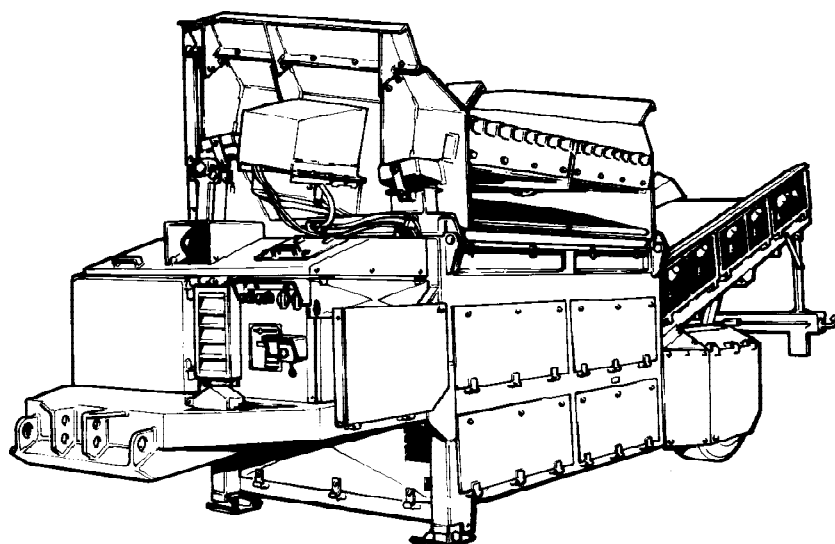




POWERGRID 800 - 1200



PRODUCT USER MANUAL

OPERATION
INSTALLATION
MAINTENANCE

WARNING WARNING WARNING WARNING WARNING



DO NOT ATTEMPT TO OPERATE THIS PRODUCT UNLESS
YOU HAVE READ AND UNDERSTOOD THESE SAFETY INSTRUCTIONS.
FAILURE TO DO SO WILL INCREASE
THE RISK OF INJURY OR MAY RESULT IN DEATH!





SUBJECT TO CHANGE WITHOUT PRIOR NOTICE!
IMPORTANT SAFETY NOTICE!

Read this manual carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage.

Consider this manual a permanent part of your machine.

Keep a copy of this manual at the operational site.

Follow all applicable safety regulations and recommendations in this manual as appropriate to your product and the situation/conditions prevailing at the time. Federal, State, National and Local laws and safety regulations must be complied with at all times to prevent possible danger to person(s) or property from accidents or harmful exposure.

See also the separate Operation and Maintenance Manual provided for the diesel engine if fitted to your product and in particular read and observe the instructions within the Safety Section of the engine manual

INFORMATION AND ADVICE

If you need any information or advice regarding your Powerscreen Product, contact:-

Northern Ireland:

Terex Powerscreen
200 Coalisland Rd
Dungannon
Co. Tyrone
BT71 4DT

Telephone:

Main Switchboard:
+ 44 (0) 2887 740701

Email:

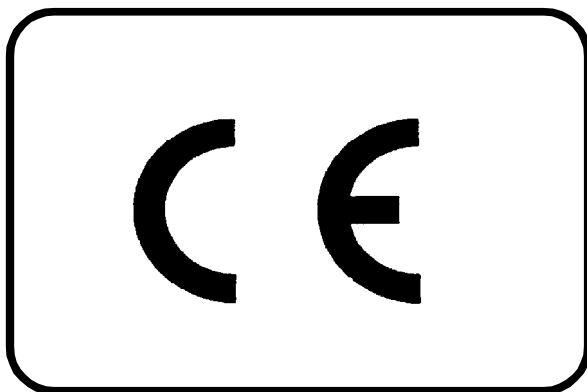
aftersales@powerscreen.co.uk

America

Terex Crushing & Screening Inc.
11001 Electron Drive
Louisville,
Kentucky 40299
United States of America

Telephone:

Main Switchboard:
001 (502) 736 5200



EC - Conformity

POWERSCREEN product machinery are in conformity of the EC Machinery Directive guideline 2006/42/EC and supplement there to.



Noise Level - Hearing Hazard dB (A) Levels

CALIFORNIA

Proposition 65 Warning

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

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

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The Operator must read and understand all the instructions in this manual before operating the machine.

Owners, Users, and Operators: Powerscreen International Dis. Ltd. 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 that you can make a major contribution to safety if you as the equipment users and operators:

1. **Comply** with OSHA, Federal, State, and Local Regulations.
2. **Read, Understand, and Follow** the instructions in this and other manuals supplied with this product.
3. **Use Good, Safe Work Practices** in a common sense way.
4. **Only have trained operators** — directed by informed and knowledgeable supervision — operating this product.

If there is anything in this manual that is not clear or which you believe should be added, please send your comments to:

Help Desk (aftersales@powerscreen.co.uk)

Main Switchboard: + 44 (0) 2887 740701

Fax: + 44 (0) 2887 74718649

Powerscreen International Distribution, Dungannon, Co. Tyrone BT71 4DT.



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.

Intended use

This product and its approved attachments are designed to perform the following (state approved function). Use of this product in any other way is prohibited and contrary to its intended use.

The list of terms below, can be found throughout the following manual.

A-Frame

A frame that is mounted at each end of the drum (only on Trommels). Used to ensure drum is sealed correctly.

Anti Rock Stay

A strap which is used to stabilise the screen unit whilst in transport.

Antiluce Fastener

A type of fastener used to secure some doors.

Assemblies

Individual sections of the machine made up of different components parts.

Auxiliary Control Valve

A bank of hydraulic valves which carry out various movement functions throughout the machine.

Belt Scraper

A device fixed or flexible mounted across the width of a belt of a conveyor for removing adherent material.

Bogie

Undercarriage on chassis to which axles are bolted.

Centre Roller

A roller, which supports the loaded belt.

Collection Conveyor

A conveyor used to transfer the fines material from underneath the drum onto the incline conveyor.

Control Panel

A panel that is situated in the powerunit which is used to start the engine and view the various warning lights.

Controller

An electromechanical device or assembly of devices for starting, stopping, accelerating, or decelerating a drive, or serving, to govern in some predetermined manner the power delivered to the drive .

Conveyor

A horizontal, inclined, or vertical device for moving or transporting bulk material, packages, or objects, in a path determined by the design of the device, and having points of loading and discharge, fixed or selective.

Conveyor belt

A belt used to carry materials and transmit the power required to move the load being conveyed.

Conveyor, extendable

A conveyor that may be lengthened or shortened to suit operating needs.

Conveyor, live roller

A series of rollers over which objects are moved by the application of power to all or some of the rollers. The power transmitting medium is usually belting or chain.

Conveyor, mobile

Conveyor, supported on a structure, and includes, but is not limited to, radial stackers, winged stackers, reclaiming conveyers, and shipholders. These conveyors normally handle bulk material.

Conveyor, portable

A transportable conveyor which is not self-propelled, usually having supports that provide mobility.

Conveyor, screw

A conveyor screw revolving in a suitably shaped stationary trough or casing fitted hangers, trough ends, and other auxiliary accessories.

Control Valve

A hydraulic valve, which carries out a movement function on the machine.

Depressurised

To release the pressure from a vessel i.e. a tyre, hydraulic system.

Discharge Area

The area where material is dumped from the machine.

Dolly Axle

An axle that can be fitted to king pin, used for towing purpose.

Drive

An assembly of the necessary structural, mechanical, and electrical parts provide the motive power to change direction.

Drive Drum

The drum that drives the conveyor belt sometimes called the head drum.

Drum

A cylindrical or polygonal rim type of wheel around which cable, chain, belt, or other linkage may be wrapped. A drum may be drive or driving. The face may be smooth, grooved, fluted, or flanged.

Drum Lagging

Rubber glued around the drive drum to grip the conveyor belt.

Feed Conveyor

Conveyor used to move the material from the hopper to the main conveyor.

Feedboot

An extended metal surround located at the bottom of the main, tail & side conveyors.

Feeder Unit

Conveyor which feeds the material onto the incline conveyor at an even rate.

Filler Cap

A cap used to seal a tank and is removed in order to fill the tank.

Fines Material

Material that is screened through the lower screen deck and is discharged on to the tail conveyor.

Four Bank

A bank of hydraulic control valves used to control functions of the machine.

Flywheel

A half moon shaped counter weight, which is mounted on the screen unit shaft for the purpose of counter acting the weight of the eccentric of the screen shaft.

Gate

A device or structure by means of which the flow of material may be stopped or regulated; also a section of a machine equipped with a hinge mechanism for movable service often called a hingesction.

Machine Stop

A stop arising from a sudden and unexpected need, and not as a part of the normal operation.

Main Conveyor

Conveyor used to move the material from the hopper to the screen unit.

Nip Point

A point at which a machine element moving in line meets a rotating element in such a manner that it is possible to nip, pinch, squeeze, or entrap a person or objects coming into contact with one or two of the members.

Optimum Speed

The best or most favourable speed to run a conveyor for example.

Oversize material

Material that is larger than the mesh size and runs off the top screen deck.

Platform

A working space for persons, elevated above the surrounding floor or ground for the operation of machinery and equipment.

Prevent

When used in a context such as prevent access or prevent physical contact, means to impede or block; when used in a context such as prevent injury, means to reduce the chances of, but does not imply that an injury cannot occur.

Powerunit

An inclosed unit situated under the main conveyor which houses the component parts which together drive the machine.

P.S.I

Pounds per square inch. Unit of Pressure. Conversion 1 Bar = 14.5 P.S.I

Rated speed

The speed, as established by the manufacture or a qualified person, at which safe and satisfactory service can be expected.

Return Roller

A roller, which is used to support the unladen belt on the underside of the conveyor.

Grid Aperature

The spacing between the grid bars (typically 100mm) which determines the material size that enters the feed hopper.

Grid Bar

Bars used on the grid spaced out with equal spacing. Used to roughly screen material.

Grating

A coarse screen made of parallel and crossed bars used to prevent passage of oversized material.

Guard

A covering, barricade, grating, fence, or other form of barrier used to prevent inadvertent physical contact with operating components such as gears, sprockets, chains, and belts.

Hopper

A box having a funnel shaped bottom, or a bottom reduced in size, narrowed, or necked to receive material and direct it to a conveyor, feeder, or chute.

Hydraulic Components

A part used in the hydraulic system of the machine i.e. valve, motor etc.

Hydraulic Screen Tension

The assistance of hydraulic rams when tensioning the screen meshes.

Jacking legs

Hydraulic adjustable legs which raise or lower the back of the machine for the purpose of coupling to the tractor unit.

King Pin

Coupling used for towing by the tractor unit.

Landing Leg

A support leg which lowers from the machine and is used to stabilise it whilst in the working position.

LHS

Left Hand Side, used with reference to the side conveyors.

Lockout

Procedure to be carried out to ensure the machine is safe for maintenance or repairs

Recommissioning

To prepare the machine for use.

Reject Grid

An arrangement of equally spaced grid bars which is used to separate the large stones before the material enters the feed hopper.

Retract

Withdraw or fold up conveyor.

Remote control

Any system of controls in which the actuator is situated in a remote location.

RHS

Right Hand Side, used with reference to the side conveyors.

Safety device

A mechanism or an arrangement placed in use for the specific purposes of preventing an unsafe condition, preventing the continuation of an unsafe condition, warning an unsafe condition, or limiting or eliminating the unsafe effects of a possible condition.

Scraper

A device fixed or flexibly mounted across the width of a belt of a conveyor for removing adherent material.

Screen Drum

Drum which mesh is fitted onto rotates during operation to screen material (Trommel).

Sound Baffles

Plates used to blank out noise from the powerunit.

Screen Unit

Vibratory unit used to separate by size raw materials.

Should

As used in the context of a provision of this manual, indicates a recommendation, the advisability of which depends on the facts in a particular situation.

Shredder Safety Stay

Metal strap which restrains the shredder unit whilst in the raised position.

Take-up

The assembly of the necessary structural and mechanical parts that provides the means to adjust the length of belts, cables, chains, etc. to compensate for stretch, shrinkage, and wear.

Shredder Unit

Swinging flail type unit which is located at the discharge end of the feed conveyor and is used to break down material.

Side Conveyor

Conveyor used to collect the material from the screen unit and move it to the discharge area at 90 degrees to the main machine.

Side Roller

Roller used to create arc on the belt to reduce spillage.

Spillage

Material that spills over the edge of a conveyor etc.

Spill guard

A stationary device of sufficient strength and capacity to catch, retain, and contain any reasonably foreseeable spillage from a conveyor passing overhead.

Spreader Plate

Swinging plate located at the discharge end of the main conveyor and is used to spread the material evenly on the screen unit.

Sprocket

A toothed wheel arranged to fit into the links of a chain.

Strut

Rigid support used to hold an assembly in place.

Swivel Conveyor

Conveyor used to discharge fines material. Swivel through 180° to increase stockpiling capacity.

Tail Conveyor

Conveyor used to collect the fines material from the screen unit and move it to the discharge area.

Tow pin

A movable or fixed member, used to engage a push or pull.

Telescopic Head Section

A section of a conveyor which extends out telescopically into transport position.

Tracks

The beams, shapes, or formed section on which trolleys, rollers, shoes, or wheels roll or slide while propelled.

Transport Bracket

A bracket used to hold an assembly in place whilst in transport.

Transport Position

The position of the machine when conveyors are folded.

Variable Speed Flow Control

A device which is used to hydraulically vary the speed of the conveyor belt.

Viewing Apertures

Opening holes to view the conveyor belt.

Vulcanized Belt

A conveyor belt that has been joined seamlessly using a special treatment.

Wheel Nut Torque

A measure of pressure applied to tightened a nut.

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0.1.1 Warnings and symbols

The following signs and designations are used in the manual to designate instructions of particular importance:



This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DANGER



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

WARNING



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

CAUTION



indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE



indicates a statement of company policy as the message relates directly or indirectly to the safety of personnel and protection of property.

0.1.2 Organisational measures

0.1.2.1

Loose or baggy clothing can get caught in running machinery.

Where possible when working close to engines or machinery, only do so when they are stopped. If this is not practical, remember to keep tools, test equipment and all other parts of your body well away from the moving parts.

For reasons of safety, long hair must be tied back or otherwise secured, garments must be close-fitting and no jewellery - such as rings - may be worn. Injury may result from being caught up in the machinery or from rings catching on moving parts.

Always wear correctly fitting (EN/ANSI approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close fitting Overalls, Steel Toed Boots and a High Visibility Vest.

0.1.2.2

You can be injured if you do not obey the safety instructions as indicated on warning stickers.

Observe all safety instructions and warnings attached to the machine!

See to it that safety instructions and warnings attached to the machine are always complete and perfectly legible.

Keep warning and instruction labels clean.

Replace unreadable or missing labels with new ones before operating the machine. Make sure replacement parts include warning or instruction labels where necessary.

0.1.2.3

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, clean, service or adjust machine while it is moving. Keep hands, feet and clothing clear of power driven parts and in running nip-points. Disengage all power and operate controls to relieve pressure. Stop the engine. Implement lockout procedure. Allow the machine to cool.

Keep all parts in good condition. Ensure that all parts are properly installed. Fix damage immediately. Replace worn and broken parts. Remove any build up of grease, oil or debris.

Disconnect battery ground cable before making adjustments on electrical systems or welding on machine.

For the execution of maintenance work, tools and workshop equipment adapted to the task on hand are absolutely indispensable.

0.1.2.4

Never make any modifications, additions or conversions which might affect safety without the supplier's approval.

In the event of safety-relevant modifications or changes in the behaviour of the machine during operation, stop the machine and lock out immediately and report the malfunction to the competent authority/person.

0.1.3 Selection and qualification of personnel - Basic responsibilities

0.1.3.1

Any work on and/ or with the machine must be executed by trained, reliable and authorised personnel only. Statutory minimum age limits must be observed.

0.1.3.3

Work on the hydraulic system must be carried out only by personnel with special knowledge and experience of hydraulic equipment.

0.1.3.2

Work on the electrical system and equipment of the machine must be carried out only by a skilled electrician or by instructed persons under the supervision and guidance of a skilled electrician and in accordance with electrical engineering rules and regulations.

0.1.4 Safety instructions governing specific operational phases

0.1.4.1 Standard operation

0.1.4.1.1

Take the necessary precautions to ensure that the machine is used only when in a safe and reliable state.

Operate the machine only if all protective and safety-oriented devices, such as removable safety devices, emergency shut-off equipment, sound-proofing elements and exhausts, are in place and fully functional.

0.1.4.1.2

In the event of malfunctions or operational difficulty stop the machine immediately and lock out. Have any defects rectified immediately.

0.1.4.1.3

In running nip-points can cause serious injury or even death.

Do not reach into an unguarded machine.

Your arm could be pulled in and amputated.

Switch off and lockout machine before opening guard doors.

0.1.4.2 Special work in conjunction with utilization of the machine and maintenance and repairs during operation; disposal of parts and consumables

0.1.4.2.1

Observe the adjusting, maintenance and intervals set out in these operating instructions, except where:

A: Warning light/ gauge or indicator calls for immediate action.

B: Adverse conditions necessitate more frequent servicing.

Observe information on the replacement of parts and equipment. These activities may be executed by skilled personnel only.

0.1.4.2.2

When the machine is completely shut down for maintenance and repair work, it must be secured against inadvertent starting by:

- Switching off the engine and removing the ignition key.
- Implementing the lockout procedure.
- Attaching a warning sign to the control panel door.

0.1.4.2.3

Carry out maintenance and repair work only if the machine is positioned on stable and level ground and has been secured against inadvertent movement and buckling.

0.1.4.2.4

Never allow unqualified or untrained personnel to attempt to remove or replace any part of the machine, or anyone to remove large or heavy components without adequate lifting tackle.

To avoid the risk of accidents, individual parts and large assemblies being moved for replacement purposes should be carefully attached to lifting tackle and secured. Use only suitable and technically adequate lifting gear.

Never work or stand under suspended loads.

Keep away from the grid and screenbox where there is risk of serious injury or death due to the loading and removal of material.

0.1.4.2.5

Falling from and/or onto a POWERSCREEN machine can cause injury or even death.

Do not climb on the machine.
Never use machine parts as a climbing aid.

For carrying out overhead assembly work always use specially designed or otherwise safety-oriented ladders and working platforms.

Always use any of the walkways/platforms where provided or a safe and secure platform approved by the regional safety enforcing authority.

Always use an EN/ANSI approved safety harness when reaching any points 7ft (2m) or more above the ground level.

Keep all handles, steps, handrails, platforms, landings and ladders free from dirt, oil, snow and ice.

0.1.4.2.6

The fastening of loads and the instructing of crane operators should be entrusted to experienced persons only. The marshaller giving the instructions must be within sight or sound of the operator.

0.1.4.2.7

After cleaning, examine all fuel, lubricant, and hydraulic fluid lines for leaks, loose connections, chafe marks and damage. Any defects found must be rectified without delay.

0.1.4.2.8

Any safety devices removed for set-up, maintenance or repair purposes must be refitted and checked immediately upon completion of the maintenance and repair work.

0.1.4.2.9

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with Powerscreen equipment includes such items as oil, fuel, coolant, filters and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain or into any water source.

Ensure that all consumables and replaced parts are disposed of safely and with minimum environmental impact.

0.1.4.2.10

A shredder or any other raised part of the machine can fall causing serious injuries or death.

Always fit the safety support strut provided if any part of the machine (such as the shredder chamber) must be raised for any reason.

Never work under unsupported equipment.

Never work alone.

0.1.4.2.11

Diesel fuel is highly flammable.

Never remove the filler cap, or refuel, with the engine running.

Never add gasoline or any other fuel mixes to diesel because of increased fire or explosion risks.

Do not smoke or carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.

0.1.4.2.12

Using unapproved structures i.e. walkways\ platforms etc. in the vicinity of a POWERSCREEN machine, is very dangerous and could lead to serious injury or even death through falling and/ or entanglement with the machine.

Do not use any unauthorised structures.

0.1.5 Warning of special dangers

0.1.5.1 Electric energy

0.1.5.1.1

Use only original fuses with the specified current rating. Switch off the machine immediately if trouble occurs in the electrical system.

0.1.5.1.2

When working with the machine, maintain a safe distance from overhead electric lines. If work is to be carried out close to overhead lines, the working equipment must be kept well away from them. Check out the prescribed safety distances.

0.1.5.1.3

If your machine comes into contact with a live wire:

- Warn others against approaching and touching the machine.
- Have the live wire de-energized.

0.1.5.1.4

Work on the electrical system or equipment may only be carried out by a skilled electrician or by specially instructed personnel under the control and supervision of such an electrician and in accordance with applicable electrical engineering rules.

0.1.5.1.5

If provided for in the regulations, the power supply to parts of machines and plants, on which inspection, maintenance and repair work is to be carried out must be cut off.

Before starting any work, check the de-energized parts for the presence of power and ground or short-circuit them in addition to insulating adjacent live parts and elements.

0.1.5.1.6

The electrical equipment of the machine is to be inspected and checked at regular intervals. Defects such as loose connections or scorched or otherwise damaged cables must be rectified immediately.

0.1.5.1.8

Before starting work on high-voltage assemblies and after cutting out the power supply, the feeder cable must be grounded and components such as capacitors short-circuited with a grounding rod.

0.1.5.1.7

Necessary work on live parts and elements must be carried out only in the presence of a second person, who can cut off the power supply in case of danger by actuating the emergency shut-off or main power switch. Secure the working area with a red-and-white safety chain and a warning sign. Use insulated tools only.

0.1.5.1.9

These machines are wired on negative earth. Always observe correct polarity.

Always disconnect battery leads before carrying out any maintenance to the electrical system.

The battery contains sulphuric acid, an electrolyte which can cause severe burns and produce explosive gases.

Avoid contact with the skin, eyes or clothing.

0.1.5.2 Gas, dust, steam and smoke

0.1.5.2.1

Always operate internal combustion engines and fuel operated heating systems only out of doors or in a well ventilated area. Before starting the machine in enclosed premises, make sure that there is sufficient ventilation.

Observe the regulations in force at the respective site.

Dust found on the machine or produced during work on the machine should be removed by extraction, not by blowing.

Dust waste should be dampened, placed in a sealed container and marked, to ensure safe disposal.

0.1.5.2.2

Carry out welding, flame-cutting and grinding work on the machine only if this has been expressly authorised, as there may be a risk of explosion and fire.

0.1.5.2.3

Before carrying out welding, flame-cutting and grinding operations, clean the machine and its surroundings from dust and other inflammable substances and make sure that the premises are adequately ventilated (as there may be a risk of explosion).

0.1.5.3 Hydraulic and pneumatic equipment

0.1.5.3.1

Work on hydraulic equipment may be carried out only by persons having special knowledge and experience in hydraulic systems.

0.1.5.3.2

Check all lines, hoses and screwed connections regularly for leaks and obvious damage. Repair damage immediately. Splashed oil may cause injury and fire.

0.1.5.3.3

Depressurise all system sections and pressure pipes (hydraulic system, compressed-air system) to be removed in accordance with the specific instructions for the unit concerned before carrying out any repair work.

0.1.5.3.4

Hydraulic and compressed-air lines must be laid and fitted properly. Ensure that no connections are interchanged. The fittings, lengths and quality of the hoses must comply with the technical requirements.

0.1.5.3.5

Always practice extreme cleanliness when servicing hydraulic components.

0.1.5.3.6

Hydraulic fluid under pressure can penetrate the skin causing serious injury.

If fluid is injected under the skin, it must be surgically removed or gangrene will result.

Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or adjustment.

Always use a piece of cardboard to check for leaks. Do not use your hand.

Get medical help immediately.

0.1.6 Transporting and towing recommissioning

0.1.6.1

The machine must be towed, loaded and transported only in accordance with the operating instructions.

0.1.6.5

Before starting work or travelling with the machine, check that the braking, signalling and lighting systems are fully functional.

0.1.6.2

For towing the machine, observe the prescribed transport position, admissible speed and itinerary.

0.1.6.6

Before setting the machine in motion always check that the accessories have been safely stowed away.

0.1.6.3

Use only appropriate means of transport and lifting gear of adequate capacity.

0.1.6.7

When travelling on public roads, ways and places, always observe the valid traffic regulations and, if necessary, ensure beforehand that the machine is in a condition compatible with these regulations.

0.1.6.4

The recommissioning procedure must be strictly in accordance with the operating instructions

0.1.6.8

In conditions of poor visibility and after dark, always switch on the lighting system.

0.1.6.9

When crossing underpasses, bridges and tunnels or when passing under overhead lines always make sure that there is sufficient clearance.

0.1.6.10

Never travel across slopes; always keep the working equipment and the load close to the ground, especially when travelling downhill.

0.1.6.11

On sloping terrain, always adapt your travelling speed to the relevant ground conditions. Never change to a lower gear on a slope. Always change gear before reaching a slope.

0.1.6.12

Explosive separation of a tyre and rim parts can cause injury or death.

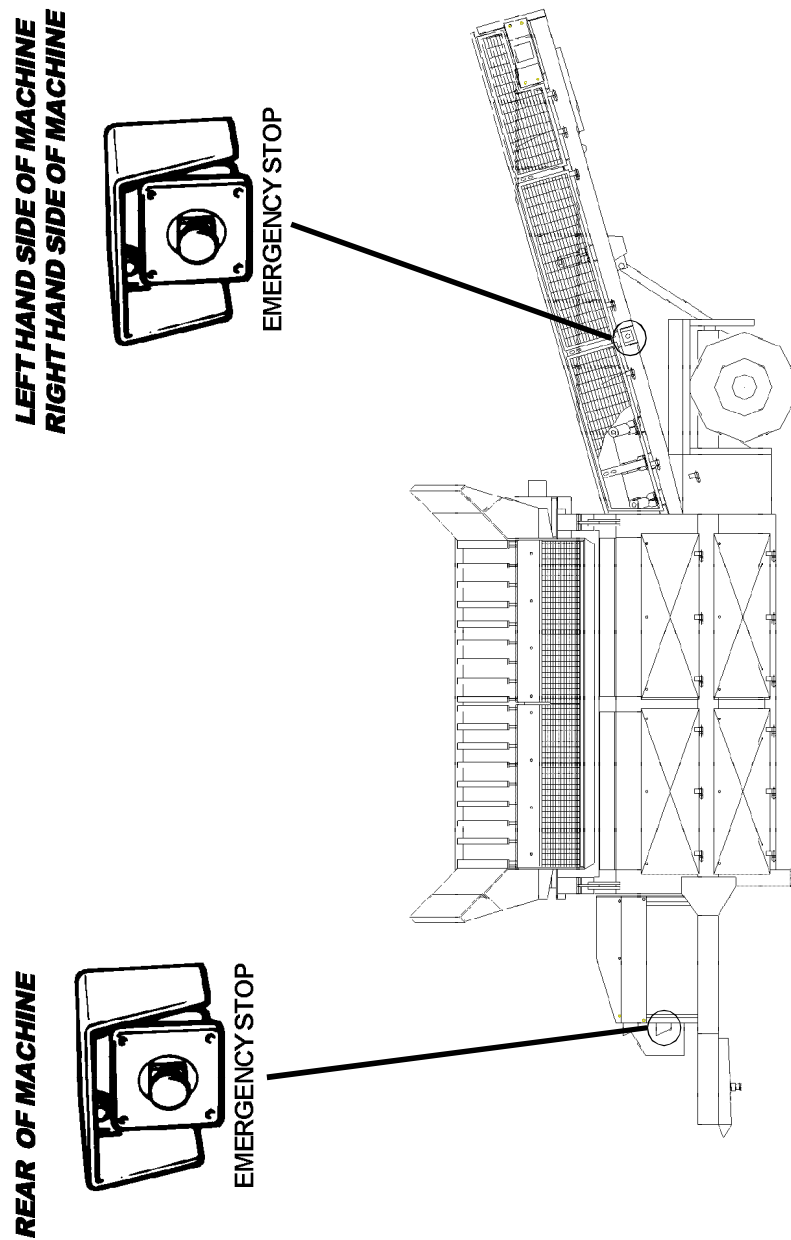
Do not attempt to mount a tyre unless you have the proper equipment and experience to perform the job.

Always maintain the correct pressure. Do not inflate the tyres above the recommended pressure. Never weld or heat wheel and tyre assembly. The heat can cause an increase in air pressure resulting in a tyre explosion. Welding can structurally weaken or deform the wheel.

When inflating tyres, use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front or over the assembly. Use safety cage if available.

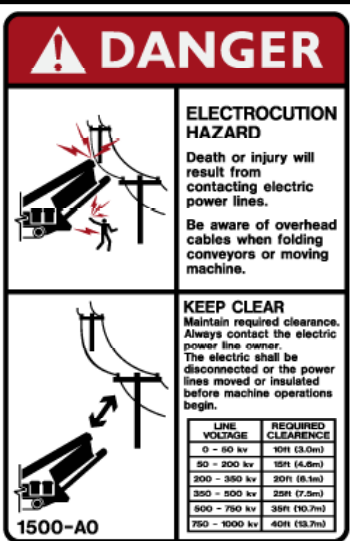
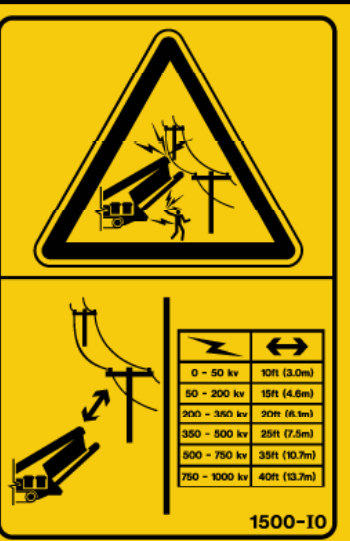
Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

0.1.7 Position of emergency stops



0.1.8 Machine Safety Decals

Please see Page34 which outlines the amount and location of each decal on this machine.
Decal reference numbers have been also listed on this and the proceeding page.

