



TEREX Equipment Limited Operator Handbook



Operator Handbook
T R 10

15504845
OHE783

Original Operating Instructions

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TEREX Equipment Limited Operator Handbook Re-order

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OHE783 (CEC2)
Re-order Part Number
15504845

This controlled document is the original instruction
and should remain with the vehicle at all times.

Revision: November 2011

Dealer:

Operator Handbook
TR100

15504845

OHE783

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For further information on the subject matter detailed within this Operator Handbook, please refer to Terex Equipment Limited Service Manuals and Product Parts Books.

Alternatively, please contact;

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The illustrations, technical information, data and descriptive text in this manual, to the best of our knowledge, were correct at the time of print. The right to change specifications, equipment and maintenance instructions at any time without notice, is reserved as part of the Terex Equipment Limited policy of continuous development and improvement of the product.

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Please refer to TEREX Specification Sheets or consult Factory Representatives to ensure that information is current.

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**ONLY TRAINED COMPETENT PERSONNEL
SHOULD BE ALLOWED TO OPERATE THIS
VEHICLE**

The operator is responsible and must be familiar with the contents of the Operator's Handbook and any Local / National regulations prior to operating this vehicle.

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CALIFORNIA
Proposition 65 Warnings

WARNING: Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.
Wash hands after handling.

SPARE PARTS STATEMENT

When carrying out repairs, alterations or fitting attachments, it is important that only genuine spare parts are used to ensure the operating safety of the machine is not impaired.

It is only by using genuine parts that the technical requirements stipulated by the manufacturer can be maintained.

If a General Operating Approval is issued for this machine, it may be considered null and void if non-genuine parts are used.



EC DECLARATION OF CONFORMITY

MANUFACTURERS NAME AND FULL ADDRESS:	
Terex Equipment Limited, Newhouse Industrial Estate, Motherwell, Scotland. ML1 5RY	
PERSON AUTHORISED TO COMPILE TECHNICAL FILE	DIRECTIVES COMPLIED WITH:
Name: Paul Douglas, Address: Newhouse Industrial Estate, Motherwell, Scotland. ML1 5RY	2000/14/EC 2004/108/EC 2006/42/EC
DESCRIPTION OF MACHINERY:	
MAKE:	TEREX
MODEL/DESIGNATION:	TR100 Rigid Truck
INSPECTOR:	
UNIT SERIAL NUMBER:	
WE DECLARE THAT THE ABOVE MACHINERY FULFILS ALL THE RELEVANT PROVISIONS OF THE ABOVE DIRECTIVES	
FULL QUALITY ASSURANCE (Annex X):	CERTIFICATE NUMBER:
L.R.Q.A. Ltd., Hiramford, Middlemarch Office Village, Siskin Drive, Coventry. CV3 4FJ. England	LRQ 0925301/A
FOR AND ON BEHALF OF THE MANUFACTURER:	DATE OF MANUFACTURE:
NAME: Paul Douglas	
POSITION: General Manager	
PLACE: Motherwell, Scotland	SIGNATURE: 
	DATE:

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CONTENTS

1. INTRODUCTION

Introduction	1-1
Safety Precautions	1-1
Intended use of machine	1-2
Hazard Classification	1-2
Machine Identification	1-2
Theft Deterrent Practices	1-3

2. SAFETY PRECAUTIONS

General	2-4
Vehicle Lifting Precautions	2-5
Vehicle Tie Down Precautions	2-5
Preventing Fire Hazards	2-6
Mounting and Dismounting	2-7
Pre-Starting	2-8
Starting	2-8
Operating	2-8
Roading	2-10
Lubrication and Servicing	2-10
Scrapping of Machine	2-11
Option With Additional Mirrors	2-12
CCTV	2-17
Ground Level Isolation Switch	2-17
Wheels and Tyres	2-18
Avoid Tyre Explosion Hazard	2-19
Decals and Instruction Plates	2-20

3. CONTROLS AND OPERATING

Controls and Instruments	3-3
Basic Data	3-4
Warning Lights	3-4
Instruments	3-7
Switches	3-8
Controls	3-10
Heater	3-10
Air Conditioner	3-10
Operator's Seat - Air Suspension	3-11
Seat Belt	3-12
Machine Controls	3-14
Braking	3-14
Service Brake	3-14
Park/Emergency Brake	3-14

Par/Emergency Brake	3-14
Automatic Spotting Brake	3-14
Retarder	3-15
Engine	3-17
Accelerator	3-17
Steering	3-18
Transmission	3-19
Description and Operation	3-21
General Transmission Operation	3-25
Body Control	3-27
Raising the Body	3-27
Lowering the body	3-27

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CONTENTS

4. OPERATING THE TRUCK

Pre-Starting Inspection	4-3
Component Checks	4-4
Suspension Ride Struts	4-6
Engine Operation	4-7
Starting the Engine	4-8
Starting the Engine at low ambient Temperature	4-10
Starting the Engine with Jumper Cables	4-10
Pre-Operating Checks	4-11
Brake Function Checks	4-12
Driving and Stopping	4-13
Stopping the Engine	4-14
Parking	4-16

5. WORKING THE TRUCK

Working the Truck	5-3
Loading	5-3
Hauling	5-5
Dumping	5-6
Empty Return	5-7

6. ROADING

Roading	6-3
General	6-3
Preparation Prior to Rading	6-3
In Case Of Trouble	6-4

7. MOVING DISABLED TRUCK

Moving Disabled Truck	7-3
-----------------------	-----

8. LUBRICATION AND SERVICING

Safety Precautions	8-3
Lubrication and Servicing	8-4
Lubrication and Service Chart	8-5
Miscellaneous Servicing	8-7
Service Capacities	8-8
Recommended Lubricants	8-9

Recommended Lubricant	8-9
Air Conditioning Re-start Procedure	8-10
Tyre Pressure	8-10

9. TECHNICAL DATA

Technical Data - TR100	9-3
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10.SYMBOL IDENTIFICATION 10-3

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Safety alert symbol

INTRODUCTION

This Handbook is provided as a guide to familiarize the operator and serviceman with the controls, recommended inspections, start-up, operating, shutdown and parking procedures for a TR100 Rigid Truck.

Look for the safety alert symbol to point out important safety precautions. It means:

ATTENTION! BECOME ALERT! YOUR SAFETY AND THE SAFETY OF OTHERS IS INVOLVED!

SAFETY PRECAUTIONS

The machine should be properly operated and maintained to keep it in a safe, efficient operating condition. Be sure that all controls are free of mud, grease, or other matter that might cause slips hazardous to the operator, serviceman, or other personnel or equipment. Report all malfunctions to those responsible for maintenance, and, do not operate the equipment until corrected. Normal service or maintenance performed as required can prevent unexpected and unnecessary downtime.

This Handbook describes general inspections, servicing and operation with the normal safety precautions required for normal servicing and operating conditions. It is not a guide however, for other than normal conditions or situations, and therefore, servicemen and operators must be safety conscious and alert to recognize potential servicing or operating safety hazards at all times, and take, necessary precautions to assure safe servicing and operation of the machine.



WARNING

These machines are equipped with cylinders containing compressed nitrogen gas. Transportation of these machines by any method may

require a special permit from the appropriate authority of the country involved. Consult your dealer for details.
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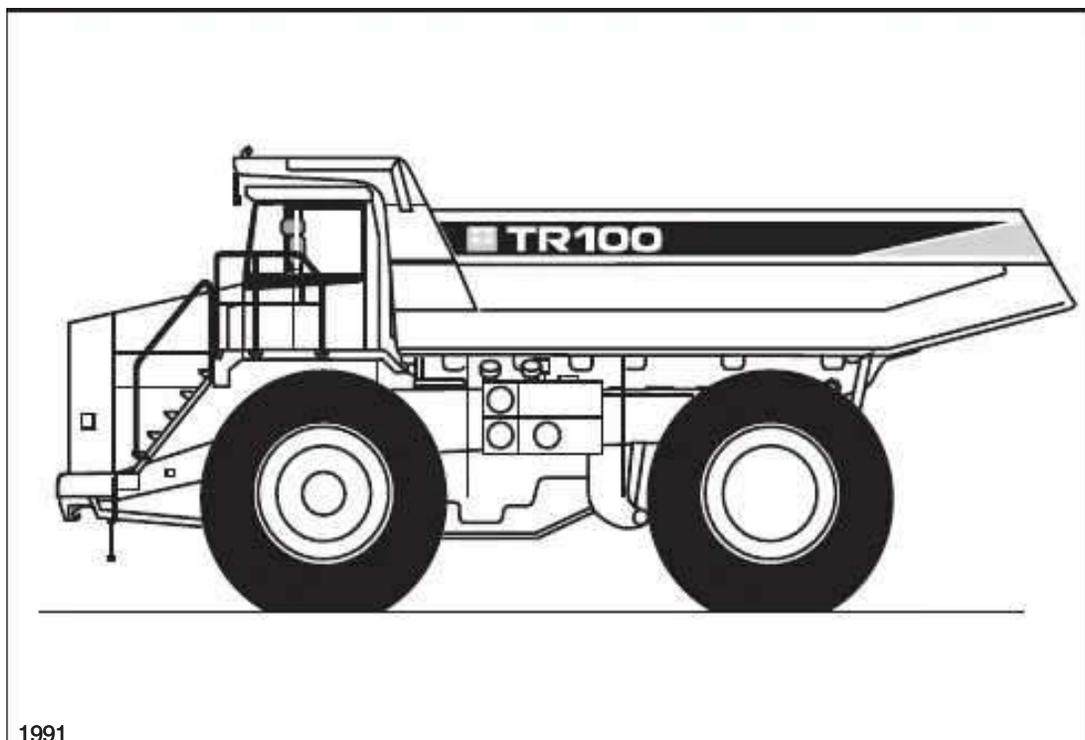
All information, illustrations and specifications contained in this publication are based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

Continuing improvement and advancement of the design may cause changes to your machine which may not be included in this publication. Each publication is reviewed and revised, as required, to update and include these changes in later editions.

This Handbook contains lubrication and routine servicing instructions, most of which can be performed in the field. Maintenance manuals containing repair/rebuild procedures can be obtained from your dealer.

1-1

Introduction



INTENDED USE OF MACHINE

This product and its approved attachments are primarily intended to be used as described in this manual.

Use of this product in any other way is prohibited and contrary to its intended use.

Hazard Classification

Multi-tier hazard classification system is used to communicate potential personal injury hazards. The following signal words used with the safety alert symbol indicate a specific level of severity of the potential hazard. Signal words used without the safety alert symbol relate to property damage and protection only. All are used as attention getting devices throughout this handbook as well as on decals and labels fixed to the machinery to assist in potential hazard

recognition and prevention.

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DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



Machine Identification

While reading this handbook you will notice references to controls and equipment which may not be found on all machines. It is important that you know your machine and its equipment and how to operate it properly.

Information regarding the machine model, code and chassis serial number is found on the unit serial number plate on the rear right of the front frame. The machine model and serial number should always be referenced in any correspondence with your dealer or factory.

Introduction

There is a dealer serving every part of the world where these products are sold. Your dealer is ready to provide you with any additional information needed and should be consulted for additional publications for this machine.

THEFT DETERRENT PRACTICES

General

The owner/operator should take the following precautions to discourage theft, to aid in the recovery in the event that the machine is stolen, or to reduce vandalism.

Actions to Discourage Theft and Vandalism

Remove all keys any time the machine is left unattended.

At night lock all doors and attach, secure or lock all anti-vandalism and anti-theft devices on the machine.

Immobilise the machine by removing a critical electrical or starting system device.

Upon receipt of a machine, record the machine serial number and the serial numbers of all major components and attachments. Keep this list up to date and filed in a safe location for fast retrieval.

Place a decal or notice on the machine stating that all serial numbers are recorded.

Discourage the thief! Inspect the gates and fences of the machinery storage yard or construction site. Keep machines in well-lit areas and ask the local law enforcement authorities to make frequent checks around the storage yard or work site.

Establish liaison with neighbours and ask them to watch equipment left at job

sites and to report any suspicious activities to the local law enforcement au-

...to report any suspicious activities to the local law enforcement authorities.

Make frequent inventories of machines to promptly detect losses or vandalism.

Actions to Aid in Recovery of Stolen Machines

In the event of theft, immediately notify the law enforcement authorities having jurisdiction. Provide the investigating officer with name, type of equipment, chassis and serial numbers of major attachments and components. It is helpful to show the investigating officer an Operator's Handbook, photographs, and advertising, to familiarize him with the appearance of the machine.

Report the theft to the insurance company. Provide the model and all serial numbers.

Report the model and serial numbers of the stolen machine to a dealer handling the respective line of equipment. Request that the dealer forward this same information to the equipment manufacturer.



2 - Safety

Safety

SAFETY

The machine should be properly operated and maintained to keep it in safe, efficient operating condition. Be sure that all controls are free of mud, grease, or other matter that might cause slips hazardous to the operator, serviceman, or other personnel or equipment. Report all malfunctions to those responsible for maintenance, and, do not operate the equipment until corrected. Normal service or maintenance performed as required can prevent unexpected and unnecessary downtime.

This Handbook describes general inspections, servicing and operation with the normal safety precautions required for normal servicing and operating conditions. It is not a guide however, for other than normal conditions or situations, and therefore, servicemen and operators must be safety conscious and alert to recognize potential servicing or operating safety hazards at all times, and take necessary precautions to assure safe servicing and operation of the machine.



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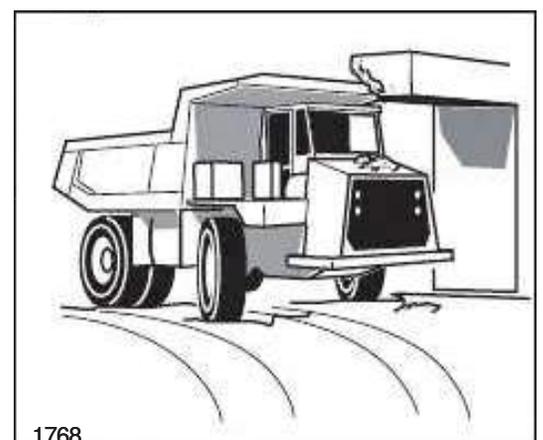
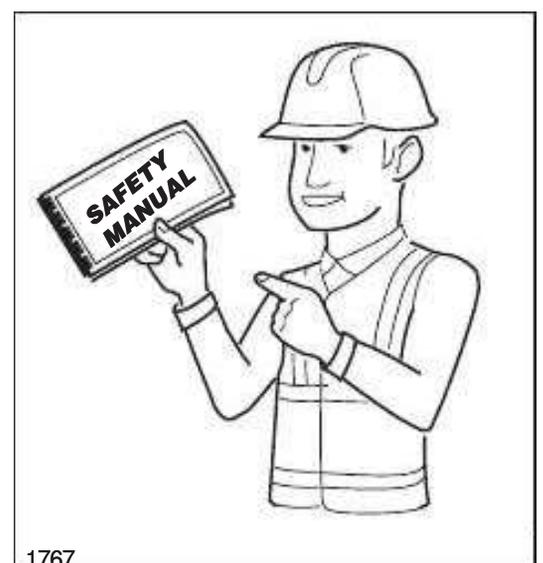
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Safety

SAFETY PRECAUTIONS

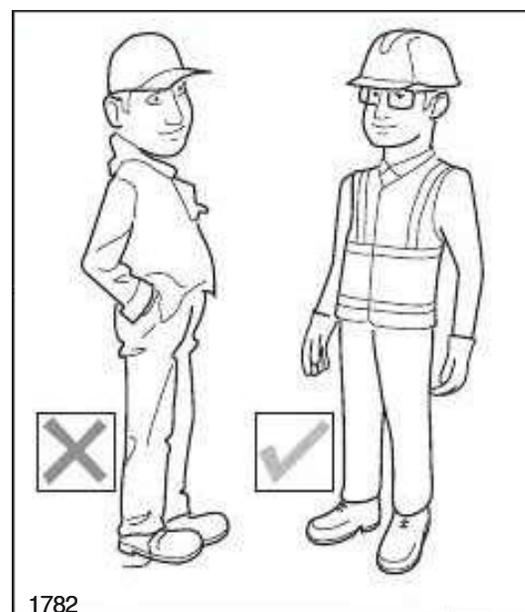
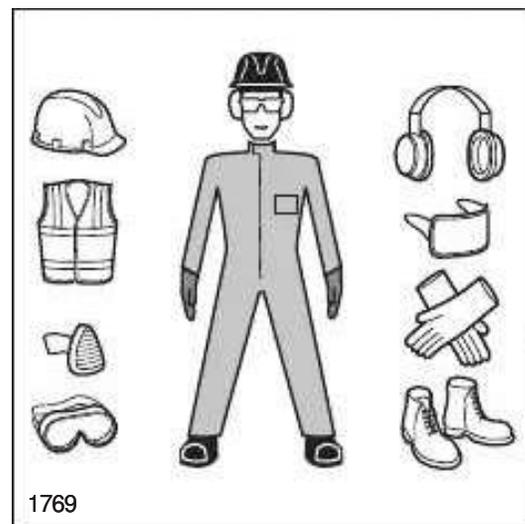
General

- * Read this Operator's Handbook and learn the operating characteristics and limitations of the vehicle. Know what operating clearances the vehicle requires.
 - Read and understand all the safety signs prior to operation.
 - If the safety signs are obstructed by dirt or debris, clean them using mild soap and water prior to operation.
 - If the safety signs are damaged or illegible, replace them immediately, prior to operation.
- * Read the AEM Safety Manual and follow the recommended safety precautions.
- * Know clearances of all side and overhead obstructions such as wires, bridges, etc., for operating safely.
- * Be especially aware of overhead power lines.
<https://www.besttruckmanuals.com/>
- * Always know all traffic rules, signs, flags and hand signals used



on the job and know who has the responsibility for signalling.

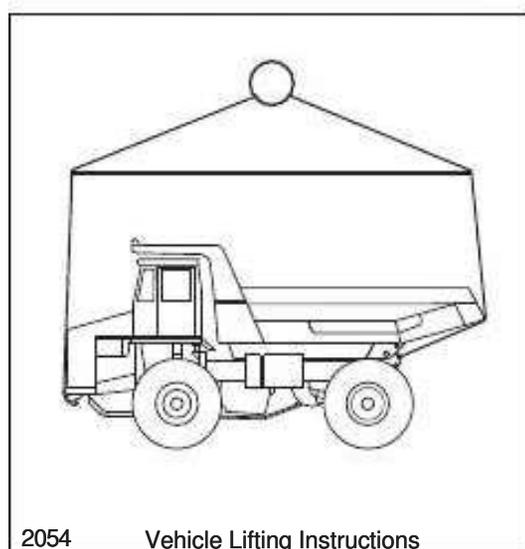
- * Be aware of operating hazards that weather changes can create on the job. Make yourself familiar with procedures that should be followed when a severe rain or electrical storm strikes.
- * Never attempt to operate or work on a vehicle when not feeling physically fit.
- * Know what safety equipment is required and use it. Such equipment may be: Hard hat, safety glasses, reflector type vests, respirators and ear plugs.
- * Never wear loose clothing, rings, watches etc., that might catch levers and controls and cause loss of control.
- * Keep hands and controls free from water, grease and mud to assure nonslip control.
- * Handle fuels and lubricants carefully and clean up spills to avoid fire and slipping hazards.
- * Clean any mud, grease or oil from controls, handrails, ladders and decks. Lash necessary tools securely and remove all loose items before operating the vehicle. Never rush. Walk, do not run.
- * Never carry more than one person and only in the instructor/trainer seat.



The protection offered by the roll over and falling object protective structure may be impaired if it has been subjected to any modification or damage. Unauthorized modification will void certification.

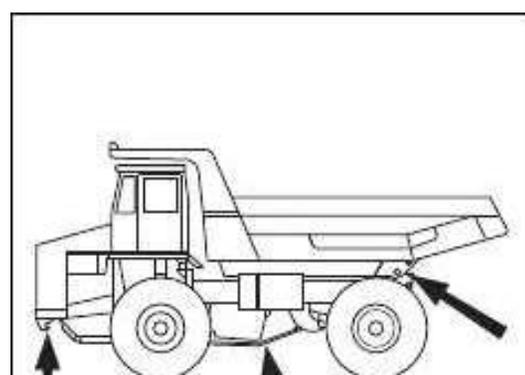
2-4

Safety



Vehicle Lifting Precautions

- * Prior to lifting, the vehicle should be parked on a level surface, wheels blocked.
- * The vehicle should be lifted using a spreader bar if possible. Lift using FOUR slings from the lifting points provided at the bumper end of the chassis and at the rear of the body.



Vehicle Tie Down Precautions

- * The vehicle should be secured at the tie down points located at the front bumper and at the body safety pin location at the rear of the chassis.

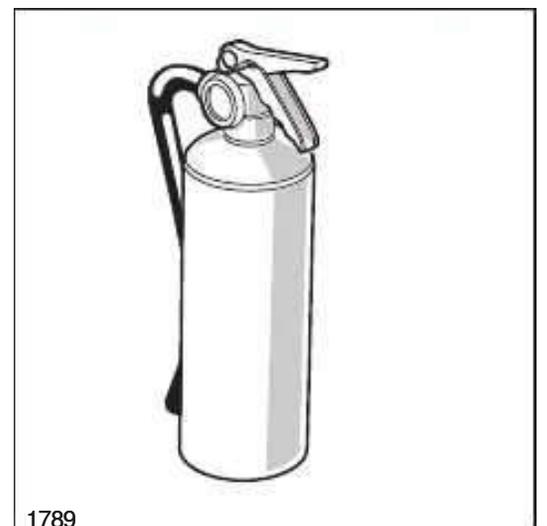
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Safety

PREVENTING FIRE HAZARDS

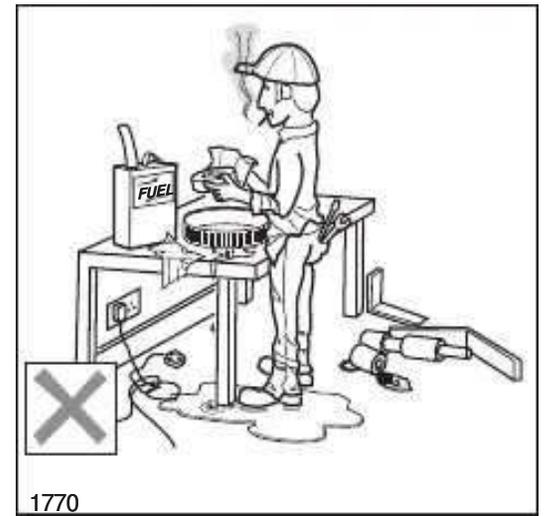
General Fire Precautions

- * Make sure the vehicle has a fire extinguisher and that it is accessible and fully charged (Not furnished with the vehicle).
- * Never use an open flame as a light anywhere on, or around, the vehicle.
- * Clean all dirt, oil, grease and other fluids from systems and components to minimize fire hazards and aid in spotting loose or leaking lines, fittings etc..
- * Check the engine compartment for rubbish, oily rags or other debris that could cause fires before starting the engine.
- * Don't let greasy, oily rags or similar hazards accumulate in the cab.
- * If the vehicle has been operated with an under inflated tyre, make sure that the tyre has cooled sufficiently before parking and leaving the vehicle unattended.



1789

- * Don't use diesel fuel or other flammable fluids for cleaning purposes. Use approved, solvents only.
- * Make sure all fluid system caps, drain cocks, valves, fittings, lines etc., are secure and leak free.
- * ~~Never use an open flame (match, lighter, etc.) when checking fuel, lubricant, coolant and battery fluid levels or when checking for fluid leaks. Use a flashlight or other safe lighting only.~~
- * Shut off engine and use extra caution if engine is hot when refuelling. Ground the hose spout to prevent sparks when spout is touched to fuel tank filler tube.
- * Never smoke while checking or adding fuel or other fluids or handling fluid containers and lines.
- * Use care and do not stand downwind when adding fuel or other flammable fluids to tanks and reservoirs to avoid fluids being blown or splashed onto clothing.
- * Close fuel tank shut-off valves, if used, before servicing fuel system.
- * When preparing vehicles or components for storage, seal and tape all openings and close containers tightly to seal in all volatile inhibitor fluids and compounds used.
- * Follow manufacturer's recommendations when handling and using engine - starting fluids and disposing of spent containers. Do not puncture or burn empty containers. These fluids are explosive and highly flammable.



2-6

Safety

Electrical Hazard Precautions

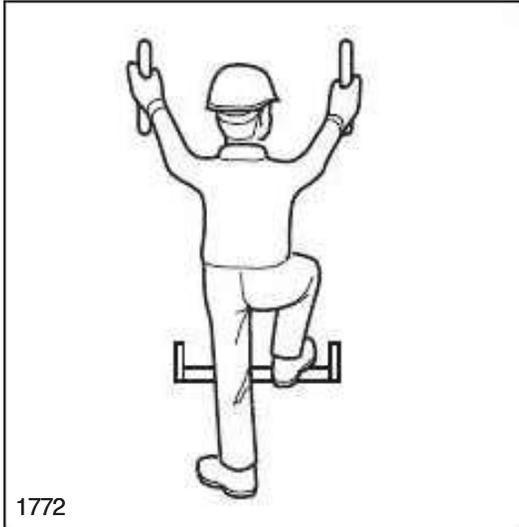
- * Never smoke or allow open flames or sparks near batteries.
- * Leave battery box open when charging batteries in the vehicle for adequate ventilation of explosive gas (hydrogen) produced.
- * Always disconnect batteries before repairing electrical system to avoid danger of fire-causing sparks. Disconnect battery ground cable first and reconnect last.
- * Always disconnect batteries & alternator leads before carrying out any welding on the vehicle.
- * Never check battery charge by placing metal objects across battery posts to avoid sparks at battery posts.
- * Use jumper cables only as recommended. Improper use can result in battery explosion or unexpected vehicle motion.



- * Never operate engine starter for more than 30 seconds and allow two minutes between long cranking periods for cooling. An overheated starter could cause a fire.

could cause a fire.

- * If electric coolant or lubricant heaters are used, be sure to follow heater manufacturer's recommendations for use to avoid electrical and/or fire hazards.



Mounting and Dismounting

- * Only use steps and hand holds provided to mount or dismount the vehicle. Do not grasp the steering wheel.
- * Always face the access system and maintain at least three points of support to mount or dismount the vehicle (two hands and one foot, or two feet and one hand).
- * Ensure walkways, stairways, platforms, handrails and handholds are free of frost, ice, oil, water or anything else that could cause slip, trip or falls.
- * Never mount or dismount a moving vehicle. Never jump off the vehicle.

Safety

Pre-Starting

- * If engine is to be started and run indoors, ensure proper ventilation to remove deadly exhaust gases.
- * Always perform 'Pre-Starting Inspection' instructions described on page 4-3 to ensure the vehicle is ready for operation.
- * Always walk around the vehicle to make sure no-one is working on, underneath or close to the vehicle before starting the engine or operating the vehicle.
- * Adjust, secure and latch the seat and fasten the seat belt before starting the vehicle.
- * Sound horn before starting the engine or beginning to move the vehicle; two blasts for forward and three blasts for reverse.



Starting

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- * Do not start the engine or operate any control if there is a 'DO NOT



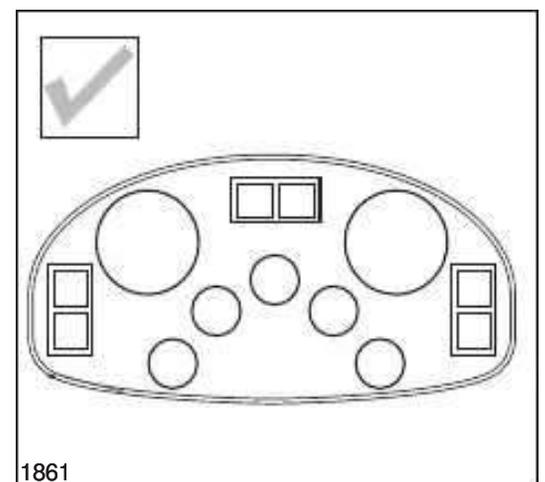
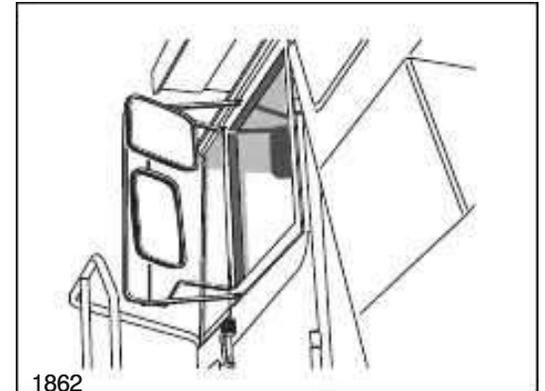
Do not start the engine or operate any control if there is a 'DO NOT OPERATE' or similar warning sign attached to any control.

- * Use jumper cables only as recommended. Improper use can result in battery explosion or unexpected vehicle motion.
- * Always obey 'Starting the Engine' instructions described on page 4-8.
- * Do not bypass the vehicle's neutral-start system. The neutral start system must be repaired if it malfunctions.
- * Start and operate the vehicle only from the operator's seat.



Operating

- * Ensure all cab glass, mirrors and light lenses are clean during vehicle operation for maximum visibility. Ensure mirrors are properly set / positioned.
- * Always keep cab floor clear of anything that could restrict full operation of pedals.
- * Always make sure all gauges, warning/indicator lights and controls are working properly before operating the vehicle.
- * Always perform 'Pre-Operating Checks' described on page 4-11 to ensure the vehicle is ready for operating.
- * Always wear seat belts when operating the vehicle.
- * In the event of a loss of steering pump output pressure, a fully pressurized accumulator provides a maximum of two lock to lock turns of the front wheels. A red warning light on the instrument panel illuminates when steering pressure falls below 83 bar (1 200 lbf/in²). If this light illuminates, indicating a loss of steering power, the machine must be stopped immediately and no further operation attempted until the fault is corrected.
- * Do not operate if exposed personnel enter the immediate work area.



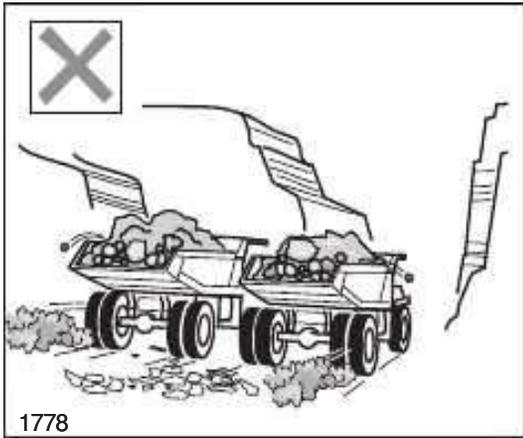
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Safety

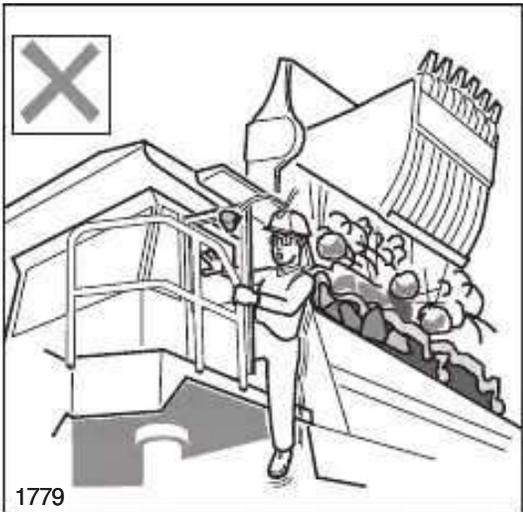


- * Sound horn before starting engine or beginning to move the vehicle; two blasts for forward and three blasts for reverse.
- * Watch for ground crew and other personnel on foot. Sound horn as a warning before setting the vehicle in motion and when approaching ground crew.
- * Be sure the body is fully down before moving the vehicle.
- * Always try to face or look in the direction the vehicle is travelling.
- * Use extreme caution and turn on lights at night or when fog, dust or similar hazards limit visibility. Do not overdrive your headlights.
- * Observe instruments frequently. Report any defects or unusual noises in the vehicle during operation.
- * Stay in gear when driving downhill. Do not coast with transmission in neutral. Select the proper gear and maintain safe speed with the service brakes or/and retarder. Always maintain safe speeds for haul road

brakes on and retarder. Always maintain safe speeds for road operating conditions for maximum control. Reduce speed before turning.



- * In the event of a loss of electric power to the gear shift control, the transmission will automatically lock in a gear range. If this occurs, stop the vehicle using the service brakes, apply the parking brake and do not operate until the fault is corrected.
- * Always operate straight up or down slopes whenever possible, side-hill operation can cause sideslip and possible roll-over.
- * Slow down when moving in congested areas. Do not race with other vehicles. Stop in authorized areas only, except in emergency.
- * Brake firmly in one application. Do not FAN the pedal. Never operate the vehicle if a warning light indicates a fault in the braking system.
- * Always give loaded vehicles the right-of-way when your vehicle is empty.
- * Always watch for holes, soft edges or other hazards when backing to dump over a spoil bank.



- * Always apply the Spotting Brake when the vehicle is being loaded or when dumping a Load.
- * Always stay in cab when being loaded.
- * Always lower the body and shut down the vehicle according to the procedure under 'Stopping The Engine' described on page 4-14 before leaving the vehicle unattended. If on a grade wheels should be blocked.

Safety

Roading

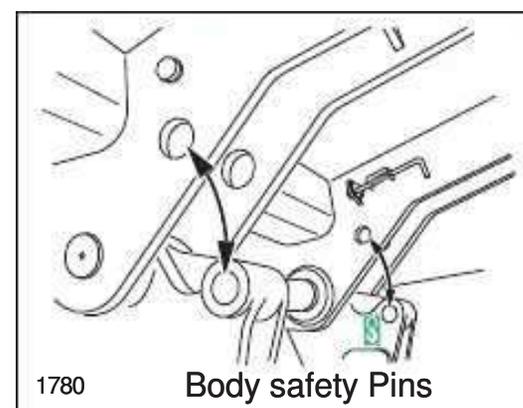
- * Match speed to road conditions.
- * Yield the right of way when required. Obey the rules of the road.
- * Stay as close to the side of the road as possible. Pass other equipment only when the road is clear and enough room / space to pass and reserve power is available.
- * Stop at appropriate intervals to inspect the vehicle and allow the tyres to cool. Tyre air pressure will rise during operation. Do not reduce tyre pressure. Excess speed will cause tyres to heat up. Reduce your travel speed, not tyre pressure.



- * Use accessory lights and devices at night or in poor visibility. Carry a flare kit. Do not overdrive your headlights.

Lubrication and Servicing

- * Do not allow unauthorized personnel to service or maintain this vehicle. Study this Operator's Handbook and the Maintenance Manual before starting, operating or servicing this vehicle. Always follow procedures and safety precautions detailed throughout the Maintenance Manual.
- * Always attach a 'DO NOT OPERATE' or similar warning sign to the ignition switch or a prominent control before cleaning, lubricating or servicing the vehicle.
- * Never allow anyone to work on the vehicle while it is moving. Make sure there is no one on the vehicle before working on it.
- * Do not work under or near an unblocked or unsupported body. Always use the body safety pins.
- * Do not work under or near any unblocked or unsupported linkage, part or vehicle.
- * Always shut down the vehicle according to the procedure under 'Stopping The Engine' described on page 4-14 and turn off the master switch before cleaning, lubricating or servicing the vehicle except as called for in Operators Handbook or the Maintenance Manual.
- * Always relieve pressure before servicing any pressurized system. Follow the procedures and safety precautions detailed in the relevant Maintenance Manual section.
- * When changing oil in the engine, transmission and hydraulic systems, or removing hydraulic lines, remember that the oil may be hot and can cause burns to unprotected skin.
- * When working on or around exhaust components, remember that the components may be hot and can cause burns to unprotected skin.
- * Always deflate the tyre before attempting to remove any embedded objects or removing the tyre and rim assembly from the vehicle.



2-10

Safety

- * Always use a self-attaching chuck with a long airline, and, stand to one side while the tyre is inflating. Refer to Section 160-0050, WHEEL RIM AND TYRE in the Maintenance Manual.
- * Ensure any lifting devices are adequate for the job which they are intended.

Scrapping the Machine

At the end of its life, the machine should be disassembled by a competent person using safe working practices, wearing the appropriate Personal Protective equipment and working in accordance with local regulations.

The appropriate lifting equipment, chocks and stands must be used to maintain a stable machine as components are removed and the machines

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maintain a stable machine as components are removed and the machine's centre of mass changes. Fluids must be drained off into suitable containers and if possible recycled or otherwise disposed of in an environmentally friendly manner in accordance with local regulations.

Care must be taken when dealing with flammable liquids and the machine parts that contained those liquids. Any process that could ignite flammable materials must not be used on components that have contained flammable liquids in them or have residual flammable liquids on them.

Fire extinguishers must be readily available if cutting/welding equipment is to be used.

