



# Vehicle Installation

***TORRO*** <sub>25</sub>

# Door Lock Operation

The vehicle is provided with two identical keys.

## Door lock operation with the keys:-

Insert the key into the lock & rotate in clockwise direction to lock & in anticlockwise direction to unlock the door.

## Door lock operation from inside the cabin:-

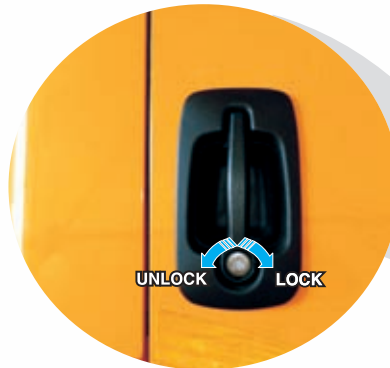
The door can be locked from inside the cabin with the lock knob.

- Push the door lock knob ① to lock the door.
- Pull the door lock knob ① towards you to unlock the door first and then pull the door opening lever ② to open the door.

### ⚠ CAUTION

If the door opening lever ② is pulled without unlocking the door; may damage the door lock and its linkages.

Door locking & opening with the key



Door locking & opening from inside the cabin



Truck and Bus Division

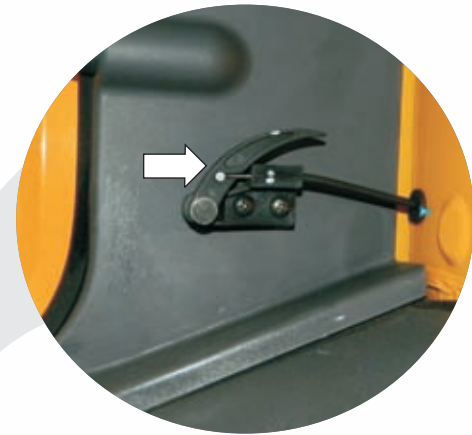
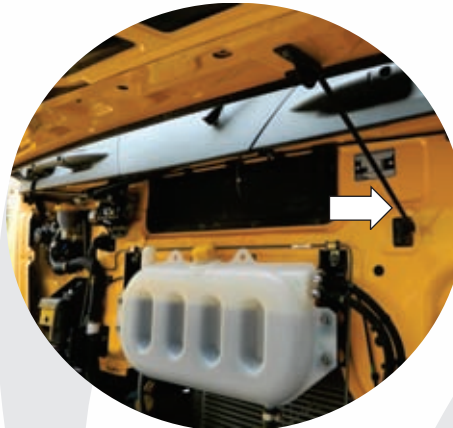
**Mahindra**  
Rise.

# Front Flap Opening

The front flap opening lever is located inside the cabin on the left side. Pull the lever to open the front flap.

## Once the front flap is opened:

- Daily checks like the engine oil, clutch oil, coolant & windshield washer fluid can be checked.
- Vehicle Identification Number can also be seen.



## CAUTION

After opening the front flap, secure it by supporting with the stay rods.



Truck and Bus Division

**Mahindra**  
Rise.

# Vehicle Identification Number (V.I.N.)

**VIN** (Vehicle Identification Number) is located at two places on the vehicle.

1. The VIN plate is fitted inside the front flap on the cabin.

Following information is provided on the VIN plate:-

- VIN
- Engine serial number
- GVW (Gross Vehicle Weight)
- FAW (Front Axle Weight)
- RAW (Rear Axle Weight)

2. The VIN is also engraved on the chassis long member on the LH front side of the vehicle.



## NOTE

It is helpful to mention VIN number to 'NOW 24x7' in case of break down.



Truck and Bus Division



# Daily Check Points

## Daily checks before starting the vehicle:-

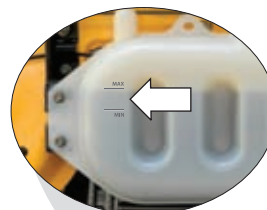
- Clutch master cylinder oil
- Coolant level in De-gassing Tank
- Windshield washer fluid
- Engine oil
- Power steering oil : Power steering oil reservoir is located behind front right wheel on chassis frame.

## Ensure before checking various fluid levels:-

1. Vehicle is parked on level ground.
2. Engine is in cold condition.



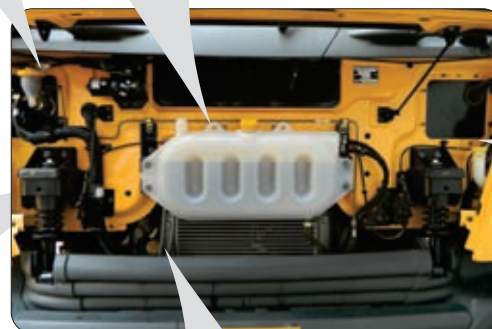
Clutch Master Cylinder\*



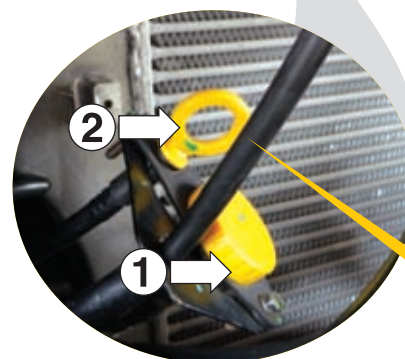
De-gassing Tank\*



Power Steering Oil \*



Windshield Washer Fluid



1 Engine Oil Filler Cap



2 Dip Stick\*

## CAUTION

- \* Always maintain fluid level between 'MIN' & 'MAX'.
- During Top up maintain the fluid level up to 'MAX'.