OLD STYLE - 253	NEW ANSI - 1500	NEW ISO - 1500
 OLD STYLE - 253	 NEW ANSI - 1500	 NEW ISO - 1500
 OLD STYLE - 315	 NEW ANSI - 1502	 NEW ISO - 1502

Machine Safety Decals Contd...

OLD STYLE - 316	NEW ANSI - 1503	NEW ISO - 1503
 ! WARNING Read and understand operator's manual and safety signs before using or maintaining machine. If you do not understand the information in the manuals consult your supervisor, the owner, or the manufacturer. 316	 ! WARNING Improper operation or maintenance can result in serious injury or death.  Read and understand operator's manual and safety signs before using or maintaining machine. If you do not understand the information in the manuals, consult your supervisor, the owner or the manufacturer. 1503-A0	  1503-IO
OLD STYLE - 317	NEW ANSI - 1504	NEW ISO - 1504
  ! DANGER SKIN INJECTION HAZARD Use a piece of cardboard to check for hydraulic hose leaks. DO NOT USE YOUR HAND. If fluid is injected under the skin, it can cause gangrene. Get medical help immediately.	 ! DANGER INJECTION HAZARD Escaping fluid under pressure can penetrate skin, causing serious injury.   Relieve pressure before disconnecting hydraulic lines. Keep away from leaks and pin holes. Use a piece of cardboard to search for leaks. Do not use hand. If fluid is injected under the skin, get medical help immediately. 1504-A0	   1504-IO

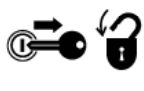
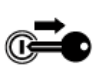
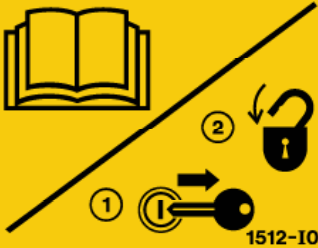
Machine Safety Decals Contd...

OLD STYLE - 409	NEW ANSI - 1506	NEW ISO - 1506
 WARNING CRUSHING HAZARD Do not place hands or feet under jacking legs. Your hands or feet could be crushed. KEEP HANDS AND FEET clear, before lowering or raising jacking legs. 409	 WARNING CRUSHING HAZARD Serious injury can result from contact with moving outriggers. KEEP CLEAR of moving outriggers. 1506-A0	 1506-I0
OLD STYLE - 410	NEW ANSI - 1507	NEW ISO - 1507
 WARNING FALLING MATERIAL HAZARD Do not walk near material discharge areas. You are at risk of serious head injury or death. WEAR A HARD HAT and EYE PROTECTION at all times, when working in the vicinity of the machine. 410	 WARNING FALLING MATERIAL HAZARD Do not walk near material discharge areas. You are at risk of serious head injury or death. KEEP CLEAR of hopper during operation. 1507-A0	 1508-I0

Machine Safety Decals Contd...

OLD STYLE - 426	NEW ANSI - 1508	NEW ISO - 1508
 WARNING FALLING HAZARD Do not climb onto moving or working machinery. You could fall and be seriously injured. SWITCH OFF, LOCKOUT and TAGOUT machine. Always use a suitable lifting platform before attempting any maintenance work, above 2 meters (6'6"). 426	 WARNING FALL HAZARD Falling from this machine can result in serious injury or even death.   DO NOT climb on machine. Use a suitable lifting platform to service the machine. 1508-A0	   1508-I0
OLD STYLE - 427	NEW ANSI - 1509	NEW ISO - 1509
 WARNING PRIOR TO TRANSPORT (1) Check tyre pressures. (2) Check wheel nut torque. (3) Connect and check braking system. (4) Recheck wheel nut torque every 150 miles (200Km). Refer to Operator manual for correct tyre pressures and torque values. 427	 WARNING Vehicle control can be affected by improper setup of vehicle. PRIOR TO TRANSPORT (1)  Check tyre pressures. (2)  Check wheel nut torque. Recheck wheel nut torque every 150 miles (200 km). (3)  Connect and check braking system. Refer to operators manual to correct tyre pressures and torque values. 1509-A0	 (1)  (2)  Nm 150 miles (200 km) (3)   1509-I0

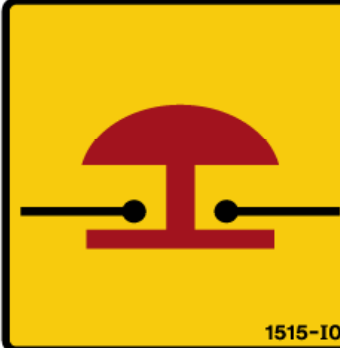
Machine Safety Decals Contd...

OLD STYLE - 562	NEW ANSI - 1511	NEW ISO - 1511
 WARNING  DO NOT INSERT HAND OR OBJECT INTO CIRCULAR CUT - OUT'S WHILE MACHINE IS RUNNING. YOU COULD BE SERIOUSLY INJURED. KEEP HANDS CLEAR OF CUT - OUT'S WHILE MACHINE IS RUNNING. 562	 WARNING  CRUSH HAZARD Contact with moving components can result in serious injury.   Keep hands clear of openings while machine is running. SWITCH OFF and LOCKOUT machine before maintaining or servicing. 1511-A0	  1511-IO
OLD STYLE - 902	NEW ANSI - 1512	NEW ISO - 1512
 DANGER  ELECTRICAL SHOCK HAZARD Hazardous voltage will cause severe injury or death. LOCKOUT AND TAGOUT POWER before servicing. 902	 DANGER  ELECTROCUTION HAZARD Contact with hazardous voltage will result in serious injury or death.    DISCONNECT, LOCKOUT power before servicing. Only authorized personnel may service this equipment. Read all manuals prior to operation. 1512-A0	  1512-IO

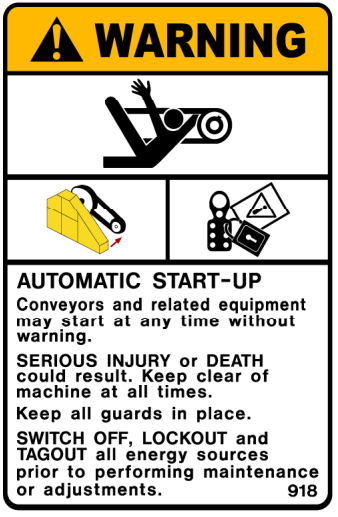
Machine Safety Decals Contd...

OLD STYLE - 903	NEW ANSI - 1513	NEW ISO - 1513
		
OLD STYLE - 905	NEW ANSI - 1514	NEW ISO - 1514
		

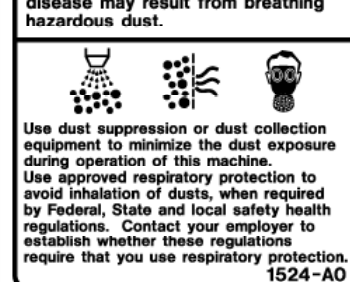
Machine Safety Decals Contd...

OLD STYLE - 907	NEW ANSI - 1515	NEW ISO - 1515
		
OLD STYLE - NONE	NEW ANSI - 1520	NEW ISO - 1520
		

Machine Safety Decals Contd...

OLD STYLE - 917	NEW ANSI - 1521	NEW ISO - 1521
		
OLD STYLE - 918	NEW ANSI - 1522	NEW ISO - 1522
		

Machine Safety Decals Contd...

OLD STYLE - 919	NEW ANSI - 1523	NEW ISO - 1523
 CRUSH HAZARD SERIOUS INJURY or DEATH can result if struck by falling material from screenbox. Do not stand on walkway while machine is in operation. SWITCH OFF, LOCKOUT and TAGOUT machine before climbing on to walkway. 919	 FLYING MATERIAL HAZARD SERIOUS INJURY or DEATH can result if struck by material.  Platform is for maintenance and servicing only. DO NOT stand on walkway while machine is in operation. SWITCH OFF and LOCKOUT machine before maintaining or servicing. 1523-A0	  1523-I0
OLD STYLE - 920	NEW ANSI - 1524	NEW ISO - 1524
 INHALATION HAZARD Death, serious injury, or delayed lung disease could result from breathing hazardous dusts that can be generated when certain hazardous materials (such as rocks, minerals sand or other substances) are crushed, screened, or conveyed with this equipment. Whenever dusts are generated by the operation of this equipment, determine if respiratory protection is needed and then only use approved respiratory protection as required by Federal, State, and Local safety and health regulations. 920	 INHALATION HAZARD Death, serious injury or delayed lung disease may result from breathing hazardous dust.  Use dust suppression or dust collection equipment to minimize the dust exposure during operation of this machine. Use approved respiratory protection to avoid inhalation of dusts, when required by Federal, State and local safety health regulations. Contact your employer to establish whether these regulations require that you use respiratory protection. 1524-A0	  1524-I0

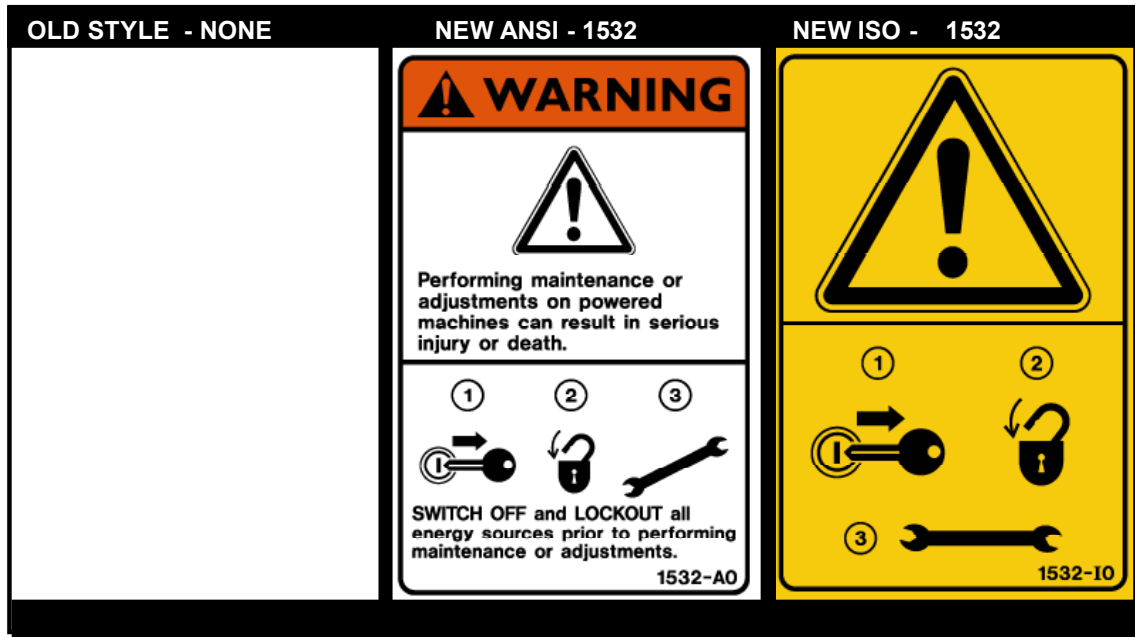
Machine Safety Decals Contd...

OLD STYLE - 1144	NEW ANSI - 1525	NEW ISO - 1525
 SHARP KNIVES HAZARD TROMMEL DRUM FITTED WITH KNIVES. YOU ARE AT RISK OF SERIOUS INJURY OR DEATH. KEEP CLEAR OF KNIVES AT ALL TIMES. SWITCH OFF, LOCKOUT AND TAGOUT ALL ENERGY SOURCES PRIOR TO PERFORMING MAINTENANCE OR ADJUSTMENTS. 1144	 CUTTING HAZARD Contact with knives in trommel drum will result in death or serious injury. Stay clear of sharp knives in trommel drum. SWITCH OFF and LOCKOUT machine before maintaining or servicing. 1525-A0	 1525-10
OLD STYLE - NONE	NEW ANSI - 1528	NEW ISO - 1528
	 CRUSH HAZARD Machine movement can cause serious injury or death. Keep clear of moving machine. 1528-A0	 1528-10

Machine Safety Decals Contd...

OLD STYLE - NONE	NEW ANSI - 1530	NEW ISO - 1530
	 EXPLOSION HAZARD May cause severe injury or death due to ignition of explosive gases. Keep welding sparks away from the battery area. Remove battery if required. 1530-A0	 1530-I0
OLD STYLE - NONE	NEW ANSI - 1531	NEW ISO - 1531
	 BURN HAZARD Contact with hot surfaces can result in serious injury or death. KEEP CLEAR. Allow surfaces to cool before servicing. 1531-A0	 1531-I0

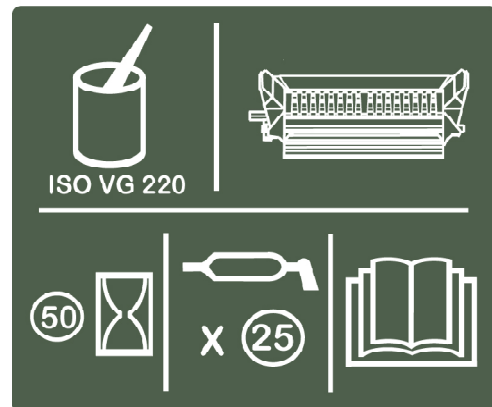
Machine Safety Decals Contd...



Machine Safety Decals Contd...

Greasing For Vibrating Grid 50 hours Intervals

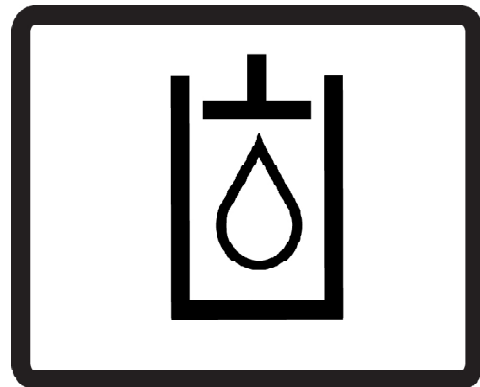
Greasing For Vibrating Grid
ISO VG 220
50 working hours Intervals
25 grease gun strokes



Machine Safety Decals Contd...

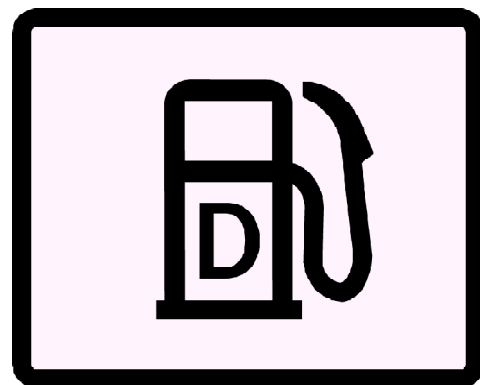
Hydraulic Oil, Diesel Oil and Cold Start Aid

Hydraulic Oil



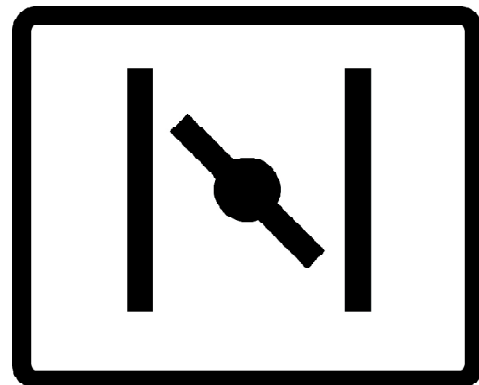
HO

Diesel Oil



DL

Cold Start Aid

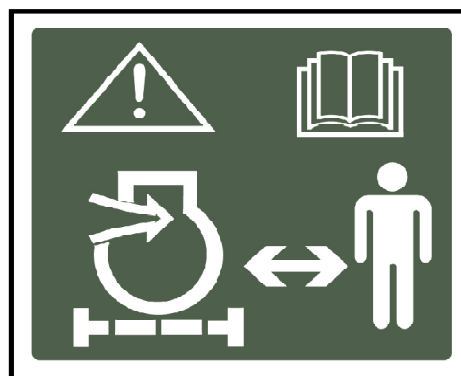


CSA

Machine Safety Decals Contd...

Air Intake Area Must Be Kept Clear, Engine Oil Only and Do Not Overfill Hydraulic Oil Tank

AIR INTAKE AREA
Must be kept Clear at all times

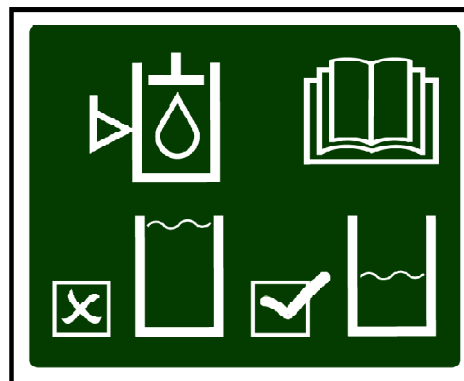


Engine Oil Only



EO

Important Do Not Over-Fill
Hydraulic Oil Tank

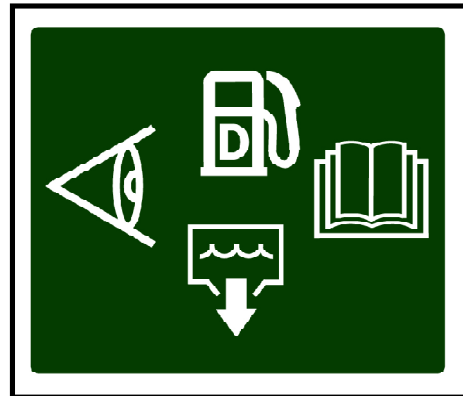


HOL

Machine Safety Decals Contd...

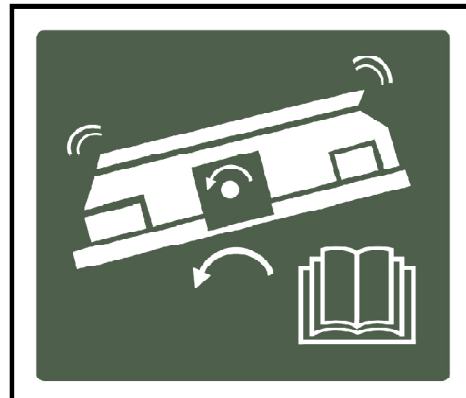
Check and Drain Diesel Watertrap Daily, Screenbox Speed and Machine Must Be Level At All Times

**Important Check And Drain
Diesel / Watertrap
Daily**



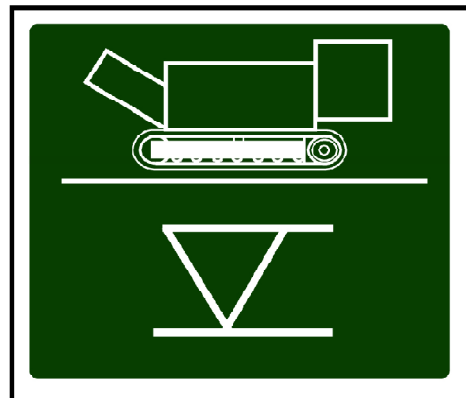
DLWT

Screenbox Speed



SBS

**Important
Machine Must Be
Level At All Times**



ML

0.1.9 Position of warning labels

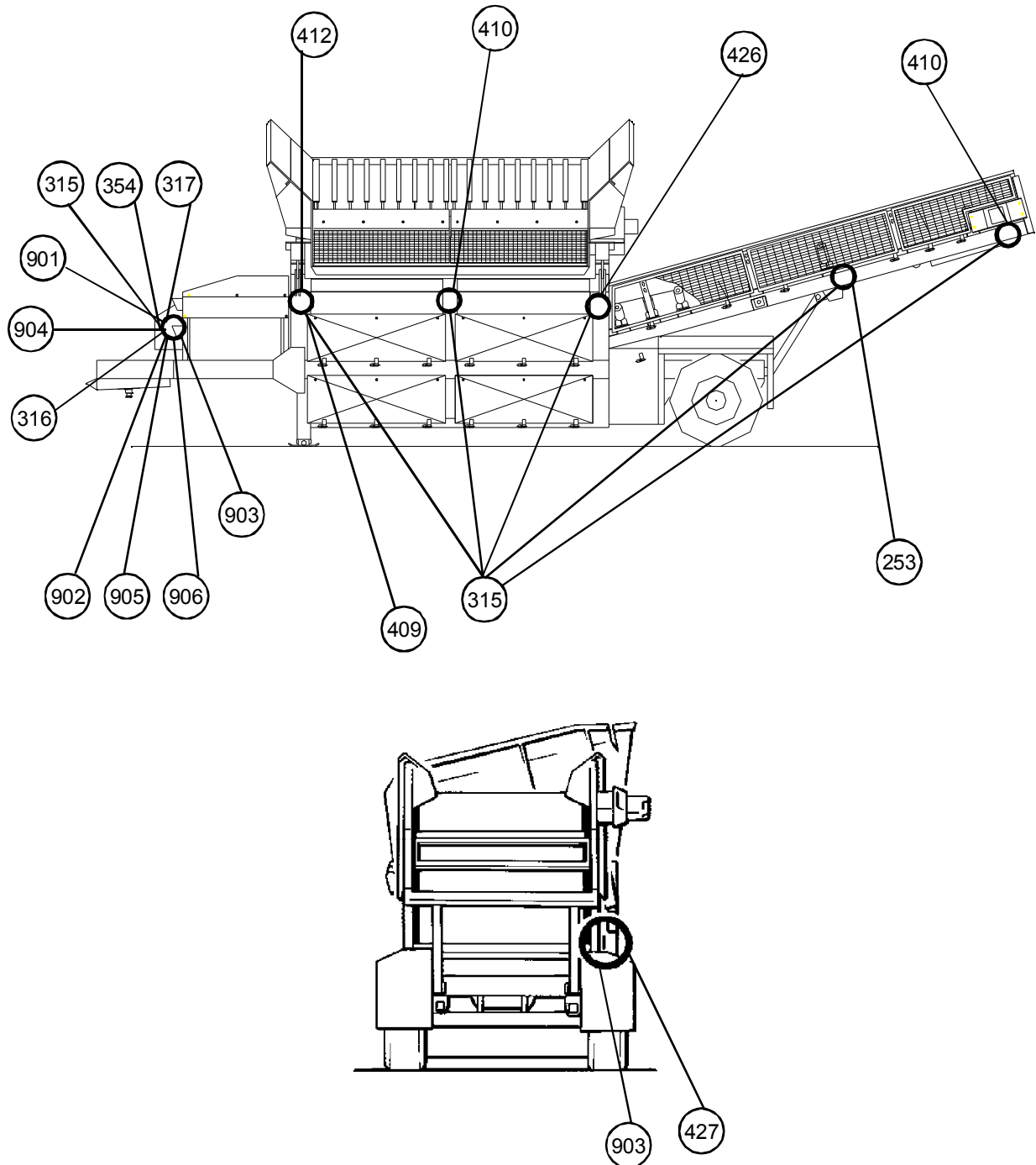
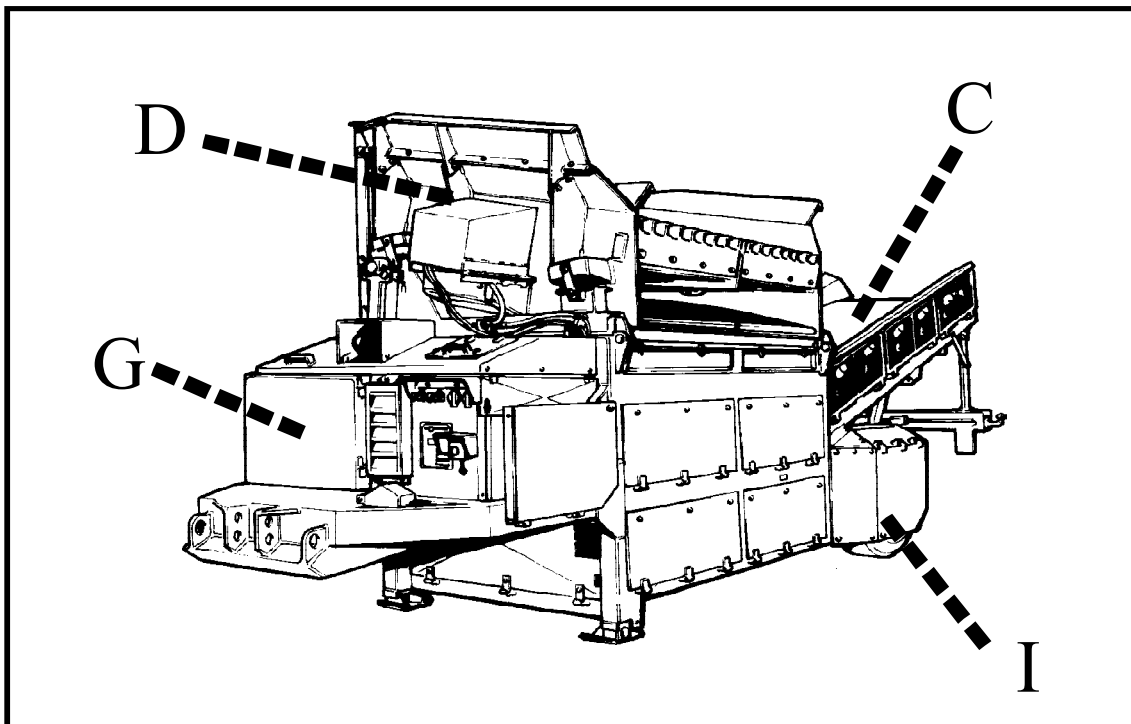


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1.1 General information

Machine	Mobile scalping and conveying unit
Type	Powergrid
Machine Serial Number	
Engine/Electric Motor Serial number :	
Total weight	17,300 kg (38,140lbs) approx
Overall dimensions	Refer designs in Section 9, "Appendix"
Weight of construction units	Refer respective data following pages
Dimensions of construction units	Refer respective data following pages

1.2 Nomenclature and technical data



Id	Construction unit	Component
C	Main conveyor	
D	Screen unit	Screen box Mesh deck
G	Power unit	Engine
H	Hydraulics	
I	Chassis	Tyres

1.2.1 Main conveyor unit

1.2.1.2 Main conveyor (C)

Belt width 1500 mm (60")
 Type.....3 ply

Degree of incline:
 Transport Angle 16°
 Working Angle 16°

1.2.2 Screen unit (D)

1.2.2.1 Reject grid

Width	3050mm (10')
Length	2135 mm (7')
Weight	5.5 tonnes
Grid angle	12 - 25 Degrees

1.2.2.2 Screen meshes (available in a range of sizes)

Lightest mesh weight 40 kgs
 Heaviest mesh weight 150 kgs

1.2.3 Power unit (G)

1.2.3.1 Engine

Refer to engine operation manual in section 9, Appendix

1.2.3.2 All-Electric / Electric Hydraulic machine

3 phase 380 - 415 Volts (depending on normal country voltage)

1.2.3.3 Battery

Type 12 Volt, negative earth
Cranking Power 810 amps SAE

1.2.4 Hydraulics (H)

1.2.4.1 Hoses

Type	Diameter	Working pressure	Test pressure	Burst pressure
2 SN-K "Semperpac 1" DIN 20022 Part 3	3/4"	3500 psi	7395 psi	14210 psi
R1 AT DIN 20022 Part 3	3/16"	3570 psi	8700 psi	14500 psi
	1/4"	3210 psi	7830 psi	13050 psi
	5/16"	3070 psi	7395 psi	12325 psi
	3/8"	2570 psi	6307 psi	10440 psi
	1/2"	2295 psi	5582 psi	9280 psi
	5/8"	1855 psi	4567 psi	7540 psi
	3/4"	1500 psi	3697 psi	6090 psi
	1"	1255 psi	3045 psi	5075 psi
	1 1/4"	900 psi	2175 psi	3625 psi
	1 1/2"	715 psi	1740 psi	2900 psi
	2"	570 psi	1392 psi	2320 psi
R2 AT DIN 20022 Part 4	3/16"	5930 psi	14355 psi	23925 psi
	1/4"	5710 psi	13920 psi	23200 psi
	5/16"	5000 psi	12180 psi	20300 psi
	3/8"	4710 psi	11527 psi	19140 psi
	1/2"	3930 psi	9570 psi	15950 psi
	5/8"	3570 psi	8700 psi	14500 psi
	3/4"	3070 psi	7395 psi	12325 psi
	1"	2355 psi	5655 psi	9425 psi
	1 1/4"	1785 psi	4350 psi	7250 psi
	1 1/2"	1285 psi	3190 psi	5220 psi
	2"	1140 psi	2827 psi	4640 psi

1.2.5 Chassis (I)

1.2.5.1 Wheels

For wheel stud torques, see adjustment data, Maintenance section

1.2.5.2 Tyres

Standard Size	425/65/R22.5
---------------	--------------





General

POWERGRID 800-1200

Page 1

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2.2	General Information	2
2.3	Designated use	3
2.4	Screening materials	3
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2.1 Introduction

This instruction manual contains important information on how to operate the machine safely, properly and most efficiently. Observing these instructions helps to avoid danger, to reduce repair costs and downtimes and to increase the reliability and life of the machine.

The operating instructions must always be available wherever the machine is in use.

These operating instructions must be read and applied by any person in charge of and/ or working on the machine such as:

Operation

including setting up, troubleshooting during the course of work, evacuation of production waste, care and disposal of fuels and consumables.

Maintenance

(servicing, inspection, repair)

and/ or

Transport

Follow all applicable safety regulations for accident prevention and environmental protection.

2.2 General information

The POWERGRID which you have now received has been manufactured, assembled and tested with the utmost care and was built with first class materials.

Close attention has been paid to all details in assembly, running tests and final inspection.

We are confident that you have received a machine which will give you every satisfaction over a long period.

To be assured of faultless operation we would ask you to carefully read the following paragraphs and give the required time and attention to essential maintenance, cleaning and inspection.

The machine is simple to operate, adjustments are easy to make and expert assistance is seldom required, provided that ordinary care is exercised in daily use.

The machine has been built in accordance with state-of-the-art standards and recognised safety rules. It is designed to be reliable, efficient and safe when used and maintained in accordance with the instructions given in this manual.