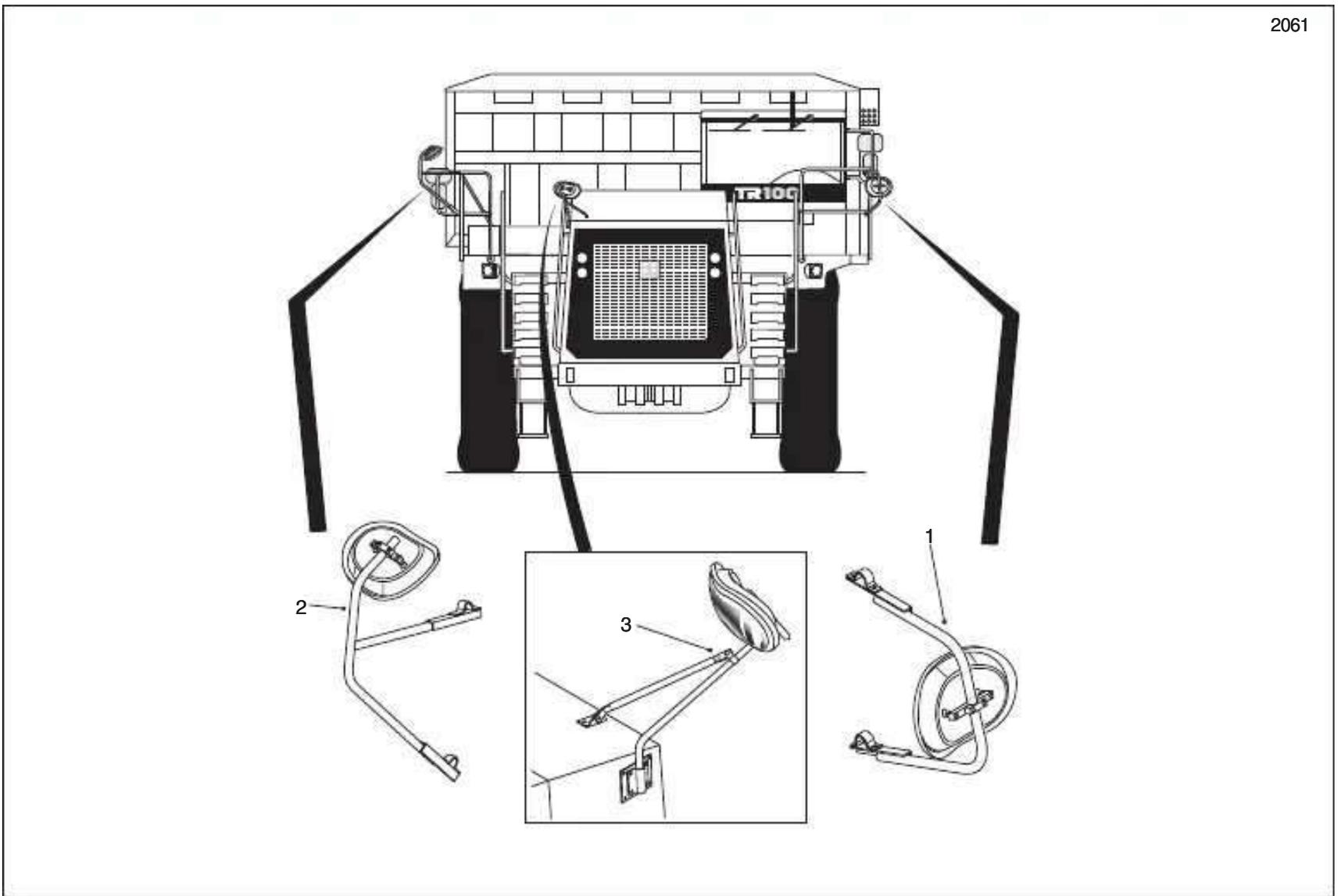
When possible, recyclable materials should be separated out and processed in accordance with local regulations using an authorised agent.

Safety

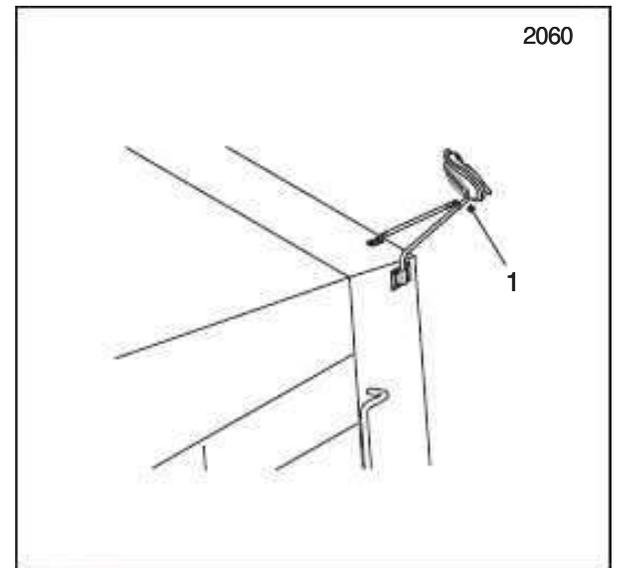
Installation and Adjustment of Mirrors and CCTV



The operator must survey their surroundings before entering the machine, and check their field of vision prior to and during operation of the machine. All mirrors must be adjusted when installed, and prior to operating the machine, to achieve optimum visibility and thus minimize the risk of injury to themselves and others. Site management should utilize appropriate jobsite organization to minimize hazards due to restricted visibility. Modifications made to the machine may restrict the visibility and compromise compliance with safety standards (ISO 5006:2006).



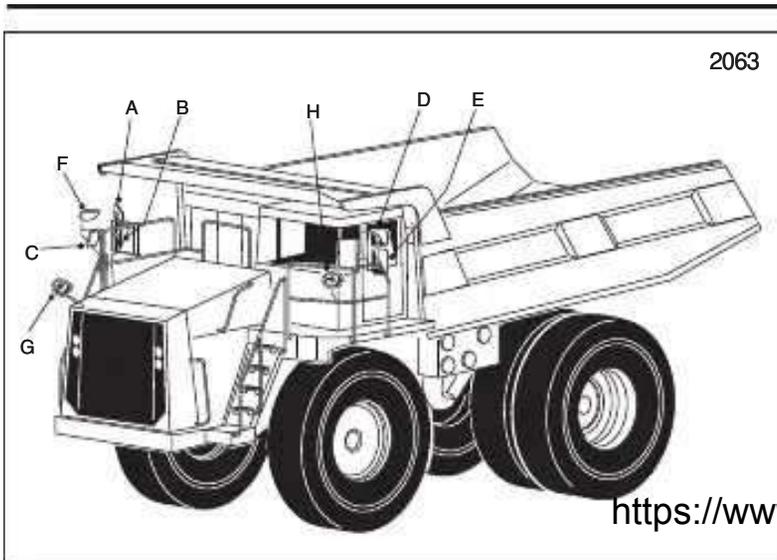
Ensure that all mirrors are installed and adjusted to optimize operator visibility. All mirrors are capable of adjustment in a similar fashion, by undoing their attachment bolts, manually repositioning them to the desired angle then retightening their attachment bolts. The three mirrors illustrated above (fitted to brackets mounted on the handrails), and to the right of this text (mounted on the top-right-hand corner of the radiator guard), are supplied loose and adjusted using the same method.



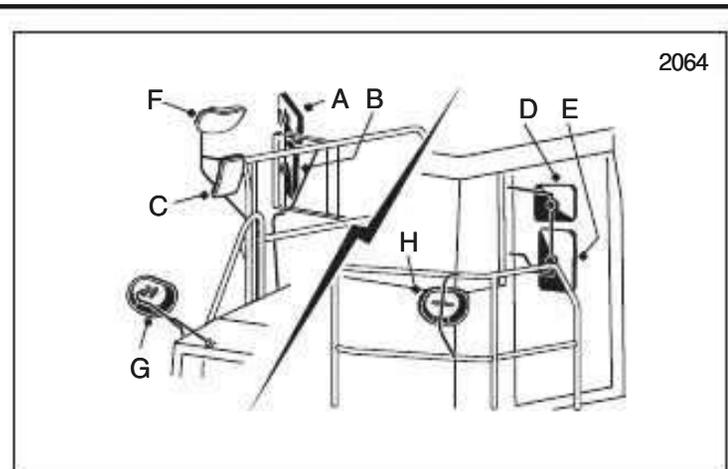
2060

2-12

Safety



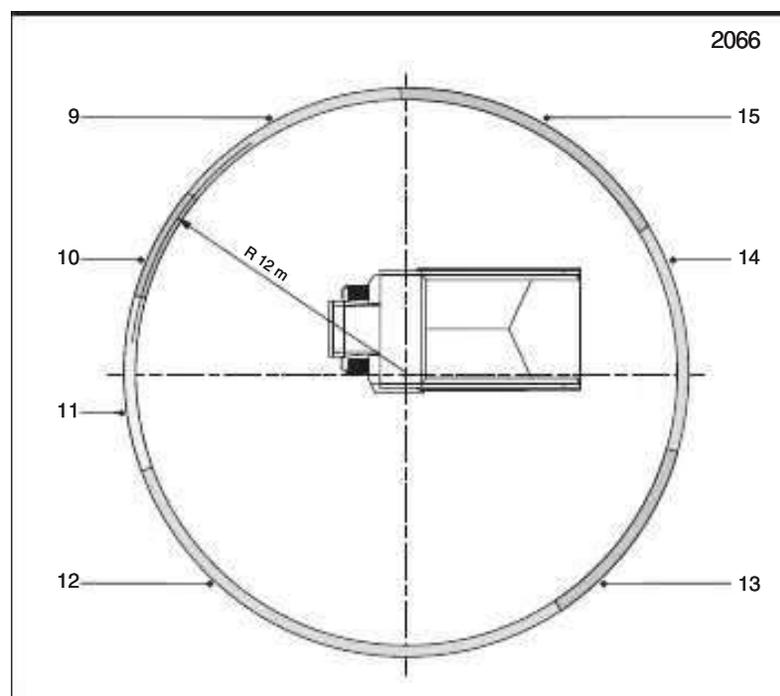
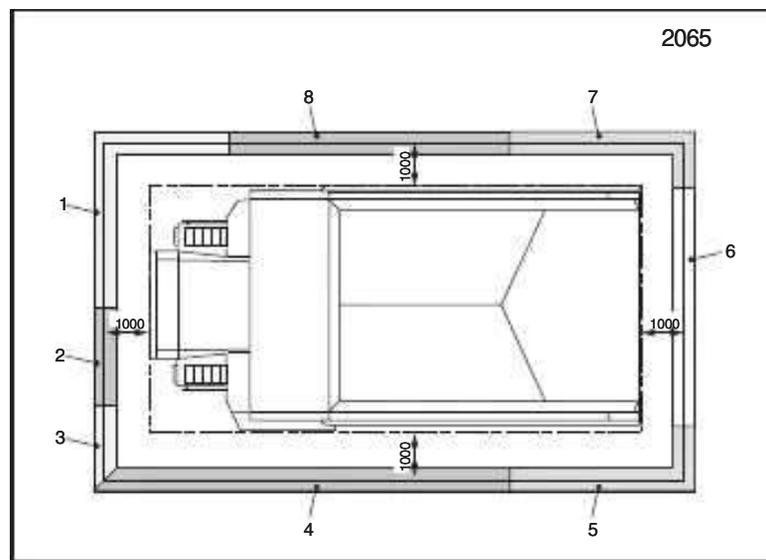
2063



2064

When the three loose mirrors (F, G and H) have been fitted, the machine has a total of eight mirrors, designated A to H respectively, and positioned generally as illustrated. The area surrounding the machine is to be considered as two distinct fields of view, illustrated below as areas 1 to 8 in the immediate vicinity, and areas 9 to 15 at a radius of 12 m from the operator when seated. The operator **MUST** adjust the mirrors, and set the CCTV camera, to achieve visibility as identified below:

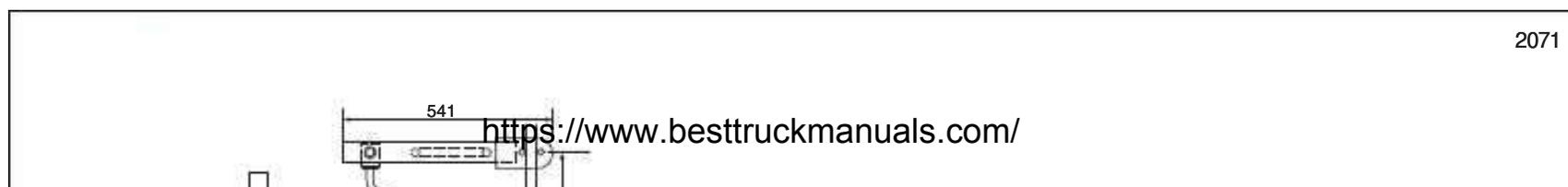
- Areas 3, 11 and 12 can be directly viewed from the operator's seating position without the need for mirrors.
- Adjust mirror A to maximize the view of Areas 14 and 15.
- Adjust mirror B such that Area 7 is fully visible.
- Set mirror C to enhance the view of the front right-hand step Area.
- Adjust mirror D to maximize the view of Areas 14 and 13.
- Adjust mirror E to facilitate vision of Area 5.
- Adjust mirror F to facilitate vision of Areas 8 and 10.
- Adjust mirror G to facilitate vision of Areas 1 and 9.
- Adjust mirror H to facilitate vision of Areas 2, 4 and 13.
- Set the CCTV to facilitate vision of Areas 6 and 14.

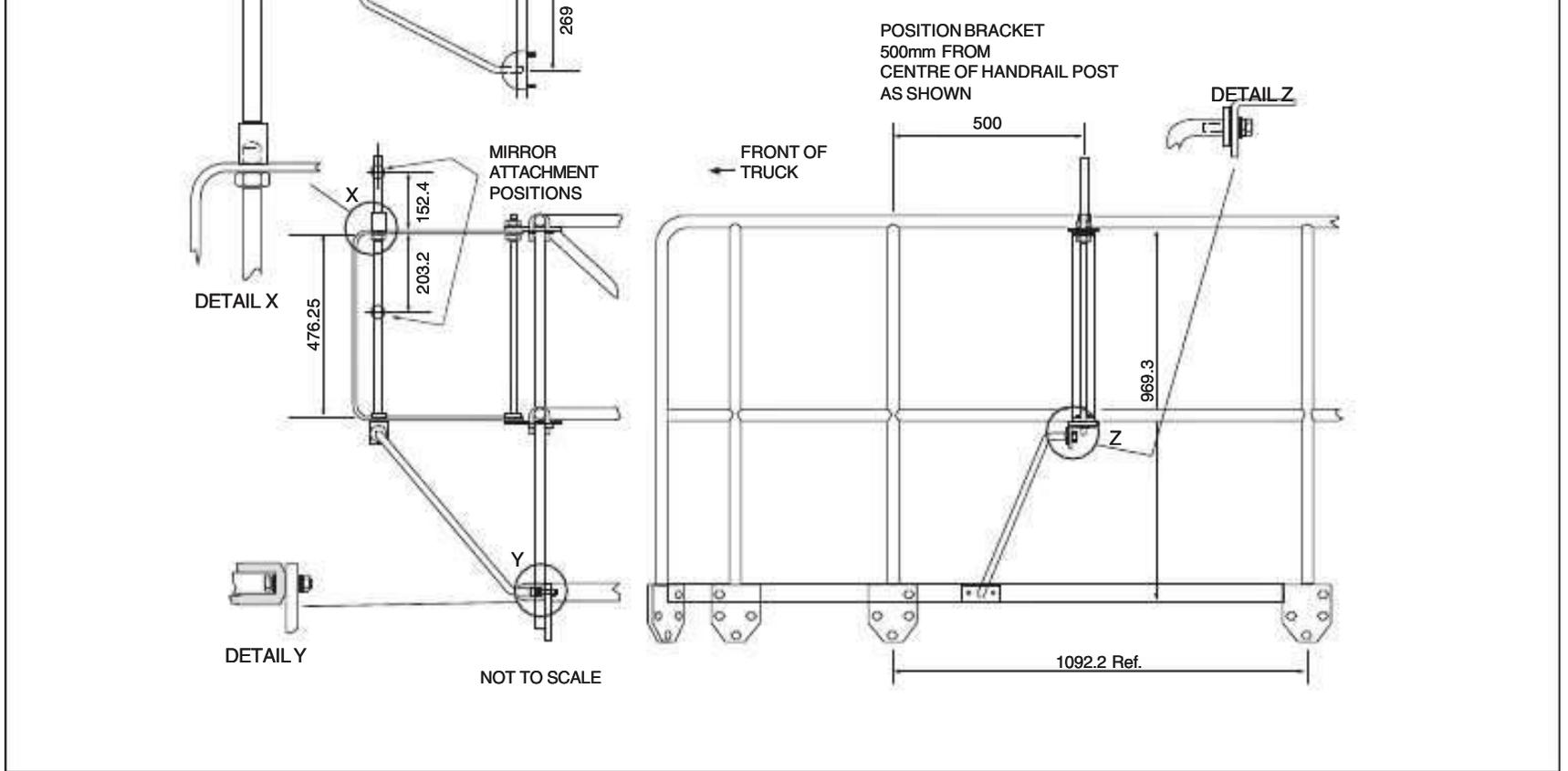


Safety

Installation of Mirrors A and B and Associated Brackets

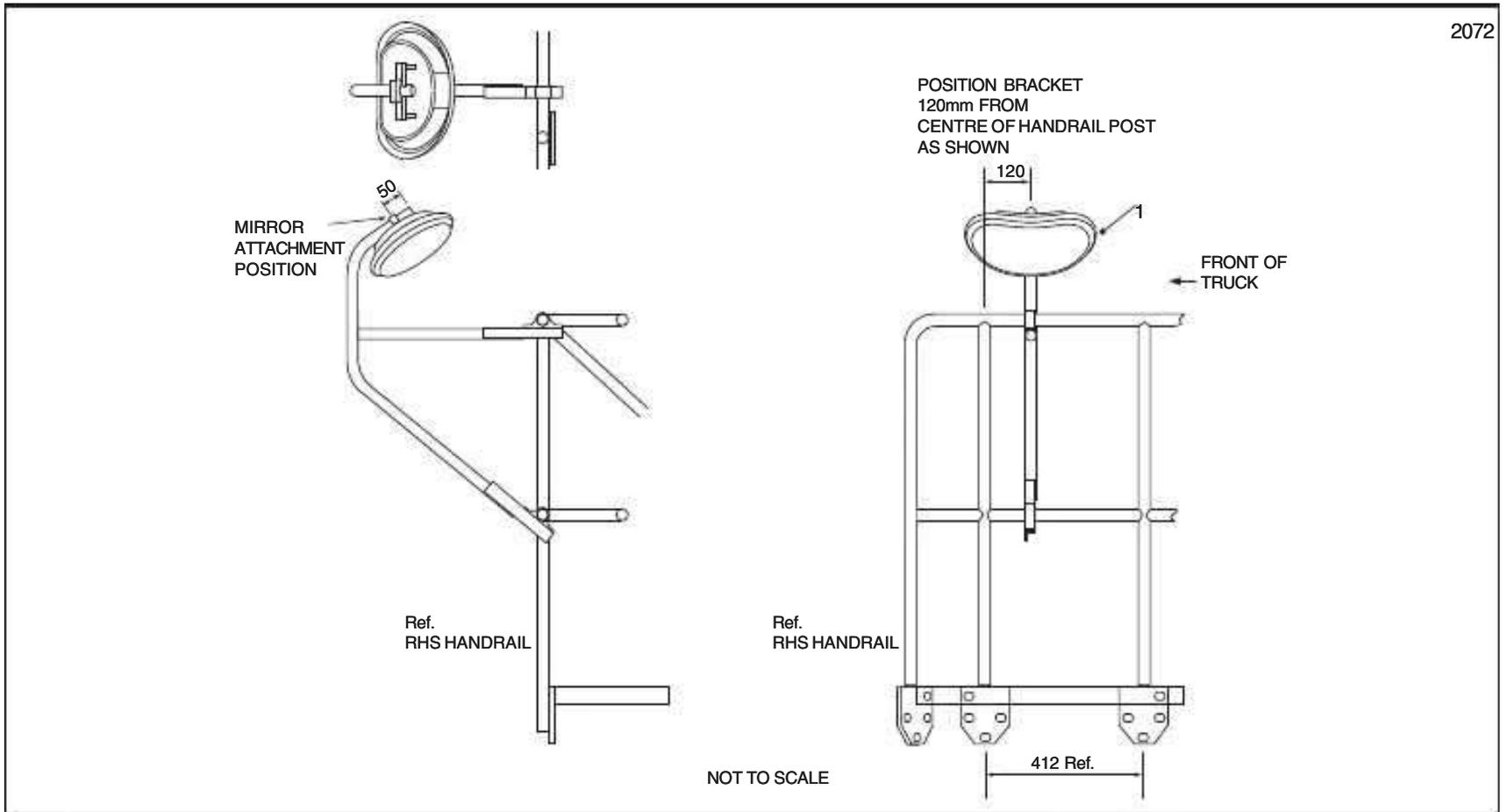
Mirrors A and B are supplied fitted, on brackets folded into the handrails. They must be installed by the customer in the positions defined by the illustration below. Mirror A is to be installed on the upper vertical extension immediately above the upper hand-rail. Mirror B is to be installed on the lower vertical member between the upper and lower hand-rails.





Installation of Bracket for Mirror F

The bracket provided for the mounting of mirror F is supplied as a loose item, and must be installed by the customer in the position defined by the illustration below.



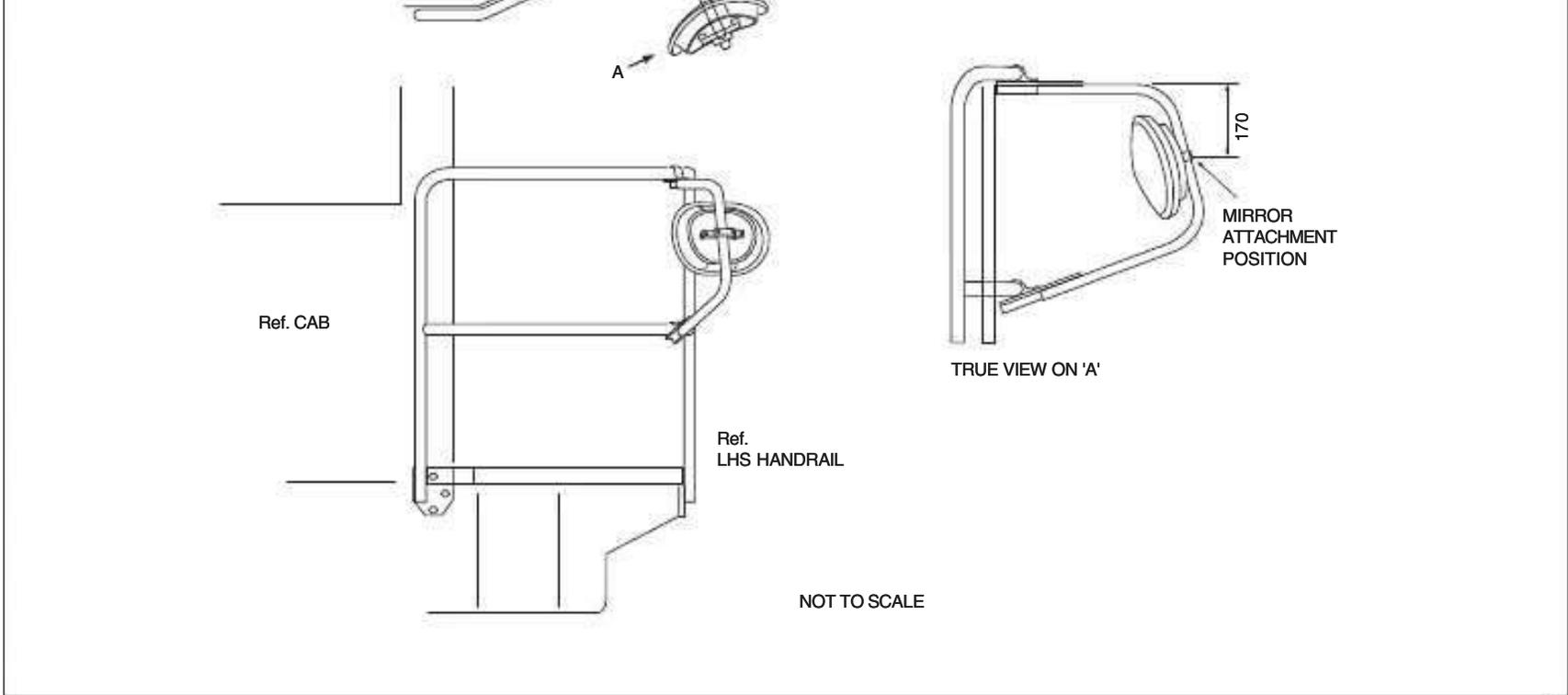
2-14

Safety

Installation of Bracket for Mirror H

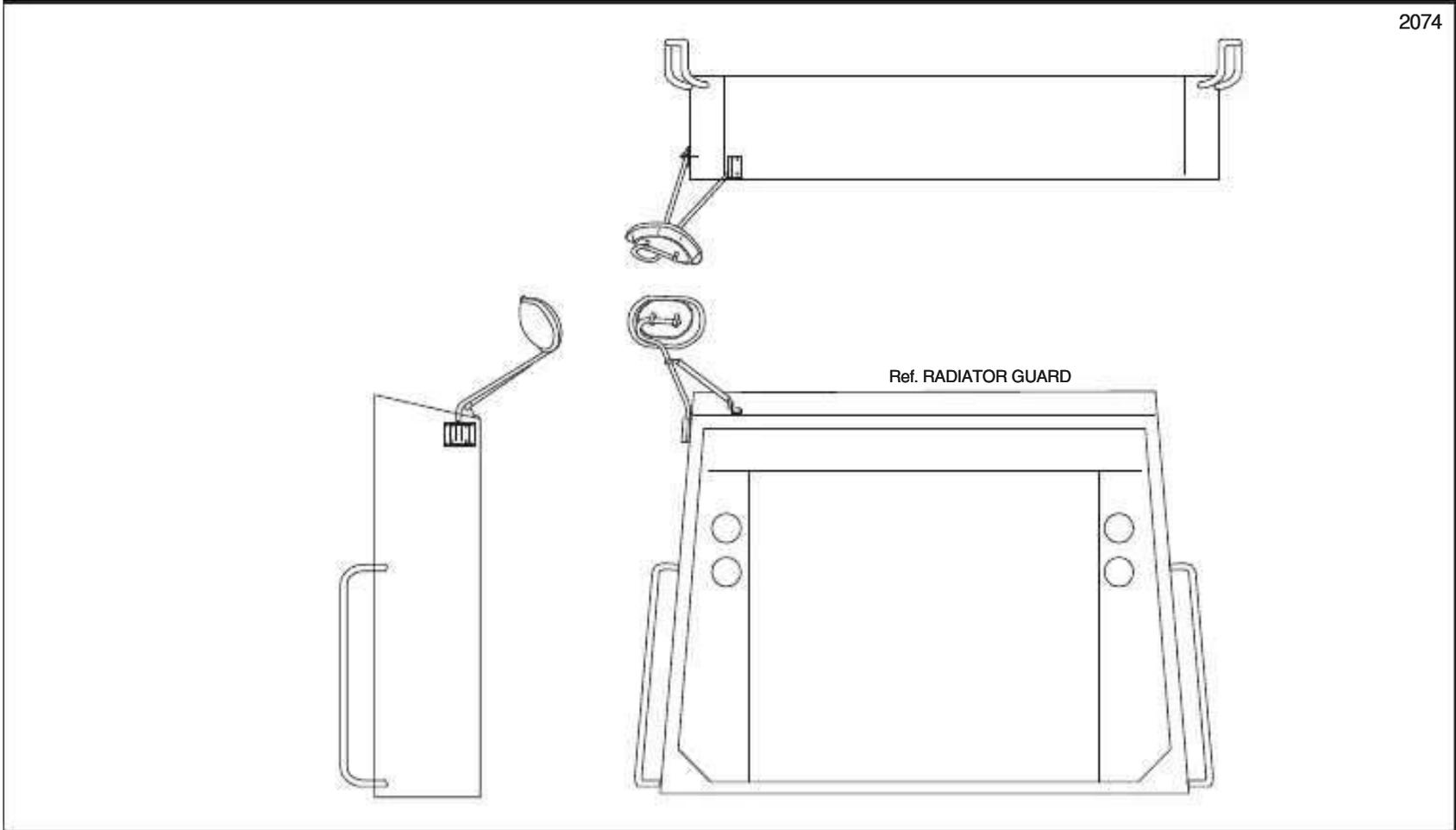
The bracket provided for the mounting of mirror H is supplied as a loose item, and must be installed by the customer in the position defined by the illustration below.





Installation of Bracket for Mirror G

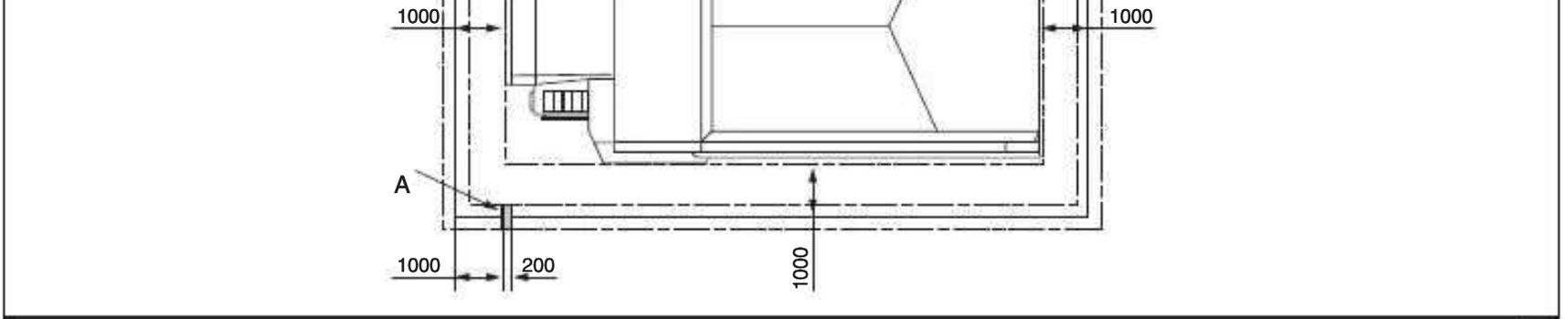
The bracket provided for the mounting of mirror G is supplied as a loose item, and must be installed by the customer in the position defined by the illustration below.



Safety

Visibility





The visibility for this vehicle at a 1 m area boundary from the outside surface of the vehicle at a height no greater than 1.5 m is shown in the diagram above. The hatched area (A) shows the area where the operator's view is blocked by part of the machine, when mirrors and other CCTV visual aids are installed and adjusted correctly, when viewing from the operator's seating position.

Please be fully aware that there are areas around the vehicle that cannot be seen when operating the vehicle in normal conditions and all operators should survey their surroundings and field of vision before and during vehicle operation.

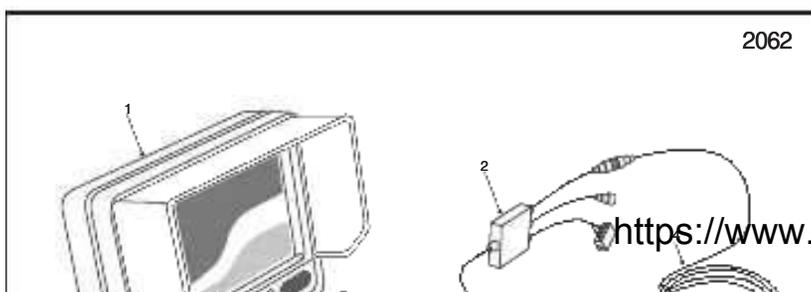
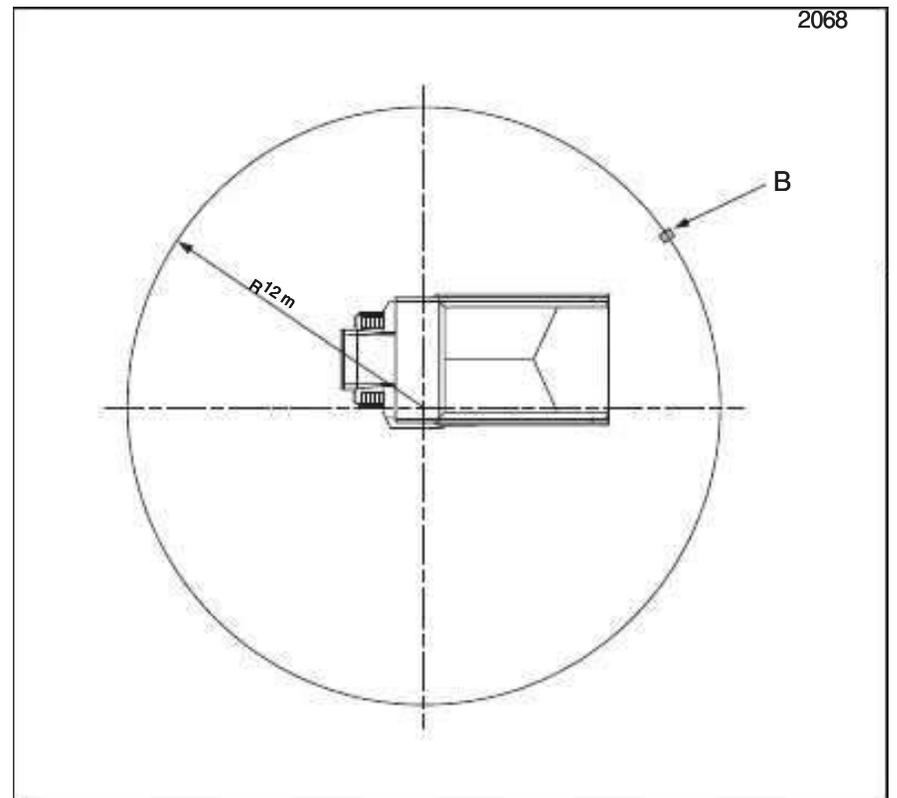


Site management should employ suitable jobsite organization to minimize hazards due to restricted visibility.

The visibility at a radius of 12 m from the Seat Index Point (SIP) is shown in the diagram below. The hatched area (B) shows the area where the view is blocked, when mirrors and other CCTV visual aids are installed and adjusted correctly.

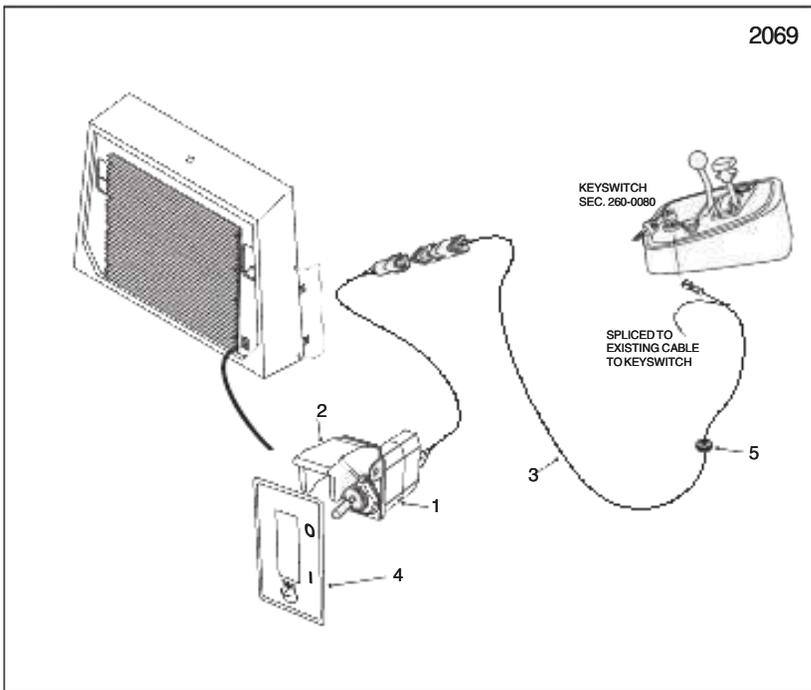
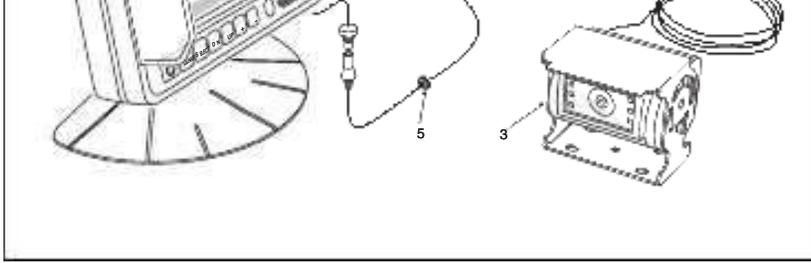


Site management should employ suitable jobsite organization to minimize hazards due to restricted visibility.



CCTV

Some machines are fitted with CCTV cameras at the rear, and a CCTV monitor in the cab for viewing the CCTV images. Operate the CCTV system in accordance with the manufacturer's instructions, provided in the cab.



Option with Addition of Ground Level Isolation Switch

Some machines are fitted with a ground level isolation switch, mounted at the front, on the left-hand side adjacent to the radiator. This switch is connected into the starter keyswitch circuit, and when operated prevents starting of the engine. This facility is provided to allow personnel in the vicinity of the vehicle to prevent operation of the engine, when carrying out fuelling operations. The switch is protected by a hinged cover that must be lifted to access the switch.



The ground level isolation switch must ONLY be utilized when the vehicle is stationary, with the brakes applied, and the engine switched off. DO NOT return the switch to the unoperated position until it is safe to start the engine again.

The engine cannot be restarted by simply returning the switch to the 'unoperated' position. It is necessary to start the engine from the keyswitch in the cab, when it is safe to do so.

Safety

Wheels and Tyres

If tyres on the vehicle were inflated at the factory with dry nitrogen gas, the tyre walls will be marked 'N' and the following factory installed decal will be found mounted on the fenders.