Truck and Bus Division

# Getting Inside The Cabin

**Three point support ensures easy entry & exit from the cabin.**

1. Grab handle - Left
2. Grab handle - Right
3. Foot step

## Getting in :-

Hold both the grab handles with hands and climb the steps to enter the cabin.

## Getting out :-

Move out from the driver seat & turn facing towards the co-driver seat.

Hold both the grab handles with hands and step down from the cabin.

### CAUTION

- Do not hold the steering wheel while entering/exiting from cabin.
- Use foot steps during entering/exiting the cabin.
- Do not jump from the cabin to exit.



Truck and Bus Division



# Steering Lock & Ignition Switch Operation

1. The steering wheel can be locked & unlocked using the ignition key.

A. **LOCK** : Steering in locked condition.

B. **OFF** : Steering in unlocked condition.

C. **IGN** : Cluster lights ON (Ignition)

D. **START** : Vehicle can be started with rotation of the key.

## 2. Steering unlocking procedure :-

If the steering wheel is locked; insert the key into switch & with one hand move the steering wheel either side & with the other hand rotate the key to unlock the steering.

### CAUTION

If the steering is not unlocked as per the recommended procedure the key & lock may get damage.

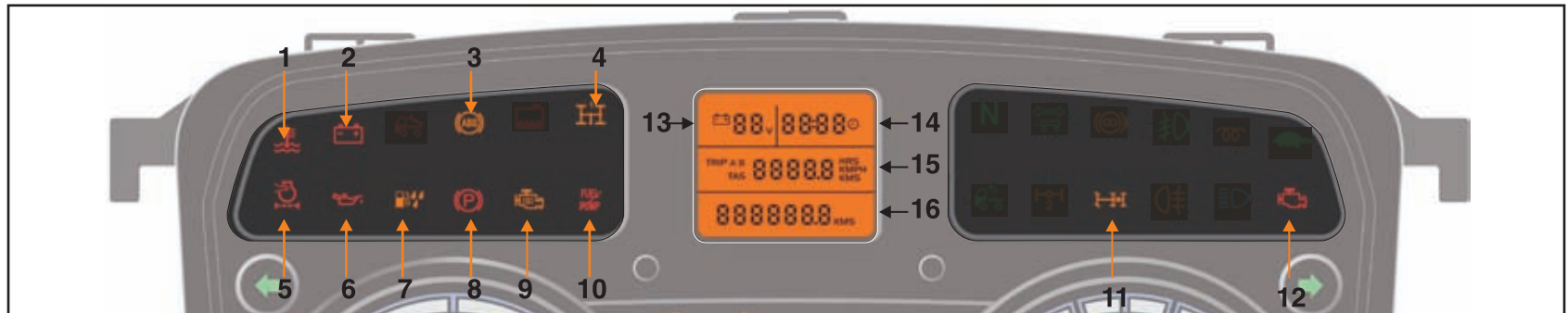


Truck and Bus Division





# Cluster & Warning Indicators



- |                                     |   |
|-------------------------------------|---|
| <b>1 Engine Coolant Temperature</b> | : Indicator glows if the engine coolant temperature reaches higher than the designed limit. (Above 105°C)   |
| <b>2 Battery Charging</b>           | : Indicator glows when the ignition switch is ON & goes OFF once the engine is started if the system is OK.   |
| <b>3 ABS*</b>                       | : Indicator glows when ignition switch is ON & goes OFF after few seconds, if the system is ok. (If the indicator remains ON; Indicates some malfunction in the ABS system. However normal brakes will work & the vehicle can be driven down to nearest dealership for diagnosis) |
| <b>4 PTO*</b>                       | : Indicator glows when the PTO is engaged.  |
| <b>5 Air Filter Restriction</b>     | : Indicator glows if the air filter element is clogged / Choked.  |
| <b>6 Engine Oil Pressure</b>        | : Indicator glows when the ignition switch is ON & goes OFF once the engine is started, if the system is OK.  |
| <b>7 Water in fuel *</b>            | : Indicator glows when the water quantity accumulated in the water separator bowl is more than specification.   |
| <b>8 Parking Brake</b>              | : Indicator glows if the parking brake is ON.   |
| <b>9 MIL*</b>                       | : Malfunction Indication lamp - Glows when there is any fault with exhaust emission   |
| <b>10 Fuel Feed Pump</b>            | : Indicator glows if the fuel feed pump fuse blown off / fuel feed pump malfunction.  |
| <b>11 Inter axle Lock</b>           | : Indicator glows when the inter axle lock is engaged.  |
| <b>12 Diagnostic Lamp*</b>          | : (Engine check lamp) Indicator glows in case of fault with CR (Common Rail) system.  |
| <b>13 Battery Voltage</b>           | : Displays voltage when the key is switched 'ON'. Once the vehicle is started the charging voltage is displayed at the same place.  |
| <b>14 Clock</b>                     | : Displays time.  |
| <b>15 Engine Hours</b>              | : Displays engine hours.  |
| <b>16 Odometer</b>                  | : Displays odometer reading (Total kms covered).  |

\* Functions are applicable as per model requirements.