Nevertheless, its use may constitute a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property.

2.3 Designated use

The machine is designed exclusively as a self-contained mobile unit for screening materials into various sizes.

The material is deposited in the feed hopper. A reject grid will discharge oversize material.

The variable speed feeder delivers the material at the required rate evenly on to the main conveyor which conveys it to the screen, where it is split into separate grades.

In order to operate the machine optimally for the respective application, several different screen mesh decks may be installed. Depending on the installed number of screen mesh decks the machine is able to screen out material of up to three different sizes. As an option you may receive a third screen mesh deck in order to separate a fourth size.

Operating the POWERGRID beyond its contractual, will result in a loss of the guarantee and the manufacturer/ supplier cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user.

2.4 Screening materials

Sand & Gravel
Rock
Soil
Wood-bark & Wood-chippings
Coal
Metal Ore
Demolition Rubble
Refuse

NOTICE  If you need to process any material with the POWERGRID machine which is not on the above list, contact your local POWERSCREEN Dealer or POWERSCREEN Technical Department for advice.

WARNING  If you have any doubts about any aspect of the machines capability or servicing procedures, you must consult your local POWERSCREEN dealer or POWERSCREEN Technical Department.

2.5 Copyright

The copyright of this manual is reserved by POWERSCREEN International Distribution Ltd.

The operating manual contains regulations and technical drawings, which may not be copied, distributed, altered, stored on electronic media, revealed to others or used for the purpose of competition, either partially or in its entirety.

The right is reserved to alter any details contained in this manual without notice. Copyright 1997.

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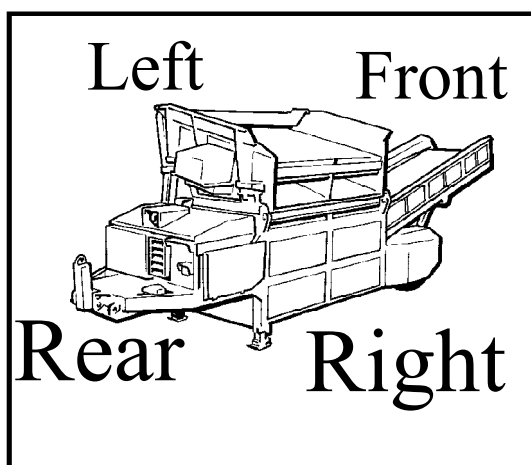
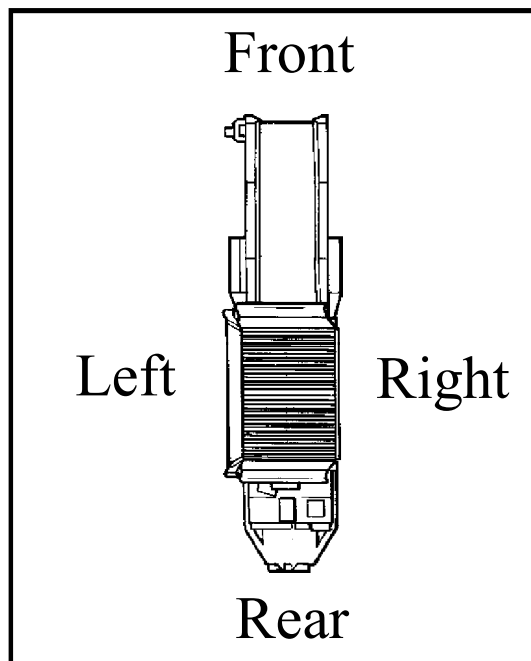
3.1 General Information

Left and Right hand

When using this handbook, at all times the right and the left hand references are viewed from the towbar end of the machine.

Front and Rear

When using this handbook, at all times the rear of the machine is situated at the towbar end.

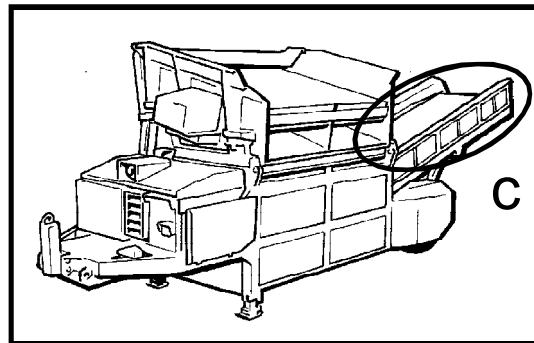


3.2 Construction Units

3.2.1 Main conveyor (C)

The steel plate hopper which is mounted under the screen directs the material onto the conveyor and rubber skirting eliminates spillage. The screened material is either delivered by the conveyor for stockpiling or for further processing.

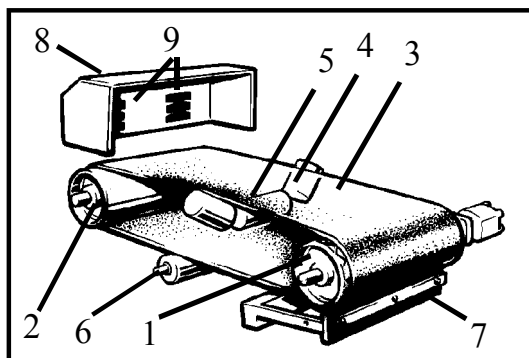
The main conveyor belt is driven by a hydraulic motor. It is fully skirted and incorporates head drum guarding; belt tension adjustments can be made external to the guard doors.



Belt Design

The conveyor belts on all POWERSCREEN machines consists of :

- 1 Drive drum
- 2 Tail drum
- 3 Conveyor belting
- 4 Side rollers
- 5 Center rollers
- 6 Return rollers
- 7 Belt scrapers
- 8 Guarding
- 9 Viewing apertures



Belt alignment

For safe, proper and efficient operation of the machine, it is important that conveyor belts are running in alignment.

The belt alignment can be checked without removing any guard through viewing apertures.

The conveyor belts are aligned by adjusting the drum adjusters.

Reasons for the conveyor belts not running in alignment:

1. Machine not perfectly levelled.
2. Faulty belt tension.
3. Faulty position of the drums.

Solution refer to section 6, "operating instructions", "troubleshooting".

Belt Tension

The belt will normally have to be tensioned a number of times during the machines lifetime due to the natural stretching of the belt.

It is very important that the conveyor belt is tensioned evenly to the correct level, not too tight and not too loose.

A loose belt can cause slippage, resulting in reduced throughput.

An over tight belt can damage drum bearings, resulting in increased downtime.

Correct tension is obtained when no slippage occurs during normal use.

Belt Slippage

So long as the described maintenance procedures have been properly observed, your machine should not experience belt slippage.

Slippage is a term used to describe when the drum turns but the belt does not move.

Slippage can occur for a number of reasons:

1. Incorrectly tensioned belts.
2. Worn belts.
3. Ineffective lagging.
4. Too much load on the belt.
5. Rollers cannot rotate freely

Solution refer to section 6, "operating instructions", "troubleshooting".

Belt performance

All conveyor belts and drum lagging on POWERSCREEN machines are made to the highest standards and are tough and durable.

However these are consumable items and will need to be replaced through normal wear and tear.

Spliced torn belts are less effective than vulcanised and have an increased tendency to slip.

Also a belt which has been adjusted to its maximum must be replaced with a new belt.

Worn lagging must also be replaced.

The correct procedure for changing a belt/lagging is to contact your local POWERSCREEN dealer who will either carry out the work himself or get it carried out by personnel trained in this field.

To ensure optimum performance and safety, the conveyor(s) must be:

1. Cleaned on a daily basis or more frequently depending on the application.
(For details contact your local POWERSCREEN dealer).
2. Checked for cuts, tears, rips or any other physical damage.
3. Maintained at the correct tension.
4. Maintained in alignment.

3.2.2 Screen Unit (D)

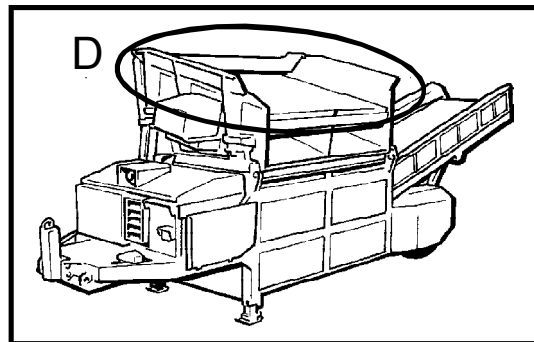
The scalping unit is constructed from heavy duty plate and box sections having two screening surfaces 3.05 m x 2.13 m (10' x 7') each.

Scalping action is provided by out of balance flywheels and an eccentric screenshaft in a conventional 2 bearing screen arrangement.

A fixed loading plate is standard equipment. A range of mesh sizes from 4" to 1/4" are available and are end tensioned designed to facilitate easy replacement.

A bofor steel grizzly bar reject grid is fitted to the top deck. A fixed loading plate at the top of the screen allows full utilisation of the screen area.

The screening angle can be adjusted from 12° to 25° degrees by means of two hydraulic rams.



A heavy duty Bofor grid is available featuring a tapered opening from 90mm to 110mm (3.5" to 4.3") nominal aperture. Punched plate screens are available with a range of opening sizes up to 460mm (hexagonal). A heavy duty solid steel plate finger screen is available with a range of apertures.

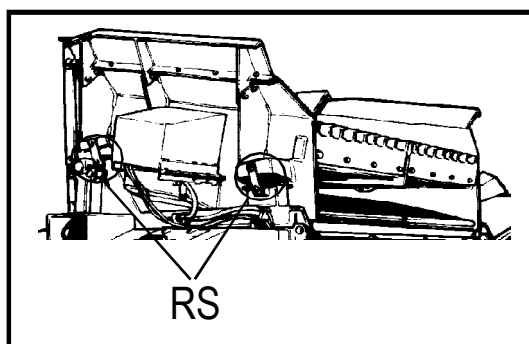
CAUTION  **Do not adjust reject grid bars to be spaced wider than 110 mm (4.2").**

The screen unit has a loading width of 3.050m (10').
The standard aperture is 78mm (3")

The Powergrid machines also have the option of wire finger screens on the bottom deck instead of conventional wire meshes.

The POWERTRACK screenbox has 4 anti-rock stays (RS).

The anti-rock stays (RS) are situated on each corner of the screenbox, 2 off Lhs\Rhs.

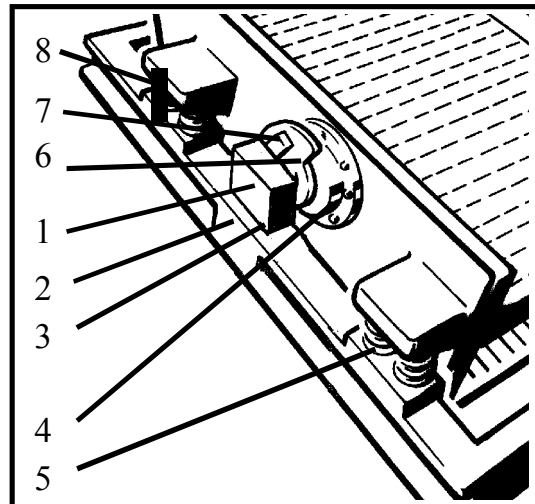


The screen unit consists of a 2-deck screenbox mounted with 2 heavy duty flange bearings (4) on an eccentric shaft (Screen shaft (1)).

The subframe (2) in turn is rigidly connected to the chassis of the machine.

Screen springs (5) are used to prevent the ends of the screenbox from rocking.

The rotation of the screen shaft (1) causes the screen unit to follow a circular path and provide the screening action (i.e. vibration).



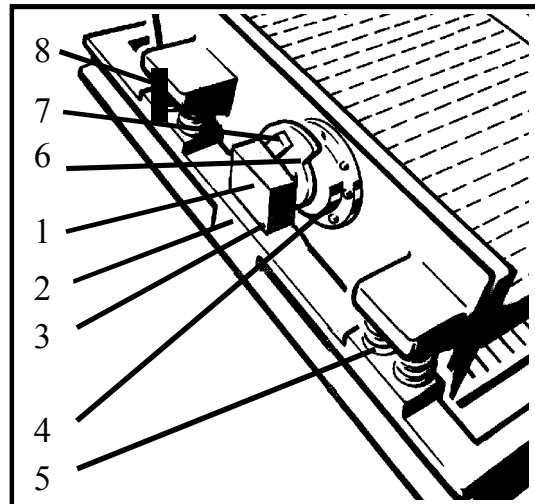
The natural motion of the screenbox would cause an undesirable “out of balance” reaction against the subframe (2).

Two large flywheels (6) are mounted on the shaft which act to cancel out the “out of balance” reaction of the screenbox.

These flywheels (6) are normally fitted with additional balance weights (flywheel weights (7)) to adjust their overall weight.

This can compensate for varying weights of screenbox as a result of different sizes of meshes being fitted.

Hence the 2 bearing screen unit can easily be adjusted (tuned) to achieve perfect overall balance and transmit no vibration into the subframe or chassis.



Tuning the screen unit

NOTICE



Screen units on all POWERSCREEN machines are tuned before leaving the factory.

Re-tune screen unit only when altering its weight or when vibrations are noticed in the structure.

Always act on both sides of the screen shaft.

The screen unit is tuned by altering the flywheel counter weights on both sides of the screen shaft.

Two ways of altering the flywheel counter weights:

1. Adding flywheel counter weights.
2. Removing flywheel counter weights.

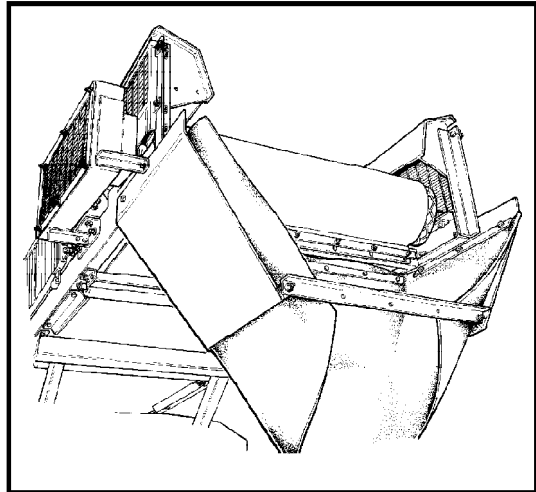
Add flywheel counter weights, when increasing the screen unit's weight. The screen unit's weight is increased by adding a mesh deck or decreasing the mesh opening.

Remove flywheel counter weights, when decreasing the screen unit's weight. The screen unit's weight is decreased by removing a mesh deck or increasing the mesh opening.

3.2.3 Chutes

A chute can be attached at the POWERGRID main conveyor for the purpose to direct the discharged material either to a particular spot on the ground or onto another stockpiler.

The chute is constructed from 3mm sheet metal and can also be rubber lined depending on the application.

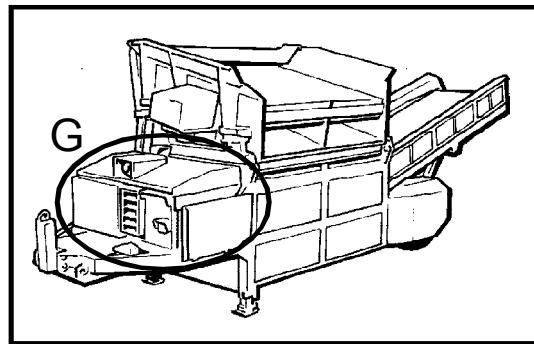


3.2.4 Power unit (G)

The power unit is enclosed in a vandal proof cabinet and is mounted directly on top of the 5th wheel assembly.

The power unit is completely enclosed, sound suppressed and lockable.

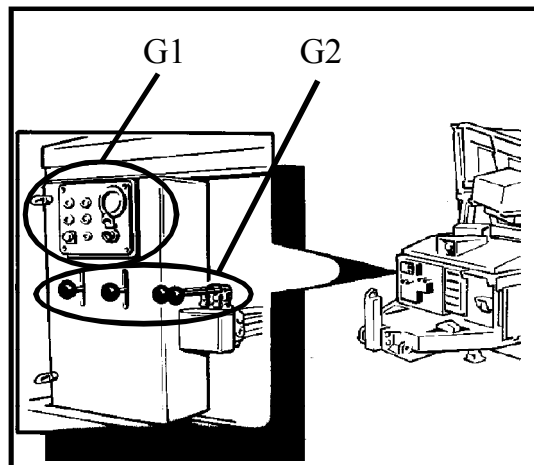
Electric/Hydraulic drive and all-electric drive are other available options.



The POWERGRID machine has two control units.

The control panel (G1) and the control valve unit (G2).

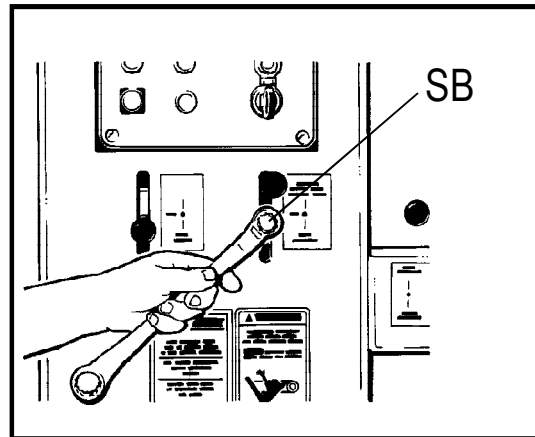
Both control units are situated at the powerunit on the rear of the machine.



A safety bolt (SB) is inserted midway on the main conveyor control valve slot, when the machine is put in the transport position.

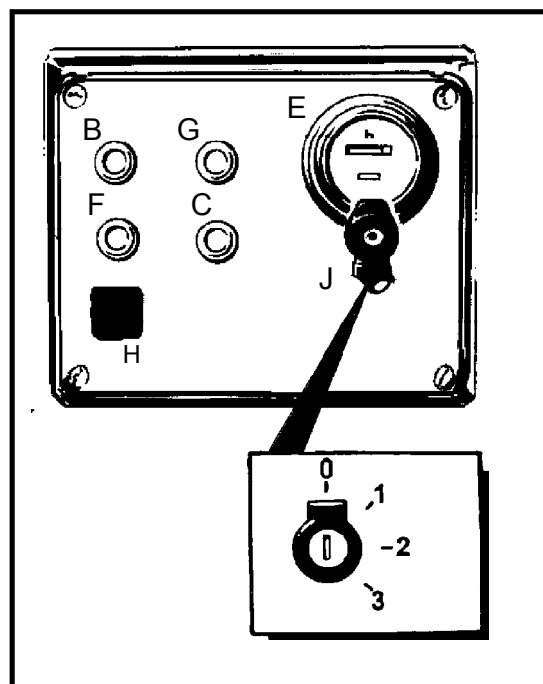
The control lever is put into the neutral position and the safety bolt is placed and tightened below it. This prevents the accidental starting of the main conveyor by not allowing the lever to be pushed down. However the lever can still be raised up to permit the auxiliary control valves to operate.

The safety bolt, nut and washers are removed during operation and placed in the tool box for safe keeping.



3.2.4.1 Control panel (G1)

- (B) Charge (ignition) lamp
- (C) Air cleaner blockage lamp
- (E) Hour meter
- (F) Oil pressure lamp
- (G) Water temperature/ level lamp
- (H) Override button (green)
- (J) Ignition key switch
 - (0) Off
 - (1) Ignition ON
 - (2) Siren on
 - (3) Start

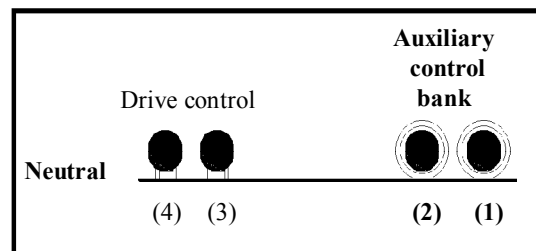
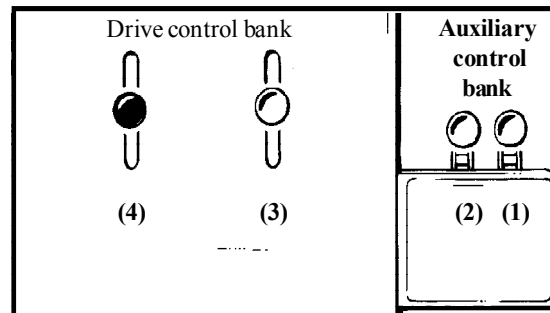


3.2.4.2 Control valve unit (G2)

The levers of the control valve unit can be divided into two different banks (according to their functions):

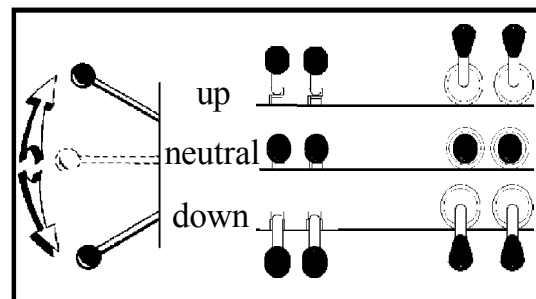
- Drive control Bank.
- Auxiliary control Bank.

Note that all control valve levers are labelled on the machine (Refer to Section 10, "Appendix")



Symbols for the levers

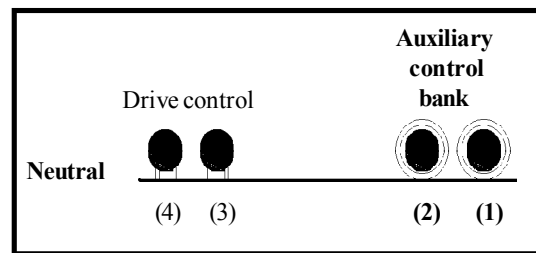
In the manual the following symbols are used to show the position (up, neutral, down) of the levers.



POWERGRID 800

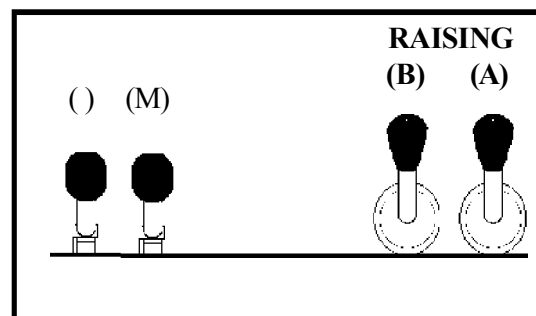
(a) Auxiliary control bank

The auxiliary control bank cannot be used unless enabled using the drive control bank.

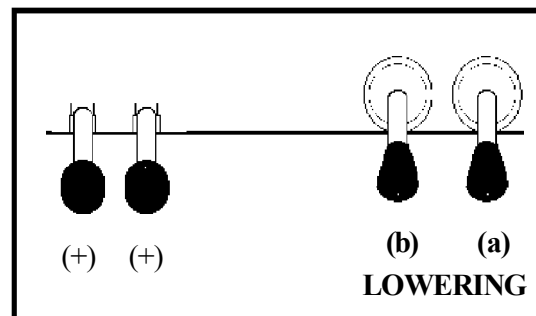


The auxiliary control valve bank is for RAISING and LOWERING.

(1) Machine,
RAISING: A
LOWERING: a



(2) Screenbox, (screen angle)
RAISING: B
LOWERING: b



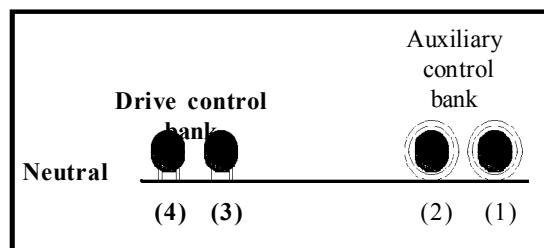
(b) Drive control bank

The drive control bank has two functions:

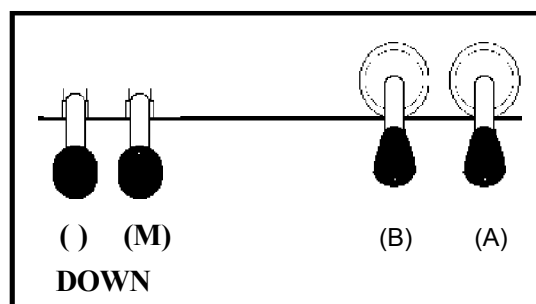
Engaging/ stopping the drive

and

Engaging/ stopping the auxiliary control bank.

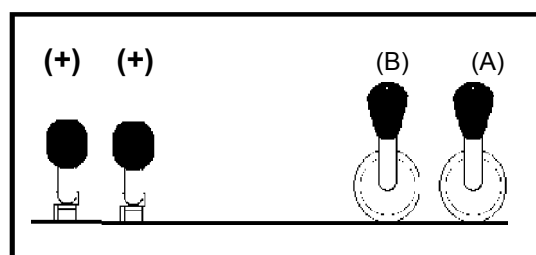


- (3) Main conveyor,
Drive: +
Stop: NEUTRAL



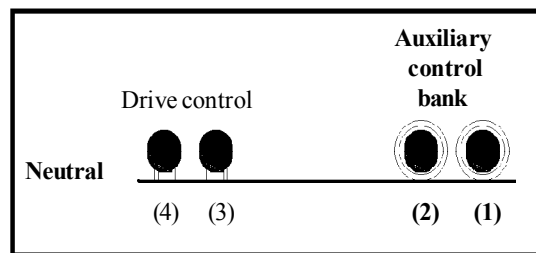
Auxiliary Control Bank,
Engage: M
Disengage: NEUTRAL

- (4) Screenbox
Drive: +
Stop: NEUTRAL



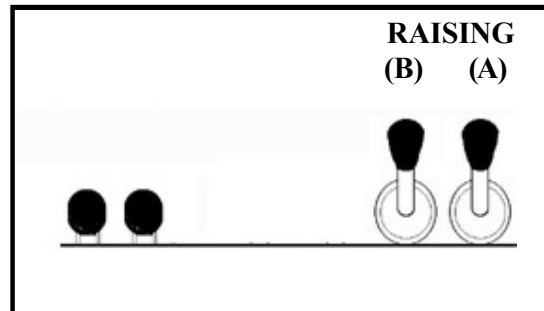
POWERGRID 1200

(a) Auxiliary control bank

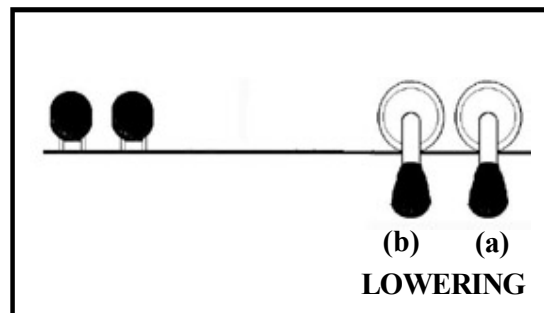


The auxiliary control valve bank is for RAISING and LOWERING.