NOTICE

TYRES ON THIS VEHICLE ARE FACTORY INFLATED WITH DRY NITROGEN. IT IS RECOMMENDED THAT DRY NITROGEN BE USED EXCLUSIVELY FOR ALL TYRE PRESSURE ADJUSTMENTS AS WELL AS INFLATION OF REPLACEMENT TYRES.

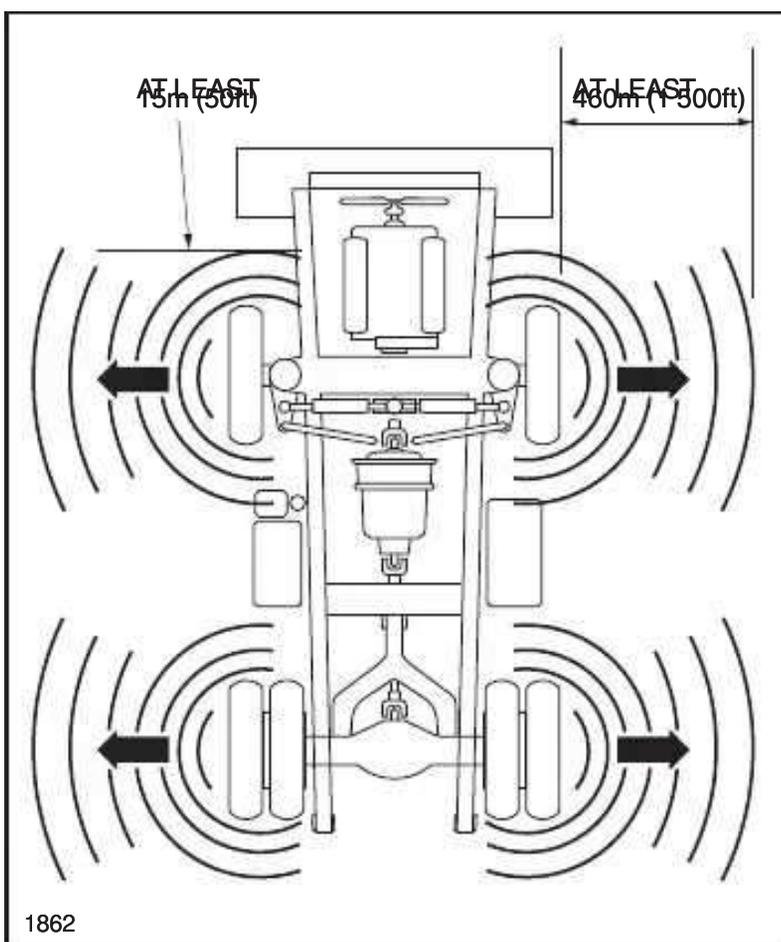
Nitrogen gas improves tyre pressure retention, increases tyre life by reducing carcass oxidation from within, minimizes rim rust, and has no known detrimental effect on the tyre. It also reduces the potential of a tyre explosion because it is an inert gas and will not support combustion inside the tyre. The same tyre inflation pressure used for air inflation should be used for nitrogen inflation. Refer to Section 160-0050, Wheel, Rim and Tyre of the vehicle Maintenance Manual for recommended procedures for inflating and pressure adjusting tyres with dry nitrogen gas. Only proper nitrogen charging equipment operated by personnel trained in its use should be used.



Never mix components of one manufacturer's rims with those of another. Using the rim base of one manufacturer with the lock ring of another or vice versa is dangerous. The lock ring of one may not fully engage with the lock ring groove of the other. Always consult the rim manufacturers for proper matching, assembly and safety instructions. Also, use and servicing of damaged, worn out or improperly assembled rim assemblies is a very dangerous practice. Failure to comply with the above warnings could result in an explosion from tyre pressure causing serious property damage and serious personnel injury or death.

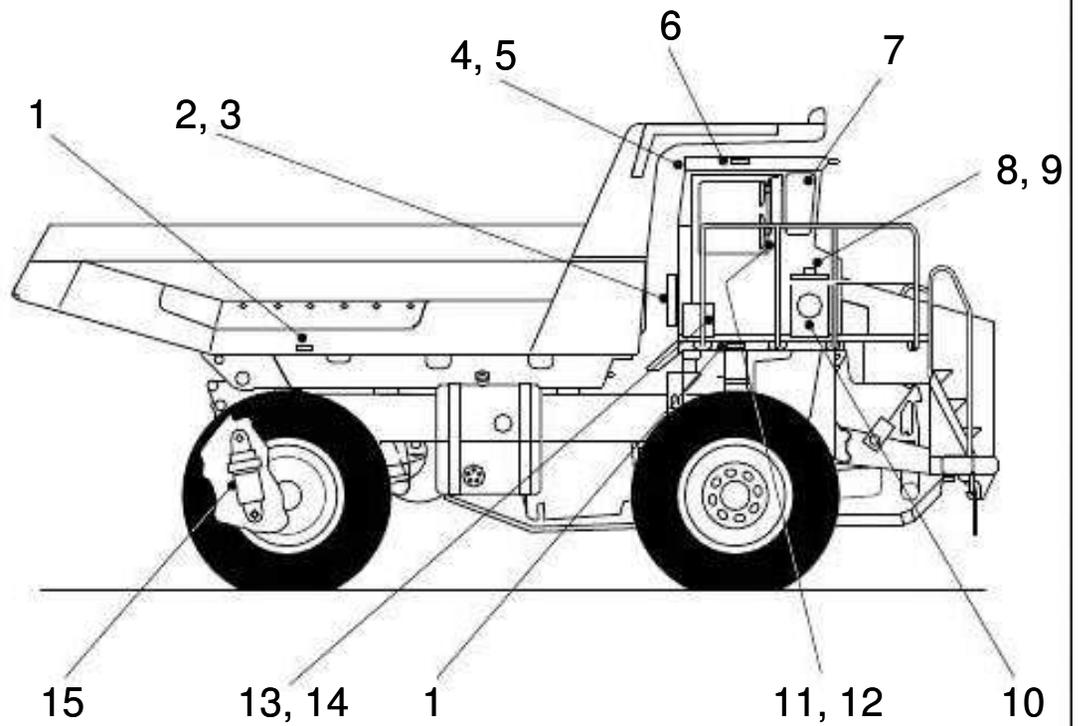


Whenever a vehicle's tyre(s) is (are) exposed to excessive heat, such as a vehicle fire or extremely hot brakes, the hazard of a subsequent violent tyre explosion must be recognized. All nearby persons must avoid approaching the vehicle, so as not to be physically endangered in the event of an explosion of the tyre and rim parts. The vehicle should be moved to a remote area, but only when this can be done with complete safety of the operator operating or towing the vehicle. All other persons should stay clear of the vehicle. The fire or overheated brakes, wheel, etc., should be extinguished or cooled from a safe distance. Do not attempt to extinguish the fire or cool the vehicle by use of hand-held fire extinguishers. If it is absolutely necessary to approach a vehicle with a suspect tyre, approach only from the front or the back. Stay at least 15 m (50 ft) from the tread area. Keep observers out of the area and at least 460 m (1 500 ft) from the tyre sidewall. Refer to the accompanying sketch. The tyre(s) should be allowed at least eight (8) hours cooling time after the vehicle is shut down or the fire extinguished before approaching closer.



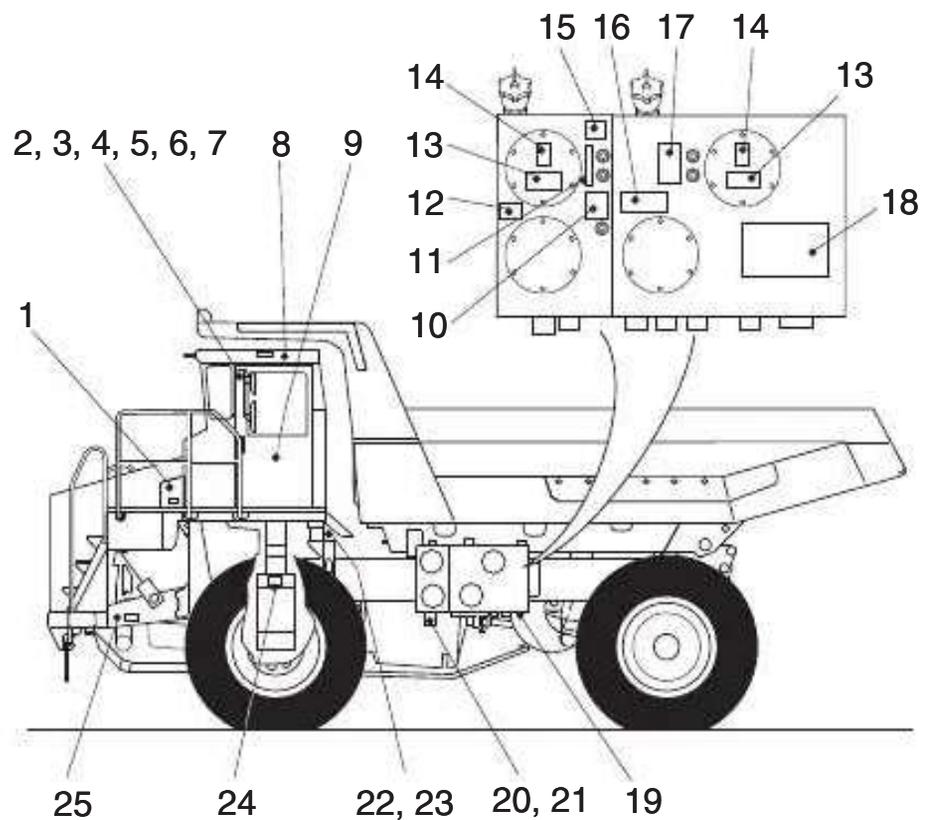
Decals and instruction plates fitted to vehicles may vary from country to country to suit local needs. These pages contain a brief description and the location of the decals and instruction plates that may appear on your vehicle.

1. Tyre Warning
2. Accumulator Precautions
3. Accumulator Charging Instructions
4. Operating On A Grade Instructions
5. Vehicle Parking Instructions
6. Acoustic Foam Precautions
7. Symbol Identification Chart
8. Radiator Cap Warning
9. Radiator Fill Instructions
10. Air Cleaner Information
11. Vehicle Overall Height
12. Steering Wheel Lock
13. Negative Earth
14. Battery Cable Warning
15. Ride Strut Pressure Warning

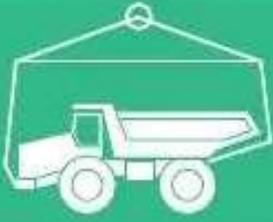


659

1. Alternator Precautions
2. CEC (ATEC) Welding Warning
3. Engine Instructions
4. Body Control Lever Positions
5. Retarder Positions
6. CEC (ATEC) Switches
7. Pre-operating Instructions
8. Acoustic Foam Precautions
9. Pre-operating Instructions
10. Hydraulic Oil Decal
11. Sight Gauge Plate
12. Hydraulic Oil Pressure Plate
13. Anti-Syphon Instructions
14. Instruction Plate
15. Hydraulic Oil Level
16. Instruction Decal
17. Hydraulic Oil Level
18. Lubrication Chart
19. Pressure Test Points
20. Accumulator Charging Instructions
21. Accumulator Precautions
22. Pressure Test Points
23. Pressure Test Points
24. Ride Strut Pressure Warning
25. Machine Serial Plate



2075

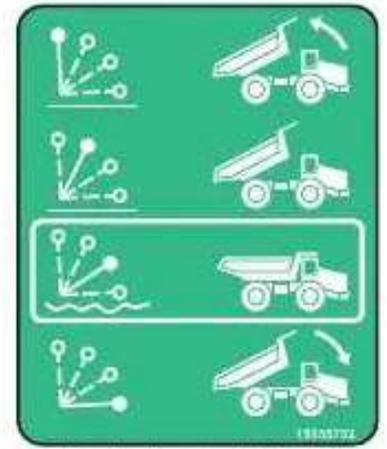


I. D		
	TR35	57 760 lb (26 200 kg)
	TR40	85 800 lb (39 000 kg)
	TR45	89 100 lb (40 500 kg)
	TR60	101 200 lb (46 000 kg)
	TR70	116 850 lb (53 000 kg)
	TR100	159 500 lb (72 500 kg)

Safety Lift Instruction (1900)



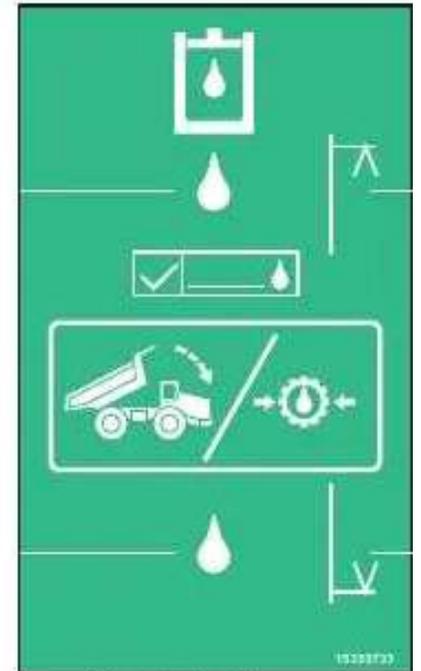
Battery Earth (1798)



Body Control (1897)



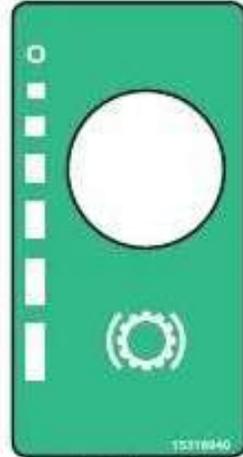
Hand Lamp (1964)



Hydraulic Oil Level (1962)



Transmission Retarder (1934)



Transmission Retarder Lever Control (1961)



50% Front Brake Reduction (1898)



Hydraulic Oil Level (1963)



CE Marking (1799)



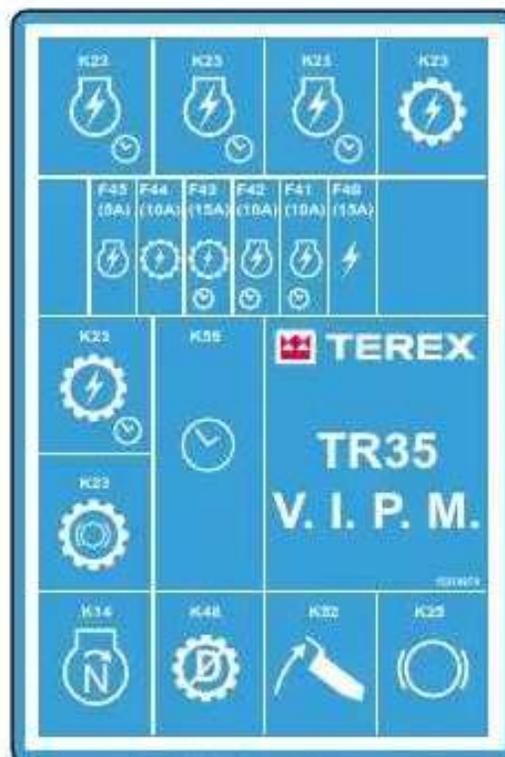
CEC2 Vehicle Interface Module (1967)



Hook Point (1797)



CEC2 Vehicle Interface Module (2193)



Vehicle Interface and Power Module (1966)



Emergency /Park Brake (1933)



Diagnostic Pressure Points (1904)



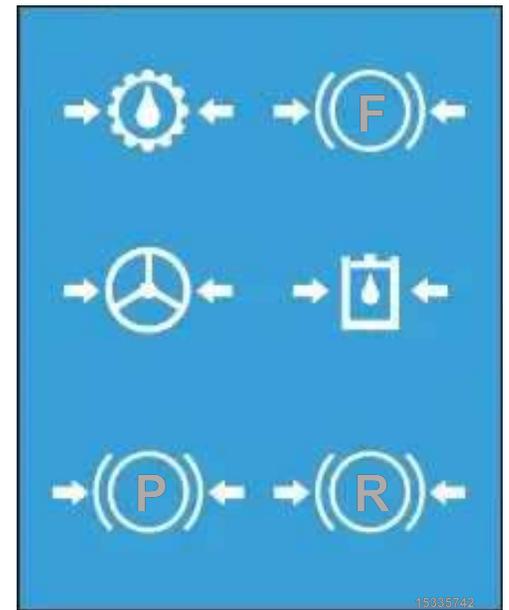
Diagnostic Pressure Points (1901)



Diagnostic Pressure Points (1903)



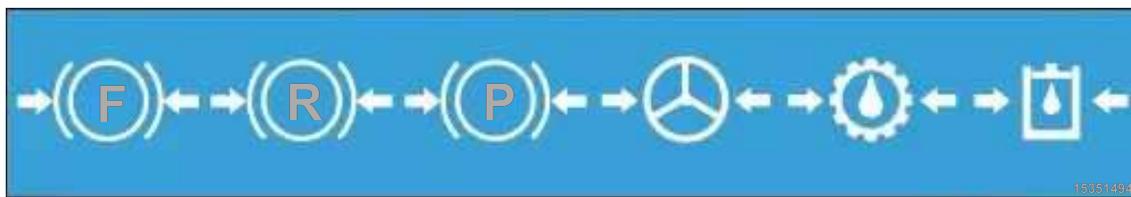
Diagnostic Pressure Points (1902)



Diagnostic Pressure Points (1899)



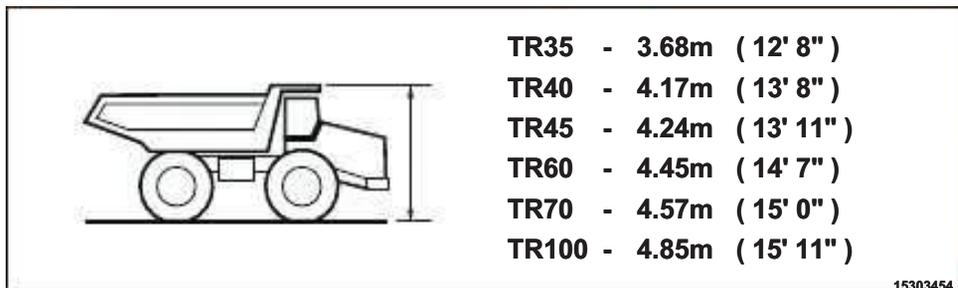
Diagnostic Pressure Points (1905)



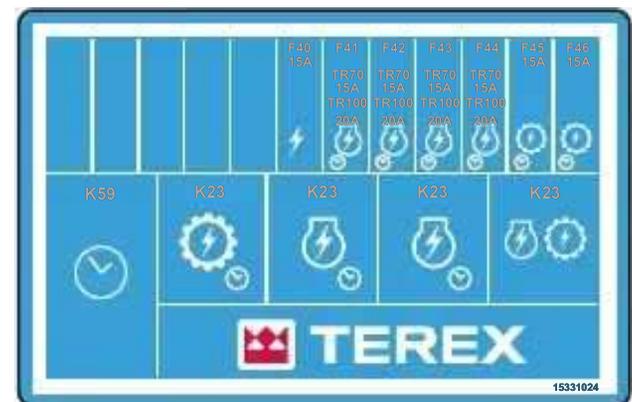
Diagnostic Pressure Points (2196)



Power Module (1968)



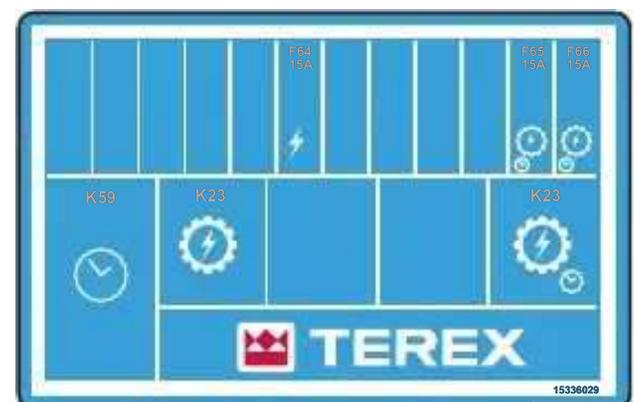
Vehicle Height (1965)



Power Module (1969)



Serial Plate (2199)



Power Module (2194)

F1	F13  10A	F25  5A	K23 	K17 	K4 
F2	F14  10A	F26  5A	K39 	K35 	K39 
F3  5A	F15  10A	F27  5A			
F4	F16  10A	F28  5A	K34 	K58 	
F5  5A	F17  25A	F29  5A			
F6	F18  5A	F30  5A	K15 	K38 	K57  1/R
F7  10A	F19  10A	F31  10A			
F8  5A	F20  10A	F32  5A	K15 	K38 	K57  1/R
F9  3A	F21  5A	F33  10A			
F10  5A	F22  5A	F34  15A	K15 	K38 	K57  1/R
F11  5A	F23  15A	F35  15A			
F12  5A	F24  10A	F36  5A			

15342619

Fuse/Relay Chart (2195)

F1	F13  10A	F25  5A	K23 	K17 	K4 
F2	F14  10A	F26  5A	K39 	K35 	K39 
F3  5A	F15  10A	F27  5A			
F4	F16  10A	F28  5A	K34 	K58 	
F5  5A	F17  25A	F29  5A			
F6	F18  5A	F30  5A	K15 	K38 	K57  1/R
F7  10A	F19  10A	F31  10A			
F8  5A	F20  10A	F32  5A	K15 	K38 	K57  1/R
F9  3A	F21  5A	F33  10A			
F10  5A	F22  5A	F34  15A	K15 	K38 	K57  1/R
F11  5A	F23  15A	F35  15A			
F12  5A	F24  10A	F36  5A			

15335803

Fuse/Relay Chart (1927)

SAFETY DECAL SET ISO STANDARD

ROPS		FOPS		lb MAX.	kg MAX.	TEREX No.
SAE	ISO	SAE	ISO			

S/N

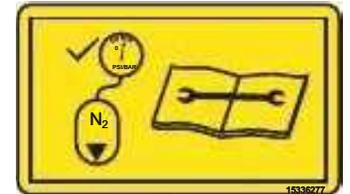
15335811

ROPS and FOPS, See handbook for procedure (1931)

TR35				TR35			
%	⊙	KPH	MPH	%	⊙	KPH	MPH
0	5	55	34	0	5	55	34
5	4	30	17	5	5	54	33
10	2	15	9	10	4	34	21
15	1L	9	5	15	4	28	17
20	1L	5	3	20	3	22	14
25	1C	3	1	25	2	15	9
30	1C	1	0.3	30	1L	10	5

15335774

Gradeability Chart, TR35 (1910)



Suspension Strut (2198)



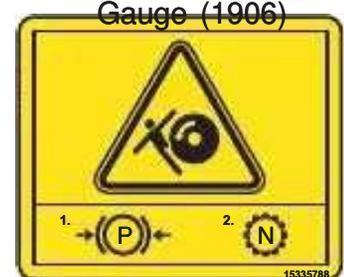
TR45				TR45			
%	⊙	KPH	MPH	%	⊙	KPH	MPH
0	6	66	41	0	6	66	41
5	4	30	18	5	6	59	36
10	2	15	9	10	4	31	19
15	1L	10	6	15	3	20	12
20	1C	6	3	20	2	16	9
25	1C	5	3	25	1L	12	7
30				30	1L	11	6

15335774

Gradeability chart TR45 (1912)



Hydraulic Oil Sight Gauge (1906)



Warning park brake (1925)

TR60				TR60			
%	⊙	KPH	MPH	%	⊙	KPH	MPH
0	6	60	37	0	6	60	37
5	5	30	18	5	6	58	36
10	3	16	10	10	5	35	21
15	1L	10	6	15	4	24	15
20	1L	8	5	20	3	18	11
25	1C	5	3	25	3	15	9
30	1C	2	1	30	2	12	7

15335778

Gradeability chart, TR60 (1914)



Backalarm Warning, Operator must make certain back alarm is operating properly (1923)

%	KPH	MPH	TR70 (1916)	
			Gradeability	Gradeability
0	60	37	0	6
5	27	16	5	6
10	12	7	10	5
15	9	5	15	4
20	5	3	20	3
25	1	1	25	2
30			30	1L

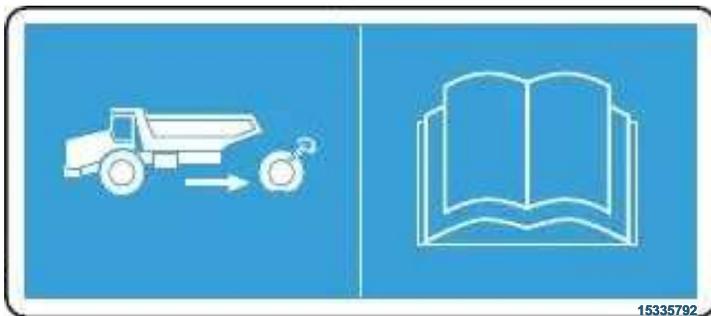
Gradeability chart, TR70 (1916)



Crush Hazard, Install support before servicing (1908)

%	KPH	MPH	TR100 (1918)	
			Gradeability	Gradeability
0	49	31	0	6
5	27	16	5	6
10	14	9	10	5
15	9	5	15	4
20	8	4	20	3
25	5	3	25	2
30	4	2	30	2

Gradeability chart, TR100 (1918)

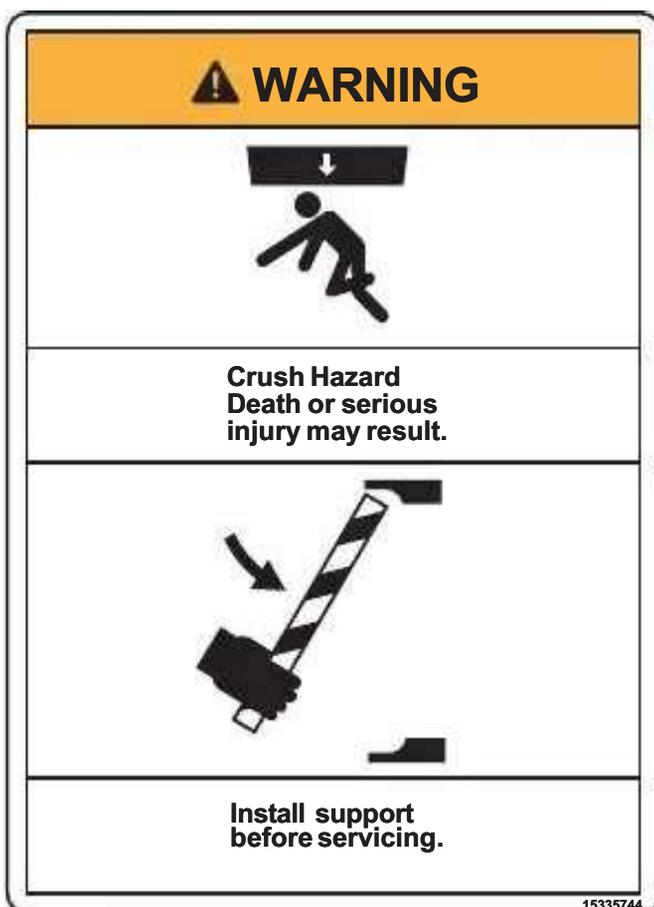


Rim clamps, See handbook for procedure (1928)



Caution Cab Foam, Do not weld or burn cab structure unless foam is removed (1920)

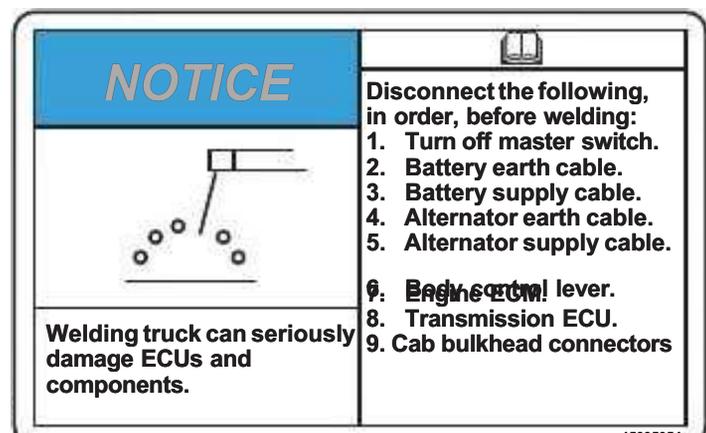
SAFETY DECAL SET ANSI STANDARD



Warning, Crush hazard (1909)



Hot Radiator Steam Warning (1823)



Warning Alternator (2197)

Safety

CAUTION	
PERSONAL INJURY CAN OCCUR IF WELDING OR BURNING CAB STRUCTURE	DO NOT WELD OR BURN CAB STRUCTURE UNLESS ACCOUSTICAL FOAM IS REMOVED

15335790

Caution cab foam, do not burn or weld cab structure (1921)

WARNING				
SUSPENSION STRUTS suspension is equipped with precharged nitrogen gas cylinders.		Read manual for suspension and ride strut system information.		

15335822

Warning Suspension Struts (1930)

WARNING				
Accumulators. Incorrectly maintained accumulators can result in brake failure, which can result in death or serious injury.		Maintain nitrogen precharge in accumulators for proper operation of brake system. Read manual for brake system information.		

15333270

Warning maintain accumulators (1922)

NOTICE
Deflate tyre completely before loosening rim clamps. For dual assembly, deflate both tyres before loosening rim clamps.

15335791

Rim Clamps (1929)

NOTICE OF ROPS & FOPS CERTIFICATION							
This structure meets the following requirements for the machine and weights listed:							
ROPS		FOPS		MAX. WEIGHT		MODEL	STRUCTURE PART No.
SAE	ISO	SAE	ISO	lb	kg		
MANUFACTURED FOR/BY TEREX EQUIPMENT LTD. - SCOTLAND							

CAUTION	
Damage to ROPS may weaken structure and may cause injury.	If damaged, ROPS must be replaced. Do not repair. Unauthorised modification will void certification. Tighten fasteners periodically.

15335812

ROPS and FOPS (1932)

SAFETY DECAL SET ANSI STANDARD

WARNING																																																																				
TR35																																																																				
Operating the truck outside the stated limits on the chart could result in death or serious injury.	Do not operate truck outside the limits stated on the chart.	Select the correct gear for the gradient you are on.	<table border="1"> <tr> <th>%</th> <th>⊙</th> <th>KPH</th> <th>MPH</th> </tr> <tr> <td>0</td> <td>5</td> <td>55</td> <td>34</td> </tr> <tr> <td>5</td> <td>4</td> <td>30</td> <td>17</td> </tr> <tr> <td>10</td> <td>2</td> <td>15</td> <td>9</td> </tr> <tr> <td>15</td> <td>1L</td> <td>9</td> <td>5</td> </tr> <tr> <td>20</td> <td>1L</td> <td>5</td> <td>3</td> </tr> <tr> <td>25</td> <td>1C</td> <td>3</td> <td>1</td> </tr> <tr> <td>30</td> <td>1C</td> <td>1</td> <td>0.3</td> </tr> </table>	%	⊙	KPH	MPH	0	5	55	34	5	4	30	17	10	2	15	9	15	1L	9	5	20	1L	5	3	25	1C	3	1	30	1C	1	0.3	<table border="1"> <tr> <th>%</th> <th>⊙</th> <th>KPH</th> <th>MPH</th> </tr> <tr> <td>0</td> <td>5</td> <td>55</td> <td>34</td> </tr> <tr> <td>5</td> <td>5</td> <td>54</td> <td>33</td> </tr> <tr> <td>10</td> <td>4</td> <td>34</td> <td>21</td> </tr> <tr> <td>15</td> <td>4</td> <td>28</td> <td>17</td> </tr> <tr> <td>20</td> <td>3</td> <td>22</td> <td>14</td> </tr> <tr> <td>25</td> <td>2</td> <td>15</td> <td>9</td> </tr> <tr> <td>30</td> <td>1L</td> <td>10</td> <td>5</td> </tr> </table>	%	⊙	KPH	MPH	0	5	55	34	5	5	54	33	10	4	34	21	15	4	28	17	20	3	22	14	25	2	15	9	30	1L	10	5
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30	1L	10	5																																																																	

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Decline Warning TR35 (1911)

WARNING	
Crush Hazard. Sudden and unwanted machine movement can result in serious injury or death.	Always ensure when starting / stopping engine to : 1. Apply park brake 2. Shift transmission into neutral.