# Cluster & Warning Indicators



**18 Engine RPM \*\*** : Indicator glows in different colour with respect to RPM - Green - 1100-1500 ,  
Amber- 1500 -2500, Red - More than 2500

**19 Turn Signal (Right)**

**20 Turn Signal (Left)**

**21 RPM Meter\*\***

**22 Temperature Gauge**

**23 Air Pressure Gauge (Front)**

**24 Air Pressure Gauge (Rear)**

**25 Low Pressure LED Indicator**

**26 Fuel Gauge**

**27 Speedometer**

**\*\* For better performance and results maintain the RPM in the range of 1100 to1500 (Engine RPM Indicator glows in green colour)**

**The brake system operating pressure is 10 bar for effective & safe braking. The unloader valve setting should not be tampered.**



**Truck and Bus Division**

**Mahindra**  
Rise.

# Combination Switch Controls

1. **Windshield washer :-** Pull the lever towards you to operate.

2. **Wiper controls :-**

**MIST** : Wiper operates once.

**OFF** : Wiper do not operate.

**INT** : Wiper operates once every after 5 sec.

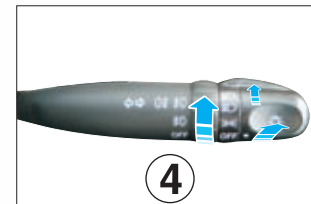
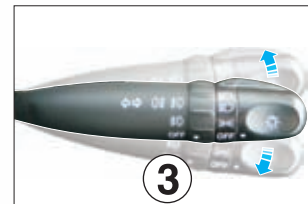
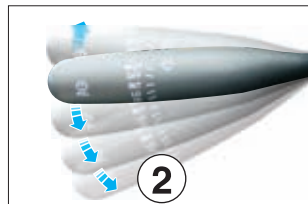
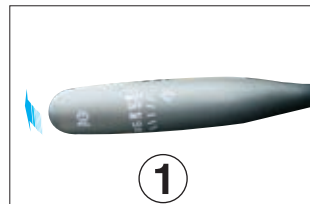
**LO** : Wiper operates at low speed.

**HI** : Wiper operates at high speed.

3. Move the right side lever of combination switch up or down to operate the turn indicators.

4. A switch is located at the end of right side lever of combination switch. Rotate the switch to operate parking light & headlight.

5. Horn



5



Truck and Bus Division

**Mahindra**  
Rise.

# Operating Switches & Cabin Light

## 1. Hand brake valve:-

**OFF** : Hand brake in disengaged position.

**ON** : Hand brake in engaged position.

## 2. Exhaust brake switch:-

For switching 'ON' or 'OFF' the exhaust brake.

The exhaust brake should be used while coming down the slopes/ghats to avoid any damage to engine & drive line as the vehicle speed increases due to slope without pressing the accelerator.

## 3. Inter-axle lock switch :-

The inter axle lock helps the driver when the vehicle has to pass through mud or slippery surface where there are chances of wheel spinning. The inter axle lock divides the power between both the rear axles. Always press the switch before entering the muddy patch to drive the vehicle safely through it.

Engaging the inter axle lock midway may not enable the driver to drive out the vehicle through muddy patch.

## 4. Rear work lamp :-

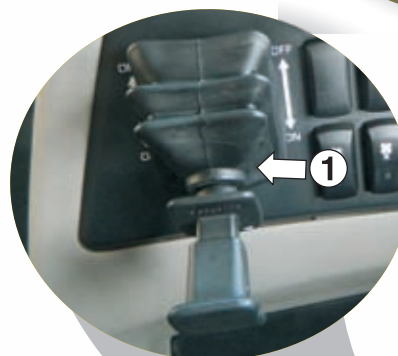
The rear work lamp switch & wiring harness is provided with the vehicle & can be used to fit the work lamp. The work lamp need to be fitted as per the customer choice / requirement.

## 5. Cabin light switch has three positions:-

**OFF** : Cabin light 'OFF'.

**DOOR** : When the door is open; the cabin light glows and goes 'OFF' when the door is closed.

**ON** : Cabin light remains 'ON'; till it is switched 'OFF'



### ⚠ CAUTION

- When the inter axle lock is in engaged position, do not drive the vehicle more than the speed of 30 kmph.
- Prolonged use of cabin light when the engine is off may cause battery drain.



