Operators Instruction Book

TA5, 6 & 7

4.W.D. Dumpers, Perkins Engine
Straight and Swing Skip
with Dana Axles

Publication No. 0801GB-5 July 2011
Original Instructions

For machines with Newage Axles refer to
Publication No. 0801GB-3 November 2009

CALIFORNIA

Proposition 65 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.**

CALIFORNIA

Proposition 65 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

Dealer Stamp

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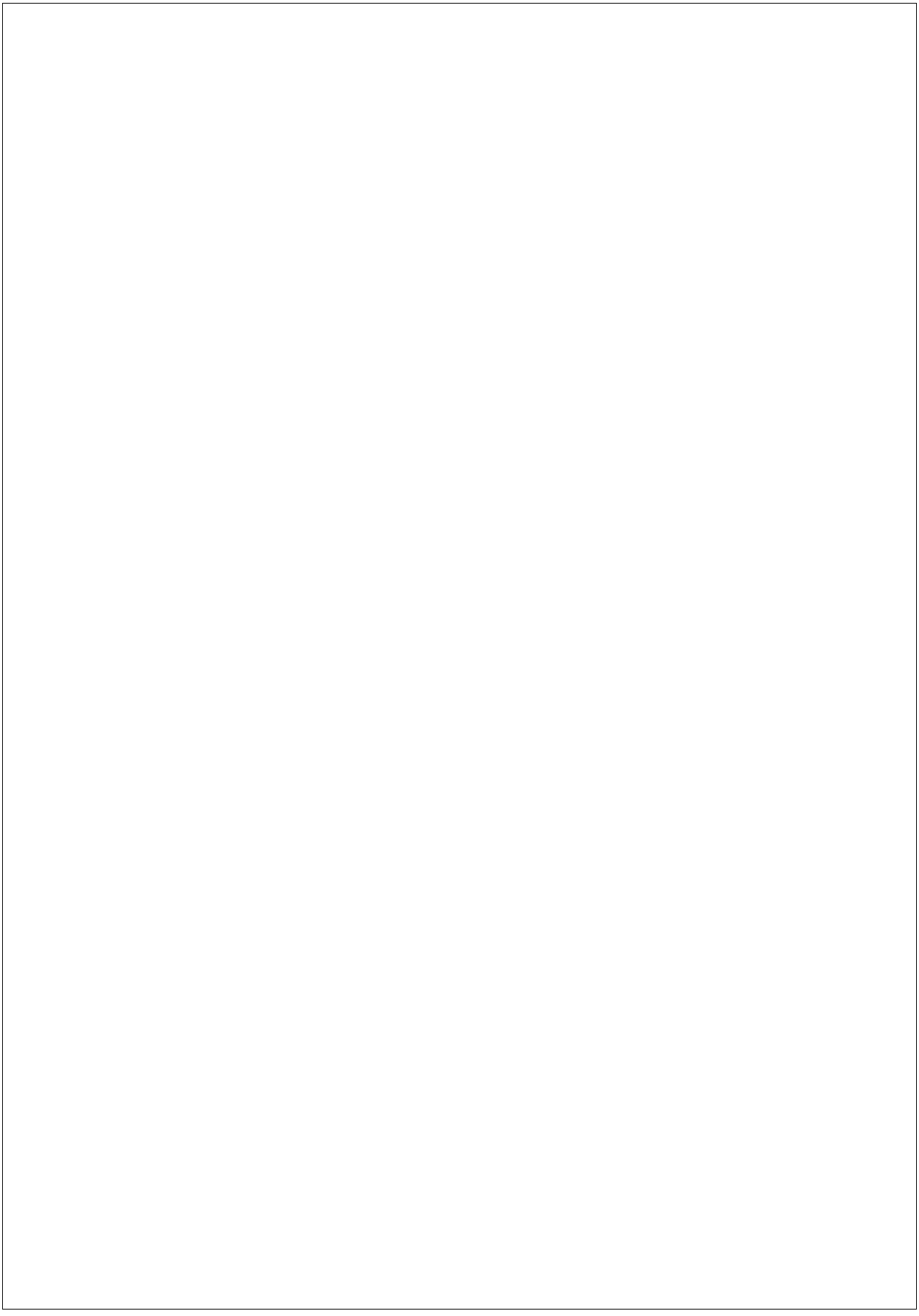
Four Wheel Drive Dumper

Straight and Swing Skip



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Four Wheel Drive Dumper

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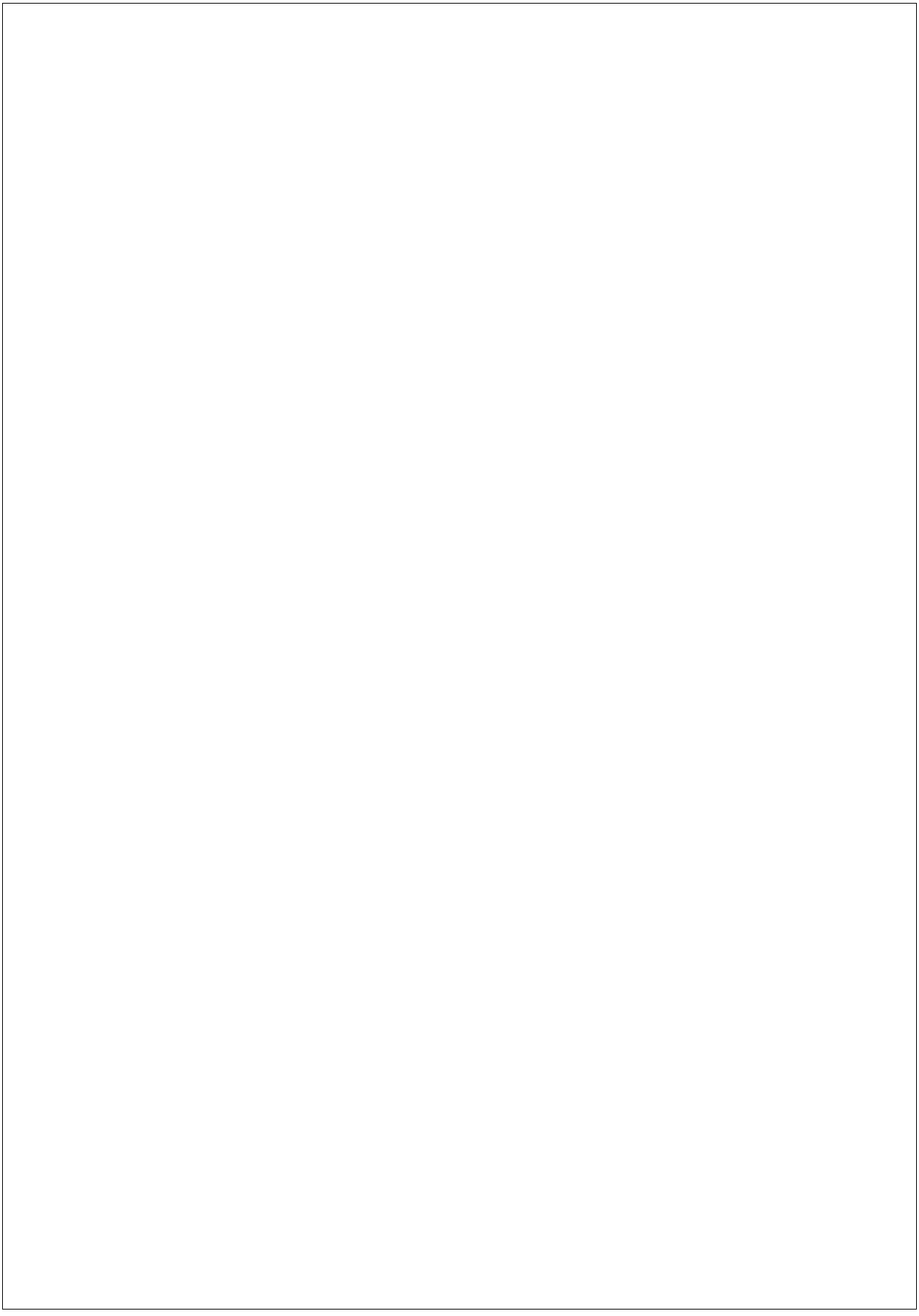


Introduction

TEREX appreciates your choice of our product for your application. Our number one priority is user safety which is best achieved by our joint efforts. We feel you can make a major contribution to safety if, you as the machines user:

- **Comply** with all the relevant National Laws and Local Regulations.
- **Read, Understand and Follow** the instructions in this and any other manuals supplied with this machine.
- **Use Good, Safe Work Practices** in a common sense way.
- **Only Use Trained Operators** to operate the machine who are directed by informed and knowledgeable supervision.

If there is anything in this manual which is not clear or there is information which you think should be added, contact the Manufacturers Service Department who will deal with your problem or request.

We reserve the right to make improvements to these machines without incurring any need to change these operating instructions.

Any modification to this machine which has not been approved by the Manufacturer in writing immediately invalidates the Manufacturers warranty and product liability for any resulting consequential damage.

Safety Alert System

Safety Alert Symbol is used to identify potential personal safety hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Intended Use

The machine has been designed and tested to carry out the function of transporting various free flowing materials. If used correctly, it will provide an effective means of transportation and meet the appropriate performance standards and regulations.

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

Machine LEFT and RIGHT HAND

All references in this manual to LEFT and RIGHT are as viewed from the Operating Position (Operators Seat) with Operator facing the skip.

Instruction Manual

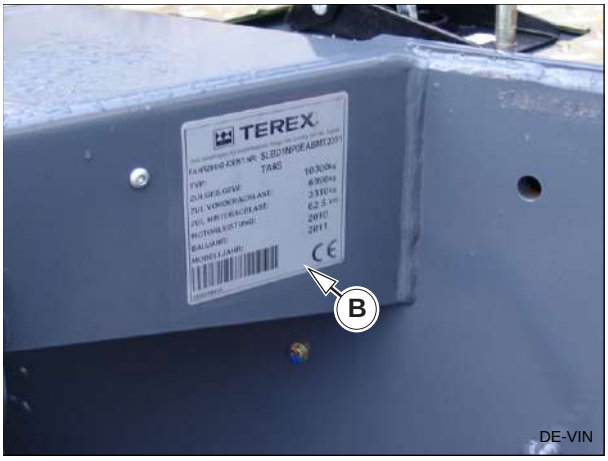
Read this instruction manual carefully before operating the machine. Ensure this instruction manual is kept with the machine at all times and is in good condition - replace the manual immediately if it becomes dirty, damaged or has been lost. The manual holder (A) for this manual is located at the back of the seat.

Service or Spares Enquiries

Please state the vehicle type and the Vehicle Identification Number when making enquiries or orders and in all written correspondence.

The Vehicle Identification Number is recorded on a plate (A) located on the front of the right hand wing.

Vehicle Identification Number (Specific Markets) (B).



Warranty and Maintenance

The warranty period for the machine, under normal circumstances, covers the **first 12 months.** This period begins the day the machine is handed over or put into operation.

The machine must be used correctly and serviced to the manufacturers recommendations.

The correct grades of fuels, lubricants and coolants must be used at all times and must be new and clean when added to the machine. Failure to follow these rules may lead to failure of the machine.

Servicing and repairs should be carried out by the dealers staff who will be trained and experienced in the necessary skills for successful maintenance of the machine.

Only genuine TEREX spare parts must be used when the machine is serviced or repaired.

All claims during the warranty period will only be accepted if the recommended maintenance and service work has been carried out at the specified intervals.

It is important regular maintenance and service work is carried out after the warranty period has expired to ensure the machine is in good working condition and does not cause unnecessary downtime and expense.

Modifications to this machine and/or changes to the specification which have not been approved by the factory, will invalidate the machines warranty and possibly your own insurance cover.

Official documents (European Community only)

CE mark

The Machinery Safety directive is intended to harmonise all the machinery safety regulations throughout the community so that there will be no technical barriers to trade.

Compliance with the essential safety requirements of the EEC directives 2006/42/EC (machinery), 2000/14/EC (Noise) and 2004/108/EC, permits companies to CE mark their products.

The directive affects almost every equipment supplier and user in the community and in particular, applies to this type of machine.

The regulations require that potential hazards from machinery are properly addressed and guarded against.

The EC declaration of conformity is a requirement of CE marking. The declaration for this machine follows.

EC declaration of conformity

TEREX

Contents of the EC Declaration of Conformity

2006/42/EC Machinery Directive

Manufacturer:	Terex United Kingdom Limited Central Boulevard Prologis Park Keresley End Coventry CV6 4BX United Kingdom
Name of Person to Compile Technical File:	David Maslin
Address of Person to Compile Technical File:	Terex United Kingdom Ltd
Generic Denomination:	Compact Dumper
Machine Function:	Earth-moving machinery
Model / Type :	TA5 TA5S TA6 TA6S TA7
Serial/VIN number:	
Commercial Name:	Same as model type

Terex United Kingdom Limited hereby declares that the above piece of machinery is in conformity with the relevant provisions of Machinery Directive 2006/42/ EC.

Terex United Kingdom Limited hereby declares that the above piece of machinery is in conformity with the provisions of the following other EC-directives: Noise - Equipment Used Outdoors (2000/14/EC), Emissions - Non-Road Engines (97/68/EC) and Electromagnetic Compatibility (2004/108/EC).

Terex United Kingdom Limited hereby declares that the following European harmonised Standards have been used:

EN474-1 & EN474-6

Place of Issue: Coventry, United Kingdom

Date of Issue:

Empowered signatory:

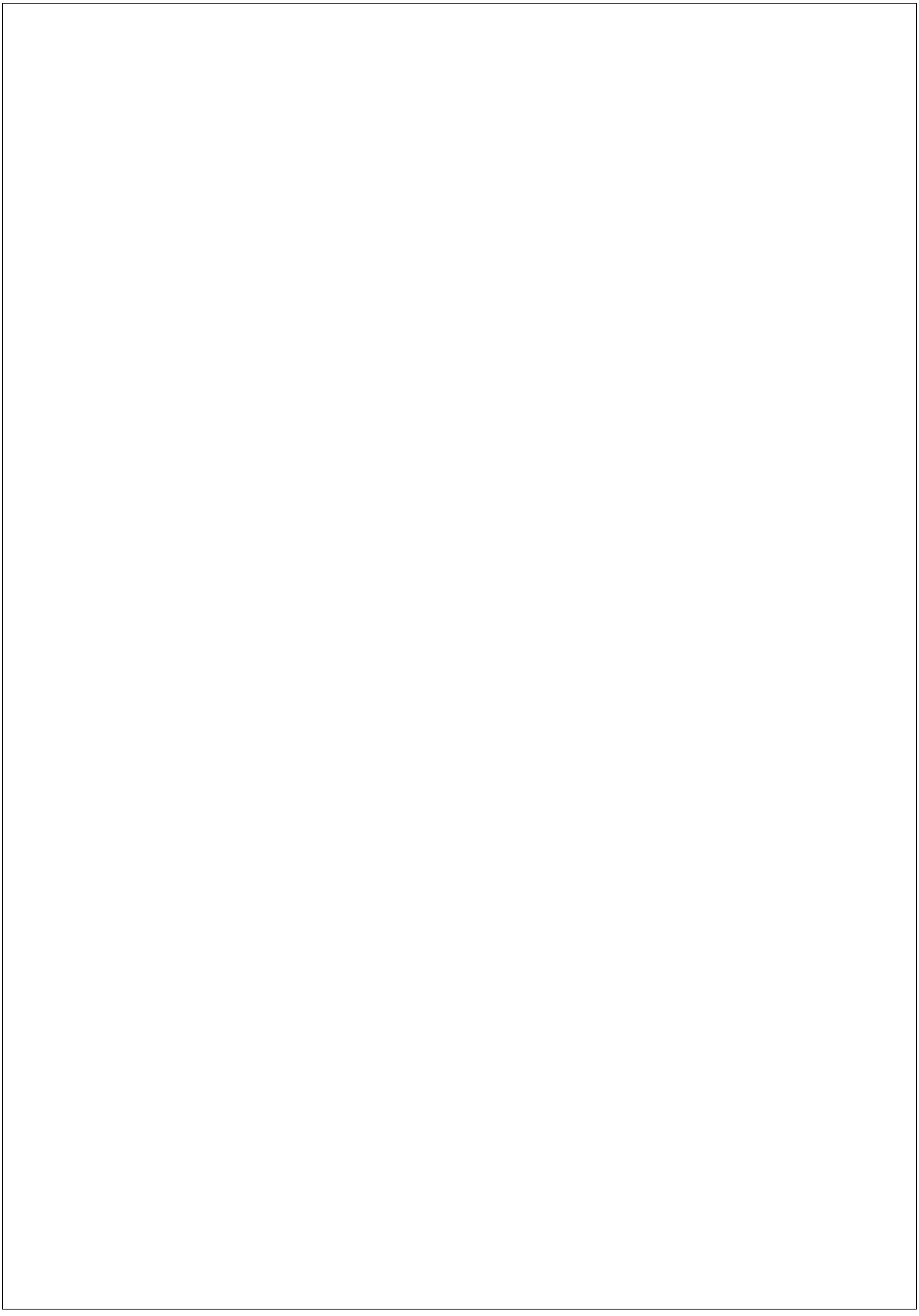
Wayne Berry

Sales Administration Manager

3 - Safety

TA5, 6 & 7

Four Wheel Drive Dumper
Straight and Swing Skip



General Safety

This manual is designed as a guide to the Machines Controls, Operation and Maintenance.

It Is NOT A Training Manual

Safety Alert Symbol

The Safety Alert Symbol is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death..

Safety Alert Symbol

Hazard Classification

A 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.

DANGER - Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

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

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

NOTICE - Indlcates a property damage message. This signal word shall not be used with a safety message. The safety alert symbol shall not be used with this signal word.

Signal words used without the safety alert symbol relate to property damage and protection only.

All are used as attention getting devices throughout this manual as well as on decals and labels fixed to the machinery to assist in potential hazard recognition and prevention.

General Safety Notes

Consult manufacturers or dealers for details of training courses.

All the time you are working on or with the machine you must be thinking what hazards there may be and how to avoid them.

This manual is designed as a guide to the Machines Controls, Operation and Maintenance

IT IS NOT A TRAINING MANUAL

This manual must not be removed from the machine and should be kept in the place provided in a useable condition.
If the manual becomes unusable new copies may be ordered from the manufacturer by quoting the Publication Number

ALL Operators of the machine must be authorised, mentally and physically capable of operating this machine and fully trained in its operation.
The Operator must have read and understood this manual before operating this machine.

Only authorised persons should be allowed to operate this machine.
Unauthorised use of this machine may invalidate the insurance.

If you are unsure of anything concerning machine or job-
ASK

⚠ Personal Protective Equipment (PPE)

The following symbols indicate the personal protective equipment that must be used as necessary.

	**Protective Helmet**	A protective helmet must be worn to prevent injury from falling objects		**Face Mask**	A face mask must be worn when conditions dictate to prevent eye or facial injury from flying objects
	**Protective Gloves**	Wear protective gloves to prevent injury from sharp objects		**Dust Mask**	A dust mask must be worn when site conditions dictate
	**Respirator**	A respirator must be worn when site conditions dictate		**Protective Clothing**	Protective clothing must be worn when site conditions dictate
	**Safety Glasses**	Safety glasses must be worn at all times to prevent eye injury from flying objects		**High Visibility Clothing**	High visibility clothing must be worn when operating this equipment.
	**Ear Defenders**	Ear protection must be worn when operating or near this equipment		**Safety Harness**	A seat belt must be worn at all times when operating this equipment
	**Safety Boots**	Safety boots must be worn when operating this equipment			

⚠ General Safety Information

Operators and maintenance personnel must always comply with the following precautions. These precautions are given here for your protection. Review them carefully before operating the machine and before performing general maintenance or repairs. Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations.

- Before operating the machine ensure you have had proper training and are fully conversant with the machine and its operation - If in Doubt ASK!
- Read this instruction manual carefully before operating the machine. Ensure this instruction manual is kept with the machine at all times and is in good condition - replace the manual immediately if it becomes dirty, damaged or lost.
- Safety signs are fitted to machine for safety purposes and MUST be replaced immediately if they are unreadable or lost. If the machine is repaired and parts have been replaced on which decals were fixed ensure new decals are fitted before the machine is put into service.
- Always make sure there is adequate ventilation around the machine. Never run the engine in an enclosed area without good ventilation or next to combustible materials.
- Stop the engine before refuelling, if there is a spillage mop it up and do not start the engine until it has been done.
- The exhaust gets extremely hot. Do not place anything on top of it and keep all combustible materials clear. Do not attempt any maintenance on a hot engine.
- Be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Check your local laws and regulations, the engine may require a spark arrester etc.
- Do not inspect or clean the machine with the engine running.
- Before carrying out maintenance on the hydraulic system ensure the hydraulic fluid is cool and there is no residual pressure in the hydraulic circuit - hydraulic fluid leaking under pressure can penetrate the skin.
- Make sure you, and anyone else who uses the machine, have been trained to operate it correctly.
- Personal Protective Equipment must be used as necessary.
- Establish a training programme for all operators to ensure they are fully familiar with its operation.
- Do not operate the machine unless thoroughly trained and are physically and mentally fit.
- Do not operate the machine if it is damaged, improperly adjusted or not completely and correctly assembled.
- Always use driveways approved by site management when driving around the site.
- Do not work under a raised skip unless the props are fitted and locked in position.
- Never drive the machine with the skip raised.
- Do not operate the machine if you are unfit to do so because of alcohol or drugs etc.
- Before performing any maintenance on the machine, place a warning tag on the machine to prevent accidental start-up and/or remove the start key and battery isolator. Put the locking bar into position to prevent the front and rear chassis moving and creating a crushing zone.
- Ensure the ROPS/FOPS is not damaged.
- The operator must get off machine when loading the dumper skip.
- Do not carry passengers.
- Keep footplates and steps free from dirt, oil, snow, ice etc.
- Check seat belts daily. **ALWAYS WEAR A SEAT BELT WHEN OPERATING THE MACHINE IF A ROPS/FOPS IS FITTED.**
- Do not remove the radiator cap when the engine is hot. Do not add coolant to a hot engine.
- Always park machine correctly on firm, level ground where it will not cause an obstruction or danger - chock the wheels if necessary. DO NOT LEAVE THE ENGINE RUNNING or the start key in the start switch.
- Before taking the machine on public roads ensure the machine complies with all road traffic regulations and obey all driving laws.
- Tyre Changes and repairs to Punctured Tyres MUST only be carried out by fully trained Operatives using the correct equipment. The manufacturer of this machine recommends a competent firm is employed to carry out these tasks.
- If the machine is fitted with ROPS/FOPS and the machine should roll over, the Operator must grip the steering wheel firmly allowing the seat belt to restrain him/her in the seat until the machine comes to rest.

⚠

If any site personnel has any concerns with any safety aspect of the machine, the machine must not be used until the safety concerns have been rectified or an authorised person has checked and satisfied the site personnel the machine is safe to use.

⚠ Seat Controlled Safety System

To help prevent accidents a safety system prevents the engine being started unless the operator is sat on the seat.

An inhibitor switch in the seat is operated by the weight of the operator and the seat must be adjusted for the drivers weight.

⚠ Seat Belt

A seat belt is provided for operator safety, it must be worn at all times the machine is in use. It is important that the seat belt is inspected and checked regularly *See Maintenance Section*.

Failure to properly inspect and maintain a seat belt can cause serious injury or loss of life in the event of an accident.

The seat belt MUST be worn at all times when operating this equipment.

⚠ ROPS

A ROPS (Roll Over Protective Structure) is provided for operator safety.

Although ROPS seem to be relatively maintenance-free, regular periodic inspections to ensure ROPS are damage free and thus capable of functioning in a rollover cannot be over emphasized.

Through periodic inspections, cracks, loose bolts, damage, and other normal wear and tear related problems can be eliminated before they become serious.

Proper inspection and maintenance procedures can ensure that ROPS will perform the life saving function they are designed for and expected to do.

Details on the inspection and maintenance of the ROPS will be found in the *Maintenance Section*.

Do NOT modify or attach items to the ROPS without the manufacturers approval.
Do NOT use the ROPS as an attachment point for towing or pulling equipment.

⚠ Hydraulic Fluid

Fine jets of hydraulic fluid under pressure can penetrate the skin.

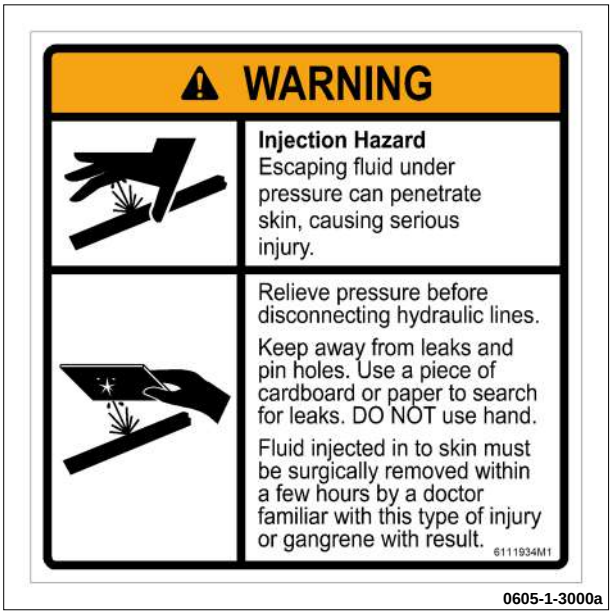
Do not use your fingers to check for small leaks or expose uncovered areas of your body to leaks.

Check for leaks using a piece of cardboard.

⚠

If skin is penetrated with Hydraulic Fluid, Get Immediate Medical Help

Oil injected into the skin must be surgically removed within a few hours by a doctor experienced with this type of injury or gangrene will result.



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⚠ Fluid Levels

Ensure Machine is on level Stable Ground, gear lever is in neutral and the engine is stopped when checking ALL fluid levels.

⚠ Frozen Battery Electrolyte

- Batteries with frozen electrolyte may explode if used or charged.
- Never 'jump start' a machine with a frozen battery.
- To help prevent freezing, keep the battery fully charged.

⚠

Do Not Use a Machine with Frozen Battery Electrolyte

⚠ Fires

Using water to extinguish an oil fire could spread the fire or give you a shock from an electrical fire.

Use a carbon dioxide, dry chemical or foam extinguisher whilst waiting for the fire brigade.

Keep fire extinguisher servicable and have it checked regularly.

⚠

Do Not Use Water to Extinguish a Machine Fire

⚠ Water Cooled Engines

Water cooled systems operate under pressure to increase the boiling point of the coolant. Therefore, the coolant temperature may be greater than boiling water at standard atmospheric pressure (100ºC).

⚠

Never Maintain Cooling System when the Engine is HOT!

⚠ Lubricants

It is essential that anyone concerned with lubricants read and understand the following text.

⚠ Hygiene

Lubricants are not a health risk when used correctly for their intended purposes.

However, excessive or prolonged skin contact can remove the natural fats from the skin, causing dryness and irritation.

Low viscosity oils are more likely to do this, therefore particular care is necessary in handling used oils which can be diluted with fuel contamination.

Whenever handling oil products, maintain good standards of care plus personal and plant hygiene.

For details of these precautions we advise you to read the relevant publications issued by your local health authority.

⚠ Storage

ALWAYS keep lubricants out of reach of children.

NEVER store lubricants in open or unlabelled containers.

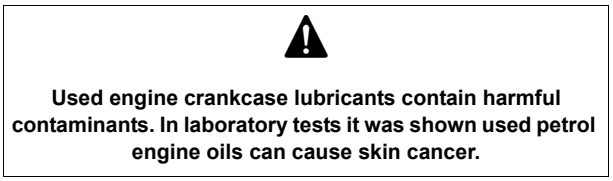
⚠ Handling Oil

See also First Aid - Oil on Page 3 - 7.

New Oil

There are no special precautions needed for the handling or use of new oil other than the normal care and hygiene practices.

Old Oil



Used engine crankcase lubricants contain harmful contaminants. In laboratory tests it was shown used petrol engine oils can cause skin cancer.

Observe the following precautions.

- Avoid prolonged, excessive or repeated skin contact with used engine oil.
- Apply a barrier cream to the skin before handling used engine oil.
- Note the following when removing engine oil from the skin.
  - Wash skin thoroughly with soap and water. Using a nail brush will help.
  - Use special hand cleansers to help clean dirty hands.
  - Never use petrol, diesel fuel or kerosene.
  - Avoid skin contact with oil soaked clothing.
  - Do not keep oily rags in pockets.
  - Wash dirty clothing before reuse.
  - Throw away oil soaked shoes.

⚠ First Aid - Oil

Swallowing Oil

If oil is swallowed, do not induce vomiting.

Get Medical Advice.

Skin Contact

In the case of excessive skin contact, wash with soap and water.

Eye Contact

In the case of eye contact, flush with water for 15 minutes. If the irritation persists, get medical attention.

Oil or Fuel Spillage

Absorb with sand or a locally approved brand of absorbent granules. Scrape up and dispose of in a chemical disposal area.

⚠ Fires

Extinguish with carbon dioxide, dry chemical or foam.

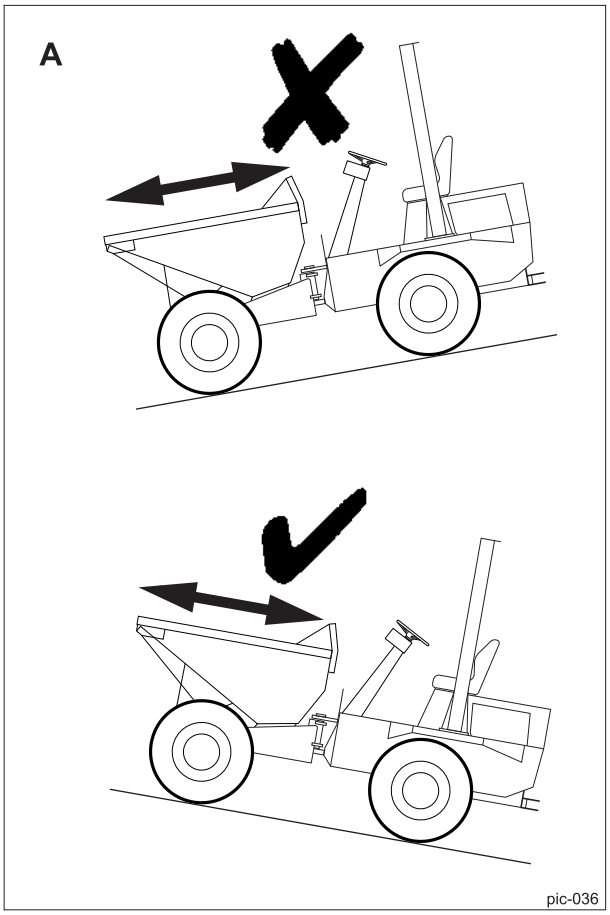
⚠ Gradients

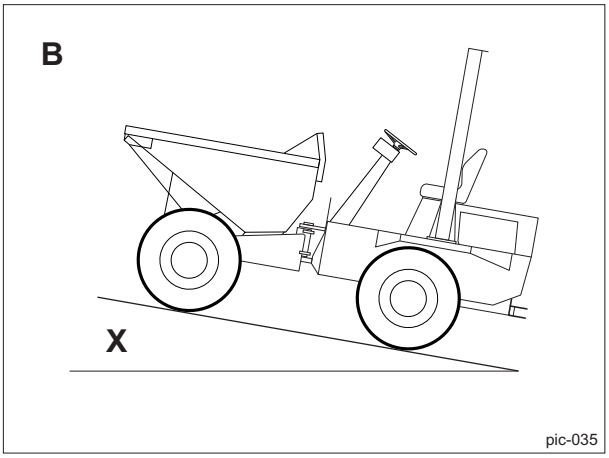
Slopes - Diagram A

When ascending or descending a gradient, especially when the skip is loaded, the skip MUST ALWAYS face the top of the incline.

Maximum Slope Gradient - Diagram B

Maximum Gradient X = 25% (14º, 1 in 4)





⚠

ALWAYS Reverse Down Inclines

⚠

ONLY Fill Skips with Free Flowing Materials

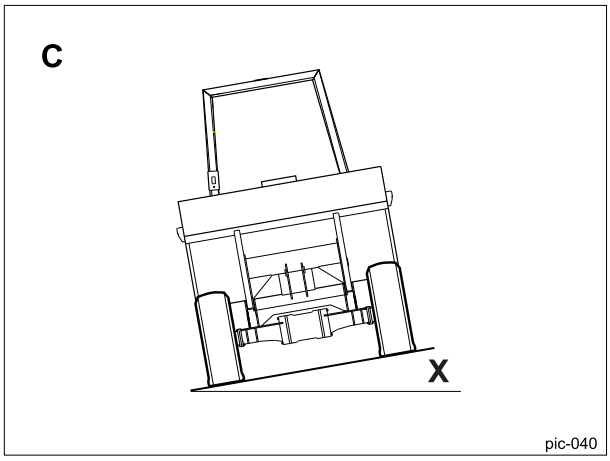
⚠ Gradients - continued

Crossing Gradients - Diagram C

Muddy, slippy ground conditions will adversely affect the ascending and descending capabilities of the dumper.

However, these ground conditions can be even more hazardous when crossing a gradient. Greater care must be taken when crossing a gradient to prevent the machine sliding sideways out of the operators control.

X (Maximum Crossing Gradient) = 25% (14º, 1 in 4)



⚠

Do Not Drive on Land which may cause the Dumper to Exceed Maximum Gradient Limits Shown

Emergency Stopping on Slopes - (Running Out of Fuel)

Where possible park the machine at a slight angle across the slope (less than 8.5º (15%), chock the wheels and refuel. If near the bottom of the gradient the vehicle can be allowed to roll backwards to the bottom of the gradient, however caution must be exercised as the vehicle has no engine braking, and heavy steering.

Responsibilities

Site management should identify possible dangers and make arrangements to eliminate them.

Site management are responsible for planning driveways around the site which will prevent the machine from experiencing excessive slopes, soft ground or having to drive over edges especially at an angle etc. The driveways should also avoid any other possible dangers e.g. overhead cables, work areas etc.

The operator should ensure the machine is driven correctly at all times especially with regards to speed, overloading, using the wrong machine for the intended task, driving dumpers with a lift-skip in the raised position etc.

If these instructions are followed the risk of overturning is very much reduced.

Overturning

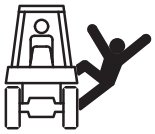
If the machine should overturn and it is fitted with ROPs and seat belt the risk of injury to the operator is reduced if they are wearing the seat belt.

When the machine begins to overturn the operator should grip the steering wheel firmly allowing the seat belt to restrain him/her in the seat until the machine comes to rest. **The operator should not try to jump clear of the machine when it is rolling**.

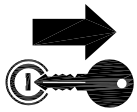
Description of Symbols and Pictorials Used on Safety Signs

Read and understand Operators Manual and all safety messages before operating or maintaining the machine.

Entanglement Hazard. Contact with rotating parts can result in serious injury. Keep away from fan and belt when engine is running.



Falling Hazard. Falling from machine can result in serious injury or death.

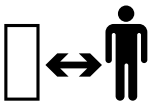


Stop Engine and Remove Start Key before servicing.

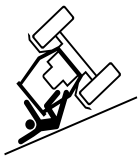
No passengers on machine. It is dangerous and forbidden to carry passengers on this machine

Crush Hazard. Machine movement can cause serious injury or death

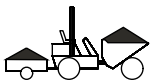
No passengers/hangers on machine. Do not allow passengers stand or ride on the machine



Stay away from machine. Contact with moving machine can cause serious injury or death



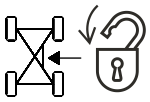
Rollover hazard. Incorrect skip position when operating can result in serious injury or death.



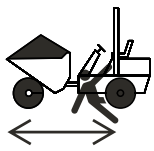
Improper towing may cause damage. Read instruction book before towing.

Crush Hazard. Crushing can result in serious injury or death

Fasten the seat belt before operating the machine and keep it secure at all times.



Transport Lock. Secure Lock before lifting.



Crush Zone. Machine movement can cause serious injury or death.

Lift Point.

Skip Prop. Secure lifting cylinder locking device before service.