15335815

Warning Park Brake (1926)

WARNING																																																																				
TR45																																																																				
Operating the truck outside the stated limits on the chart could result in death or serious injury.	Do not operate truck outside the limits stated on the chart.	Select the correct gear for the gradient you are on.	<table border="1"> <tr> <th>%</th> <th>⊙</th> <th>KPH</th> <th>MPH</th> </tr> <tr> <td>0</td> <td>6</td> <td>66</td> <td>41</td> </tr> <tr> <td>5</td> <td>4</td> <td>30</td> <td>18</td> </tr> <tr> <td>10</td> <td>2</td> <td>15</td> <td>9</td> </tr> <tr> <td>15</td> <td>1L</td> <td>10</td> <td>6</td> </tr> <tr> <td>20</td> <td>1C</td> <td>6</td> <td>3</td> </tr> <tr> <td>25</td> <td>1C</td> <td>5</td> <td>3</td> </tr> <tr> <td>30</td> <td> </td> <td> </td> <td> </td> </tr> </table>	%	⊙	KPH	MPH	0	6	66	41	5	4	30	18	10	2	15	9	15	1L	10	6	20	1C	6	3	25	1C	5	3	30				<table border="1"> <tr> <th>%</th> <th>⊙</th> <th>KPH</th> <th>MPH</th> </tr> <tr> <td>0</td> <td>6</td> <td>66</td> <td>41</td> </tr> <tr> <td>5</td> <td>6</td> <td>59</td> <td>36</td> </tr> <tr> <td>10</td> <td>4</td> <td>31</td> <td>19</td> </tr> <tr> <td>15</td> <td>3</td> <td>20</td> <td>12</td> </tr> <tr> <td>20</td> <td>2</td> <td>16</td> <td>9</td> </tr> <tr> <td>25</td> <td>1L</td> <td>12</td> <td>7</td> </tr> <tr> <td>30</td> <td>1L</td> <td>11</td> <td>6</td> </tr> </table>	%	⊙	KPH	MPH	0	6	66	41	5	6	59	36	10	4	31	19	15	3	20	12	20	2	16	9	25	1L	12	7	30	1L	11	6
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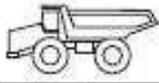
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Decline Warning TR45 (1912) <https://www.besttruckmanuals.com/>

WARNING	
USE TO STOP ONLY IN EMERGENCY OTHERWISE USE PARKING BRAKE	

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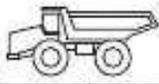
Warning Emergency/Park Brake (1971)

 <p>WARNING</p> <p>TR60</p>									
		%	⊙	KPH	MPH	%	⊙	KPH	MPH
<p>Operating the truck outside the stated limits on the chart could result in death or serious injury.</p> <p>Do not operate truck outside the limits stated on the chart.</p> <p>Select the correct gear for the gradient you are on.</p>	0	6	60	37	0	6	60	37	
	5	5	30	18	5	6	58	36	
	10	3	16	10	10	5	35	21	
	15	1L	10	6	15	4	24	15	
	20	1L	8	5	20	3	18	11	
	25	1C	5	3	25	3	15	9	
	30	1C	2	1	30	2	12	7	

Decline Warning TR60 (1915)

 <p>WARNING</p>	
<p>Improper operation or maintenance can result in serious injury or death.</p>	<p>Read and understand operator's manual and all safety signs before using or maintaining machine. If you do not understand the information in the manuals, consult your supervisor, the owner or the manufacturer.</p>

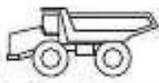
Read Operator Handbook Warning (1820)

 <p>WARNING</p> <p>TR70</p>									
		%	⊙	KPH	MPH	%	⊙	KPH	MPH
<p>Operating the truck outside the stated limits on the chart could result in death or serious injury.</p> <p>Do not operate truck outside the limits stated on the chart.</p> <p>Select the correct gear for the gradient you are on.</p>	0	6	60	37	0	6	60	37	
	5	4	27	16	5	6	58	35	
	10	2	12	7	10	5	34	21	
	15	1L	9	5	15	4	20	12	
	20	1C	5	3	20	3	16	10	
	25	1C	1	1	25	2	12	8	
	30				30	1L	10	6	

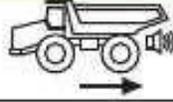
Decline Warning TR70 (1917)

<p>NOTICE</p> 	
<p>OIL SHOULD BE VISABLE THROUGH THIS SITE.</p>	<p>SEE MAINTENANCE MANUAL FOR INSTRUCTIONS.</p>

Sight Gauge (1907)

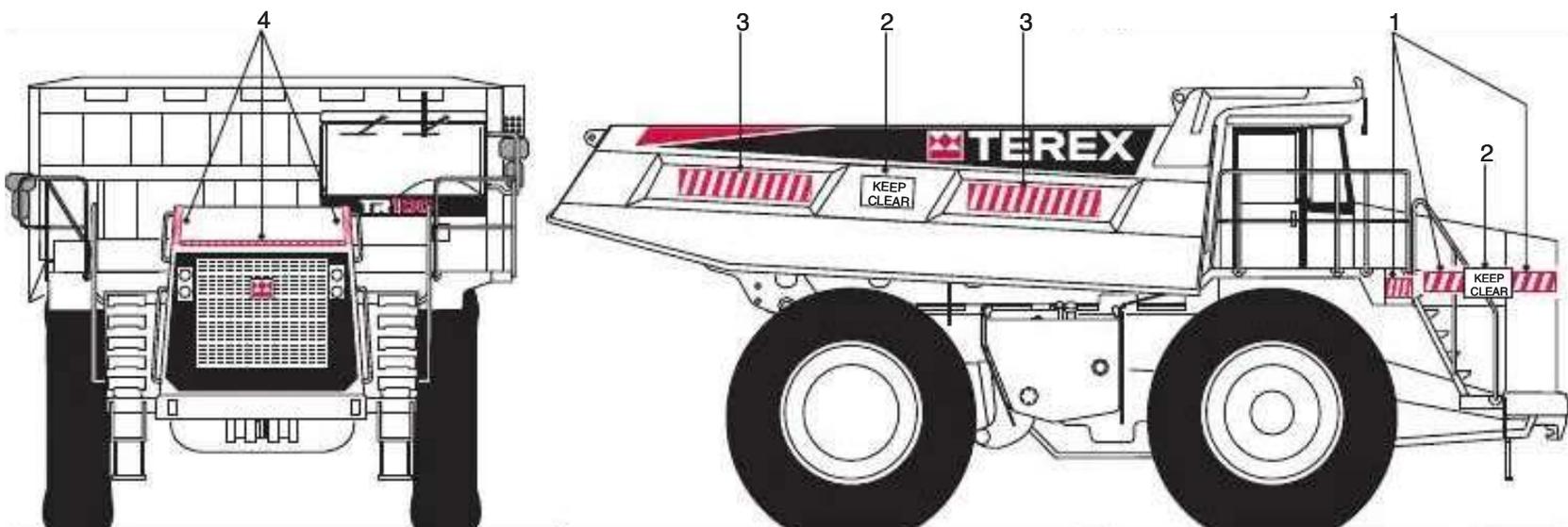
 <p>WARNING</p> <p>TR100C</p>									
		%	⊙	KPH	MPH	%	⊙	KPH	MPH
<p>Operating the truck outside the stated limits on the chart could result in death or serious injury.</p> <p>Do not operate truck outside the limits stated on the chart.</p> <p>Select the correct gear for the gradient you are on.</p>	0	6	49	31	0	6	49	31	
	5	4	27	16	5	6	49	31	
	10	2	14	9	10	5	32	19	
	15	1L	9	5	15	4	22	13	
	20	1L	8	4	20	3	16	10	
	25	1C	5	3	25	2	14	9	
	30	1C	4	2	30	2	11	7	

Decline Warning TR100 (1919)

 <p>WARNING</p>

<p>WHEN REVERSING OPERATOR MUST MAKE CERTAIN BACKALARM IS WORKING BEFORE OPERATING THE VEHICLE</p>

Warning Back Alarm (1924)

OPTIONAL ADDITIONAL SAFETY DECALS



ITEMS 1, 2 AND 3 FITTED TO RHS OF TRUCK ONLY

Safety

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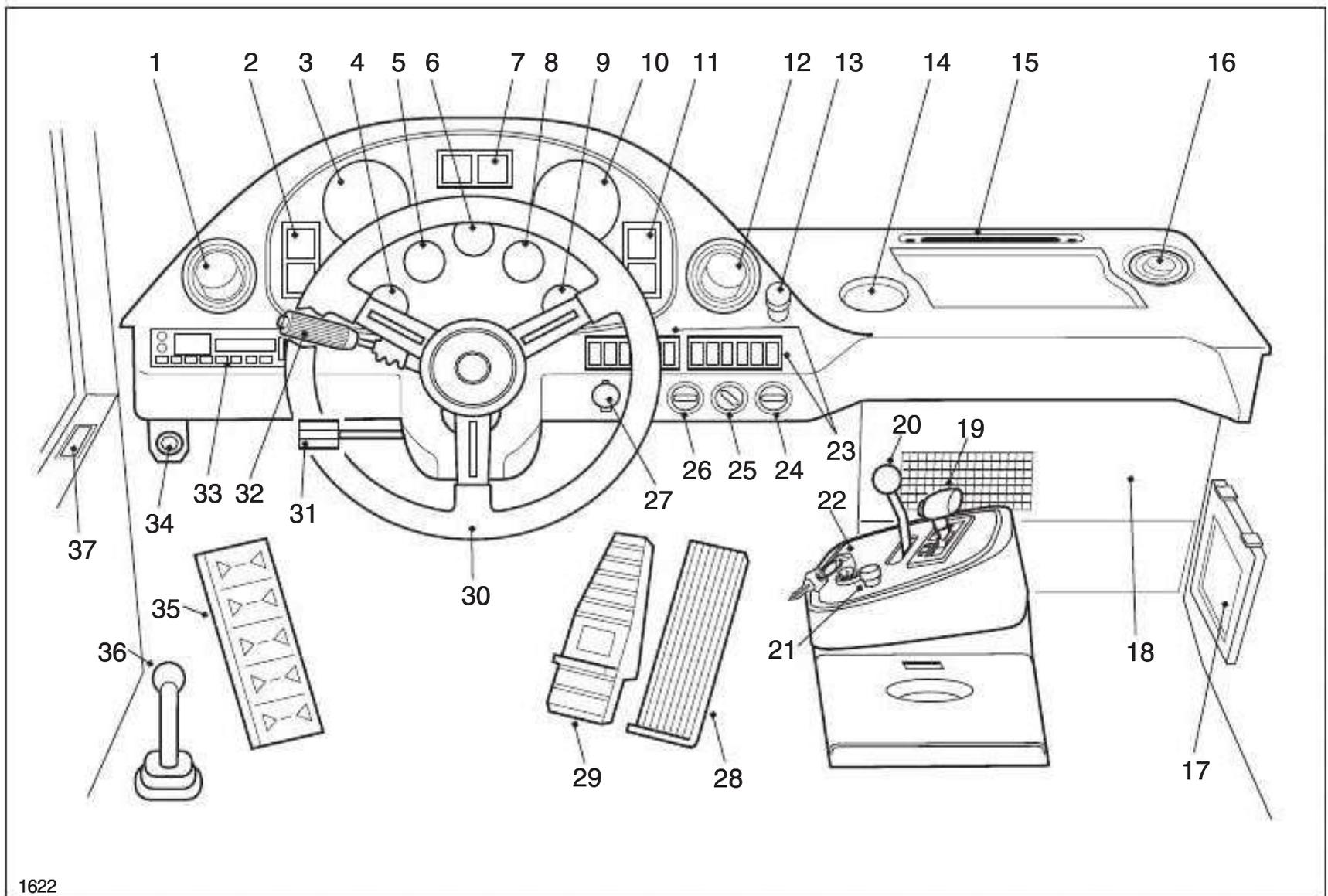


3 - Controls and Operating

Controls and Operating

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CONTROLS AND INSTRUMENTS



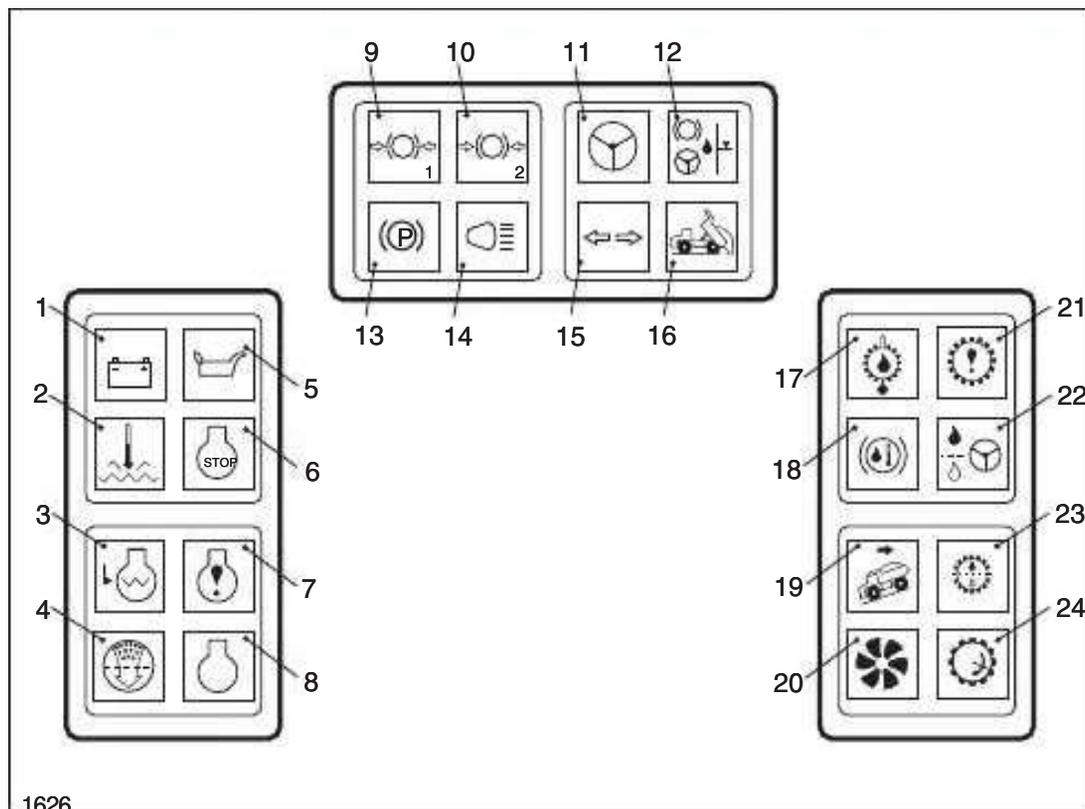
1622

- | | |
|---|---|
| 1. Face Vent/Side Window Demister | 30. Steering Wheel |
| 2. Warning Lights | 31. Steering Wheel Adjustment Lock |
| 3. Tachometer/Hourmeter | 32. Headlight Dipper, Direction Indicator, Windscreen Wiper/Washer and Horn Control |
| 4. Engine Water Temperature Gauge | 33. Radio/Cassette Player |
| 5. Engine Oil Pressure Gauge | 34. Cold Start Pilot |
| 6. Fuel Gauge | 35. Foot Rest |
| 7. Warning Lights | 36. Body Control Lever |
| 8. Transmission Oil Pressure Gauge | 37. Electric Window Switch |
| 9. Transmission Oil Temperature Gauge | 38. Interior Light (Not Shown). Located above dash. |
| 10. Speedometer/Odometer | 39. Cup Holder (Not Shown). Located on back wall. |
| 11. Warning Lights | |
| 12. Face Vent | |
| 13. Parking/Emergency Brake Control | |
| 14. Cup Location | |
| 15. Windscreen Demister | |
| 16. Side Window Demister | |
| 17. Document Holder | |
| 18. Fuse Box Cover | |
| 19. Transmission Gear Shift Selector | |
| 20. Retarder Control | |
| 21. Spotting Brake Control | |
| 22. Ignition and Starter Key Switch | |
| 23. Ignition and Starter Key Switch | |
| 24. Parking/Emergency Brake Control | |
| 25. Parking/Emergency Brake Control | |
| 26. Parking/Emergency Brake Control | |
| 27. Steering Wheel Adjustment Lock | |
| 28. Transmission Gear Shift Selector | |
| 29. Retarder Control | |
| 30. Steering Wheel | |
| 31. Steering Wheel Adjustment Lock | |
| 32. Headlight Dipper, Direction Indicator, Windscreen Wiper/Washer and Horn Control | |
| 33. Radio/Cassette Player | |
| 34. Cold Start Pilot | |
| 35. Foot Rest | |
| 36. Body Control Lever | |
| 37. Electric Window Switch | |
| 38. Interior Light (Not Shown). Located above dash. | |
| 39. Cup Holder (Not Shown). Located on back wall. | |

- 23. Ignition and Starter Key Switch
- 24. Air Conditioner Control
- 25. Blower Control
- 26. Heater Control
- 27. Accessory Lamp Socket
- 28. Accelerator Control
- 29. Service Brake Control

Controls and Operating

BASIC DATA



Warning Lights

- 1. Alternator Charging (Red)**
Illuminates to indicate when the alternator is not charging.
- 2. Engine Water Temperature (Red)**
Illuminates when the engine water temperature rises above the safe operating temperature.
- 3. Engine Water Level (Amber)**
Illuminates when the engine water level drops below the safe operating level.
- 4. Air Cleaner Restriction (Amber)**
Illuminates to indicate that the air filters are needing cleaned or replaced.
- 5. Engine Oil Pressure (Red)**
Illuminates when the engine oil pressure drops below the safe operating pressure.
- 6. Engine Stop Light (Red)**
Not currently used on TR100.
- 7. Engine Warning Light (Yellow)**
Not currently used on TR100.

8. Engine protection Fluid Light (Amber)

Not currently used on TR100.

9. Front Brake Accumulator Pressure (Red)

Illuminates to warn of low pressure in the front brake system accumulator. Stop the machine if this light illuminates and do not operate until the fault is corrected.

3-4

Controls and Operating

10. Rear Brake Accumulator Pressure (Red)

Illuminates to warn of low pressure in the rear brake system accumulator. Stop the machine if this light illuminates and do not operate until the fault is corrected.

11. Low Steering Pressure (Red)

Illuminates when the steering system oil pressure drops below 83 bar (1200 lbf/in²).

Stop the machine when this light illuminates and do not operate until the fault is corrected.

12. Steering & Braking Tank Low Oil Level (Red)

Illuminates when the level in the tank falls below the safe operating level. Stop the machine when this light illuminates and do not operate until the fault is corrected.

13. Parking Brake (Green)

Illuminates when the parking brake is applied.

14. Headlight Main Beam (Blue)

Illuminates when headlights are operated on main beam.

15. Direction Indicator (Green)

Flashes when the indicator lights are operating.

16. Body-up (Amber)

Illuminates to indicate that the body is NOT resting on the chassis. Never move the machine until this light goes OUT.

17. Transmission Oil Temperature (Red)

Illuminates when the transmission oil temperature rises above the safe operating temperature.

18. Brake Hydraulic Oil Temperature (Red)

Illuminates if brake cooling hydraulic oil overheats. Reduce speed and shift transmission to the range that will maintain an engine speed as high as possible, without exceeding the maximum recommendation, to increase oil circulation and cooling. If the trouble persists, stop the machine and have the fault corrected.

19. Retarder Indicator (Amber)

Illuminates when the retarder is applied.

20. In-converter Indicator (Green)

Illuminates when the transmission is in Torque Converter drive. It goes OUT when Lockup is engaged.

21. Check Trans (Red)

Illuminates to alert of a fault in the transmission shift system or abnormal transmission temperature. The light will illuminate when the ignition keyswitch is turned to position '1' to provide a bulb and system check and should go off a few seconds after the engine is started.

22. Steering Filter Restriction (Amber)

<https://www.besttruckmanuals.com/>

Illuminates when the filter is restricted, indicating that a filter change is required.

23. Transmission Oil Filter Restriction (Amber)

Illuminates when the filter is restricted, indicating that a filter change is required. Transmission will not upshift from first gear while this light is illuminated.

Note: This lamp may illuminate at initial start up, due to the viscosity of the oil when cold.

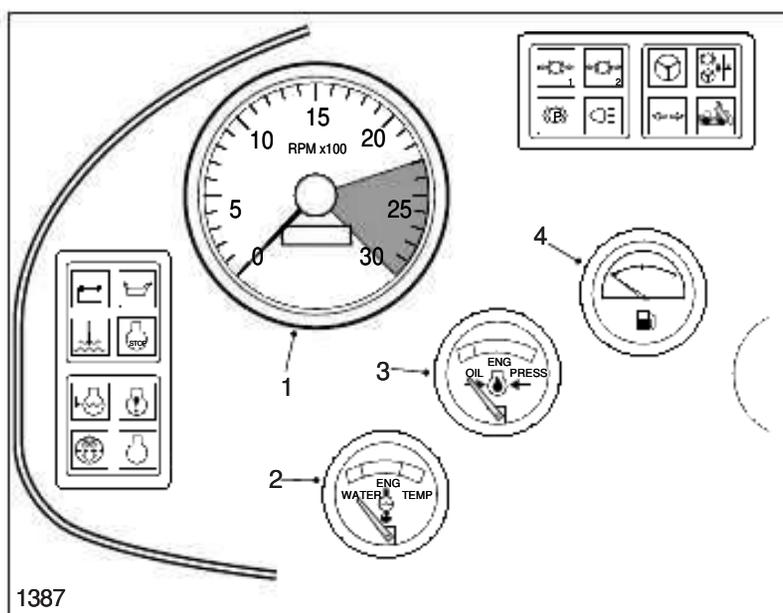
Controls and Operating

24. Engine Overspeed (Red)

Illuminates to alert the operator when the transmission ECU detects an engine speed of 2550 rev/min.

Note: For further information on items 21 and 24, refer to 'Transmission' section on pages 3-23 and 3-24.

INSTRUMENTS



1387

1. Tachometer/Hourmeter

Indicates the engine speed in revolutions per minute. The needle shows the variations in engine operating speed. Never accelerate the engine to speeds indicated by the red zone on the dial face. A digital hourmeter is incorporated in the tachometer to record total hours of engine operation. The readings can be used for operating and service records.

2. Engine Water Temperature Gauge

This gauge should read in the green zone, after the engine has warmed. If gauge reads in the red zone, stop the engine until the fault is corrected.

3. Engine Oil Pressure Gauge

This gauge should read in the lower end of the green zone at normal operating speeds (on machines with three colour zone, may fall to the lower end of the yellow zone at engine idle). If gauge reads in the red zone, stop the engine until the fault is corrected.

4. Fuel Gauge

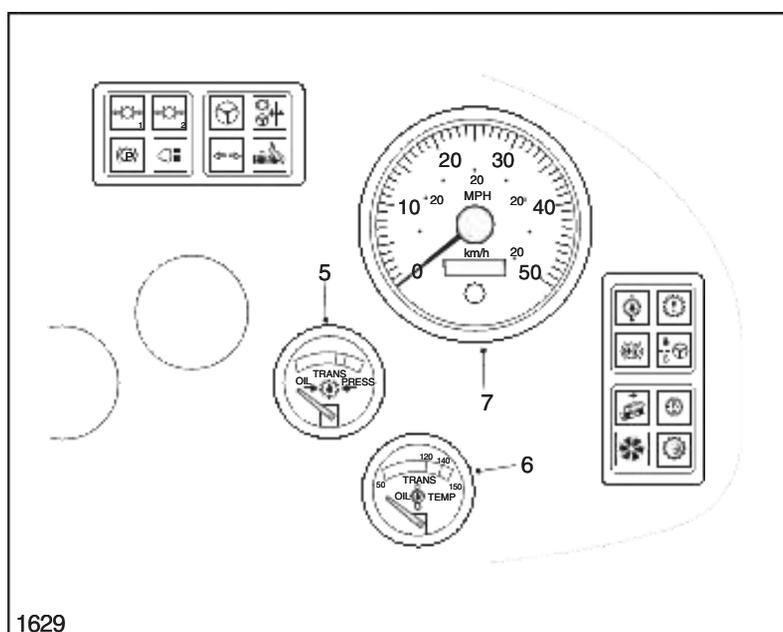
Indicates the level in the fuel tank. Fill the tank before parking the machine overnight to minimize condensation in the tank. Avoid a dry tank condition which requires bleeding the fuel system.

5. Transmission Oil Pressure Gauge

Indicates transmission clutch application oil pressure. The reading will vary during shifts and with varying speeds and loads. The needle should remain in the green zone during normal operation but might rise into the upper red zone for short periods under heavy loading. When the load decreases, the needle should return to the green zone and may fall momentarily into the lower red zone. If the needle remains in either of the extreme zones for extended periods, stop the machine until the fault is corrected.

6. Transmission Oil Temperature Gauge

This gauge should read in the green zone during normal operation. Refer also to 'General Transmission Operation' on page 3-24 and 'Retarder' section on page 3-14 for variations from normal.



1629

7. Speedometer/Odometer

Driven by a signal from the transmission ECU, the speedometer indicates travel speed in kilometres per hour

speedometer indicates travel speed in kilometres per hour and miles per hour. A digital odometer is incorporated in the speedometer to record the distance travelled by the vehicle at any given time.

Controls and Operating

SWITCHES

1. Hazard Warning Lights

Press bottom of switch to make turn indicators flash simultaneously as hazard warning lights. The light in the switch and direction indicator warning light on the dash panel will flash. To switch hazard lights off; press the top of the switch.

2. Position not used.

3. Position not used.

4. Position not used.

5. Front Brake Pressure Reduction

Press bottom of switch to give a 50% reduction in front brake pressure. The lower front pressure reduces the risk of wheel lockup in slippery conditions. To return to full front brake pressure; press the top of the switch.

6. Retarder Selection Switch

Allows the operator to select which retarder is employed when using the retarder control lever.
 Pressed at top = Disc Brake
 Pressed at bottom = Transmission

7. Sidelight and Headlight

Press bottom of switch to the first position to operate side, tail and panel lights. The lights in the other switches will illuminate. Press switch to the second position to operate the headlights. To switch lights off; press the top of the switch.

8. Position not used.

9. Warning Light Test Switch

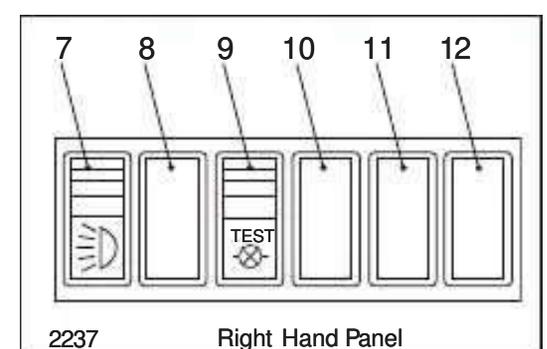
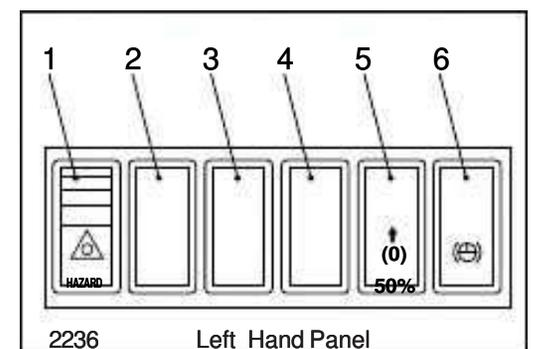
Pressing the switch with the ignition switched on will illuminate warning lights 1, 2, 3, 4, 5, 9, 10, 11, 12, 17, 18, 20, 22 and 23 and the buzzer will sound, to provide a bulb and system check. Refer to 'Warning Lights' section on pages 3-4, 3-5 and 3-6 for details. The light in the switch will illuminate with the panel lights.

10. Position not used.

11. Position not used.

12. Position not used.

13. Manual Mode Switch



13. Manual Mode Switch

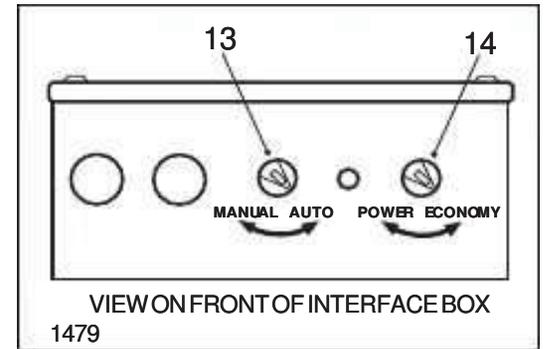
Allows the service technician to change the operation of the transmission from automatic to manual.

Automatic - Normal Operation.

Manual - Service Functions.

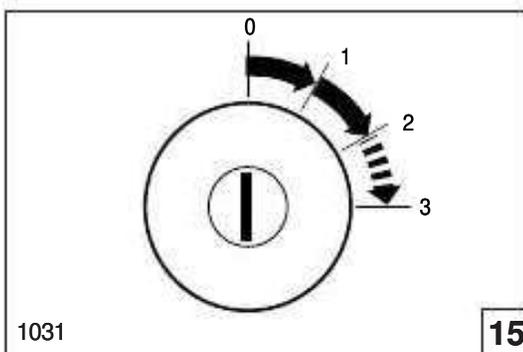
14. Mode Selection Switch

Allows the service technician to select between the transmission 'POWER' and 'ECONOMY' shift schedules.



3-8

Controls and Operating



15. Ignition and Starter Key Switch

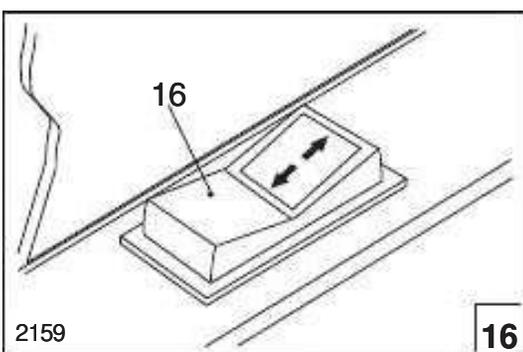
The combined switch operates the ignition, pre-lube motor and starter motor. The key can only be withdrawn from position '0'.

'0' - Ignition switched off. Disconnects the batteries making all electrical systems inoperative (with the exception of a supply to the transmission ECU memory, interior light and to the radio).

'1' - Turn key clockwise to connect the batteries to the electrical systems.

'2' - Ignition switched on, instruments, gauges and warning lights register as appropriate. All electrical systems are operative. The key must remain in this position whilst operating the machine.

'3' - Initiates starting sequence. The engine pre-lube motor will run until engine oil pressure of 0.35-0.48 bar (5 - 7 lbf/in) is achieved. This will normally take 8 - 15 seconds, but can take up to 45 seconds in cold climates or with dry filters. 3 seconds after the pre-lube motor stops, the engine starter motors engage. Release the key as soon as the engine starts firing. The key will return to position '2'.



16. Electric Window Switch

Press bottom of switch to lower window; press top of switch to raise window.

Controls and Operating

CONTROLS

Headlight Dipper, Direction Indicator, Windscreen Wiper/Washer and Horn

1. Headlight Dipper and Flasher:

- Control Downwards = Main Beam
- Neutral Position = Dipped Beam
- Control Upwards = Headlight Flash

2. Direction Indicator:

- Control Rearwards = Left Indicators
- Control Forwards = Right Indicators

3. Windscreen Wiper/Washer:

- Position J = Not used
- Position 0 = Neutral Position
- Position 1 = Wiper Slow Speed
- Position 2 = Wiper Fast Speed
- Ring Pushed = Windscreen Wash

4. Horn:

- Button Pushed = Horn Sounds

Heater

Blower control (2) is rotated to select one of three blower speeds.

Temperature control (1) is rotated to vary heater output temperature. Heater output air is unheated with the control turned fully clockwise and heated by turning anti clockwise.

Heater/air conditioner outlets (4) may be adjusted to control air flow output by opening and closing the control flaps. Air direction can be adjusted by rotating complete outlet.

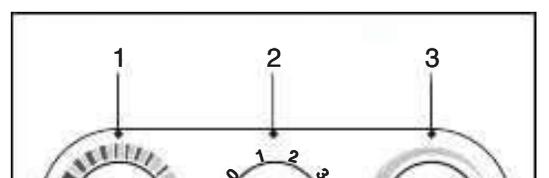
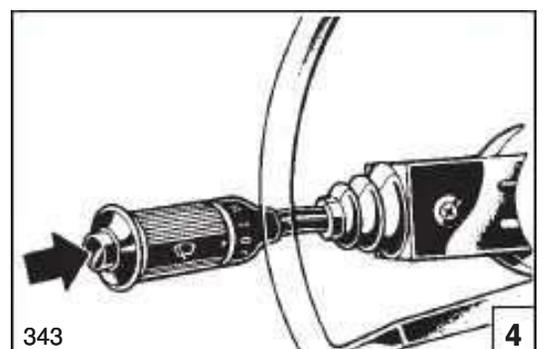
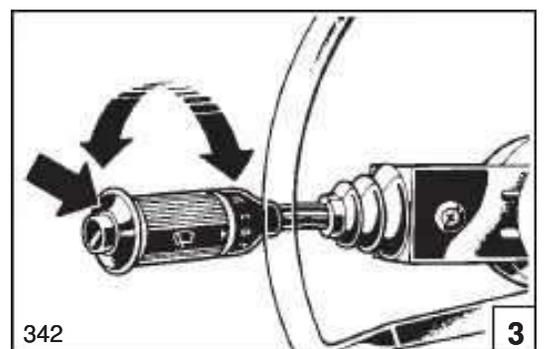
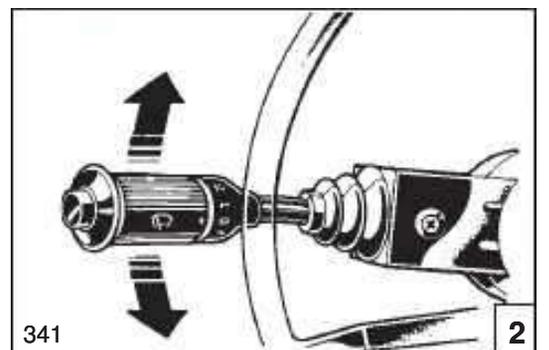
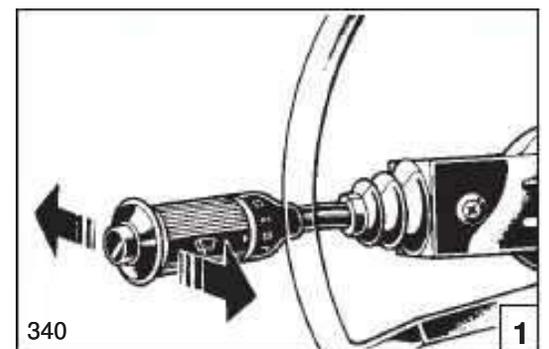
Air Conditioner

Keep all windows and vents closed.

Blower control (2) is rotated to select one of three blower speeds. The air conditioning will not operate if the blower control is not switched on.

Temperature control (3) adjusts the air conditioner output temperature. Rotating the control to the left provides maximum cooling.

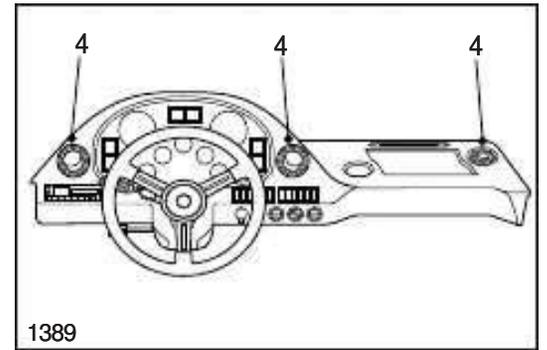
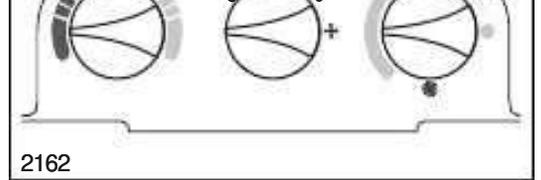
Heater/air conditioner outlets (4) may be adjusted to control air flow output by opening and closing the control flaps. Air direction can be adjusted by rotating complete outlet.



Air Condition Commissioning Procedure

If the machine has been idle overnight or for an extended period of time, the refrigerant in the air conditioning unit converts from a gas to a liquid. This puts the compressor unit under a great deal of strain trying to compress a liquid instead of a gas and could cause a failure in the air conditioning unit. The following commissioning procedure allows the air conditioning unit to achieve normal operating parameters.

1. Start the machine and allow it to run until the engine is at a normal operating temperature of 80 °C (176 °F).
2. Turn the blower control to setting 1.
3. Turn on the air conditioning unit on for 5 seconds then off for 5 seconds.



3-10

Controls and Operating

4. Repeatedly switch the air conditioning on and off for at least 1 minute. This should be at least 12 repetitions.
5. Commissioning the air conditioning unit is complete and ready for use.

NOTICE

Follow the instructions given above, otherwise the machine may be damaged.



OPERATOR'S SEAT - AIR SUSPENSION

The air seat only reacts when the driver sits on the seat. When unoccupied the seat sinks to the lowest position to enable easier access. The incorporated suspension system maintains the seat in position for driving.

The following is the list of controls provided for the seat:

1. Seat cushion tilt adjustment. The operator removes their weight from the seat while lifting the handle. Raise or push down on the front of the seat cushion to adjust its angle. Release the handle at one of the three positions provided.
2. Ride zone indicator. When the operator is seated, the suspension height and weight adjustment (6) is pulled out to lower the seat, or respectively pushed in to raise it, until the white indicator (2) shows in the green zone.
3. Forward and rearward positioning. The operator has the facility to move the entire seat bodily forwards or rearwards, by first lifting this handle, adjusting the horizontal seat position, then releasing the handle in one of several positions provided.

3-11

Controls and Operating

Note: If the horizontal slide become loose, adjustment can be achieved by tightening of two gold coloured grub screws on the right-hand side of the slide plate, the access to which requires longitudinal movement of the seat to align access holes. Tighten the grub screws by $\frac{1}{4}$ turn increments until the looseness has been reduced to a minimum. Avoid overtightening of the grub screws, which will prevent the seat from horizontal movement altogether.

4. Seat cushion length adjustment. The operator can individually adjust the horizontal position of the base cushion, by first lifting this handle, moving the cushion forwards or rearwards, then releasing the handle in one of six positions provided.
5. Ride firmness adjustment. Push down on this button to increase the ride firmness, or conversely pull up on the button to decrease the ride firmness.
6. Combined height and weight adjustment. Push this knob in to raise the seat, or pull it outwards to lower the seat.
7. Rear cushion angle adjustment. Lift this handle and allow the rear cushion to spring forward, or lean back into the cushion to force it back. Release the handle at the desired position.
8. Lumbar adjustment. Rotate this control upwards to deploy increased lumbar support, or downwards to decrease applied lumbar support.

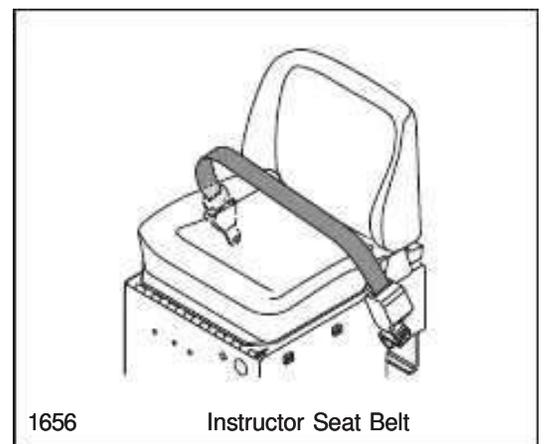


Do not attempt to adjust the seat or seat belt while the machine is moving. Loss of control may result. Stop the machine, apply the brakes, then carry out adjustments.



2104

Three point harness

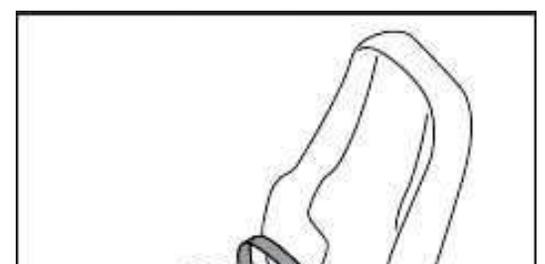


1656

Instructor Seat Belt

Seat Belt

The operator's seat will be fitted with either a "three point harness" or a "retractable lap belt". Both allow freedom of movement for proper manipulation of all controls. The instructor's seat is fitted with a retractable lap belt.



To Fasten Three Point Harness:
Position belt over both shoulders and around waist and insert belt into buckle until an audible click is heard. Adjust the length of the belt as required using the adjusters. Ensure belt is secured.

To Unfasten Three Point Harness:
Press the red release button on the buckle.

To Fasten Lap Belt:
Pull belt from reel and position around waist and insert belt into seat buckle until an audible click is heard. Ensure the belt is secure. No external adjustment is required.

To Unfasten Lap Belt:
Press the red release button on the buckle. The belt will self retract into its reel.



The Trainer/instructor seat is NOT for continuous passenger

3-12

Controls and Operating



Always wear the seat belt when operating the machine.

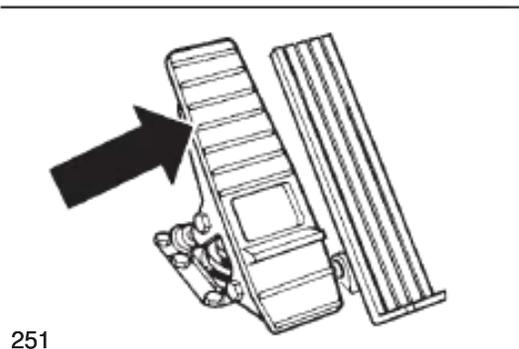
Always check condition of seat belts and mounting hardware before operating the machine.

Any signs of looseness or wear should be reported to your Maintenance Department or Dealer for repair or replacement immediately.

Replace seat belts at least once every three years, regardless of appearance.

Do not attempt to adjust seat or seat belt while machine is moving. Loss of control may result. Stop machine; apply brakes; then adjust.

Controls and Operating



MACHINE CONTROLS

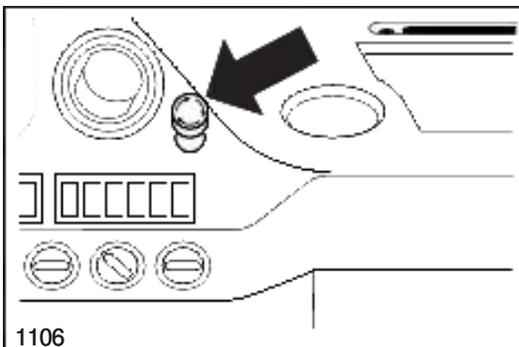
Braking

The dual circuit brake system is applied during normal operation by using the Service Brake Pedal or, in an emergency, by using the Parking/Emergency Brake Control.