# Fuses & Relays

## Fuse and Relay Box :-

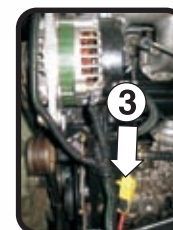
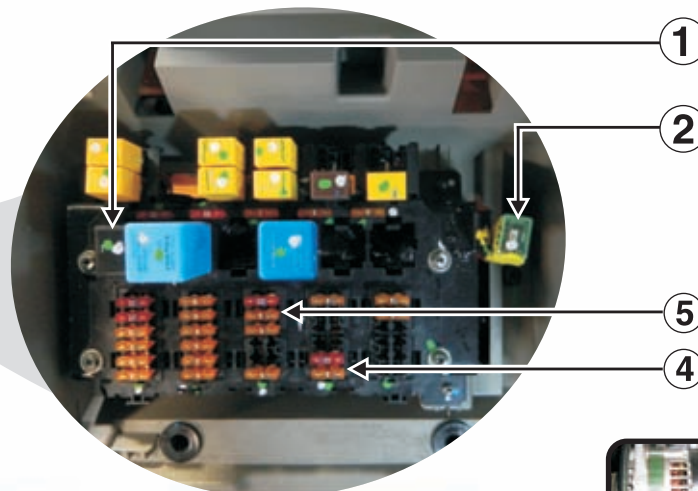
The fuse & relay box is located on the left side of the dashboard in front of the co-driver seat.

A sticker explaining the fuses & relays is pasted inside the fuse box lid.

**If engine does not start, check following fuses & relays :-**

1. Ignition relay.
2. Maxi fuse in the fuse box. (40 amps)
3. Maxi fuse near alternator. (60 amps)
4. Fuel feed pump fuse.
5. Fuel solenoid fuse.

FUSE AND RELAY LAYOUT									
REAR WORK LAMP 24V/15A	PARKING LAMP 24V/15A	HEAD LAMP HI 24V/15A	AC CLUTCH 24V/15A						
FUEL FEED PUMP 24V/15A	HORN 24V/15A	HEAD LAMP LOW 24V/15A	CONDENSOR 24V/15A	STARTER RELAY 24V/15A					
IGNITION 24V/15A	WIPER CONTROLLER 24V	BLOWER 24V/20A	HORN TIMER 24V/15A	HVAC CONTROLLER 24V/15A					
HEAD LAMP HI LH 15A	FLASHER 5A	WIPER & WASHER 15A	REVERSE LIGHT 15A						
HEAD LAMP HI RH 15A	FAN 15A	INSTRUMENT CLUSTER 5A	IGNITION 15A						
HEAD LAMP LO LH 15A	EXHAUST BRAKE 5A	FUEL SOLENOID 5A	HEAD LAMP LEVELING 15A						
HEAD LAMP LO RH 15A	CABIN & ENGINE LAMP 15A	STOP & REVERSE LAMP 15A	CONDENSOR 15A						
POSITION MARKER LH 15A	HORN HT & LT 15A	FUEL FEED PUMP 15A	AC CLUTCH 15A						
POSITION MARKER RH 15A	BATTERY 15A	KKSB 15A	BLOWER 20A						



## CAUTION

- Do not use higher or lower rating fuses than designated.
- Always use recommended rating fuse only.



Truck and Bus Division

**Mahindra**  
Rise.



# Gear Shifting Pattern & Tyres

## Gear shift:-

The gear shift pattern is shown on the lever knob. The clutch pedal should be pressed down fully while shifting the gear and release slowly after shifting the gear.

## Tyre rotation:-

It is recommended to do the tyre rotation as per the sequence shown at every 250 Hrs for better tyre life.

## Wheel alignment:

It is recommended to do the wheel alignment as specified first at 500 hrs and there after every 1000 Hrs for better tyre life.

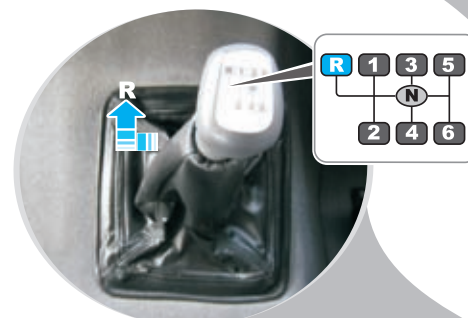
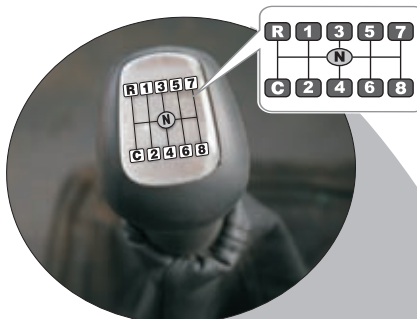
While driving the vehicle in unladen condition the speed should be controlled in such a way that the chances of tyre cuts can be avoided.