Description of Symbols and Pictorials Used on Safety Signs

Oil Injection Hazard. Escaping fluid under pressure can penetrate skin

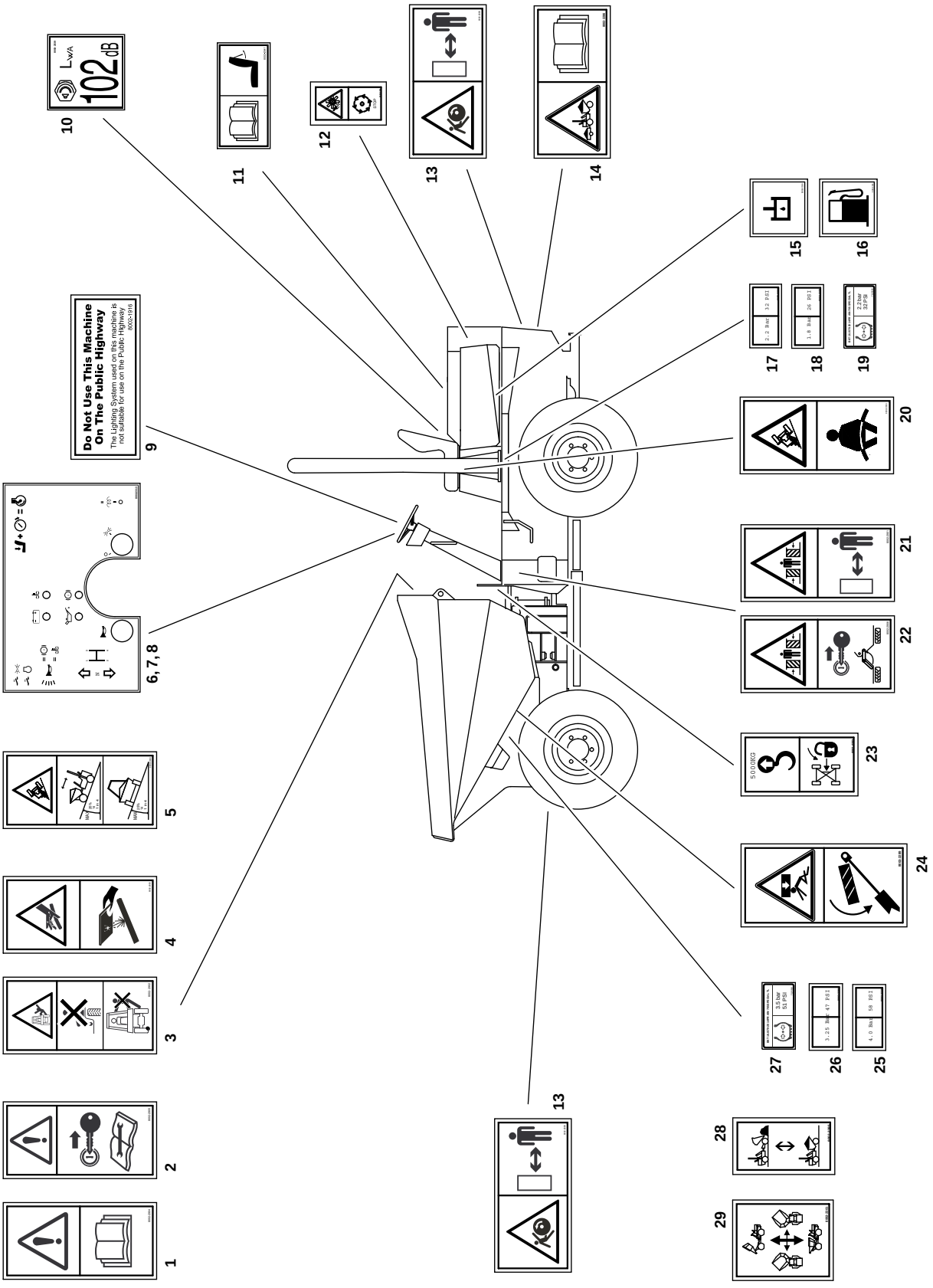
Do Not Use Hand to Check For Leaks. Use a piece of paper or cardboard.

Read Instruction Manual before performing maintenance or repair.

Keep clear of rotating parts. Contact with rotating parts will result in injury or death.

Stop engine when working in this area.

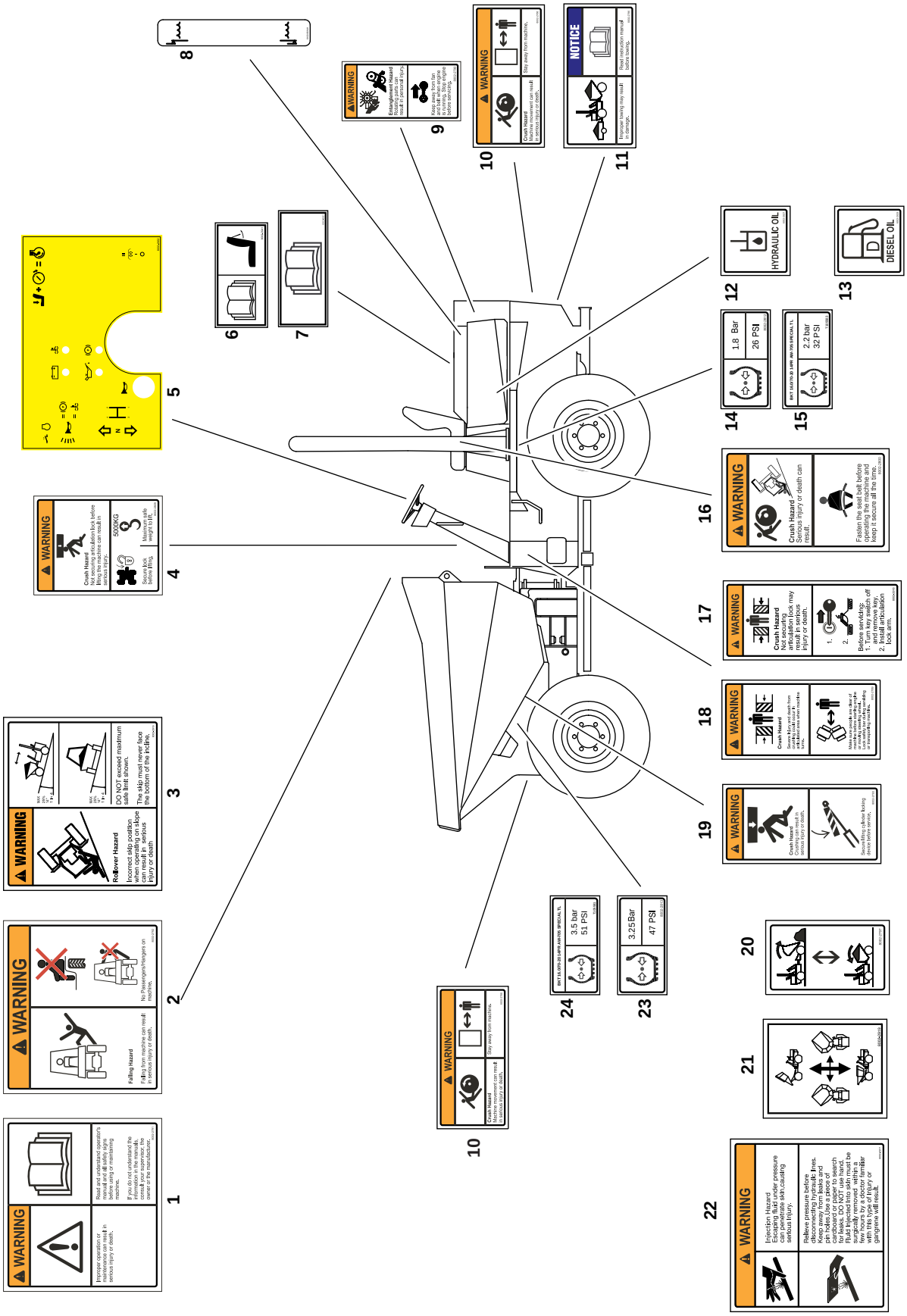
Safety Sign Location - ISO



Safety Sign Description - (ISO)

Item	Decal Description	Notes
1	Read Instruction Manual	-
2	Remove start key before doing any maintenance work	-
3	No passengers	-
4	Beware high pressure oil leaks	-
5	Gradient instructions	-
6	Dashboard Decal - No Lights	Dashboard
7	Dashboard Decal - Site Lights	Dashboard
8	Dashboard Decal - Road Lights	Dashboard
9	Do Not Use On Public Highway (Only fitted with item 6)	Dashboard
10	Vehicle Sound Power Level	-
11	Instruction Manual Location.	On Manual Holder
12	Keep Clear of Fan/Wait Until Moving Parts Have Stopped Completely	-
13	Keep Clear of Machine - Crush Zone	-
14	Read Manual Before Towing	-
15	Hydraulic Oil Filler Point	On Tank
16	Diesel Fuel Filler Point	On Tank
17	Tyre Pressure Rear - 5T	-
18	Tyre Pressure Rear - 6 & 7T	-
19	Tyre Pressure Rear - 6T - Turf Tyre	-
20	Always use Seatbelt when operating the machine	-
21	Crush Zone - Keep Clear	-
22	Remove Start Key And Fit Articulation Lock Before Maintenance	-
23	Lift Point/Fit Articulation Lock Before Lifting	-
24	Fit skip prop BEFORE doing maintenance under the skip	-
25	Tyre Pressure Front - 5T	-
26	Tyre Pressure Front - 6 & 7T	-
27	Tyre Pressure Front - 6T - Turf Tyre	-
28	Straight Skip control valve lever positions	Righthand of seat support
29	Swing Skip control valve lever positions	Righthand of seat support
Safety Signs	**IMPORTANT** **ALL safety signs listed must be fitted to the machine and must be legible. Use mild soap and water to clean safety signs - DO NOT use solvent based cleaners because they may damage safety sign material.** **Safety signs are fitted to the machine to warn of possible dangers and MUST be replaced immediately if they become unreadable or lost.** **If the machine is repaired and parts have been replaced on which safety signs were fixed, ensure new safety signs are fitted before the machine is put into service.**	

Safety Sign Location - ANSI



Safety Sign Description - ANSI

Item	Decal Description	Notes
1	Warning - Read Manual Before Operating Machine	-
2	Warning - Falling Hazzard - No Passengers	-
3	Warning - Rollover Hazard - Gradient Instructions	-
4	Warning - Crush Hazard Fit Articulation Lock Lift Point	-
5	Dashboard Decal	Dashboard
6	Manual Location	
7	Manual Location	
8	Coolant Level	-
9	Warning - Entanglement Hazard - Keep Clear Of Fan/Moving Parts	-
10	Warning - Crush Hazard - Keep Away From Machine	-
11	Caution - Read Manual before Towing With Dumper	-
12	Hydraulic Oil Filler Point	On Top Of Tank
13	Diesel Fuel Filler Point	On Top Of Tank
14	Tyre Pressure - Rear	Above Wheel
15	Tyre Pressure - Rear - Turf Tyre	Above Wheel
16	Warning - Crush Hazard - Wear Seat Belt When Operating Machine	-
17	Warning - Crush Hazard - Fit Articulation Lock & Remove Key Before Maintenance	-
18	Warning - Crush Hazard - Keep Fellow Workers Away From The Machine	-
19	Warning - Crush Hazard - Fit Skip Prop Before Working Under Raised Skip	-
20	Straight (Forward Tip) Skip Control Lever Operation - (TA6)	Righthand of Seat Support
21	Swing Skip Control Lever Operation- (TA6S)	Righthand of Seat Support
22	Warning - High Pressure Oil Leaks- Injection Hazard	-
23	Tyre Pressure - Front	Above Wheel
24	Tyre Pressure - Front - Turf Tyre	Above Wheel
Safety Signs	**IMPORTANT** **ALL safety signs listed must be fitted to the machine and must be legible. Use mild soap and water to clean safety signs - DO NOT use solvent based cleaners because they may damage safety sign material.** **Safety signs are fitted to the machine to warn of possible dangers and MUST be replaced immediately if they become unreadable or lost.** **If the machine is repaired and parts have been replaced on which safety signs were fixed, ensure new safety signs are fitted before the machine is put into service.**	

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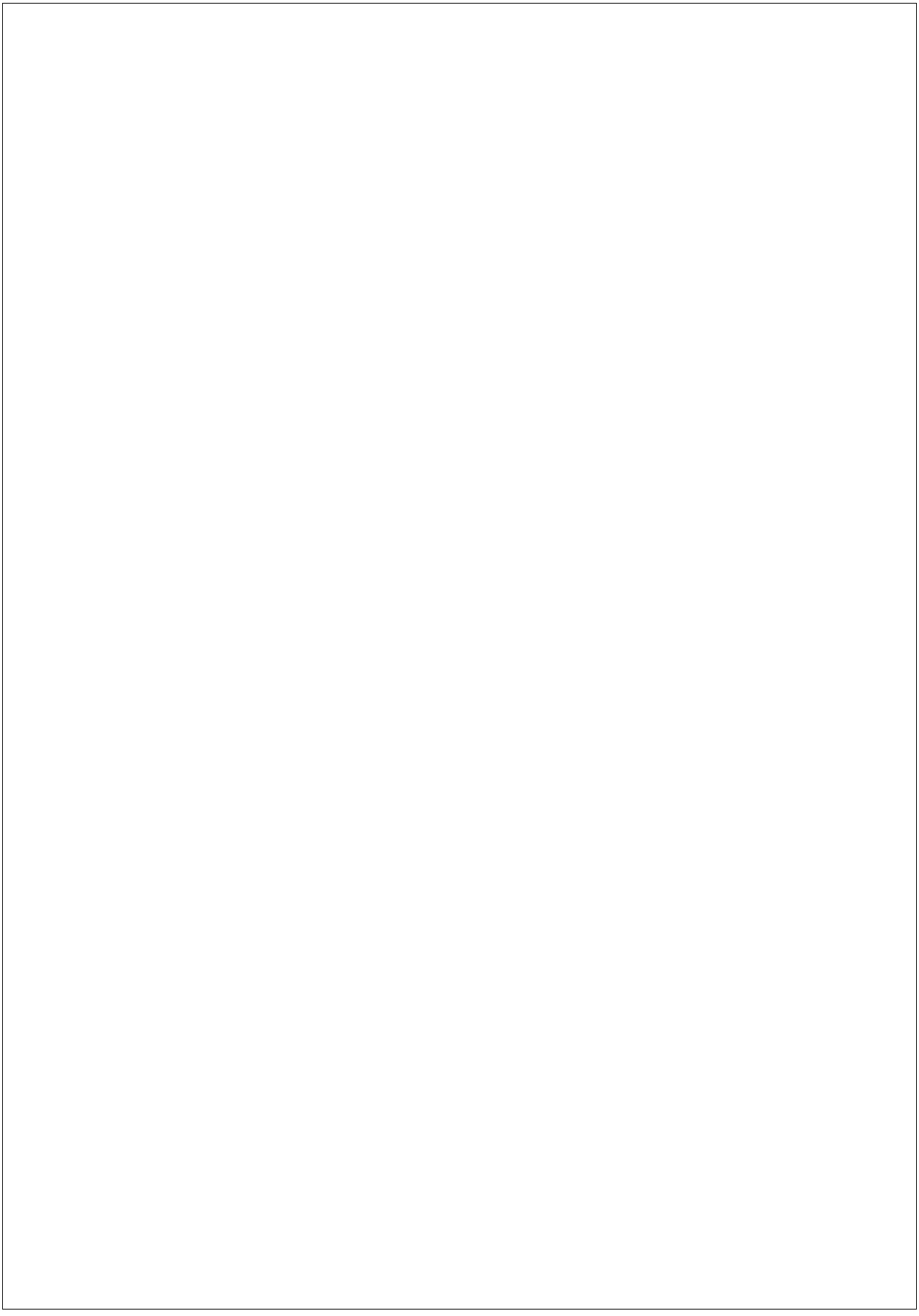
4 - Installation

TA5, 6 & 7

Four Wheel Drive Dumper

Straight and Swing Skip



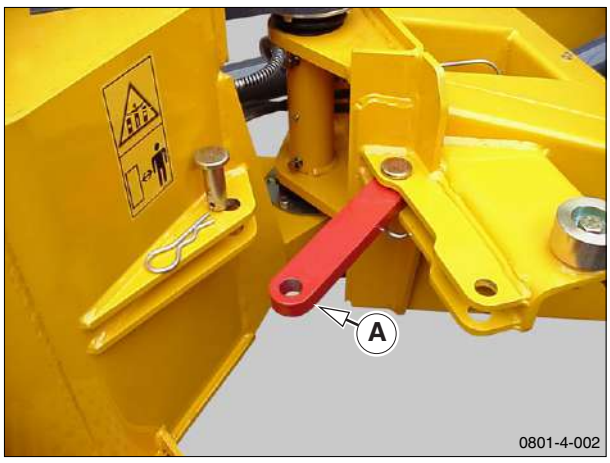
Delivery Checks

Immediately on taking delivery of your new dumper and before putting it into service:

- Read this handbook completely -- it could save a great deal of unnecessary expense. Put this Instruction Manual in its holder (A) behind the seat.
- Read the engine handbook supplied with the dumper.
- Check general condition of the machine, - has it been damaged during delivery?
- If folding ROPS is fitted, raise ROPS and install all pins and locking rings.
- Fit flashing beacon to ROPS.
- Check fluid levels - see *Pre Start Checks* on page 4-2.

Articulation Lock

If the machine has been delivered by lorry or trailer the articulation lock (A) may have been fitted. This must be released before the machine is used. Failure to release the articulation lock will make the steering inoperative and cause serious damage to the machine.



Pre-Start Checks

Before putting the machine into service:

- Check the following fluid levels:
  - Oil levels in engine and both axles.
  - Hydraulic oil and fuel levels.
  - Brake fluid level in reservoir located under floor plate.
  - Coolant level in radiator.

Recommended lubricants are detailed in the Maintenance section of this manual.

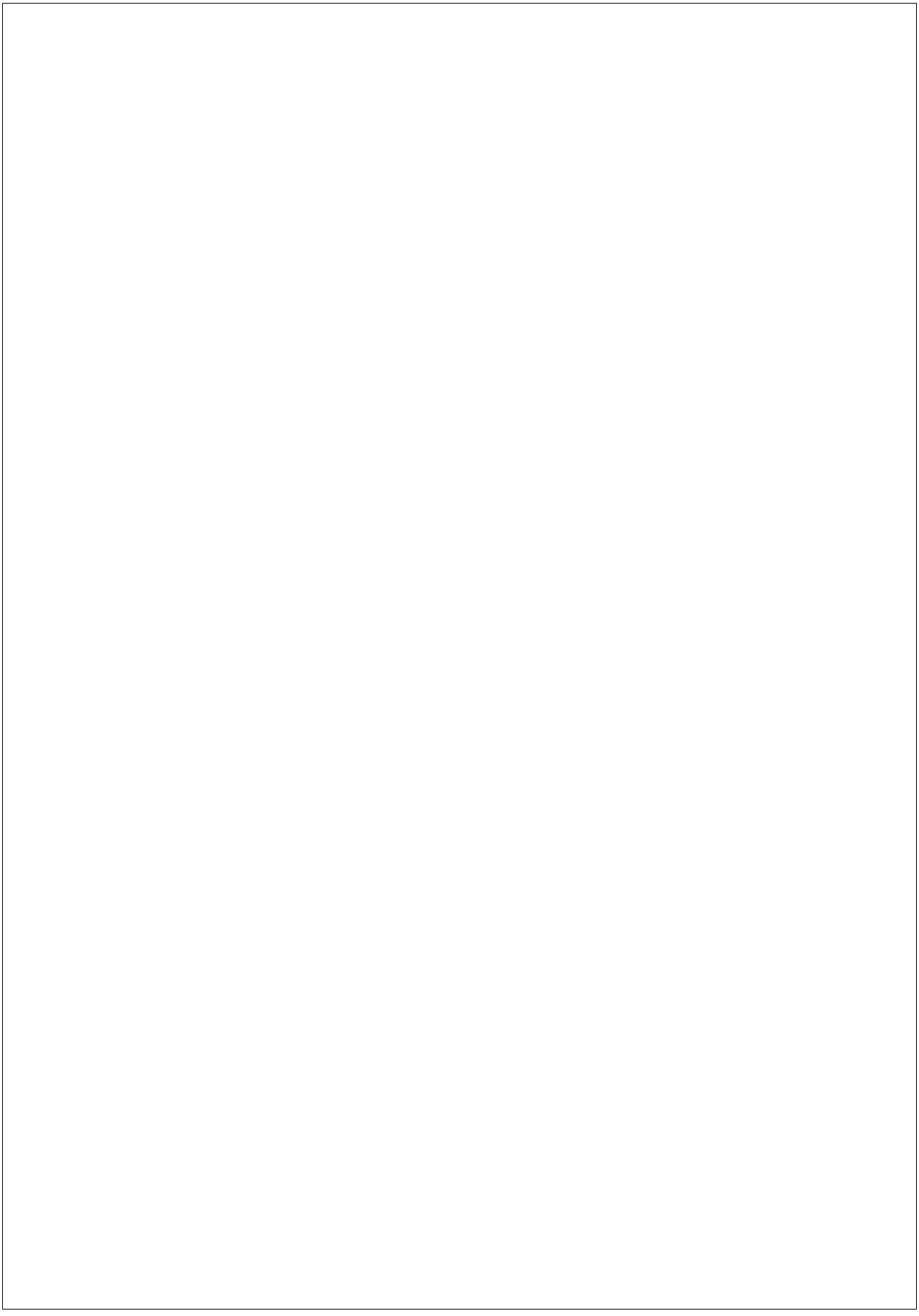
- Check tyres are inflated to correct pressure.
- Check all instruments alarm buzzers and warning lights function correctly.
- Check all lights and road traffic indicators (if fitted) function correctly.

Note: When filling fuel tank make sure the tank is filled when the engine is cold and the machine is in a well ventilated area, with the engine stopped using clean fuel and container. It is advisable to fill the tank at the end of a working session to prevent condensation forming in the tank during long periods of inactivity, e.g. overnight.

When Refuelling Beware of Naked Flames, Grinding Sparks etc.

Check for adequate ventilation if the machine is to be started or run in a building etc.

5 - Description
TA5, 6 & 7
Four Wheel Drive Dumper
Straight and Swing Skip



TA6 & TA6S Dumpers

General Description

This range of site dumpers has been designed for ease of use, reliability and simplified servicing due to the use of standardised components across the range.

.The dumper is basically a load carrier and can be used for a multitude of building/contracting site functions, but essentially it is used for carrying materials from excavations or demolitions and carrying materials to general building activities. The carrying of soil, sand, gravel, debris, bricks etc. requires that the materials can be placed accurately at the place point and in some cases without damage to the materials themselves.

There are 5 models in the range:-

TA5	**5 Tonne**	**Conventional Forward Tipping Skip**
TA5S	**5 Tonne**	**Swing Skip**
TA6	**6 Tonne**	**Conventional Forward Tipping Skip**
TA6S	**6 Tonne**	**Swing Skip**
TA7	**7 Tonne**	**Conventional Forward Tipping Skip**

This section of the manual must be read in conjunction with the *Safety* section located at the beginning of the manual.

Skips - Standard and Swing

All models in the range are 4 wheel drive dumpers having a load carrying skip located over the front axle, ahead of the driver.

In addition to a conventional forward tipping skip TA5 and 6 models are available with a swing skip that rotates through 180^{o} to discharge either side of the machine.

Engines

Engines on all machines are multi-cylinder diesel which transmit power to the wheels by means of a gearbox and axles.

All machines are fitted with electric starting of the engine. A separate key operated start switch is provided and is located adjacent to the steering wheel. A battery isolator switch is provided in the engine compartment.

Chassis

The chassis of the dumpers is of the two part articulating type having a centre pivot joint which articulates in both vertical, and horizontal planes.

Steering

Steering of the dumper is by an 'Orbitrol' hydrostatic steering unit, powering a single ram connecting the front and rear chassis units.

Hydraulic power is supplied via an engine driven pump to the steering unit, which on turning the steering wheel meters oil to the steering ram and thus provides movement in either direction.

In the event of an hydraulic failure the vehicle can still be steered. Under these circumstances steering loads are high and the dumper should only be driven at slow speeds.

Transmission

The transmission of the dumpers have torque converters and Synchro Shuttle four speed gearboxes.

Brakes

The vehicle braking is provided by means of totally enclosed oil immersed brakes located within the drive axles. These brakes are self adjusting, multi-plate discs which are hydraulically operated by means of a single master cylinder.

Parking Brake

The vehicle is fitted with a overcentre parking brake.

Electric System

All models are available with full lighting to comply with EU/ ISO road traffic regulations.

ROPS

Machines are fitted with a ROPS (Roll Over Protective Structure) to protect the operator should the machine turn over.

Skip

TA5 and 6 machines are available with a conventional forward tipping skip or a swing skip enabling discharge of the load either side of the machine. The TA7 machine only has the forward tip option.

Straight Skip

The skip is power lifted and lowered by means of two double acting hydraulic cylinders mounted between the front chassis and the underside of the skip which are controlled from the drivers seat by a double acting hydraulic control valve (A).

Never Elevate Skip Unless the Dumper Is On Level Ground

To elevate the skip move lever forwards (1).

To lower the skip move lever backwards (2).

The power for the system is provided by an engine driven hydraulic pump and the circuit is described in detail in the Hydraulic System section.

The skip in the lowered or loading position is located such that the driver has a good view ahead, therefore when loading the skip get off the machine and do not allow the load to be heaped in such a fashion as to impair the drivers view.

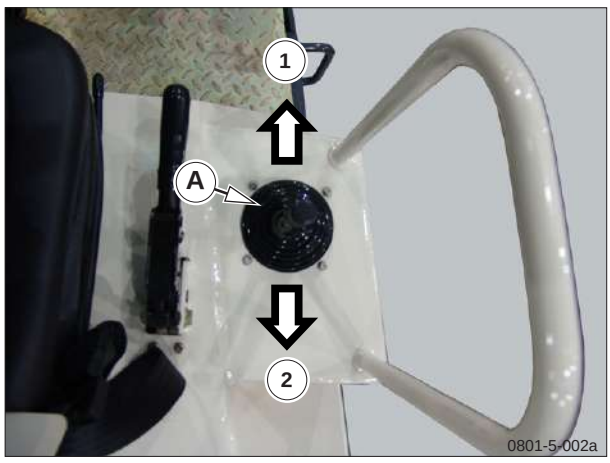
Swing Skip

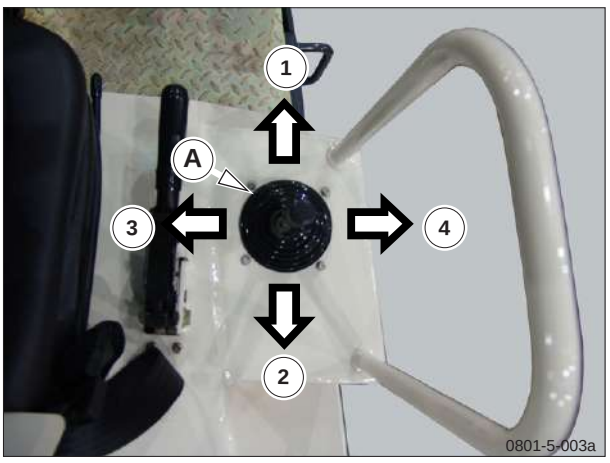
The special purpose swing skip enables the load to be discharged through a range of 180º about the fore and aft axis of the dumper. This feature is particularly useful for side tipping into trenches, but because of this feature it is important that only free flowing materials are used.

Only Fill Swing Skip with Free Flowing Loads

A locking device is used to locate the skip in the straight ahead position when the skip is fully lowered.

The swing skip is elevated and lowered by one double acting hydraulic cylinder in the same manner as the straight skip; however, the skip locking device must be aligned correctly before fully lowering the skip. The skip rotates on a ball bearing slew ring. Two hydraulic rams rotate the skip. By moving the valve control handle in direction (3) the skip will rotate to the left and by moving the lever in direction (4) the skip will rotate to the right.





Skip

Swing Skip Lock

A locking device is used to locate the skip in the straight ahead position when the skip is fully lowered.

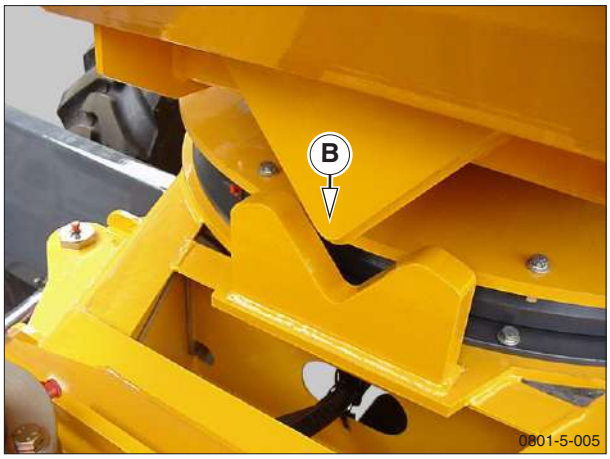
Before slewing to the left or right, raise the skip slightly to clear the catch (A).

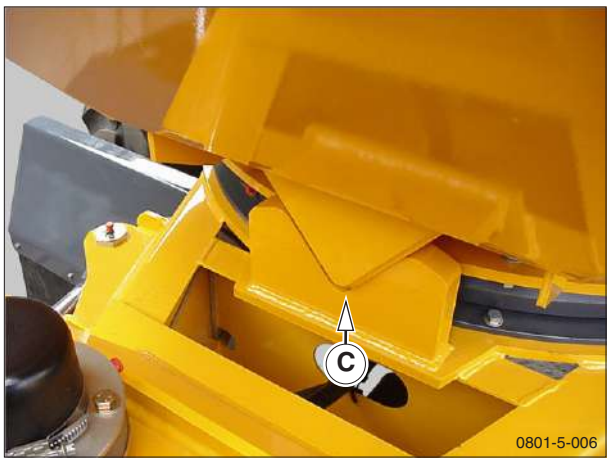
To lock the skip in the straight ahead position, elevate skip until the skip slew lock clears the catch (A).

Rotate the skip until the slew lock is directly above the catch (B) and lower the skip into the 'V' (C).

Skip Props

Skip props are provided to enable personnel to work safely on the machine with the skip in the raised position.



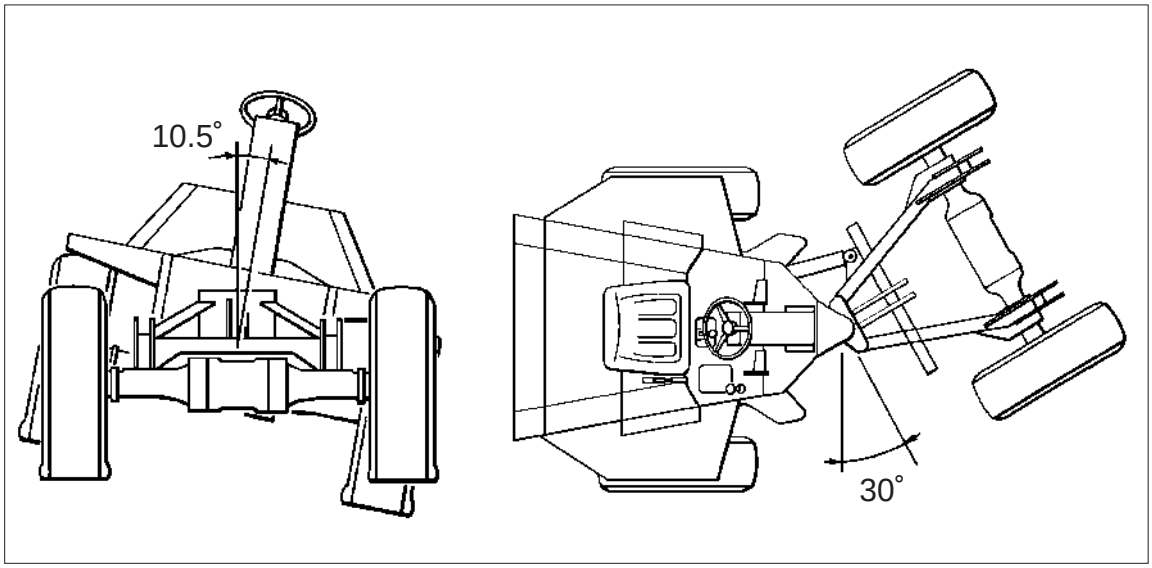


Chassis

The two part chassis is of the centre pivot articulating type and is of a design which enables both front and rear axles to be attached directly to the chassis members.

The front and rear frames are connected in the middle by a vertical pivot in spherical bearings and a horizontal link, which connects between the spherical bearing of the vertical pivot and an additional spherical bearing located in the rear frame.

This arrangement is illustrated in the diagram below and shows full movement of the chassis in both horizontal and vertical planes, thus ensuring maximum wheel adhesion at all times.



Torque Converter & Shuttle Gearbox

The dumpers are fitted with an ITL Synchro Shuttle gearbox with integral 4 speed synchronised transmission and a Borg Warner Torque Converter.

This system provides 4 forward and 4 reverse speeds.

Transfer Box

The transfer box transmits the drive from the gearbox/torque converter to the front and rear axles.

Hydraulic System

The hydraulic system provides power to operate the vehicle steering and to power the skip elevation.

All dumpers other than the turntable models have a similar hydraulic circuit layout (see circuit diagrams) and all the components other than the skip ram, steering ram and the hydraulic pump are common.

In the case of the turntable dumpers, additional rams are required to slew the skip to the left or right positions.

The system comprises an engine driven hydraulic pump drawing oil from a tank located inside the chassis. The tank is fitted with a suction strainer, an oil level gauge, and a filler/ breather cap. The pump generates a maximum pressure of 172 bar (2,500 psi). The system is protected by a relief valve in the control valve which is set at the same pressure.

A return line filter is fitted to the circuit and is of the replaceable element type.

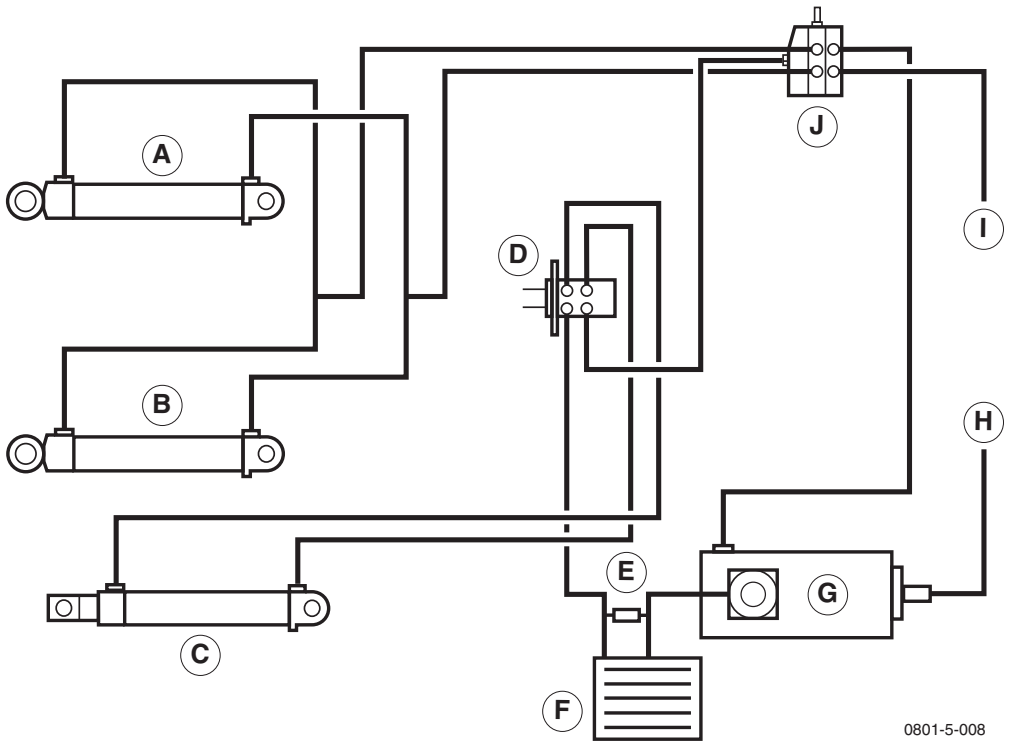
Steering of the dumper is by means of a single hydraulic ram connecting the front and rear frames, the oil supply to the ram is controlled by an Orbitrol hydrostatic steering unit.