A 'Front Brake Accumulator' warning light and a 'Rear Brake Accumulator' warning light are located on the instrument panel. If any of these lights illuminate during operation, stop the machine, apply the parking brake and do not operate until the fault is corrected.

Service Brake

This is a floor mounted pedal operated by the right foot. Depress the pedal as required by speed, load and road conditions to slow or stop the machine. Release the pedal as the machine slows until, when stopped, the pedal is depressed just enough to hold it stationary.



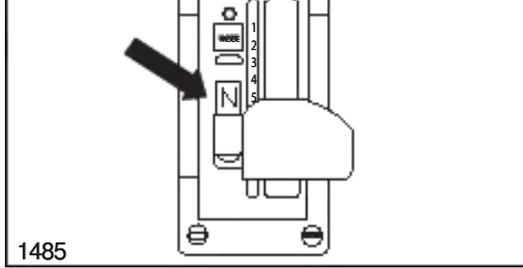
Park/Emergency Brake

Pushing the control in will apply the spring operated parking brakes within the rear brake assemblies and the service brakes at all wheels. The parking brake warning light on the instrument panel will illuminate when the control is pushed in. To release the brakes; turn the control clockwise and shift the transmission to "DRIVE" or "REVERSE".

NOTICE

The Parking/Emergency Brake Control should only be used to stop the machine in an emergency. For normal braking the service brake pedal should be employed. When stopped for loading or unloading the spotting brake control should be used.

Always apply the parking brake before leaving the operator's seat.



Automatic Spotting Brake

Shifting the transmission to "NEUTRAL" when the machine is stopped will automatically apply the spring operated parking brakes and service brakes at the rear wheels to hold the machine stationary for loading or unloading. The parking brake warning light on the instrument panel will illuminate when the brakes are applied. To release the brakes, shift the transmission to "DRIVE" or "REVERSE".

Note: The automatic brake will apply automatically if the transmission is in "NEUTRAL" and the truck is travelling at less than 1 mile/hour. On Parking/Emergency brake application or engine shut down the Parking/ Emergency brake will take priority and apply the front service brakes also.

3-14

Controls and Operating

Retarder

This control lever (1) is used to apply retardation to the truck. Retardation is the term used for applying a continuous braking force to hold the truck to a safe steady speed when descending grades.

The retarder is OFF when the lever is fully forward and is APPLIED as the lever is pulled back. Maximum retardation is obtained when the lever is in the fully back position. The retarder may be used anytime to slow down. If additional braking is required apply the service brakes. The retarder is not meant for bringing the machine to a halt, or for sudden deceleration - the service brakes should be employed for this purpose.

When the retarder is applied, the 'Retarder Indicator Light' on the instrument panel will illuminate and an orange coloured warning light at the rear of the truck will illuminate to warn following vehicles.

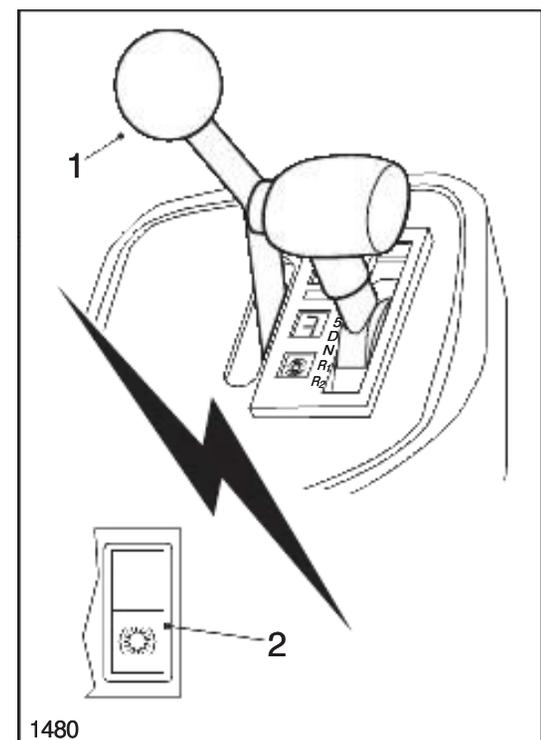
Retardation of this truck may be achieved by using the DISC BRAKE RETARDER or the TRANSMISSION RETARDER.

Machines fitted with Disc Brake and Transmission Retarders have a 'Retarder Selection Switch' (2). This selects which retarder will be employed when using the retarder control.

Pressed at top = Disc Brake, Pressed at bottom = Transmission.

The operator should select the correct gear range to match the site conditions. Application of the retarder gives the transmission enhanced retardation through 6th and 5th gears until 4th gear is attained.

Note: In order to obtain the maximum retardation and cooling effect during retardation, the engine speed should be maintained as high as possible without exceeding the maximum recommendation.



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Do not use the retarder for parking the vehicle. Only use the Parking/Emergency brake control for this purpose.

Controls and Operating

Retarder Operation

Before the machine crests the top of a grade and starts down, the operator should slow the machine with the service brakes and downshift to the gear range which would be used to ascend the grade. The retarder should be applied before starting the descent. Machine downgrade speed (with the retarder applied as required) in the gear range selected should be high enough to keep the engine operating at governed speed with the throttle closed (operator's foot off the accelerator pedal). This will ensure maximum oil circulation and cooling. If the rate of descent is too slow, the transmission should be upshifted to the next highest gear range. If the rate of descent is too fast, the gear range selected is too high and the operator must slow the machine by using the service brakes, then downshift into a lower gear range which will allow a safe descent and efficient retarder operation.



Great care should be used if applying the retarder when road surfaces are slippery. Retarder braking effect will occur only at the driving axle and could make vehicle control difficult.

Oil Temperature - Disc Brake

The disc brake hydraulic temperature warning light on the instrument panel will illuminate and an electric horn will sound if the oil flowing through the disc brake assemblies overheats. If alarm is activated, reduce downgrade travel speed. If the trouble persists, stop the machine and have the fault corrected.

Oil Temperature - Transmission

During normal operation the transmission oil temperature gauge should read in the green zone. However, during transmission retarder operation oil temperature can enter the yellow 'RETARDER ON' zone but should not enter the red zone. Do not allow the temperature to stay at or near the top of the yellow zone for more

than 3 minutes. Reduce downgrade travel speed to avoid the oil overheating and possible damage to the transmission.

3-16

Controls and Operating

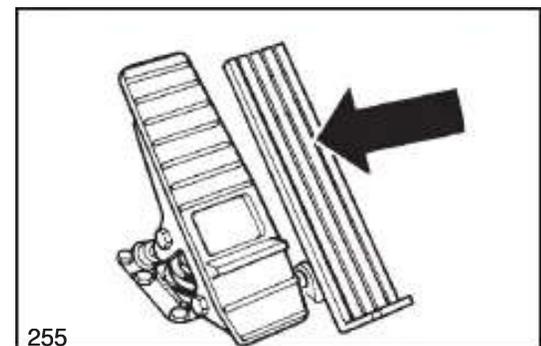
ENGINE

Accelerator

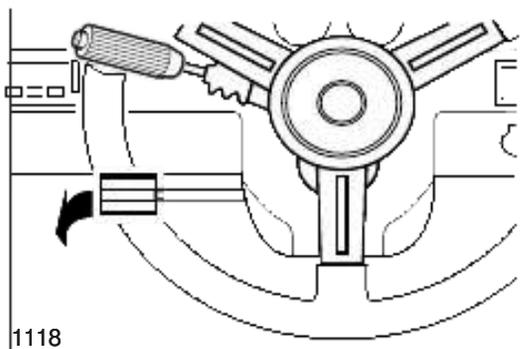
This is a floor mounted pedal operated by the right foot. Press the pedal down as required, to increase fuel flow to accelerate the engine.

NOTICE

Do not place the engine under full load at full speed immediately after starting. Always allow the engine to fully circulate lubricant and warm up gradually before operating at full speed and full load. Operate the engine at top rated speed when maximum power is needed for the load.



Controls and Operating



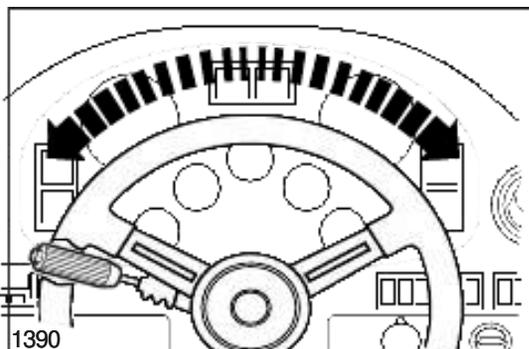
1118

Steering

The steering wheel position can be adjusted as required for the most convenient operating position. To adjust, pull out adjustment lock and tilt steering wheel up or down as desired; release lever to lock adjustment.

The steering system provides full-time hydraulic power with a continuous running pump and a pressurized accumulator. The accumulator helps maintain a constant flow of hydraulic power to operate the steering cylinders.

To steer the front wheels, rotate the steering wheel in the desired direction to the required radius of turn. The front wheels will turn only as the steering wheel is turned and at a rate of turning directly proportional to steering wheel speed. The front wheels will stop and hold position when the steering wheel is stopped. To return the front wheels to the straight ahead position or to the opposite direction, turn the steering wheel in the opposite direction.



1390



In the event of loss of steering pump output pressure, a fully pressurized accumulator provides a maximum of two lock to lock turns of the front wheels. A red warning light on the instrument panel illuminates and a buzzer sounds when steering pressure falls below 83 bar (1200 lbf/in²). If this warning light illuminates, indicating a loss of steering power, the machine must be stopped immediately and no further operation attempted until the fault is corrected.

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The accumulator slowly bleeds down after engine shut-off to prevent

accidental steering. However, accumulator pressure should be dissipated after engine shut-off by turning the steering wheel in both directions to avoid accidental steering during bleed down.

Improper steering control unit repair or hose connections can cause sudden and forceful steering wheel movement when engine is started. Keep hands off steering wheel when starting engine.

Transmission

This machine is equipped with a CEC (Commercial Electronic Control) shift system to operate the transmission. The CEC shift system continually monitors the transmission and shift system electrical components and warns the operator when a problem develops. It also takes action to prevent damage to the transmission, and provides the serviceman with diagnostic capabilities so that problems can be corrected quickly and easily.

NOTICE

Before any welding is done on a machine equipped with a CEC shift system, disconnect battery equalizer ground cables, battery cables from terminal posts (ground cable first), battery equalizer positive cables and electrical connections at the ECU to avoid damage electrical components. Turn off ignition key switch to isolate batteries before disconnecting any components.

In addition, CEC provides the following systems designed to protect the operator and mechanical components:

REVERSE INHIBIT

Prevents gear selection if engine is operating at more than 20% throttle.

HOIST INTERLOCK PRESSURE SWITCH

The ECU will shift the transmission from Reverse to Neutral if the body control lever is moved to the 'Raise' position. When this circuit has been activated, moving the transmission shift lever to Neutral, the re-selecting Reverse, will engage Reverse gear whilst the body is held in the 'Raise' position. This feature is only operational in the normal automatic driving mode, either power or economy.

only operational in the normal automatic driving mode, either power or economy. It is not activated during the manual mode.

NOTICE

The standard procedure for raising the body must still be adhered to.

BODY UP INTERLOCK

When the body is raised, the CEC system will only allow the transmission to operate in First gear. This feature is only operational in the normal automatic driving mode, either power or economy. It is not activated during the manual mode.

PARKING BRAKE INTERLOCK

If the parking brake control switch is applied while the transmission is in Neutral, the CEC system will prevent a shift out of Neutral to protect the brake components. If the parking brake control switch is applied while the transmission is in gear, the parking brake interlock will not function and normal shifts will occur.

Controls and Operating

LOCK-IN-GEAR

The lock-in-gear feature is designed to protect the transmission from damage should wheel spinning or lockup occur due to poor traction or panic braking. The ECU will delay making a shift for several seconds and then, if the condition fails to correct itself, locks in gear and prevents any further shifting. The Check Trans warning light will come on. If this occurs, the ECU must be reset before normal operation may be resumed.

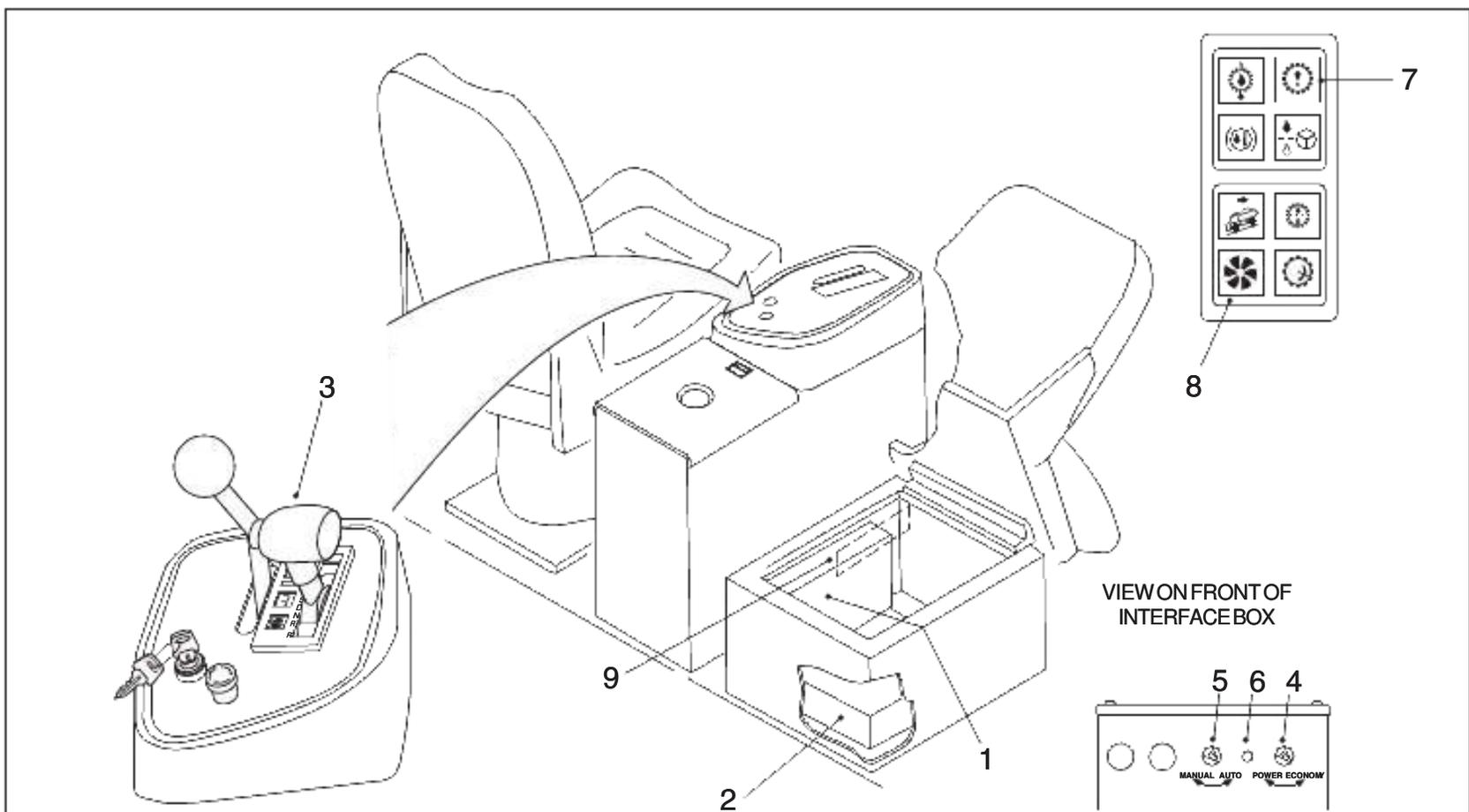
To reset the ECU if the transmission has locked in gear because of wheel spinning or a panic stop, stop the machine, select 'Neutral', apply the parking brake control switch, and shut down the engine. Wait ten seconds, then restart the engine. Select 'Reverse', then 'Neutral'. The Check Trans warning light should go 'Off'.

COLD WEATHER STARTS

During cold weather starts, if the transmission temperature is below -24°C (-10°F) the Check Trans warning light will illuminate and the ECU will prevent the transmission from being shifted out of Neutral.

Between -24°C (-10°F) and -7°C (19°F) the light will go out and the ECU will only permit operation in First or Reverse gears. Above -7°C (19°F), normal operation will be permitted.

Controls and Operating



- 1. Electronic Control Unit (ECU)
- 2. Interface Box
- 3. Gear Shift Selector

- 4. Mode Selection Switch
- 5. Manual Mode Warning Light
- 6. Manual Mode Warning Light

- 7. Check Trans Warning Light
- 8. In-converter Indicator Light
- 9. Digital Data Line

DESCRIPTION AND OPERATION

1. Electronic Control Unit (ECU)

Contains an electronic microcomputer. The ECU receives information in the form of electronic signals from the switches and sensors, processes the information, and sends electronic signals to the appropriate solenoids which control the transmission.

2. Electrical Control Box

Contains fuses and relays.

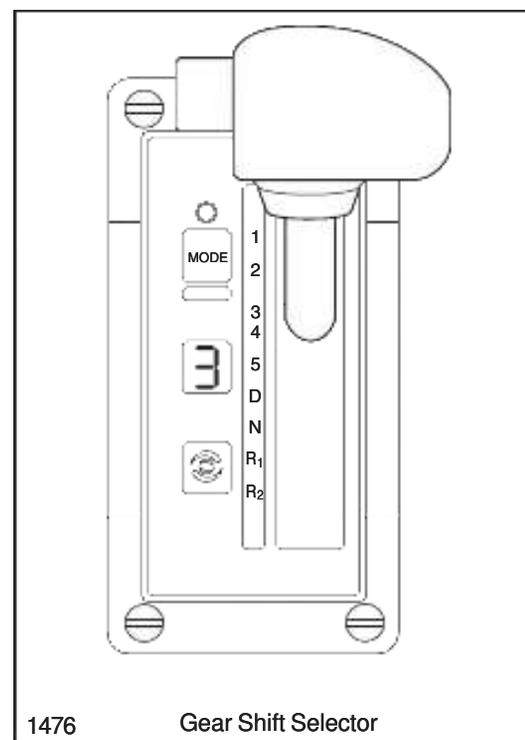
3. Gear Shift Selector

The shift selector is a remote mounted lever type. The gear shift selector is connected to the ECU by a wiring harness. The shift lever has 6 forward ranges and 1 reverse range, as well as a neutral position.



Do not allow the vehicle to coast in Neutral. This practice can result in severe transmission damage.

The shift selector has a single digit LED display, that during normal operation will display the gear selected (*Not gear attained*). Diagnostic information can be displayed on the single digit LED display by pressing the diagnostic display button. There is a hold override button that must be pressed when shifting between R, N and D. The hold override button is released when desired selector position is reached. The selector lever can move freely between D and the number ranges without pressing the hold override button.



3-21

Controls and Operating

The transmission provides six forward ranges, one reverse range and a neutral position. The transmission upshifts and downshifts automatically between first range and the highest range selected on the range selector in direct response to throttle position and transmission output speed.

When reverse range is selected the 'Reverse Alarm' sounds and the 'Reverse Light' illuminates at the rear of the truck. This feature warns personnel to the immediate rear of the truck that the operator has shifted the transmission to reverse.

When drive (D) is selected, the transmission automatically upshifts and downshifts through all six forward ranges as required by loads and travel speeds. Selecting a lower range (4th, 3rd etc.) limits the highest range to which the transmission will automatically upshift.

If a lower range is selected while moving forward, the transmission automatically downshifts sequentially to the selected lower range at maximum controlled engine speeds. Downshifts will not occur until machine is slowed by use of the service brakes and/or retarder.

When shifting from neutral to start from a standstill, or to reverse direction, decelerate the engine to idle speed. To move forward, select Drive (D) and accelerate the engine to the machine load and speed requirements. The transmission will automatically upshift from 1st through 6th ranges as travel speed increases.

With the throttle fully depressed, and the Mode Selection Switch in the 'POWER' position, the transmission upshifts to the next higher range when the engine attains maximum rated speed, since maximum power train output is needed under this condition. At lower throttle settings where minimum power train performance is required, the transmission will upshift to the next higher range at less than maximum rated engine speed.

Upgrades or soft spots might slow travel speed, even at full throttle, requiring transmission downshifts to maintain maximum powertrain performance. When this occurs, the transmission downshifts automatically.

Shift the transmission to the next lowest range if transmission 'Hunting' or 'Shift Cycling' occurs.

When temporarily stopped, such as for yielding the right-of-way to a loaded machine, the transmission can be left in the selected range and the machine held stationary with the service brakes.

When stopped for a more extended period with the engine left running, however, shift the transmission to Neutral to avoid unnecessary heat buildup, and apply the parking brake.



Always select neutral and apply the parking brake before leaving the operator's seat.

3-22

Controls and Operating

4. Mode Selection Switch

Gives the option to select between transmission 'POWER' and 'ECONOMY' shift schedules. The transmission must be in Neutral before the switch will function.

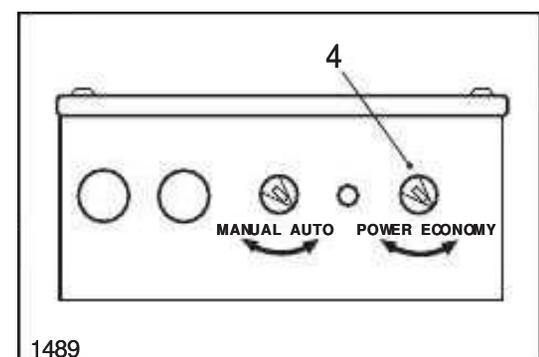
The transmission torque converter is equipped with a lockup clutch which, when engaged by the ECU, locks the converter pump and turbine together as a single unit and allows power to be transmitted mechanically from the engine directly to the transmission gearing on a 1 to 1 ratio. When the lockup clutch is disengaged, the torque converter acts as a fluid coupling, multiplying torque when engine speed is significantly higher than transmission output shaft speed.

When the Mode Selection Switch is in the 'POWER' position, the ECU controls operation of the lockup clutch according to signals received by the throttle position sensor (giving engine speed as a percent of throttle), the transmission output shaft speed sensor, and range selector. The ECU may

delay application of the lockup clutch and allow torque multiplication by the torque converter to take place until a balance is achieved between engine speed and transmission output shaft speed before activating the lockup clutch.

Power versus Economy Mode

The POWER mode is designed for applications involving heavy loads and hilly duty cycles where performance rather than fuel economy is of prime importance.



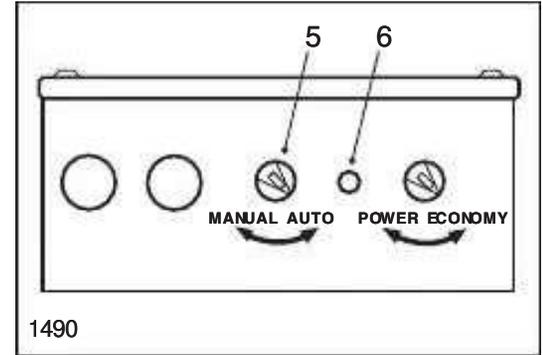
importance.

The ECONOMY mode is designed for applications involving lighter loads and level duty cycles or where fuel economy is more important than performance.

In the ECONOMY mode, the ECU controls operation of the lockup clutch with a timed, preprogrammed schedule where in Second through Sixth gears the lockup clutch is disengaged only long enough to allow the torque converter's fluid coupling to absorb shift shock. Otherwise, the lockup clutch is engaged and no torque multiplication takes place in Second through Sixth gears.

5. Manual Mode Switch

Allows the transmission operation to be changed from Automatic to Manual. When at the 'ON' position it is used to perform stall checks, clutch pressure checks and, if necessary, to move the machine to a repair area. The manual mode can only be used if the Mode Selection Switch is in the 'POWER' position and the transmission is in Neutral.



Do not operate engine for more than 30 seconds at full throttle with transmission in gear and output stalled as this will result in severe overheat damage to the transmission.



The manual mode is not intended to be used for normal operations. The machine should only be driven at very low speeds in first or reverse gears if the manual mode is activated, or damage to the transmission may result.

Controls and Operating

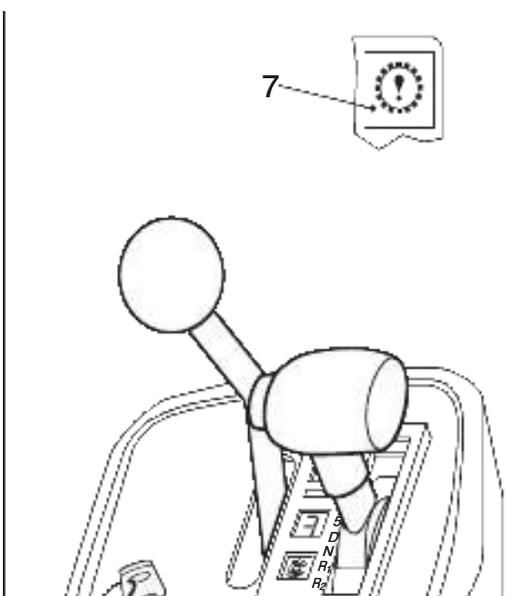
6. Manual Mode Warning Light

This light is located on the front face of the CEC-2 Interface Box. The warning light illuminates to alert the operator when the transmission has been switched to operate in the manual mode. The light should be 'Off' during normal operation.

7. Check Trans Warning Light

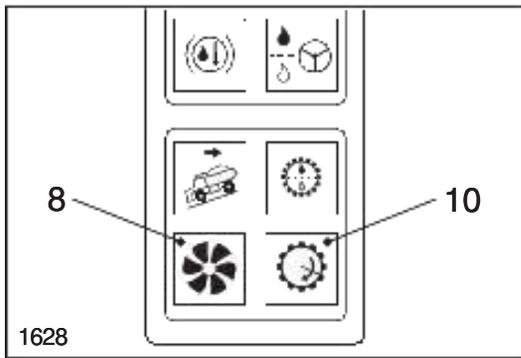
Illuminates to alert of a minor fault in the transmission shift system or abnormal transmission temperature. The warning light will come 'On' when the ignition keyswitch is turned to position '1' to provide a bulb and system check and should go 'Off' a few seconds after the engine is started and the transmission oil pressure rises.

The check trans warning light will come 'On' during operation if the ECU has detected a minor fault in an electrical component or abnormal transmission oil temperature. If transmission oil temperature is too high, stop the machine, select Neutral (N), and increase engine speed to allow a greater flow of oil to the oil cooler until oil temperature drops to normal operating range. In most cases, a minor fault triggering the check trans warning light will not prevent normal operation from continuing but, depending on the nature of the problem, the ECU should take action to protect the transmission from damage, such as preventing operation in high gear ranges. If the check trans warning light comes





1481



1628

'On', have the problem diagnosed and corrected at the earliest opportunity.

8. In-convertor Indicator Light

Illuminates when the transmission is in torque converter drive. It goes 'Off' when Lockup is engaged. In order to avoid unnecessary waste of fuel, if traffic or other road conditions permit, the operator should modify throttle position, or gear held to achieve a steady road speed with the torque converter lockup engaged (Indicator Light 'Off'). The Lockup relay in the interface box is also activated by the 20 bar (290 lbf/in²) pressure switch on the foot brake pedal.

When this switch is activated the 'In-Converter' light will be illuminated due to the transmission dropping out of converter lock up, avoiding engine stall.

9. Digital Data Line

Located in the right hand side of the transmission control tower. Plug in connector for diagnostic data reader (DDR).

10. Engine Overspeed Light

Illuminates when the transmission ECU senses an engine speed above 2550 rev/min.

GENERAL TRANSMISSION OPERATION

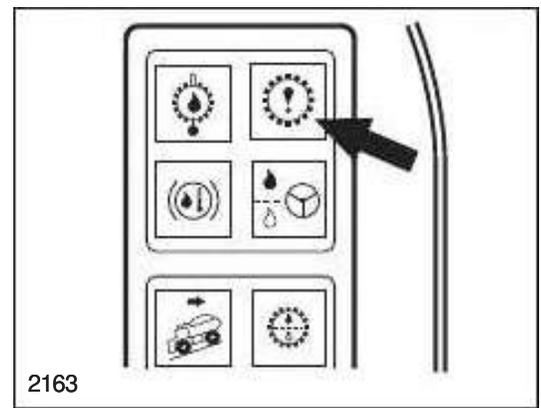
Watch for wide deviations from normal readings on the transmission oil temperature gauge during machine operation. If the transmission oil temperature gauge, on vehicles which do not have a transmission retarder fitted, shows oil temperature consistently rising above the green zone (43 - 135° C; 100 - 275° F) under normal operating conditions; check for external causes. If none are evident shift to Neutral (N) and operate the engine at 1 200 - 1 500 rev/min. If the transmission oil temperature does not decrease into the green zone within 2 or 3 minutes, the cause of the overheating should be corrected before the machine is operated further. Watch the oil temperature gauge when operating on upgrades, also. If the oil temperature goes into the red zone (135 - 176° C; 275 - 350° F), select the range which will limit upshifts to the highest range in which the transmission will operate within the normal temperature range. If upshifting must be consistently limited to ranges

lower than normal for the loads and the grades encountered to prevent overheating the transmission oil, the causes should be determined and corrected. On vehicles fitted with a transmission retarder, it is permissible to operate with the gauge showing in the yellow zone during operation of the transmission retarder.

Retrieving Diagnostic Codes

Diagnostic fault codes can be retrieved from the CEC2 system using the gear shift selector or by plugging in the diagnostic data reader (DDR). To obtain diagnostic codes using the gear shift selector:

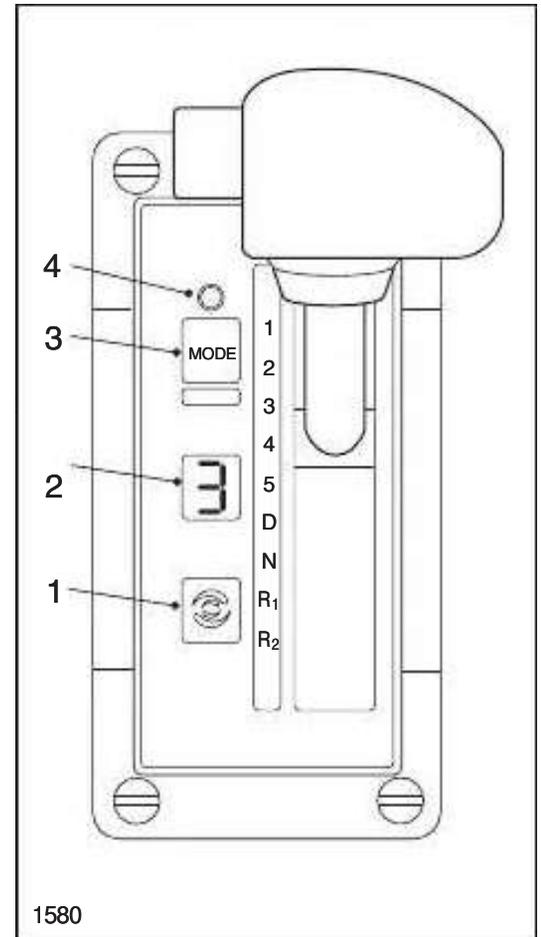
1. Check transmission warning light on dash will illuminate when ECU detects a fault.
2. Stop truck and select 'Neutral'.
3. Press diagnostic button (1) on gear shift selector. Display (2) on gear shift selector will flash one digit at a time.
4. Display starts with code position D1, D2, etc, followed by the two digit main code, then the two digit subcode.
5. To advance to the next code, press the mode button (3). Up to five codes can be stored.
6. Active codes are indicated by illumination of the mode light (4).



2163

Clearing Diagnostic Codes

1. To clear active codes, press and hold mode button (3) for 3 to 5 seconds.
2. To clear inactive codes, press and hold mode button (3) for 8 to 10 seconds.
3. To exit diagnostic mode, press diagnostic button (1). Refer to table for diagnostic code description.



1580

3-25

Controls and Operating

CEC2 DIAGNOSTIC CODES			
Main Code	Sub Code	Description	Check Trans Light
13	12	ECU input voltage low	Yes
13	23	ECU input voltage high	Yes
21	12	Throttle sensor failed low	Yes
21	23	Throttle sensor failed high	Yes
22	14	Engine speed sensor	Yes
22	15	Turbine speed sensor	Yes
22	16	Output speed sensor	Yes
23	12	Primary shift selector	Yes
23	12	Primary shift selector mode function	No
23	14	Secondary shift selector	Yes
23	15	Secondary shift selector mode function	No
23	16	Shift selector display line fault	Yes
24	12	Sump fluid temperature cold	Yes
24	23	Sump fluid temperature hot	Yes
25	11	Output speed sensor, zero speed, 1st	Yes
25	22	Output speed sensor, zero speed, 2nd	Yes
25	33	Output speed sensor, zero speed, 3rd	Yes
25	44	Output speed sensor, zero speed, 4th	Yes
25	55	Output speed sensor, zero speed, 5th	Yes
25	66	Output speed sensor, zero speed, 6th	Yes

25	66	Output speed sensor, zero speed, 6th	Yes
25	77	Output speed sensor, zero speed, 7th	Yes
25	88	Output speed sensor, zero speed, 8th	Yes
26	00	Throttle source not detected	No
33	12	Sump fluid temperature sensor failed low	Yes
33	23	Sump fluid temperature sensor failed high	Yes
34	12	Factory calibration compatibility number wrong	Yes
34	13	Factory calibration fault	Yes
34	14	Power off fault	Yes
34	15	Diagnostic queue fault	Yes
34	16	Real time fault	Yes
34	17	Customer modifiable constants fault	Yes
35	00	Power interruption	No
35	16	Real time write interruption	Yes
36	00	Hardware/software not compatible	Yes
45	12	General solenoid failure - F	Yes
45	13	General solenoid failure - K	Yes
45	14	General solenoid failure - B	Yes
45	15	General solenoid failure - G	Yes
45	16	General solenoid failure - E	Yes
45	21	General solenoid failure - H/J	Yes
45	22	General solenoid failure - A	Yes
45	23	General solenoid failure - D	Yes
45	24	General solenoid failure - I	Yes
45	26	General solenoid failure - C	Yes
46	21	High-side overcurrent, H/J solenoid	Yes
46	26	High-side overcurrent, C, D, E solenoid	Yes
46	27	High-side overcurrent, A, B, F, G, I, K solenoid	Yes
56	11	Range verification ratio test, 1st	Yes
56	22	Range verification ratio test, 2nd	Yes
56	33	Range verification ratio test, 3rd	Yes
56	44	Range verification ratio test, 4th	Yes
56	55	Range verification ratio test, 5th	Yes
56	66	Range verification ratio test, 6th	Yes
56	77	Range verification ratio test, R1 or 7th	Yes
56	88	Range verification ratio test, R2 or 8th	Yes
65	00	Engine rating too high	Yes
66	00	Serial communications interface	No
69	27	ECU, inoperative A, B, F, G, I, K solenoid	Yes
69	28	ECU, inoperative H/J solenoid	Yes
69	29	ECU, inoperative C, D, E solenoid	Yes
69	33	ECU, COP fault	Yes
69	34	ECU, EEPROM fault	Yes
69	35	ECU, EEPROM fault	Yes
69	42	SPI output failure	No
69	43	SPI input failure	Yes

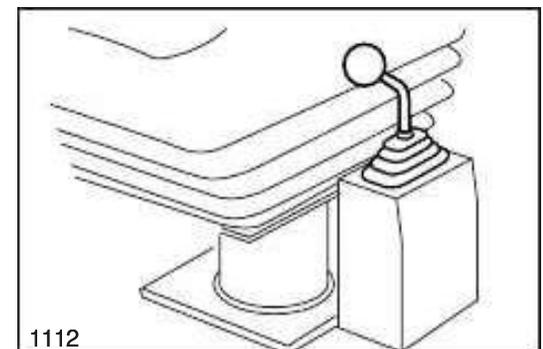
Controls and Operating

BODY CONTROL

The lever to the left of the operator's seat controls the hydraulic valve which operates the body hoist cylinders. The four operating positions of the lever from front to rear are as follows:

'LOWER' - This position provides hydraulic force to power-down the body. It is needed when the body cannot be started downward from the fully raised position by gravity. When the body starts lowering by gravity, the lever should be moved to the 'FLOAT' position.

'FLOAT' - The lever should be moved to this position while the body is lowering by gravity and should remain in this position until the body must be operated again. The control lever should always be kept in 'FLOAT' while the machine is in motion.



'HOLD' - Moving the lever to this position while the body is being raised or lowered will allow the body to be raised or lowered at a slower rate. <https://www.besttruckmanuals.com/>

lowered traps the oil in the body hoist cylinders to stop and hold the body at any desired height. The lever will remain in the detented 'HOLD' position when released.

'RAISE' - This position directs oil to extend the body hoist cylinders and raise the body. When released, the lever will be spring-returned to the 'HOLD' position.



Pressurized system. Before carrying out any maintenance on the body control system, pressure must be dissipated from the pilot valve accumulator. Shut-off the engine and operate the body control lever in both directions approximately 15 times to discharge the accumulator.

Raising the Body

Before raising the body, allow the engine to slow to idle, make sure the rear wheels are on firm level ground, shift the transmission to Neutral and hold the machine stationary by applying the brakes with the spotting brake control.