- (1) Machine,
RAISING: A
LOWERING: a

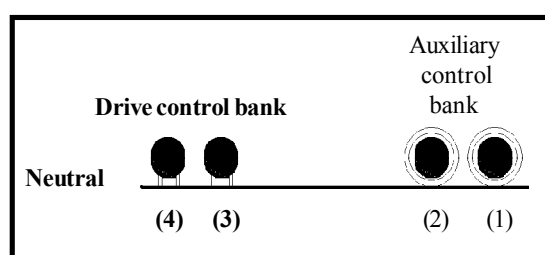


- (2) Screenbox, (screen angle)
RAISING: B
LOWERING: b



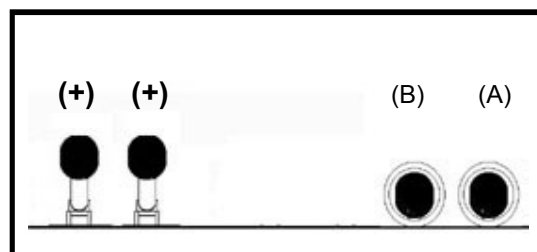
The drive control bank has one function:

Engaging/ stopping the drive



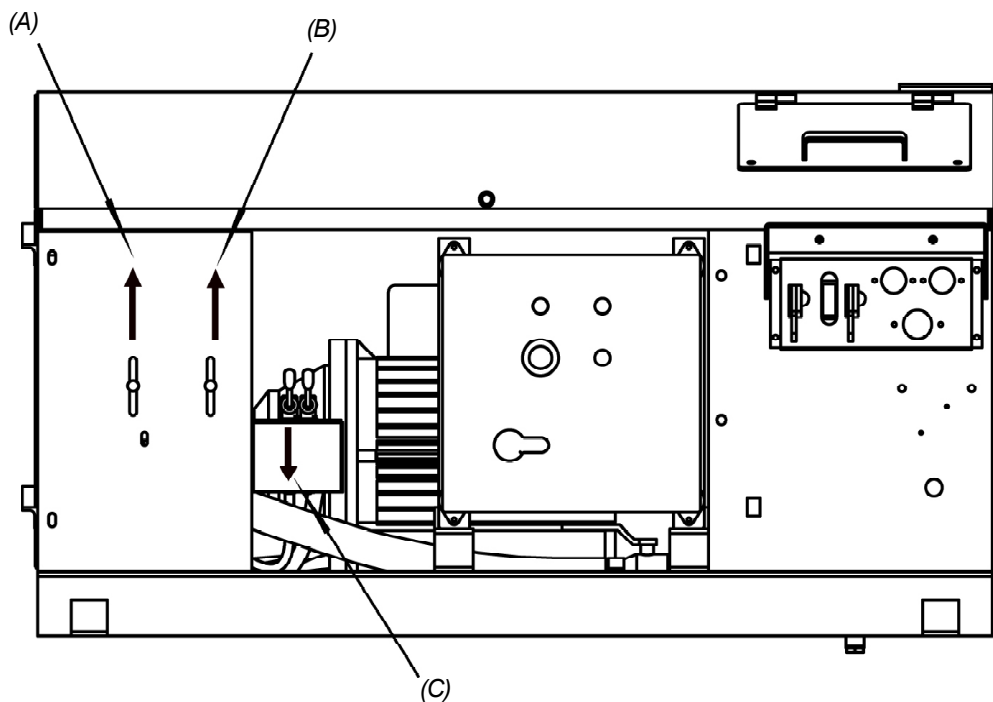
- (3) Main conveyor,
Drive: +
Stop: NEUTRAL

- (4) Screenbox
Drive: +
Stop: NEUTRAL



POWERGRID 800

Electric hydraulic Standard control Levers



(A)= SCREEN DRIVE STD DIRECTION – DOWN THE SCREEN (CLOCKWISE)

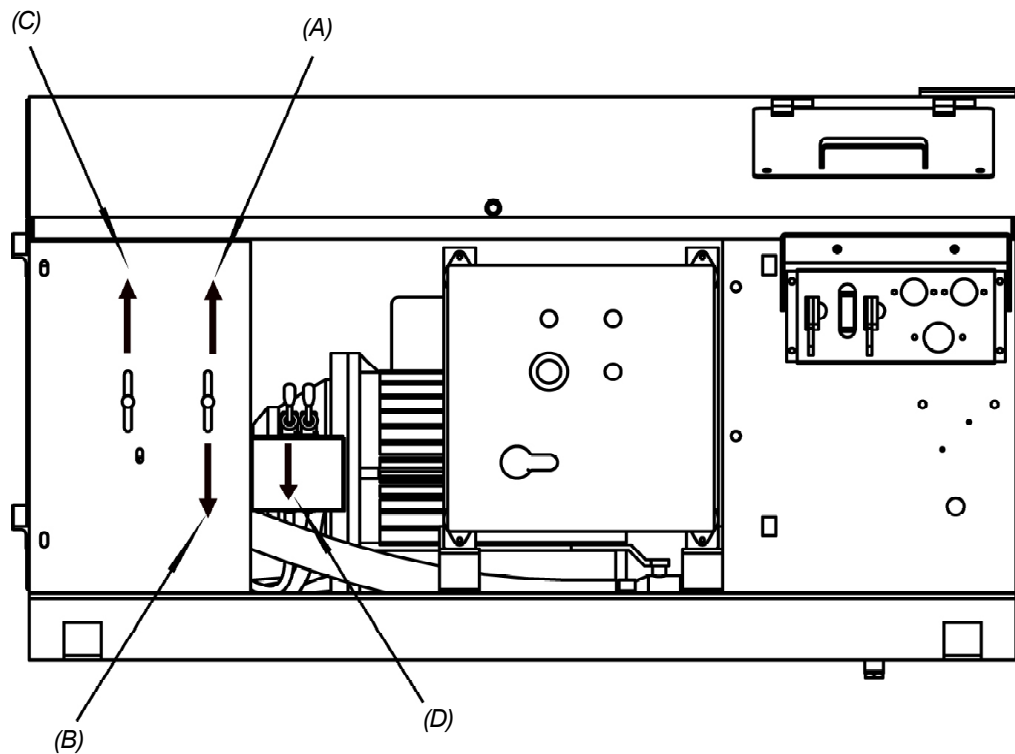
(B)= CONVEYOR DRIVE

(C)= SCREEN JACKING RAMS

All other levers positions are redundant and are not used

POWERGRID 800

Electric hydraulic Reversible screen drive control Levers



(A)= SCREEN DRIVE STD DIRECTION – DOWN THE SCREEN (CLOCKWISE)

(B)= SCREEN DRIVE REVERSE DIRECTION - UP THE SCREEN (ANTICLOCKWISE)

(C)= CONVEYOR DRIVE

(D)= SCREEN JACKING RAMS

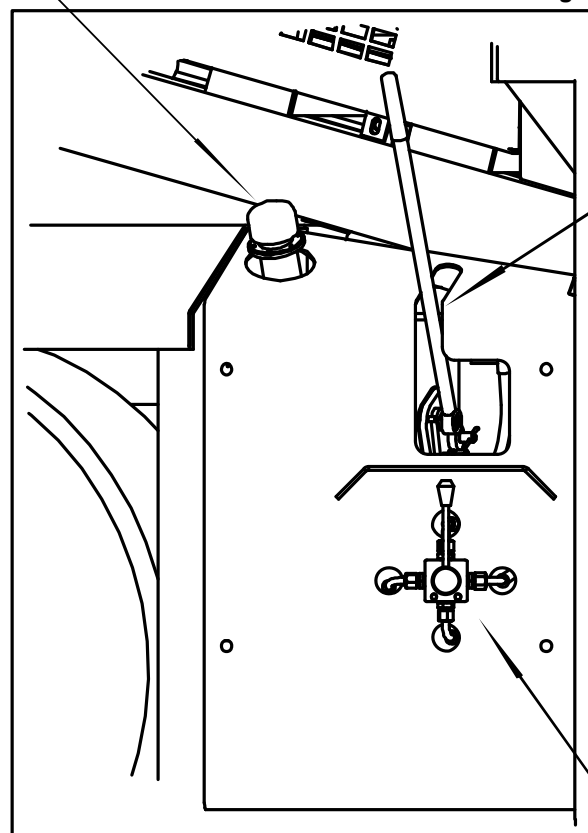
All other levers positions are redundant and are not used

POWERGRID 800

Electric hydraulic option Jacking legs

Hydraulic oil filler cap

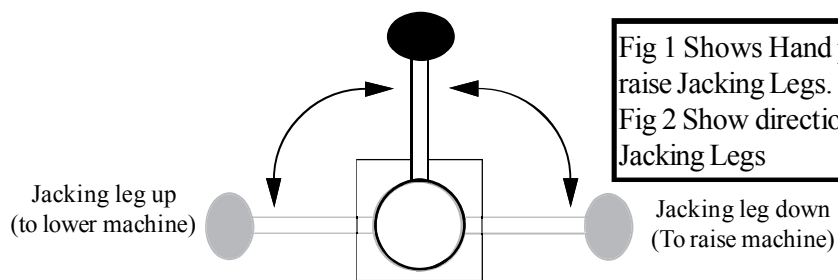
Fig 1



Hand pump

Neutral – flow
back to tank

4 way priority valve/
flow diverter valve

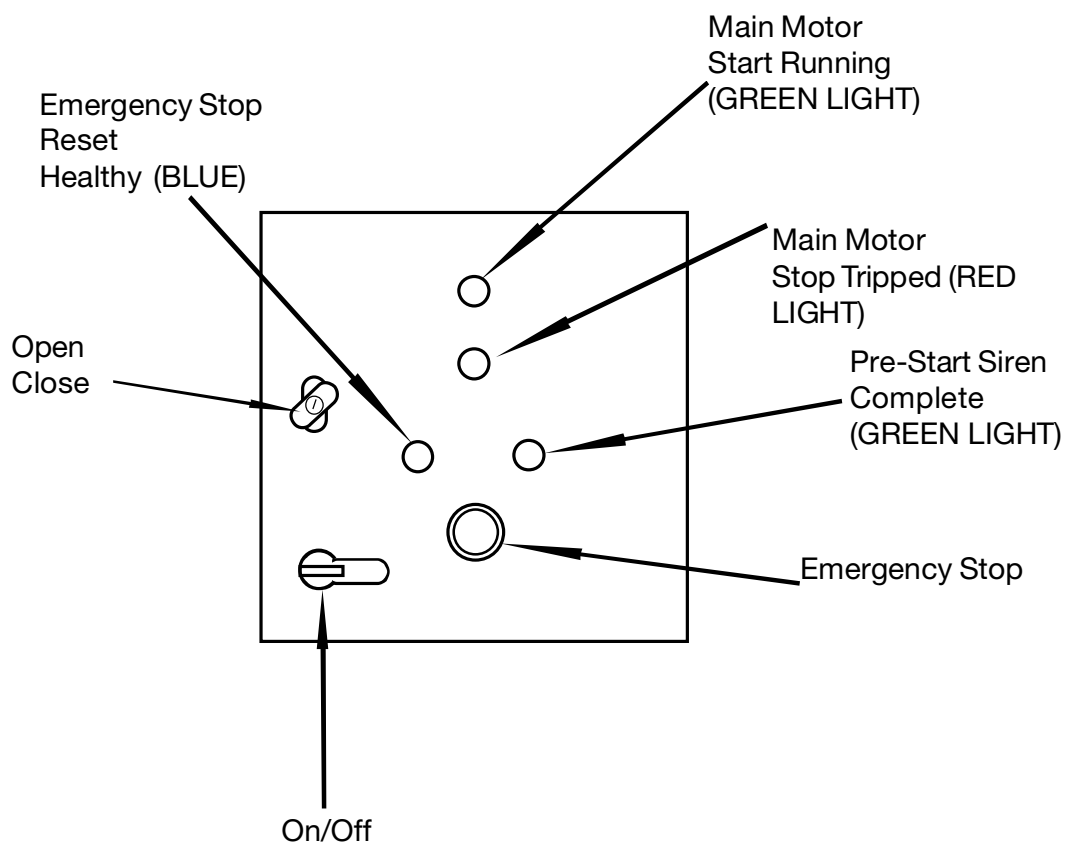


4 way priority valve/flow diverter Fig 2

Fig 1 Shows Hand pump is used to lower and raise Jacking Legs.
Fig 2 Show direction to move lever to operate Jacking Legs

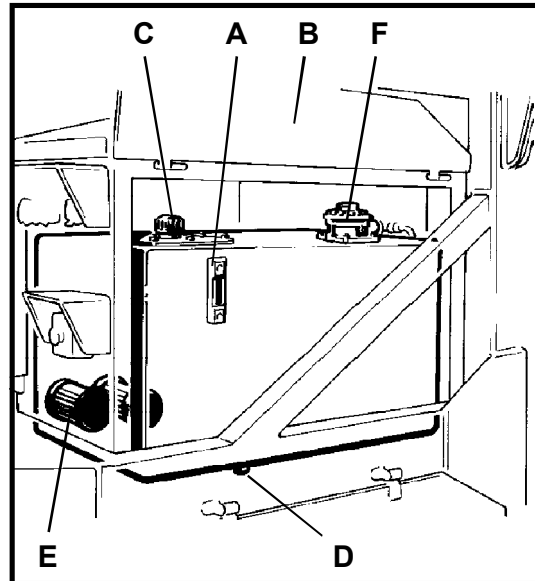
POWERGRID 800

Electric hydraulic Electrical Control Panel Layout



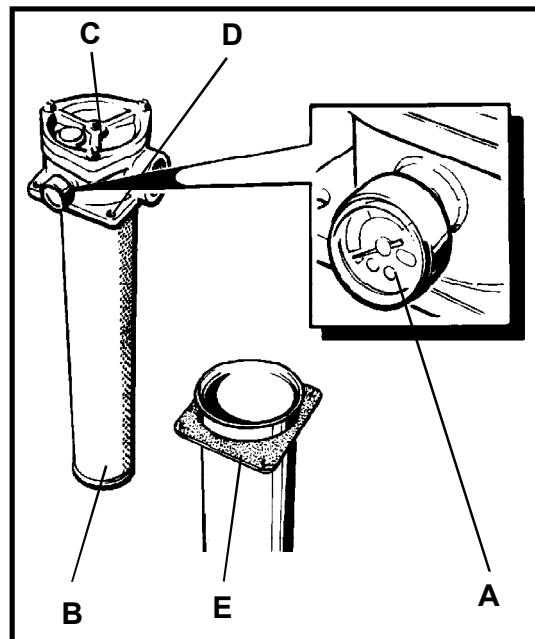
3.2.5 Hydraulic system (H)

- A Hydraulic Oil Level Indicator
- B Hydraulic Tank Access Panel
- C Filler Cap
- D Drain Plug
- E Suction Filters
- F Return Line Filter



3.2.5.1 Return Line Filter (F)

- A Blockage Indicator
- B Filter Element
- C Filter Housing
- D Retaining Bolts
- E Seal ring



3.2.6 Chassis (I)

The Chassis is a sturdy construction which supports the main conveyor, feeder, hopper, powerunit and screen. It is supported on the axle arrangement and can be connected to the prime mover by means of the king-pin.

The specific axle arrangement depends on individual customer requirements.

In working position the machine is supported by:

1. Two jacking legs
2. The chassis

The jacking legs are fully retracted when in the working position and can be extended for prime mover loading only.

The machine can be fitted with a tow bar to enable it to reposition on the work site.

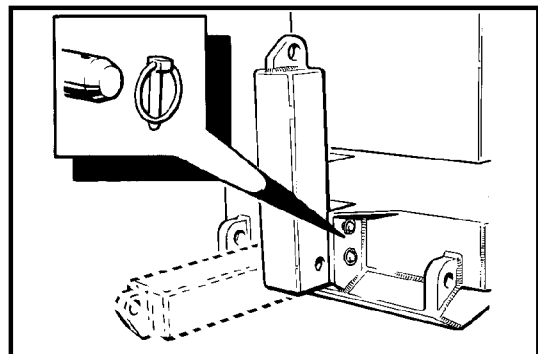
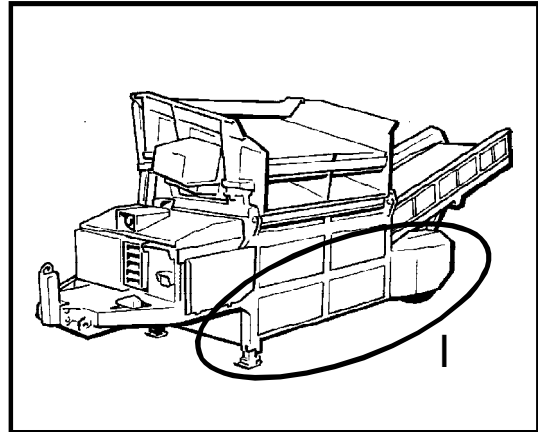


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4.2 Towing on the highway	4
4.3 Repositioning on the work site.....	8

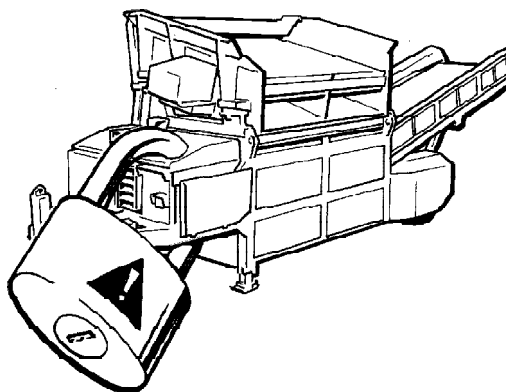
4.1 Safety information

WARNING  When carrying out maintenance or adjustment to a machine the following procedure must be followed.

1. Switch off engine and remove ignition key.
2. Implement "Lockout Procedure".
3. Never work alone.

LOCKOUT PROCEDURE

- a. Close Control Panel door.
- b. Insert padlock through the antiloose fastener.
- c. Lock padlock.
- d. Keep key on person during lockout.

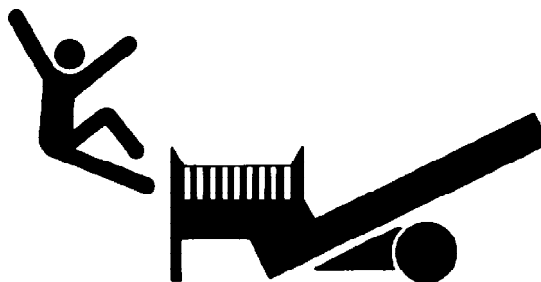


WARNING  Falling from and/or onto a Powerscreen machine can cause serious injury or even death.

Do not climb on the machine.

Always use the walkways/ platforms provided or a safe and secure platform approved by the regional safety enforcing authority.

Always use a EN/ANSI approved safety harness when reaching any points 7 ft (2 m) or more above ground level.



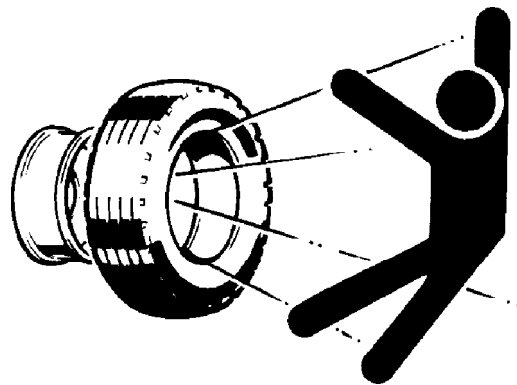
WARNING



Explosive separation of a tyre and rim parts can cause serious injury or death.

Always maintain the correct tyre pressure. Do not inflate the tyres above the recommended pressure (See Maintenance Section).

When inflating tyres, use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front or over the tyre assembly. Use a safety cage if available.



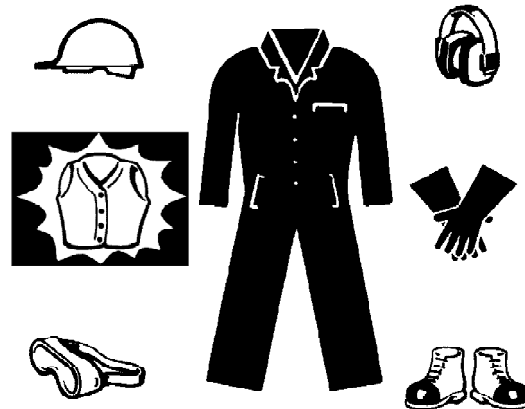
WARNING



Loose or baggy clothing can get caught in running machinery.

Always wear correctly fitting (E.N./A.N.S.I. approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close Fitting Overalls, Steel Toed Boots and a High Visibility Vest.



4.2 Towing On The Highway

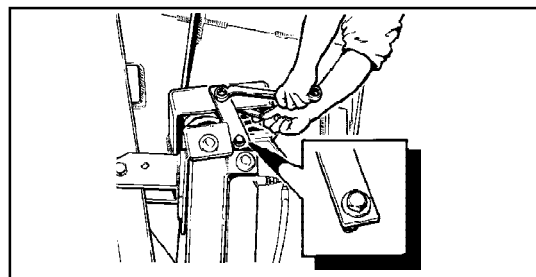
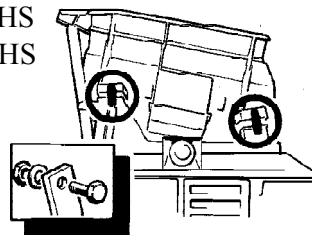
CAUTION  Prior to putting the **POWERGRID** in the towing position it must be shut off in accordance with Section 7 “Shut Off”.

Procedure

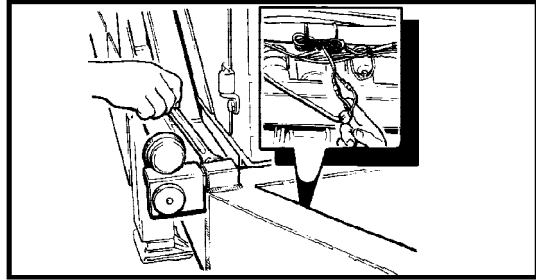
1. Observe all safety warnings.
2. Remove all loose materials such as rocks from the machine.
3. Put the machine in the site transport position. (Refer to section 7, “Shut Off”).
4. Position the 4 anti-rock stays on the four corners of the screenbox.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	FALLING HAZARD. Refer this Section, safety information for relevant warning.
	AVOID LOOSE CLOTHING. Refer this section, Safety information for relevant warning.

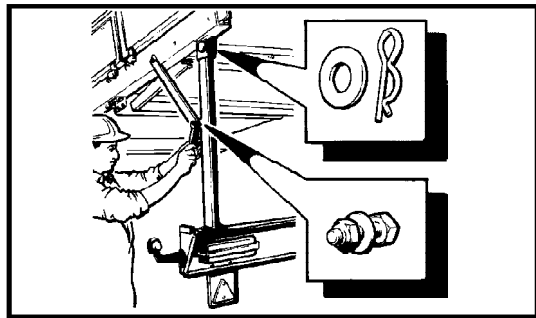
2 off LHS
2 off RHS



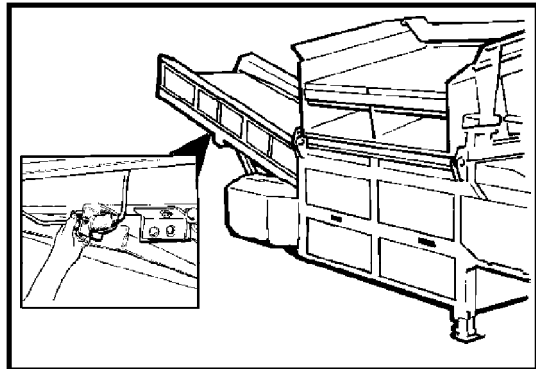
5. Attach lights to the provided holding device at the rear of the machine and plug in the wiring.



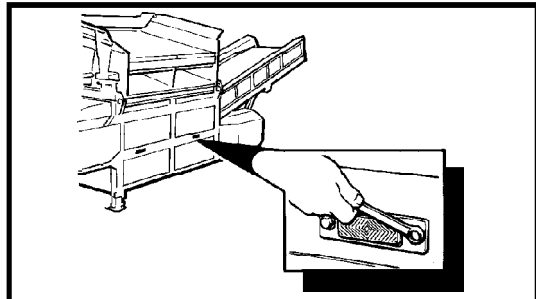
6. Connect lighting board to the front of the machine.



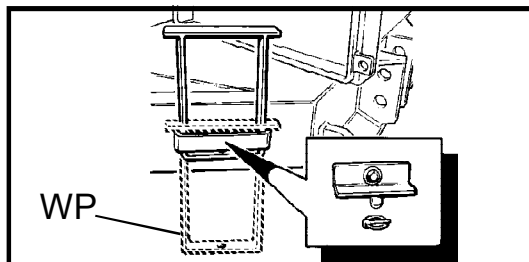
7. Plug lighting board into the socket provided.



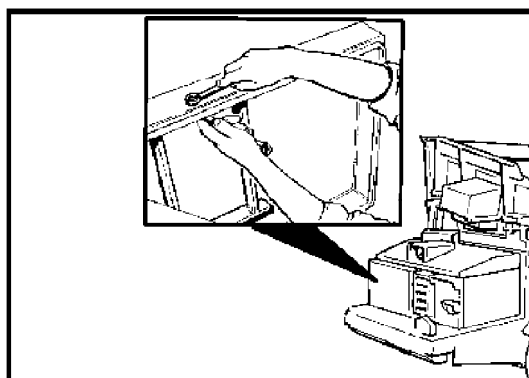
8. Fit reflectors and lateral protection where provided.



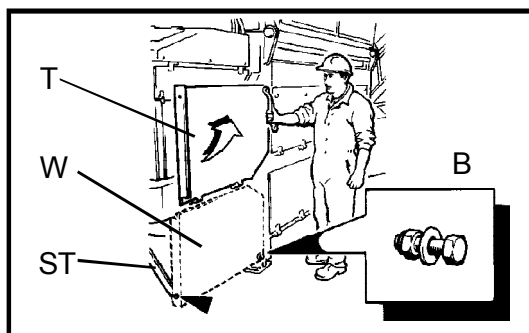
9. Remove step from the working position (WP).



10. Fit step in its holding position, inside the powerunit door.



11. Remove bolts (B) and stay (ST) Lhs/Rhs and place on the conveyor belt. Raise the stone guard from its working position (W) to its transport position (T) and secure in position.



CAUTION



Stand clear of guard door when swinging it up into position. The guard door is heavy and may cause serious injury if allowed to fall.

12. Remove jacking leg holding bolts (B) and raise the machine.

13. Attach the prime mover.

14. Retract the jacking legs and reinsert bolts (B).

15. Insert safety bolt in control valve slot.

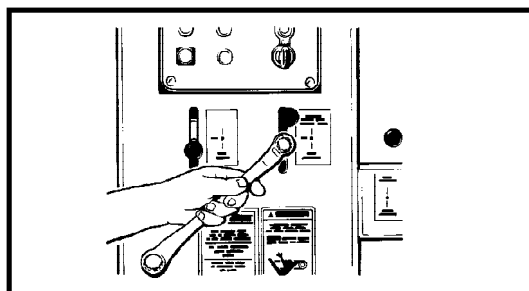
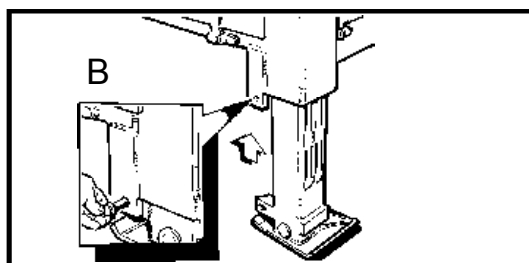
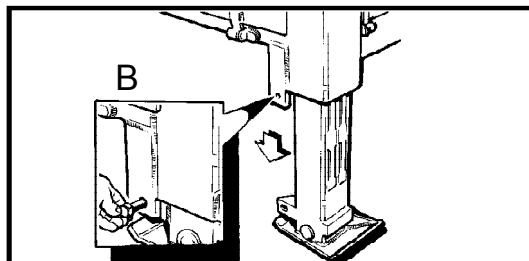
16. Connect and check lights.

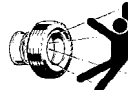
17. Connect and check braking system.

18. Check tyre pressure. (Refer to Section 8, Maintenance.

19. Check wheel nut torque. (Refer to Section 8, Maintenance.

20. Re-check wheel nut torque every 150 miles (200Km).



 WARNING	
	EXPLOSIVE SEPERATION OF TYRE Refer this Section for relevant warning.
	AVOID LOOSE CLOTHING Refer this section, Safety information for relevant warning.

4.3 Repositioning on the work site

The machine may be moved on the work site for a short distance by using the towbar.

CAUTION



Prior to repositioning the POWERGRID on the work site, the machine must be put in towing position in accordance with Section 7 “Shut Off”.

Procedure

1. Observe all safety warnings.
2. Shut off machine.
(Refer to Section 7, “Shut Off”).
3. Re- position machine on site.
(Refer to Section 7, “Shut Off”).
4. Fix the towbar at the rear of the machine.

	WARNING
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	AVOID LOOSE CLOTHING Refer this section, Safety information for relevant warning.

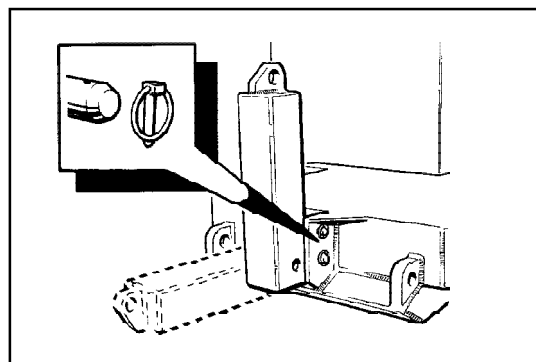


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5.4	Measures before set up	5
5.5	Machine set up	6
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5.5.2	Starting the engine	8
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5.1 Safety Information

DANGER

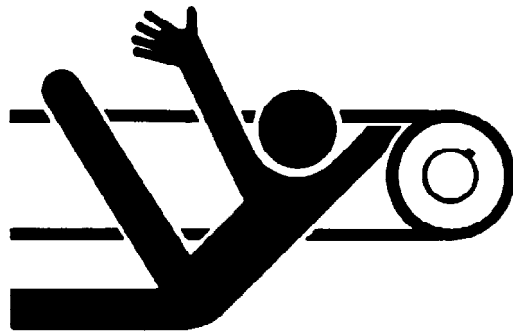


In-running nip points can cause serious injury or even death.

Do not reach into an unguarded machine.

Your arm could be pulled in and amputated.

Switch off and lockout machine before opening or removing guard doors.



DANGER



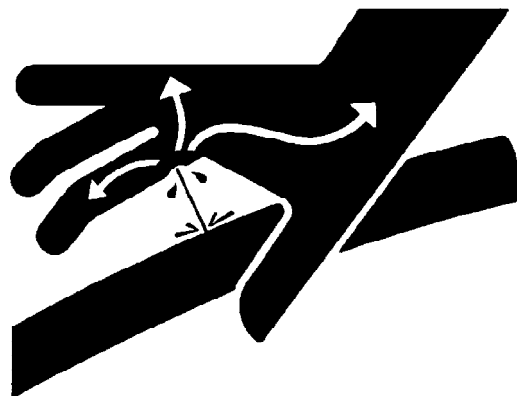
Hydraulic fluid under pressure can penetrate the skin causing serious injuries.

Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or adjustment.

Always use a piece of cardboard to check for leaks. Do not use your hand.

If fluid is injected under the skin, it must be surgically removed or gangrene will result.

Get medical help immediately.



WARNING

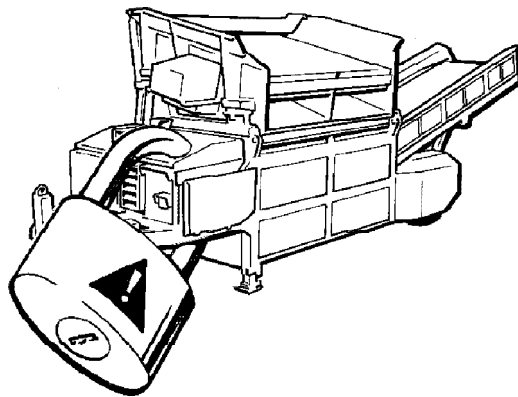


When carrying out maintenance or adjustment to a machine the following procedure must be followed.

1. Switch off engine and remove ignition key.
2. Implement "Lockout Procedure".
3. Never work alone.

LOCKOUT PROCEDURE

- a. Close Control Panel door.
- b. Insert padlock through the antiloose fastener.
- c. Lock padlock.
- d. Keep key on person during lockout.



WARNING

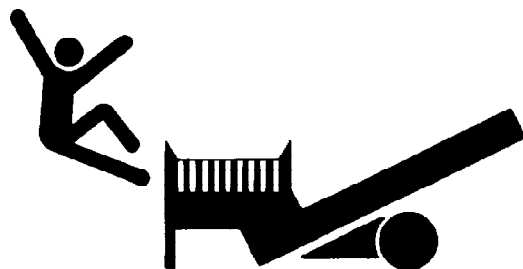


Falling from and/or onto a Powerscreen machine can cause serious injury or even death.