## CAUTION

- Reverse gear should be engaged only when vehicle is stationary.
- Always follow recommended gear shifting speed limits.
- Always maintain recommended tyre pressures.
- Check the tyre pressure when tyres are at ambient temperature.



Truck and Bus Division



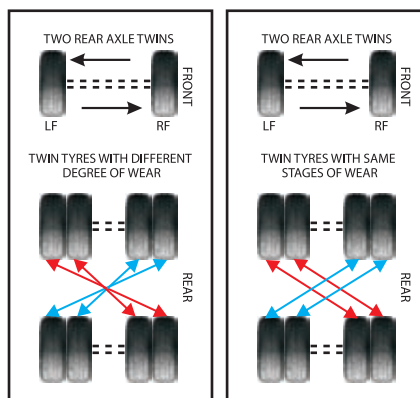
## Speed Limits

Gear	9 Speed (km/hr)
Crawler	0 – 5
1	5 – 10
2	4 – 13
3	8 – 18
4	10 – 25
5	15 – 35
6	25 – 45
7	30 – 65
8	Above 60

Gear	6 Speed (km/hr)
1	upto 10
2	10 - 20
3	20 - 30
4	30 - 40
5	40 - 50
6	Above 50



## Tyre Rotation



## Recommended Tyre Pressures

Type Size	Tyre Pressure (PSI)			
	Front (Rib)		Rear (Lug)	
	Laden	Unladen	Laden	Unladen
10x20-16PR	115 (PSI) 8.08 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>	90 (PSI) 6.68 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>
10R20-16PR	120 (PSI) 8.44 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>	90 (PSI) 6.68 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>
10x20-16PR	115 (PSI) 8.08 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>	95 (PSI) 6.68 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>
10R20-16PR	120 (PSI) 8.44 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>	95 (PSI) 6.68 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>
Spare Wheel	—	—	95 (PSI) 6.68 kg/cm <sup>2</sup>	70 (PSI) 4.92 kg/cm <sup>2</sup>

# Tilt & Telescopic Steering Arrangement

The tilt & telescopic steering adjustment helps the driver to attain comfortable posture while driving.

- 1. Steering adjustment :-** Lift the lever upward to unlock the steering shaft. Move the steering towards or away from the driver (Tilting) and upwards or downwards (Telescopic) to attain comfortable driving position.
- 2. Fan switch :-** LH & RH.
- 3. Hazard switch :-** In case of vehicle breakdown if the vehicle has to park beneath the road; press the switch to glow all the side indicators at a time to warn other vehicles passing on the road.

## CAUTION

- Lock the lever after the required adjustment of the steering.
- Steering should be adjusted before moving the vehicle.
- Prolonged use of fans when the engine is off may cause battery drain.