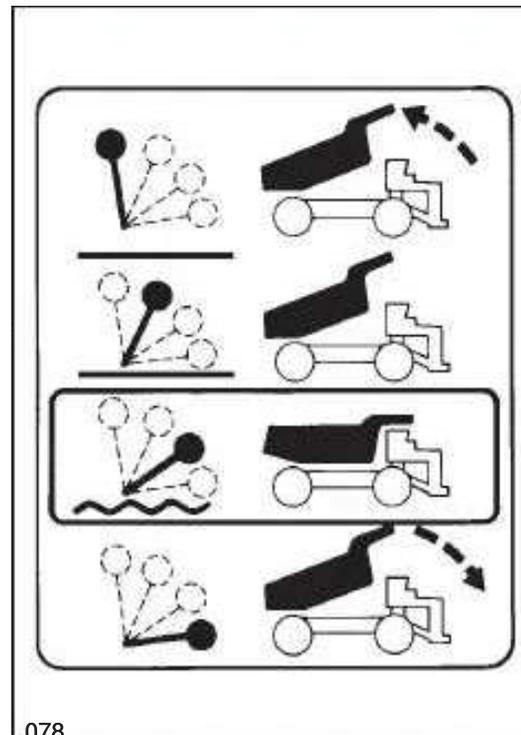
Move the body control lever all the way back to the 'RAISE' position and accelerate the engine. The body can be stopped at any point by moving the lever to 'HOLD'. Decelerate the engine as the last stages of the body hoists begin to extend to slow the raising speed as the body hoists cylinder approach their maximum extensions.

When the body has been raised to the desired height, move the control lever to the 'HOLD' position until the body is to be lowered.

Lowering the Body

To lower the body, move the control lever to the 'FLOAT' position to allow the body's weight to lower it to the frame. Body descent can be stopped at any position by moving the lever back to the 'HOLD' position. If the body does not begin to lower by its own weight, such as after dumping downgrade, move the control lever all the way forward to the 'LOWER' position and power the body downward until it begins lowering by gravity. Then move the lever to 'FLOAT' to allow the body to lower the rest of the way to the chassis.

Make sure that the body is completely lowered and the control lever is in 'FLOAT' before releasing the brakes and moving the machine.



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3-28

4 - Operating the Truck

4-1

Operating the Truck

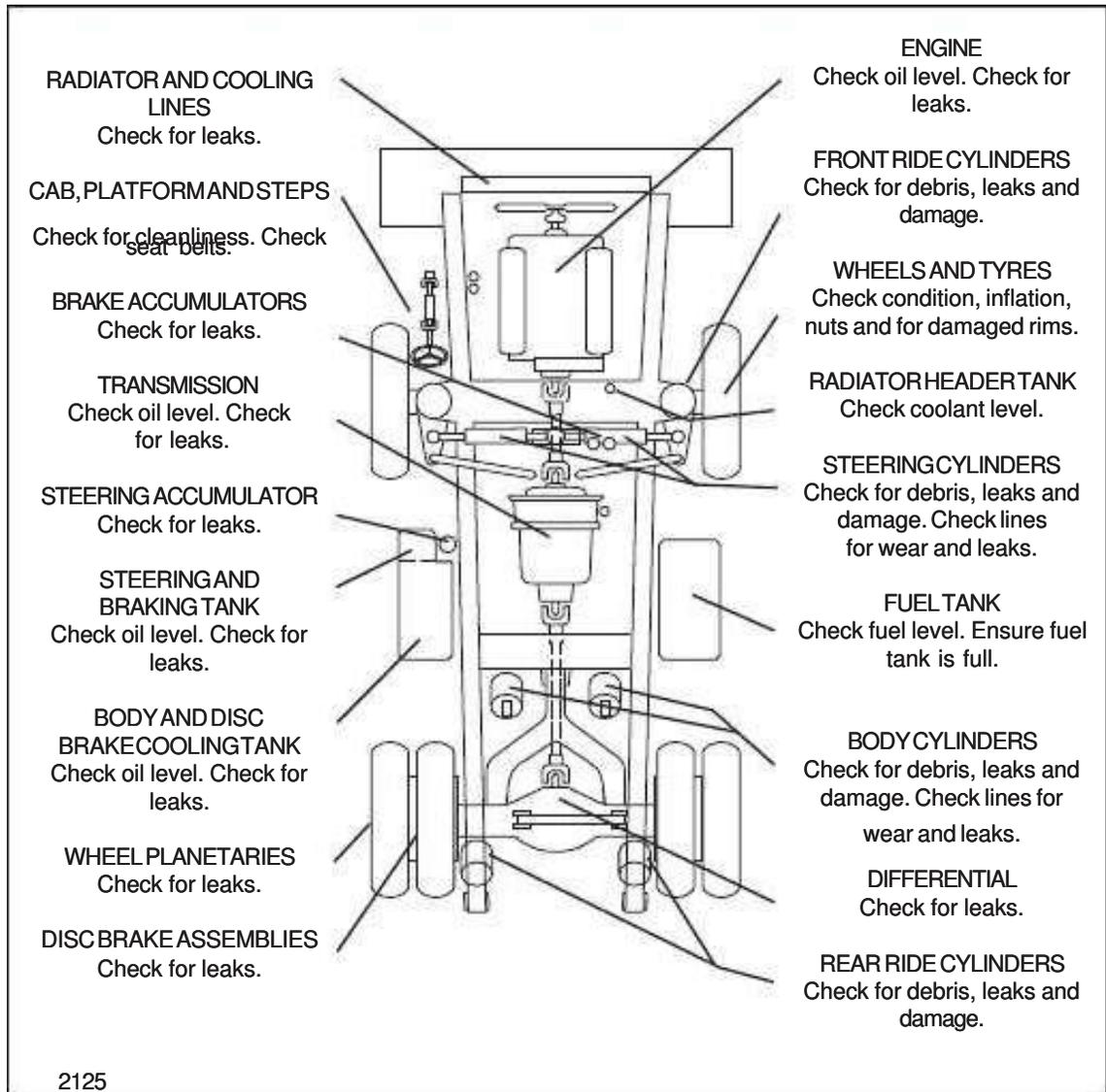
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OPERATING THE TRUCK

Pre-Starting Inspection

- * Make sure all safety signs are free of damage, and are fully readable, replace as necessary.
- * Before the engine is started ensure the machine is ready for operation.
- * <https://www.besttruckmanuals.com/>
The machine should be in a level position to permit accurate checking of fluid quantities in the engine and other components.

- * Make sure parking brake is applied and block wheels securely to prevent accidental movement of the machine while checking component levels.
- * Test all lights, warning signals, controls and instruments for proper operation.
- * Walk around the machine and carry out the Inspections and Component Checks described in the drawing and on the following pages.

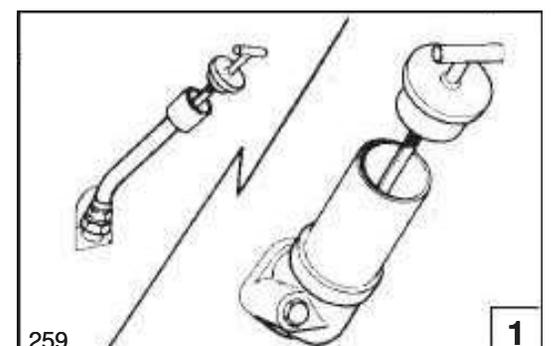


Operating the Truck

COMPONENT CHECKS

1. Engine

With the engine off, check oil level. The oil level should be between the lower and upper marks on the dipstick. Add oil if low.



2. Fuel Pre-filters

Drain sediment and water from fuel pre-filters until fuel runs clear.



3. Radiator Header Tank

Check coolant level. Add if low.

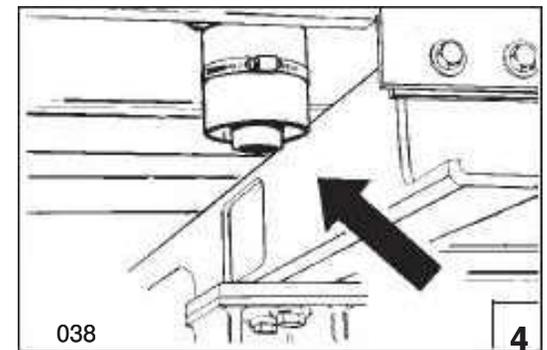
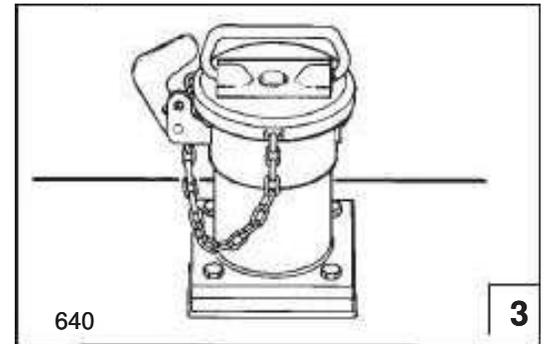


SCALDING HAZARD

Press button in centre of cap to bleed pressure before removing cap completely. Fill to bottom of filler neck.

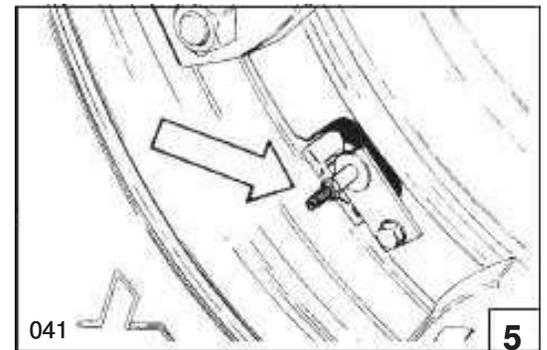
NOTICE

In subfreezing temperatures, be sure that the coolant contains sufficient antifreeze.



4. Air Cleaner Vacuator Valve(s)

Check for proper operation. Clean if required.



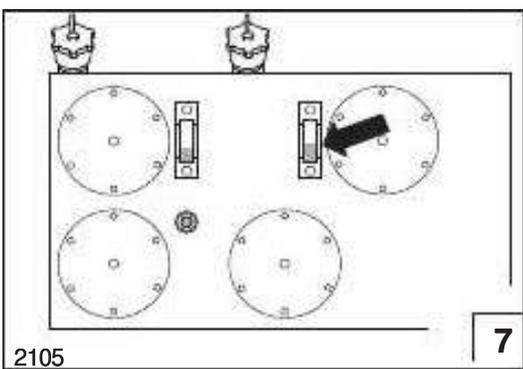
5. Tyres

Carefully inspect all tyres for cuts, bruises, or other damage and proper inflation for the loads to be carried. Inflate all tyres to the recommended pressure while cold.



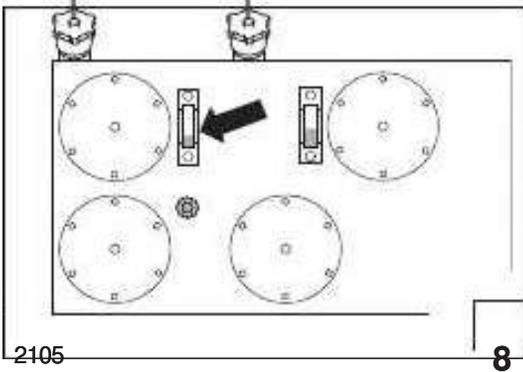
6. Fuel Level Gauge

Check fuel level. Tank should be filled at end of each shift to prevent condensation.



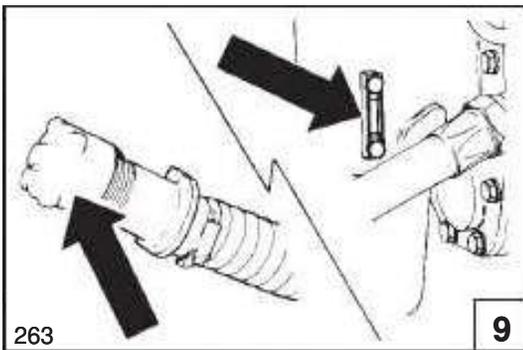
7. Body and Disc Brake Cooling Hydraulic Tank - Cold Oil Level

With the body fully lowered, the oil should be showing between the upper and lower lines on the sight gauge (on tanks with two sight gauges, the bottom gauge should show full). Add fluid, if low.



8. Steering and Braking Hydraulic Tank - Cold Oil Level

With the engine off, turn the steering left and right to discharge the steering accumulator. Operate the service brake continuously to discharge the brake accumulators. Oil should be showing between the upper and lower lines on the top sight gauge (on tanks with three sight gauges, oil should be showing in the middle gauge). Add fluid, if low.



9. Transmission - Cold Oil Level

This check is made only to determine if the transmission contains sufficient oil for safe starting. Make sure there is some oil showing on the sight gauge before starting the engine. Add oil if low.



10. Seat and Seat Belts

Adjust the seat position and lap belt as required to allow complete machine control at all times with minimum fatigue. Make sure the seat belt does not restrict movement for proper machine operation.

Operating the Truck

SUSPENSION RIDE STRUTS

Suspension ride struts are oiled and charged with nitrogen to ensure optimum ride comfort. However, ride struts may have been lowered during transportation of the machine. These struts must be correctly set prior to operating the machine.

The ride struts contain a mixture of nitrogen and oil, so when the struts are lowered, some oil will be lost along with the nitrogen. Although only a small amount of oil may be lost, this will still affect the final ride height, so it is important that ride struts contain the correct volume of oil.

To recharge the ride struts, nitrogen pressures are given in the table below. These pressures are dependant on oil levels being correct, refer to Section 180, SUSPENSION SYSTEM in the Maintenance Manual. Use suitable lifting equipment to fully extend ride struts and charge with nitrogen.

Note: The heights given are intended as reference only, cylinders should always be set according to pressure. Refer to Section 180, SUSPENSION SYSTEM in the Maintenance Manual for full details.

Truck	TR35	TR40	TR45	TR60	TR70	TR100
Front Ride Struts - bar (lbf/in ²)	11.7 (170)	13.8 (200)	13.8 (200)	13.8 (200)	17.2 (250)	16.3 (240)
Height - mm (in)	143 (5.6)	168 (6.6)	168 (6.6)	168 (6.6)	158 (6.2)	158 (6.2)
Rear Ride Struts - bar (lbf/in ²)	5.5 (80)	7 (100)	7 (100)	8.3 (120)	8.3 (120)	8.3 (120)
Height - mm (in)	365 (14.4)	556 (21.9)	556 (21.9)	505 (19.9)	378 (14.9)	381 (15)

Note: It is advised to charge the ride struts by an additional 1.4 bar (20 lbf/in²) to allow for pressure lost while carrying out pressure checks. After recharging, the machine should be operated to allow ride struts to settle. Then if ride heights are incorrect, the oil levels should be checked.

Do not place engine under **FULL LOAD** at **FULL SPEED** **IMMEDIATELY** after starting. **ALWAYS** allow the engine to fully circulate lubricate and warm up gradually before operating at full speed and full load.

Operate engine at top rated speed when maximum power is needed for the load. Operation of the engine below top rated speed can occur during gear shifting due to the difference of ratios between transmission gears, but engine operation **MUST NOT** be sustained more than 30 seconds at full throttle below top rated speed.

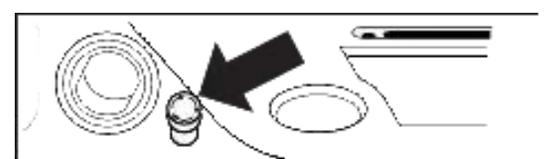
NEVER idle the engine more than 5 minutes at a time; shut it off.

If any gauge operates outwith its normal operating range or a warning light illuminates, shut engine down immediately and report to service or maintenance personnel.

NOTICE

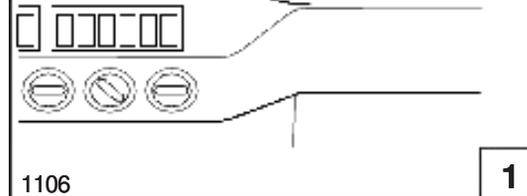
Never start the engine indoors unless proper exhaust ventilation is provided to remove deadly exhaust gases. Once the engine is running, move the machine outdoors as soon as possible. Exhaust gases are hazardous and can cause unconsciousness and death.

Operating the engine beyond high idle speed can cause severe engine damage. The engine speed must not exceed 2 400 rev/min under any circumstances. When descending a steep grade, use a combination of transmission gears, retarder and service brakes to control the vehicle and engine speed.

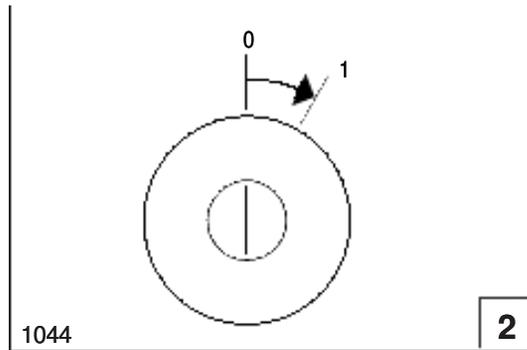


operating, will help the operator monitor the machine systems and components.

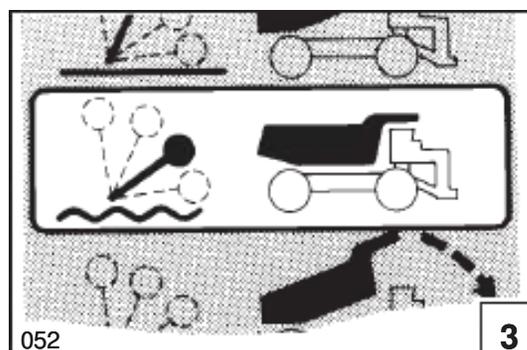
1. Make sure the parking/emergency brake control is in the 'PARK' position.



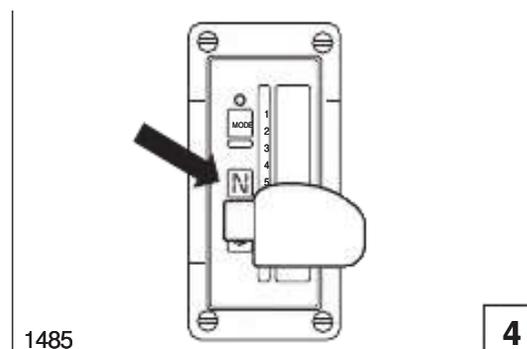
2. Insert switch key and turn clockwise to position '1'.



3. Make sure the body control lever is in the 'FLOAT' position.

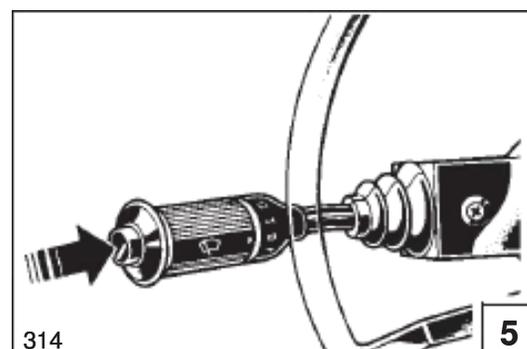


4. Make sure the transmission shift selector is in the 'NEUTRAL' position.



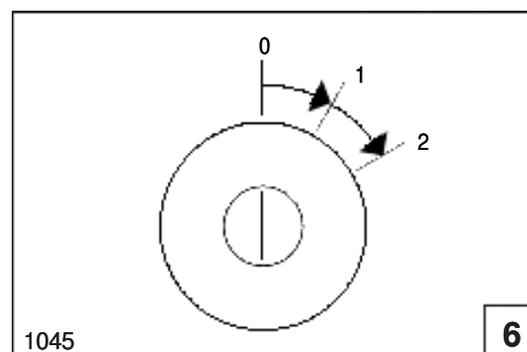
5. Press horn control to sound horn.

NOTICE
Always sound horn before starting engine or operating any control.

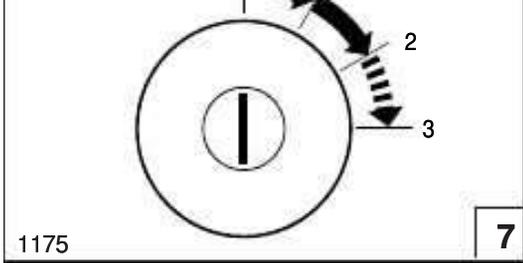


6. Turn key switch to position '2' to switch on the ignition. Press warning light test switch to test operation of warning lights.

7. Turn key further clockwise against spring pressure to position '3' to initiate the



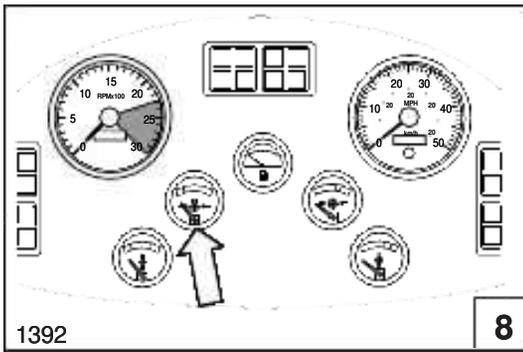
starting sequence. The engine pre-heat motor will run until engine oil pressure of 0.35 - 0.48 bar (5 - 7 lbf/in²) is achieved. This will normally take between



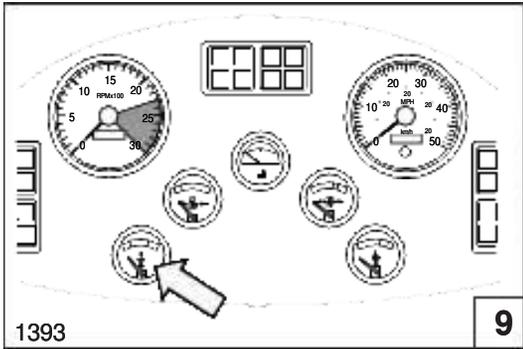
8 - 15 seconds, but can take up to 45 seconds in cold climates or with dry filters. After an interval of 3 seconds, the pre-lube motor stops and the engine starter motors engage. Release the key as soon as the engine starts firing.

NOTICE

Never crank the engine more than 30 seconds continuously. Allow starter(s) at least 2 minutes cooling time between cranking periods to avoid overheating.



8. Check the engine oil pressure gauge. Within 10 to 15 seconds at engine idle, the gauge needle should rise into the yellow zone. If the needle does not rise within 15 seconds, shut off the engine and do not operate until the fault is identified and corrected.



9. Observe the engine water temperature gauge. After a few minutes running time at moderate load and varying speed, the gauge needle should be in the green zone. If the needle moves into the red zone, the engine is over heated and should be shut down immediately.

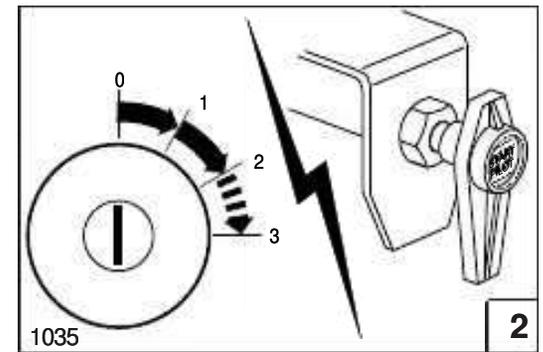
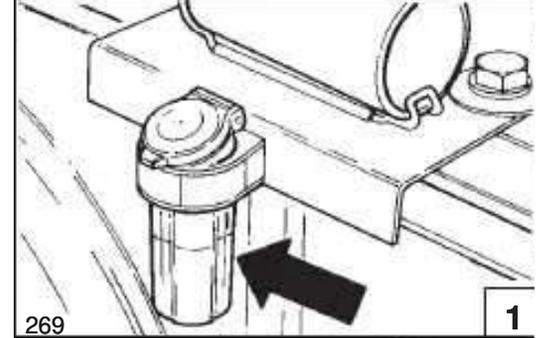
STARTING THE ENGINE AT LOW AMBIENT TEMPERATURES {Below 0 °C (32 °F)}

Follow steps 1 through 5 for 'Starting the engine' as described on page 4-8 then proceed as follows:

1. Fill starting aid reservoir if required. To fill, raise the cover of the reservoir and push the filler can, head downwards, firmly over the filler valve of the reservoir. Fill the transparent reservoir up to, but not over the 'MAXI' mark.
2. Turn key switch clockwise to position '2'. Press warning light test switch to test operation of warning lights. Turn key further clockwise against spring pressure to position '3' to crank the engine. When cranking has commenced, operate the starting pilot pump. When the engine starts and runs, release starter key and stop pumping. If necessary, further short applications can be made in order to keep the engine running.

DO NOT use excessive starting fluid during starting or after the engine is running.

3. Follow normal starting procedures but limit engine speed to 1 200 rev/min and run for two to five minutes, depending on the temperature. Before moving, operate the body control lever to raise and lower the body with no load. Turn the steering wheel from lock to lock then straight ahead. These actions will circulate warm oil throughout the hydraulic systems.



Starting fluid is poisonous and flammable. Breathing vapours or repeated contact with skin can cause personal injury. Use only in well ventilated areas. Use with care to avoid fires. Do not smoke when changing cylinders. Do not store cylinders in the operators compartment, living areas, in direct sunlight or at temperatures above 49° C (102° F). Discard cylinders properly. Do not puncture or burn cylinders. Keep cylinders out of the reach of unauthorized personnel.

STARTING THE ENGINE WITH JUMPER CABLES



Batteries contain sulfuric acid and can emit hydrogen gas. Check for required voltage and polarity connections to discharged batteries.



Excessive booster voltage and/or incorrect jumper cable connections, open flames, lighted cigars, or other ignition sources can cause battery explosion/fire. Do not lean over batteries, and always wear safety glasses, face shield, safety gloves, and any other appropriate safety equipment when working with or near battery.



Do not jump start a vehicle by using arc welding equipment. Currents and voltages are dangerously high and cannot be sufficiently reduced to make the method safe.

NOTICE

Be sure machines are not touching each other. Use cables that are equal to cable size on the machine, for example (1/0) or (2/0).

If jumper cables are used to start an engine, be sure to follow this procedure:

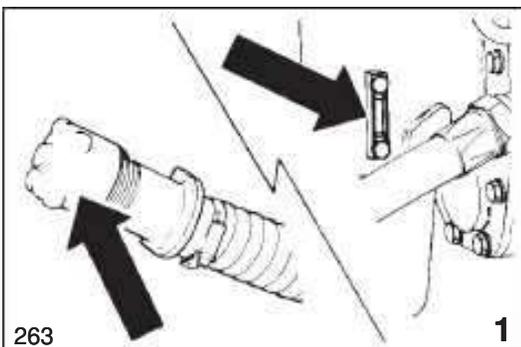
Connect one end of a jumper cable, usually coloured red, to the discharged battery 'POSITIVE' (+) post. Connect the other end of the same cable to the 'POSITIVE' (+) post on the booster or charged battery.

Connect one end of the second cable, usually coloured black, to the 'NEGATIVE' (-) post of the booster battery. Connect the other end of the 'NEGATIVE' (-) cable to machine frame for grounding so that if a spark occurs, it is away from battery fumes (explosive hydrogen).

Check for cause of failure of the dead battery.

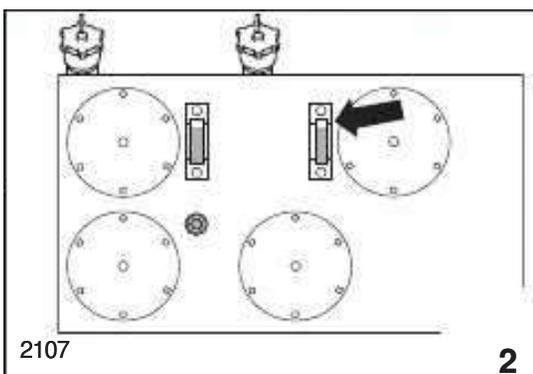
PRE-OPERATING CHECKS

Make sure all cab glass, mirrors and lights are clean. Test all controls to ensure they are functioning properly. Select 'REVERSE' momentarily on the transmission shift selector to make sure the reverse alarm sounds.



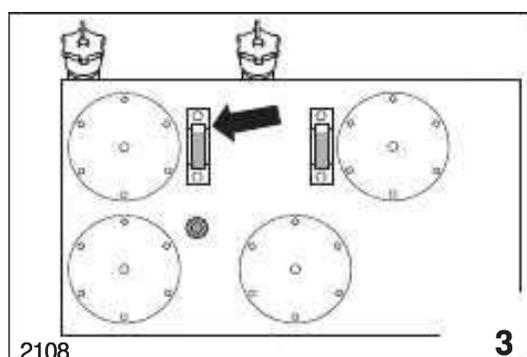
1. Transmission - Hot Oil Level

The parking brake must be applied and the road wheels securely blocked while carrying out this check. With the engine idling, transmission in 'NEUTRAL' and at normal operating temperature, the top of the oil column should be visible in the sight gauge. Add oil if low. If the top of the column is above the sight gauge, the transmission is overfull and oil should be drained.



2. Body and Disc Brake Cooling Hydraulic Tank - Hot Oil Level

Operate the body hoist cylinders to their fully extended positions to charge all cylinders and lines then lower the body. With the engine running, and body fully lowered, the oil level should be shown between upper and lower lines on the site gauge (on the tanks with two sight gauges, the bottom gauge should show full). Add fluid if low.



3. Steering and Braking Hydraulic Tank - Hot Oil Level

With the engine running, oil at operating temperature and accumulators charged, oil must be between the bottom and top sight gauges. Shut down the engine and operate the steering left and right to discharge steering accumulator. Operate the service brake continuously to discharge the brake accumulators. Oil should be showing between the upper and lower lines on the top sight gauge (on the tanks with three sight gauges, oil should be showing in the top gauge). Add fluid if low.

BRAKE FUNCTION CHECKS

In addition to the above checks, the following brake function checks can be carried out to determine if both the service and emergency brake systems are functional before operating the machine.



Make sure the area around the machine is clear of personnel and obstructions before carrying out these checks.

If the machine moves during these checks, stop the machine, apply the parking brake and do not operate until the fault is corrected.

Note: The following checks are NOT intended to measure maximum brake holding ability. If NEW brake pads are fitted, they MUST be burnished as per the manufacturers recommendations before carrying out the checks.

Service Brake Holding Ability Check

Depress the service brake pedal and select 1st gear on the transmission shift selector. Pull the parking/emergency brake control out to release the brakes. Depress accelerator control and accelerate engine to 1350 rev/min. The machine should not move. Decelerate engine, shift transmission to 'NEUTRAL' and apply the parking brake control switch before releasing the service brake.

Emergency Brake Holding Ability Check

Depress the service brake pedal, release the parking/emergency brakes, select first gear, apply the park/emergency brakes and release the service brake pedal. Depress accelerator control and accelerate engine to 1350 rev/min. The machine should not move. Decelerate engine and shift transmission to 'NEUTRAL'.

Note: Brake holding effort required to hold a machine static at a specific engine speed, can vary from machine to machine due to differences in engine performance, powertrain efficiency, etc., as well as differences in brake holding ability.

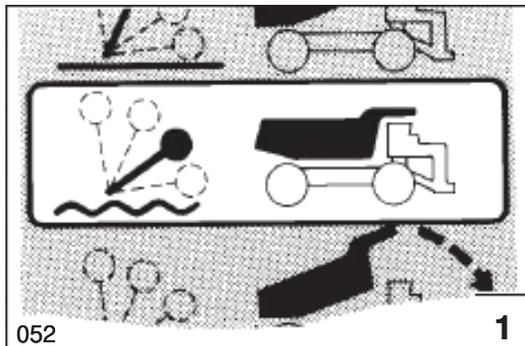
Note: As an indication of system deterioration, the engine speed at which point the machine moved, with the service or emergency brakes applied, can be compared against the engine speed your machine was able to hold to on a previous check.

DRIVING AND STOPPING

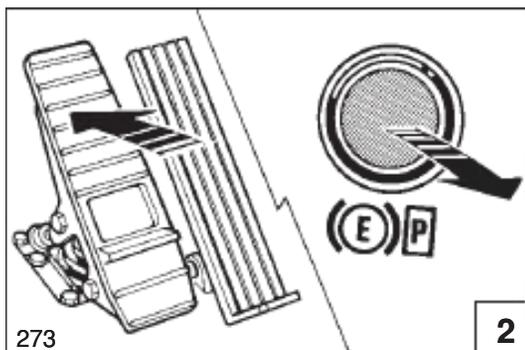
Before driving off observe all instruments and warning lights. All instruments should operate in their normal range and all warning lights should be out except possibly the Direction Indicator and Headlight Main Beam warning lights.

Make sure the area around the machine is clear of personnel and obstructions before driving off.

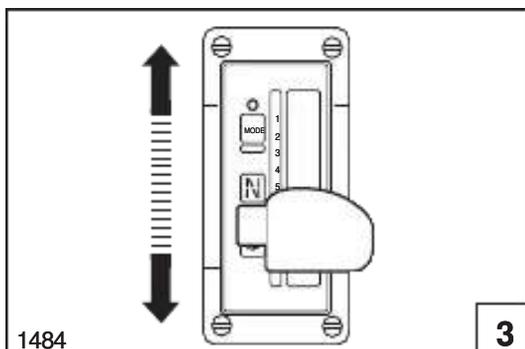
In the first few minutes of travel, check carefully for the required steering, braking, engine and transmission power response for maximum operating safety.



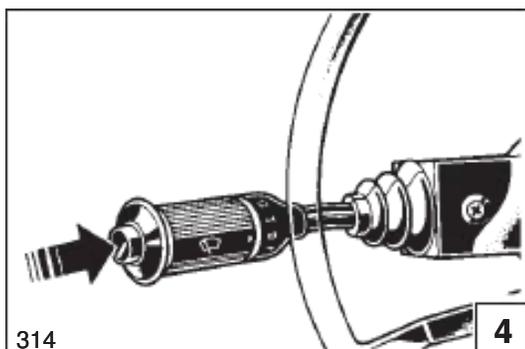
1. Make sure the body is fully down and body control lever is in the 'FLOAT' position.



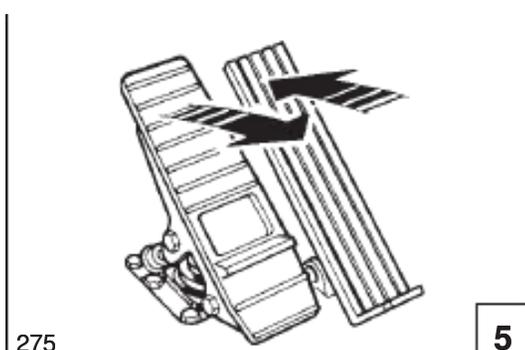
2. Apply the service brake and release the parking brake.



3. Select the driving direction and the required range.



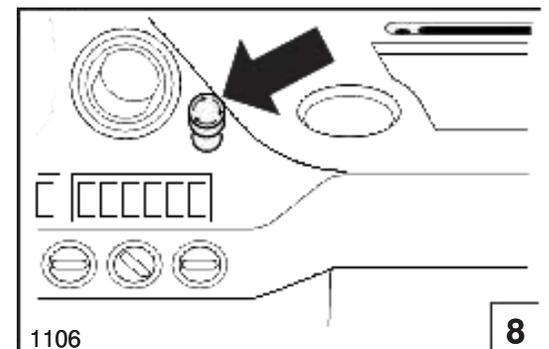
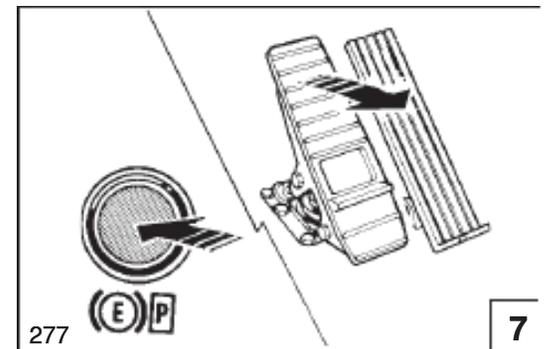
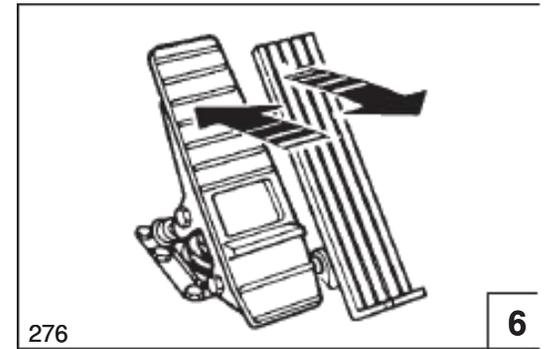
4. Sound horn; two blasts for forward and three blasts for reverse.



5. Release the service brake, apply the accelerator and move off.

Operating the Truck

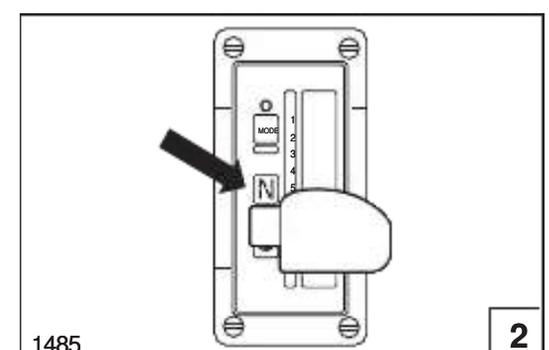
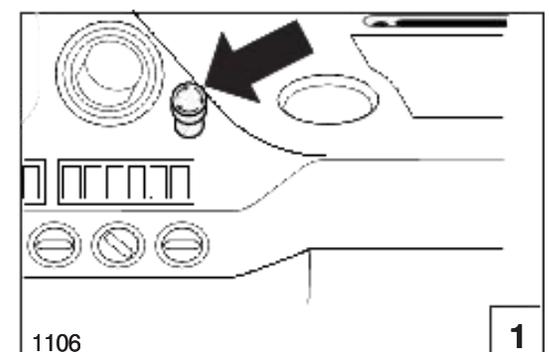
6. To stop the machine release the accelerator and depress the service brake pedal. Release the service brake as the machine slows until, when stopped, the pedal is depressed just enough to hold the machine stationary.
7. When the machine has stopped, shift the transmission to Neutral, apply the parking brake and release the service brake.
8. If the service brake does not stop the machine. Apply the parking/emergency brake. This should only be applied to stop the machine in an emergency.