The unit receives oil via a carry over port in the 3 way control valve and meters oil to the steering ram as the steering wheel is turned, at all times.

The control valve, operated by a lever adjacent to the drivers seat, controls the lifting, lowering and (on swing skip models) slewing of the dumper skip.

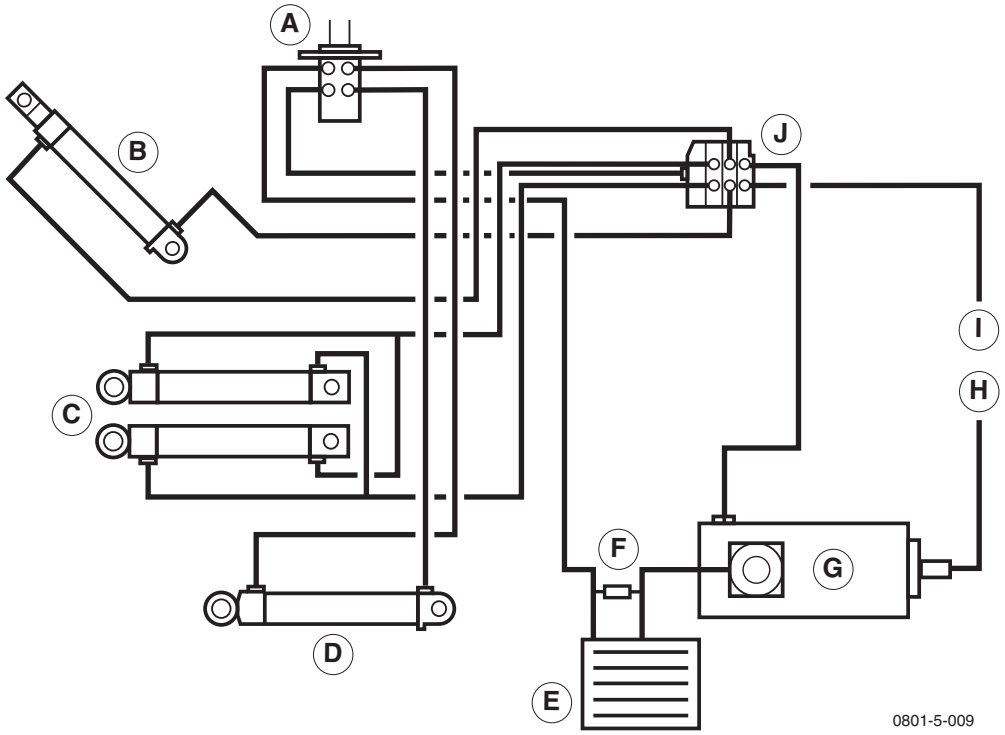
The skip can be elevated at varying speeds dependent on engine speed, and it can be stopped at any intermediate point for discharging of partial loads.

Hydraulic Circuit - Straight Skip



Item	Description	Item	Description
A	Skip Rams	F	Oil Cooler
B		G	Hydraulic Tank
C	Steering Ram	H	To Pump
D	Orbitrol Unit	I	From Pump
E	Check Valve	J	Control Valve

Hydraulic Circuit - Swing Skip



Item	Description	Item	Description
A	Orbitrol Unit	F	Check Valve
B	Skip Ram	G	Hydraulic Tank
C	Slew Rams	H	To Pump
D	Steering Ram	I	From Pump
E	Oil Cooler	J	Control Valve

Engine Air Intake

The engine air intake (A) is located on the left hand side of the seat support and it is important this intake is never blocked. See illustration below.

Do not hang clothing etc. over air intake.

NOTICE

NEVER Block Engine Air Intake (A)

If the engine air intake (A) is blocked it will adversely affect the running of the engine and may cause engine damage.

Battery Isolator

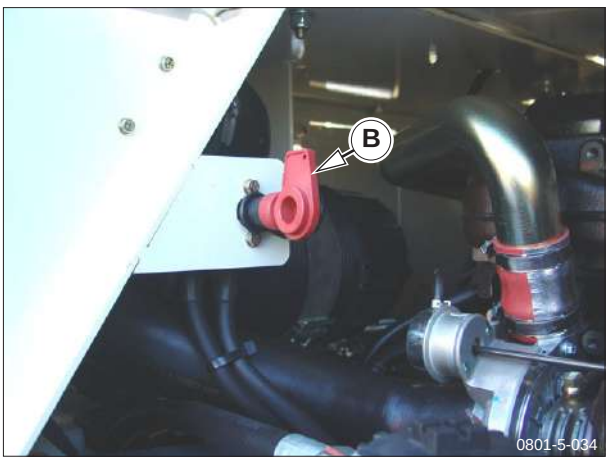
The battery isolator is located in the engine compartment and serves both as a maintenance aid and Anti-Vandalism device. It is fitted with a removable key.

When in the ON position (A) the key is horizontal and this can only be removed from the isolator when set in the OFF position (B) - key vertical.

When carrying out any maintenance on the machine, the battery isolator must be set to the OFF position and the key removed to prevent the engine from being started or the electric circuit being activated.

When parking or leaving the machine, remove the battery isolator key to prevent unauthorised people from using or stealing the machine.

Before performing any maintenance, remove the isolator key to prevent accidental starting etc. Disconnect battery before major maintenance work.



Circuit Breakers

A - Engine Starter System (15amps)

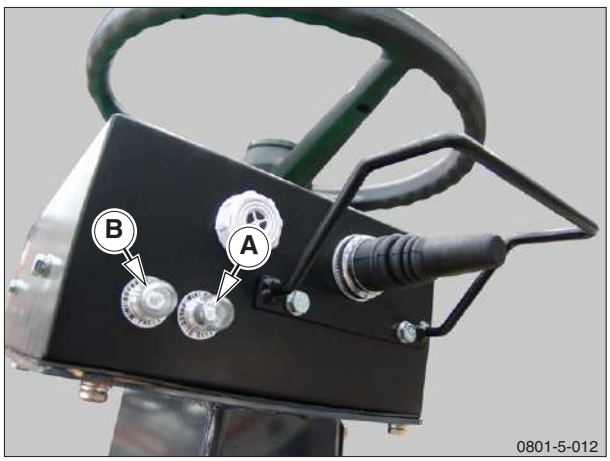
B - Lights (30amps) When Fitted

In the event of a fault occurring, the circuit breaker will trip out, this being indicated by the button protruding out beyond its normal position.

Should this occur, the reason for the overload must be found and the components at fault replaced or repaired.

When the repair has been completed the circuit breaker should be reset by pressing the button until it locks in position thus restoring the electrical supply.

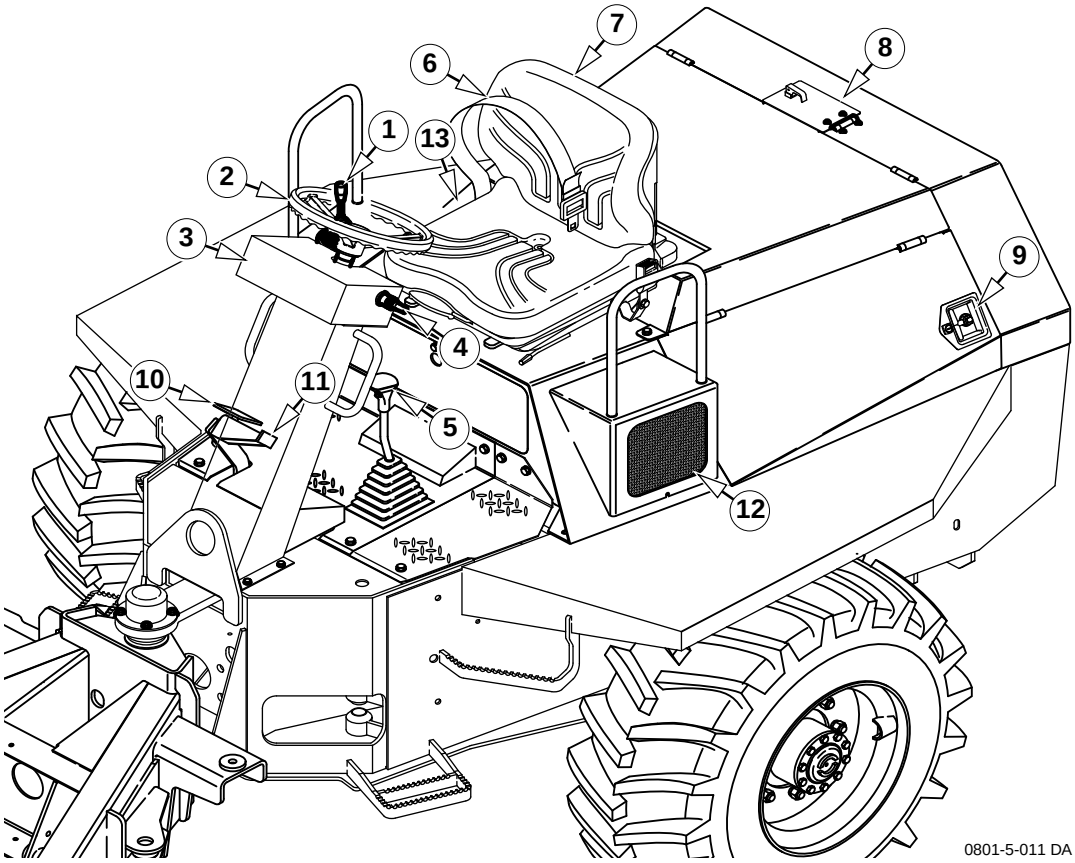
On machines with site or full lighting, one extra 30amp circuit breaker is fitted.



Controls

This range of dumpers has a common driving position and layout of controls. All operating controls are accessible from the drivers seat.

Arrangement of Controls

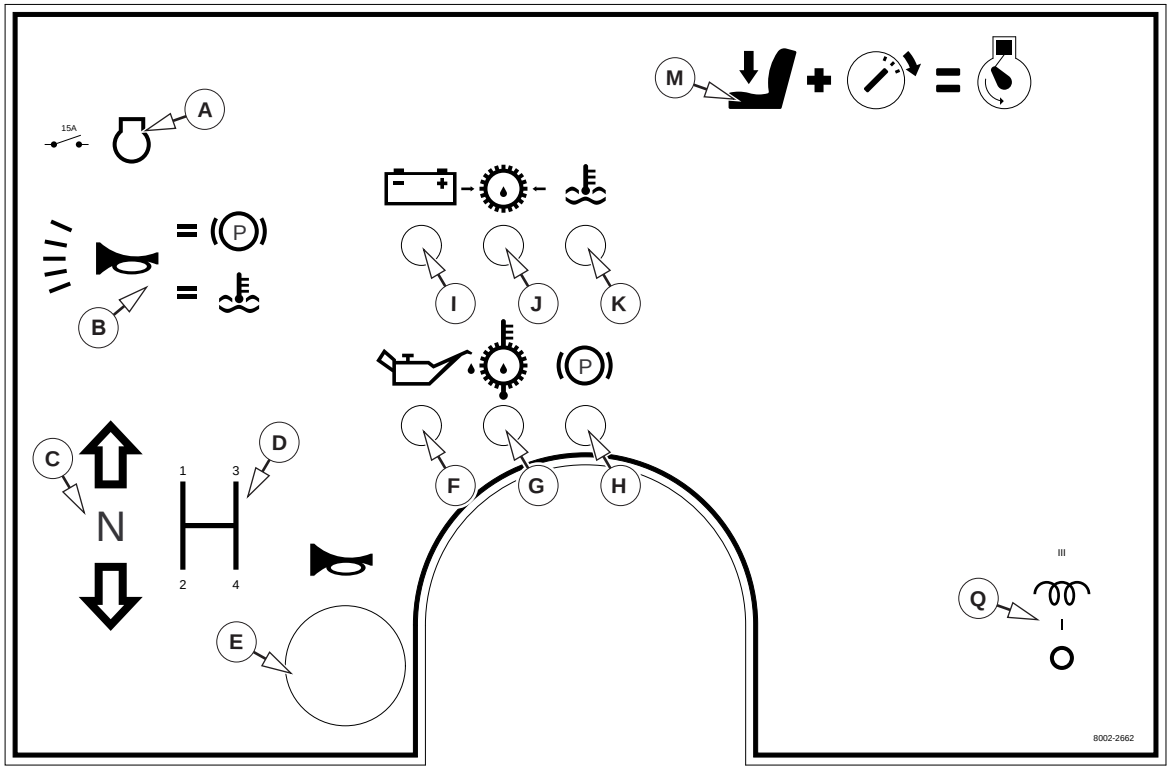


Item	Description	Item	Description
1	Skip Control Valve	8	Radiator Filler Cover
2	Steering Wheel	9	Engine Cover Release Handle
3	Dashboard	10	Accelerator Pedal
4	Forward/ Reverse Switch	11	Brake Pedal
5	Gear Lever & Drive Disconnect Button	12	Air Filter Grill
6	Seat Belt	13	Parking Brake (By side of seat)
7	Seat		

Dashboard Controls & Instruments

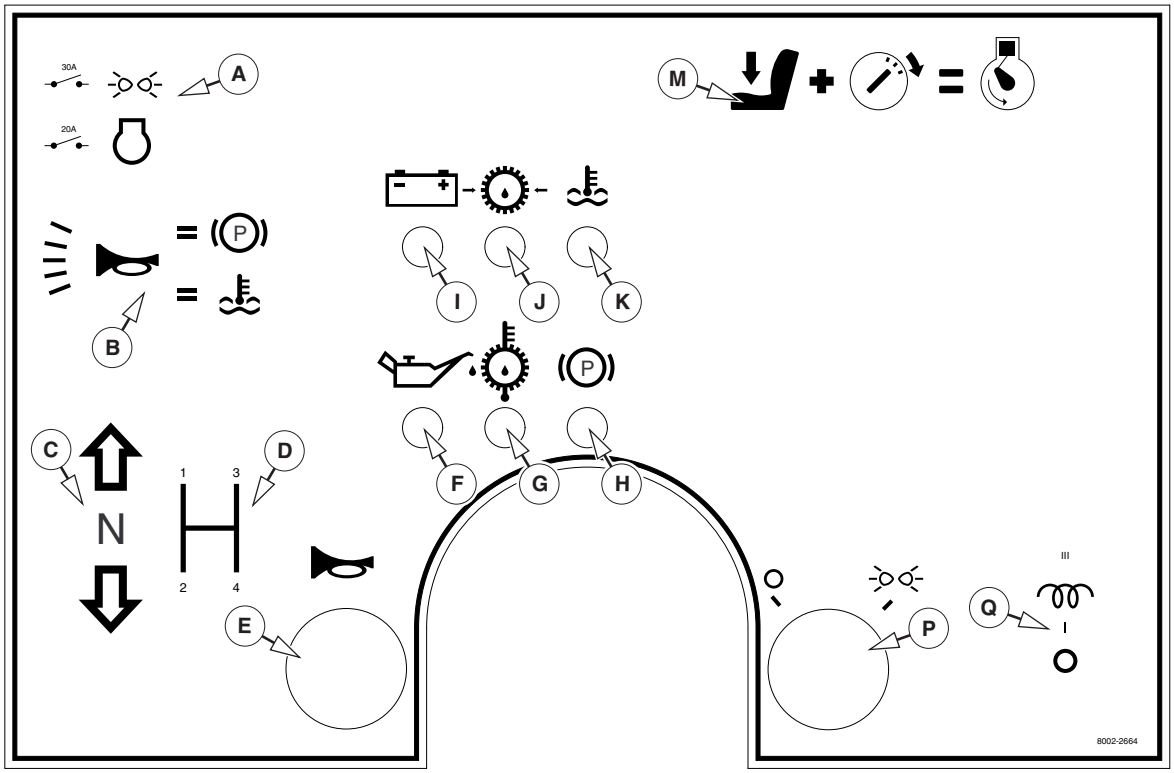
The layout of the dumper dashboard is dependant on equipment and options fitted and various examples are illustrated on the following pages.

Dash Layout - No Lights



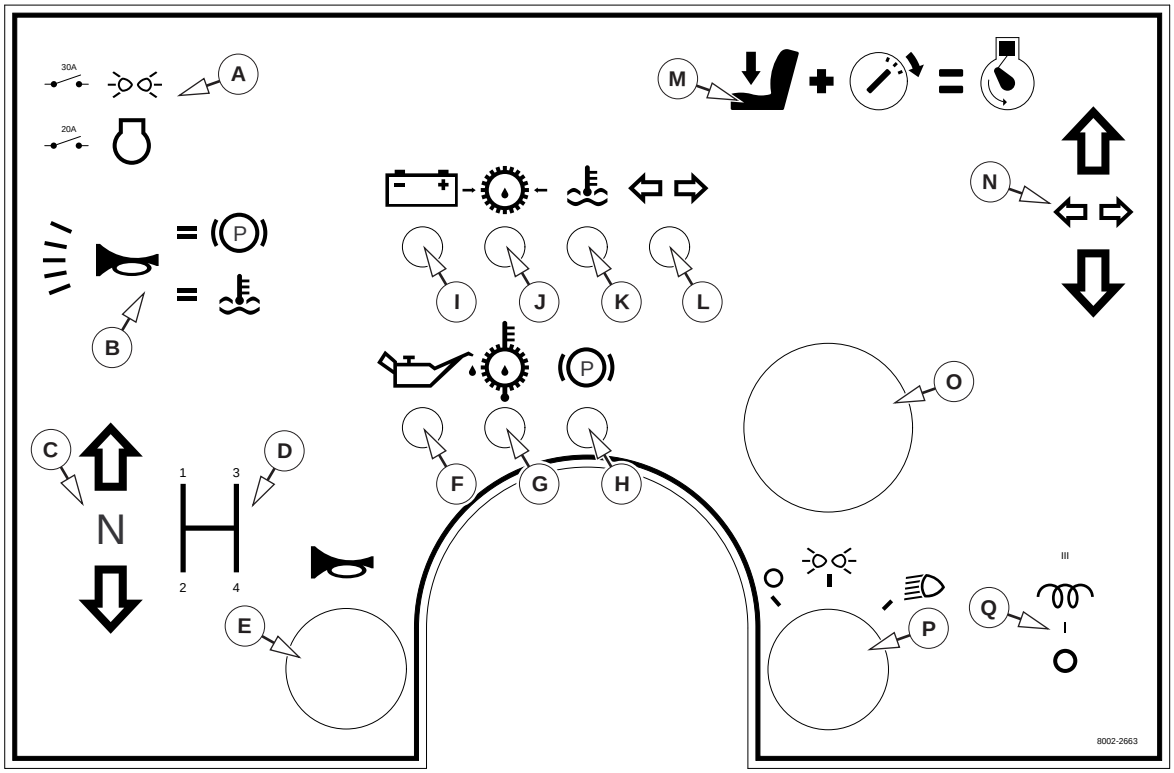
A - 15A Circuit Breaker	H - Warning Light - Parking brake 'ON'
B - Instruction - Parking Brake/Coolant Temp. Audible	I - Warning Light - Battery Charge
C - Instruction - Forward/Reverse Switch	J - Warning Light - Transmission Oil Pressure
D - Instruction - Gear Lever Positions	K - Warning Light - Engine Water Temperature
E - Horn Button	M - Instruction Start Inhibitor
F - Warning Light - Engine Oil Pressure	Q - Instruction - Engine Start Key Switch
G - Warning Light - Transmission Oil Temperature	

Dash Layout - Site Lights



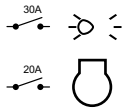
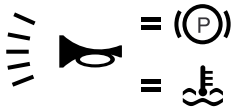
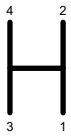
A - 30A/15A Circuit Breakers	H - Warning Light - Parking brake 'ON'
B - Instruction - Parking Brake/Coolant Temp. Audible	I - Warning Light - Battery Charge
C - Instruction - Forward/Reverse Switch	J - Warning Light - Transmission Oil Pressure
D - Instruction - Gear Lever Positions	K - Warning Light - Engine Water Temperature
E - Horn Button	M - Instruction Start Inhibitor
F - Warning Light - Engine Oil Pressure	P - Switch - Site Lighting
G - Warning Light - Transmission Oil Temperature	Q - Instruction - Engine Start Key Switch

Dash Layout - Road Traffic Lights

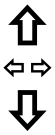
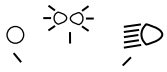
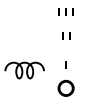


A - 30A/15A Circuit Breakers	J - Warning Light - Transmission Oil Pressure
B - Instruction - Parking Brake/Coolant Temp. Audible	K - Warning Light - Engine Water Temperature
C - Instruction - Forward/Reverse Switch	L - Warning Light - Direction Indicators
D - Instruction - Gear Lever Positions	M - Instruction - Start Inhibitor
E - Horn Button	N - Instruction - Indicator Switch
F - Warning Light - Engine Oil Pressure	O - Switch - Hazard Warning Lights
G - Warning Light - Transmission Oil Temperature	P - Switch - Road Traffic Lighting
H - Warning Light - Parking brake 'ON'	Q - Instruction - Engine Start Key Switch
I - Warning Light - Battery Charge	

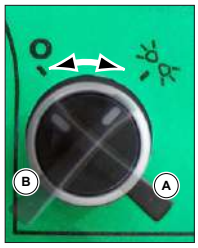
Dash Panel Symbol Description

A - Circuit breaker - Electric Circuit		A - 15A Engine Starter System B - 30A Lights (if fitted) Circuit breakers protect the machines electrical system.
B - Instruction - Audible Warning		Instructs if the audible warning sounds either the handbrake has been left on or the engine coolant temperature has reached an unacceptable high temperature. If the cause is excessive engine coolant temperature - **STOP THE ENGINE IMMEDIATELY** Do not use the machine until the fault has been rectified.
C - Switch Instruction - Forward / Reverse Positions		Indicates the direction to move the forward/reverse switch from the neutral position to obtain the required direction of travel.
D - Instruction - Gear Lever Positions		Instructs the operator to the position of the gearlever with regards to the desired gear
E - Horn Button		The horn is used to warn others and should only be used for this purpose. Excessive use may cause others to ignore a genuine warning.
F - Warning Light - Engine Oil Pressure		This warning light will illuminate when the start switch is turned to the RUN position. When the engine starts, the light should extinguish. If the light fails to extinguish or illuminates when the engine is running - **STOP THE ENGINE IMMEDIATELY** Do not use the machine until the fault has been rectified.
G - Warning Light - Excessive Transmission Oil Temperature		This warning light will illuminate if the transmission oil temperature reaches an unacceptable level. If the light illuminates when the engine is running - **STOP THE ENGINE IMMEDIATELY** Do not use the machine until the fault has been rectified.
H - Warning Light - Parking Brake 'ON'		This warning light will illuminate when the parking brake is in the 'ON' position and the start key switch is in the 'RUN' position. The machine should not be driven when the light is illuminated - release the parking brake first.
I - Warning Light - Battery Charge		The battery charge warning light should only be illuminated when the start switch is ON and the engine is not running. When the engine starts and full RPM is selected the charge warning light extinguishes. The warning light should stay off while the engine is running. If the light fails to go out when the engine is running - **STOP THE ENGINE IMMEDIATELY** Check the fan belt, alternator, wiring etc. Do not use the machine until the fault has been rectified.

Dash Panel Symbol Description - continued

J - Warning Light - Transmission Oil Pressure		When illuminated this warning light indicates the transmission oil pressure is LOW. STOP the machine immediately
K - Warning Light - Engine Coolant Temperature		The water temperature warning light should only be illuminated when the start switch is in the ON position and should go out when the engine is cranked. If the warning light illuminates when the engine is running the water temperature is too high, a warning buzzer will also sound. If engine temperature warning light is Illuminated when engine is running - **STOP THE ENGINE IMMEDIATELY** Do not use the machine until the fault has been rectified
L - Warning Light - Direction Indicator		If fitted, this light will flash when the indicator switch is moved into the left or right turn position. If the light fails to perform this function, do not use the machine until the cause has been rectified.
M - Instruction - Start Inhibitor		This instruction informs the operator they will have to sit on the seat before the engine will start. A start inhibitor is fitted to the seat which is disabled when the operator sits on the seat. It is therefore important the operator adjusts the seat to match their weight.
N - Switch Instruction - Direction Indicator		If fitted, this instruction informs the Operator which way to move the switch in order to operate the LEFT and RIGHT direction indicators
O - Switch - Hazard Warning Lights		If fitted, the hazard warning light switch will cause all four indicator lights to flash and is used to warn others the machine is experiencing problems and should be given special attention.
P - Switch - RTA Lights - if fitted		This switch will turn the headlights, front and rear side lights on and off.
P - Switch - Site Lights - if fitted		This switch will turn the site lights on and off.
Q - Instruction - Engine Start Key Switch		This instruction shows the start key position to use when the engine cold start aid is required.

Dash Panel Switch Descriptions

Hazard Light Switch		Pressing the button will cause all four direction indicator lights to begin flashing and will continue to do so until the button is pressed again
Horn Button		When pressed, this button will cause the horn to sound.
Site Light Switch		Turning this switch clockwise (A to B) will cause the site lights to illuminate. To turn the site lights off, turn switch anticlockwise (B to A). Site lights are fitted to provide illumination when driving off the public highway.
RTA Light Switch		Turning the switch clockwise to (B) from the OFF position (A) will cause the front and rear side (marker) lights to illuminate. Turning the switch to the next position (C) will cause the main headlights to illuminate too. When the machine is fitted with the full lighting set and is taxed and insured for public road use, the machine may be driven on the public highway at night.

Start/Stop Switch

The Start/Stop Switch (A) is operated by removable key. The engine will not start unless the operator is sitting on the seat.

The switch has 4 positions:-

- O - Off/Neutral
- 1 - Run
- 2 - Heat
- 3 - Start

Forward / Reverse Switch

When the machine is not being used or driven the Forward/ Reverse Switch (A) should always be in position '0' to prevent accidental movement.

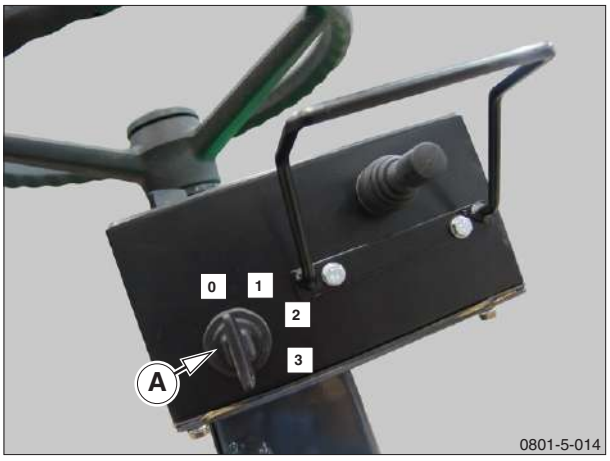
Ensure handbrake is applied whenever machine is stationary

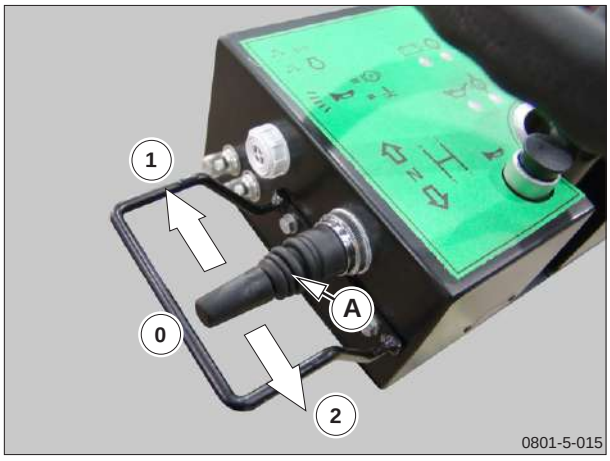
Forward/Reverse Positions and Actions

- 0 - Neutral
- 1 - Forward
- 2 - Reverse

If the handbrake is 'ON' when forward or reverse is selected a warning buzzer will sound.

If a reverse alarm option is fitted this will also sound when reverse is selected regardless of the handbrakes status. See "Audible Warning, Hourmeter and Reverse Beeper" section on page 5-20.





Direction Indicator Switch - if fitted

This switch is used to illuminate the LEFT or RIGHT, front and rear indicator lights to inform others of the operators intention to turn the machine to the Left or Right.

Moving indicator lever (A) forwards (1) will illuminate the left hand indicator lights. Moving the lever (A) backwards (2) will illuminate the right hand indicator lights.

These instructions are shown graphically on the dashboard decal (B).

Audible Warning, Hourmeter and Reverse Beeper

Audible Warning (A)

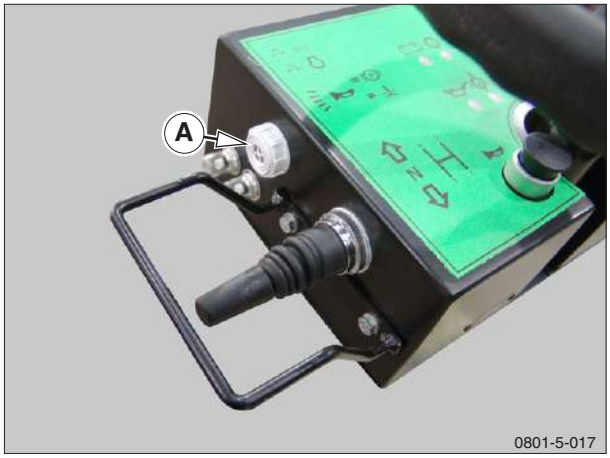
The Audible Warning (A) alerts the Operator that the handbrake is 'ON' or the engine coolant temperature is too high.

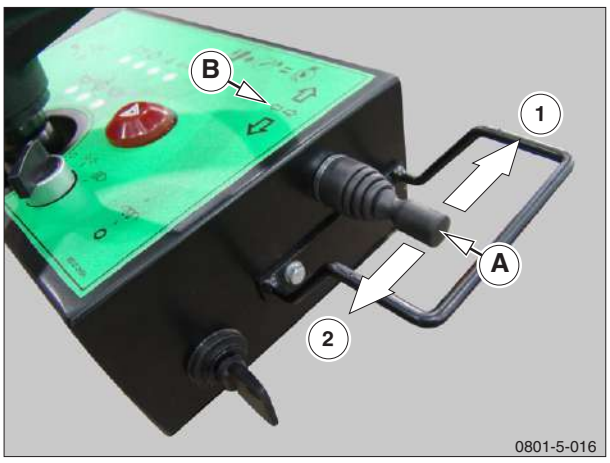
Hourmeter (B)

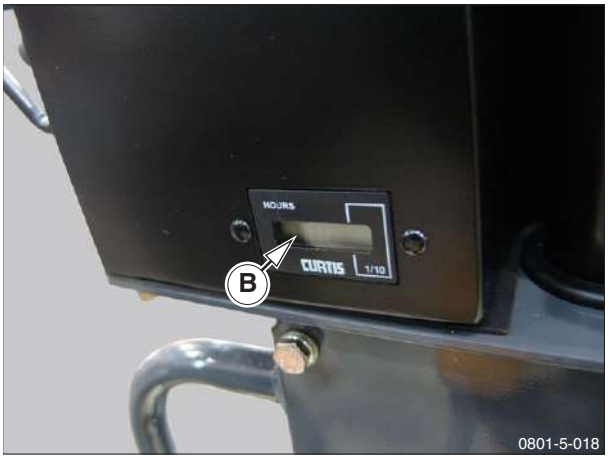
The Hourmeter (B) is located in the control panel to the right of the steering column. The meter is activated whenever the start switch is in position 1 or above and its purpose is to determine when a service schedule is due i.e. every 10, 50, 250, 500 and 1000 hours etc.

Reverse Beeper - if fitted

This warning device is activated whenever the Forward/ Reverse switch is put into the REVERSE position. Its purpose is to warn people the machine is reversing.



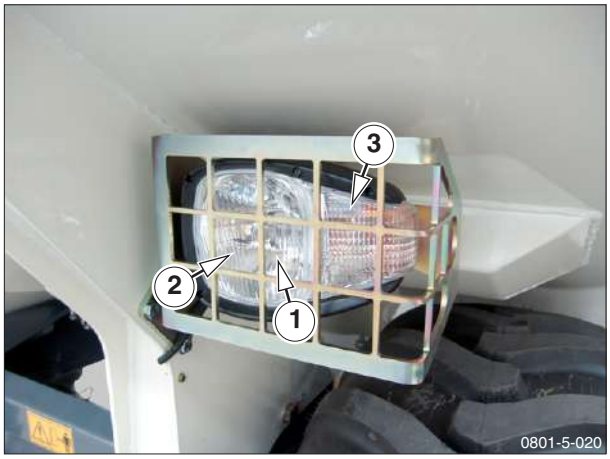




Road Traffic Lighting

A 3 position switch (A) Controls the side and head lights.

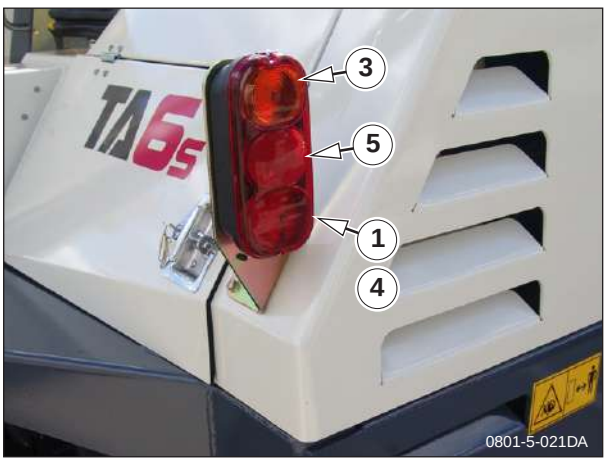
Switch Position	Lamp	Description
0	All	OFF
1	1	Side Light
1	1a	Rear Number Plate Light
2	2	Head Light
Indicator Switch	3	Indicator Light
Brake Switch	4	Brake Light
-	5	Reflector



Brake Lights

The brake light switch is activated when the brake pedal is pushed down, this illuminates the brake lights (4).

When the pedal is released the brake light switch is de-activated and the brake lights (4) are extinguished.



Number Plate Lights

If full lighting is fitted, lights are provided for illuminating the vehicle rear registration plate.

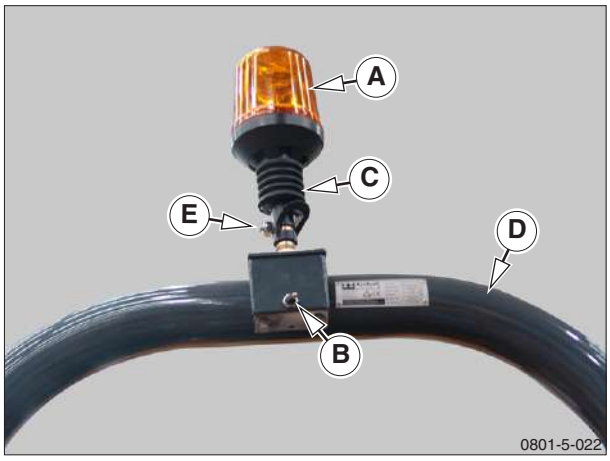
Flashing Beacon

The beacon is provided to warn people of the machines presence.

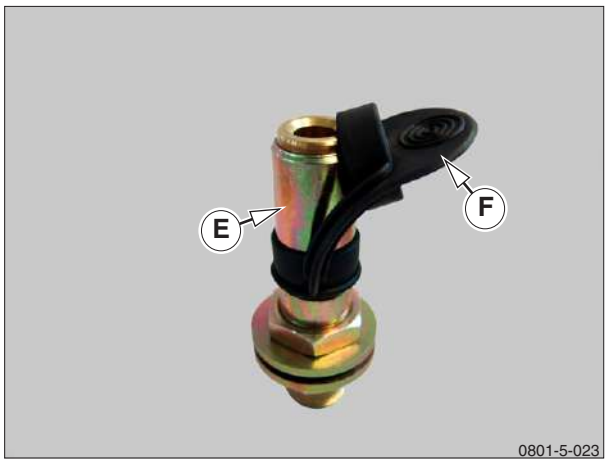
The flashing beacon (A) is fitted to the ROPS (D) using a connection on top of the ROPS.