Do not climb on the machine.

Always use the walkways/ platforms provided or a safe and secure platform approved by the regional safety enforcing authority.

Always use a EN/ANSI approved safety harness when reaching any points 7 ft (2 m) or more above ground level.



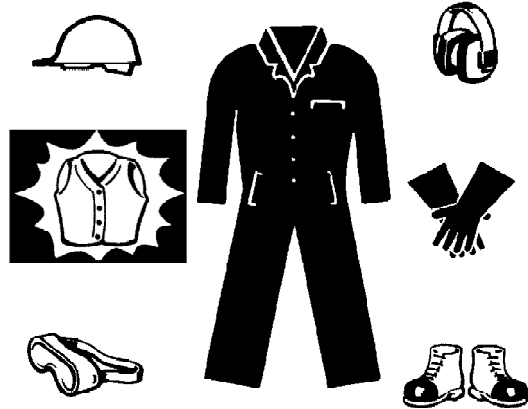
WARNING



Loose or baggy clothing can get caught in running machinery.

Always wear correctly fitting (E.N./A.N.S.I. approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close Fitting Overalls, Steel Toed Boots and a High Visibility Vest.



5.2 General information

We recommend that the assembly/ installation work of the POWERGRID be carried out by the POWERSCREEN customer service department.
The manufacturer/ supplier will not be liable for damage caused by improper assembly/ installation.

5.3 Dimensions, required space and weight

Dimensions

Refer to Section 9, "Appendix".

Required space

Refer to Section 9, "Appendix".

Weight

Refer to Section 1, "Technical Information".

5.4 Measures before set up

1. Ensure all guards are fully secured in correct/closed position.
2. Remove all loose items from the belt by untying the securing ropes.
3. Put control valve levers in neutral (non-operational) position.

When setting up the POWERGRID pay particular attention to the following points:

- 1 The POWERGRID must be placed on solid ground capable of carrying the machine's weight.
- 2 Before detaching the POWERGRID from the prime mover, it is important that the chosen site is level.
Level the worksite foundation with the loading shovel.
- 3 Level the POWERGRID with a precision spirit level.
- 4 Do not position the machine above ground level, eg. on blocks etc.

5.5 Machine set up

For dusty conditions some account should be taken of the prevailing wind to minimize the possibility of dust entering the air intake.

When setting up the POWERGRID ensure that enough space is available around the machine/ plant to enable easy set up, servicing and repair work.

Machines arranged before and after the POWERGRID will have to be placed accordingly.

The general arrangement diagram giving you the basic information of the POWERGRID including measurements and weight is provided in Section 9 “Appendix”.

Before setting up the POWERGRID this section and all of the previous sections must be read, understood and observed.

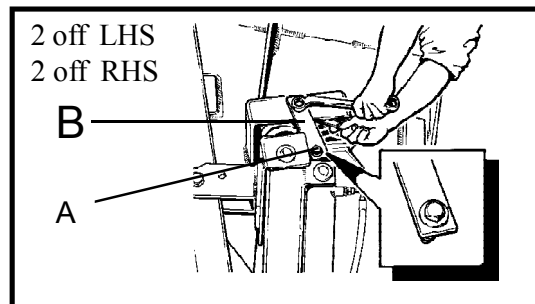
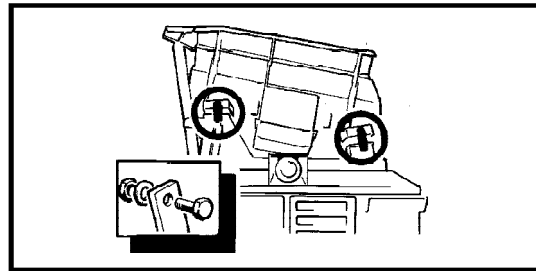
Any work on and with the machine must be executed by reliable, authorised personnel only. Statutory minimum age limits must be observed.

5.5.1 Removing screen anti-rock stays

Procedure

1. Observe all relevant safety warnings.
2. Remove bolts (A) and anti-rock stays (B).
3. Keep bolts (A) and anti-rock stays (B) in the tool box in order to have them available for re-use when the machine is towed on the highway.

	WARNING
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	FALLING HAZARD. Refer this Section, safety information for relevant warning.
	AVOID LOOSE CLOTHING. Refer this section, Safety information for relevant warning.



5.5.2 Starting the engine

NOTICE


All control levers must be in the neutral (non-operational) position.

1. Turn ignition key to position "1".
2. The following warning lights on the control panel will illuminate:

(B) - Charge(ignition) lamp
(F) - Oil pressure lamp

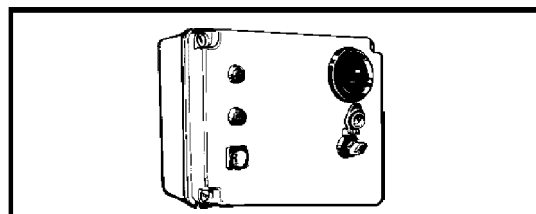
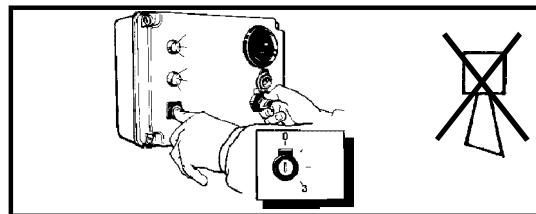
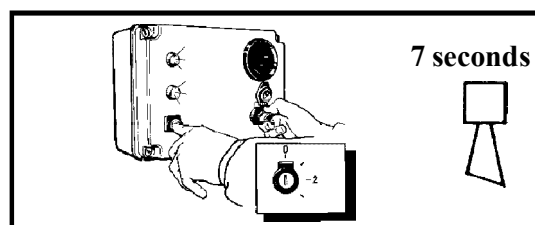
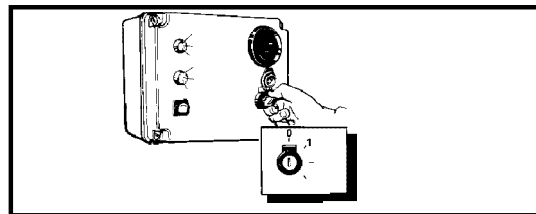
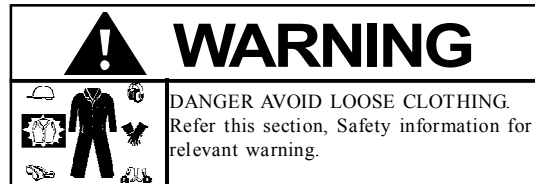
NOTICE


Do not start engine without the above mentioned warning lights being illuminated.

3. Fully depress and hold override button (H).
4. Turn ignition key to position "2", the safety siren will start, hold in this position until the safety siren stops after 7 seconds.
5. Turn ignition key to position "3", where the engine will start.
6. Release ignition key immediately after the engine starts.
7. When oil pressure lamp (F) is extinguished release override button (H).

NOTICE


If the warning lights fail to extinguish stop the engine and detect the fault before using the machine.



POWERGRID 800

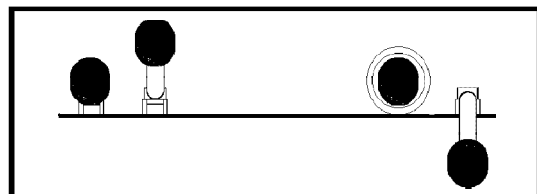
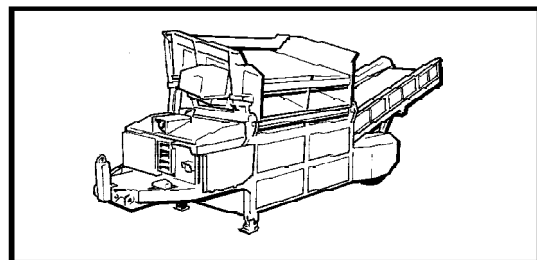
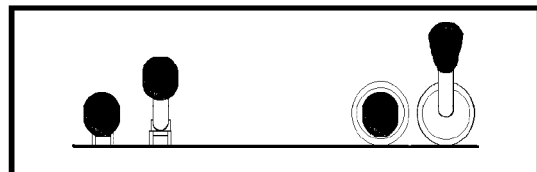
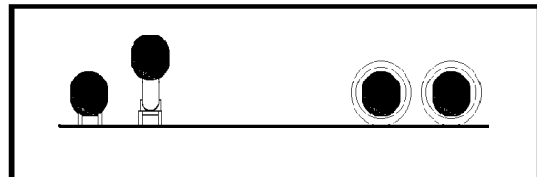
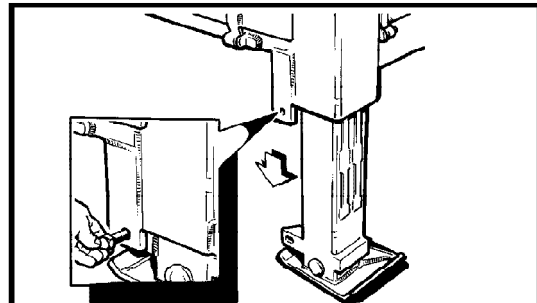
5.5.3 Removing Machine from the Prime Mover

NOTICE

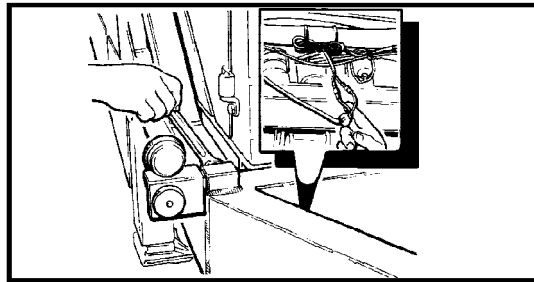


All control levers must be in the neutral (non-operational) position.

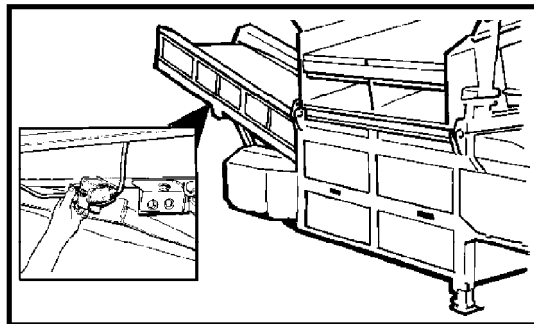
1. Start the engine.
(Refer this Section, relevant paragraph)
2. Remove the bolt from the hydraulic jacking legs.
3. Move drive control valve up to engage auxiliary control valve.
4. Move up, jacking leg lever of the auxiliary control valve to extend the jacking legs.
5. Detach braking system and lights.
6. Remove prime mover.
7. Move down, the jacking leg lever, of the auxiliary control valve to retract the jacking legs fully.
8. Re-insert bolts.
9. Switch off engine.



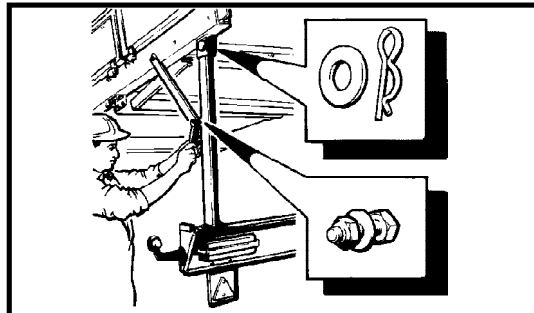
10. Detach lights at the rear of the machine and unplug the wiring.



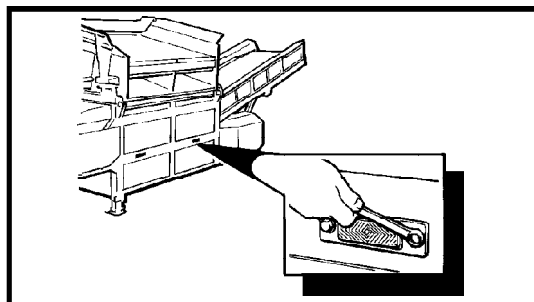
11. Unplug the lighting board at the front of the machine.



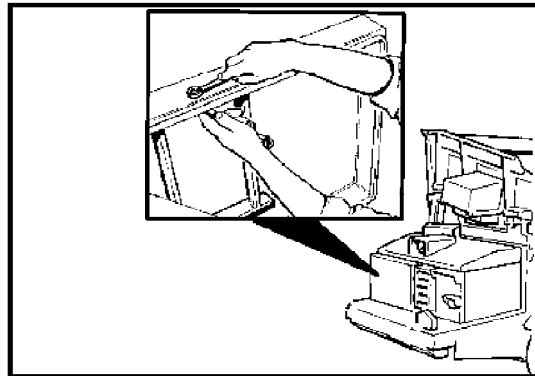
12. Disconnect lighting board at the front of the machine.



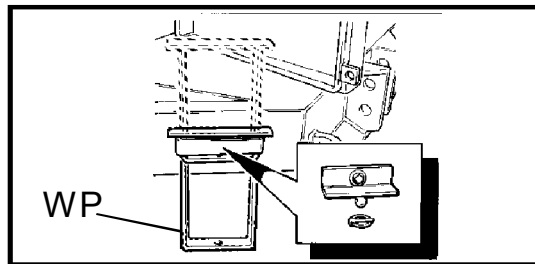
13. Remove reflectors and lateral protection where provided.



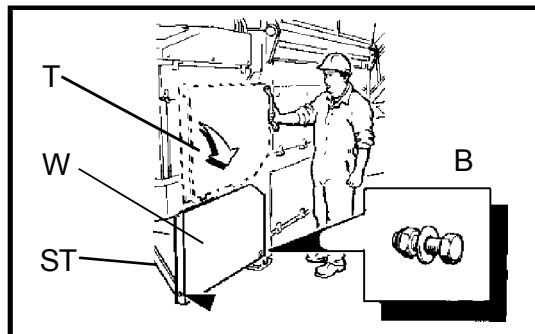
14. Remove step from its stored position inside the powerunit door.



15. Fit step into its working position (WP).



16. Remove bolts (B) and stay (ST) Lhs/Rhs from the conveyor belt. Lower the stone guard from its transport position (T) to its working position (W) and secure in place.



CAUTION  Stand clear of guard door when lowering it into position. The guard door is heavy and may cause serious injury if allowed to fall.

POWERGRID 1200

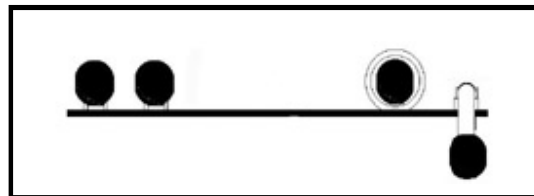
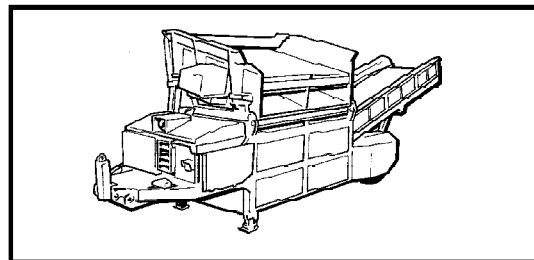
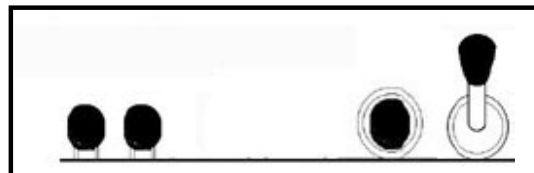
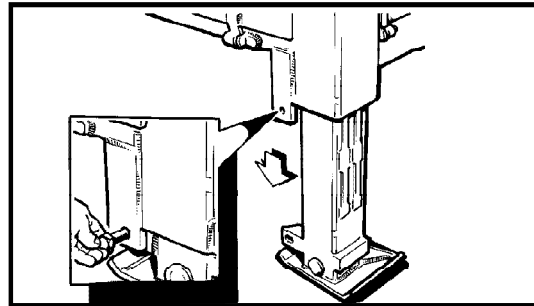
5.5.4 Removing Machine from the Prime Mover

NOTICE

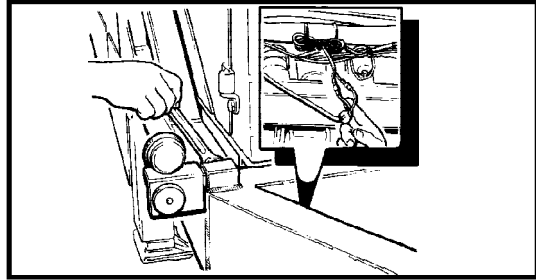


All control levers must be in the neutral (non-operational) position.

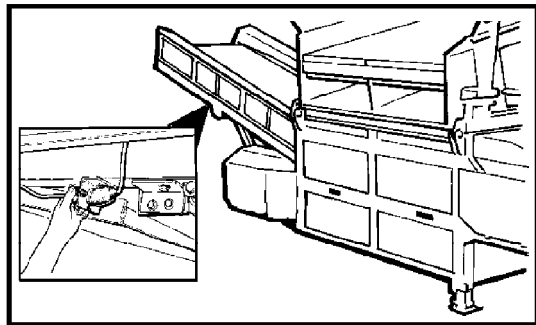
1. Start the engine.
(Refer this Section, relevant paragraph)
2. Remove the bolt from the hydraulic jacking legs.
3. Move up, jacking leg lever of the auxiliary control valve to extend the jacking legs.
4. Detach braking system and lights.
5. Remove prime mover.
6. Move down, the jacking leg lever, of the auxiliary control valve to retract the jacking legs fully.
7. Re-insert bolts.
8. Switch off engine.



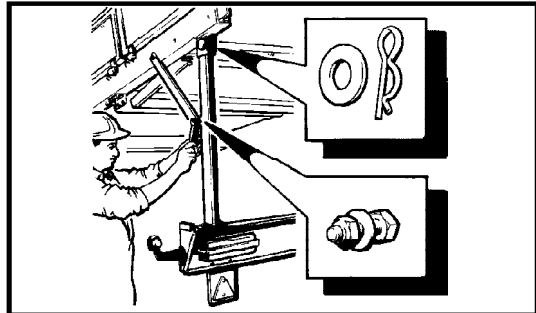
9. Detach lights at the rear of the machine and unplug the wiring.



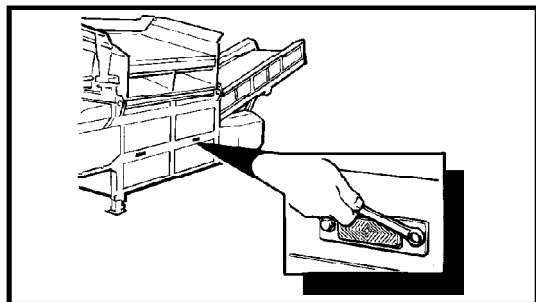
10. Unplug the lighting board at the front of the machine.



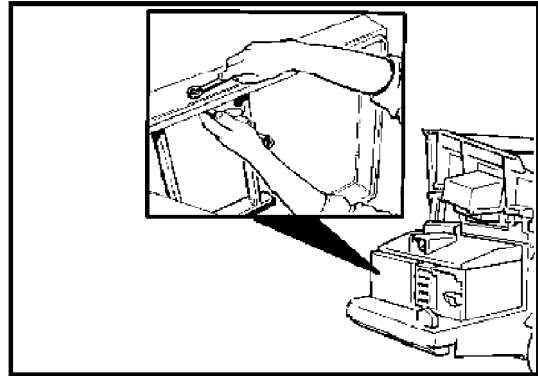
11. Disconnect lighting board at the front of the machine.



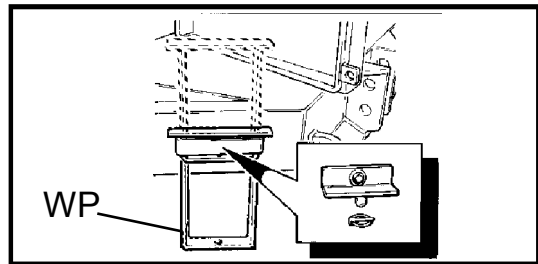
12. Remove reflectors and lateral protection where provided.



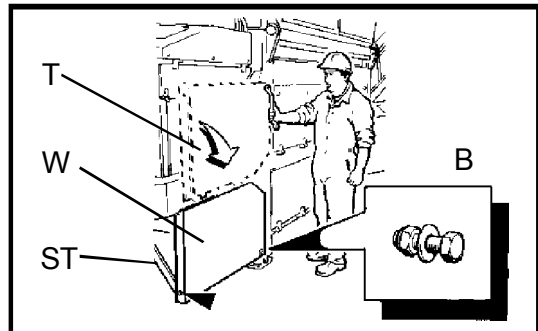
13. Remove step from its stored position inside the powerunit door.



14. Fit step into its working position (WP).



15. Remove bolts (B) and stay (ST) Lhs\Rhs from the conveyor belt. Lower the stone guard from its transport position (T) to its working position (W) and secure in place.



CAUTION



Stand clear of guard door when lowering it into position. The guard door is heavy and may cause serious injury if allowed to fall.

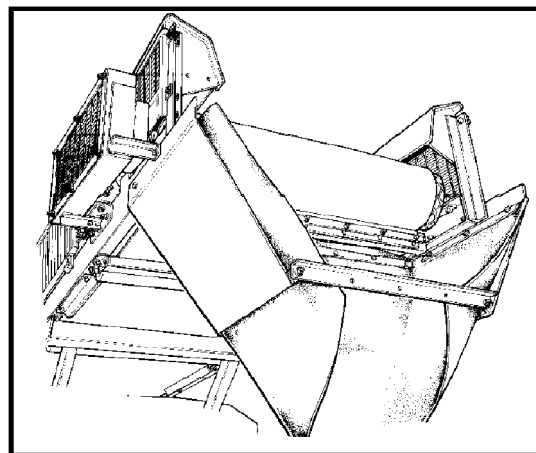
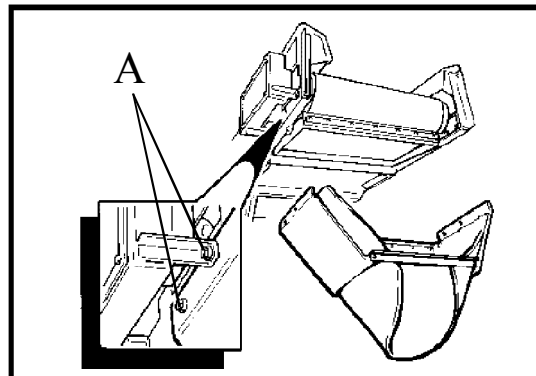
5.5.5 Attaching chutes to the main conveyor

CAUTION  Only a lifting gear capable of lifting 500 Kg or more may be used for this operation.

Procedure

1. Observe Safety Warnings.
2. Remove the four bolts (A), two on each side .
3. With the help of another operative position chute into place and align the holes.
4. Re-insert the four bolts again.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, Safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, Safety information for relevant warning.



POWERGRID 800

5.5.6 Raising the screenbox into working position

NOTICE



All control levers must be in the neutral (non-operational) position.

Procedure

1. Observe all safety warnings.
2. Remove the holding pins from the screenbox struts.
3. Move down, auxiliary control lever to engage auxiliary control valve.
4. Move up, screenbox control lever to raise screenbox.
5. When in the required working position, reinsert the pins, washers and spring pins.
6. Move the screenbox control lever and the auxiliary control lever into neutral position.

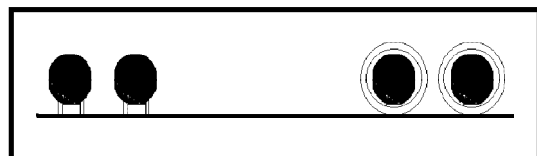
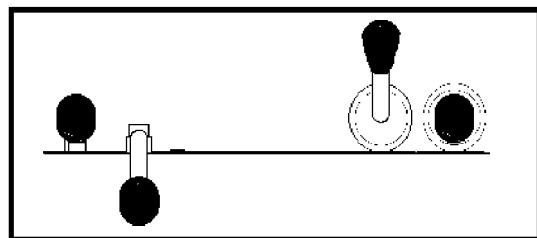
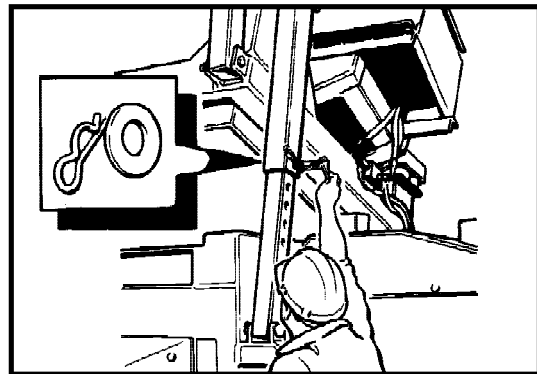


WARNING



WEAR PERSONAL PROTECTIVE EQUIPMENT.

Refer this section, safety information for relevant warning.



POWERGRID 1200

5.5.7 Raising the screenbox into working position

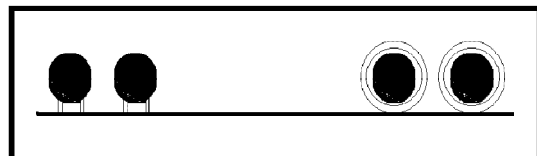
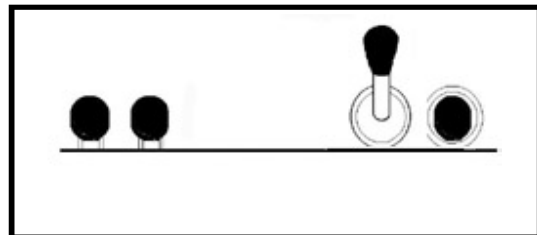
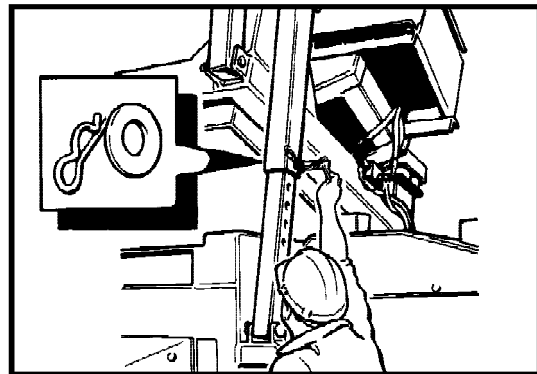
NOTICE All control levers must be in the neutral (non-operational) position.



Procedure

1. Observe all safety warnings.
2. Remove the holding pins from the screenbox struts.
3. Move up, screenbox control lever to raise screenbox.
4. When in the required working position, reinsert the pins, washers and spring pins.
5. Move the auxiliary control lever into neutral position.

	WARNING
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this section, safety information for relevant warning.



POWERGRID 1200

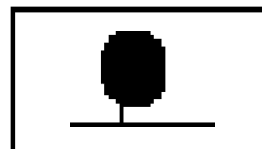
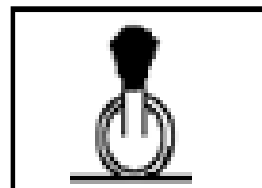
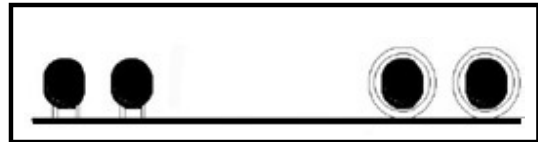
5.5.9 Unfolding Conveyor

NOTICE

All control levers must be in the neutral (non-operational) position.

Procedure

1. Remove pins from conveyor struts.
2. Move up the control valve lever to raise the conveyer head section.
3. Position control valve in neutral.
4. Pin conveyor struts to lock conveyer in working position.



POWERGRID 800

5.5.10 Attaching the Gabion Stone to the Powergrid coupling circuit.

Procedure

1. Observe Safety Warnings.
2. Switch off and lockout the machine.
3. Operate control valves to release any trapped oil in the system.
4. Attach Gabion Stone to the coupling circuit (see relevant Gabion Stone manual or your local POWERSCREEN dealer.



DANGER



FLUID INJECTION HAZARD
Refer this Section, Safety information for relevant warning.



WARNING



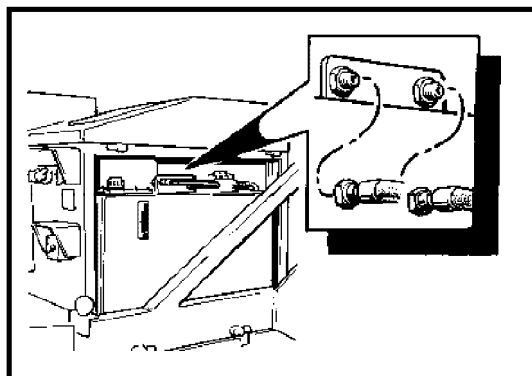
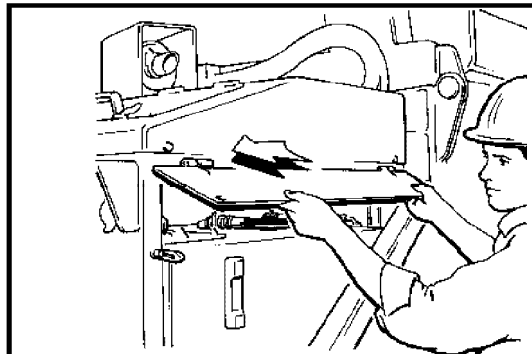
LOCK-OUT MACHINE.
Refer this Section, safety information for relevant Lock-Out procedure.



FALLING HAZARD.
Refer this Section, safety information for relevant warning.



AVOID LOOSE CLOTHING.
Refer this section, Safety information for relevant warning.