There is no mechanical connection between the engine and wheels on machines with converter transmissions. The parking brake must always be applied when the engine is switched off.

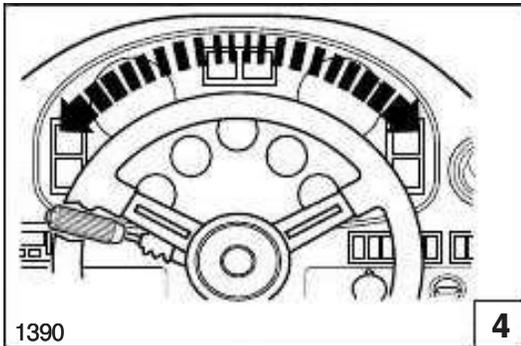
STOPPING THE ENGINE

1. Make sure the parking/emergency brake control is in the 'PARK' position.
2. Make sure the transmission is in 'NEUTRAL'.

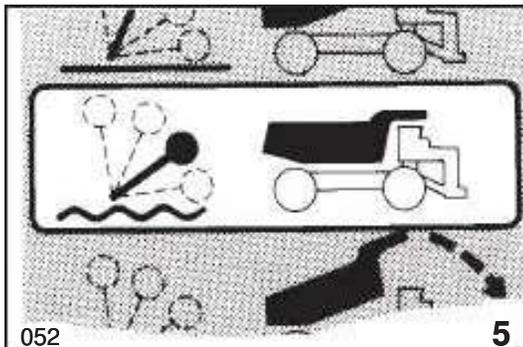




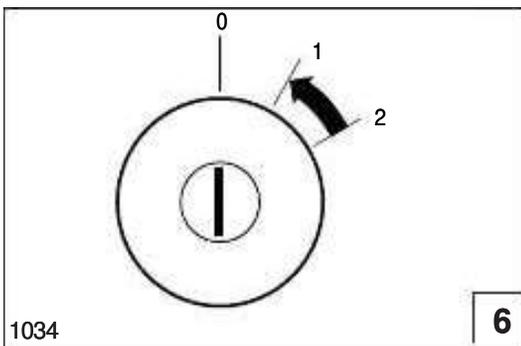
3. Allow the engine to idle 3 - 5 minutes after a full load operation before shutting it off. This allows the engine to cool gradually and uniformly.



4. Turn the steering wheel in both directions to dissipate the pressure in the steering accumulator to prevent accidental steering during bleed down.



5. Make sure the body control lever is in the 'FLOAT' position.



6. To stop the engine, turn the ignition key switch to position '1'.



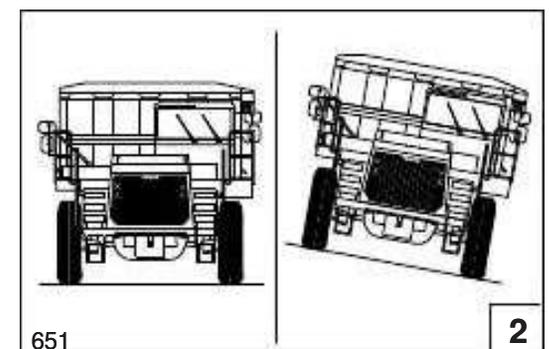
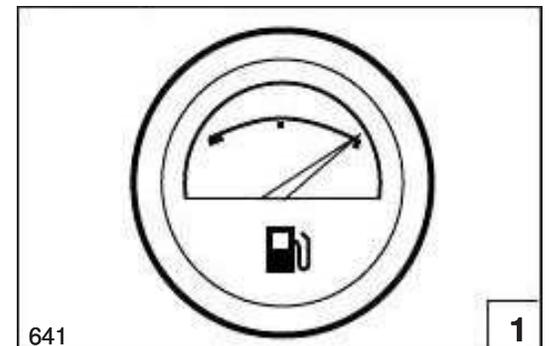
7. Turn the ignition key switch to the 'OFF' position ('0').

Operating the Truck

PARKING

When parking the machine overnight, or for an extended period, the following procedure in addition to that given in 'Stopping the Engine' will help maintain it in good condition for subsequent use:

1. Fill the fuel tank completely, to prevent condensation. If security kit is supplied, keep it locked.
2. Always park the machine on level ground where possible. If the machine must be parked on a grade, position the machine at right angles to the grade and block the wheels securely.
3. If below freezing temperatures are expected, make sure the cooling system has sufficient anti-freeze to prevent the coolant freezing. If anti-freeze cannot be added to the cooling system, drain the cooling system completely.
4. Check all tyres, hoses, wiring, tubing and fittings for cuts, ply separation, abrasion, fraying, or other damage or deterioration. Inspect for structural damage to the cab, body and chassis. Attach warning signs to the steering wheel or to a control to alert others if lubricant has been drained, batteries removed, etc.

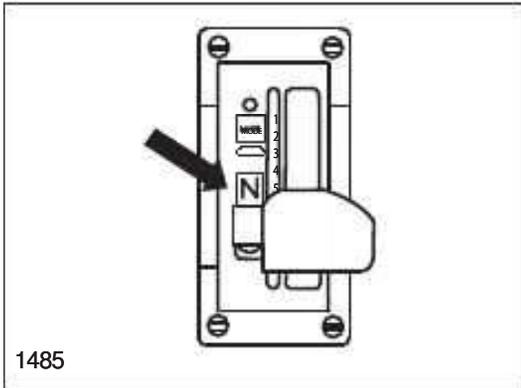




5 - Working the Truck

Working the Truck

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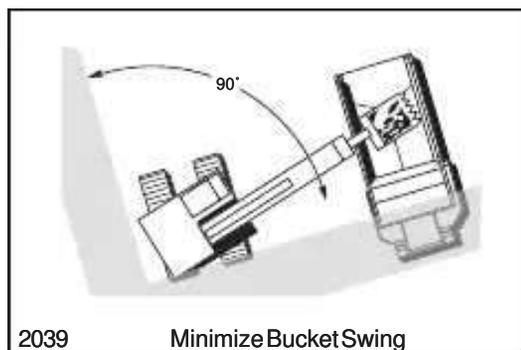
WORKING THE TRUCK

Off-highway trucks are used on a variety of hauling jobs, from mine overburden removal to dam building. Every truck operation, regardless of the type of job, can be divided into four phases; loading, hauling, dumping and the empty return.

Note: After coming to a stop for loading or unloading the truck, shifting the transmission to "NEUTRAL" will hold the brakes in the applied positions.

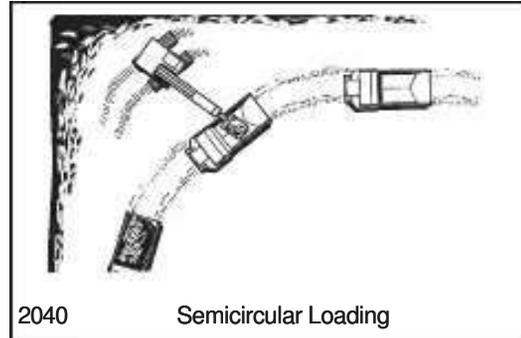
Loading

The most common methods of loading trucks are with hydraulic excavators, rope shovels, and front end loaders. For maximum material movement, the truck operator must help the loading machine operator hold loading time to a minimum. The fewer manoeuvres the truck must make to get into loading position, the sooner loading can start. And the shorter the distance the loading unit bucket must travel between the cut, or stockpile and the truck body, the more passes it can make in a given period of time and the quicker the truck can be loaded.



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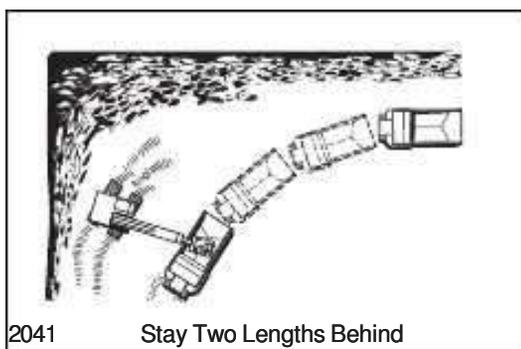
Minimize Bucket Swing



2040

Semicircular Loading

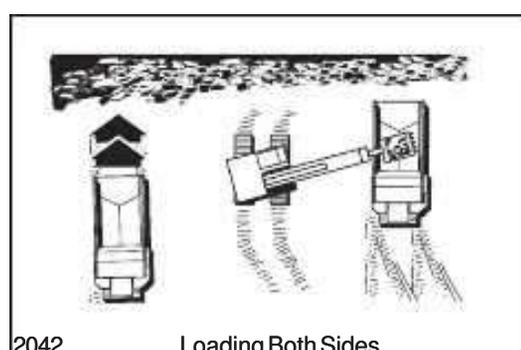
Ideally, the hydraulic excavator or rope shovel should require 90° or less swing to dump into the truck body for best loading efficiency. Required turning and backing to position the truck for loading should be held to a minimum. A common loading method is to have trucks travel a semicircle in the loading area. This method eliminates all backing. Waiting machines should stay about two truck-lengths behind the one being loaded to avoid any spillage from the loading machine bucket or truck body. The operator of the waiting truck is also better able to judge the best spot for his truck when it is his turn to be loaded.



2041

Stay Two Lengths Behind

On some jobs, the loading machine might work most efficiently when trucks are positioned on both sides of the loader. Thus, while one truck is being loaded, another can move into position on the opposite side of the loader and the loading machine can swing over to load the next truck with a minimum of lost time. Since the truck is usually backed into the loading position with this method, the operator must be alert and careful while backing.



2042

Loading Both Sides

For fastest, most accurate loading when being loaded by a front end loader, the truck operator should spot his machine on the most level area and at an angle to the face of the bank or stockpile. This minimizes loader travel time, particularly with a raised, full bucket. Where possible, the truck should also locate downwind of the loader when dusty-type material is being loaded on a windy day. This practice improves both working conditions and visibility for the loader operator. A cleanup dozer or small loader is often working in conjunction with the main loading machine to keep the area clear of bucket spillage for maximum efficiency of the loading operation. The truck operator must always be alert to the position of the cleanup machine when entering the loading area to avoid congestion, and for maximum safety.

Working the Truck

The following precautions should be observed when approaching the loading area and while being loaded -

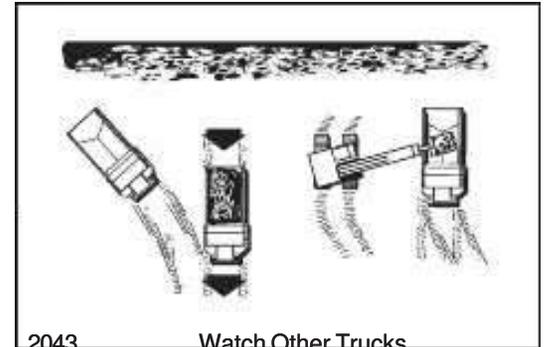


Avoid rocks and other shovel spillage that can needlessly damage tyres or other truck components. Allow the cleanup machine sufficient time to clear up such debris.

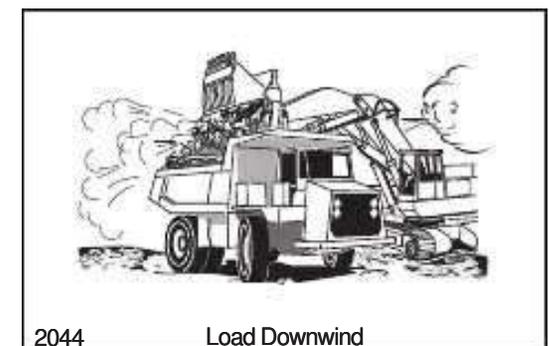
Do not move the truck into loading position with the shovel bucket swinging overhead. Large rocks that might fall from the bucket can be dangerous to both the truck and operator.

Keep your head and arms inside the cab during loading to avoid the danger of falling rocks or other shovel spillage.

When the loader operator signals that the truck is loaded, sound two blasts on the horn, release the brakes and shift the transmission to drive (D). Move out of the loading area and onto the haul road with the least possible delay to allow any waiting truck to move into the loading position as soon as possible.



2043 Watch Other Trucks



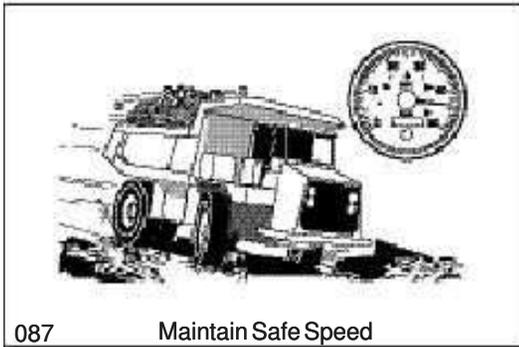
2044 Load Downwind



2045 Watch Cleanup Machine



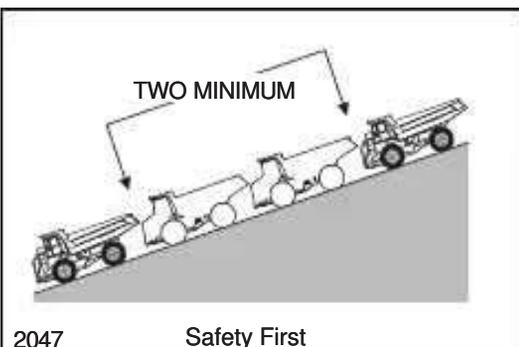
Hauling



087 Maintain Safe Speed

While travelling the haul road, always maintain a safe speed for the haul road conditions and grades. Never allow the machine to move or coast with the transmission in 'NEUTRAL'!

When approaching downgrades, select the proper transmission range and use the retarder and service brakes as required to maintain safe descent speed without over-speeding the engine or gaining excess travel speed. Generally, the transmission range required for ascending is also correct for descending a grade.



2047 Safety First

Always remain a safe distance behind the machine ahead, particularly on downgrades. A good rule-of-thumb to follow is to allow two (2) truck-lengths between machines for each 15 km/h (10 mile/h) of travel speed under normal operating conditions. Under adverse conditions, allow more room for safe operation. On jobs on which minimum distance between machines is specified for the haul road, be sure to observe the regulations at all times. Such regulations would be established for the safety of everyone on the job.



2048 Avoid Obstacles

Pay attention to haul road conditions to avoid rocks, holes, or other obstacles. Such obstacles not only present hazards to safe operation, but can needlessly damage tyres and suspensions if not avoided.

Be sure to reduce speed and come to a full stop, as required, at intersections, rail-roads, public highways etc.. Where a 'FLAGMAN' is stationed to direct traffic, always stay alert and follow his directions.

Working the Truck

Dumping

The dumping operation usually depends upon the type of material being hauled. For instance, overburden and other waste material is usually dumped over a spoil bank or piled into large mounds. The dumping on a job of this type might be controlled by a dump 'SPOTTER', 'FLAGMAN' or 'BANKSMAN' or second person who directs the truck to its dumping area. The 'SPOTTER' is needed due to the limited rear visibility the operator has with a loaded truck of this size. While backing to dump, the operator must watch the 'SPOTTER' at all times and follow his direction. Under no circumstances should the operator leave his seat to gain better visibility while backing. Always remain seated to maintain maximum machine control.

Mineral ores, blasted rock etc., are usually dumped into a hopper or crusher where it is processed before shipment. When dumping into a hopper, the operator, in order to avoid excess wear on the tyres, must avoid hitting the protecting rail at the hopper. If a DRIVEOVER HOPPER is used, the operator must avoid rubbing the tyre inner sidewalls.

When hauling dirt or rock from a borrow pit into a fill area such as an earth-fill dam, the load is usually dumped in a string with other loads and the loads smoothed out with a crawler tractor. When dumping on a fill of this type, the operator usually works alone and picks his own dumping place. To save bulldozer work and cleaning up, the load should be dumped as close as possible to the preceding load. The operator should pull past the preceding load, turn in line with the string and back his truck until it is within a few feet of the last load. This assures that the load will fall in the right place.

No matter what kind of job the operator is working, there are a few things which are common to all jobs and which the operator should observe -



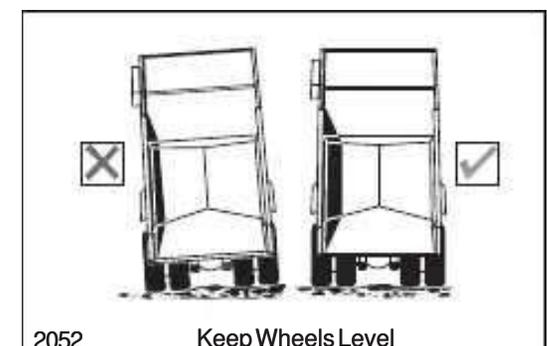
2049 Watch Spotter



2050 Never Leave Seat



2051 Watch Inside Duals



2052 Keep Wheels Level

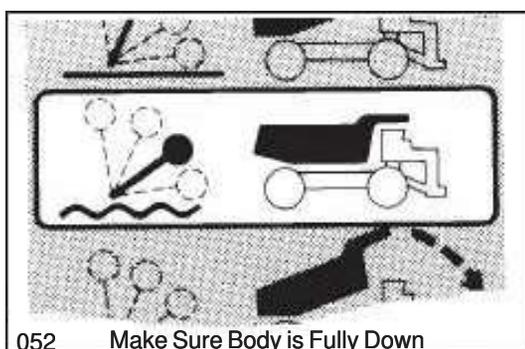


When dumping over a spoil bank without a 'SPOTTER', know how close the machine can safely approach the edge under all weather conditions. If in doubt as to dumping safety, dump the load a safe distance from the edge so that it can be pushed over the edge later.

**NOTICE**

Before raising the body, make sure the rear wheels are on firm level ground. If one wheel is higher than the other, a twisting strain is imposed upon the body hinge pins, hoists and chassis. Stop the machine, allow the engine to slow to idle, shift the transmission to 'NEUTRAL' and apply the brakes with the Spotting Brake control to hold the machine stationary.

Push the body control lever back into the 'RAISE' position and accelerate the engine. Decelerate the engine to slow the raising speed as the body hoist cylinders approach their maximum extension. When the body has been raised to the desired height, release the control lever into the 'HOLD' position until the body is to be lowered. Do not hold the lever in the 'RAISE' position when the body hoist cylinders are fully extended to prevent unnecessary hydraulic system relief valve operation.

**NOTICE**

NEVER 'JUMP DUMP' the machine by bouncing the rear tyres against a stop block, or otherwise jarring the body in its raised position to dislodge stuck or frozen material. The tremendous loads that this practice develops on the body pin area, chassis and hydraulic system can cause needless, extensive stresses.

Once the load has been dumped, push the control lever down into the 'FLOAT' position to allow the body's weight to lower it to the chassis. If the body does not begin to lower by its weight, push the control lever down into the 'LOWER' position and power the body down until it begins to lower by gravity. Then release the control lever into the 'FLOAT' position.

Empty Return

Make sure the body is completely lowered, the body control lever is in the 'FLOAT' position, and the transmission is shifted to the correct range before releasing the brakes and moving away from the dump site.



DO NOT drive the truck with the body up. Apart from affecting the stability of the truck, there can be severe danger from contacting overhead electric cables, trees, or bridges over the haul route.

Except for the above, the procedure for returning empty to the loading area is the same as that given earlier for 'HAULING'.
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Working the Truck

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6 - Rading

Roading

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ROADING



These machines are equipped with cylinders containing compressed nitrogen gas. Transportation of these machines by any method may require a special permit from the appropriate authority of the country involved. Consult your Dealer for details.

General

'ROADING' (operating a truck over public highways) requires special care and attention. Trucks, because of their large size, are slower and less manoeuvrable than most other vehicles encountered on the road. Yet, while on the road, they must be operated for extended periods of time at or near maximum speeds.

Before 'ROADING' a truck for an extended distance between jobs, or between widely scattered sections of a job, the machine must be properly equipped and in good condition. It is also recommended to carry a 'Warning Triangle'.

The operator must use extra care while on the public highways and remain constantly alert, especially for overhead cables and low bridges.

Necessary permits must be obtained from the proper authorities before the machine is 'ROADED' on public highways.

PREPARATION PRIOR TO ROADING

Lubrication

Thoroughly lubricate and service all components and systems as described under 'LUBRICATION AND SERVICING' in this handbook and/or Maintenance Manual for this machine.

Inspection

Perform all pre-starting and post-starting checks described in this Handbook. Pay particular attention to the function of all instruments and lights, and make any repairs necessary.

Improper tyre inflation during over-the-road operation can cause rapid tyre deterioration by overheating. Tyre pressures increase with heat. Always check pressures while tyre is cold. Consult your tyre dealer for proper pressures and tyre speed limits for roading.

Check the inflation pressures of all tyres, while cold, with an accurate tyre pressure gauge. Inflate tyres if necessary, while cold, to the recommended pressure for 'ROADING'. Inspect all tyres thoroughly and carefully for stones or other debris embedded in the treads or carcasses. Inspect for cuts, bruises, burned beads, abnormal wear and damaged wheels rims. Replace any damaged or excessively worn tyres.

Check all hoses, drain cocks, fuel level check cocks, and other potential sources of leaks. Make sure that all leaks are repaired and that all drain cocks are sufficiently tightened to avoid subsequent loosening. Make sure that all warning flags, oversize load signs, etc. are in place and secure.

6-3

Roading

Clean all glass and adjust the seat for proper operation of all controls.

Check all lights and other controls for proper operation.

Make sure the truck body is empty, fully lowered and the body control lever is in the 'FLOAT' position.

Note: Make sure the body control lever is in the 'FLOAT' position. Failure to comply to this caution could result in overheating the hydraulic oil and failure of the hydraulic system components.

In Case of Trouble

If trouble develops en route, move machine off the road at the first safe parking place, and shut off the engine. Carefully note as many of the symptoms of the trouble as possible, such as rough engine operation with loss of power and overheating, or, loss of speed and transmission clutch pressure with normal engine operation etc..

If the area in which the trouble occurs requires that the machine be left unattended while the trouble is reported by phone, disconnect a battery cable and apply security locks, if so equipped, before leaving the parked machine. Make sure body is completely lowered and the parking brake is applied.

Report the following data as soon as possible.

1. Exact location.
2. Destination.
3. The nature of the trouble (with as many details as possible) and the time and conditions under which it happened.
4. The telephone number at which the machine operator can be reached.

NOTICE

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Do not attempt to restart or operate the machine unless instructed to

Do not attempt to restart or operate the machine unless instructed to do so. An engine, pump, transmission or other component that develops a minor defect can be completely destroyed in just a few extra minutes of unnecessary operation.

6-4



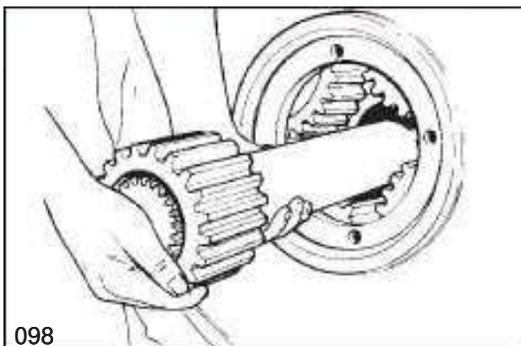
7 - Moving a Disabled Truck

Moving a Disabled Truck

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MOVING DISABLED TRUCK

Any unusual power train noises noted while operating the truck should be reported to those responsible for maintenance. Should the power train, hydraulic or electrical systems fail, the machine should be stopped and shut down immediately until suitable repairs can be made. If the failure is in the power train and the truck must be moved to a service area or workshop to make required repairs, remove the drive flange covers from the drive wheels and pull the axle shafts and final drive planetary sun gears from the planetary assemblies. This will prevent any possible additional damage, which may be caused by the drive wheels turning the power train as the machine is towed. Replace the covers on the drive wheels to retain lubricant and prevent entry of dirt.



098

If possible, start the engine to provide the required hydraulic pressure for steering and braking. Never allow riders on a machine being towed without sufficient hydraulic pressure for safe steering and braking.

If the nature of the trouble prevents engine operation, repairs must be made on the site of the breakdown, or special arrangements made for towing the machine safely to the repair area without steering and braking power.

If the parking brake must be released, but the engine cannot be operated to provide the required hydraulic power needed to release the brake, refer to the machine Maintenance Manual 165-0030, for parking brake release with auxiliary hydraulic power source. See WARNING above.

Connect a suitable towing bar to one of the lugs on the front bumper of the disabled machine and reverse another machine, in a straight and in-line manoeuvre, towards the disabled machine. Connect the opposite end of the towing bar to the towing point on the rear axle of the recovery machine and ensure that it is securely locked.

Note: An alternative method of towing a disabled machine is by connecting an A-Frame arrangement to the lugs on the front bumper of the disabled machine and the towing point of the recovery machine.



Uncontrolled machine movement hazard. There is no mechanical connection between the machine wheels and the engine when the parking brake is released. Before releasing the parking brake, make sure the machine wheels are secured with chock-blocks to

prevent or restrict unexpected machine movement. When moving the machine

When moving the machine with insufficient hydraulic pressure and power for safe steering and braking, use extreme caution to ensure personnel and property safety.



If using a chain or cable, be sure it is strong enough for the expected load and properly secured.

When pulling, take up the slack slowly to avoid jerking. A chain or cable which fails under load can cause serious injury. Stand clear. Do not pull through a kinked chain or cable. Do not pull or tow unless the operator's compartment is guarded against or out of reach of a whipping chain or cable. Attach only to the towing points. Failure to follow these instructions could cause serious injury or death.



Never allow riders on a vehicle being towed without sufficient hydraulic pressure for safe braking.

7-4



8 - Lubrication and Servicing

Lubrication and Servicing



1767

SAFETY PRECAUTIONS

Do not allow unauthorized personnel to service or maintain this machine. Study the Operator's Handbook and Maintenance Manual before starting, operating or servicing this machine. Always follow procedures and safety precautions detailed in the Maintenance Manual.

Always attach a 'DO NOT OPERATE' or similar warning sign to ignition switch or a control before cleaning, lubricating or servicing the machine.

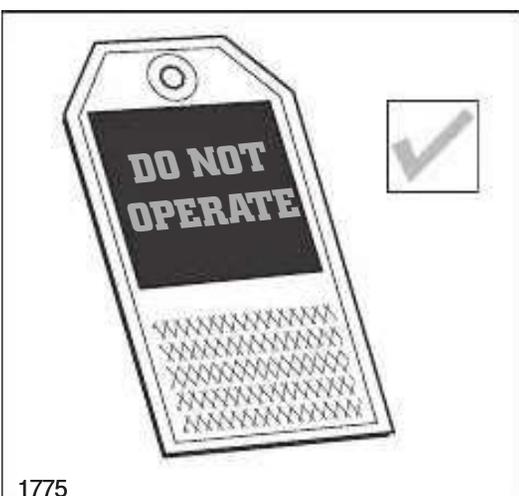
Never allow anyone to work on the machine while it is moving. Make sure no one is on the machine before working on it.

Do not work under or near unblocked or unsupported body. Always use the body safety pins.

Do not work under or near any unblocked or unsupported linkage, part or truck.

Always shut down machine according to the procedure under 'Stopping The Engine', described on page 4-14, before cleaning, lubricating or servicing the machine except as called for in this Handbook or the Maintenance Manual.

Always relieve pressure before servicing any pressurized system. Follow the procedures and safety precautions detailed in the relevant Maintenance Manual section.

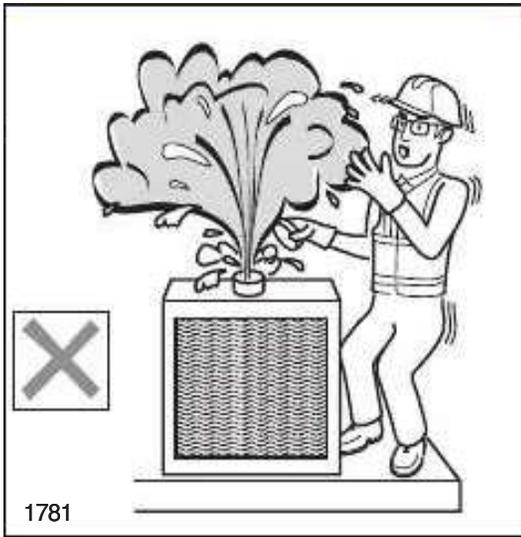


1775



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Escaping fluids under pressure can penetrate skin.



When changing oil in the engine, transmission and hydraulic systems, or removing hydraulic lines, remember that the oil may be hot and can cause burns to unprotected skin.

When working on or around exhaust components, remember that the components may be hot and can cause burns to unprotected skin.

Always deflate tyre before attempting to remove any embedded objects or removing the tyre and rim assembly from the truck.

Always use a self-attaching chuck with a long airline, and stand to one side while the tyre is inflating. Refer to Section 160-0050 in the Maintenance Manual.



When working around battery area, keep all flames and sparks away from batteries.

8-3

Lubrication and Servicing

LUBRICATION AND SERVICING



These trucks are fitted with engine and transmission oil pans which permit operation at maximum gradeability as designated in the 'Performance Data' section of the relevant Sales Specification Sheet.

Lubrication is an essential part of preventive maintenance. It is important that the instructions regarding types of lubricants and the frequency of their application be followed to prolong the useful life of the machine. Periodic lubrication of moving parts reduces to a minimum the possibility of mechanical failures.

All change and service periods are recommendations based on average operating conditions. Lubricants showing evidence of excessive heat, oxidation or dirt should be changed more frequently to prevent these conditions.

Lubricant change and service periods must be established on the basis of individual job conditions utilizing oil sampling and recommendations from <https://www.besttruckmanuals.com/>

units which are TranSynd RD filled may result in damage to the transmission.



Trucks filled with Allison TranSynd RD oil should only be filled with TranSynd RD oil at drain and refill intervals. Use of other oils or mixing of oils is prohibited and may cause damage to the transmission. If there is any uncertainty consult the manufacturer.

For TranSynd RD filled transmissions, refer to page 8-7 for service intervals and recommended lubricant details.

lubricant suppliers.

Thoroughly clean all fittings, caps, plugs, etc., to prevent dirt from entering any system while carrying out servicing procedures. Lubricants must be at operating temperature when draining.

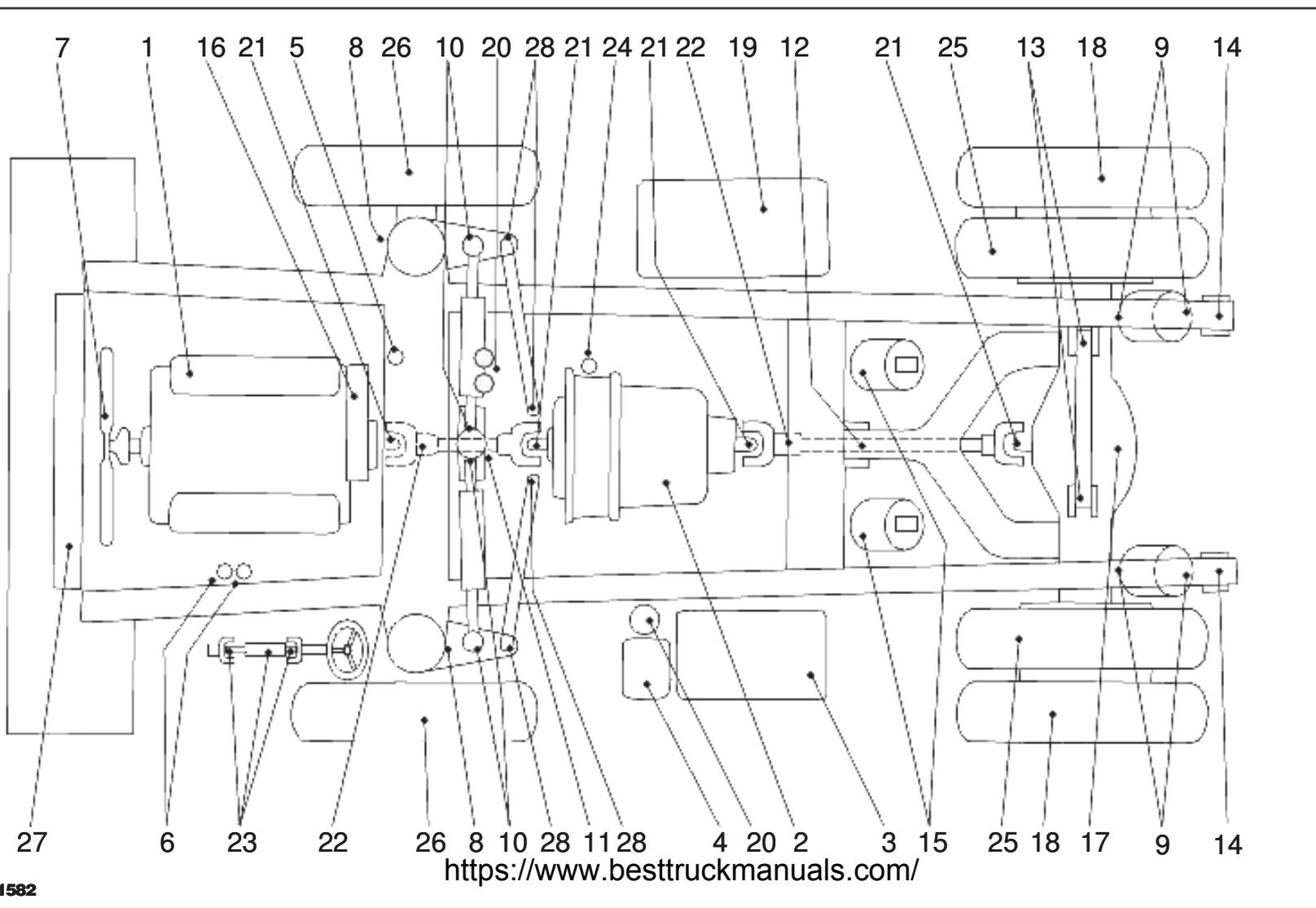
Note: Do not operate any system unless the oil level is within the recommended operating levels as indicated on oil level dipstick, sight gauge or level plug.

Small circles on the following illustration represent points at which lubrication or servicing must take place, at the intervals indicated on the left-hand side of the lubrication chart. The numbers on the illustration contain reference numbers which is given in the 'Ref. Points' column of the Lubrication and Service chart.

TRANSMISSION FLUID - Transynd RD

For non TranSynd RD filled transmissions refer to the service schedule detailed from page 8-5 onwards.