The rubber cover (C) must first be removed from the connection by pulling to one side. The beacon (A) is fitted over the connection and held in place by tightening the nut and bolt (E).

Once in position, the beacon is switched on using the switch (B).

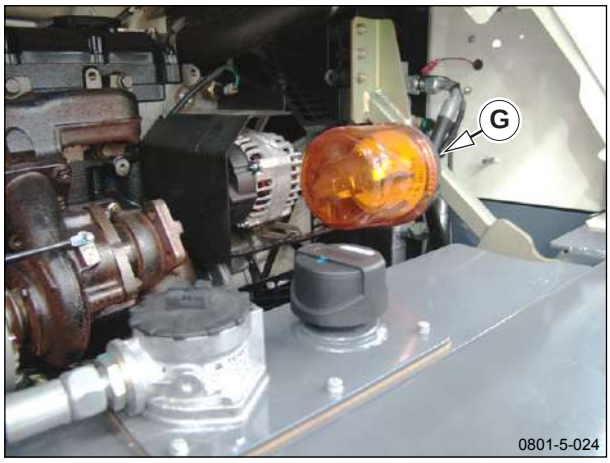


When the beacon has been removed, the top of the mounting stem is covered by pulling the rubber stem cap (F) over the mounting stem (E).



Storage

To help prevent damage, theft and vandalism the flashing beacon can be removed from the ROPS and stored on a bracket (G) inside the lockable engine compartment when not in use.

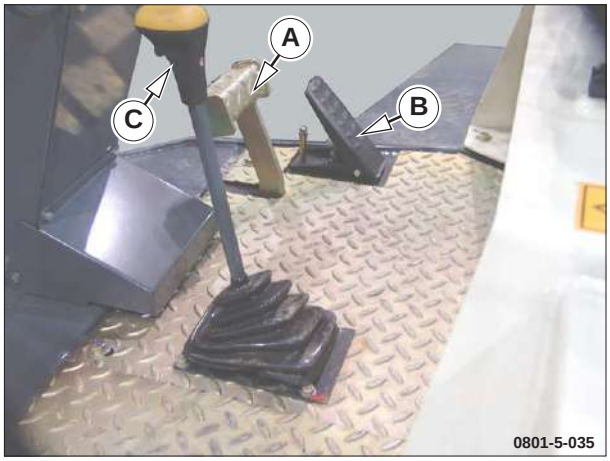


Foot Brake and Accelerator Pedals

The range of dumpers have a common driving position and controls for all models.

The driver is centrally positioned. The foot brake (A) and accelerator (B) pedals are located in standard automotive format.

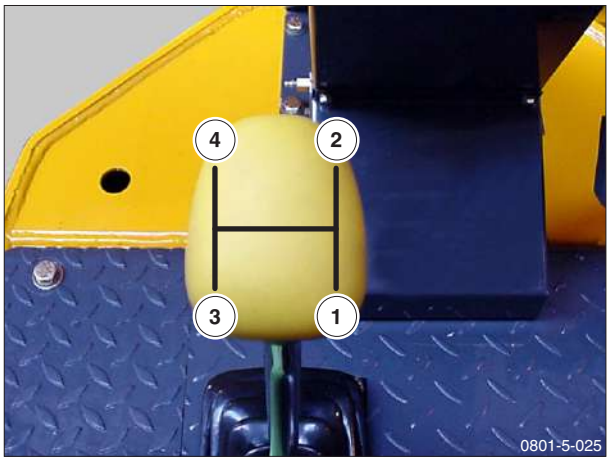
NOTE:- There is no clutch pedal fitted to these machines.

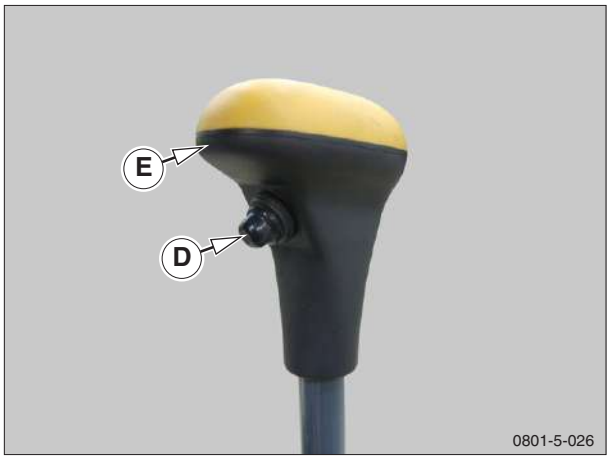


Gearlever

The gearlever (C) allows any of the gearboxes 4 speed ratios to be selected. The lever moves in a conventional H pattern.

An interrupt button (D) on the gear lever knob (E) is depressed and held while changing gear. This button is the equivalent of a clutch pedal on a conventional dumper.





Parking Brake

The dumper has a parking brake system which is integral with the disc and calliper, fitted to the gearbox output shaft, and is operated by a lever (A) located to the right of the drivers seat.

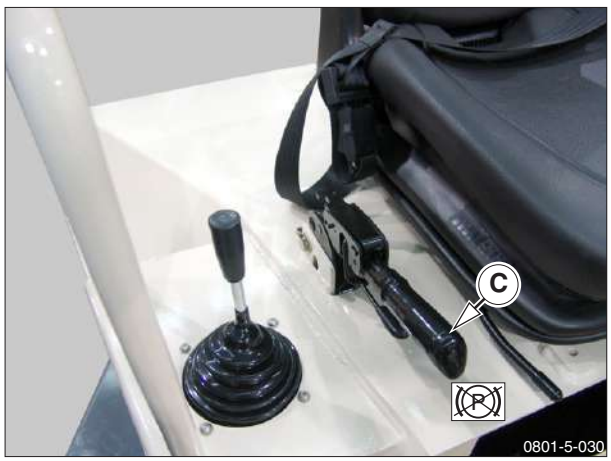
The parking brake may not hold machine on gradients steeper than 8.5º (15%). Always park on flat level ground. (If the dumper is parked on a slope it must not exceed 8.5º (15%) and the dumper must be parked across the slope and the wheels chocked). DO NOT stop or park on a slope that is liable to collapse.

Apply

Pull the parking brake lever (A) upwards to the vertical 'ON' position to apply the parking brake

Release

To release the parking brake lever (A) pull release lever (B) against the parking brake handle (A), this will release lever (A) allowing it to return to the 'OFF' position (C).

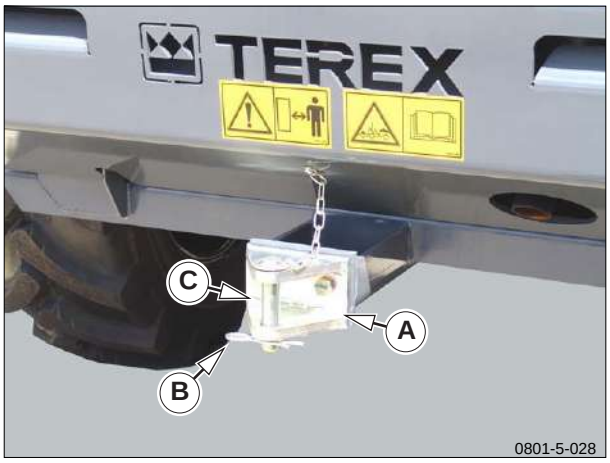


Tow Hitch

The dumper has not be designed for, and we do not recommend its use as a towing vehicle but if so used always make sure the weight of any trailer and its load does not exceed half the rated payload of the dumper.

It is important that if used for towing:

- .The skip is loaded with half the rated payload to provide adhesion when braking.
- The machine is NEVER driven down gradients as "jack knifing" may occur.
- Only first gear is used and the machine is never driven on or across inclines.
- The grip clip (B) must be positioned through the towing pin (C) when the trailer etc. has been attached to the bracket (A).



Engine Cover Doors

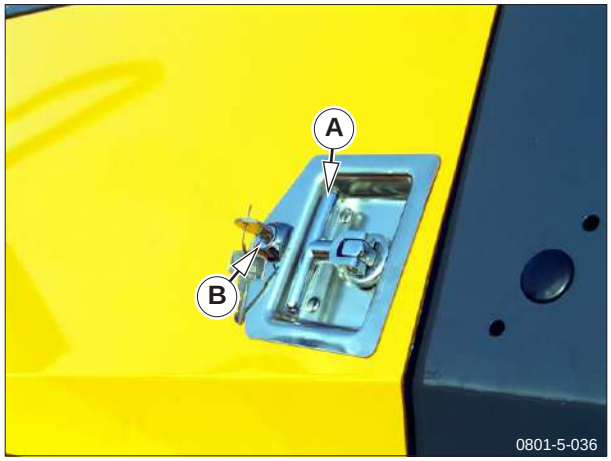
The engine cover doors are fitted horizontally allowing the door to open upwards for daily servicing. A gas strut assists opening.

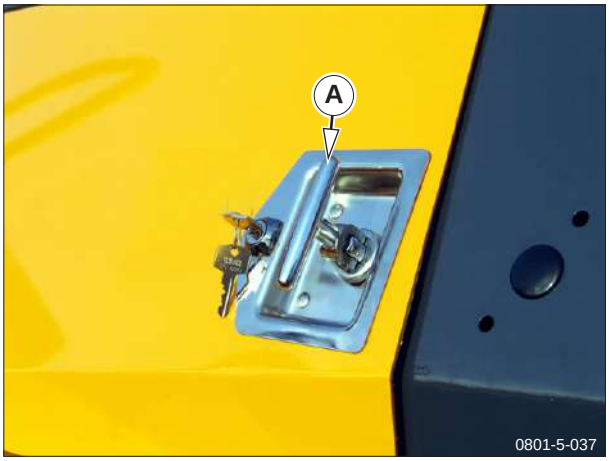
The door is opened by lifting the catch handle (A) outward and rotating 90°. To close, place hand on the door and push firmly. Turn the handle (A) to engage the catch which holds the door shut and fold the handle into the storage position in the catch.

A lock (B) is fitted to prevent unauthorised access to the engine compartment.

Engine Cover

When performing maintenance duties other than daily checks, it may be beneficial to lift the engine cover and prop it in the open position. Details will be found in the *Maintenance* section.





⚠ ROPS

A Roll Over Protective Structure (ROPS) is fitted to protect the operator should the machine over turn. The machine has a rigid ROPS with an option of a folding ROPS to reduce transport height. For more information on ROPS see '*Safety'* section of this manual

Rigid ROPS

The ROPS (B) is maintenance free other than for checking for loose fixings, corrosion and damage. The ROPS has a mounting point for the beacon and switch.

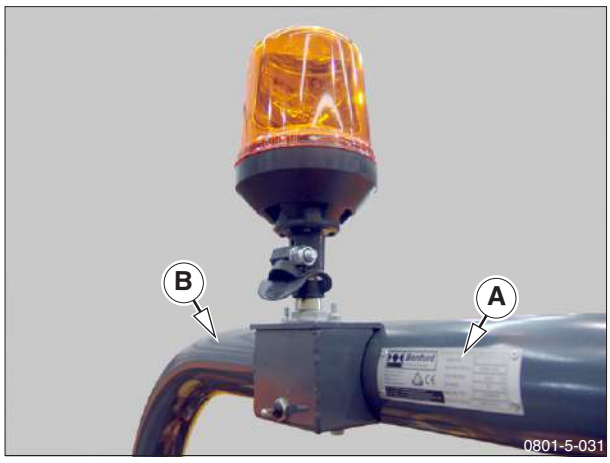
The ROPS Identification Plate (A) is located on the top of the ROPS.

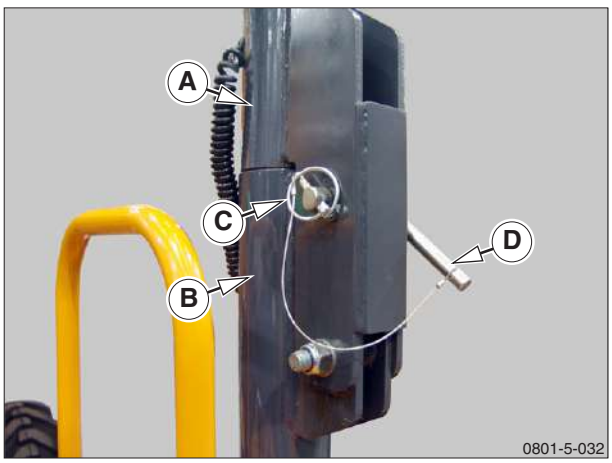
Under No Circumstances Modify the ROPS in Any Way

Folding ROPS

The optional Folding ROPS comprises of two sections (A & B) and is pivoted at seat level to allow the ROPS to be tipped backwards to reduce the transportation height - not the working height. It is secured in the raised position by a locking pin (C) and linch pin (D).

Only Lower the ROPS when Transporting the Dumper on a Lorry / Trailer etc.
DO NOT Operate Dumper with ROPS Lowered.
Beware of trapping fingers etc. in ROPS pivot areas.





Additional Equipment (Specific to certain countries)

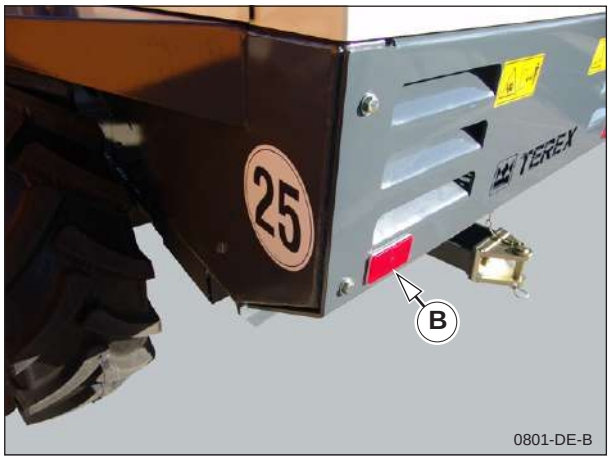
To satisfy specific regulations in certain countries additional equipment as follows is fitted to meet these requirements.

Forward Facing White Marker Lights

These lights (A) positioned on each side of the machine and illuminate when the road lighting is switched on - *see page 5-20.*

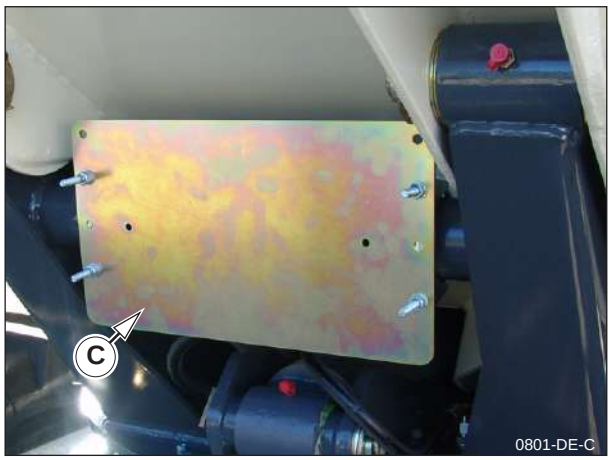
Rear Reflectors

Light reflective markers (B) are fitted on each side at the rear of the machine.



Registration Plate

A mounting (C) is provided to enable a registration plate to be fitted. This is located under the skip at the front of the machine.

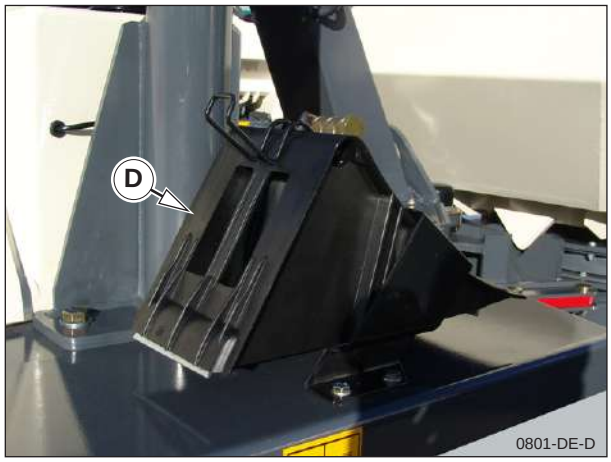


Wheel Chock

A wheel chock (D) is located on the wing. It is designed to to be removed from its storage position and placed under a wheel of the machine to prevent movement when the machine is parked.

When parking the machine on sloping ground use the wheel chock to immobilise the machine

After use replace the chock in its housing.

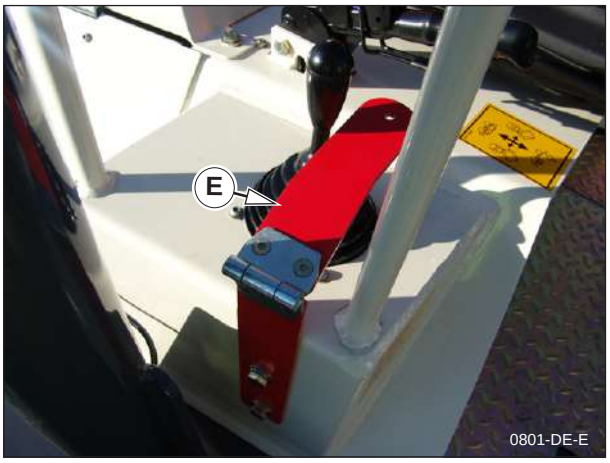


Control Valve Stop.

The control valve stop (E) is fitted to prevent the skip tipping and discharging the load when the machine is travelling.

The stop must be in position before the machine is used on the public highway.

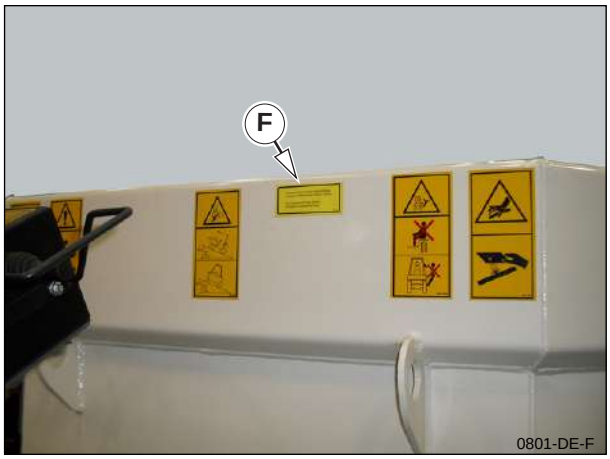
The stop must be released before attempting to discharge the load.



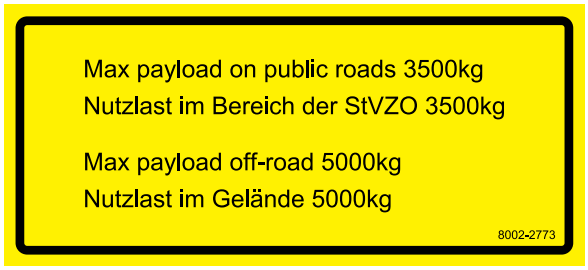
Engage the control valve stop before travelling on the public highway

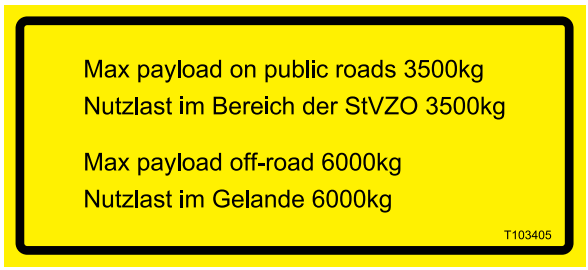
Maximum Load Decal.

The maximum load decal (F) indicates the maximum payload of the machine when used on the public highway and also the maximum payload permitted when on the work site.



Decals for TA5 and TA6 are illustrated below.

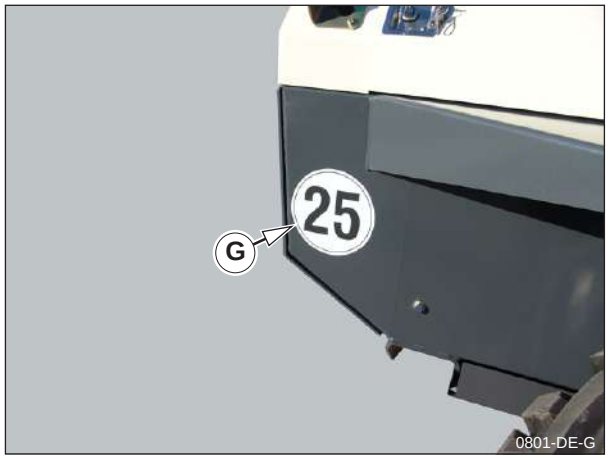




Do not exceed the maximum payloads stated on the Maximum Load Decal

Speed Indication Decals

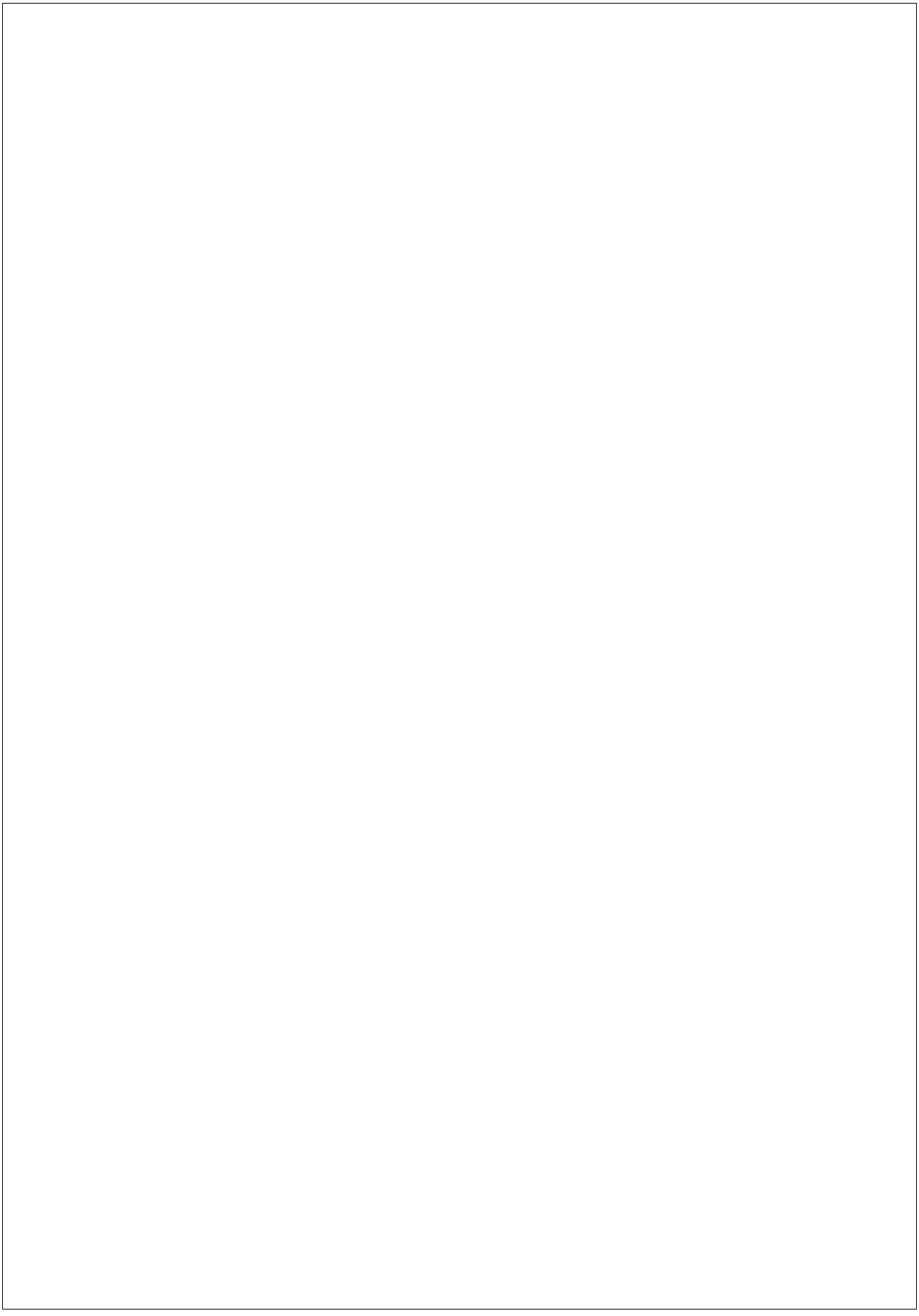
Speed Decals (G and H) are fitted each side and at the rear of the machine. They indicate the maximum authorised speed of the machine on the public highway.



6 - Inspection

TA5, 6 & 7

Four Wheel Drive Dumper
Straight and Swing Skip



General Inspection

Before each days operation of the dumper the operator must perform the General Inspection as outlined in the Check List on the following page.

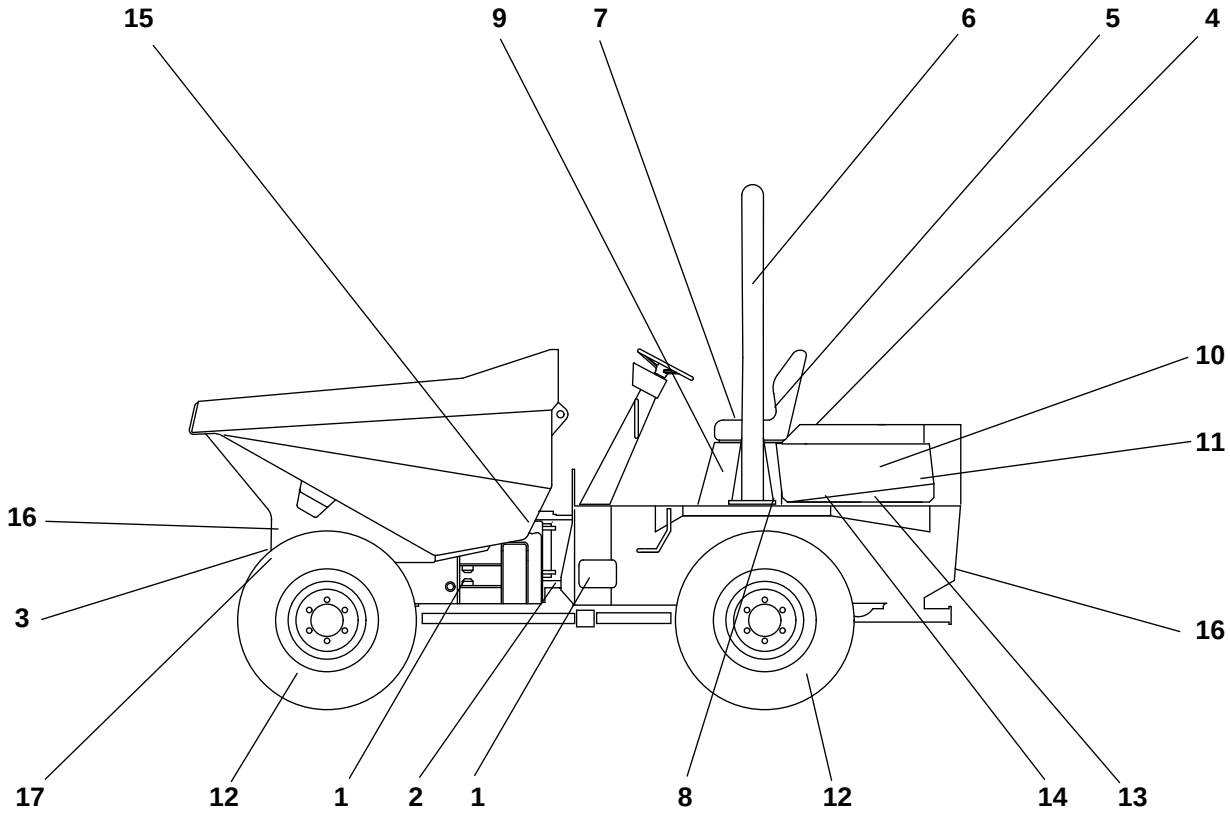
The purpose of the Operators Inspection is to keep the machine in proper working condition and to detect any signs of malfunction during normal operation between scheduled maintenance intervals.

Read the Safety Section of this manual before performing the inspection.

While it may not be the operators responsibility to perform mechanical maintenance the operator must be thoroughly familiar with the machine and its proper care since their own safety is involved.

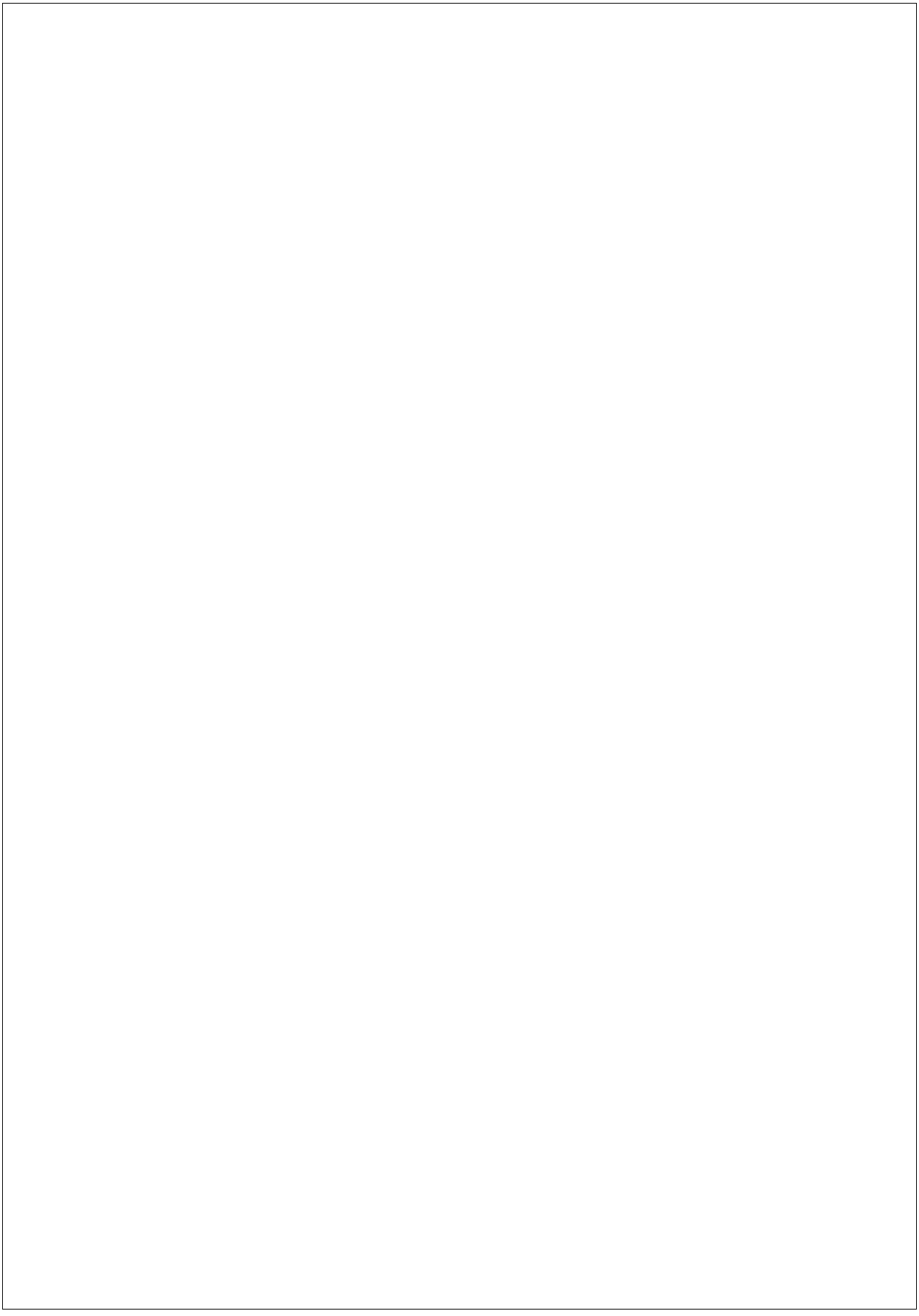
Before Carrying Out Checks Read Safety Section Of This Manual

Daily Operator Checks



1	**Steering Ram Pins**	Check for wear and retention
2	**Steering Ram and Hoses**	Check for leaks
3	**Skip Pivot Pins**	Check for wear and retention
4	**Instruction Manual**	Present and Legible
5	**Seat Belt**	Working and Undamaged
6	**ROP's Frame**	Check for Damage
7	**Seat Inhibitor Switch**	Check for Correct Function
8	**Brake System**	Check Level
9	**Air Cleaner**	Clear and unobstructed
10	**Engine Coolant**	Check Level (ONLY with Engine Cold)
11	**Engine Oil**	Check Level
12	**Tyres**	Check for Correct Inflation and Damage
13	**Fuel**	Check Level
14	**Hydraulic Tank**	Check Level
15	**Skip Rams and Hoses**	Check Condition and Signs of Leakage
16	**Lighting (If Fitted)**	Check Operation
17	**Slew Ring - Swing Skip Only**	Check Operation and Slew Skip Lock Function
Various	**Safety Decals**	Check if Present and Legible

7 - Operating Instructions
TA5, 6 & 7
Four Wheel Drive Dumper
Straight and Swing Skip



Operating Instructions

Before using this equipment the operator must read and fully understand this instruction manual and pay particular attention to Section 3 - Safety and Section 5 - Description which describes the major components of the machine and the layout and function of all the controls.

ALL Operators of this machine must be authorised, mentally and physically capable of operating this machine and fully trained in its operation.

Pre-Start Checks

- Ensure the machine has been cleaned to enable leaks etc. to be noticed easily during the pre-start check and during normal operation.
- Check general condition of machine - missing parts, loose fixings, fuel lines for damage, hydraulic hose end fittings for leakage, hose outer covers for ballooning, etc.
- Check engine and hydraulic oil levels - make sure the engine and hydraulic tank are filled using clean oil and a clean container.
- Check fuel tank is full - make sure the tank is filled when the engine is cold and the machine is in a well ventilated area, with the engine stopped using clean fuel and container. It is advisable to fill the tank at the end of a working session to prevent condensation forming in the tank during long periods of inactivity, e.g. overnight.

When Refuelling Beware of Naked Flames, Grinding Sparks etc.

- Check battery and battery cable condition.
- Check for adequate ventilation if the machine is to be started or run in a building etc.
- If a folding ROPS is fitted ensure it is in the “work” position and pins and retaining clips are fitted

Access / Egress

The Operator must use footsteps (B) and handles (A) when mounting or dismounting the machine to avoid personal injury or damage to the machine.

When mounting or dismounting, the Operator must always face the machine to help avoid personal injury.

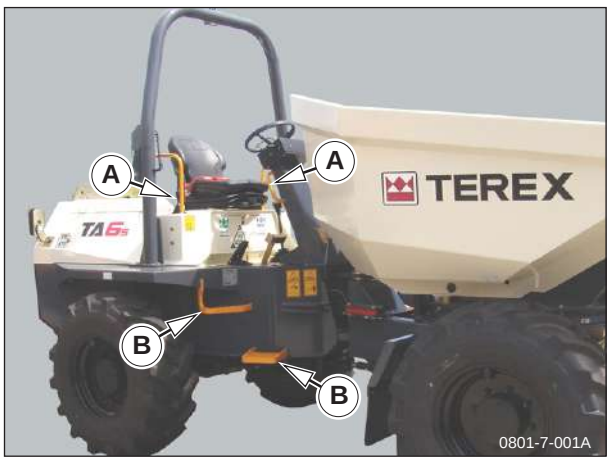
Do Not use steering wheel, handbrake etc. when mounting or dismounting. Use Footsteps and Handles provided

The handles (A) and footsteps (B) are situated either side of the machine.

Ensure the steps, handles and Operators footplate are kept clean from mud, oil, ice etc.

