On:	22/08/2007

CE 06

VFS (Southampton) Limited Unit 8, Barton Park Industrial Estate, Chickenhall Lane, Eastleigh, Hants. SO50 6RR
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Registered Office: Unit 8, Barton Park Industrial Estate, Eastleigh, Hampshire, SO50 6RR Registered No: 3059947