Truck and Bus Division

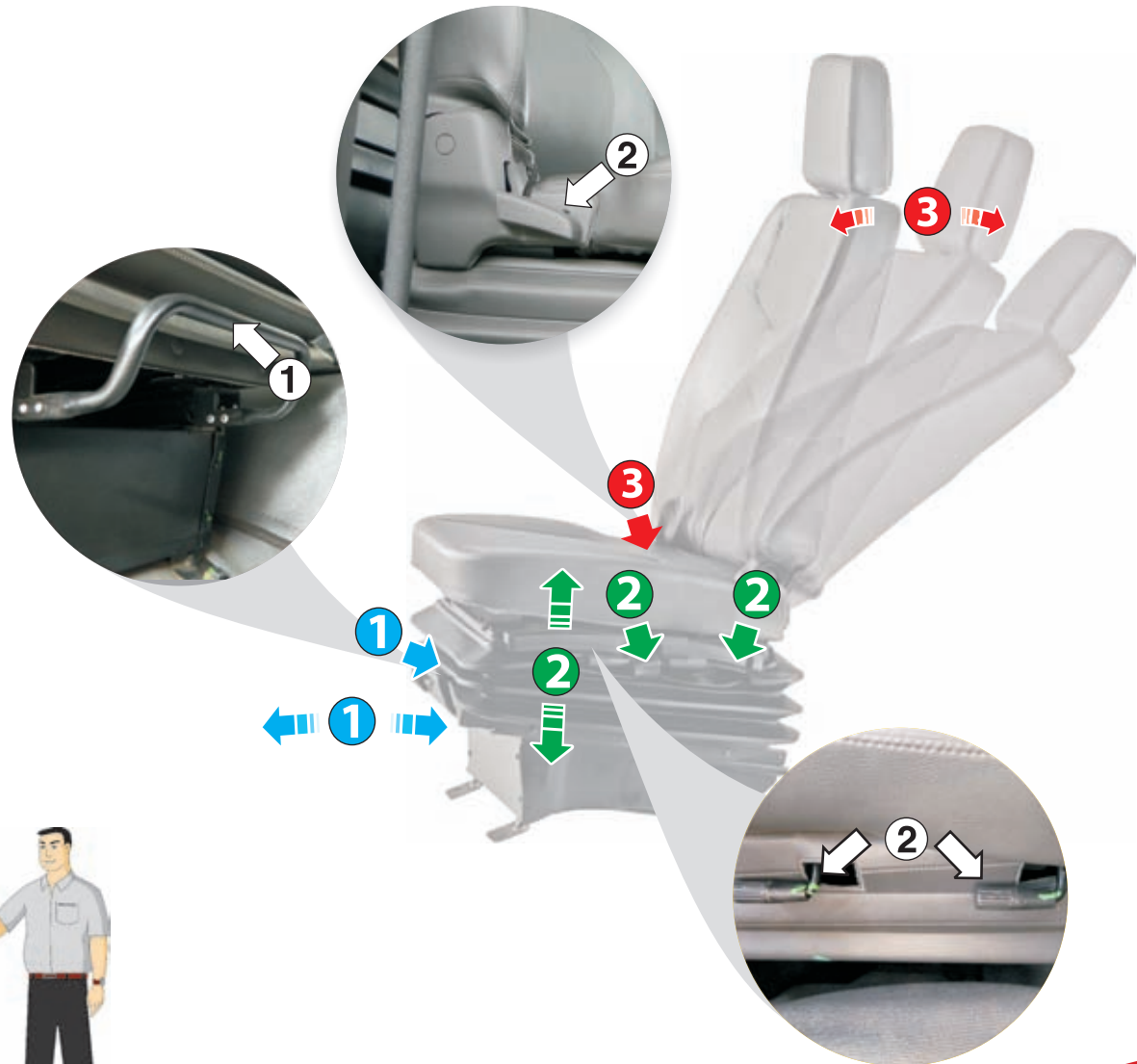


# Driver Seat Adjustments

The driver seat can be adjusted in three different directions as shown to achieve maximum comfort level while driving.

## Seat adjustment:-

1. Lift the locking lever to move the driver seat forward & backward.
2. The two levers located on the left side of the driver seat enables to move the seat in upward & downward directions.
3. The seat back adjustment can be done using the lever provided on right side of the driver seat.



## CAUTION

Do not adjust the seat while driving.



Truck and Bus Division

**Mahindra**  
Rise.



# Fuel System

- 1. Fuel tank :-** The fuel tank & water separator are located on the right side of the vehicle. 250 liter fuel tank, as a standard fitment is provided with lock arrangement. Use key to open the lock.
- 2. Water separator cum fuel filter :-** A drain cock is provided at the bottom of the water separator cum fuel filter to drain the accumulated water content.

## CAUTION

**Fuel Tank :** The minimum required diesel quality in the fuel tank is 60 litres. If the same is not maintained the fuel system aggregates like F.I.P. Feed Pump, etc. may get damaged.

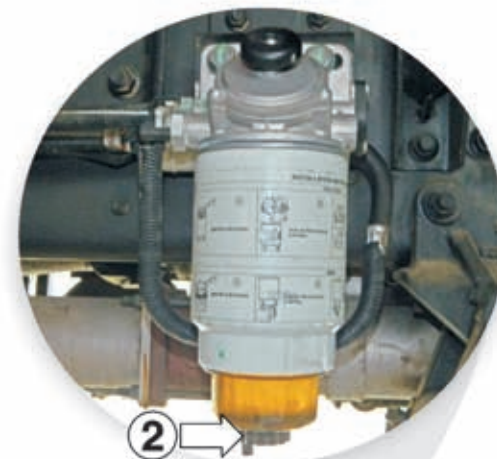
Never close the breather pipe fitted on the float unit. Closing of breather pipe may damage the fuel tank.

### **Water Separator cum Fuel Filter :**

The water from the water separator cum fuel filter needs to be drain as and when required to safeguard the F.I.P. & other precision aggregates of the engine.

Do not over tight the drain cock as it may get damaged.

While draining the water from water separator; the ignition switch should be in 'OFF' position.



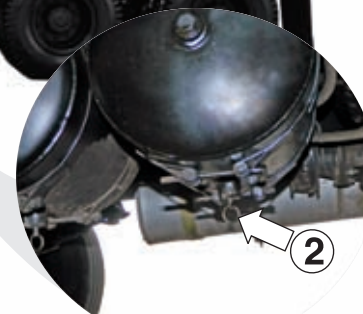


# Air Tanks & Battery

1. Two batteries are fitted on the left side of the vehicle.
2. The air tanks are fitted on the left side of the vehicle below the batteries.

Drain valve is provided at the bottom of each air tank.

Regularly drain the air tanks to remove the water content.



## ⚠ CAUTION

- Do not apply grease on battery terminals. Apply petroleum jelly.
- Do not top up normal water in the batteries.  
Always use De-mineralised water.
- Do not tap direct connections for 12V supply from battery. This may cause in battery draining.
- Regularly interchange both the batteries for better performance.