Before dismounting, ensure the machine is parked correctly on firm, level ground. The parking brake is firmly ON, the direction lever is in NEUTRAL and the engine has been stopped.

DO NOT jump from the machine, ALWAYS face the machine and use handles and steps provided



Operators Seat - Grammar

Angle Adjustment

The seat back rest is adjustable for angle, this is achieved by lifting lever (A) at the front of the seat cushion and sliding the seat cushion forwards/backwards.

Release the lever and ensure the seat runners engage in one of the preset locking positions.

Seat Movement

On all machines the operator is able to adjust the seat in the fore/aft direction by lifting knob (B) and sliding seat to the required position, then releasing the knob to lock the seat into position.

Do Not Adjust the Seat While the Machine Is Moving

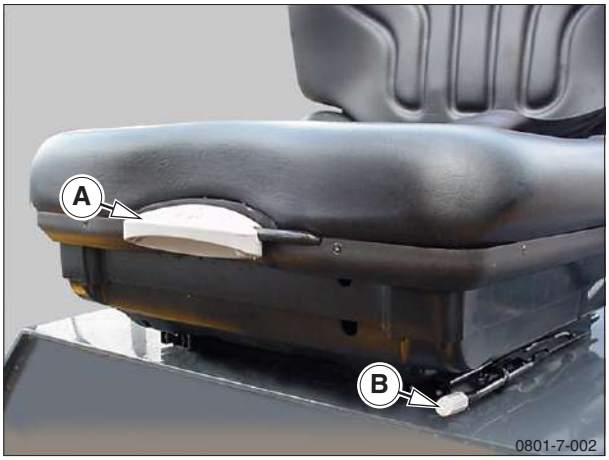
Weight Adjustment

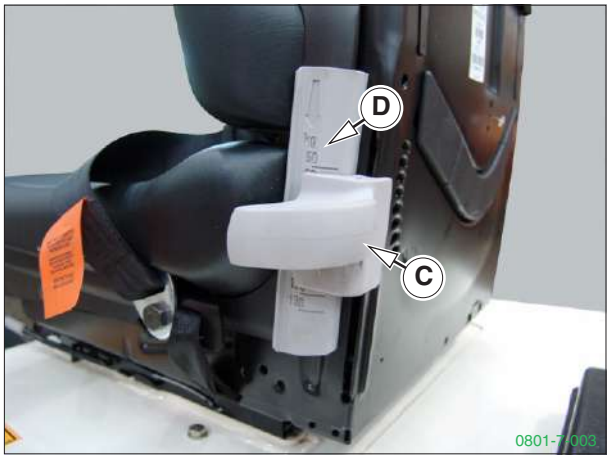
The seat may be adjusted for drivers weight by sliding lever (C) downwards to the relevant weight position, as indicated by the scale (D) on the side of the seat.

To return lever to the top of the scale push the lever (C) fully downwards to the bottom of the scale (D) and then lift the lever (C) to the top.

The Engine will not start unless Operator is sitting on the Operators Seat.

The engine will not stop when the Operator leaves the seat.

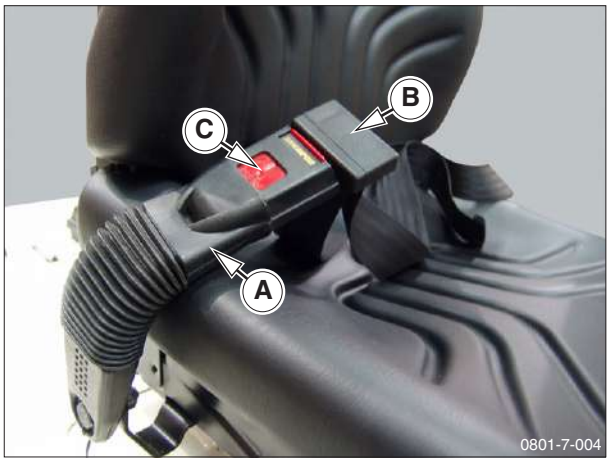




Seat Belt

- Sit on the seat, place the seat belt across the lap and insert the inner buckle 'B' into outer buckle 'A' until it locks firmly into position.
- Adjust by puling the belt through buckle ‘B’ until it is a firm comfortable fit across the hips.
- To remove the seat belt, press the button ‘C' and pull inner buckle 'B' away from outer buckle 'A'.

Seat Belt must be locked in position across the Operators hips BEFORE operating the machine if ROPS/FOPS fitted



Operators Seat - Milsco

The seat is adjustable for Operator comfort. The adjustments allow the seat to be moved forwards and backwards, the back of the seat may be tipped forwards and backwards and the seat suspension may be adjusted to the weight of the Operator.

Seat Controls

A - Fore and aft movement.

B - Weight adjustment.

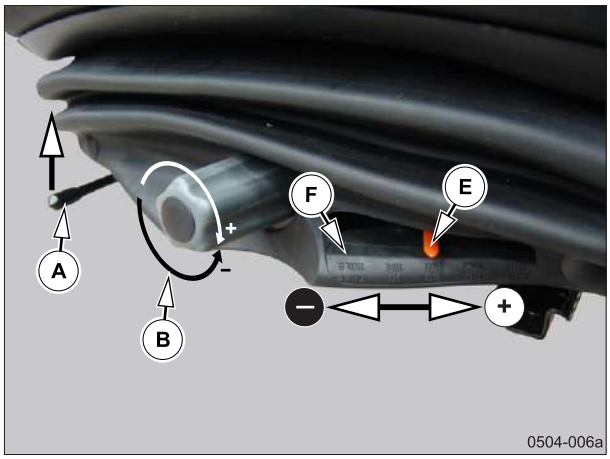
C - Back rest angle adjustment.

D - Seat belt.

Fore and Aft Movement

Lifting lever (A) allows the seat to be move forwards or backwards to suit the leg length of the Operator.

When the lever (A) is released the seat is locked in the selected position.



Weight Adjustment

This control is used to adjust the seat characteristics to the weight of the Operator.

Turning knob (B) clockwise adjusts the seat for the larger person and anticlockwise for the smaller person.

When the knob (B) is turned, the pointer (E) moves to allow the Operator to select the correct weight from the scale (F)..

The Engine will not start unless Operator is sitting on the Operators Seat.

The engine will not stop when the Operator leaves the seat.

Back Rest Angle Adjustment

Lifting lever (C) allows the back of the seat to be pushed forwards or backwards to suit the preference of the Operator.

When the lever (C) is released the seat is locked in the selected position.

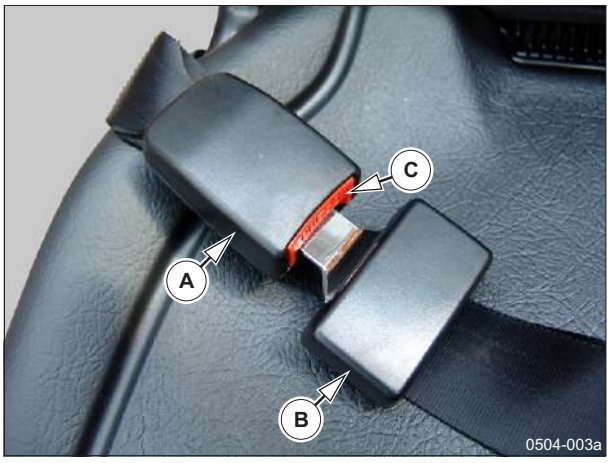
Operators Seat - Milsco

Seat Belt

- Sit on the seat, place the seat belt across the hips and insert the inner buckle (B) into the outer buckle (A) until it locks into position.

Seat Belt must be locked in position across the Operators hips BEFORE operating the machine if ROPS/FOPS fitted

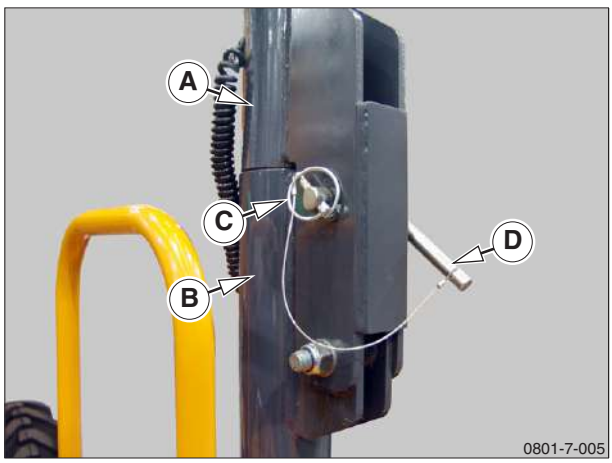
- Adjust by pulling the belt through buckle (B) until it is a firm, comfortable fit across the hips.
- To remove the seat belt, press the button (C) and pull inner buckle (B) away from outer buckle (A).



Folding ROPS

The optional Folding ROPS comprises of two sections (A & B) and is pivoted at seat level to allow the ROPS to be tipped backwards to reduce the transportation height - not the working height.

Only Lower the ROPS when Transporting the Dumper on a Lorry / Trailer etc.



Transport Position

NOTICE

Before lowering the ROPS, remove the flashing beacon

- Remove flashing beacon.
- Remove the two linch pins (C) from locking pins (D), one either side, and remove the pins (D).
- Carefully push the top half of ROPS (A) backwards and lower into the transport position.
- Replace the pins and fix in position using the 'R' clips (C).

Work Position

- Remove the two linch pins (C) from locking pins (D), one either side, and remove the pins (D).
- Push the top half of the ROPS upwards into the working position.
- Refit the pins and fix in position using the 'R' clips (C).
- Refit the Beacon.

NEVER use the dumper with the ROPS in the transport (lowered) position

Starting and Stopping the Engine

Starting the Engine

Before attempting to start the engine ensure:-

- There are no obvious faults with the machine.
- The Operator is Sitting on the Operators Seat.
- The parking brake is applied and Forward/Reverse switch (A) is in neutral (0) and ALL warning lights on the dashboard are illuminated when the start key (B) is turned to the RUN position (1).
- Turn the start key (B) to the HEAT position (2) and hold for 10 seconds.
- Turn the start key switch (B) to the START position (3), release immediately the engine starts and allow the key to return to the RUN position (1).

Do Not Use Starting Sprays to Assist Engine Starting

Do Not Crank Engines for More than 10 Seconds - Allow 30 Second Delay Before Further Starting Attempt

- When engine has started, ensure ALL warning lights on the dashboard are no longer illuminated except the parking brake 'ON' light. If any are still illuminated stop the engine and have the fault rectified before using the dumper.

NOTICE

Never Engage the Starter Motor Whilst Engine is Running

Stopping the Engine

- Before stopping the engine the machine must be on firm, level, stable ground, it must not be in a dangerous position or causing an obstruction to others, the handbrake must be applied and the forward / reverse switch (A) and gear lever should be in neutral.

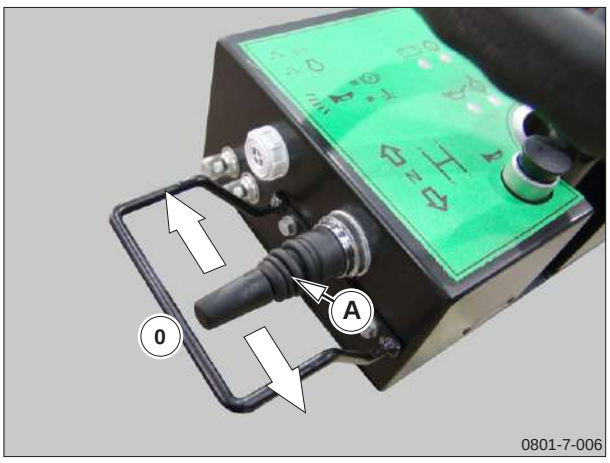
NOTICE

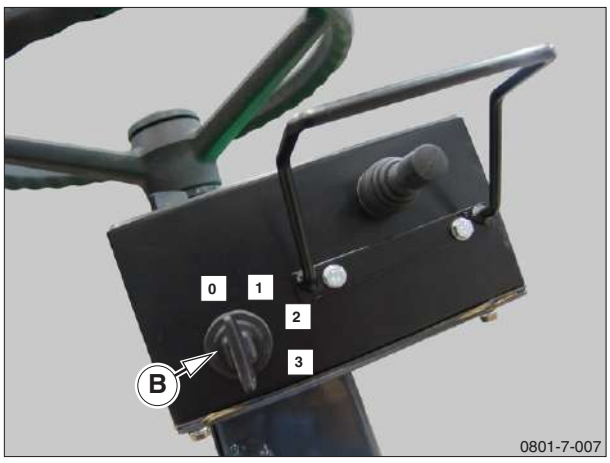
Allow the engine to 'idle' for 30 seconds before stopping engine especially if the engine has been 'worked hard'

- The engine is stopped, in normal use, by the Operator turning the start switch (B) anticlockwise to the OFF position (0).

⚠

If leaving the machine unattended, remove the start key and turn the battery isolator to the OFF position and remove the isolator key. This will help prevent the machine from being used by unauthorised people.





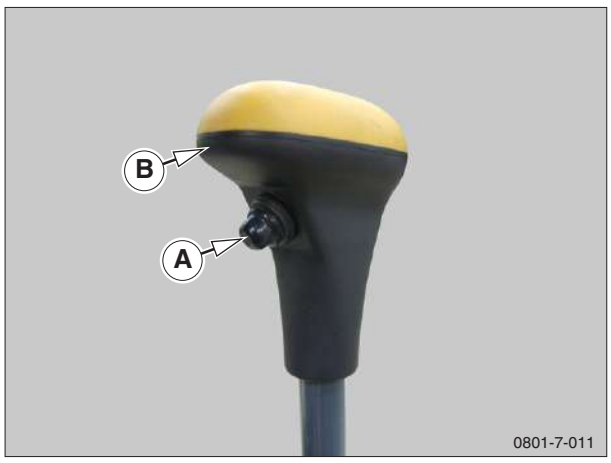
To Move the Machine

Action	See Section	Remarks
Check condition of machine is satisfactory and the surrounding area is clear. Sit on operators seat.	Safety Start Inhibitor	The engine will not start unless operator is sitting on the machine.
Ensure the Parking brake is ON, the Forward / Reverse switch is in NEUTRAL and gearlever is in NEUTRAL.	Handbrake Forward / Reverse Switch Torque Convertor & Shuttle Gearbox	-
Turn start key switch to RUN - position 1. Check all warning lights etc. on the dashboard are illuminated before proceeding.	Starting the Engine Dash Panel Symbol Descriptions	-
If the engine is cold turn start key switch to HEAT - position 2 - before proceeding.	Starting the Engine	If the engine is 'Hot' this procedure should not be required.
Turn start key switch to START - position 3. When the engine starts release key and allow it to return to RUN - position1. Ensure all warning lights have extinguished except the handbrake 'ON' warning light	Starting the Engine Dash Panel Symbol Descriptions	Do not crank for more than 10 seconds. Wait for 30 seconds before attempting the starting procedure again.
Select forward or reverse. Using the gearlever select first gear. Release parking brake and depress accelerator pedal gently until the machine begins to move.	Forward / Reverse Switch Handbrake Torque Convertor & Shuttle Gearbox	-
As machine speed increases, if conditions allow, change into successive higher gears	Torque Convertor & Shuttle Gearbox	-

To Change Gear

The procedure is as follows:-

- Select Forward or Reverse as required using the Forward/ Reverse switch.
- Depress the Drive Interrupt Button (A) on the gear lever (B)and hold whilst moving the gear lever into first gear. This button is the equivalent of a clutch pedal on a conventional dumper.



- Release the button.
- Release the parking brake.
- Press the accelerator pedal down slowly, drive will be progressively taken up through the torque converter and the dumper will move off.

Changing gear, up or down the range, is effected by depressing the drive interrupt button on the gear lever and moving the gear lever into a higher or lower gear position.

Gradients

Ascending, descending or crossing gradients should be done with extreme care.

See *Gradients* in *Safety* section in this manual for further information.

Descending Gradients

The operator must select a suitable low gear for descending the gradient. If the operator is in any doubt as to the gear to be selected, first gear must be selected.

Stopping and Moving off on a gradient steeper than theparkingbrake capability

- Stop the vehicle on the foot brake, continue to apply the foot brake and apply the parking brake, and select neutral on the forward reverse lever.
- To move off select 1st gear then forward/reverse, hold the vehicle on the parking brake, release the foot brake and apply the throttle to drive against the parking brake.
- When the vehicle starts to move in the desired direction release the parking brake and move off.

NOTICE

Ensure the machine is at rest before moving the direction switch to the opposite direction

To Tip The Skip - Straight Skip Machines

- Position the machine where the load is to be discharged.
- Ensure the area is clear of bystanders.
- Move the control lever forwards (A).

The skip will elevate and the load will be discharged.

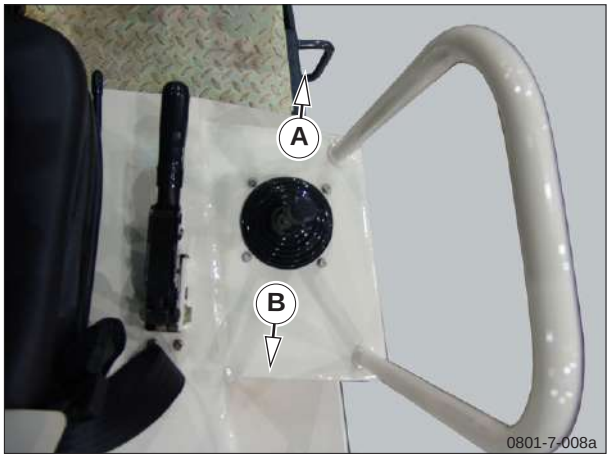
NEVER Elevate The Skip Unless The Dumper Is On Level Ground

To Lower The Skip

- Move the control lever rearwards (B).

The skip will lower.

Do Not Use Raised Skip as a Bulldozer Blade.



To Tip The Skip - Swing Skip Machines

- Position the machine where the load is to be discharged.
- Ensure the area is clear of bystanders.
- Move the control lever forwards (A).

The skip will elevate and the load will be discharged.

NEVER Elevate The Skip Unless The Dumper Is On Level Ground

To Lower The Skip

Move the control lever rearwards (B).

The skip will lower.

To Rotate The Skip

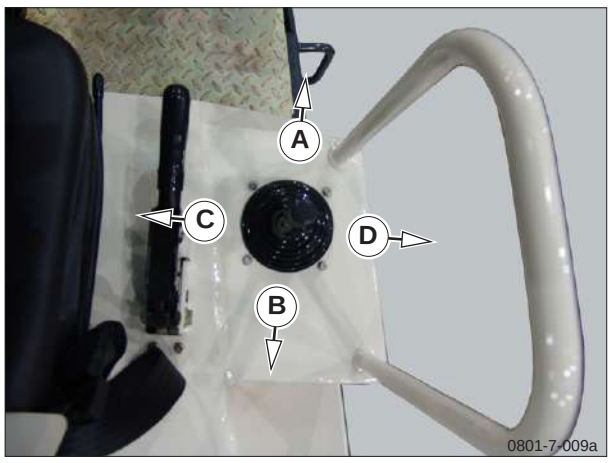
- Raise skip to clear skip lock (E) by pushing control lever forwards (A).
- Move lever to rotate skip to the right (D) or left (C) to desired position.
- Move lever forwards (A)

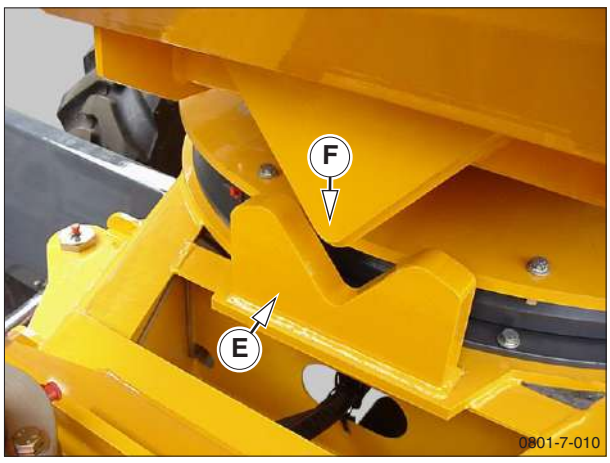
The skip will elevate and the load will be discharged.

To Return Skip to the Ahead (Travelling) Position

- Rotate the skip to the ahead position.
- Move lever backwards (B) to lower skip.

Ensure the skip catch (F) is directly above the lock (E) before fully lowering the skip.





Towing Or Recovery

When towing or recovering the machine it is essential that the top driveshaft between the transfer box and the gearbox is disconnected to prevent damage to the gearbox.

Note that the parking brake will be inoperative when the drive shaft is disconnected. Before removing the driveshaft it will be necessary chock the wheels of the machine to prevent movement.

NOTICE

To prevent oil starvation and possible seizure of the transmission whilst towing vehicle, it is imperative that the top drive shaft is disconnected. Failure to observe this precaution may result in extensive damage to transmission.

When the driveshaft is disconnected the parking brake will not operate. The wheels must be chocked to prevent movement.

A suitable rope or chain attached; using a 'D' link, to one of the front lashing points (see *Lashing Points* in Section 8 Transportation) or the rear tow hitch should be used for towing the dumper.

The rope, chain etc. must be of adequate strength for the weight of the dumper and its load. All bystanders must be kept well clear when towing or recovering.

Towing

The machine may be towed for a maximum distance of 1 mile (1.6 kilometres) at speeds not exceeding 15 mph (25kph).

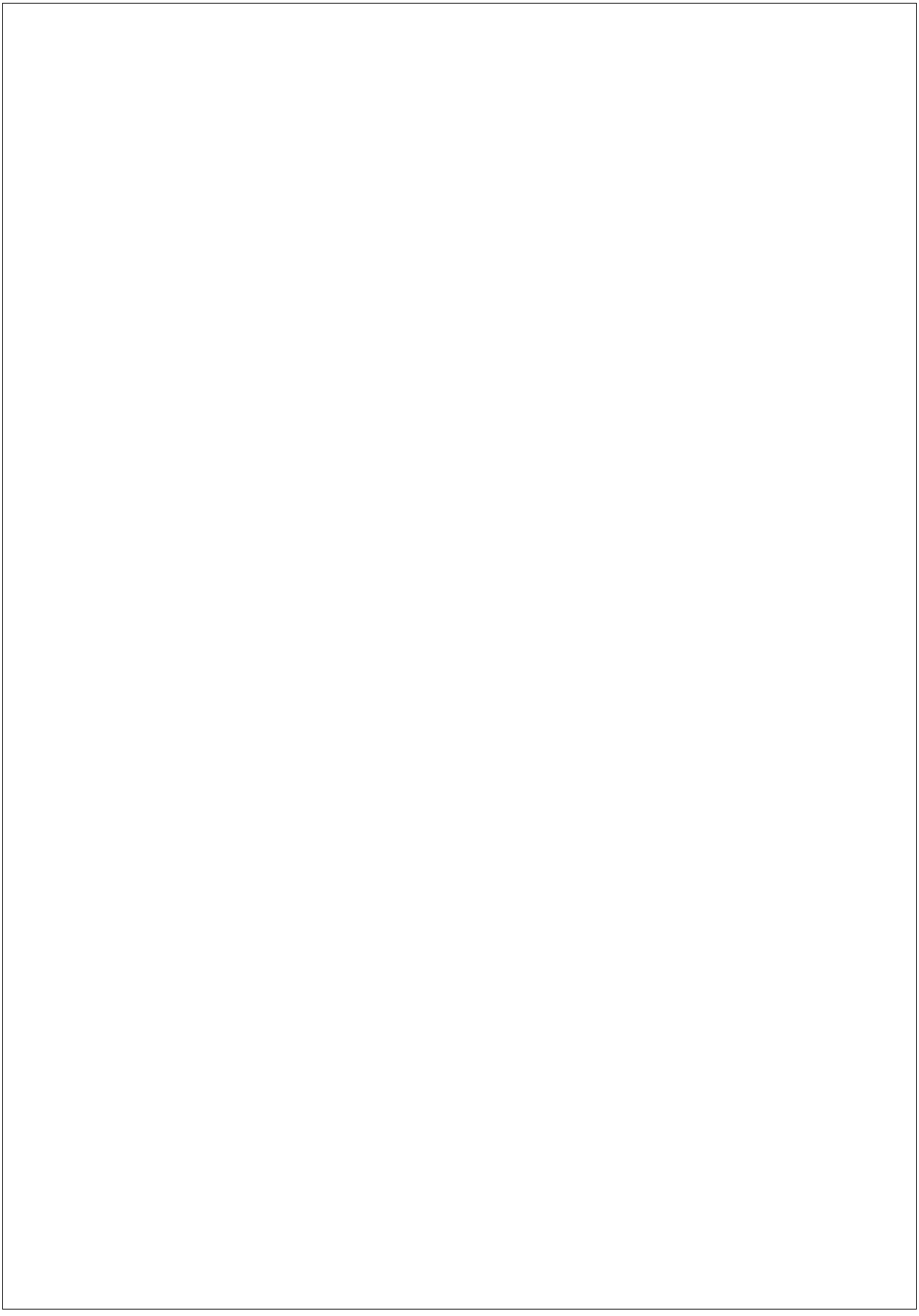
For distances greater than above the machine should be placed on a trailer or lorry.

8 - Transportation

TA5, 6 & 7

Four Wheel Drive Dumper

Straight and Swing Skip



⚠ Transportation

Loading onto Lorry / Trailer

When loading dumper onto a trailer or lorry, strong loading ramps should be used. See *Specification* section for machine weights.

Ensure trailer or lorry will not move during loading by applying their brakes and also chocking their wheels if necessary.

The angle of the ramps must not exceed the gradeability of the machine and in wet or muddy conditions may need to be less

It is recommended a winch is used whenever the machine is loaded using ramps. Use a two legged chain attached to the lashing points to secure the winch hook to machine.

⚠

Ramp Gradeability Will Be Reduced In Slippy Conditions. Ensure the Skip is Empty when Transporting.

⚠

To prevent both chassis halves swinging relative to each other the articulation lock must be fitted when the machine is on lorry/trailer. See *Articulation Lock* section.

⚠

Keep all bystanders well clear while loading or unloading the machine.

Fit articulation lock - see *Articulation Lock* on page 8-2.

Secure the dumper to the lorry chassis using chains, straps or ropes of sufficient strength attached to the machine.

See *Securing Dumper* on page 8-3.

Unloading

When unloading from a lorry/trailer, strong loading lamps; capable of taking the weight of the dumper, must be used.

Ensure trailer or lorry will not move during loading by applying their brakes and also chocking their wheels if necessary.

Release the articulation lock before moving the machine.

⚠

Keep all bystanders well clear while loading or unloading the machine.

Crane

A single lifting point (A) is provided for lifting the complete machine. The position of this point will ensure a safe, stable lift of the machine in working condition using standard lifting gear.

⚠

Other Methods of Lifting Are Not Recommended

If using a crane or lifting device the rope, chain, strap etc. should be of sufficient strength to support the machine safely and be free from damage. See *Specifications* section for machine weights.

Before lifting the dumper ensure the vehicle is positioned in the straight ahead position, i.e. front and rear chassis are in line.

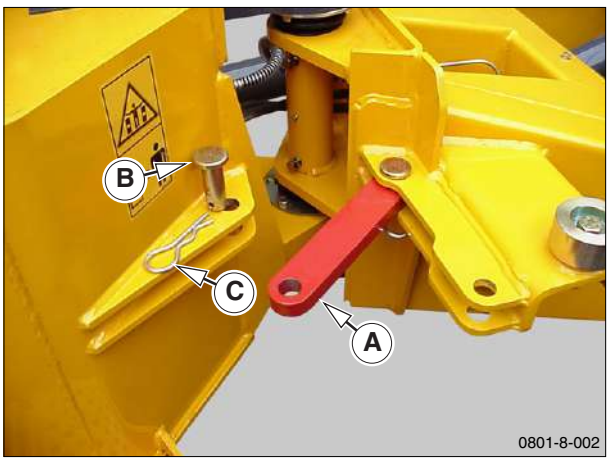
To prevent both chassis halves swinging relative to each other, the articulation lock must be used.

Secure the dumper to the lorry chassis using chains, straps or ropes of sufficient strength attached to the machines front lashing points and the rear towing hitch.

⚠ Articulation Lock

When the machine has been positioned on the lorry or trailer to prevent both chassis halves swinging relative to each other the articulation lock (A) must be used.

- To fit the lock remove grip clip (C) and pin (B) from front storage position.
- Pivot the locking bar (A) around until the holes in the bar are in line with the holes in rear chassis locking bracket.
- Fit the pin (B) through the holes and secure with the grip clip (C).



⚠ Securing Dumper to a Lorry or Trailer Bed

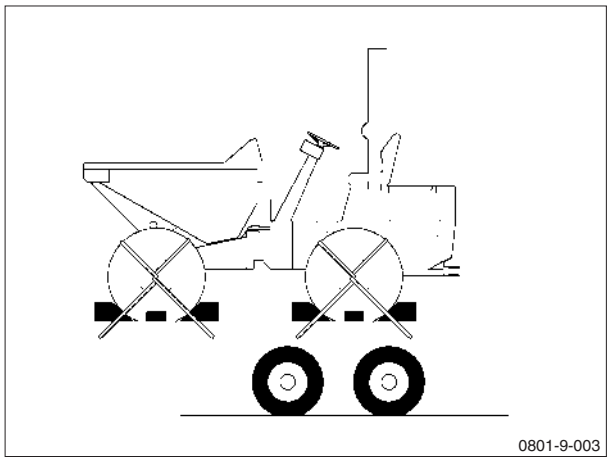
When the machine has been placed in an acceptable position on the lorry or trailer, the handbrake should be securely applied and the skip fully lowered. The articulation lock should be fitted.

If the dumper has a folding ROPS this should be lowered to reduce the transport height of the machine.

Once the machine has been positioned on the Lorry / Trailer bed, chocks should be nailed firmly in the positions shown in the diagram below.

⚠

Chocks MUST be Placed on All Four Wheels.
Secure the dumper to the lorry/trailer chassis using Chains, Straps or Ropes of Sufficient Strength.



Lashing Points

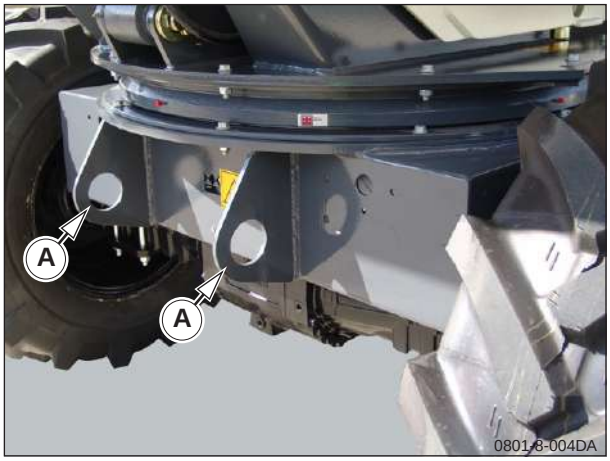
The chains, straps, ropes etc. should be attached to the machines front lashing points (A) for swing skip machines or (B) for forward tipping skip machines and rear towing hitch or over axles.

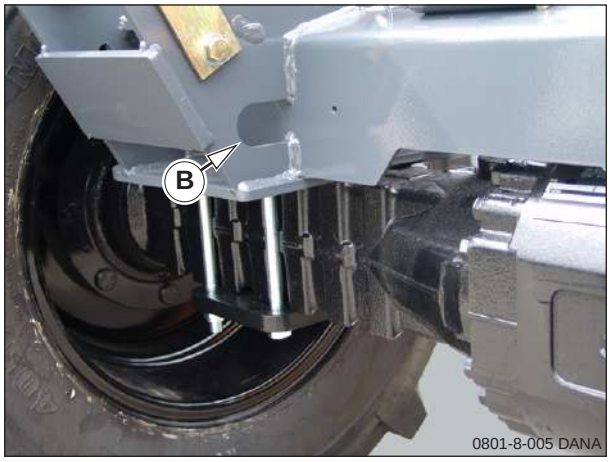
Ropes may also be placed over the wheels as shown in diagram.

The loose ends of the chains, straps, ropes etc. must then be securely attached to the lorry / trailer bed.

⚠

Whichever Lashing Method is Used it MUST be SECURE





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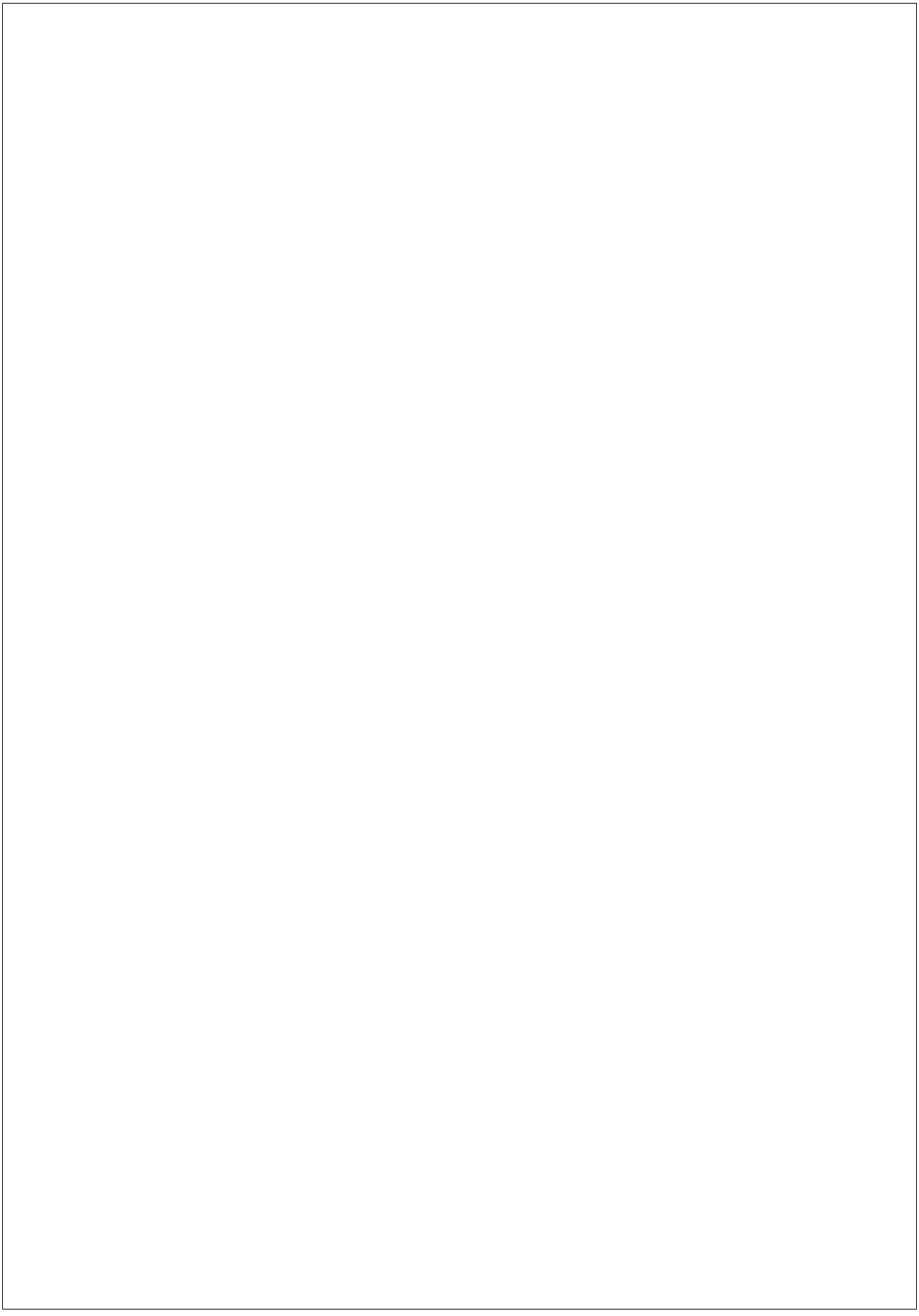
9 - Maintenance

TA5, 6 & 7

Four Wheel Drive Dumper

Straight and Swing Skip



Maintenance and Lubrication

Before carrying out any service or maintenance work ensure that the following precautions have been taken.