Note: For units filled with TranSynd RD, the service schedule for the transmission differs from those which are filled with EO. The use of any other oil in



LUBRICATION AND SERVICE CHART

Interval Hours	Ref. Points	Identification	Service Instructions	No. of Points	Lubricant	Service/Quantities
10	1	Engine	Check oil level. Add if low.	1	EO	As Required
	2	Transmission	Check oil level. Add if low.	1	EO	As Required
	3	Main Hydraulic Tank	Check oil level. Add if low.	1	HO	As Required
	4	Steering/Braking Hydraulic Tank	Check oil level. Add if low.	1	HO	As Required
	5	Radiator Header Tank	Check coolant level. Add if low.	1	Antifreeze	See Page 8-7 / 8
	-	Steering/Braking Hydraulic Tank Filter	Check W/Light. Replace element if reqd.	1	-	See Page 8-7 / 8
	6	Rear Disc Brake Filter(s)	Check indicator. Replace element if reqd.	-	-	See Page 8-7 / 8
	-	Fuel Filter/Water Separator	Drain water and sediment.	2	-	-
	7	Cooling Fan	Visually inspect for debris and damage.	1	-	-
	-	Drive Belts	Visually inspect all belts.	-	-	See Page 8-7 / 8
	8 and 9	Front and Rear Ride Cylinders	Visually inspect heights.	4	-	Maintenance Manual 180-0050
	-	Air Cleaner Restriction W/Light	Check. Replace element if reqd.	1	-	-
	-	Air Cleaner Vacuator Valve(s)	Check for proper operation.	3	-	-
	-	Tyres	Check condition. Check pressures when tyres are cold.	6	-	Maintenance Manual 160-0050 and Page 8-10
	-	Controls, Instruments and W/Lights	Check for proper operation.	-	-	-
-	General Inspection	Check for leaks and worn/damaged parts. Repair/replace as required.	-	-	-	
50	8	Front Ride Cylinders	Lube.	2	EP, NLGI	20 Strokes
	9	Rear Ride Cylinder Spherical Bushings	Lube.	4	EP, NLGI	See Note A
	10	Steering Cylinders	Lube.	4	EP, NLGI	See Note A
	28	Steering Linkage	Lube.	4	EP, NLGI	See Note A
	11	Steering Pivot Pin	Lube.	2	EP, NLGI	See Note A
	12	A-Frame Nose Spherical Bushing	Lube.	1	EP, NLGI	See Note A
	13	Banjo Stabilizer Spherical Bushings	Lube.	2	EP, NLGI	See Note A
	14	Body Hinge Pins/Optional Tailgate Pins	Lube.	2	EP, NLGI	See Note A
	15	Body Hoist Cylinder Bushings	Lube.	4	EP, NLGI	See Note A

Lubrication and Servicing

LUBRICATION AND SERVICE CHART (Continued)						
Interval Hours	Ref. Points	Identification	Service Instructions	No. of Points	Lubricant	Service/Quantities
250	-	Engine Fuel Filters	Replace filters.	2	-	Maintenance Manual 110-0030
	-	Engine Coolant Additive	Check DCA concentration and replenish.	-	DCA4	See Page 8-7
	-	Engine Coolant Filter(s)	Replace filter(s) if required.	-	-	See Page 8-7
	-	Engine Crankcase Breather	Clean.	1	-	Maintenance Manual
	7	Engine Cooling Fan	Check condition.	1	-	See Page 8-7
	16	Engine Power Takeoff	Drain and refill.	1	EPL	See Page 8-8 / 9
	17	Differential	Check oil level. Add if low.	1	EPL	-
	18	Wheel Planetaries	Check oil level. Add if low.	2	EPL	-
	-	Differential Breather	Clean.	1	-	-
	-	Transmission Breather	Clean.	1	-	-
	-	Alternator Drive Belt	Check belt tension. Adjust if required.	1	-	See Page 8-7 / 8
	-	Accessory Drive Belts (if fitted)	Check belt tension. Adjust if required.	-	-	See Page 8-7 / 8
	-	Front Brake Pads	Check wear. Replace as required.	2	-	See Page 8-8
1	Engine	Drain and refill	1	EO	See Page 8-8 / 9	
500	-	Engine Oil Filters	Replace Filters	-	-	Maintenance Manual 110-0030
	19	Fuel Tank	Clean filler neck screen and cap.	-	-	-
	20	Accumulators	Check nitrogen pressures.	3	-	-
	21	Driveline Universal Joints	Lube (if grease nipple fitted).	-	*EP, NLGI	See Note A
	22	Driveline Slip Joints	Lube (if grease nipple fitted).	-	*EP, NLGI	See Note A
	23	Steering Column Universal Joints	Lube.	3	*EP, NLGI	See Note A
-	Hydraulic & Steering Tank Breather	Clean.	1	-	-	
1 000	-	Hydraulic System Pressure Checks	Check pressure at check points/	-	-	See Page 8-8
	-	Main Hydraulic Filter	Replace elements.	2	-	See Page 8-8
	6	Rear Disc Brake Filter(s)	Replace element(s).	2	-	See Page 8-8

1 000	8	Rear Disc Brake Filter(s)	Replace element(s).	2	-	See Page 8-8
	2	Transmission	Drain and refill.	1	EO	See Page 8-8 / 9
	-	Transmission Oil Filter	Replace element.	1	-	-
	24	Steering In-line Filter	Replace element	1	-	-
1 500	-	Engine Crankcase Breather	Clean/Replace	1	-	-
	17	Differential	Drain and refill	1	EPL	See Page 8-8 / 9
	18	Wheel Planetaries	Drain and refill	2	EPL	See Page 8-8 / 9
	-	Fan Idler Pivot Arm	Lube	1	EP, NLGI	See Note A
2 000	3	Main Hydraulic Tank	Drain and refill	1	HO	See Page 8-8 / 9
	-	Main Hydraulic Tank Suction Screens	Remove and clean	3	-	-
	4	Steering / Braking Tank	Drain and refill	1	HO	See Page 8-8 / 9
	-	Steering / Braking Hydraulic Tank Filter	Replace element	1	-	See Page 8-8
	-	Steering / Braking Tank Suction Screen	Remove and clean	1	-	-
	19	Fuel Tank	Drain and refill	1	Diesel	See Page 8-8 / 9
	25	Rear Brake Packs	Drain and refill	2	HO	-
4 000	27	Cooling System	Drain, flush and refill	1	Antifreeze	See Page 8-8 / 9
	-	Air Conditioning Compressor	Drain, flush and refill	1	PAG Oil	See Page 8-8 / 10
5 000	26	Front Wheel Bearings	Repack	2	*EP, NLGI	*

* - Fill compartment one half full.

Note A -Lubricate slowly until excess lube is seen.

EO- Engine Oil. Refer to chart under 'Recommended Lubricants'.

EPL- Extreme Pressure Gear Lubricant meeting specification MIL-L-2105C.

HO- Hydraulic Transmission Oil meeting Specification EMS19058 Refer to chart under 'Recommended Lubricants'.

EP, NLGI - Extreme Pressure Lithium No. 2 Grease. Refer to chart under 'Recommended Lubricants'.

*EP, NLGI - Extreme Pressure Lithium No. 2 Grease (without 'Molybdenum'). Refer to chart Under 'Recommended Lubricants'.

PAG Oil - Polyalkylene Glycol (PAG) Compressor Lubricating Oil - Low Viscosity (ISO46).

Lubrication and Servicing

RECOMMENDED LUBRICANTS- (TranSynd RD Specific)			
COMPONENT	LUBRICANT	VISCOSITY (See Note 1*)	
		Temp	Recommendation
Transmission	TranSynd RD Allison Transmission Oil Minimum operating Temperatures (without preheat)	-35° C	SAE 0W-30 or TranSynd RD
		-30° C	SAE 0W-20 (Arctic)
		-28° C	DEXRON-III
		-20° C	SAE 15W-40
		-00° C	SAE30
		-10° C	SAE40

LUBRICATION AND SERVICE CHART - (TranSynd RD Specific)						
Interval Hours	Ref. Points	Identification	Service Instructions	No. of Points	Lubricant	Service/Quantities
10	2	Transmission	Check oil level. Add if low.	1	TranSynd RD	As Required
150	-	Transmission Oil Filter	Replace element	1	-	-
250 4000	- 2	Transmission Breather Transmission	Clean Drain and Refill	1 1	- TranSynd RD	- See Page 8-8

MISCELLANEOUS SERVICING

INSPECTION AT DELIVERY OF A NEW VEHICLE

Rear Ride Cylinders - check the extension of the rear ride

clamps. Change air cleaner element only when air cleaner flow restriction warning light illuminates.

Service vacuator valves daily. Inspect and remove any obstructions from the vacuator valve lips. Valve lips should be open and pliable with engine stopped.

cylinders, and recharge with with oil and nitrogen if necessary. This is required because in some circumstances nitrogen is evacuated from the cylinders to lower the body for transportation, and cylinder oil may be lost also during the evacuation process.



Permanent damage may occur when operating the truck with inadequately charged rear ride cylinders, as the rear axle will impinge on the bump stops.

WHEN REQUIRED

Seat Belts - Inspect seat belts and replace if damaged.



Replace seat belts at least once every three years, regardless of appearance.

Note: Replace seat belts at least once every three years, regardless of appearance.

Windscreen Wipers and Washers - Inspect wiper blades and replace if damaged. Top up washer reservoir.

Wheel Rim Nuts - After first 10 hours of operation re-torque nuts to 813 Nm (600 lbf ft). Check torque every 50 hours (weekly) thereafter.

EVERY 10 HOURS OF OPERATION

Walk Around Inspection - Inspect the machine as described in Section 4.

Engine - Visually check engine for damage, loose or frayed belts and listen for any unusual noises.

Engine Air Cleaner(s) - Check air cleaner piping, hoses and

Note: Service air cleaner(s) more often under extremely dusty operating conditions.

Radiator Header Tank - Check the coolant level and replenish if low. Fill radiator header tank with coolant until coolant reaches the bottom of the filler neck and holds at that level.

NOTICE

Any time a significant amount of coolant is added, the DCA4 concentration **MUST** be checked. If the concentration is low, engine damage will result. Conversely, over-inhibiting antifreeze solutions can cause silicate dropout. Refer to Section 210-0000, Cooling System, in the Maintenance Manual.

Steering, Braking and Body Hoist Systems - Check for correct operation of all systems before operating the truck.

Steering Filter - Check steering filter restriction warning light with the truck empty, brakes released, oil at normal operating temperature, engine operating at 1 500 rev/min and while turning the steering wheel at one turn/sec. If the warning light illuminates, the filter element should be replaced.

Rear Disc Brake Filter(s) - Replace element(s) when indicator shows oil at the replace element level.

AFTER FIRST 150 HOURS OF OPERATING NEW OR REBUILT COMPONENTS

Transmission - Drain oil and refill (non TranSynd RD filled transmissions only), replace filters (all oil types).

Differential - Drain oil and refill.

Planetaries - Drain oil and refill.

8-7

Lubrication and Servicing

EVERY 250 HOURS OF OPERATION

Oil Can Points - Oil accelerator linkage, hinges, and other working parts with engine oil.

Coolant Additive - Check and replenish DCA4 concentration as described in Section 210-0000, Cooling System, in the Maintenance Manual.

Coolant Filter(s) - Replace coolant filter(s) if required. When testing the DCA4 concentration, depending on the level of DCA4, the coolant filter(s) may not necessarily have to be changed. Refer to Section 210-0000, Cooling System, in the Maintenance Manual.

Engine Fuel Pre-filter - Replace fuel pre-filter.

Cooling Fan - Visually check the fan for cracks, loose rivets, and bent or loose blades. Check fan mounting and tighten if required. Replace any fan that is damaged.

Note: The fan belt is maintained to the correct belt tension by a spring-loaded idler arm, therefore, there is no need to check or adjust belt tension.

Drive Belts - Visually check the belts and replace if they are cracked or frayed. Adjust belts that have a glazed or shiny surface which indicates belt slippage. Correctly installed and tensioned belts will show even pulley and

EVERY 1000 HOURS OF OPERATION

Hydraulic System Pressure Checks - Check all steering, body and braking system pressures.

Note: Instructions for checking pressure, and locations of pressure check points, are contained in the relevant Maintenance manual section. If the pressures are outwith the specified settings then components in the relevant system should be inspected, repaired or replaced to ensure the correct operation of the system. All safety instructions in the relevant sections should be strictly adhered to.

Main Hydraulic Filter - Clean filter housing and install new element.

Rear Disc Brake Filter(s) - Replace filter element(s) when indicator sight gauge shows replacement is necessary, or after 1 000 hours of operation, whichever comes first.

Steering In-line Filter - Clean the filter housing and install a new element when indicated, or after 1000 hours of operation, whichever occurs first.

EVERY 2000 HOURS OF OPERATION

installed and tensioned belts will show even pulley and belt wear. Refer to Section 110-0030, Engine and Mounting, in the Maintenance Manual for drive belt tension and adjustment of new and used drive belts.

Front Brakes - Check pads and discs for wear and replace where necessary.

Note: This service interval applies to normal driving. Check more frequently under more severe conditions. Thickness of pad friction material should never be allowed to wear below 3 mm (0.12 in).

Steering Filter - Clean filter housing and install new element when indicated, or after 2000 hours of operation, whichever comes first.

ENGINES AND TRANSMISSIONS

All information contained in the "Lubrication and Service Chart" was extracted from the relevant manufacturers 'Operation and Maintenance Manual', and was correct at time of publication. User should ensure that information contained in this chart reflects the information shown in the relevant manufacturers 'Operation and Maintenance Manual'. Maintenance Procedures should be carried out in conjunction with any additional procedures in the relevant manufacturers 'Operation and Maintenance Manual', at the intervals specified.

SERVICE CAPACITIES				
Ref. Points	Identification	Lubricant	TR100	
			litres	US gal
1	Engine Crankcase and Filters	EO	134	35.4
2	Transmission and Filters	EO / TranSyndRD	100	26
3	Main Hydraulic Tank	HO	297	78.5
-	Main Hydraulic System	HO	557	147.1
4	Steering Hydraulic Tank	HO	61	16
-	Steering Hydraulic System	HO	72	19
27	Cooling System	Coolant	304	80.3
19	Fuel Tank	Diesel	1 275	336.3
8	Front Ride Cylinders (Each)	HO	27	7.1
9	Rear Ride Cylinders (Each)	HO	18	4.8
16	Engine Power Takeoff	EPL	1.5	0.4
17	Differential	EPL	61	16.1
18	Wheel Planetaries (Total)	EPL	57	15.1
-	Air Conditioning Compressor	PAG Oil	0.135	0.036

8-8

Lubrication and Servicing

Note: Capacities given are approximate. Work to dipstick, sight gauges or level plugs. Use table in conjunction with 'Recommended Lubricants' table.

Note: *Use of the correct transmission oil type is essential to prevent damage to the transmission and maintain correct operation. In trucks which are TranSynd RD filled, use only TranSynd RD. Similarly for trucks filled with EO, use only EO.

RECOMMENDED LUBRICANTS			
COMPONENT	LUBRICANT	VISCOSITY (See Note 1*)	
Engine	Engine oil with 1.00% sulphated ash is recommended. Sulphated ash must not exceed 1.85% limit. API code CH-4, ACEA-E5. See Note 2*	Ambient Temp 0° C and above -10° C and above -25° to 35° C	Recommendation SAE 20W-40 SAE 15W-40 SAE 10W-30
Transmission	Allison C-4 Type Specification; Refer to www.allisontransmission.com for a complete list of C-4 approved oils. See Note 3*	Ambient Temp -35° C -30° C -28° C -25° C -20° C 0° C 10° C	Recommendation SAE 0W-30 or TranSynd RD SAE 0W-20 (Artic) DEXRON-III SAE 10W-40 SAE 15W-40 SAE 30 SAE 40
Cooling System	Heavy Duty Coolant. Refer to Section 210-0000 COOLING SYSTEM, in the Maintenance Manual. https://www.berstruckmanuals.com/		
Fuel Tank	Diesel Fuel Oil with maximum sulphur 0.5%	DIN EN590	

Differential Planetary Gears Power Takeoff	Diesel Fuel Oil with maximum sulphur 0.5%. Multipurpose Extreme Pressure type gear oil meeting MIL-L-2105C Specifications (No Zinc Additive). See Note 4*.	DIN EN590 SAE 80W-90 at ambient temperatures of -18° to 32° C
Grease Fittings	Multipurpose Extreme Pressure Lithium Grease (which may or may not contain 'Molybdenum'), with a typical melting point of 190° C.	No. 2 Consistency
Drivelines Steering Column Wheel Bearings	Multipurpose Extreme Pressure Lithium Grease (without 'Molybdenum'), with a typical melting point of 190° C.	No. 2 Consistency
Air Conditioning Compressor	Polyalkylene Glycol (PAG) Compressor Lubricating Oil - Low Viscosity	ISO46 SP 10
Ride Cylinders (Nitrogen/Oil)	Hydraulic oil meeting MIL-L-2104B Specification.	SAE 10W
Hydraulic System	Hydraulic Transmission Oil meeting Specification EMS19058. See Note 5.	SAE 10W at ambient temperatures of -18° to 32° C SAE 30W at ambient temps of 32° C and above

Note 1 - Consult your lubricant supplier for the correct viscosity of lubricant to use when ambient temperatures are consistently above or below those listed.

Note 2 - Cummins Engine Co. do not recommend any specific brand of engine oil but the use of oils that meet API categories. Cummins recommend use of only the multi-graded viscosity oils shown for the various ambient temperatures listed.

Note 3 - Operation below the minimum temperatures listed for the oil used without proper preheat or warm-up results in greatly reduced transmission life. If auxiliary heating is available, preheat the oil to the minimum temperature limit. If not available, run the engine at part throttle with the transmission in neutral to raise the fluid temperature.

Note 4 - If rear axle has limited slip differential, an EP oil with limited slip additives should be used because using standard SAE 90 oil may result in very loud noise and jerking of the wheels when driving slowly round sharp corners.

Note 5 - Typical SAE 10W oils complying with Specification EMS19058 are:

KUWAIT TO4	TEXACO TEXTRAN	TOTAL TRANSMISSION AC
SHELL DONAX TC	MOBILTRANS HD	BP AUTRAN 4
ESSO TORQUE FLUID	CASTROL TFC	

Other lubricant suppliers may have comparable products and should be consulted for confirmation.

Temperature Conversions																		
° Celsius	-32	-30	-27	-25	-20	-18	-15	-10	0	10	15	25	32	35	38	45	93	190
° Fahrenheit	-26	-22	-17	-13	-4	0	5	14	32	50	59	77	90	95	100	113	200	375

Lubrication and Servicing

AIR CONDITIONING RE-START PROCEDURE

If the machine has been idle for an extended period of time (2 weeks), the refrigerant in the air conditioning unit converts from a gas to a liquid. This puts the compressor unit under a great deal of strain trying to compress a liquid instead of a gas and could cause a failure in the air conditioning unit. The following commissioning procedure allows the air conditioning unit to achieve normal operating parameters.

1. Start the machine and allow it to run until the engine is at a normal operating temperature of 80 °C (176 °F)
2. Turn the blower control to setting 1.
3. Turn on the air conditioning unit on for 5 seconds then off for 5 seconds.
4. Repeatedly switch the air conditioning on and off for at least 1 minute. This should be at least 12 repetitions.
5. Commissioning the air conditioning unit is complete and ready for use.

TYRE PRESSURES

Tyre pressures on this pages apply to the truck serial number range specified only, Gross Vehicle Weight (G.V.W.) and axle weights may vary between truck derivatives. Tyre pressure should be recalculated if not shown for a particular truck. Contact TEREX for assistance. <https://www.besttruckmanuals.com/>

The tyre inflation pressures listed are manufacturers' recommendations for G.V.W. travelling at maximum speed. TEREX advise that operators check tyre inflation pressures with tyre manufactures to ensure correct setting for each particular

MODEL	MANUFACTURE	SIZE	PATTERN	TYRE INFLATION PRESSURE			
				FRONT		REAR	
				BAR	lb/in ²	BAR	lb/in ²
TR35 877	BRIDGESTONE	18.00-R25	VMTP	7.4	108	7.7	111
	BRIDGESTONE	18.00-R25	VMTS	7.4	108	7.7	111
	MICHELIN	18.00-R25	XHD1-A4	6.2	90	6.2	90
	ALTURA	18.00-R25	GRIPMASTER ND	7.0	102	7.0	102
TR45 881	ALTURA	18.00-R25	GRIPMASTER XL	7.0	102	7.0	102
	BRIDGESTONE	21.00-R35	VMTP	7.7	111	7.2	105
	BRIDGESTONE	21.00-R35	VELS	7.7	111	7.2	105
	MICHELIN	21.00-R35	XDT-A4	5.5	80	5.2	75
	BELSHINA	21.00-35	BEL51-A	5.8	84	5.8	84
TR60 882	BRIDGESTONE	24.00-R35	VMTP	6.5	94	6.3	91
	BRIDGESTONE	24.00-R35	VRLS	6.5	94	6.3	91
	MICHELIN	24.00-R35	XDT-A4	5.5	80	5.5	80
	BELSHINA	24.00-35	FBEL-150	5.5	80	5.5	80
TR70 913	BRIDGESTONE	24.00-R35	VMTP	7.9	114	7.9	114
	BRIDGESTONE	24.00-R35	VRLS	7.9	114	7.9	114
	MICHELIN	24.00-R35	XDT-A4	7.2	105	6.9	100
TR100 783	BRIDGESTONE	27.00-R49	VMTP	7.0	102	6.8	98
	BRIDGESTONE	27.00-R49	VRLS	7.0	102	6.8	98
	MICHELIN	27.00-R49	XDT-A4	6.6	95	6.6	95
	PACETRONIC	27.00-49	E4D	6.6	95	6.6	95
	BELSHINA	27.00-49	FBEL-150	6.4	93	6.4	93
TR100DD 883	BRIDGESTONE	27.00-R49	VMTP	7.0	102	6.8	98
	BRIDGESTONE	27.00-R49	VRLS	7.0	102	6.8	98
	MICHELIN	27.00-R49	XDT-A4	6.6	95	6.6	95
	PACETRONIC	27.00-49	E4D	6.6	95	6.6	95

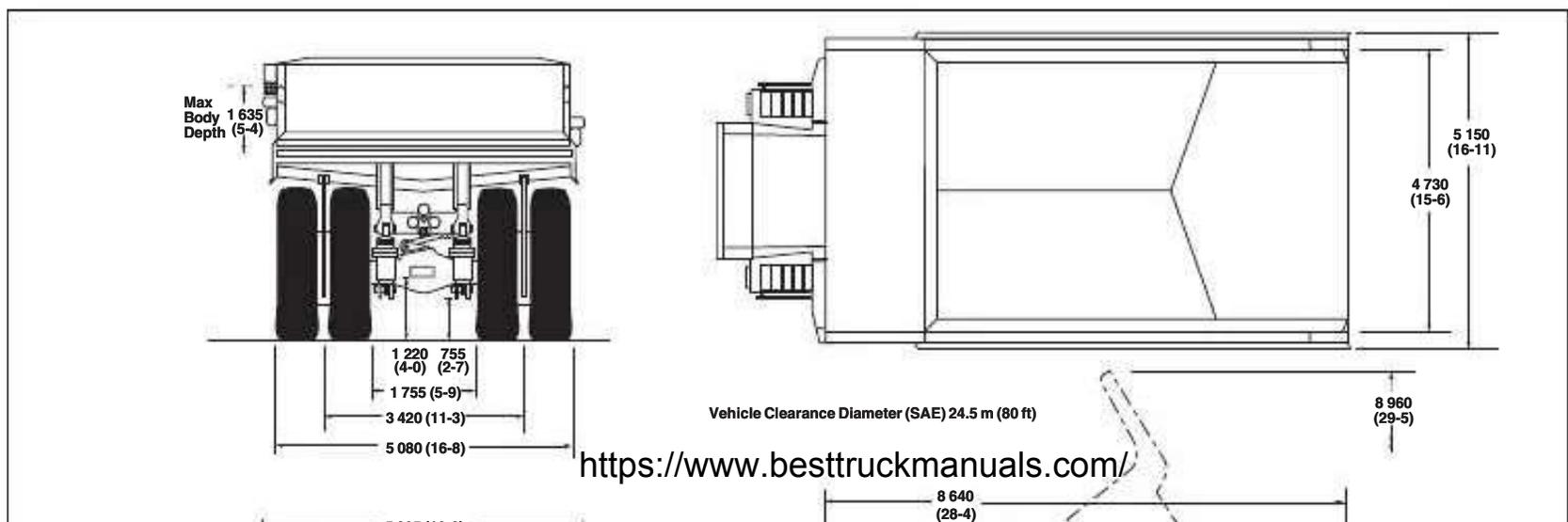
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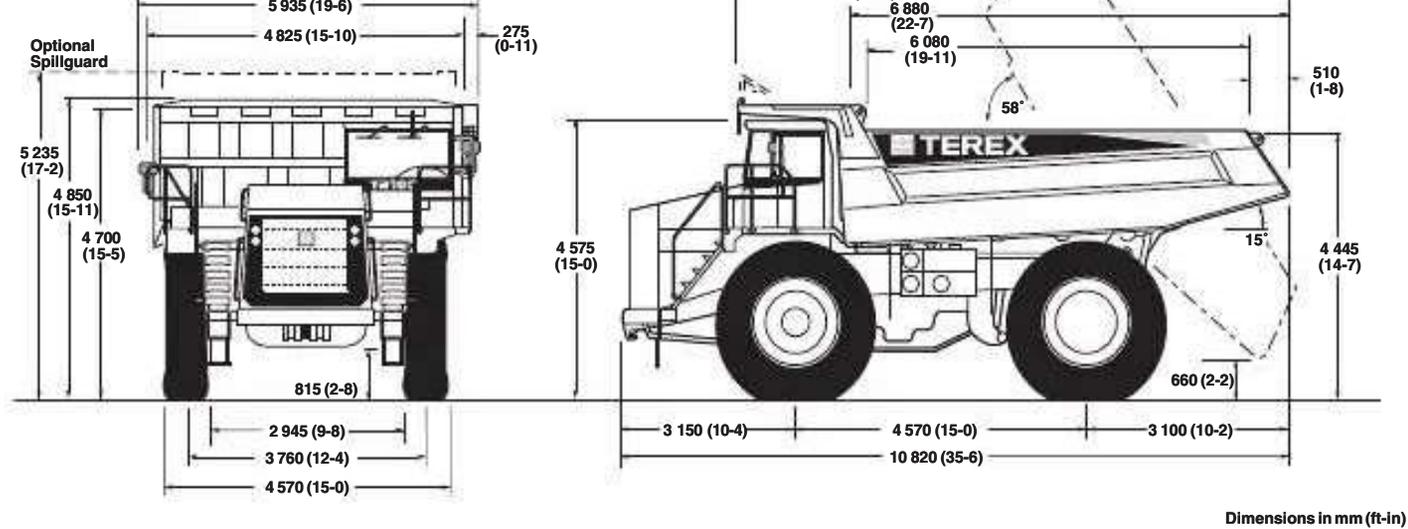


9 - Technical Data

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TECHNICAL DATA TR100





1620

Dimensions in mm (ft-in)

TECHNICAL DATA

ENGINE

Make/Model Cummins KTA-38-C1050
 Type 4 Cycle Turbocharged/Aftercooled
 Gross Power at 2 100 rev/min 783 kW (1 050 hp, 1094 PS)
 Net Power at 2 100 rev/min 692 kW (928 hp, 967 PS)

Note: Power ratings to SAE J1995 June 1990. Net Power is after deductions for fan and alternator. Engine requires no derating up to 3 050m (10 000 ft) altitude.

Maximum Torque 4630 Nm (3415 lbf ft) at 1300 rev/min
 Number of Cylinders/Configuration 12V
 Bore x Stroke 159 x 159 mm (6.25 x 6.25 in)
 Total Displacement 37.7 litres (2300 in³)
 Starting Electric
 Maximum Speed, Full Load 2 100 rev/min
 Maximum Speed, No Load 2 400 rev/min
 Idle Speed 750 rev/min

Technical Data

TRANSMISSION

Make/Model Allison H 8610 AR CEC 2
 Automatic electronic control with soft shift feature. Remote mounted in the frame with integral TC 890 torque converter and planetary gearing. Six speeds forward, one reverse. Automatic converter lockup action in all speed ranges. Downshift inhibitor. Integral hydraulic retarder.

DRIVE AXLE

Heavy duty axle with full floating axle shafts, single reduction spiral bevel gear differential and planetary reduction at each wheel.

Ratios:	Standard	Optional
Differential.....	2.16:1	2.16:1
Planetary.....	13.75:1	10.50:1
Total Reduction.....	29.70:1	22.68:1

Speeds with Standard Planetary						
	Forward					
Gear	1	2	3	4	5	6
Ratio	4.24	2.32	1.69	1.31	1.00	0.73
km/h	8.2	15.0	20.6	26.5	34.8	47.6
mile/h	5.1	9.3	12.8	16.5	21.6	29.6
Reverse						
Ratio	5.75					
km/h	6.0					
mile/h	3.8					

SUSPENSION

Front: King pin strut type independent front wheel suspension with self-contained, variable rate, nitrogen/oil cylinders.

Rear: Variable rate nitrogen/oil cylinders with A-frame linkage and lateral stabilizer bar.

Maximum Strut Stroke

Front 229 mm (9.0 in)
Rear 175 mm (6.9 in)
Maximum Rear Axle Oscillation ± 7.0 Degrees

WHEELS AND TYRES

Wheel Rim Width 19.5 in
Standard Tyres (Front & Rear) 27.00 R 49 Radial
Optional Tyres (Front & Rear) 27.00-49 (48 PR) E-4

Note: It is recommended that for tyres both listed and unlisted, the user should consult the tyre manufacturer and evaluate all job conditions in order to make the proper selection.

BRAKES

Service

All hydraulic brake system control. Transmission mounted pressure compensating pump provides hydraulic pressure for brakes and steering. Independent circuits front and rear. Each circuit incorporates a nitrogen accumulator which stores energy to provide consistent braking response.

Front Brake Circuit Pressure159 bar (2 300 lbf/in²)
Rear Brake Circuit Pressure 52 bar (750 lbf/in²)
Accumulators
Nitrogen Precharge Pressure 55 bar (800 lbf/in²)

Front:

Type Dry Disc with 1 calliper per wheel
 Disc Diameter965 mm (38 in)
 Pad Area, Total2 015 cm² (320 in²)

Rear:

TypeOil cooled, multiple friction discs,
 completely sealed from dirt and water.
 Braking Surface, Total 87 567 cm² (13 573 in²)

Parking

Application of rear brakes by springs in brake disc pack. Hydraulically released.
 Hold-off Pressure 83 bar (1 200 lbf/in²)

Retardation

Modulated lever control of rear disc pack.
 Retarder Actuation Pressure up to 33 bar (480 lbf/in²)

Emergency

Push button solenoid control applies service and parking brakes. Automatically applies when engine is switched off. Parking brake applies should system pressure fall below a predetermined level.

Brakes conform to ISO 3450, SAE J1473.

STEERING SYSTEM

Independent hydrostatic steering with closed-centre steering valve, accumulator and pressure compensating piston pump.

Accumulator provides uniform steering regardless of engine speed. In the event of loss of engine power it provides steering of approximately two lock-to-lock turns. A low pressure indicator light warns of system pressure below 83 bar (1 200 lbf/in²). Steering meets ISO 5010, SAE J53.

System Pressure159 bar (2 300 lbf/in²)
 Relief Pressure 207 bar (3 000 lbf/in²)
 Steering Cylinders Double Acting, Single Stage
 Accumulator:
 Oil Capacity 16.4 litres (3.70 US gal)
 Nitrogen Precharge Pressure 55 bar (800 lbf/in²)
 Steering Angle (Left and Right) 39°

Technical Data

Pump:
 Type Piston
 Capacity at 2 100 rev/min1.57 litres/s (25 US gal/min)

BODY HYDRAULICS

Two body hoist cylinders are mounted between the frame rails. Cylinders are two-stage with power down in the second stage.

System Relief Pressure <https://www.besttruckmanuals.com/>
 Pump: 150 bar (2 175 lbf/in²)

Pump:
Type Gear
Capacity at 2 100 rev/min 365 litres/min (97 US gal/ min)

Control Valve Servo Controlled, Open Centre
Body Raise Time 14 Seconds
Body Lower Time 18 Seconds

ELECTRICAL

Type 24 Volt, Negative
Ground
Battery Four, 12 Volt, 210 Ah each,
Maintenance Free
Accessories 24 Volt
Alternator 70 Amp
Starter Two 9 kW

BODY

Longitudinal 'V' type floor with integral transverse box-section stiffeners.
The body is exhaust heated and rests on resilient impact absorption pads.

Body wear surfaces are high hardness (360-440 BHN) abrasion resistant
steel. Yield strength of plates 1 000 MPa (145 000 lbf/in²).

Plate Thicknesses:

Floor 19 mm (0.75 in)
Side 10 mm (0.39 in)
Front, lower 10 mm (0.39 in)

ROPS Cabguard SAE J1040 Feb 86. ISO 3471

Volumes:

Struck (SAE) 41.6 m³ (54.4 yd³)
Heaped 2:1 (SAE) 57.0 m³ (74.5 yd³)

SERVICE CAPACITIES

Engine Crankcase and Filters 134 litres (35.4 US gal)
Transmission and Filters 100 litres (26 US gal)
Cooling System 304 litres (80.3 US gal)
Fuel Tank 1275 litres (336.8 US gal)
Steering Hydraulic Tank <https://www.besttrucksmanuals.com/>
Steering System 72 litres (19 US gal)

Body and Brake Cooling Tank	297 litres (78.5 US gal)
Body and Brake Cooling System	557 litres (147.1 US gal)
Planetaries (Total)	57 litres (15.1 US gal)
Differential	61 litres (16.1 US gal)
Front Ride Strut (Each)	27 litres (7.1 US gal)
Rear Ride Strut (Each)	18 litres (4.8 US gal)
Power Takeoff	1.5 litres (0.4 US gal)
Air Conditioning Compressor	0.135 litres (0.036 US gal)

Sound Power Level ISO6395	TR100
A - Weighted sound power level Lwa in decibels	88.5 dba
Uncertainty Kwa, in decibels	TBA
Sound Pressure Level at Operators Station ISO6396	TR100
A - Weighted emission sound pressure level Lpa in decibels	79
Uncertainty Kwa, in decibels	2.09

The sound level values are in compliance with Directive 2000/14/EC and BS EN 474.

Note: The above result is for the mode giving the highest exterior sound level when measured and operated as per the prescribed procedures of the standard. Results shown are for the vehicle in base configuration.

Note: Noise Exposure Level to the operator and bystander personnel may be higher depending upon proximity to buildings, rock piles, machinery, etc.. The actual job site Noise Exposure Level must be measured and applicable regulations complied with in respect to Employee Hearing Protection.

Technical Data

Hands and Arm Vibration

The weighted root mean square acceleration to which hand and arms of the operator are exposed is less than 2.5 m/s² under normal operating conditions.

	VEHICLE WEIGHTS (MASS)	
	kg	lb
Chassis, with hoists	53 240	11 7375
Body, standard	15 020	33 115

<https://www.besttrucks.com>

Whole Body Vibration	TR100
Vibration Emission Value a	0.73m/s ²
Uncertainty K	0.37m/s ²
Operating Mode: Value Obtained under simulated field duty cycle.	

Note: The whole body vibrations on construction machines are influenced by many factors independent of machine design, for example ground conditions, working methods, correct seat adjustment, operator input to vehicle speed.

The single whole-body emission value listed above is determined under particular operating and terrain

conditions. In accordance with EN474, it is not intended to be used to determine the whole-body vibration exposure to the operator using the Machine

Note: It is recognized that the appropriate design of the operator's seat is the most effective construction measure to minimize the whole - body vibration emission of a particular machine family.

This machine is equipped with an operator's seat which meets the criteria of EN ISO 7096 representing vertical vibration under severe operating conditions.

The seat on this machine has been tested with input spectral class EMI and has a seat transmissibility factor SEAT > 1.1.

Net Weight	68 260	150 490
PAYLOAD, maximum	40 825	90 000
Maximum Gross Weight*	158 980	350 495
FOR UNIT EQUIPPED WITH OPTIONAL BODY LINER PLATES:		
Chassis, with hoists	53 240	117 380
Body, heavy duty	20 550	45 300
Net Weight	73 790	162 680
PAYLOAD, maximum	85 190	187 815
Maximum Gross Weight*	158 980	350 495

* Maximum permissible gross vehicle weight with options, attachments, full fuel tank and payload.

WEIGHT DISTRIBUTION	Front Axle	Rear Axle
Empty %	49	51
Loaded %	34	66



10 - Symbol Identification

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Basic
Warning
Symbol



Fast



Engine
Oil



Air
Pressure



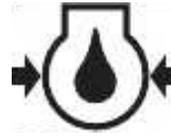
Pressurised
Compartment



Slow



Engine
Oil
Pressure



Air Filter
or
Restriction



Master
Switch



Lock



Engine
Oil
Filter



Starter
Air
Pressure



Switch
'On'



Lock



Basic
Transmission



Oil
Level



Switch
'Off'



Basic
Engine



Transmission
Oil



Minimum
or
Low



Negative
Ground



Engine
Starter



Transmission
Oil
Pressure



Maximum
Or
High



Ammeter



Engine
Rev/Min



Transmission
Oil
Temperature



Basic
Hydraulic
Oil Symbol



Circuit
Breaker



Engine
'Off'



Transmission
Oil
Filter



Hydraulic
Oil
Filter



Hourmeter



Emergency
Engine
Shut Off



Transmission
Convertor
Lockup



Hydraulic
Oil Filter
Pressure



Symbol Identification

Hot



Light Flood

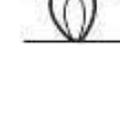
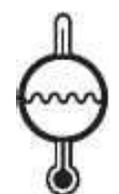
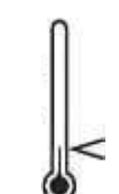
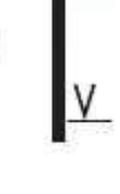
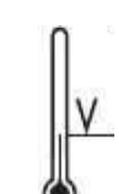
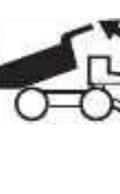
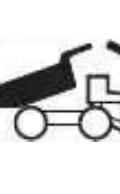
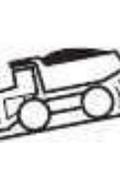


Heater



Low Steering
Pressure



Hydraulic						Pressure	
Coolant Temperature		Light Low Beam		Air Conditioner		High Speed Or Level	
Coolant cold'		Light High Beam		Inside Air Circulation		Low Speed Or Level	
Coolant Hot		Instrument Panel Light		Outside Air		Body Up	
Cooling		Lamp Test		Parking Brake		Body 'Raise'	
Heating		Horn		Parking Brake		Body 'Hold'	
Fuel Gauge Or Fill tube		Windshield Wiper		Brake Oil Temperature		Body 'Lower'	
Fuel Filter		Windshield Defroster		Turn Left		Body 'Float'	
Fuel Shut-Off		Windshield Washer		Turn Right		Dumpertruck 'Retarder'	
Basic Lights Symbol		Blower Fan		Tilt Steering		Neutral	N

Lift Point		Water in Fuel		Engine Stop		Trans. Oil Temp.	
Do Not Lift		Wait to Start		Trans Over Speed		Drop Oil Temp	
Forward		Bowl Suspension		Battery power		Drop Oil Pressure	
Reverse		Maintainance		Engine Air Filter		Trans. retarder	
Clutch 'Engaged'		Transmission Converter		Brake Cooling Oil Pressure		Engine Brake	
Clutch 'Disengaged'		Brake air Pressure		Brake Cooling Oil Temperature		Dropbox High Ratio	
Brake Applied Clutch Engaged		Engine Check		Body Up		Dropbox Low ratio	
Brake Applied Clutch Disengaged							