Truck and Bus Division

# Tow Hook, Hyfix Assembly & Tipper Body Prop

## 1. Tow Hook:-

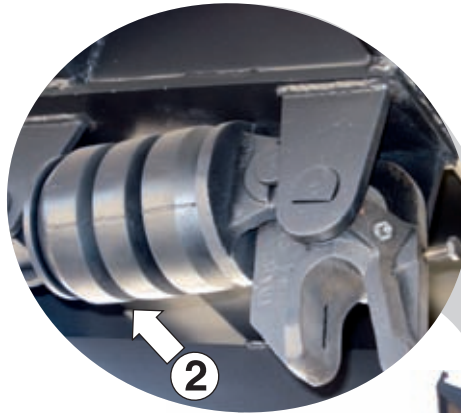
Tow hook is stored in cabin. While towing the vehicle; insert the tow hook in the bracket and lock it by pushing and rotating in clockwise direction.

## 2. Hyfix Assembly:-

The hyfix assembly fitted on the tipper body reduces the vibration of load body when the vehicle is being driven in unladen condition.

## 3. Tipper Body Prop:-

Use tipper body prop while working under the tipper body keeping the safety in mind.



Truck and Bus Division

# Hydraulic Oil Tank

## Hydraulic oil tank:-

Check the hydraulic oil quantity daily. The oil grade is D 68 & the quantity is 60 ltrs.

Check & clean the filter provided on the hydraulic tank weekly.

## Hydraulic oil inspection eye:

Visually inspect the hydraulic oil level when the tipper is parked on level surface and hydraulic cylinder is fully in rest condition. (Rest-that is in untipped condition.)

### NOTE

Hydraulic oil level should be up to the red mark.



Truck and Bus Division



# Cabin Lifting & Resting

## Cabin lifting :-

Move the key ① towards the front side of the vehicle.

Using the cab tilting lever, operate the hydraulic pump through the hexagonal nut ②. The cabin stay rod lock ③ will get locked automatically.

## Cabin resting :-

Press & lock the cabin stay rod lock ③.

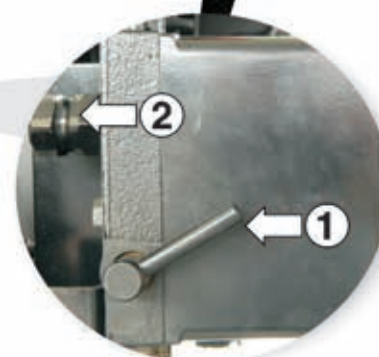
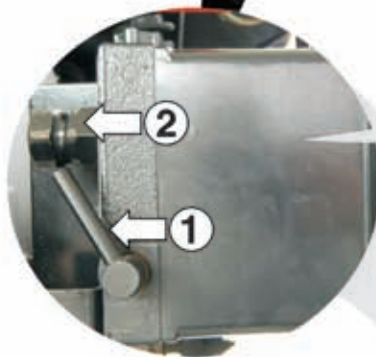
Move the key ① towards the rear of the vehicle. Using the cab tilting lever, operate the pump through the hexagonal nut ②.

If cabin stay rod lock ③ is not unlocked before moving the key ① towards the rear side of the vehicle; the cabin stay rod will get damaged due to cabin weight.

After the cabin is rested do not change the key ① position.

### ⚠ CAUTION

- Before tilting the cabin ensure that the vehicle is parked on leveled surface.
- Ensure that there is no loose material inside the cabin.
- Unlock the cabin stay rod before moving the key ① towards the rear side of the vehicle to avoid damage to the cabin stay rod.





# Body Tipping & Lowering Controls

## Tipping:-

- Before tipping, make sure the tipper is parked on level & stable ground.
- Make sure that front wheels are in line with rear wheels. (Front wheels in straight direction)
- Ensure that hand brake of the vehicle is in "ON" position.
- In neutral gear, start the engine, build up the air pressure upto 8-10 bar, then press the clutch pedal and engage the PTO slowly using PTO switch ① near the gear lever.
- Release the clutch pedal slowly.
- Start tipping by using the air control valve ②.



## Lowering:-

- Using the air control valve ②, lower the tipper body.
- Lowering operation automatically disengages PTO switch.
- Do not put the engine in high RPM while lowering the body.



### ⚠ CAUTION

- Do not tip the load on uneven ground. It may damage the tipping system.
- Do not move the vehicle when the load body is in tipped condition.

# Do's & Don'ts

## Do's



Uniform & equal loading throughout tipper body



Tip on level road



Use body prop while working



Stay away from working area



Drive only when body is rested

## Don'ts



Do not Overload



Do not tip on uneven ground



Do not stay under an unsupported body



Do not stay in the working area of the tipper



Do not drive with raised body



## Important Points to Note



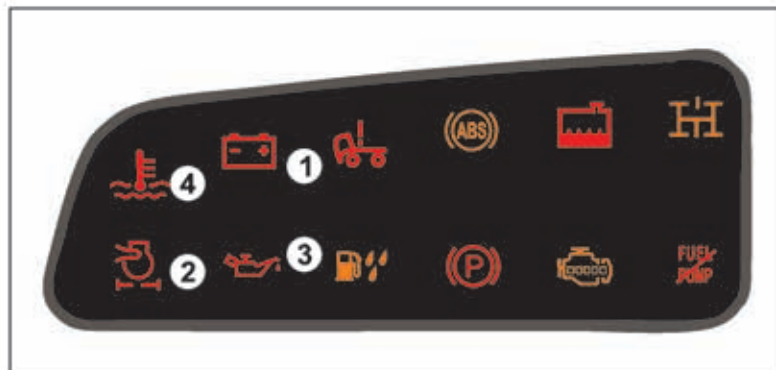
It is important to note that the service schedule of the tippers should be followed in terms of hours & not in terms of kilometers.