- Place the machine on firm level ground.
- Stop engine and chock the wheels.
- Remove Start key to prevent accidental starting.
- Place a warning tag on the machine to prevent accidental start up.
- Only jack or raise the dumper using the correct equipment.

Always use Axle Stands or other acceptable rigid support of ample capacity to support the dumper when raised clear of the floor.

- Refer to the *Service Schedule* on Page 9 - 26
- When checking fluid levels the machine must be placed on a firm, level surface, in a well ventilated position away from naked flames, grinding sparks etc.
- Ensure strict cleanliness is observed especially when dealing with hydraulic systems.
- Isolate electrical system by using the isolator switch or by disconnecting the battery.
- Ensure all guards and covers removed during maintenance are replaced before the machine is put back into work.

Refer to the SAFETY Section of this manual before performing any maintenance tasks on this machine.

Never work under a raised skip unless the skip props are LOCKED in position.

OIL - Refer to Safety Section BEFORE handling oil and other lubricants and observe and adhere to all the warnings and precautions listed.
Avoid skin contact with used oils and lubricants if possible.

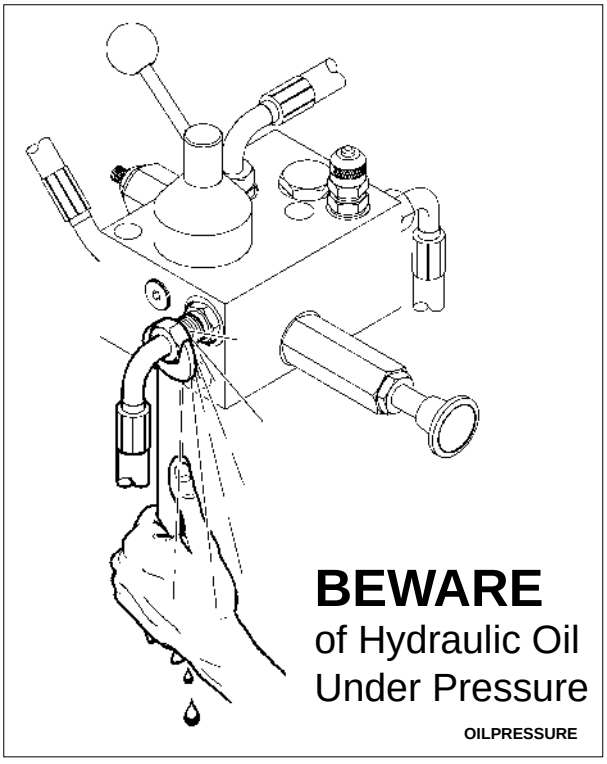
Safety Signs

All safety signs fitted to the machine must be legible.Use mild soap and water to clean safety signs -DO NOT use solvent based cleaners because they may damage the safety sign material. All safety signs MUST be replaced immediately they become damaged or unreadable.

Hydraulic Oil Under Pressure

- Release any pressure in the hydraulic circuit before carrying out any repairs to the hydraulic system or components.
- Fine jets of hydraulic fluid under pressure can penetrate the skin.
- Do not use your fingers to check for small leaks or expose uncovered areas of your body to leaks.
- Check for leaks using a piece of cardboard.

If skin is penetrated with Hydraulic Fluid, Get Immediate Medical Help



Cleaning

- Clean the dumper thoroughly, this will make it easier to find oil leaks and loose fittings etc.
- Take care to clean the oil, fuel and radiator filler necks.
- Drain plugs should also be cleaned.

NOTICE

Avoid Spraying Electrical Equipment with Pressure Washers

- Using water or a pressure washer to wash down the exterior of the dumper with or without detergent is generally all that is required.Do not spray electrical equipment with a pressure washer or direct jets into the engine air intake.
- When cleaning the dumper it is preferable to use a biodegradable cleaner. Do not use solvents or like products which can damage rubber and plastics.

⚠

Contaminated Water / Fluids / Oils Must Be Disposed of Legally

Vehicle/Machine Battery - End of Life Disposal

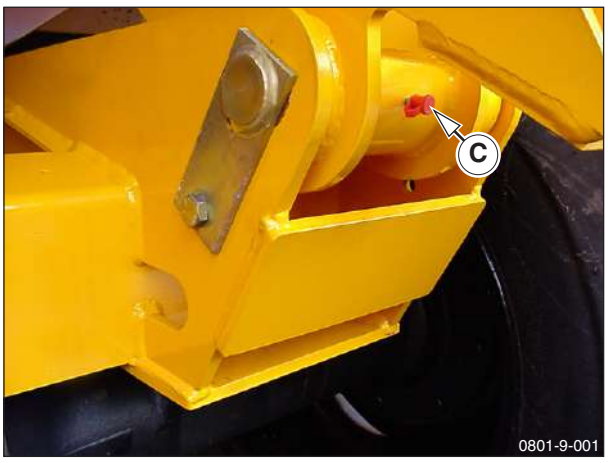
When the battery reaches the end of its useful life it must be removed from the machine and recycled in an approved way in accordance with local environmental regulations.

This service is usually offered by battery vendors.

Machine users that cannot find a suitable battery recycling facility should contact Terex for assistance.

Lubrication Points

All grease nipples are fitted with red protective caps (C) and these must be refitted when the nipple has been used to grease the relevant part.



Engine Cover

When performing maintenance duties other than daily checks, it may be beneficial to lift the engine cover and prop it in the open position. The engine cover is heavy and will require two people to lift and lower it.

Two People Are Required to Lift the Engine Cover

Lifting the Engine Cover

- Remove the two bolts (A) from the front of the cover.
- Slide operators seat forward.
- Open the engine cover doors and lift the cover up.
- Release fixing stay (B).
- Position the end of the fixing stay (B) in the engine cover stay hole (C).

Skip Props

Skip props are provided to enable personnel to work safely on the machine with the skip in the raised position.

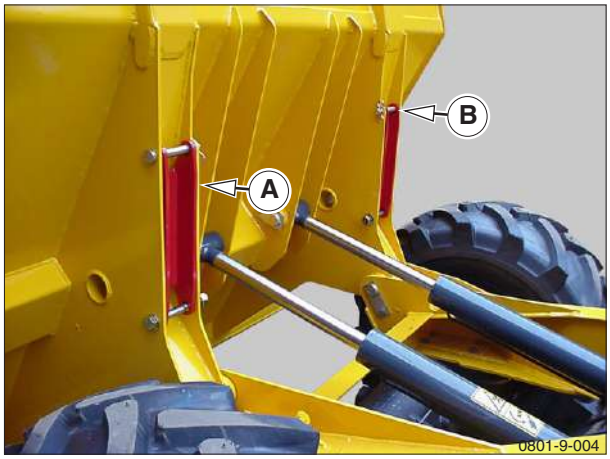
Before Attempting to Carry Out Any Work Under a Raised Skip the Props Must be Placed in the Locked Position

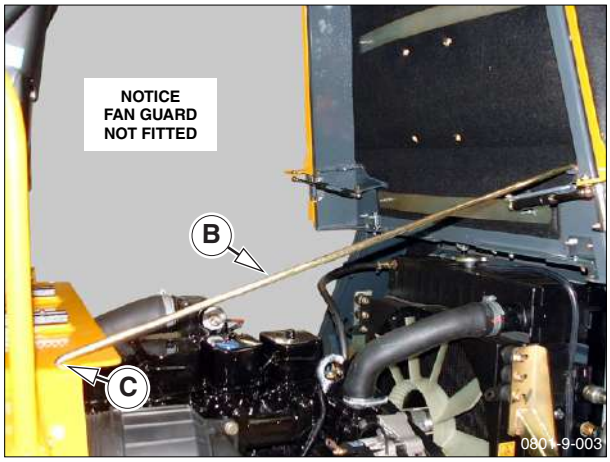
Straight Skip

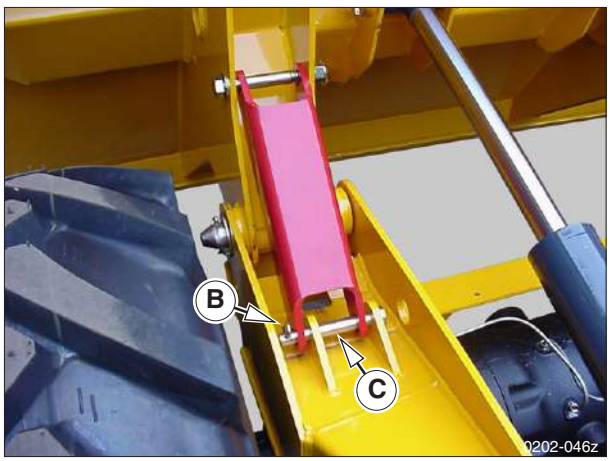
Once the skip has been fully elevated, remove the upper grip clips (B) from both skip props (A) in turn.

Remove the pins (C) and allow the props (A) to enter the lock positions on the front chassis.

Position the pins (C) through the holes in the front chassis and through the corresponding holes in the props. When pushed fully through, push the grip clips (C) securely through the locking pins (B).







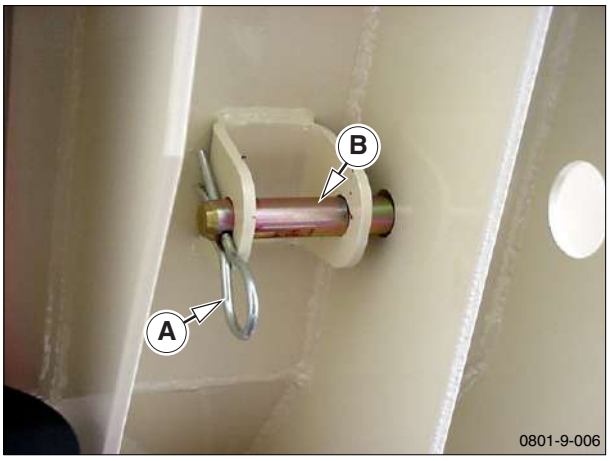
Skip Props

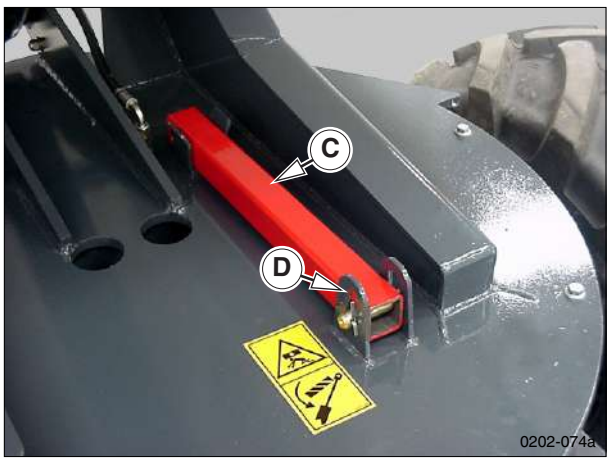
Swing Skip

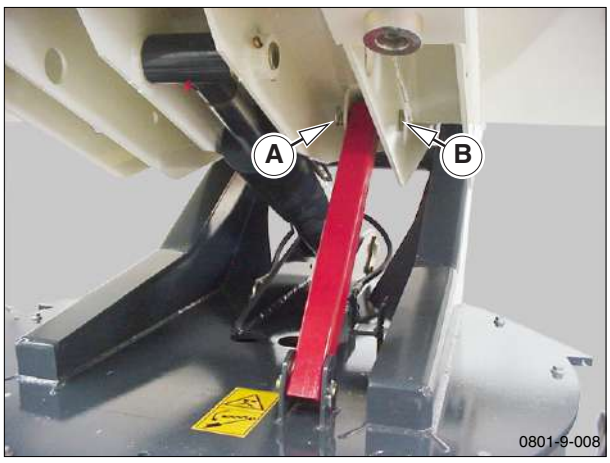
- Elevate the skip sufficiently to remove the 'R clip' (A) and pull the pin (B) out.
- Lower the skip until it is at an angle of approximately 30º. Lift the skip prop (C) up and check the alignment of the holes in the prop with those for pin (B).
- To align the holes, lower or raise the skip. There is vertical movement on the skip prop mounting pin (D) to assist in hole alignment..
- Once the holes are aligned, push pin (B) fully through the bracket and replace the 'R clip' (A).
- Lower the skip until the prop fully supports the skip.

The engine may now be stopped and maintenance may be safely performed under the supported skip.

To remove the skip prop (C), start the engine and lift the skip slightly to take the load off pin (B). Remove the 'R clip' (A) and pin (B) and lower the skip prop (C) into its storage position. Refit pin (B) and 'R clip' (A)







Battery

Battery Isolator

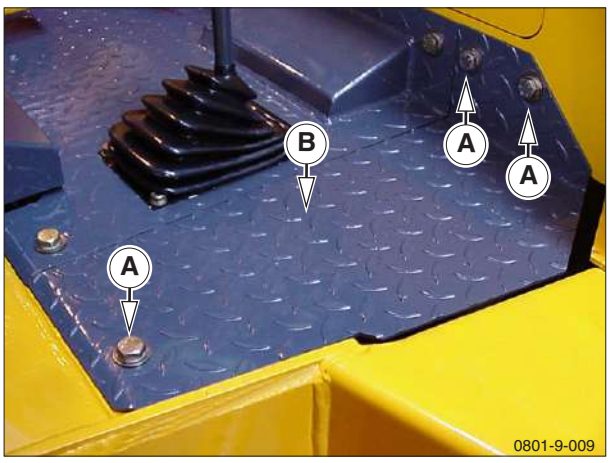
See Battery Isolator on Page 5-10 of this manual.

Before Attempting Any Major Maintenance Disconnect Battery

Use Isolator for Emergency Battery Isolation

Battery Access

To gain access to the battery, remove the three fixing bolts (A) and lift the floor plate (B) clear.

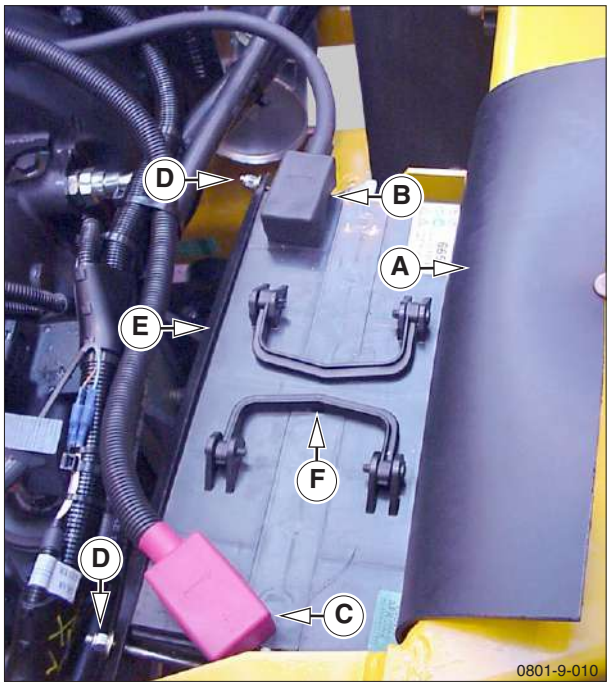


Battery Removal

Read *Battery Maintenance* section before continuing.

Disconnect Negative Battery Lead Connection First

- Lift rubber cover (A) protecting the battery.
- Disconnect **NEGATIVE** cable (B) first.
- Disconnect **POSITIVE** cable (C).
- Loosen the battery clamp strip nuts (D) and remove the clamp strip (E).
- Lift battery from the machine using lifting handles (F).



Battery

Battery Maintenance

Disconnect Negative Battery Lead Connection First

- Always wear protective glasses when working on battery.
- If battery leads are removed, clean battery terminals and connections. When reassembled smear terminals with grease.
- Remove start key and all electrical loads before disconnecting. Always disconnect Negative (-) battery lead before disconnecting the Positive (+) battery lead.
- Remove start key and all electrical loads before reconnecting. Always connect Positive (+) battery lead first when reconnecting battery.
- Never allow metal objects to touch both battery terminals at same time or allow metal objects to touch Positive (+) terminal and frame.

NEVER Charge a FROZEN BATTERY!

- When charging the battery hydrogen gas is produced. Ensure the area is well ventilated to prevent the risk of explosion from a build up of hydrogen.
- Do not smoke, weld, cut, grind etc. in vicinity of a battery being charged.
- If the skin is exposed to battery electrolyte, the affected skin must be washed immediately with running water.
- If eyes are exposed to battery electrolyte, wash eyes with running water and obtain immediate professional medical attention.

Engine Air Cleaner

Air Cleaner Daily Maintenance

The air cleaner (A) is located in the engine compartment.

Check the filter blockage indicator (B). If the indicator is showing RED, the air cleaner requires servicing.

NOTICE

Check Air Inlet System Daily for Air Leaks

NOTICE

Maximum engine protection against dust is possible only if the air cleaner is serviced at regular intervals. No hard and fast rules apply to the regularity of servicing because operating conditions vary so much. The only way to determine if an air cleaner requires cleaning or replacing is to physically check it.

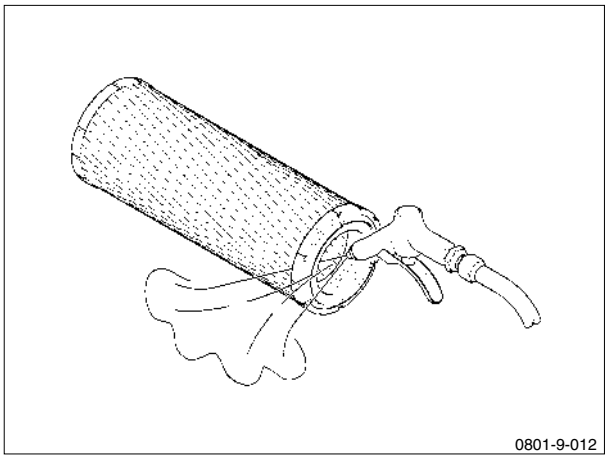
Site Conditions Will Dictate the Frequency of Element Replacement. In Dusty Conditions - Check the Air Cleaner Frequently.

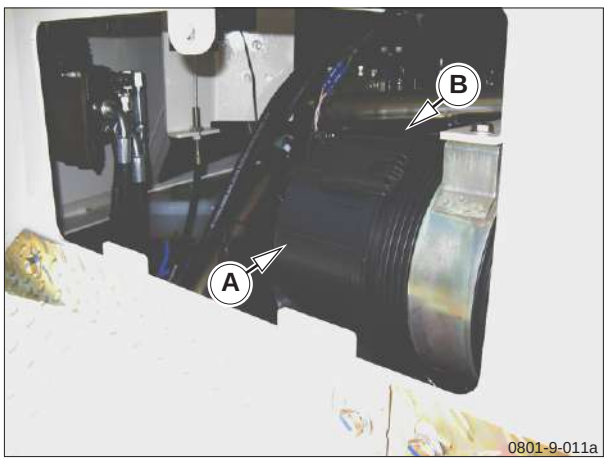
Air Cleaner Servicing

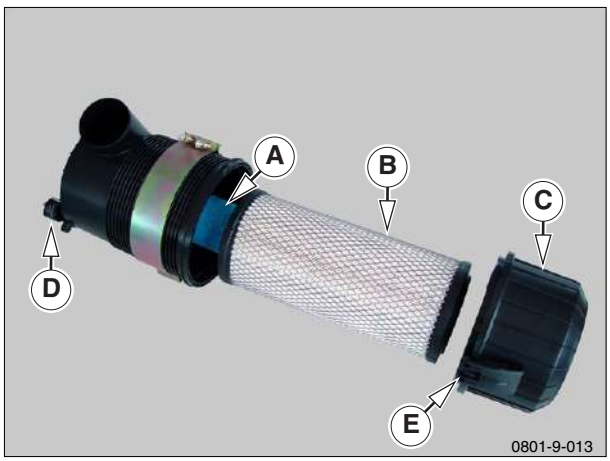
- To service air cleaner first clean its surrounding area and then loosen clamps (E) holding end cover (C) to air cleaner body (D).
- Pull the Primary (B) and Secondary (A) air filter elements from the air cleaner body (D).
- Renew, or clean the element (B). Secondary air cleaner (A) must not be cleaned - it must be renewed when necessary.
- Thoroughly clean air cleaner body (D) and end cover (C). Reassemble by reversing the above procedures.

Air Cleaner Element

Air cleaner element (B) should be cleaned by blowing gently with an airline from inside, or tapping gently against a firm object.







Engine Oil

Always use the *Engine Manufacturers Handbook* for instructions when checking or servicing the engine, e.g. oil level, filters, fan belt etc.

If this is not available the following procedures should be followed for checking and changing the engine oil.

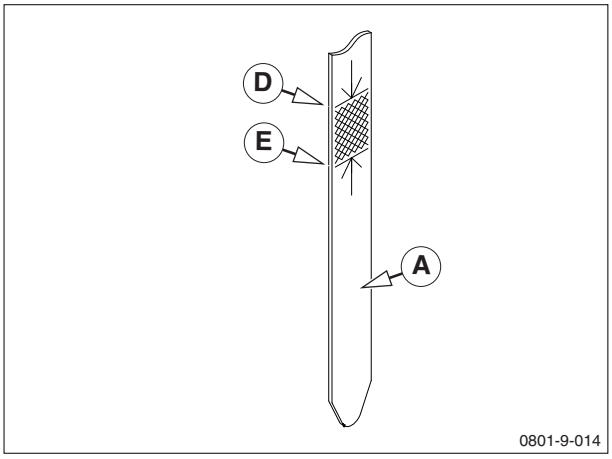
The Dumper MUST be On Firm Level Ground when Checking or Changing the Oil

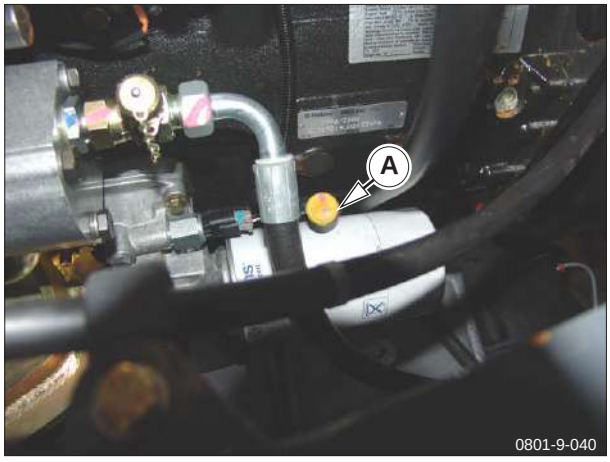
Engine Oil Level Checking

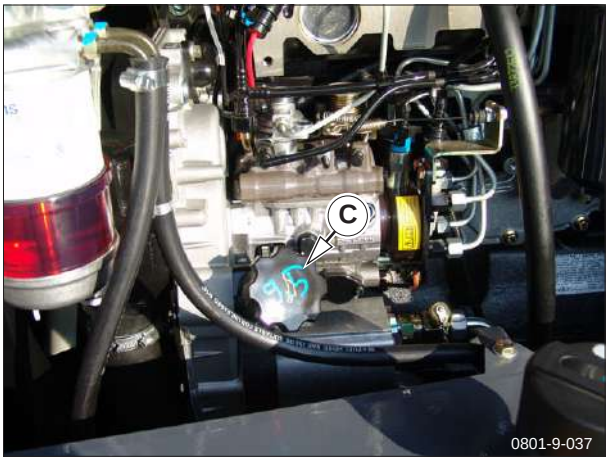
- Park the machine on firm, level ground.
- Stop the engine and let the machine stand for a few minutes to allow the oil to drain into the engine sump.
- Remove engine dipstick (A), clean with paper, replace the dipstick. Remove and check the oil level on dipstick.
- If the oil level is below the MIN level (E), remove the engine oil filler cap (C) and add clean, fresh oil of the correct grade to the engine. While adding oil, check the level frequently to ensure it does not go over the MAX level (D). Replace the filler cap (C).

NOTICE

Too much engine oil may cause damage to the engine







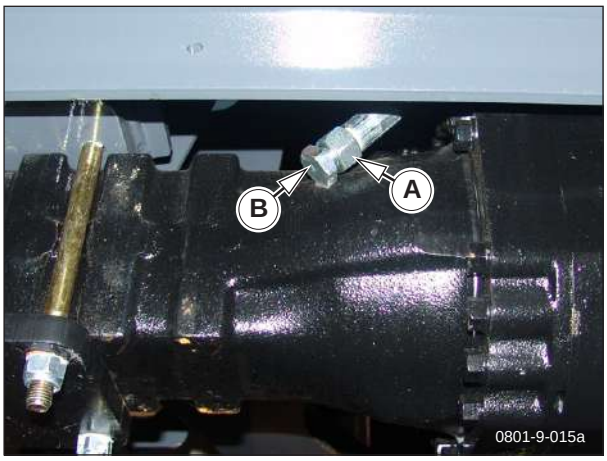
Engine Oil

Engine Oil Draining

- Drain the engine oil when the engine is warm - NOT HOT!.
- Park the machine on firm, level ground. **Access to remote drain plug is from underneath the machine**.
- Engage parking brake.
- Select neutral position for the transmission.
- Remove the starter key.
- Remove the battery isolator key.
- Place a suitable container under the remote drain plug (B), remove the drain plug (B) from the hose (A) and allow the old oil to drain into the container.
- When the oil has finished draining, replace the drain plug (B) into hose (A) and securely tighten.
- Refit belly plate.
- See *Checking Engine Oil Level* section for refilling instructions.
- Start the engine and check for oil leaks.

NOTICE

The engine oil filter should be replaced when changing the engine oil



⚠ Engine Coolant

The cooling system is pressurised to increase boiling point of coolant, therefore extreme caution should be taken when carrying out maintenance on cooling system to prevent scalding.

NEVER Remove Radiator Cap (A) or Expansion Tank Cap (C) when Engine is HOT. Allow tanks to vent residual pressure before completely removing caps.

Topping-Up Cooling System Level - Engine Cold

This operation should only be performed by topping-up the plastic expansion tank (B) to maintain coolant level within the Maximum (D) and Minimum (E) marks on expansion tank.

Only fill radiator via the orifice at (A), after draining the system or on regular servicing check. See *Radiator Cap Access* section.

NEVER Overfill the Expansion Tank

Coolant

The coolant used to top up the cooling system should be a pre-mixed solution of antifreeze and water in the correct ratio for the temperature range the machine is to be used in.

DO NOT USE Anti-Leak Additives
When topping-up the system, always check the water hoses for damage or wear and for any obvious leaks

Radiator Cap Access

- Lift and turn handle (F) on the radiator cap cover plate (G) to release the catch.
- Lift cover plate (G) to access the radiator cap (A).

NEVER Remove Radiator Cap (A) when Engine is HOT

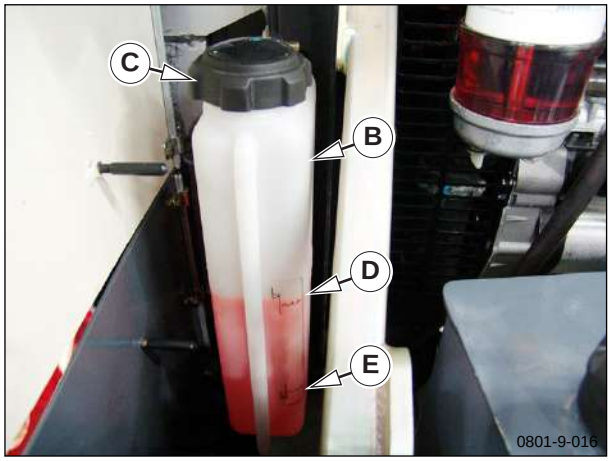
- Ensure radiator cap (A) has been replaced and tightened before closing cover plate (G) and returning the handle (F) to the locked position.

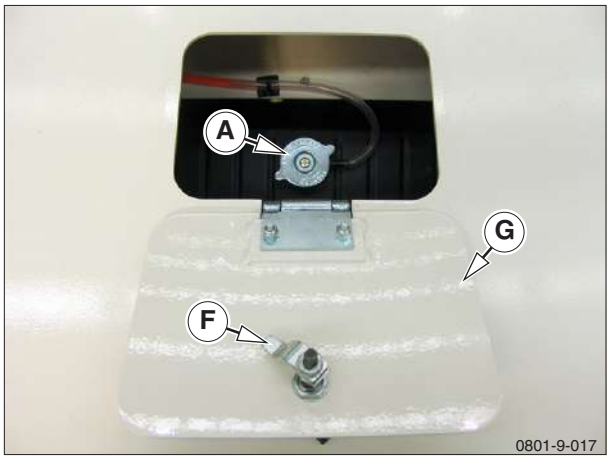
NEVER start engine without coolant in the cooling system.

NEVER remove radiator cap when the engine is running.

Antifreeze is TOXIC. If accidentally swallowed, medical advice must be sought Immediately.

Antifreeze is corrosive to the skin. If accidentally spilled on to skin, it must be washed off immediately. Protective clothing and eye protection should be worn when handling antifreeze.





Hydraulic System

During ANY hydraulic maintenance extreme care should be taken to ensure the cleanliness of the hydraulic circuit. By observing strict hydraulic cleanliness the machine will benefit from fewer hydraulic failures through contamination. For example:

Always

- Thoroughly clean machine before any maintenance. Use paper roll, not rag, to wipe parts.
- Use fresh, clean hydraulic oil from a sealed container.
- Ensure old gasket particles and excess sealing compound etc. do not enter the system. If they do clean them out.
- Ensure new parts and fittings are kept in sealed bags etc. and they are stored away from any contamination.
- Remove flaking paint from around the area being maintained. Inspect the inside of new tanks for plastic debris etc.

Never

- Fit new hoses if both ends are not fitted with plastic caps.
- Fit new valves, pumps, motors, filters etc. if all the ports are not plugged.
- Use dirty containers for oil storage.
- Use dirty containers or funnels for filling hydraulic system.
- Store hydraulic components on the floor, in areas where welding or grinding is done, in a dirty environment etc.

Hydraulic Filters

A description of the hydraulics, and circuit diagrams is contained in this manual under the section headed *Hydraulic System* on page 5-7. The system components are maintenance free other than the suction strainer and return line filter.

NOTICE

When renewing these filters, the area around the filter should be cleaned before removing old filters to prevent ingress of dirt into the hydraulic system

Whilst removing these parts it is recommended the system is drained and refilled with clean new hydraulic oil as specified on the lubrication chart on page 9-28.

Waste Oil MUST be Disposed of Legally

Hydraulic System

Hydraulic Oil Level - Checking

To check the hydraulic oil level,

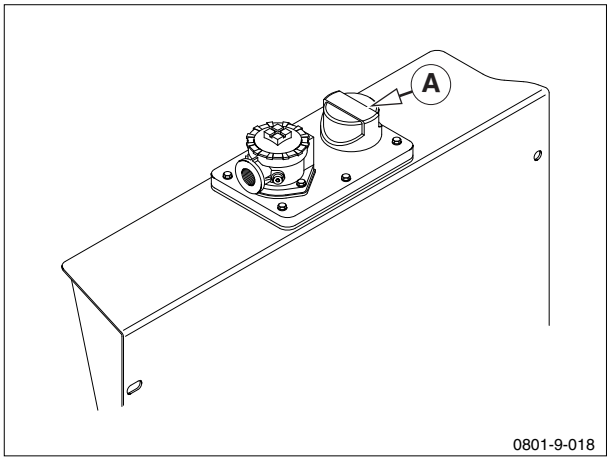
- Stop the engine and unscrew the dipstick/breather (A) and remove from the tank.
- Wipe all traces of oil from the dipstick (A) with clean paper and replace.
- Remove the dipstick (A) again and check the position of the oil level.
- There are two marks, Max (C) and Min (D) on the dipstick, never allow the oil level to go below the Minimum mark (D) or above the Maximum mark (C).

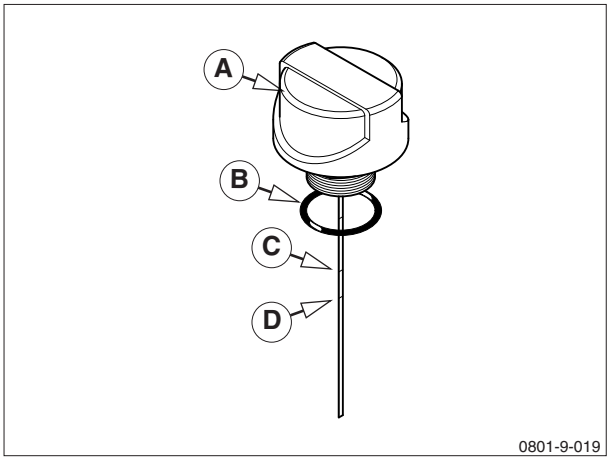
Always Position Machine on Firm, Level Ground when Checking Fluid Levels

Hydraulic Oil - Adding

When adding oil,

- Ensure a clean container and clean, fresh, new oil is used.
- See *Lubrication Schedule* in this manual for correct grade of hydraulic oil.
- Unscrew the return filler cap/dip stick (A), be careful not to lose the seal (B) from under the cap.
- Pour fresh oil through the filler hole.
- Use the filler cap / dipstick (A) to check level, fill until the oil level is at the upper mark (C).





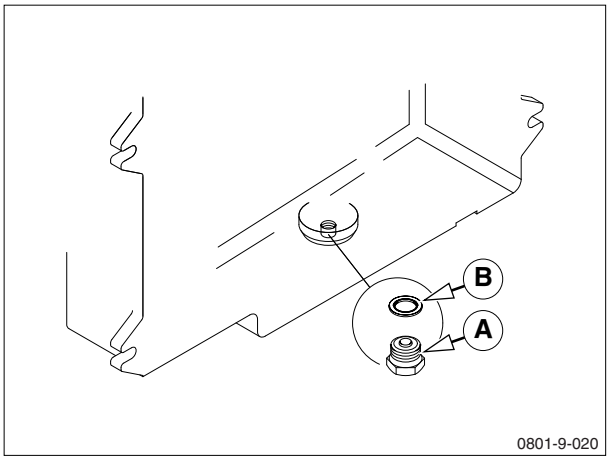
Hydraulic System

Hydraulic Oil - Replacing

- Before draining the hydraulic oil, ensure the oil is warm **not hot**.

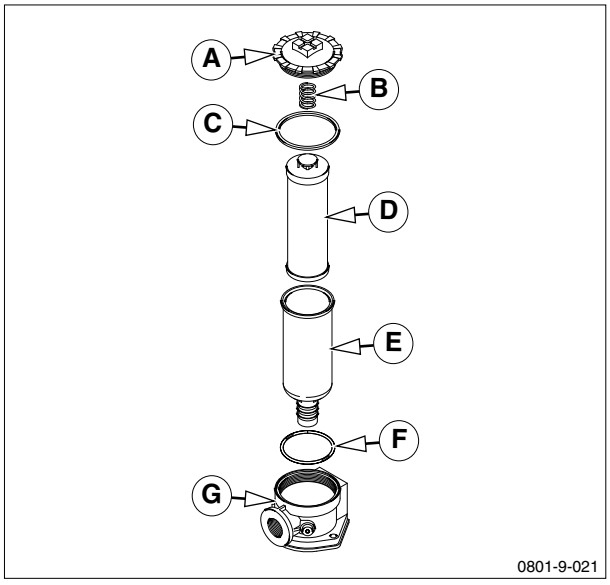
Position Machine on Firm Level Ground

- Loosen the hydraulic tank drain plug (A) at the bottom of the hydraulic tank.
- Place a suitable receptacle, of sufficient capacity, under the hydraulic oil tank drain plug (A) to catch the oil.
- Remove the drain plug (A).
- When the oil has finished draining, clean the drain plug (A) and replace the sealing washer (B).
- Refit the drain plug (A) and tighten.
- Refill the hydraulic tank with the correct grade and quantity of hydraulic oil. See '*Lubrication*' and '*Hydraulic Oil - Adding*' sections.



Return Filter

- Unscrew the cap (A) from top of return filter body (E). Take care not to loose spring (B).
- Pull the return filter (D) and casing (E) out from the filter body (G).
- Clean casing (E) and inside of the filter body (G).
- Renew rubber sealing ring (F) and replace casing (E) into filter body (G).
- Insert a new filter (D).
- Renew the rubber sealing ring (C) and lubricate with clean hydraulic oil.
- Position the cap (A) and spring (B) in filter housing (G) and fully tighten cap (A).
- Check oil level and test for leaks before returning the machine to work.