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6.3.	Normal operation	
6.3.1	Putting into operation	6
6.4	Emergency Stop	8
6.5	Restart after emergency stop	8
6.6	Troubleshooting	9

6.1 Safety information

DANGER

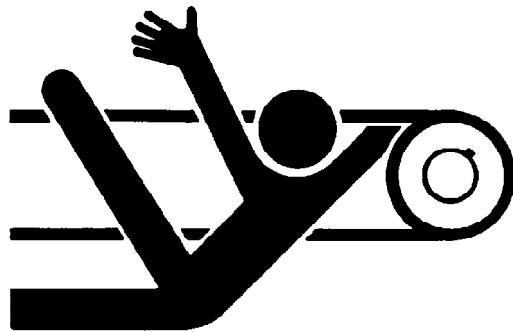


In-running nip points can cause serious injury or even death.

Do not reach into an unguarded machine.

Your arm could be pulled in and amputated.

Switch off and lockout machine before opening or removing guards.



DANGER



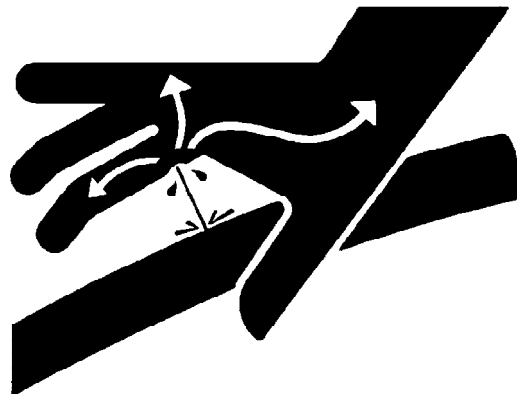
Hydraulic fluid under pressure can penetrate the skin causing serious injuries.

Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or adjustment.

Always use a piece of cardboard to check for leaks. Do not use your hand.

If fluid is injected under the skin, it must be surgically removed or gangrene will result.

Get medical help immediately.

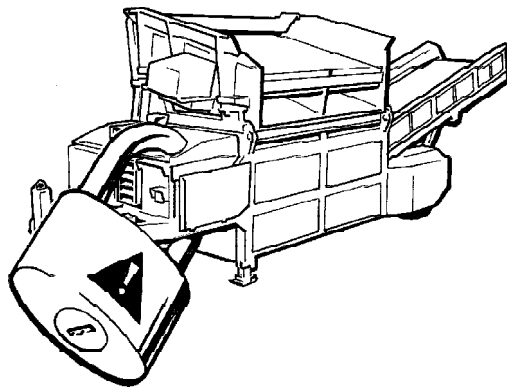


WARNING  When carrying out maintenance or adjustment to a machine the following procedure must be followed.

1. Switch off engine and remove ignition key.
2. Implement "Lockout Procedure".
3. Never work alone.

LOCKOUT PROCEDURE

- a. Close Control Panel door.
- b. Insert padlock through the antiloose fastener.
- c. Lock padlock.
- d. Keep key on person during lockout.



WARNING  Falling from and/or onto a Powerscreen machine can cause serious injury or even death.

Do not climb on the machine.

Always use the walkways/ platforms provided or a safe and secure platform approved by the regional safety enforcing authority.

Always use a EN/ANSI approved safety harness when reaching any points 7 ft (2 m) or more above ground level.



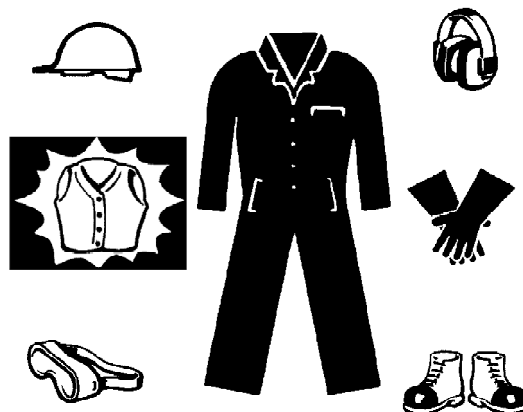
WARNING



Loose or baggy clothing can get caught in running machinery.

Always wear correctly fitting (E.N./A.N.S.I. approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close Fitting Overalls, Steel Toed Boots and a High Visibility Vest.



6.2 General information

WARNING



The **POWERGRID** may only be operated if the safety instructions provided in the previous chapters have been observed and the described procedures have been performed.

Operate the machine only if all protective and safety-oriented devices, such as removable safety devices, emergency shut-off equipment, sound-proofing elements and exhausts, are secured in correct position and fully functional.

Remove reflectors, lateral protection and lights where fitted.

During operation, all sound baffles must be closed.

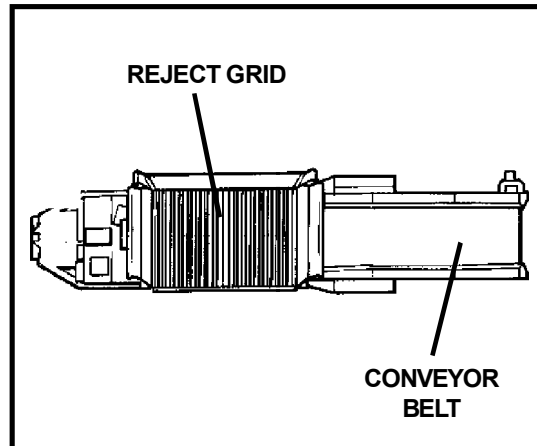
In the event of malfunctions, stop the machine/ plant immediately and lock out.

Have any defects rectified immediately.

WARNING



ALWAYS WEAR A EN/ANSI approved HARD HAT AND FOOTWEAR WITH ADEQUATE TOE PROTECTION when working in the vicinity of the machine and on the work site.



DANGER



KEEP AWAY FROM THE REJECT GRID, where there is risk of serious injury or death due to rejected material and danger from other heavy machinery working in the area, unless you are a fully-trained operator engaged in loading the machine.

DANGER



KEEP AWAY FROM THE SCREEN BOX, where there is risk of serious injury or death due to rejected processed material and danger from other heavy machinery working in the area, unless you are a fully-trained operator engaged in collecting processed material.

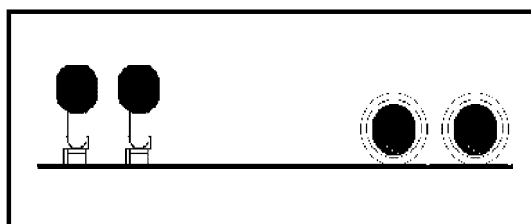
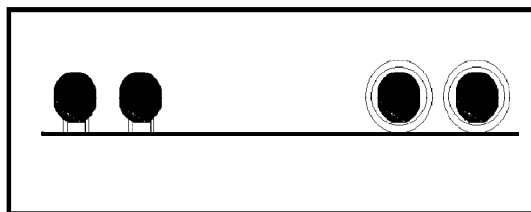
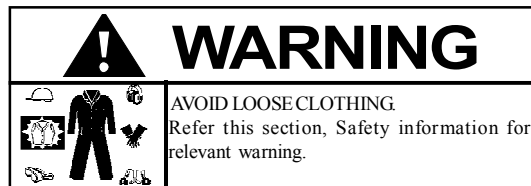
6.3 Normal operation

6.3.1 Putting into operation

WARNING  Only start machine, if the safety instructions provided have been observed and the described procedures have been performed.

Procedure

1. To start the main conveyor, move main conveyor lever up.
2. To start the screenbox, move screenbox lever up.



3. Check that the conveyor belt is running in alignment.
If an adjustment is necessary refer to Section 8, "Maintenance".



4. Begin to load up the screenbox.
5. Re-check that the conveyor belt is running in alignment.
If an adjustment is necessary refer to Section 8, "Maintenance".
6. The machine is now adjusted for continuous operation.

6.4 Emergency Stop

WARNING In case of incident or trouble, you **MUST** follow the following procedure:



1. Engage the nearest emergency stop.
2. Switch off the engine and remove the ignition key.
3. Implement the Lockout procedure.
4. Only when the machine is fully switched off, should an attempt be made to solve the problem.
5. Never work alone.

	WARNING
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	AVOID LOOSE CLOTHING Refer this section, Safety information for relevant warning.

6.5 Restart after Emergency Stop

1. Ensure that the problem has been solved.
2. Ensure that all personnel are clear of the machine.
3. Ensure that all guards and safety devices are correctly fitted and fully functional.
4. Release all emergency stops.
5. Re-start the engine.
(Refer relevant paragraph)

6.1.7 Trouble shooting

	Problem	Possible cause	Solution
<i>BELTS</i>			
	Drum turns but the belt does not move	Too much load on the belt	Remove load
		Incorrectly tensioned belt	Tension belt
		Worn belt	Replace belt
		Worn drum lagging	Replace drum lagging
		Rollers cannot rotate freely	Clean/check replace rollers
	Belt stops altogether	Material jam	Remove material jam
	Belt is "tracking off" to the right	Machine not levelled	Level machine
		Belt is not aligned	Tension the belt on the right
	Belt is "tracking off" to the left	Machine not levelled	Level machine
		Belt is not aligned	Tension the belt on the left
<i>HYDRAULIC SYSTEM</i>			
	Return lin filter blockage indicator shows red	Return line filter element is blocked	Replace return line filter element
<i>CHASIS</i>			
	Vibration	Screen unit is not perfectly tuned	Retune screen unit

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7.4 Putting the machine into transport position (POWERGRID 1200)	8
7.5 Measures prior to long term standstill	10
7.6 Folding Conveyor (POWERGRID 1200)	11

7.1 Safety information

DANGER

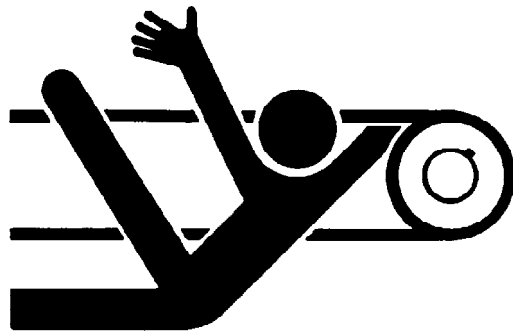


In-running nip points can cause serious injury or even death.

Do not reach into an unguarded machine.

Your arm could be pulled in and amputated.

Switch off and lockout machine before opening or removing guards.



DANGER



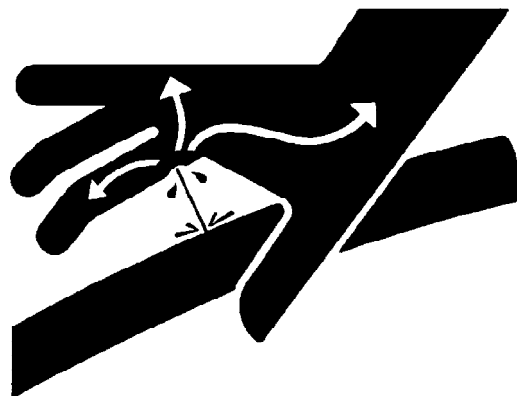
Hydraulic fluid under pressure can penetrate the skin causing serious injuries.

Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or adjustment.

Always use a piece of cardboard to check for leaks. Do not use your hand.

If fluid is injected under the skin, it must be surgically removed or gangrene will result.

Get medical help immediately.



WARNING

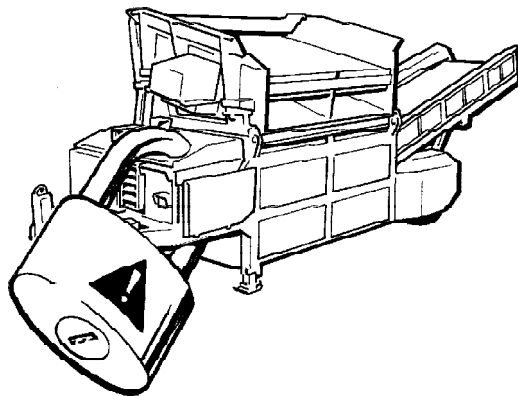


When carrying out maintenance or adjustment to a machine the following procedure must be followed.

1. Switch off engine and remove ignition key.
2. Implement "Lockout Procedure".
3. Never work alone.

LOCKOUT PROCEDURE

- a. Close Control Panel door.
- b. Insert padlock through the antiloose fastener.
- c. Lock padlock.
- d. Keep key on person during lockout.



WARNING

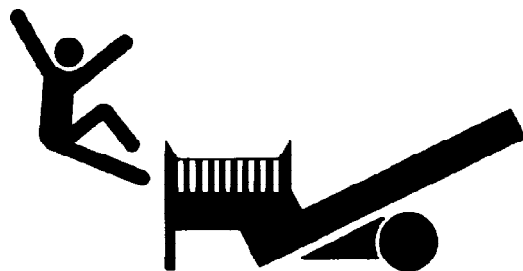


Falling from and/or onto a Powerscreen machine can cause serious injury or even death.

Do not climb on the machine.

Always use the walkways/ platforms provided or a safe and secure platform approved by the regional safety enforcing authority.

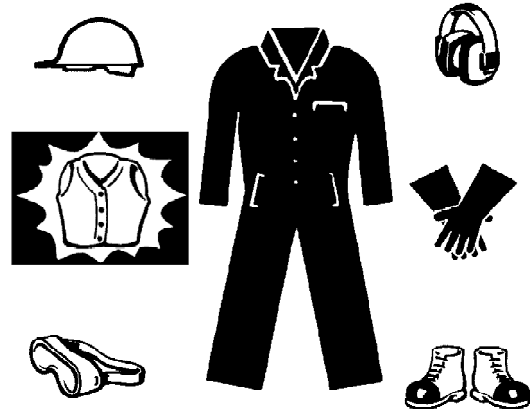
Always use a EN/ANSI approved safety harness when reaching any points 7 ft (2 m) or more above ground level.



WARNING  Loose or baggy clothing can get caught in running machinery.

Always wear correctly fitting (E.N./A.N.S.I. approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close Fitting Overalls, Steel Toed Boots and a High Visibility Vest.



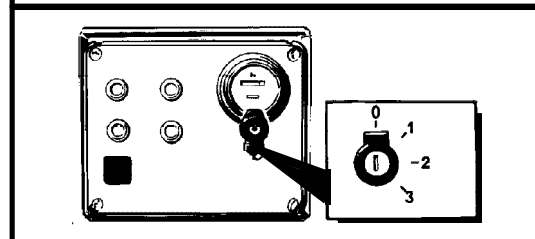
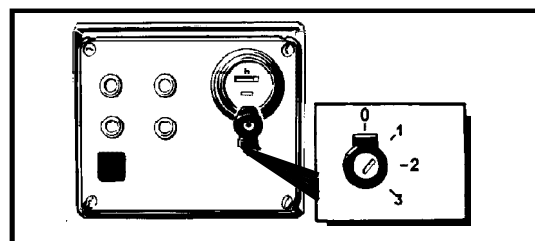
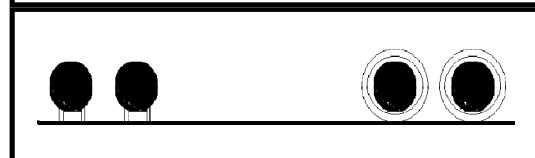
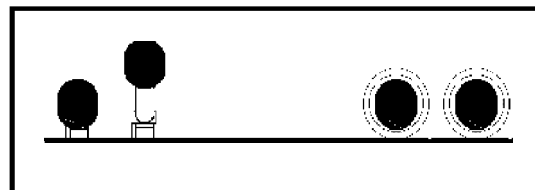
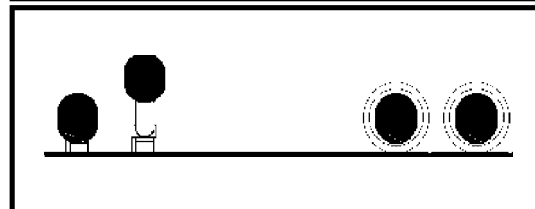
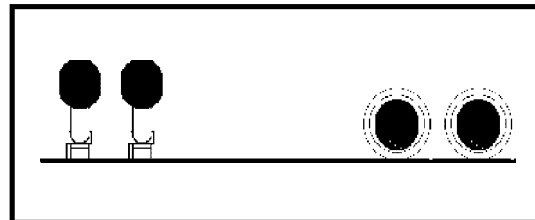
7.2 Shut off

CAUTION Empty POWERGRID prior to shut off.



Procedure

1. Stop the screenbox.
2. Stop the main conveyor.
3. Stop engine.



POWERGRID 800

7.3 Putting the machine in the transport position

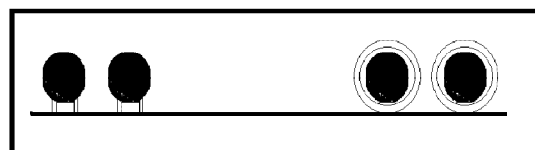
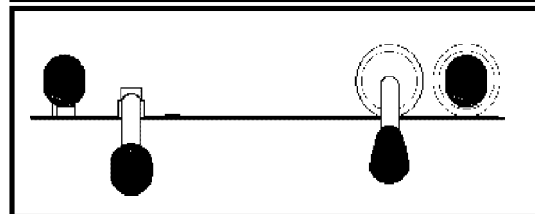
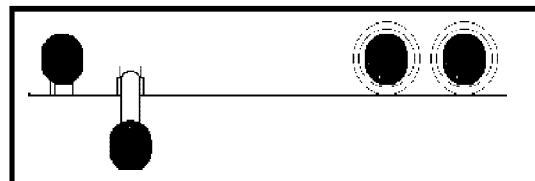
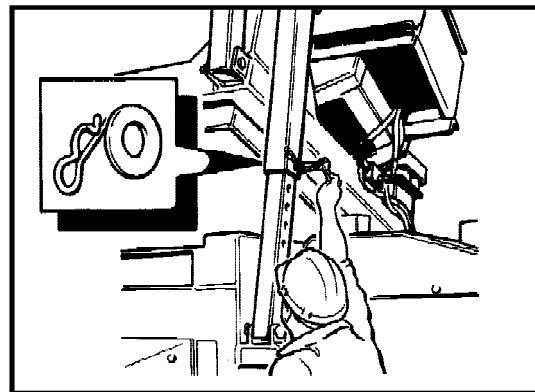
CAUTION Shut off the POWERGRID in accordance to Section 7, “Shut off”, paragraph 1 prior putting into transport position.



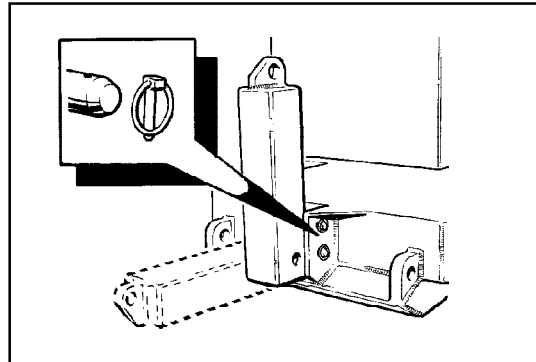
 WARNING	
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, Page 6 for relevant Protective clothing warning.

Procedure

1. Observe all safety warnings.
2. Start the machine.
(Refer Section 5, Setup)
3. Remove the holding pins from the screenbox.
4. Move down auxiliary control lever to engage auxiliary control valve.
5. Move down, screenbox control lever to lower screenbox.
6. When lowered, reinsert the pins, washers and spring pins.
7. Move the screenbox control lever and the auxiliary control lever into neutral position.



8. Fit towbar at the rear of the machine.



POWERGRID 1200

7.4 Putting the machine in the transport position

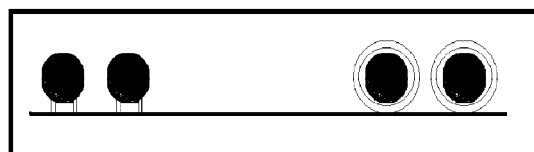
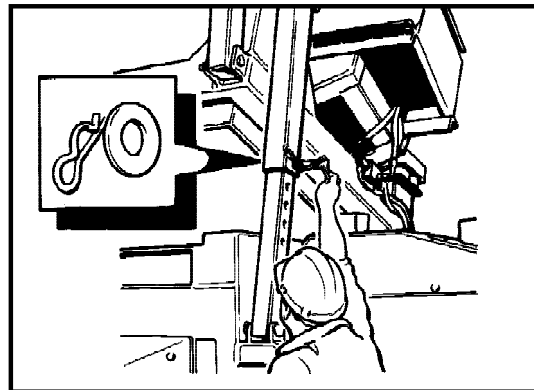
CAUTION Shut off the POWERGRID in accordance to Section 7, “Shut off”, paragraph 1 prior putting into transport position.



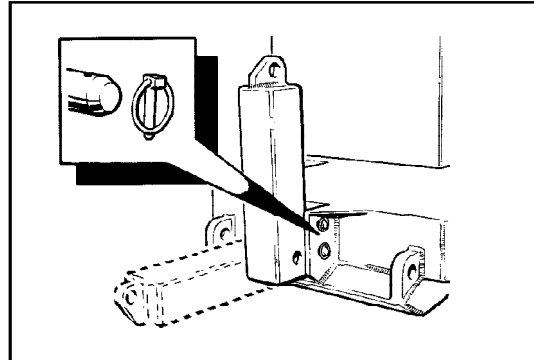
 	WARNING WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, Page 6 for relevant Protective clothing warning.
---	--

Procedure

1. Observe all safety warnings.
2. Start the machine.
(Refer Section 5, Setup)
3. Remove the holding pins from the screenbox.
4. Move down, screenbox control lever to lower screenbox.
5. When lowered, reinsert the pins, washers and spring pins.
6. Move the auxiliary control lever into neutral position.

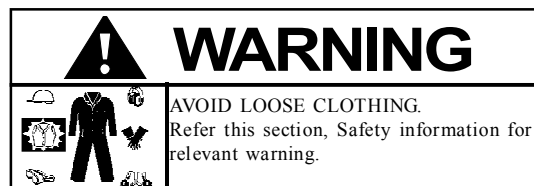


7. Fit tobar at the rear of the machine.



7.5 Measures prior to long term standstill

No special actions must be taken prior to long term standstill.



7.6 Measures after long term standstill

After being exposed to wet material and damp conditions for most of the time, wheels have a tendency to rot. Check all wheels before transporting or moving the machine.

No other special actions must be taken after long term standstill.

NOTICE  **Prior to putting into operation perform daily (10 hour) maintenance schedule.**

POWERGRID 1200

7.7 Folding Conveyor

NOTICE All control levers must be in the neutral (non-operational) position.



Procedure

1. Remove pins from conveyor struts.
2. Move down the control valve lever to retract the conveyer head section.
3. Position control valve in neutral.
4. Pin conveyor struts to lock conveyer in transport position.

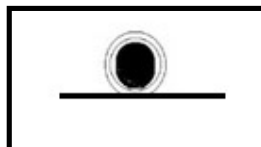
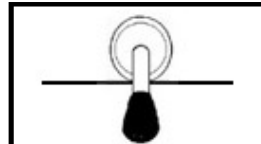
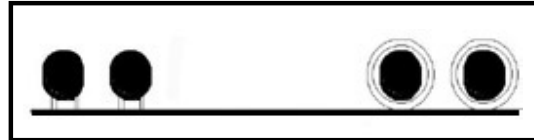




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8.1 Safety information

DANGER

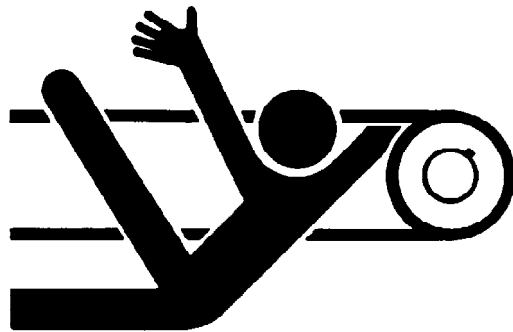


In-running nip points can cause serious injury or even death.

Do not reach into an unguarded machine.

Your arm could be pulled in and amputated.

Switch off and lockout machine before opening or removing guard doors.



DANGER



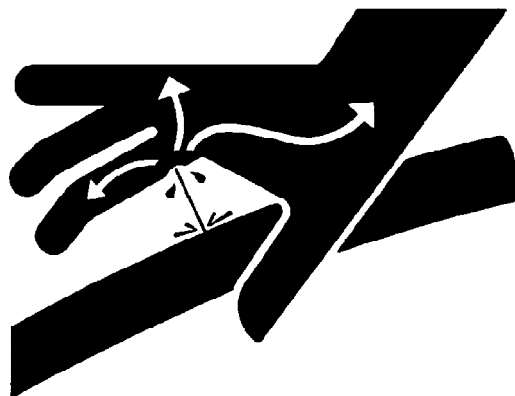
Hydraulic fluid under pressure can penetrate the skin causing serious injuries.

Always relieve pressure from the hydraulic system before carrying out any kind of maintenance or adjustment.

Always use a piece of cardboard to check for leaks. Do not use your hand.

If fluid is injected under the skin, it must be surgically removed or gangrene will result.

Get medical help immediately.



WARNING

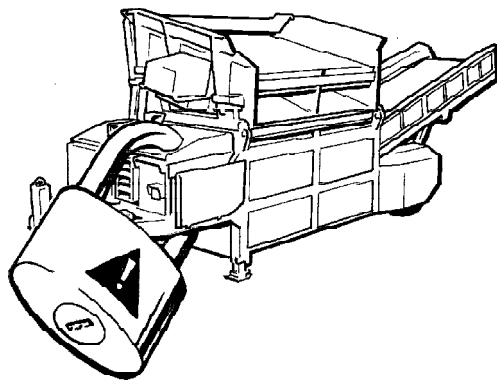


When carrying out maintenance or adjustment to a machine the following procedure must be followed.

1. Switch off engine and remove ignition key.
2. Implement "Lockout Procedure".
3. Never work alone.

LOCKOUT PROCEDURE

- a. Close Control Panel door.
- b. Insert padlock through the antiloose fastener.
- c. Lock padlock.
- d. Keep key on person during lockout.



WARNING

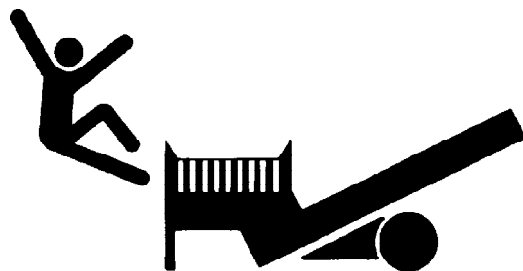


Falling from and/or onto a Powerscreen machine can cause serious injury or even death.

Do not climb on the machine.

Always use the walkways/ platforms provided or a safe and secure platform approved by the regional safety enforcing authority.

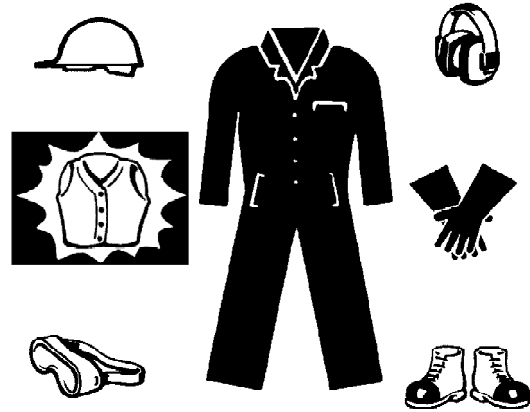
Always use a EN/ANSI approved safety harness when reaching any points 7 ft (2 m) or more above ground level.



WARNING  Loose or baggy clothing can get caught in running machinery.

Always wear correctly fitting (E.N./A.N.S.I. approved) protective clothing.

Protective clothing includes Hard Hat, Safety Glasses, Ear Protection, Close Fitting Overalls, Steel Toed Boots and a High Visibility Vest.



8.2 General information

When performing maintenance, always observe rules provided in the safety section.

Breakdown caused by insufficient or improper maintenance will cause high repair costs and long term standstill. Therefore, regular maintenance is imperative.

In addition to several other factors, the reliability and life of the POWERGRID depends on regular and proper maintenance.

The following section contains maintenance instructions as well as maintenance schedules for normal operating conditions.

The machine has been designed to facilitate easy routine maintenance without the removal of any fixed guards.

All greasing points can be accessed from the ground level or any walkways provided and all belt adjustments can be made without removing any protective guards.

If it is necessary to remove any guard doors, all are fitted with captive nuts and bolts to ensure that they are replaced before the machine is restarted.

NOTICE



When the POWERGRID is operated in extreme climatic conditions (e.g. below -15°C or above 33°C) or in very dusty conditions for a longer period of time, the maintenance schedules will change.

Ask your local POWERSCREEN dealer or POWERSCREEN Technical Department for advice

WARNING



**PRACTICE SAFE
MAINTENANCE.**

**Understand service procedure
before doing work. Keep area
clean and dry.**

**Never lubricate, clean, service
or adjust machine while it is
moving.**

**Keep hands, feet and clothing
clear of power driven parts and
in-running nip points.**

**Disengage all power and
operate controls to relieve
pressure. Stop the engine.
Implement lockout procedure.
Allow machine to cool.**

**Securely support any machine
elements that must be raised
for service work.**

**Keep all parts in good
condition and properly
installed.**

**Fix damage immediately.
Replace worn or broken
parts.**

**Remove any build up of
grease, oil or debris.**

**Disconnect battery ground
cable (-) before making
adjustments on electrical
systems or welding on
machine.**

8.3 Main conveyor

8.3.1 Clean & check the conveyor belt

Procedure

1. Observe safety warnings.
2. Open the guard doors.
3. Clean the conveyor belt using a high pressure hose. Ensure that eyes are protected by wearing safety glasses.
4. Check the belt for cuts, tears, rips or any other physical damage.
5. Close and secure the guard doors in the correct position.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	FALLING HAZARD. Refer this Section, safety information for relevant warning.
	AVOID LOOSE CLOTHING Refer this section, Safety information for relevant warning.

WARNING  If any damage to the belt is found, do not operate the machine until it is repaired or replaced entirely by your local **POWERSCREEN** dealer.

8.3.2 Tensioning the conveyor belt

Procedure

1. Observe safety warnings.
2. Start the main conveyor.
(Refer to Section 6, "Operating instructions").
3. Tighten the belt by adjusting both belt adjusters evenly, two turns at a time until slippage stop.