Do not clean the air filter element using the compressed air. It may damage the air filter element.

In very dusty conditions the air cleaner element may require frequent change.

Ensure the correct fitment of the air cleaner lock clips.



The very important warning indicators are shown in the photograph:-

1. Battery
2. Air Filter Restriction
3. Low Oil Pressure Warning
4. High Coolant Temperature

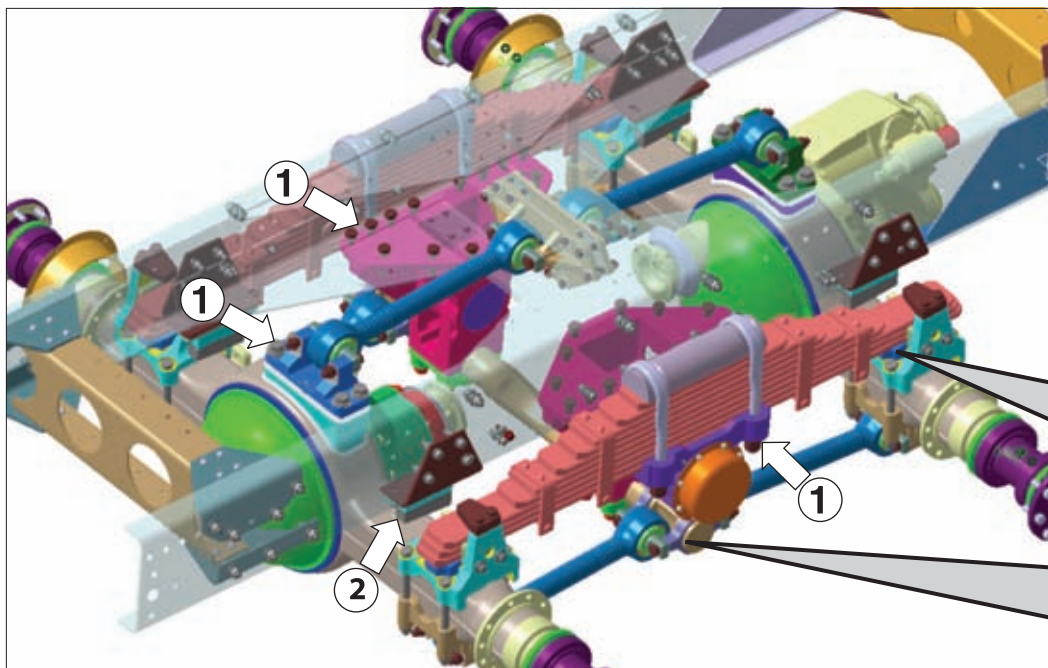
**If any of these indicator seen ON / Glow, stop the vehicle immediately and check for related defect.**



Ensure the correct fitment of air cleaner snorkel rubber bellow after the cabin is rested fully. If the fitment of rubber bellow is improper the air cleaner element may choke early & require frequent change.



# Service & Warranty



## Maintenance - Bogie Suspension

### 1 Check and tighten on weekly basis -

- a) All U clamps
- b) All suspension mountings fasteners on chassis and cross member
- c) All torque rod bracket mounting on axle
- d) All torque rod bolts



### 2 Visual Inspection on weekly basis -

- a) Bump stopper rubber condition
- b) Side and bottom wear pad
- c) Torque rod bush condition
- d) Torque rod circlip position



## Labour Free Service Schedule

Type of Service	Hours	Months
1 <sup>st</sup> Service	500 to 550	3
2 <sup>nd</sup> Service	1000 to 1050	6
3 <sup>rd</sup> Service	1500 to 1550	9
4 <sup>th</sup> Service	2000 to 1250	12



**4000 Hrs.  
Or  
24 Months**

*\* Whichever Occurs Earlier*

*\* Whichever occurs earlier.*

It is important to carry out the free services at MTB authorised set ups only to avail the benefit under warranty.

**Note :** Valid for hours or period from the date of sale whichever occurs earlier.



**Mahindra Trucks and Buses**  
GENUINE SPARES



Five unique features that cut down downtime drastically:

- 1. Expert on call
- 2. Multilingual
- 3. In-house
- 4. Two way communication
- 5. Complaint registration

This service is available for all

Mahindra & Mahindra Ltd.

(HCV/LCV)

**Mahindra**  
Rise.