Hydraulic System

Suction Strainer

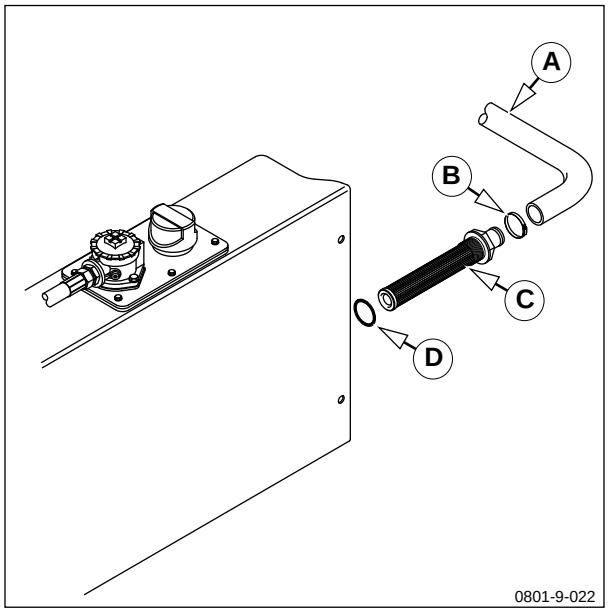
When changing this filter it is recommended the tank is removed and cleaned.

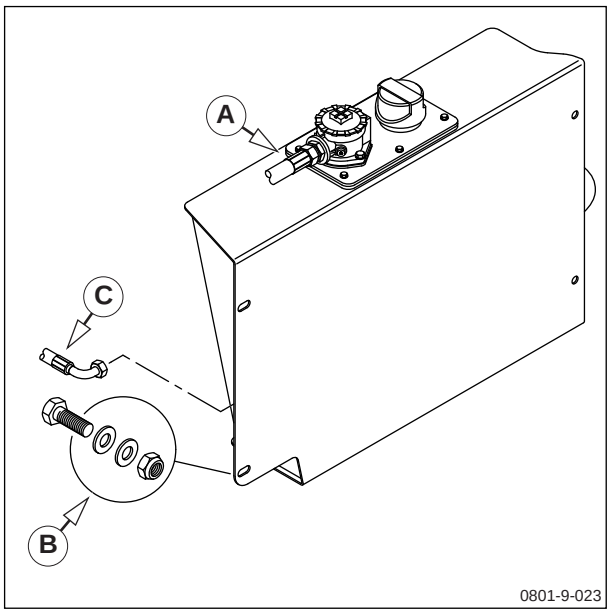
- Thoroughly clean the tank and surrounding area.
- Drain the hydraulic oil. Undo the hose clip (B) on the suction strainer hose (A) and pull the hose from the suction strainer (C).
- Unscrew the suction strainer (C) from the tank.
- Clean the suction filter tank mounting face.
- Screw in a new suction strainer (C) using a new sealing washer (D), fully tighten.

Dispose of Waste Oil and Strainer in an Environmentally Safe Way.

Hydraulic Tank Removal

- Remove the engine centre cover and engine access doors.
- Thoroughly clean the tank and surrounding area.
- Drain the hydraulic oil.
- Remove the suction strainer hose and oil return hoses (A, C).
- Undo the four fixing nuts and bolts (B).
- Lift the tank out of the frame.
- Thoroughly clean the tank and surrounding area before refitting the tank.
- Refitting is the reversal of the above procedure.
- Refill the tank. Check for oil leaks.





Fuel System

Diesel Fuel Level

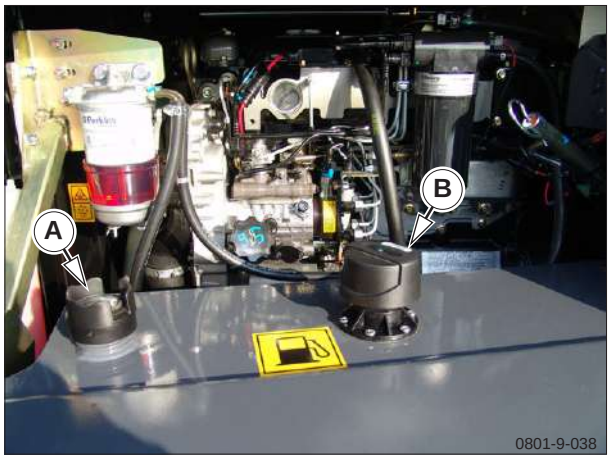
When Refuelling Stop the Engine and Beware of Naked Flames, Grinding Sparks etc.

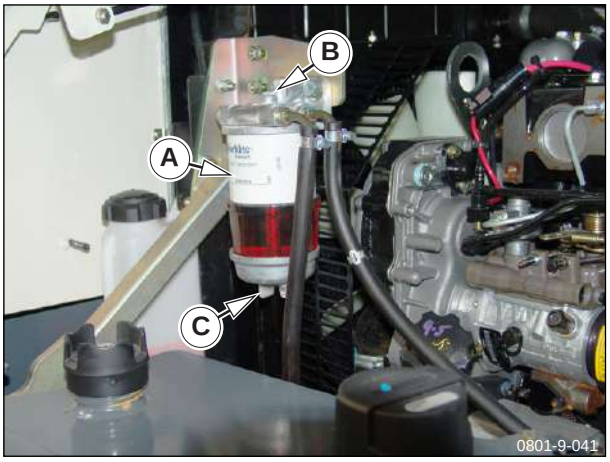
- Check the diesel fuel level reaches the indicated maximum level on the tank top mounted level gauge (A). The gauge markings indicate when the tank is Empty, half full or Full.
- To refill, remove the large filler cap (B) and pour the recommended grade of fuel through the fuel strainer inside the filler neck. NEVER overfill the fuel tank.
- When refuelling never leave the engine running
- Ensure the engine is cool, the machine is in a well ventilated area and always use clean fuel from a clean container.

Fuel/Water Separator

To drain the separator (A)

- Remove the bleed screw (B) and discard the washer.
- Place a receptacle of suitable capacity under the tap (C) of the separator, open the tap and allow contaminated fuel to drain.
- Close the tap (C) and re-fit the bleed screw (B) using a new washer.





Brakes

The machines use axles with oil immersed totally enclosed multi-plate brakes. The dumpers have braking on both front and rear axles, see *Specifications* section.

The brake system is charged with mineral oil, **NOT BRAKE FLUID**, via a fluid reservoir (B) which is remote from the brake master cylinder. For correct mineral oil refer to *Lubrication Schedule* on page 9-28.

Brake Maintenance

Normally adjustment of the brakes is unnecessary due to the automatic compensation which is built into the brake design, but bleeding of the system may be necessary on occasions if pipe work is damaged causing system leakage.

NOTICE

Under NO circumstances allow conventional BRAKE FLUID to be added to the system and NEVER purge the system and refill with brake fluid, otherwise damage will occur to all rubber sealing components in the brake system. Refer to Lubrication Section.

⚠

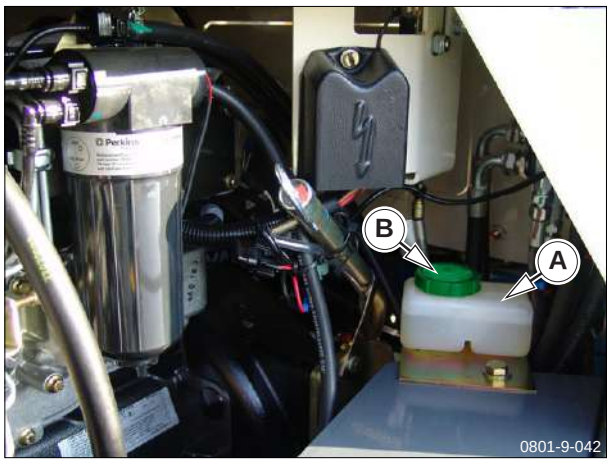
Brakes on the machines provide means of effective braking with minimum maintenance. But it is vital during machine maintenance that the general condition of system. i.e. pipe work, pedal operation, fluid level and general oil tightness is checked and deficiencies corrected immediately.

Failure to do so Could Result in Brake Failure

Brake Fluid - Checking Level

The master cylinder reservoir (A) is located in the engine compartment on top of the fuel tank.

- Thoroughly clean the area around reservoir filler cap (B).
- If the fluid is not level with the base of the filler neck, unscrew reservoir filler cap (B) and fill as necessary.
- Replace the filler cap (B).



Brakes

Parking Brake

The parking brake is mounted on the output end of gearbox.

Wear can occur either by stretching of the brake cable, or wear on the disc pads themselves, causing a reduction in efficiency.

Before adjusting the parking brake make sure that the machine is on level ground. Chock all four wheels to prevent machine moving. Set battery isolator to OFF.

Parking Brake Lever

The Parking Brake Lever (A) fitted, is of the over centre type, and if incorrectly adjusted can place excessive load on the brake cable

To adjust the cable:-

- Release the parking brake (lever horizontal). Remove plastic hand grip and slacken locking grub screw (B).
- Turn handle nut (C) to bring the pin (D) central in the slot.
- Re tighten grub screw and replace plastic grip.

Brake Calliper

To adjust the brake caliper:-

- Slacken the locknuts (E) on the brake cable (F). Tighten the lower nut until the linings contact the brake disc (G) and prevent the disc from turning easily.
- Slacken the nut (E) off until the brake disc (G) turns freely without any friction on the brake disc. Tighten the locknuts (E) and check the brake disc (G) still turns freely.

Any further adjustment should be done at the parking brake lever.

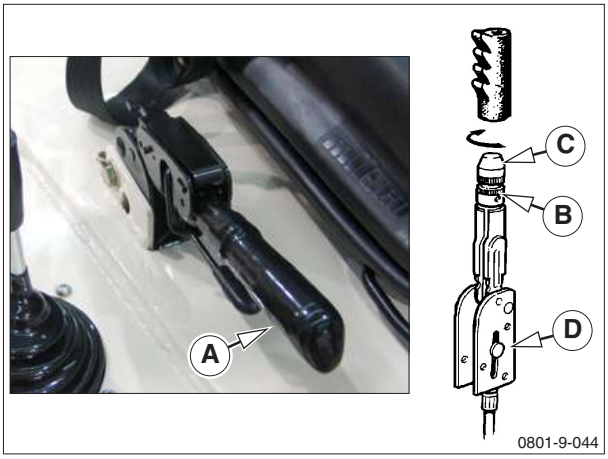
Parking Brake Test

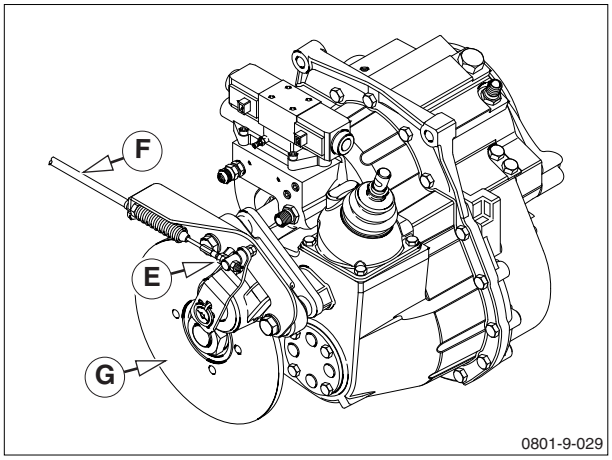
When adjusted correctly the parking brake should hold the vehicle at full engine revs in 4th gear. Test as follows:-

- Ensure all personnel are clear of the area and the area is free of obstructions.
- Apply parking brake.
- Select Forward and 4th Gear.
- Increase engine speed gradually up to maximum R.P.M

If vehicle moves abort test immediately re-check adjustment.

Ensure All Personnel are Clear of the Area Before Performing Brake Test





Front and Rear Axles

Axle Description

The axles are bolted directly to the chassis.The bolts should be checked regularly- see *Service Schedule*. The bolts should be tightened to 216Nm (160 lb. ft).

Normal servicing is limited to lubrication as detailed in the *Service Schedule*, details of procedures for major repairs may be obtained from the manufacturer.

In the front axle totally enclosed sealed multi-plate brakes are fitted, which have automatic compensation for wear of the friction discs.

Over a period of time wear may necessitate replacement of the friction discs and/or the slave cylinder seals.

These parts should be replaced as required and the system bled.

Always Position Machine On Firm, Level Ground When Checking Fluid Levels

Contaminated Fluids / Oils Must Be Disposed Of In Accordance With Environmental Regulations

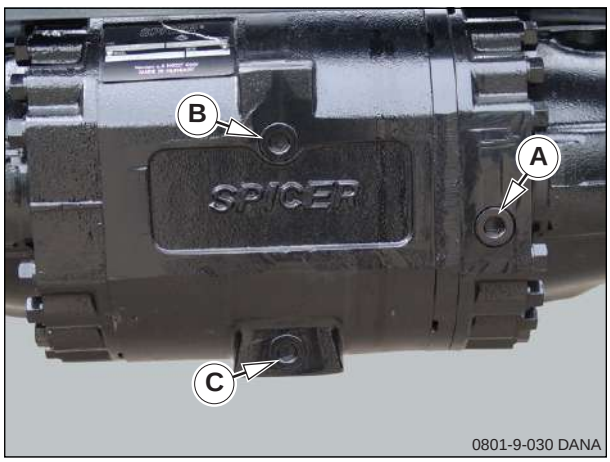
Axle Oil - Checking Level

Checking Oil Level

- Park the machine on firm, level ground.
- Clean dirt from around oil level plug (A).
- Remove the oil level plug .
- The oil should be level with the bottom of the oil level plug hole.
- Remove the filler plug (B) and add the specified oil, as required, through the filler plug hole until the oil begins to run out of oil level plug hole. See *Lubrication Schedules* for correct oil.
- Replace and tighten the filler and level plugs.

Axle Oil - Changing

- Make sure axle oil is warm - Not Hot, to help draining. Park the machine on level ground.
- Clean dirt from around drain plug (C) and oil level and filler plugs (A and B).
- Place a suitable container of sufficient size under the drain plug .
- Remove the level plug and filler plug and remove the drain plug. Permit the oil to drain.
- Replace and tighten the drain plug .
- Refill the axle through the filler hole (B) until the oil in axle is level with the bottom of the Level plug hole. See *Lubrication Schedules* for correct oil.
- Replace and tighten the filler and level plugs..



Gearbox and Transfer Box

General

NO adjustments are necessary to any of these units, all that is required is adherence to the lubrication schedule on page 9-29.

NOTICE

Always Position Machine on Firm, Level Ground when Checking Fluid Levels

Oil Changes

An initial oil change and flush is recommended after the transmission is placed in actual service. This change should be made at any time following 50 hours in service, but should not exceed 100 hours. An oil change and flush should be scheduled for every subsequent 500 hours of operation. When changing the oil it is essential to renew the oil filter and clean out the suction strainer. The object in draining the oil is to eliminate possible bearing surface abrasion and attendant wear. Minute particles of metal, the result of normal wear in service are deposited in and circulated with the oil. Oil changes are best carried out when the transmission is thoroughly warm - NOT HOT!

Transfer Box

Checking Oil Level

- Position the machine on firm, level ground.
- Clean dirt from around filler plug (A).
- Fill the transfer box through the filler/level hole (A), with the correct grade of oil, until the oil begins to flow from the level/filler hole (A).
- Replace the plug (A) and tighten.

Refer to *Lubrication Schedule* for correct grade of oil.

Changing Oil

To facilitate draining, ensure transfer box oil is warm - *Not Hot!*. Position the machine on level ground.

- Clean dirt from around drain and filler plugs.
- Place a suitable container of adequate size under drain plug (B).
- Remove drain plug (B). Allow the oil to drain.
- Refit the drain plug (B) and tighten.
- Refill the transfer box through the filler/level hole (A), with the correct grade of oil, until the oil begins to flow from the level/filler hole (A).
- Replace the plug (A) and tighten.

Synchro Shuttle Gearbox

To ensure proper lubrication and operating temperatures it is most important that appropriate lubricants are used and that the correct oil level is maintained. Refer to *Lubrication Schedule* for correct oil.

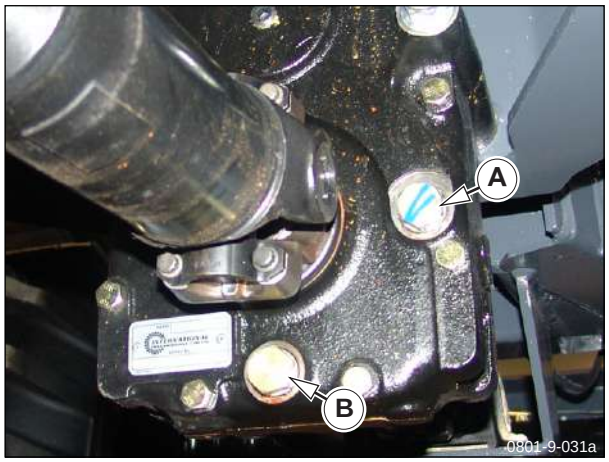
The only routine maintenance required is weekly checking of gearbox oil level using the dipstick (A) accessible through the right hand engine cover, and changing oil and filter at the specified intervals, as detailed in the *Lubrication Schedule*.

Do not overfill the transmission as this may result in oil breakdown due to excessive heat and aeration from the churning action of the gears.

Early breakdown of the oil will result in heavy sludge deposits that block oil ports and build up on splines and bearings. Over filling may also cause oil leaks.

Checking Oil Level

Drive the machine for approximately one minute. Stop the engine and check the gearbox oil level within one minute of stopping the engine.

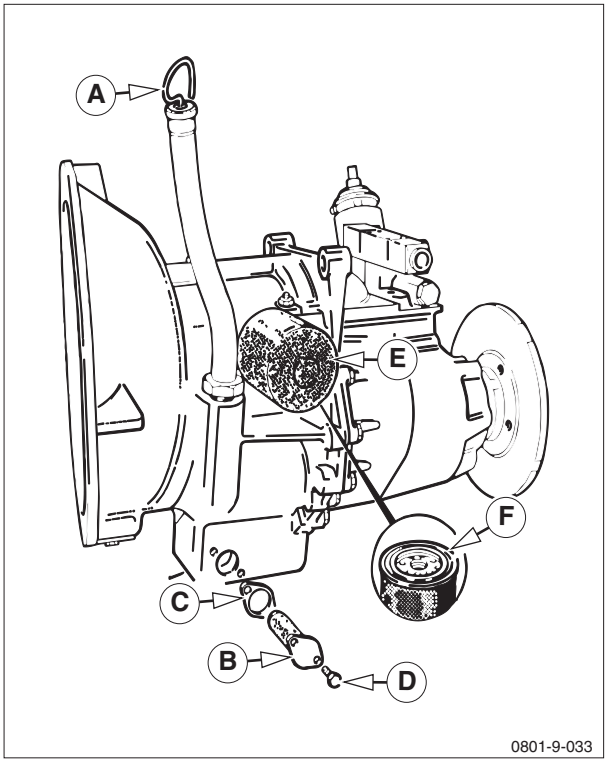


Synchro Shuttle Gearbox

Changing Oil

When draining gearbox oil the oil should be warm but not hot! Ensure container used to drain the oil into is of sufficient capacity to hold the oil.

- Drain oil by removing the strainer (B). Clean strainer (B) using a suitable solvent.
- When refitting strainer (B), renew gasket (C) and apply Loctite 242 to bolts (D).
- Before fitting a new filter (E), smear seal (F) with transmission oil. Screw the new filter onto the gearbox and tighten using hands only.



⚠ Wheels and Tyres

Check the types regularly for damage by cuts and embedded particles, i.e. nails, steel, glass etc. and check / adjust the pressures weekly using valve (A).

See *Specifications* section for tyre pressures.

⚠

Wheel Nut Torques Must be Checked Regularly. See the Service Schedule and the Technical Specifications Sections for Details

Centre Pivot

General

Ensure Articulation Lock is fitted when working in the area of the Centre Pivot.

Pivot Pin Locking Screws

To prevent centre pivot pin from turning it is important to keep the Locking Screws (A) correctly tightened.

Ensure Articulation Lock is in Position when Working in Crush Zone

NOTICE

Keep Centre Pivot Lock Screws (A) Tight

Protective Caps

Two protective caps (B) are fitted over the pivot bearing housing's and these should be replaced in the event of damage to avoid ingress of dirt and moisture to the bearings.

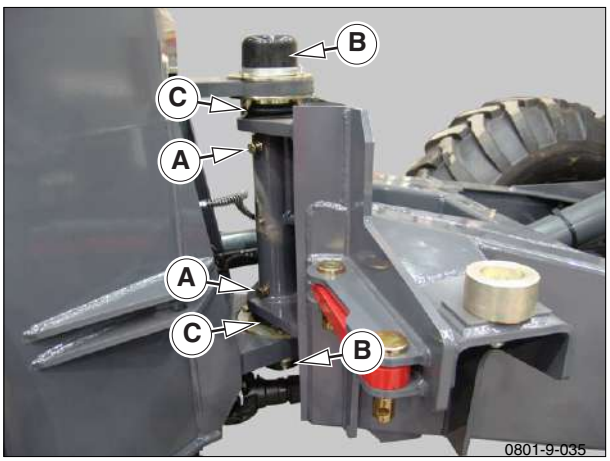
Seals (C) should be replaced in the event of damage.

Lubrication

Lubrication of the centre pivot bearings (D) and the pin (E) in the assembly is important and should be carried out every 50 hours in accordance with the *Service and lubrication schedules*.

NOTICE

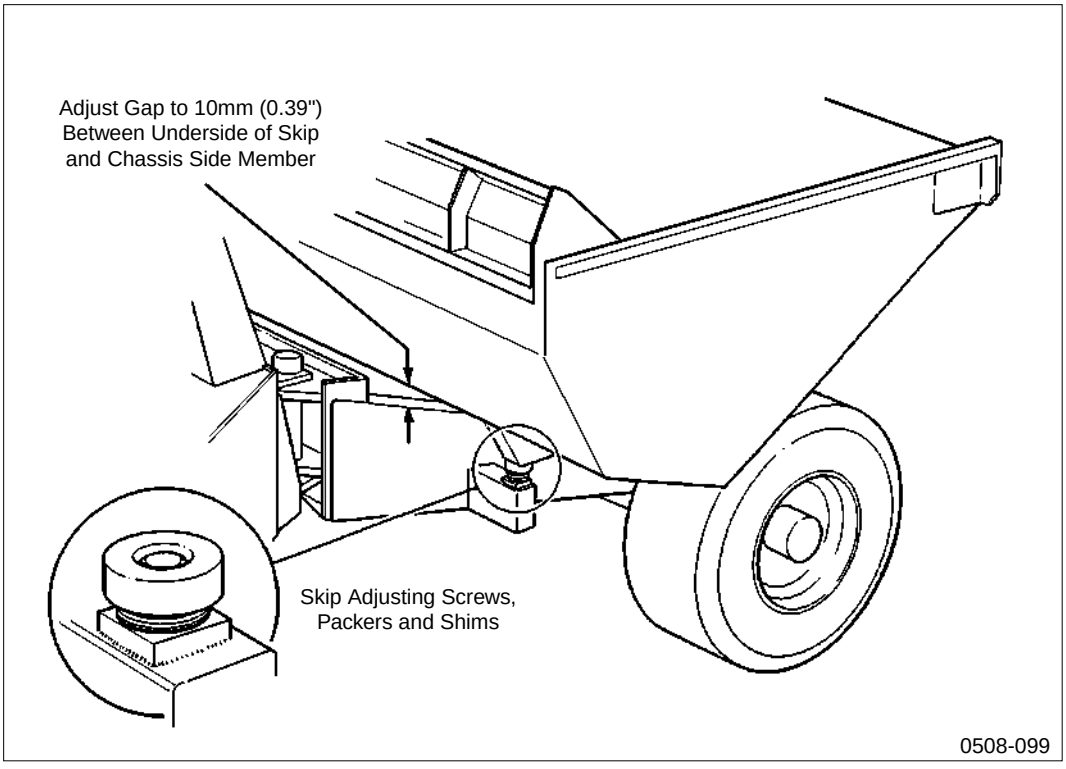
Ensure Centre Pivot Bearings are Lubricated Weekly



Straight Skip Adjustment

The skip has 2 adjustment stops located on the front frame outrigger supports. these stops require adjustment to ensure the skip is supported by the chassis and does not rest on the hydraulic ram.

The clearance between the chassis and skip at its closest point should be a minimum of 10mm (0.39”). Adjust the height by shimming as shown below.



ROPS

Introduction

There are in-service factors which tend to degrade a ROPS/FOPS systems energy absorbing or load carrying capability.

A few of these factors are:

- Structural damage from vibrations and/or loadings during some operations.
- A corrosive environment.
- Continued use of the machine after rollover or accident involving structural damage.
- Unauthorized modification.
- Worn or deteriorated isolation mounts.
- Bolt replacement with less than the correct grade or neglect in maintaining proper bolt torque.
- Improper installation.

Any of these factors may cause a dangerous condition to exist as well as exposing all concerned parties to liability damages. The following guidelines will be helpful if followed.

Attachments and/or Modifications

Generally ROPS/FOPS structures are not intended as external load carrying members and must not be used to mount attachments such as pull hooks, winches, side booms, etc. without the manufacturers approval.

Non external load transmitting attachments such as mirrors, fans, heaters, lights, etc. should be installed following the manufactures guidelines. Typically these attachments are located in non critical areas such as roof sheets, enclosure sheet metal, or the middle portion of the ROPS legs.

Modifications to basic design such as increasing canopy height, or relocating ROPS legs is not permitted.

Maintenance

Inspection - A scheduled, frequent visual check of mounting hardware by operation or service personnel is recommended. As most ROPS are different and function in different service environments, no specific inspection interval can be recommended. Inspection in conjunction with regular service intervals is suggested. The inspection should check for:

Worn, damaged or missing resilient mounts. Excessive motion or rattling during operation are indications of a problem. The mounts should be disassembled and repaired if required.

Missing or damaged mounting hardware (bolts, nuts, washers, etc.) should be replaced. Bolts should be checked for correct torque settings.

Cracks in ROPS/FOPS structure and mounting system. The machine should be cleaned and disassembled as necessary to allow inspection for cracks in the structure and mounting system. Cracks are usually associated with weld details and usually show as a line of rust before it will be clear as a crack. Rust lines should be taken as indications of cracks and verified by inspection following the manufacturers procedures. Only some cracks will badly affect the ROPS/FOPS function. Cracks in enclosure sheet metal generally are not structurally important. The manufacturer can identify the appropriate measures. If in doubt, consult the manufacturer.

Water drainage paths. The check should verify clear water drainage paths so that entrapped water will not freeze and crack or deform the structure.

Corrosion. Extensive paint peeling and rusting should be noted and corrective action taken.

Other Inspection. The structure must be inspected following a rollover, collision or fire.

Repair

Replace all missing or damaged hardware with the manufactures specified hardware. Re-torque all threaded fasteners to the manufacturers specifications.

Replace worn or damaged resilient mounts to prevent further damage and vibration problems.

Determine the repair ability of cracks in ROPS/FOPS structures on the basis of the crack details and effect on the particular design. The manufacturer must be consulted at this step. Some general guidelines which may be helpful are:

Enclosure sheet metal cracks are repairable.

Small cracks may be repairable. Consult the manufacturer.

If damaged by a rollover, collision or fire consult the manufacturer.

In all cases, when doubt exists, consult manufacturer.

⚠ Seat Belts

Important Facts about Seat Belts

The potential exposure of this seat belt to severe environmental conditions make it crucial to inspect the seat belt system regularly.

It is recommended that the seat belt system is inspected at least once a year or more often if the vehicle is exposed to severe environmental or vocational conditions,

Any seat belt system that shows cuts, fraying, extreme or unusual wear, significant discoloration due to UV exposure, dusty-dirty conditions, abrasion to the seat belt webbing, or damage to the buckle, latch plate, retractor, hardware or any other obvious problem should be replaced immediately.

Once replacement of the seat belt has been determined, be certain that it is only replaced with the original equipment manufacturer recommended replacement seat belt. See your authorized spares and service centre for replacement. Your restraint system has been developed and tested specifically for your machine.

If the inspection indicates that any part of the seat belt requires replacement, the entire belt must be replaced. It is vitally important that all components be mounted back in the same position as the original components which were removed. This will maintain the design integrity of the mounting points for the seat belt assembly.

⚠

Failure to properly inspect and maintain a seat belt can cause serious injury or loss of life in the event of an accident.

It is critical that any time the machine is involved in an accident, the entire seat belt system must be replaced.

The seat belt should be considered to have a finite life and must be replaced as required throughout the life of the machine.

The seat belt must be inspected daily for required maintenance.

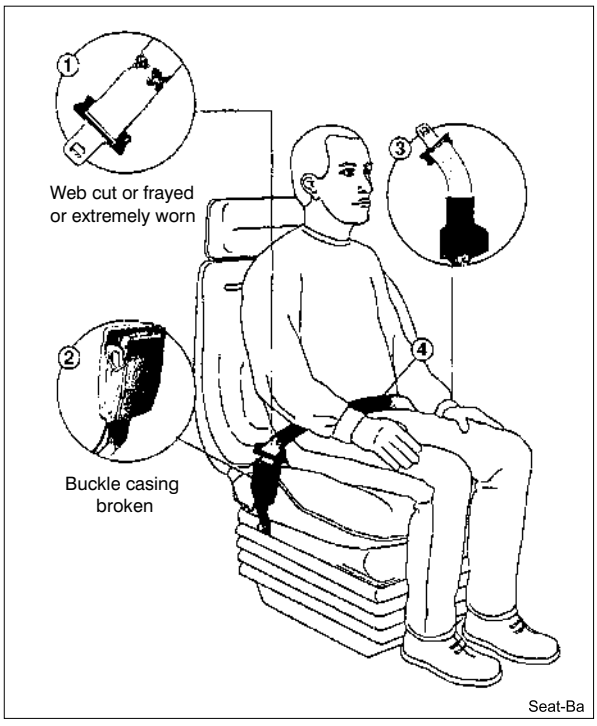
If replacement of any part of the seat belt is indicated through maintenance guidelines below, the entire belt must be replaced, both retractor and buckle sides.

⚠ Seat Belt Maintenance Guidelines

Follow Maintenance Guidelines below to properly inspect seat belt and tethers to determine if replacement is necessary.

The following maintenance guidelines detail how to Inspect seat belt for “cuts, fraying, extreme or unusual wear of the webbing, etc., and damage to the buckle, retractor, hardware or other factors” which indicate that seat belt replacement is necessary,

- Check the webbing. Pull the webbing completely out of the belt retractor and inspect the full length of the webbing for cuts, wear, fraying, dirt and stiffness. If a belt shows any cuts, fraying, extreme or unusual wear, the system should be replaced.
- Check the buckle and latch for proper operation and to determine if latch plate is excessively worn, deformed or buckle is damaged or casing broken.
- Check retractor web storage device operation by extending webbing to determine it locks properly and that it spools out and retracts webbing properly.
- Check web in areas exposed to ultraviolet rays from the sun or extreme dust or dirt. If the original colour of the web in these areas is extremely faded and/or the web is packed with dirt, the physical strength of this web may have deteriorated. If this condition exists replace the system.