NOTICE



Do not overtension the belt as this will damage the drum bearings.



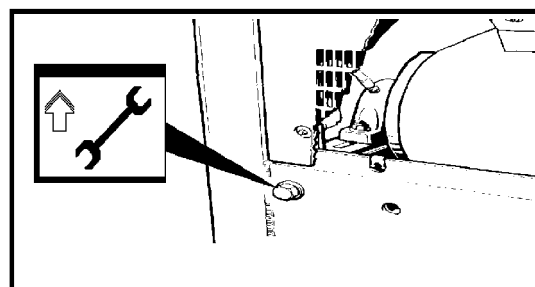
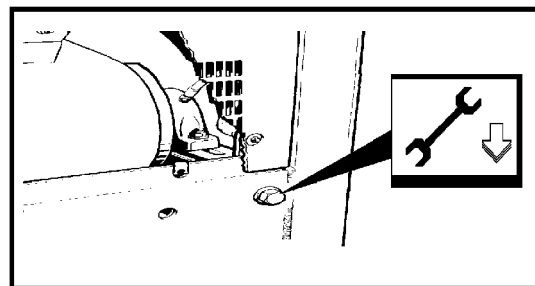
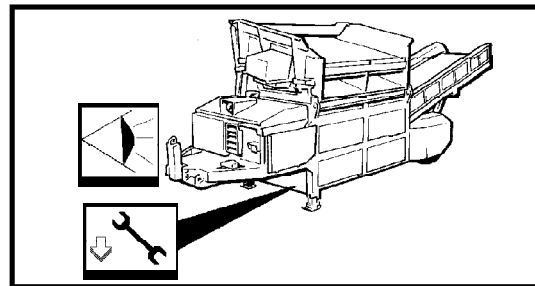
DANGER

NIP POINT HAZARD.
Refer this Section, safety information for relevant warning.



WARNING

WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.

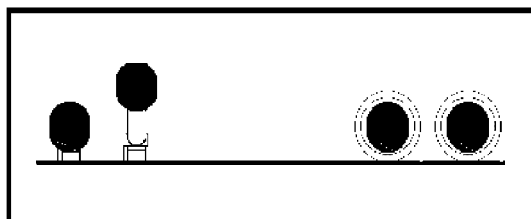


8.3.3 Feeder conveyor alignment

1. Observe all safety warnings.

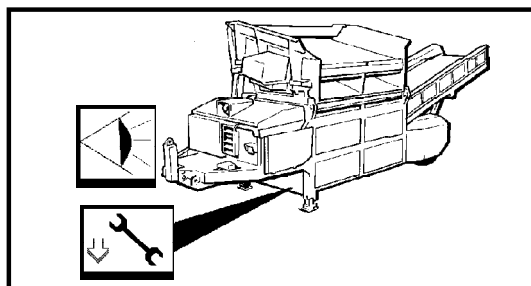
	DANGER
	NIP POINT HAZARD. Refer this Section, safety information for relevant warning.
	WARNING
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.

2. Move up, main conveyor lever to main conveyor.



WARNING  Do not unfasten or remove any guard while the machine is running or start the machine while a guard is unfastened or removed.

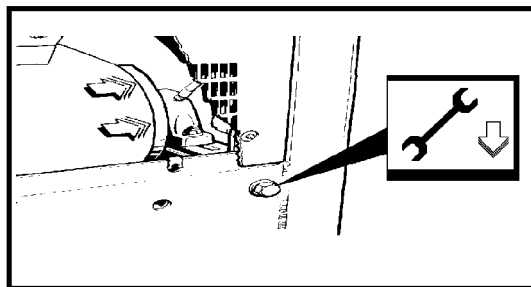
3. Observe the conveyor through the viewing apertures and determine to which side the conveyor is “tracking off”.



4.

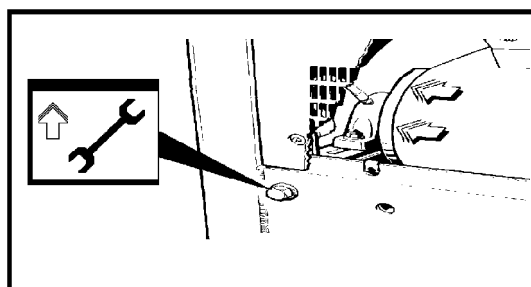
- A The conveyor is tracking off to the right side.

Operate the right side adjuster -
- One turn at a time until the belt tracks correctly.



- B The conveyor is tracking off to the left side.

Operate the left side adjuster -
- One turn at a time until the belt tracks correctly.



8.4 Screen unit

NOTICE  The screen unit is factory tuned and will not need any alteration.

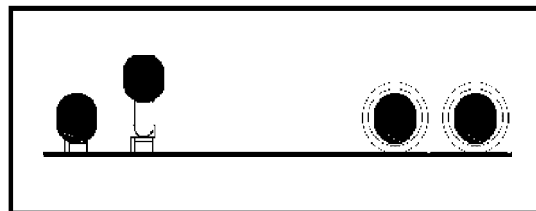
NOTICE  In the unlikely event that re-tuning is necessary this should only be performed by personnel trained in accordance with instructions provided in this manual or by trained POWERSCREEN personnel.

Procedure

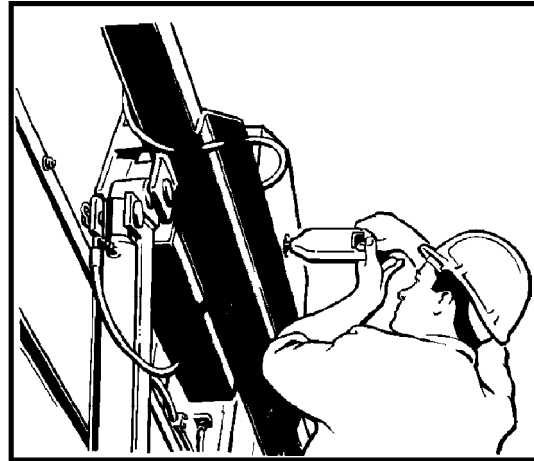
1. Observe safety warnings.
2. Set up the machine to its working \ operating position.
3. Fit protection decks and meshes as required.
(Refer Section 8, "Maintenance", relevant paragraph).
4. Move up, main conveyor lever to start main conveyor.
5. Move up, the screenbox lever to start the screen box.

This will warm up the hydraulic oil before starting the screen and main conveyor, since the screen is very slow to pick up speed when the oil is cold.

 DANGER	
	NIP POINT HAZARD. Refer this Section, safety information for Nip-points warning.
 WARNING	
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.
	FALLING HAZARD. Refer this Section, safety information for relevant warning.



6. Set the screen speed at 1180 rpm using a digital tachometer.
7. Let the machine run for 45 minutes to allow the hydraulics to warm up properly.
8. Set screen speed at 1100 rpm. Engine speed should be about 2270-2290 rpm.
9. Stop the machine and implement "Lockout" procedure.



	WARNING
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.

10. Remove the flywheel under guards, Lhs\Rhs as shown, (4 bolts each side).

NOTICE



The bolts are holding the top and bottom guards in place and must be replaced to hold the top guard in place.

CAUTION



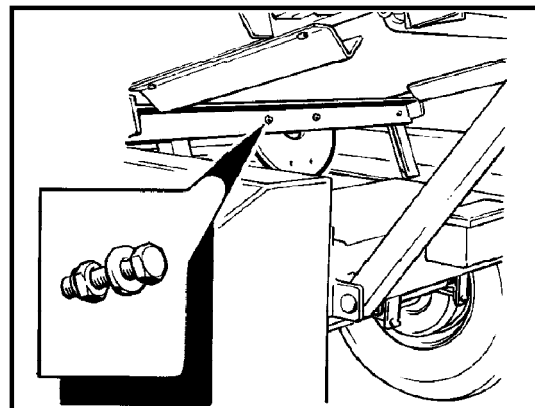
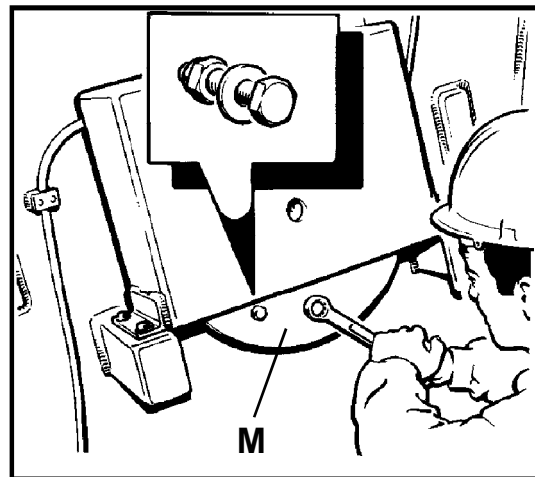
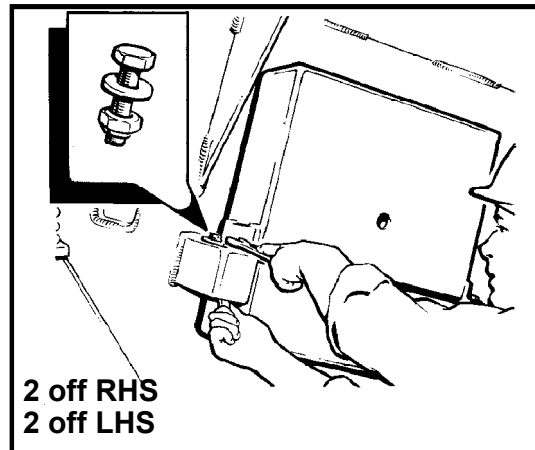
Ensure that the flywheel half moon, where the total weight is at, is in the most downward position (M), to avoid any trapping danger.

11. Add or remove flywheel counter weights from both sides as deemed necessary. Note extra flywheel weights are stored under the main conveyor.
12. Replace the guards and start the machine.
13. Check for vibration in the subframe.
14. If any vibration is detected, repeat steps 8 to 12 until there is no vibration in the subframe.

CAUTION



Do not operate machine if there is any vibration present in the sub-frame.



8.4.2 Changing the screen mesh

WARNING  Never allow unqualified personnel to attempt to operate, maintain, remove or replace any part of the machine. Never allow anyone to remove large or heavy components without adequate lifting tackle.

If the machine is free to move (ie. not connected a Gabion stone etc.) follow the procedure laid out below.

If the machine is not free to move, it will be necessary to use a safe, secure structure to reach the relevant points on the screenbox (Ignore points 2 to 3 below).

CAUTION  Only a crane capable of lifting 500 Kg or more may be used for this operation.

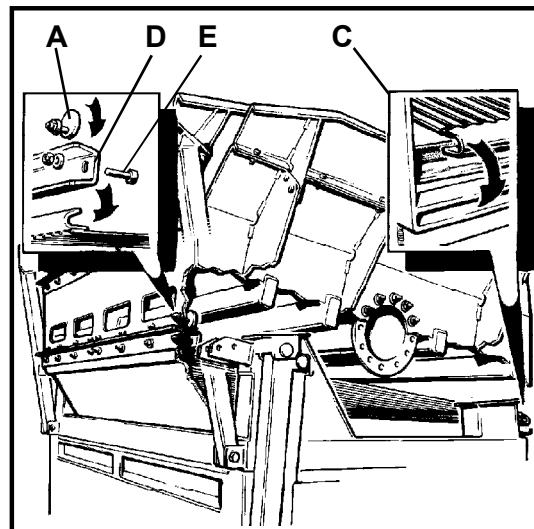
 WARNING	
	FALLING HAZARD. Refer this Section, safety information for relevant warning.
	AVOID LOOSE CLOTHING. Refer this section, Safety information for relevant warning.

Procedure

1. Observe all safety warnings.
2. Lower the screen box to its lowest point.
(Refer to Section 5, "Set up".)

3. Stop the machine and implement “Lockout” procedure.
4. Loosen the screen clamps (A) holding the screen clamp plate (D).
5. Remove screen bolts (E).
6. Remove screen mesh from screen clamp plate (D).
7. Lift up using a prise bar and slide the old mesh out.
8. Check rubber cushions and replace if necessary.
9. Clean the screenbox to remove any build up of material.
10. Insert new screen mesh ensuring the hooked end of the mesh is in the correct position around the bar (C).

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for relevant Lock-Out procedure.
	FALLING HAZARD. Refer this Section, safety information for relevant warning.
	AVOID LOOSE CLOTHING. Refer this section, Safety information for relevant warning.



11. Re-insert clamp plate and clamp plate bolts (E). Ensure hook of screen mesh is fitted inside clamp plate.
12. Tighten the screen clamps (A) back into place, ensuring clamps tighten down on the clamp plate.
13. Check for vibration in the screen unit and retune if necessary.

CAUTION



Do not operate machine if there is any vibration present in the sub-frame.

8.5 Power unit

For any maintenance on the power unit see engine operation manual in Section 9, “Appendix”, “List of attached documentation”.

8.5.1 Fuel system

8.5.1.1 Check fuel level

Procedure

1. Observe all safety warnings.
2. Check the level indicator (A).
3. Fill the tank at the end of each day, where possible, to reduce overnight condensation within the tank.

WARNING



Diesel fuel is highly flammable.

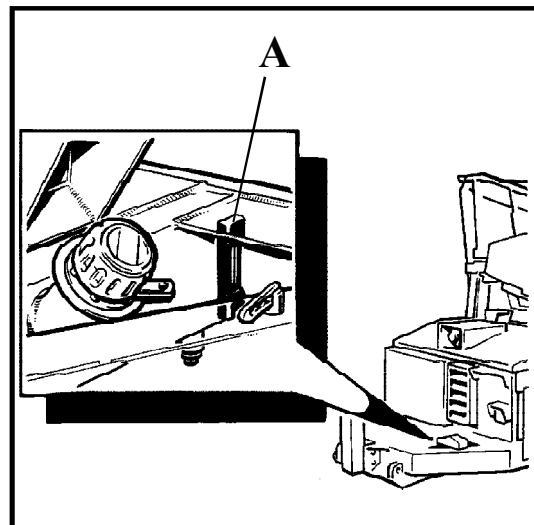
Never remove filler cap or refuel, with the engine running.

Never add gasoline or any other fuel mixes to diesel because of increased fire or explosion risks.

Do not smoke while refilling or carrying out maintenance on the fuel system.

Do not carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.



8.5.1.2 Top up fuel level

NOTICE



DO NOT fill the tank to capacity.

Monitor gauge on tank side.

Allow room for expansion and wipe up spilt fuel immediately, otherwise paintwork will be damaged.

Procedure

1. Observe all safety warnings.
2. Clean the area around the filler cap.
3. Remove the filler cap.
4. Fill the tank with diesel.

WARNING



Diesel fuel is highly flammable.

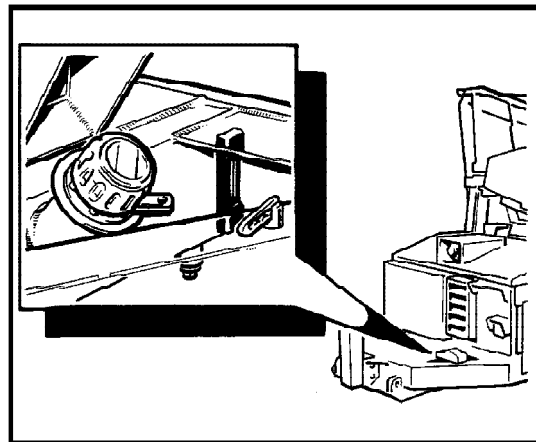
Never remove filler cap or refuel, with the engine running.

Never add gasoline or any other fuel mixes to diesel because of increased fire or explosion risks.

Do not smoke while refilling or carrying out maintenance on the fuel system.

Do not carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.



8.5.1.3 Empty the fuel filter water trap

Procedure

1. Observe all safety warnings.
2. Unscrew the bung at the bottom of the water trap and allow the water to drain out.
3. Tighten the bung when pure diesel starts to come out.

WARNING Diesel fuel is highly flammable.



Never remove filler cap or refuel, with the engine running.

Never add gasoline or any other fuel mixes to diesel because of increased fire or explosion risks.

Do not smoke while refilling or carrying out maintenance on the fuel system.

Do not carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.



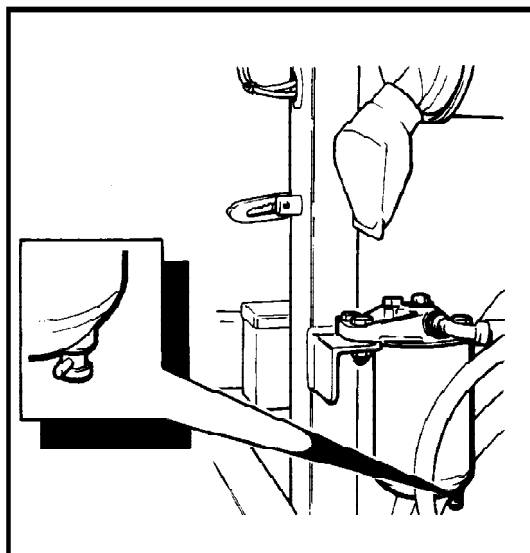
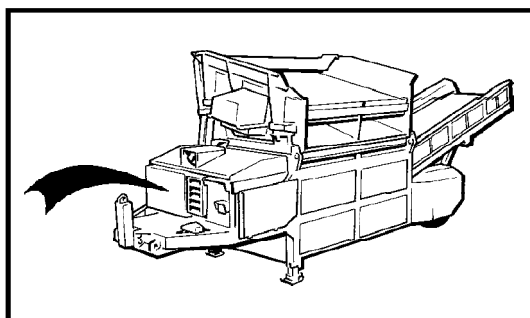
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.5.1.4 Change the fuel filter

Procedure

1. Observe all safety warnings.
2. Unscrew the fuel filter.
3. Replace fuel filter.

NOTICE  **Fill up the new fuel filter with diesel.**

This will make the restart of the machine easier.

4. Tighten new fuel filter.

WARNING  **Diesel fuel is highly flammable.**

Never remove filler cap or refuel, with the engine running.

Never add gasoline or any other fuel mixes to diesel because of increased fire or explosion risks.

Do not smoke while refilling or carrying out maintenance on the fuel system.

Do not carry out maintenance on the fuel system near naked lights or sources of sparks, such as welding equipment.



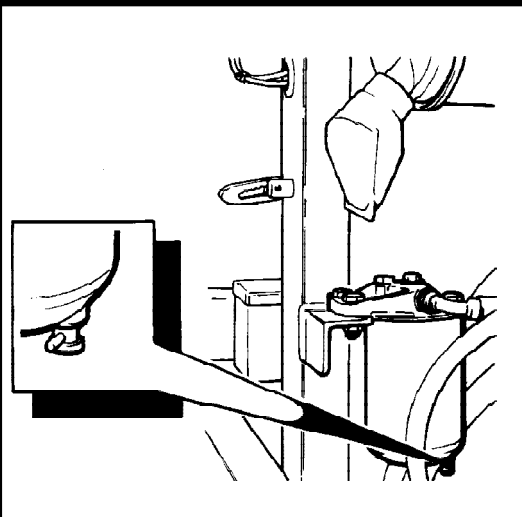
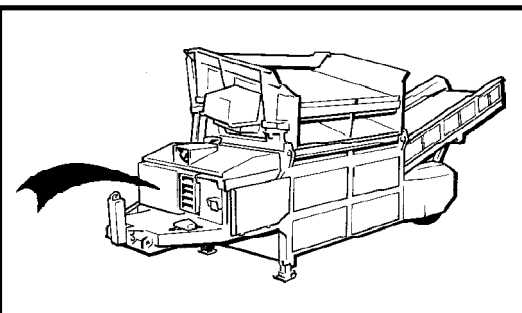
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.5.2 Air cleaner

8.5.2.1 Change outer air cleaner element

NOTICE


Always obey the air cleaner restriction indicator immediately.
(Never attempt to clean and reuse an element.)

NOTICE


During normal service, the outer element (C) will require replacing only when the restriction indicator is illuminated.

Procedure

1. Observe safety warnings..
2. Unscrew the wing nut (A).
3. Remove cover (B).
4. Carefully remove outer filter (C).
5. Remove dust bowl (D) and make sure that none is spilt into the air intake.

NOTICE


Do not run the engine with the dust bowl (D) or cover (C) removed.

6. Remove inner element (E).



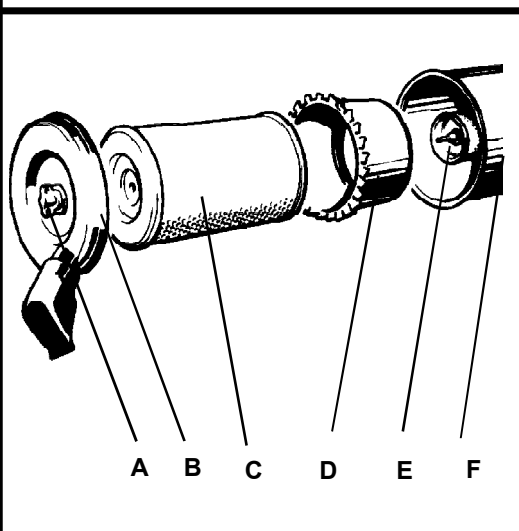
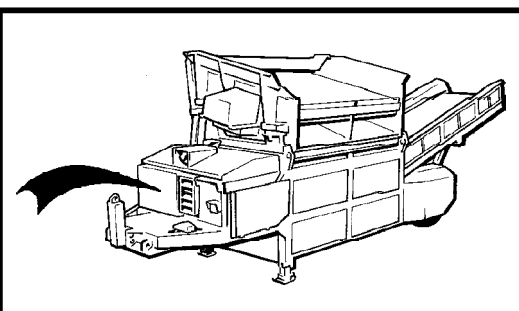
WARNING



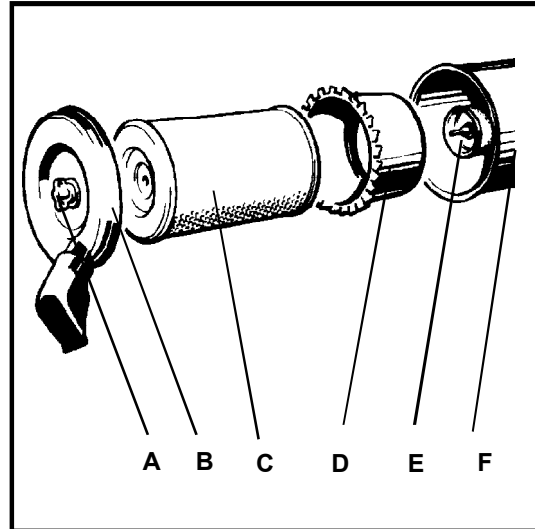
LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



7. Clean the inside of the air-cleaner casing using a damp, lint free cloth, paying particular attention to the element seals.
8. Replace the existing inner element (E).
9. Re-fit dust (D) over the outer element (C) and insert into place.
10. Re-fit cover (B).
11. Tighten the wing nut (A).
Do not over tighten.



NOTICE



If the outer element has not been changed for 500 operating hours, a leak in the induction system must be suspected. Check that the air cleaner casing and hoses to the engine are not damaged. Check that all hose connections are airtight.

8.5.2.2 Clean the precleaner

NOTICE



**Always obey the Air Cleaner restriction indicator immediately.
(Never attempt to clean and reuse an element.)**

Procedure

1. Observe safety warnings..
2. Unscrew the wing nut (A).
3. Remove cover (B).
4. Carefully remove outer filter (C).
5. Remove dust bowl (D) empty out dust and make sure that none is spilt into the air intake.
6. Wipe the bowl clean. Remove oil or grease by washing in hot water with a mild detergent.
7. Refit the dust bowl (D).
8. Refit the outer filter (C).
9. Refit cover (B).
10. Tighten the wing nut (A).
Do not over tighten.

NOTICE



Do not run the engine with the dust bowl (D) or cover (C) removed.



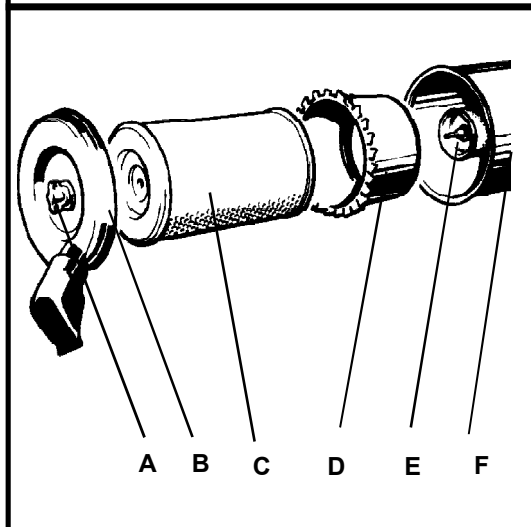
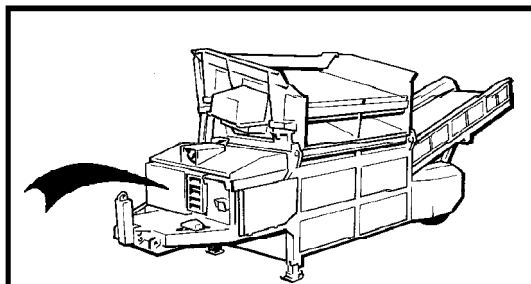
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.5.2.3 Check both air-cleaner elements

Procedure

1. Observe safety warnings..
2. Unscrew the wing nut (A).
3. Remove cover (B).
4. Carefully remove outer filter (C) and inner filter (E).
5. Discard the elements if they are distorted or the bonded gaskets are loose.
6. Hold each element up to the light to check for damage to the paper.
The elements should be discarded if pin pricks of light can be seen or if there are areas of paper that appear thin.
7. Refit new or existing elements as required.

NOTICE



Do not run the engine with the dust bowl (D) or cover (C) removed.



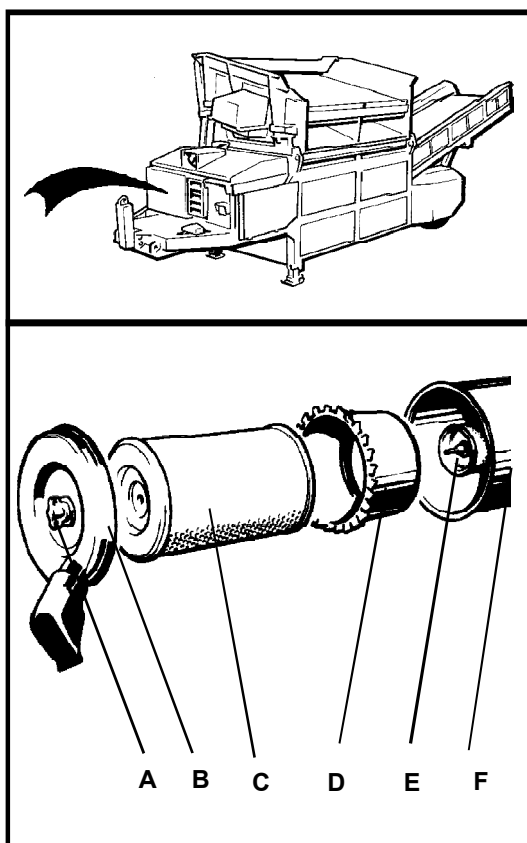
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.5.2.4 Change inner air-cleaner element

Procedure

1. Implement lockout procedure
2. Unscrew the wing nut (A).
3. Remove cover (B).
4. Carefully remove outer filter (C).
5. Remove dust bowl (D) and make sure that none is spilt into the air intake.

NOTICE



Do not run the engine with the dust bowl (D) or cover (C) removed.

6. Remove inner element (E).
7. Clean the inside of the air-cleaner casing using a damp, lint free cloth, paying particular attention to the element seals.
8. Replace the existing inner element (E) and fit a new outer element (C).
9. Re-fit cover (B).
10. Tighten the wing nut (A). Do not over tighten.



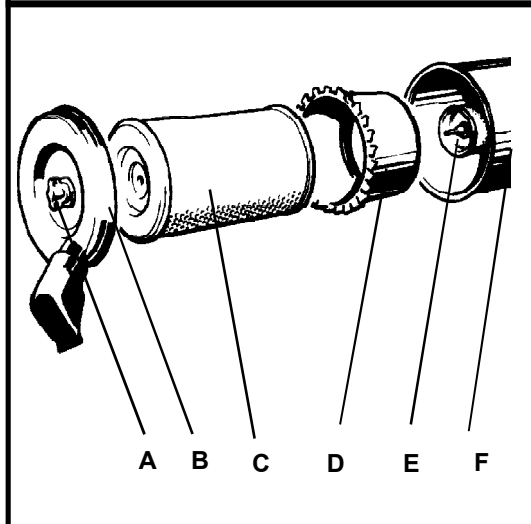
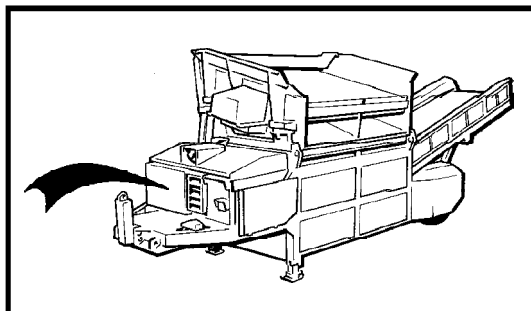
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.5.3 Electrical System

WARNING  Work on the electrical system or equipment may only be carried out by a skilled electrician himself or by specially instructed personnel under the control and supervision of a skilled electrician and in accordance with the applicable electrical engineering rules.

WARNING  If provided for in the regulations, the power supply to parts of machines and plants, on which inspection, maintenance and repair work is to be carried out must be cut off.
Before starting any work, check the de-energized parts for the presence of power and ground or short-circuit them in addition to insulating adjacent live parts and elements. Cut off any electrical supply to the machine before any inspection, maintenance or repair work is carried out.