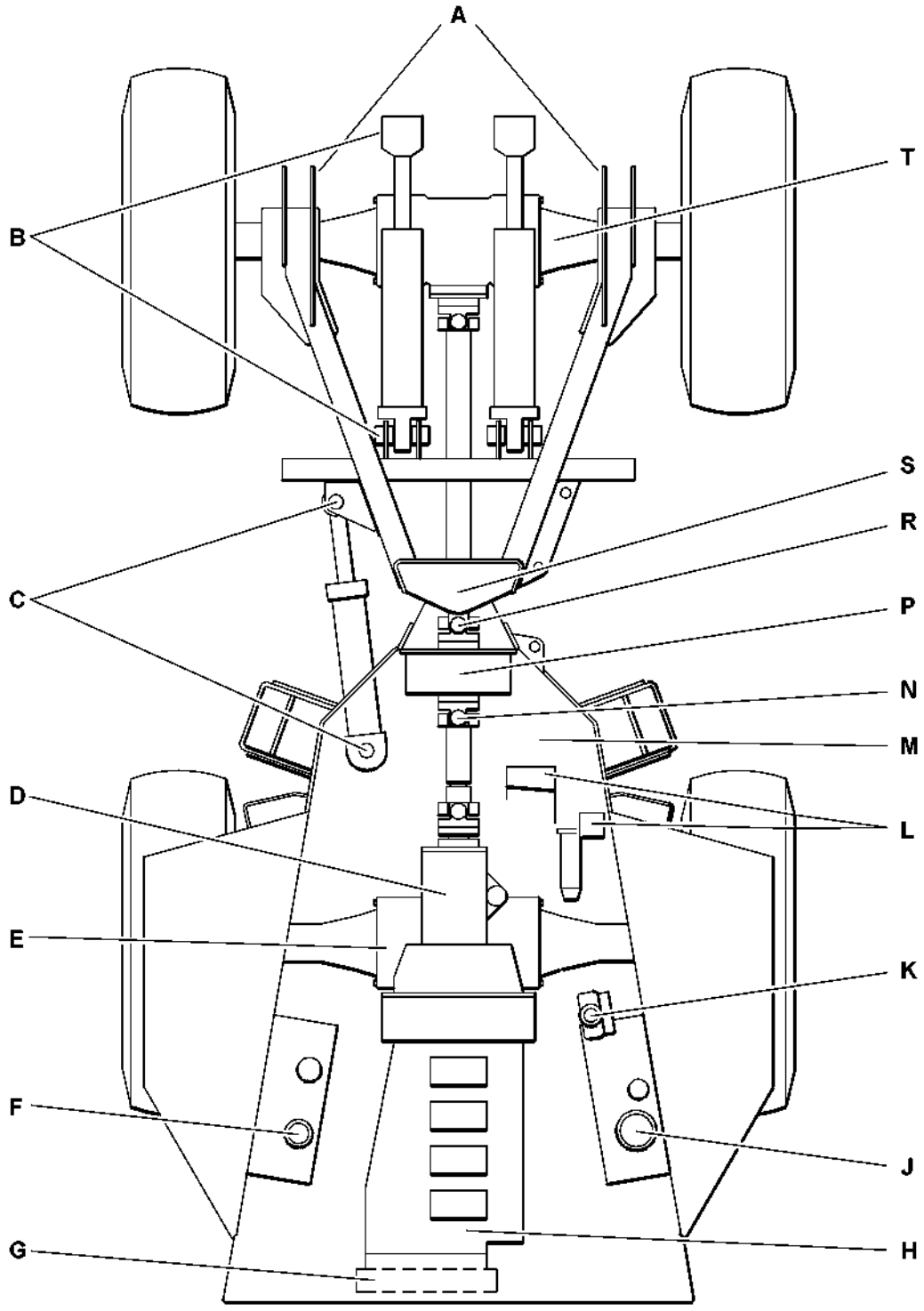


Lubrication Schedule - Straight Skip

Item	Key		International Specification	Service Hours	
A	Skip Pivot Pins	Multi Purpose Grease EP2	Lithium Grease - Gr Li, NL GI 2	50	-
B	Skip Ram Pins				
C	Steering Ram Pins				
D	Gearbox	Shell Donax TF	-	50	500
E	Rear Axle	Shell Donax TD	-	50	500
F	Hydraulic Tank	Shell Tellus T46	High VI Hydraulic Oil - HV ISO VG46	10	500
G	Radiator	Shell Glycoshell / Water Mixture Refer to Antifreeze Table	Extended Life Antifreeze	10	Autumn
H	Engine Sump	Shell Rimula R3 X 15W/40	API:CH-4, CG-4, CF-4, CF ACEA:ES, E3 SAE15/W40	10	500*
J	Fuel Tank	Diesel	DERV to EN590	10	500
K	Brake Reservoir	Shell Tellus T46	High VI Hydraulic Oil - HV ISO VG46	10	500
L	Pedals	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
M	Parking Brake				
N	Propshaft	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
P	Transfer Box	Shell Spirax A 80W/90	-	50	500
R	Propshaft	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
S	Centre Pivot	Starplex All Purpose Grease EP2	Lithium Complex Grease - Gr Lic, NLGI 2	50	-
T	Front Axle	Shell Donax TD	-	50	500

*** If Sulpher content in fuel is above 0.2% of mass (2000ppm) change oil and filter every 250 hours**

Lubrication Points - Straight Skip

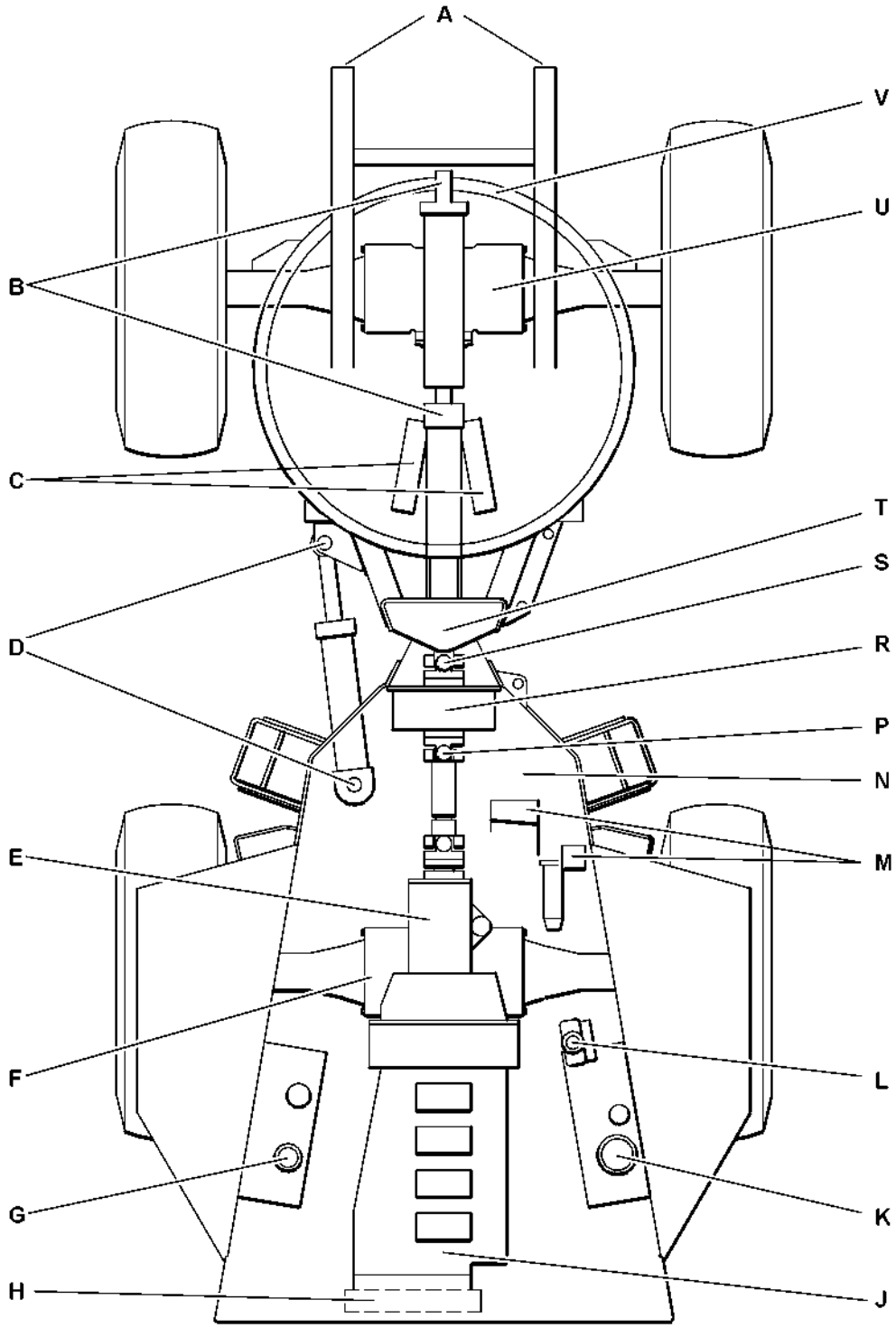


Lubrication Schedule - Swing Skip

Item	Key		International Specification	Service Hours	
A	Skip Pivot Pins	Multi Purpose Grease EP2	Lithium Grease - Gr Li, NL GI 2	50	-
B	Skip Ram Pins				
C	Turntable Rams				
D	Steering Ram Pins				
E	Gearbox	Shell Donax TF	-	50	500
F	Rear Axle	Shell Donax TD	-	50	500
G	Hydraulic Tank	Shell Tellus T46	High VI Hydraulic Oil - HV ISO VG46	10	500
H	Radiator	Shell Glycoshell / Water Mixture Refer to Antifreeze Table	Extended Life Antifreeze	10	Autumn
J	Engine Sump	Shell Rimula R3 X 15W/40	API:CH-4, CG-4, CF-4, CF ACEA:ES, E3 SAE15/W40	10	500*
K	Fuel Tank	Diesel	DERV to EN590	10	500
L	Brake Reservoir	Shell Tellus T46	High VI Hydraulic Oil - HV ISO VG46	10	500
M	Pedals	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
N	Parking Brake				
P	Propshaft	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
R	Transfer Box	Shell Spirax A 80W/90	-	50	500
S	Propshaft	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	-
T	Centre Pivot	Starplex All Purpose Grease EP2	Lithium Complex Grease - Gr Lic, NLGI 2	50	-
U	Front Axle	Shell Donax TD	-	50	500
V	Swing Turntable	Multi Purpose Grease EP2	Lithium Grease - - Gr Li, NL GI 2	50	

*** If Sulpher content in fuel is above 0.2% of mass (2000ppm) change oil and filter every 250 hours**

Lubrication Points - Swing Skip



Service Schedule

The following service schedules are for guidance only. Under extreme operating conditions the service schedules should be adjusted accordingly to allow for the local working environment.
Before carrying out any service or maintenance work ensure ALL safety precautions have been taken.
Always follow the instructions given in the engine manufacturers handbook when servicing, adjusting and especially when starting and stopping the engine.

ALL Faults MUST be Reported Immediately and Corrected BEFORE the Machine is Used

10 Hours	Check tyre condition and pressures. Check ROPS for damage etc. Report ALL faults immediately. Check seat belt. Check the air cleaner blockage indicator. Remove air filter and clean in dusty environments. Check fuel tank level - NEVER allow the fuel tank to empty. Fill at the end of each shift. Check engine oil level and top up as necessary. Check hydraulic oil level. Check all warning lights and gauges are working correctly. Check alternator belt. Check engine coolant level. Ensure engine is cold. Check brake fluid reservoir level. Check operator platform and steps are clean and free from damage and obstructions. Check start inhibitors are functioning correctly. Check skip prop is working satisfactorily. Visually check machine for fluid leaks, damage, missing parts, unreadable safety signs etc.
50 Hours	**As for 10 hours and including:-** Drain fuel filter sediment bowl. Lubricate the centre pivot. Lubricate all other grease nipples - see lubrication chart. Check gearbox and transfer box oil levels. Oil all control pivots, e.g. throttle, tipping ram links. Check parking brake adjustment. Check wheel nut torque. Check, clean and grease battery connections. Check for air leaks on the air inlet/filter system. Repair as necessary.
250 Hours	**As for 50 hours and including:-** Check front and rear axle oil levels - top up as necessary. Check tightness of centre pivot lock screws. Check hose lines for chaffing, adjust as necessary. Check steering lock bar is fitted and works.
500 Hours	**As for 250 hours and including:-** Drain engine and refill with fresh, clean oil. * Replace engine oil filter.* Replace fuel filter element. Drain and clean fuel tank. Drain gearbox oil and refill with fresh, clean oil. Replace gearbox filter element. Change hydraulic filter(s). Drain hydraulic tank and clean hydraulic suction strainer. Renew return line filter. Refill hydraulic system with clean, fresh oil. Drain and replace brake fluid Drain front and rear axles and refill with clean, fresh oil. Check engine coolant antifreeze / water ratio - especially in sub zero conditions.
1000 Hours	**As for 500 hours and including:-** Drain and replace engine coolant. Check axle location bolts. Check centre pivot pin nut torque setting.

*** If Sulpher content in fuel is above 0.2% of mass (2000ppm) change oil and filter every 250 hours**

Only Perform the Applicable Service Checks Above
Thoroughly Clean the Machine BEFORE Performing ANY Service or Maintenance Tasks

Long Term Storage

If the machine is to be stored for a long period of time the following procedures should be applied:-

- Thoroughly wash down the exterior of the machine and remove any build up of dirt etc.
- Repair all damaged paintwork to prevent further corrosion.
- Grease all greasing points.
- Start and warm up the engine. Drain the engine oil and refill with clean fresh oil. Refer to engine manufacturers handbook for further information on prolonged engine storage with regards to anti-corrosion oils and fluids.

Contaminated Water / Fluids / Oils Must Be Disposed of Legally

- Check hydraulic oil level and top up as required.
- Drain, and refill cooling system with water/antifreeze mixture (*see Specifications section*).
- Store the machine on solid level ground which is not liable to flooding, standing water or airborne contamination.
- Chock the wheels securely to prevent the dumper moving.
- Smear exposed metal parts with grease.
- Remove the battery and keep fully charged.
- Leave the parking brake in the OFF position.

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 centre of mass changes.

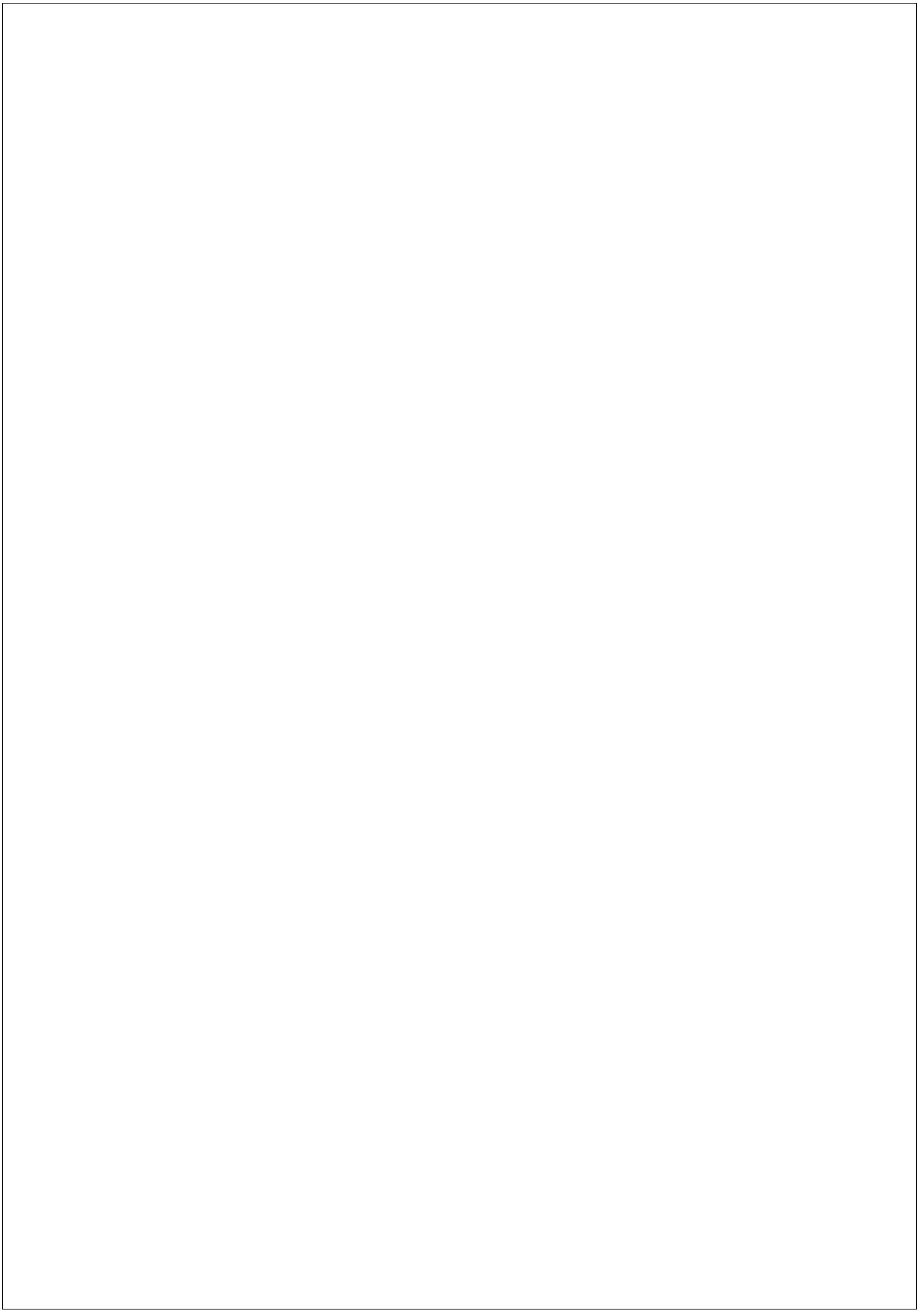
Care must be taken when dealing with flammable liquids and the machine parts that contained those liquids. Any process that could ignite flammable materials must not be used on components that have contained flammable liquids in them or have residual flammable liquids on them.

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

Fluids must be drained off into suitable containers and if possible recycled or otherwise disposed of in an environmentally friendly way in accordance with local regulations.

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

10 - Specifications
TA5, 6 & 7
Four Wheel Drive Dumper
Straight and Swing Skip

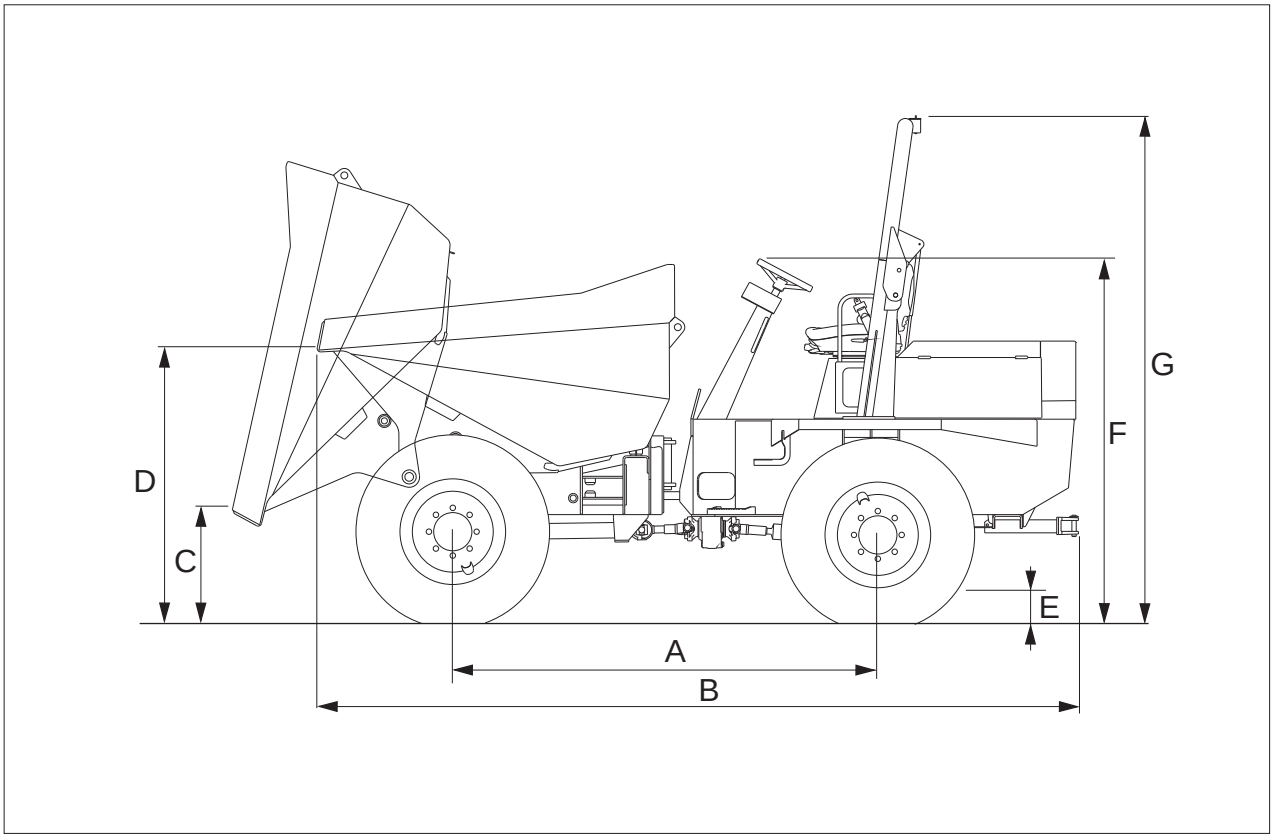


Introduction

All dimensions are in metric (mm), weights in kilograms and capacities in litres unless otherwise stated. Imperial equivalents are shown in brackets.

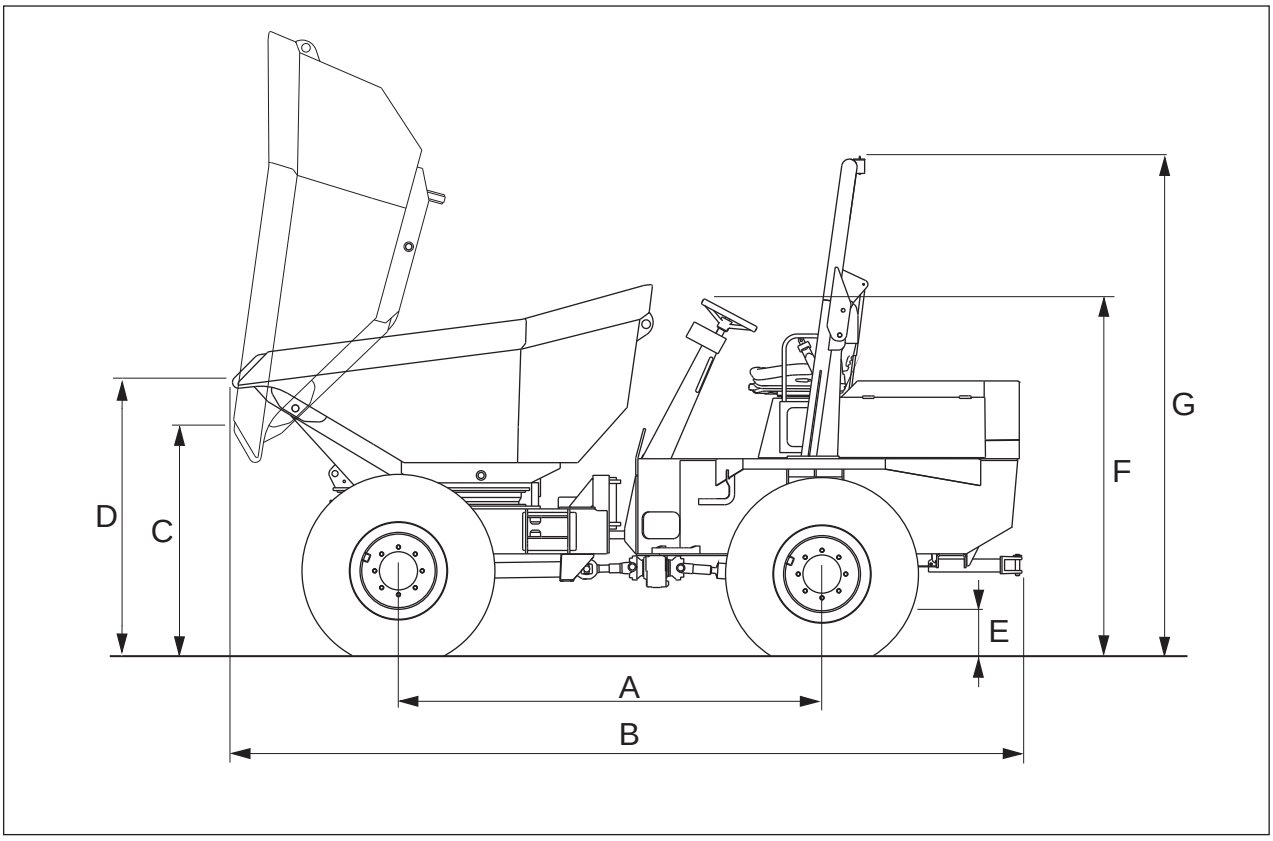
This section also contains details of electric and hydraulic circuits and fixing torque data.

Dimensions - Forward Tip Skip



	A	B	C	D	E	F	G	Overall Width	Weight* (wet)
TA5	2,450 (96.5”)	4,323 (170.1”)	392 (15.4”)	1,500 (59.0”)	299 (11.7”)	2,016 (79.3”)	2,836 (111.6”)	2,200 (86.1”)	4070 (8973lb)
TA6	2,450 (96.5”)	4,380 (172.4”)	391 (15.39”)	1,610 (63.4”)	368 (14.5”)	2,085 (82.0”)	2,905 (114.3”)	2,300 (99.5”)	4205 (9270lb)
TA7	2,450 (96.5”)	4,400 (173.2”)	391 (15.39”)	1,610 (63.4”)	368 (14.5”)	2,085 (82.0”)	2,905 (114.3”)	2,500 (98.4”)	4245 (9358lb)
Turning Radius = 11.9 metres (469.2”)									
*Note: The above weights are with the ROP’s fitted									

Dimensions - Swing Skip



	A	B	C	D	E	F	G	Overall Width	Weight (wet)
TA5S	2,450 (96.5”)	4,561 (179.5”)	1,160 (45.6”)	1,602 (63.0”)	299 (11.8”)	2,016 (79.4”)	2,836 (111.6”)	2,068 (81.4”)	4215 (9292lb)
TA6S	2,450 (96.5”)	4,568 (179.8”)	1,229 (48.4”)	1,671 (65.7”)	368 (14.5”)	2,085 (82.0”)	2,905 (114.4”)	2,230 (87.8”)	4240 (9347lb)
Turning Radius = 11.46 metres (451.2”)									

Engine Rating

Model	Engine	k.W.	h.p.	@R.P.M.
TA5 & TA5S	Perkins 1104D-44T	62.5	84	2,200
TA6 & TA6S				
TA7				

Skip Capacities

Model	Maximum Payload Kg	lbs	Water Level Litres	Struck Level Litres	Heaped Litres
TA5	5,000	11,000	1,700	2,450	3,100
TA5S	5,000	11,000	1,620	2,300	2,910
TA6	6,000	13,200	1,950	2,740	3,780
TA6S	6,000	13,200	1,850	2,750	3,520
TA7	7,000	15,400	2,100	3,020	2,850

Dumper Speeds

Model	Engine	Speed in Gears KPH				
		1	2	3	4	Reverse
TA5 & TA5S	Perkins1104D-44T	4.4	7.0	12.8	22.4	As Forward
TA6, TA6S & TA7		5.0	8.1	14.8	26.2	
TA6 Turf Tyre		5.2	8.4	15.5	27.5	

Gear and Transfer Boxes

Model	Gears	Gearbox	Transfer Box
TA5, TA5S, TA6, TA6S, TA7	4F 4R	ITL Synchro Shuttle	ITL TG300

Tyre Specification / Pressures / Wheel Torque

Model	Axle Make/Model	Specification	Pressure (bar) Front	Rear	Wheel Nut Torque
TA5 & TA5S	DANA 112/369	Dunlop 12.00x18 12PR T86 Stabilla	4.00	2.20	630Nm
TA6 & TA6S		Mitas 405-70-20 14PR MPT-01	3.25	1.80	630Nm
TA7		Mitas 405-70-20 14PR MPT-01	3.25	1.80	630Nm
Turf Tyre Option					
TA6 & TA6S		BKT 16.0/70-20 14PR AW-705 Special TL	3.50	2.20	630Nm
TA7		BKT 16.0/70-20 14PR AW-705 Special TL	3.50	2.20	630Nm

Antifreeze Concentrations

	Ratio	°C	°F	16°C (60°F)	27°C (81°F)	30°C (100°F)
20%	1 : 5	-9	15.8	S.G. 1.032	S.G. 1.030	S.G. 1.028
25%	1 : 4	-12	10.4	S.G. 1.041	S.G. 1.037	S.G. 1.033
33.3%	1 : 3	-19	-2.2	S.G. 1.054	S.G. 1.049	S.G. 1.044
50%	1 : 1	-37	-34.6	S.G. 1.080	S.G. 1.074	S.G. 1.068
Use Good Quality Ethylene Glycol - Check Concentration Regularly						

Fluid Capacities (Litres)

Engine Sump	Gearbox	Transfer Box	Axles Front	Axles Rear	Fuel Tank	Hydraulic Tank	Brake Fluid	Coolant
9.5	13.0	0.45	9.7	9.7	67.0	50.0	0.2	18.0

Alternator and Battery

Model	Engine	Alternator	Output - Amps	Battery Cold Start Amps
TA5 & TA5S	Perkins1104D-44T	Belt Driven	65 Amps	SAE J537 900CCA 90AH
TA6 & TA6S				
TA7				

Noise Emissions

Model	Declared Single-Number Noise Emission Values to ISO 4871	
	A- rated sound pressure level at operator station	A - rated sound power of machine
	L_{pAd}	L_{WAd}
TA5	**84dB**	**101 dB**
TA5S	**84dB**	**101 dB**
TA6	**84dB**	**101 dB**
TA6S	**84dB**	**101 dB**
TA7	**84dB**	**101 dB**

Vibrations:

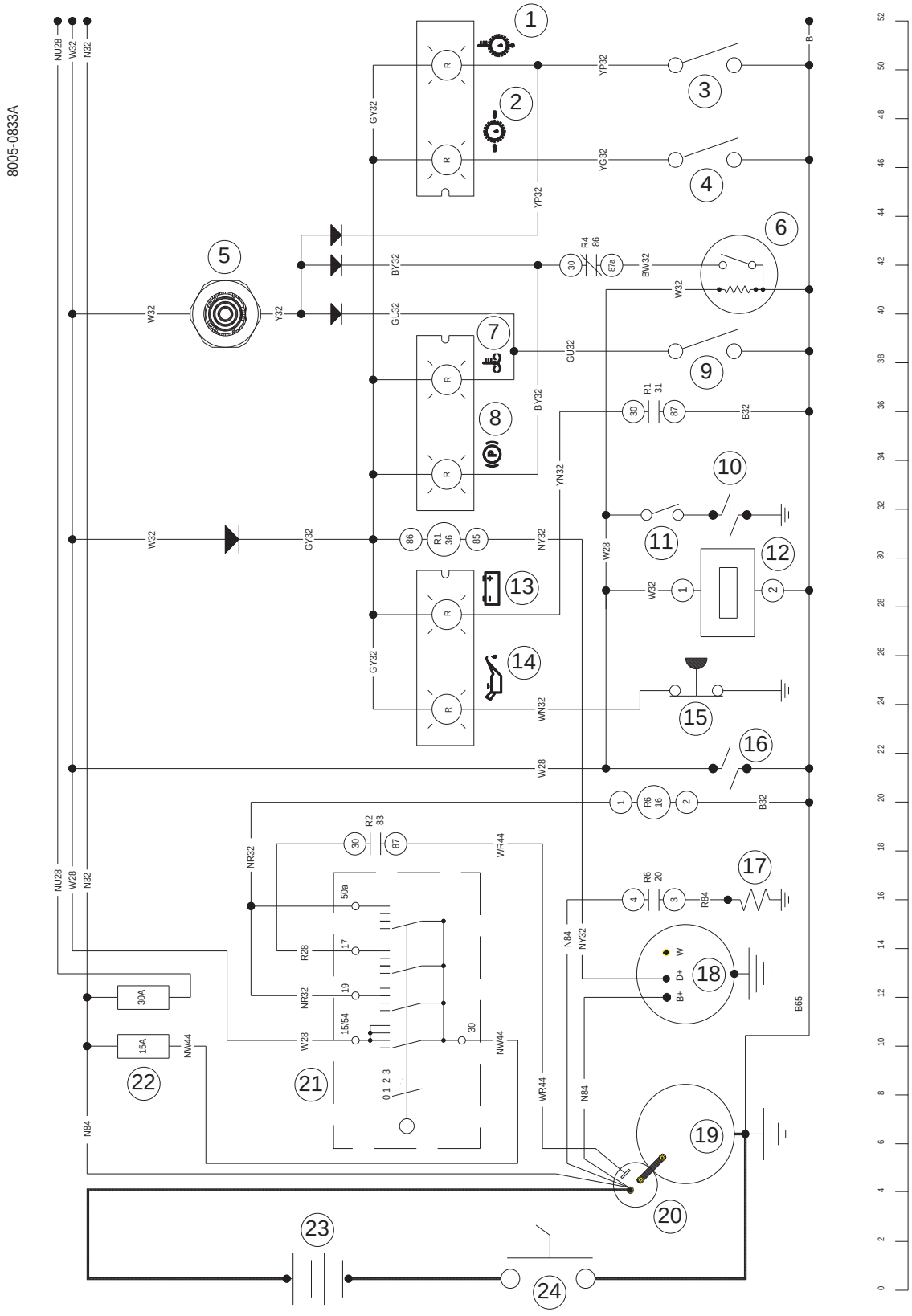
	Operation	Value	Uncertainty
Hand Arm Vibration as defined in EN474-1	**All operations**	**<2.5 m/s^2**	**N/A**
Whole body vibration values as defined in ISO/TR 25398	**Work Cycle**	**0.529 rms**	**0.264 m/s^2**

Note: these values are for guidance only. Actual work site, operation and operator characteristics will have a large influence on actual values for specific circumstances.

Electrical Circuit

Item	Description	Cable Colour Codes	
1	Warning Light - Transmission oil temperature	B	Black
2	Warning Light - Transmission oil pressure	G	Green
3	Switch - Transmission oil temperature	K	Pink
4	Switch - Transmission oil pressure	LG	Light Green
5	Audible warning	N	Brown
6	Switch - Parking brake	O	Orange
7	Warning Light - Engine Coolant Temperature	P	Purple
8	Warning Light - Parking brake ON	R	Red
9	Switch - Engine coolant	S	Slate
10	Solenoid - Cold start	U	Blue
11	Switch - Cold start	T	Turquoise
12	Hourmeter	W	White
13	Warning Light - Battery charge	Y	Yellow
14	Warning Light - Engine Oil Pressure		
15	Switch - Engine oil pressure		
16	Solenoid - Fuel		
17	Glow Plug - Engine		
18	Alternator		
19	Starter		
20	Solenoid - Starter		
21	Switch - Keystart, engine		
22	Circuit breakers		
23	Battery - 12v		
24	Battery isolator		
			8005-0833A

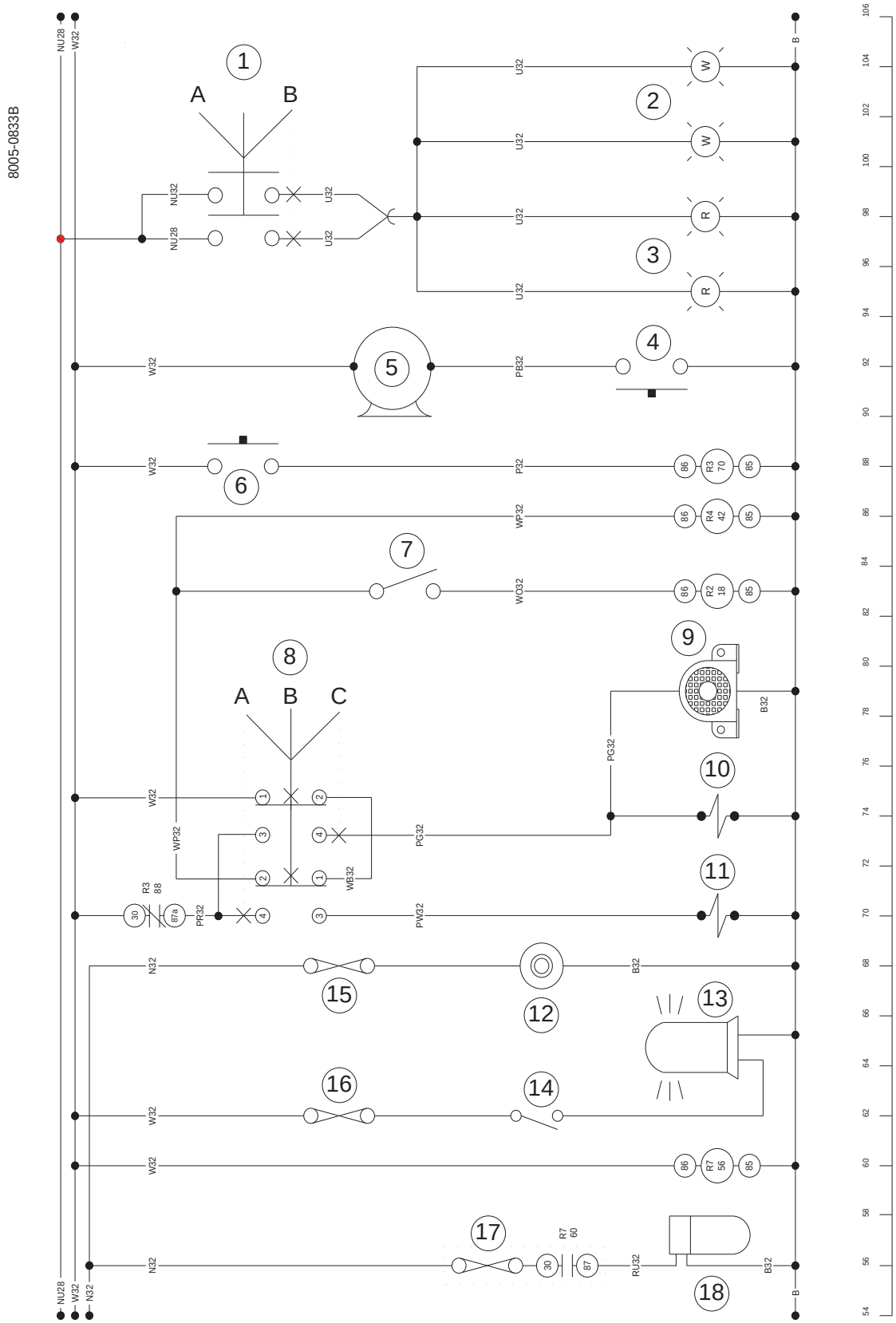
Electrical Circuit



Electrical Circuit

Item	Description	Cable Colour Codes	
1	Switch - Site lights (A = Off - B =On)	B	Black
2	Front site lights	G	Green
3	Rear site lights	K	Pink
4	Horn button	LG	Light Green
5	Horn	N	Brown
6	Button - Transmission - Gear Stick	O	Orange
7	Switch - Seat Interlock	P	Purple
8	Switch - Direction (A=Forward - B=Neutral - C=Reverse)	R	Red
9	Reverse alarm	S	Slate
10	Solenoid - Reverse drive	U	Blue
11	Solenoid - Forward drive	T	Turquoise
12	Accessory socket	W	White
13	Beacon	Y	Yellow
14	Switch - Beacon		
15	Fuse - Inline 10amp		
16	Fuse - Inline 10amp		
17	Fuse - Inline 5amp		
18	Fuel Pump		
			8005-0833B

Electrical Circuit



Electrical Circuit

Item	Description	Cable Colour Codes	
1	Switch - hazard lights	B	Black
2	Switch - direction indicator (A = Left B = Off C = Right)	G	Green
3	Rear - indicator lights	K	Pink
4	Front - indicator lights	LG	Light Green
5	Front - head lights	N	Brown
6	Brake lights	O	Orange
7	Number plate lights	P	Purple
8	Rear - marker lights	R	Red
9	Front - marker lights	S	Slate
10	Switch - lights (A=OFF - B=Marker lights - C=Headlights)	U	Blue
11	Switch - brake lights	T	Turquoise
12	Flasher unit	W	White
13	Warning Light - direction indicators	Y	Yellow
			8005-0833C

Electrical Circuit