WARNING  These machines are wired on negative earth. Always observe correct polarity. Always disconnect battery leads before carrying out any maintenance to the electrical system.
The battery contains sulphuric acid, electrolyte which can cause severe burns and produce explosive gases. Avoid contact with the skin, eyes or clothing.
Never test a battery by crossing the positive and negative terminals.
Never use a naked flame to check electrolyte level. Keep sparks and open flames away from the battery.

NOTICE  Wiring Diagram see Section 9, "Appendix".

8.5.3.1 Check Battery

WARNING  The battery contains sulphuric acid, electrolyte which can cause severe burns and produce explosive gases.

Avoid contact with the skin, eyes or clothing.

Procedure

1. Observe all safety warnings
2. Ensure that all electrical connections are clean and tight and coat the terminals with petroleum jelly to protect them from corrosion.
3. Remove the battery filler plugs and check that the electrolyte level is between 6 and 9 mm (0.25 - 0.37 ins) above the tops of the separators.
4. If necessary, top up with distilled water.
5. Where batteries have trough fillers, add distilled water to the filling trough until the trough just begins to fill with water.

NOTICE  In cold weather, distilled water should only be added immediately before starting the engine, to prevent it freezing.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.

8.5.3.2 Battery removal

Procedure

1. Observe all safety warnings
2. Ensure all electrical circuits are switched off.
3. Disconnect the earth (-) lead from the battery.
4. Disconnect the positive (+) lead from the battery.
5. Loosen bolts from the battery retaining frame.
6. Remove the battery retaining frame.
7. Lift the battery from the machine.



WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.

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.

8.5.3.3 Battery installing

Procedure

1. Observe all safety warnings
2. Ensure all electrical circuits are switched off.
3. Lift the battery onto the machine.
4. Fit the battery retaining frame.
5. Tighten bolts from the battery retaining frame.
6. Connect the positive (+) lead.
7. Connect the earth (-) lead.

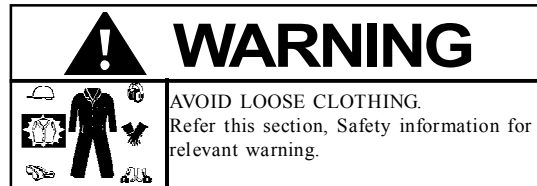
 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.

NOTICE  **When installing the battery the positive (+) lead must be connected first.**

NOTICE  **These machines are wired negative earth. Always observe correct polarity.**

8.6 Chassis

Check that all bolts and pins are in place and secure.



8.6.1 Wheels

Check that all guards are fully secured in the closed position.

Check wheel nuts before every journey.

Check wheel nuts every 150 miles.

After a wheel change, nuts should be checked several times a day until they maintain their correct setting.

(For wheel nut tightening torques, refer to “adjustment data”, this section.)

8.6.2 Tyres

Check tyre for damage and deterioration before every journey.

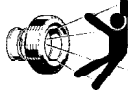
Check tyre pressure before every journey. The tyre pressure must be checked when the tyres are cold.

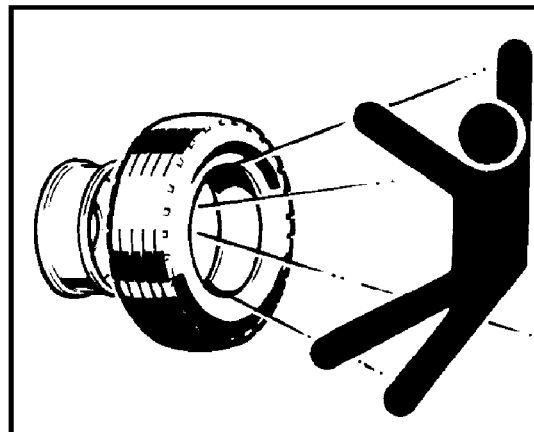
(For Tyre pressure, refer to “pressures”, this section.)

WARNING



Explosive separation of a tyre and rim parts can cause serious injury or death.
Do not attempt to mount a tyre unless you have the proper equipment and experience to perform the job.
Always maintain the correct tyre pressure. Do not inflate the tyres above the recommended pressure (See Technical Information). Never weld or heat a wheel and tyre assembly. The heat can cause an increase in air pressure resulting in a tyre explosion.
Welding can structurally weaken or deform the wheel.
When inflating tyres, use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front or over the tyre assembly. Use a safety cage if available.
Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	AVOID LOOSE CLOTHING. Refer this section, Safety information for relevant warning.
	EXPLOSIVE SEPERATION OF TYRE Refer this Section for relevant warning.



8.7 Hydraulic system

NOTICE


The air vents in the cap must be kept open to allow the hydraulic system to “breathe”.

Always use the correct grade of oil, otherwise overheating will occur. (Refer this Section, Lubricants and fluids).

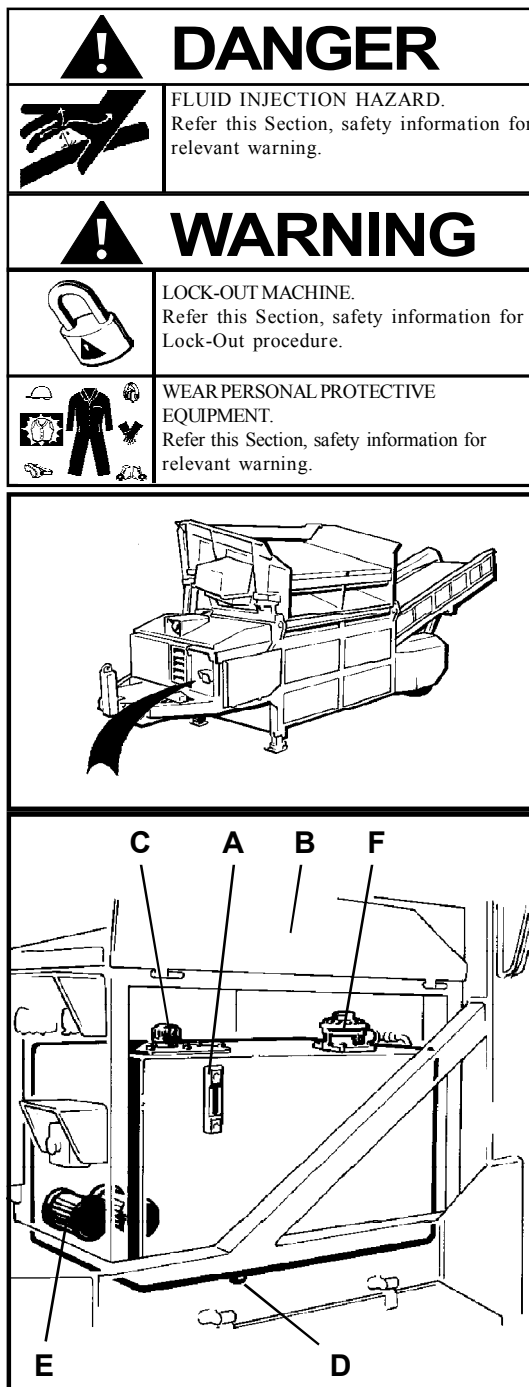
NOTICE


If the hydraulic system requires topping-up on a regular basis, the condition of all hydraulic parts and hoses should be inspected for leaks.

NOTICE


The air vents in the filler cap must be kept open to allow the hydraulic system to “breathe”.

- A Hydraulic Oil Level Indicator
- B Hydraulic Tank Access Panel
- C Filler Cap
- D Drain Plug
- E Suction Filters
- F Return Line Filter



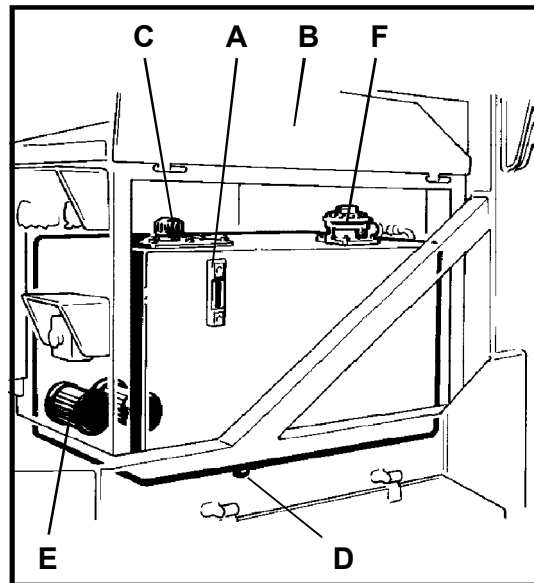
8.7.1 Hydraulic oil

8.7.1.1 Check hydraulic oil level

Procedure

1. Observe all safety warnings.
2. Machine must be on level ground.
3. Always have the hydraulic oil at normal operating temperature.
4. Always have all cylinders retracted (where possible).
5. Check the level indicator (A). The oil level must be between the red and black marks on the gauge.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.



8.7.1.2 Top up hydraulic oil level

Procedure

1. Observe all safety warnings.
2. Machine must be on level ground.
3. Always have all cylinders retracted (where possible).
4. Implement Lock-Out procedure.
5. Clean the area around the filler cap (C).
6. Open the filler cap (C).
7. Fill the tank to midway between red and black marks on the level indicator. (Correct grade of hydraulic oil see this section "Lubricants and fluids".)

CAUTION  Never overfill the hydraulic tank as this will cause leakage from the filler cap.



DANGER



FLUID INJECTION HAZARD.
Refer this Section, safety information for relevant warning.



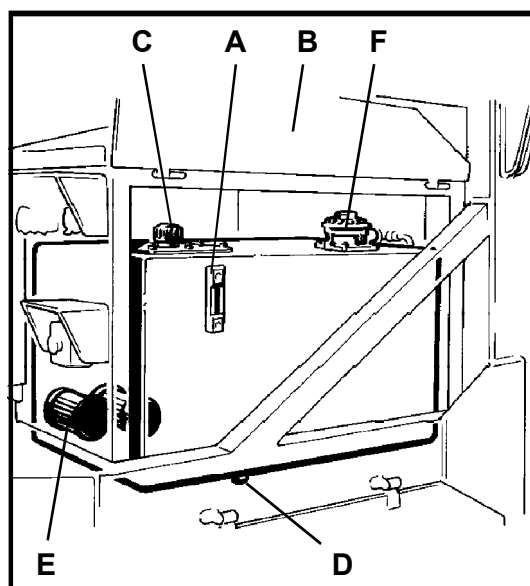
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.



8.7.1.3 Change hydraulic oil

Procedure

1. Observe all safety warnings.
2. Always have the hydraulic oil at normal operating temperature.
3. Always have all cylinders retracted (where possible).

NOTICE



ALWAYS practice extreme cleanliness when servicing.

4. Drain the tank by removing the drain plug (D).

NOTICE



Before removing the drain plug (D).

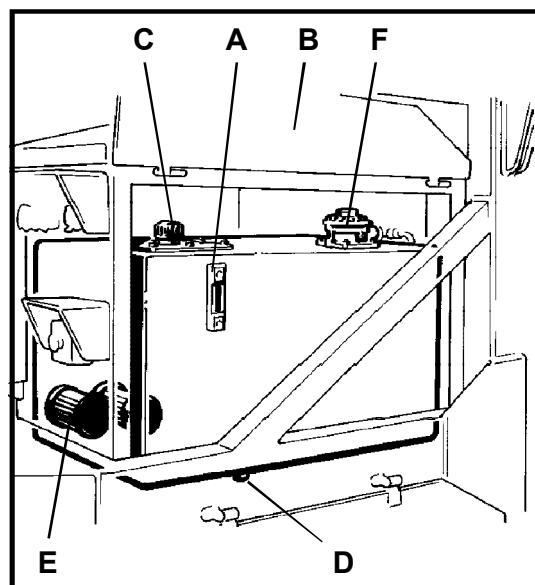
a) Release any pressure in the hydraulic tank by slowly unscrewing the filler cap (C).

b) Ensure a suitable container is placed on the ground to catch the full capacity of oil in the tank.

c) Remember to stand to one side to avoid oil which will spill from the drain hole.

5. Remove the cover plate under the filler cap (C).
Discard the gasket.

	DANGER
	FLUID INJECTION HAZARD. Refer this Section, safety information for relevant warning.
	WARNING
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.



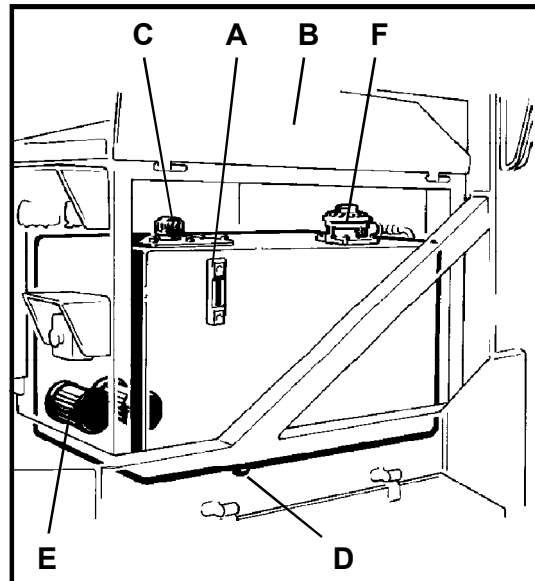
6. Remove the suction filters (E) by unscrewing them from the suction pipes.
7. Flush out the tank with clean hydraulic oil taking extreme care to remove all dirt and foreign matter. Clean and refit or replace the suction filters (E) to the suction pipes.

NOTICE



Change the suction elements when an oil change is being carried out.

8. Re-fit cover plate to the tank using a new gasket and refit drain plug (D).
9. Change the return line filter element (Refer this Section).
10. Refill the tank with clean hydraulic oil to midway between the red and black marks on level indicator. (Correct grade of hydraulic oil see this section "Lubricants and fluids".)
11. Run the engine to circulate the oil. Operate the hydraulic controls to purge any air from the system.
12. Stop the engine and top up the system as required.



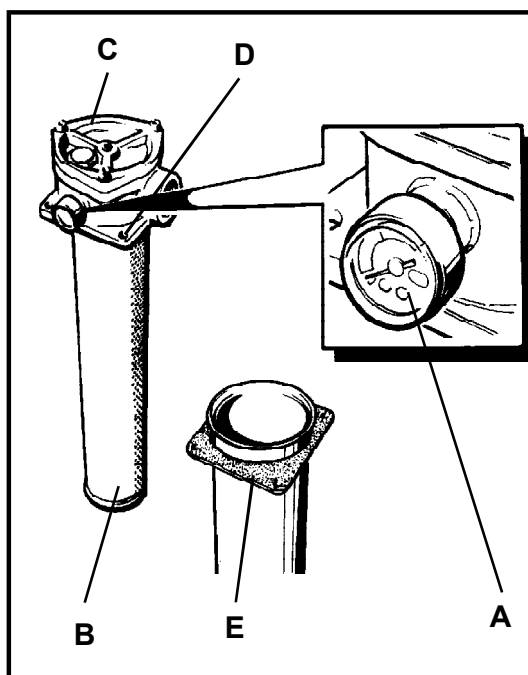
8.7.2 Return line filter

8.7.2.1 Check return line filter

Procedure

1. Observe all safety warnings
2. Always have the engine running at maximum speed.
3. Always have all hydraulic equipment working.
4. Always have the hydraulic oil at normal operating temperature.
5. Check the return line filter blockage indicator (A).
6. Change the filter element immediately when the green sector of the blockage indicator goes to red.

 WARNING	
	LOCK-OUT MACHINE. Refer this Section, safety information for Lock-Out procedure.
	WEAR PERSONAL PROTECTIVE EQUIPMENT. Refer this Section, safety information for relevant warning.



NOTICE



Red indicates no filtration.

Always change the filter element immediately when the indicator shows red.

8.7.2.2 Change return line filter

Procedure

1. Observe all safety warnings.
2. Release any pressure in the hydraulic tanks by slowly unscrewing the filler cap.
3. Clean the outside of the filter housing (C).
4. Remove the filter by unscrewing the retaining bolts (D).
5. Lift out the old element (B) and discard it safely.
6. Wash out the filter cap and dry with an air hose. DO NOT USE A RAG.
7. Re-fit new filter ensuring seal ring (E) is in good condition and correctly positioned.
8. Tighten cap securely.



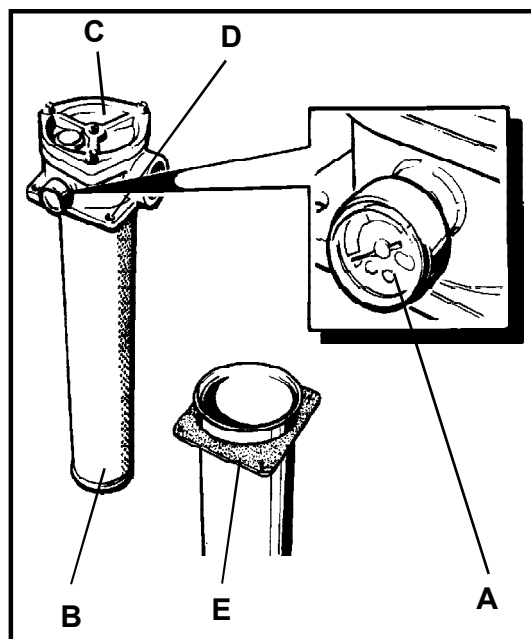
WARNING



LOCK-OUT MACHINE.
Refer this Section, safety information for Lock-Out procedure.



WEAR PERSONAL PROTECTIVE EQUIPMENT.
Refer this Section, safety information for relevant warning.





Maintenance

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8.8 Maintenance schedules

8.8.1.1 Daily (10 hour) maintenance schedule (machine stopped)

	Construction unit/ object	Job	Remarks	Sign
<i>VIEW CONTROL</i>				
	Guards	check/ replace		
	Pipelines	check/ replace		
	Valves	check/ replace		
	Bolts and pins	check/ fasten/ replace		
<i>ENGINE</i> <i>See engine operation manual</i>				
	Coolant level	check/ top up		
	Engine oil level	check/ top up		
	Hydraulic oil level	check/ top up		
	Fuel tank level	check/ top up		
<i>MOVING PARTS</i>				
	Material build up	remove		
	Moving free	check/ ensure		
<i>SCREEN UNIT</i>				
	Material build up	remove		
	Screen meshes, wear	check/ replace		
	Screen meshes, tension	check/ tune		
	Rubber cushions	check/ replace		

Procedure to Remove Spillage

1. Switch off and lockout machine. Refer to Section 0 "Safety".
2. Observe all safety warnings.
3. Open or remove any guards doors if necessary.
4. Remove spillage using a trowel or shovel. Ensure that no material is left on the chassis, walkways or underneath the machine.
5. Close/replace and secure all guard doors.

8.8.1.2 Daily (10 hour) maintenance schedule (machine running)

	Construction unit/ object	Job	Remarks	Sign
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POWER UNIT

	Return line filter	check/ replace		
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BELTS

	Alignment	check/ align		
	Tension	check/tension		

SCREEN UNIT

	Operation	check		
	Vibration	check/ tune		
	Screen shaft speed	check/adjust		



Maintenance

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8.8.2 Weekly (50 hour) maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
<i>FEED HOPPER</i>				
	Skirting rubbers	check/ adjust/ replace		
<i>MAIN CONVEYOR</i>				
	Belt cleaners	check/ adjust/ replace		
<i>SCREEN UNIT</i>				
	Bearings	grease		
<i>POWER UNIT</i> <i>See engine operation manual, section 10</i>				
	After first 50 hours carry out full service on the engine			
	Engine air filter pre-cleaner	clean out		
	Battery electrolyte level	check/ top up		

8.8.3 100 hour maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
	Carry out weekly (50 hour) maintenance schedule			
<i>MAIN CONVEYOR</i>				
	Tail drum bearings	grease		
	Drive drum bearings	grease		

8.8.4 250 hour maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
	Carry out weekly (50 hour) maintenance schedule			
	Carry out 100 hour maintenance schedule			
<i>POWER UNIT</i> <i>See engine operation manual</i>				
	Air cleaner elements	check/ replace		
	Water trap fuel system	empty		

8.8.5 500 hour maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
	Carry out weekly (50 hour) maintenance schedule			
	Carry out 100 hour maintenance schedule			
	Carry out 250 hour maintenance schedule			
<i>POWER UNIT</i> <i>See engine operation manual</i>				
	Engine oil	change		
	Engine oil filter	change		
	Fuel filter	change		
	Air cleaner inner element	change		
	V-belt tolerance	check/ adjust		
	Engine speed	check/ adjust		
	Hydraulic return line filter	change		

8.8.6 1000 hour maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
	Carry out weekly (50 hour) maintenance schedule			
	Carry out 100 hour maintenance schedule			
	Carry out 250 hour maintenance schedule			
	Carry out 500 hour maintenance schedule			
<i>POWER UNIT</i> <i>See engine operation manual</i>				
	Hydraulic oil	change		



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8.8.7 2000 hour maintenance schedule

	Construction unit/ object	Job	Remarks	Sign
<i>FIRST</i>				
	Carry out daily (10 hour) maintenance schedule			
	Carry out weekly (50 hour) maintenance schedule			
	Carry out 100 hour maintenance schedule			
	Carry out 250 hour maintenance schedule			
	Carry out 500 hour maintenance schedule			
	Carry out 1000 hour maintenance schedule			
<i>POWER UNIT</i> <i>See engine operation manual</i>				
	Engine coolant	change		
	Valve clearance	check		
	Fuel injectors	check		
	Alternator and starter motor	check		

8.9 Lubricants and Fluids

Component	International Spec	Sample
Engine	API CD CF CCMC D4	Shell Fortisol 15W/40 Shell Rimula X 15W/40
Hydraulics - up to 30°C	ISO VG 46	Shell Tellus 46
Hydraulics - above to 30°C	ISO VG 100	Shell Tellus 100
Anti-Freeze	BS6580 ASTM D3306-74	Shell Safe Anti-Freeze (Ethylene Glycol Based) Shell Save Premium Anti Freeze
General Grease		Shell Alvania EP2
Grease for Vibrating Grid Bearings		ISO VG 220
Gearbox (Bonfiglioli TA series)		Shell Tivella SB synthetic gear oil
Gearbox (Variable speed type)		Shell Automatic Transmission Fluid Dexron II

NOTICE



Always use lubricants and fluids that meet the above international specifications.

The Shell grades are for reference only.

8.10 Capacities - Fluid

Engine coolant	9.3ltr
Engine oil including filter	10.0ltr
Hydraulic tank	306ltr (67 gal)
Fuel tank	160ltr (35gal)

8.11 Adjustment Data

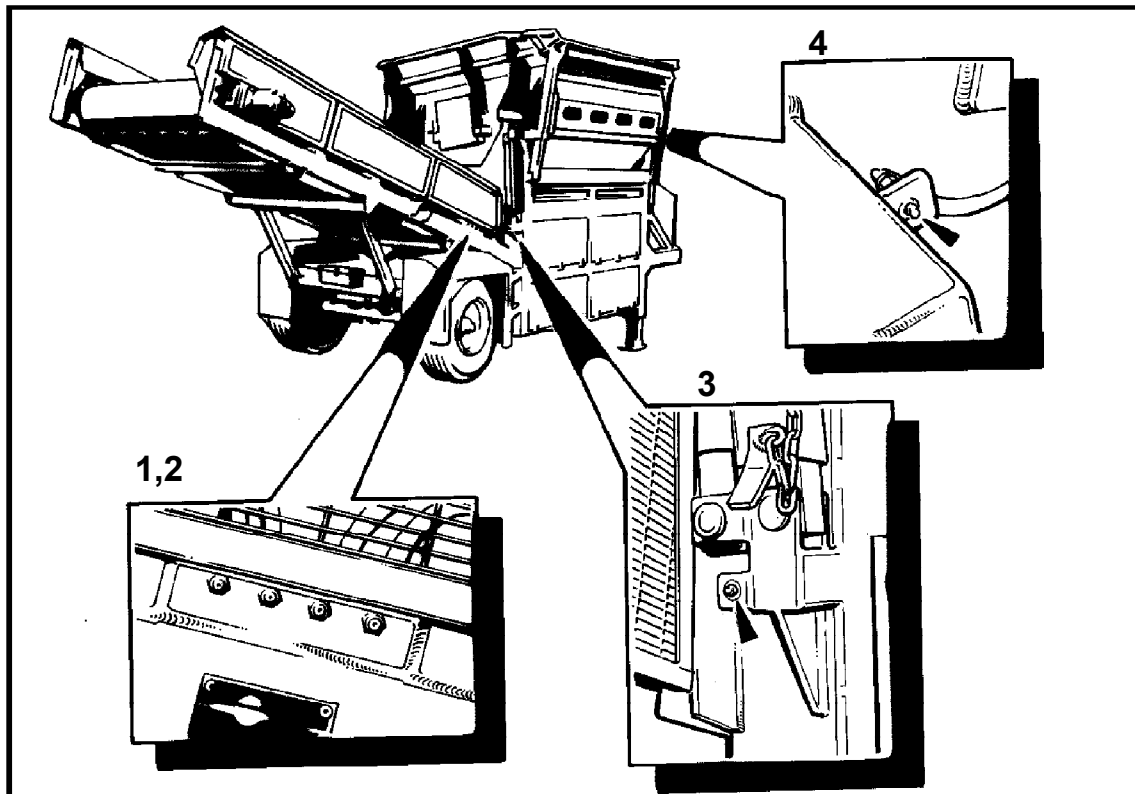
Engine speed	2150rpm
Screen shaft speed	1100rpm $\pm$ 5rpm
Wheel stud torque GLD axle or Hendrickson axle type	680 - 750Nm (500 - 550lbf ft)

8.12 Pressures

Hydraulic system	197bar (2800psi)
Hydraulic hoses Information“	Pressure rating refer to section 1, “Technical
Tyres	8.5 bar (120psi)

8.13 Greasing schedule (Lhs)

AREA	DESCRIPTION	FREQUENCY	GREASE GUN STROKES
1.	Main Tail Drum Bearings	100 HRS	2
2.	Main Drive Drum Bearings	100 HRS	2
3.	Vibrating Grid	50 HRS	25
4.	Vibrating Grid	50 HRS	25





Maintenance

POWERGRID 800-1200

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9.2 Diagrams

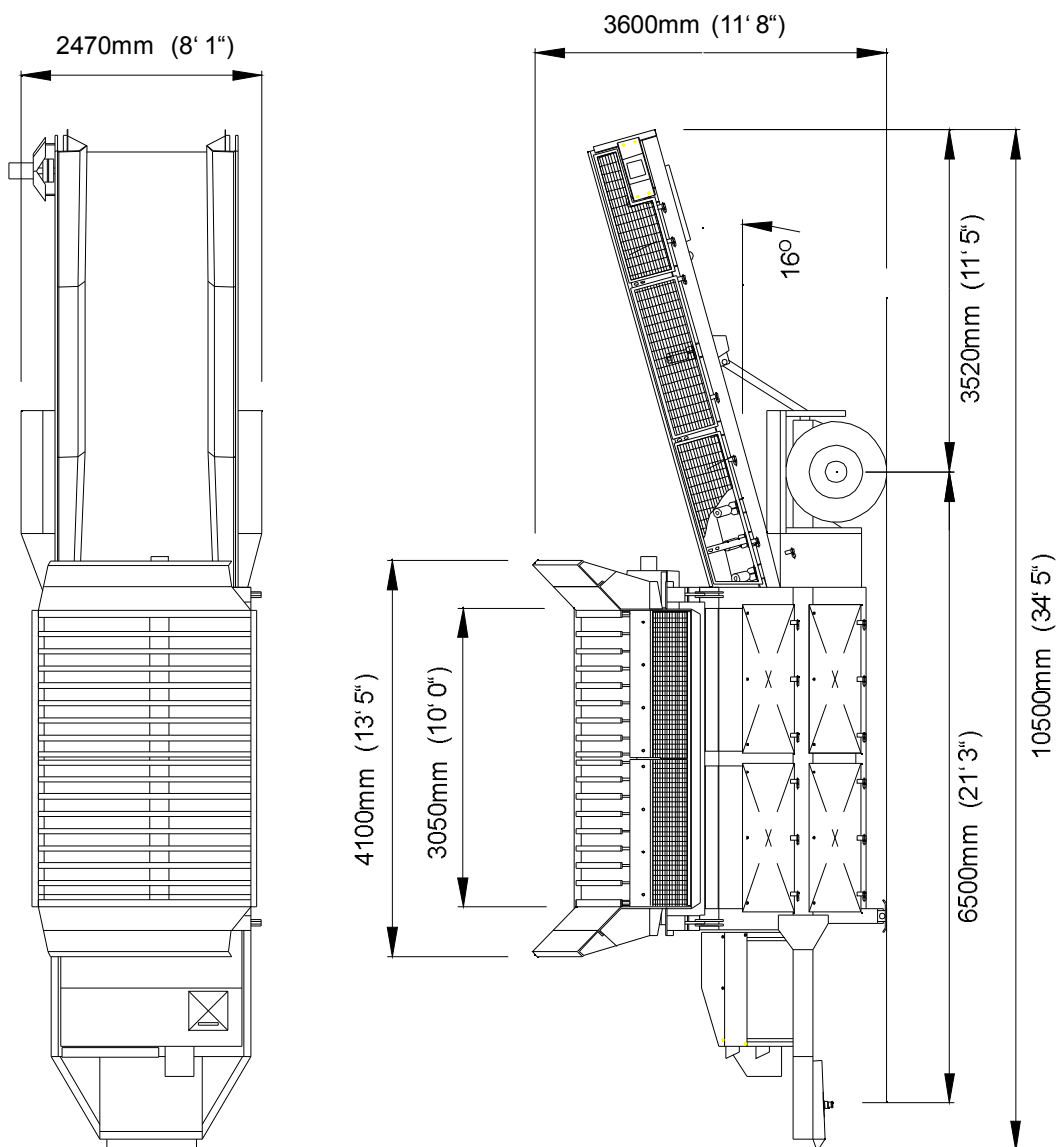
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9.3 Enclosed documentation

Engine operation manual
Engine spare parts manual

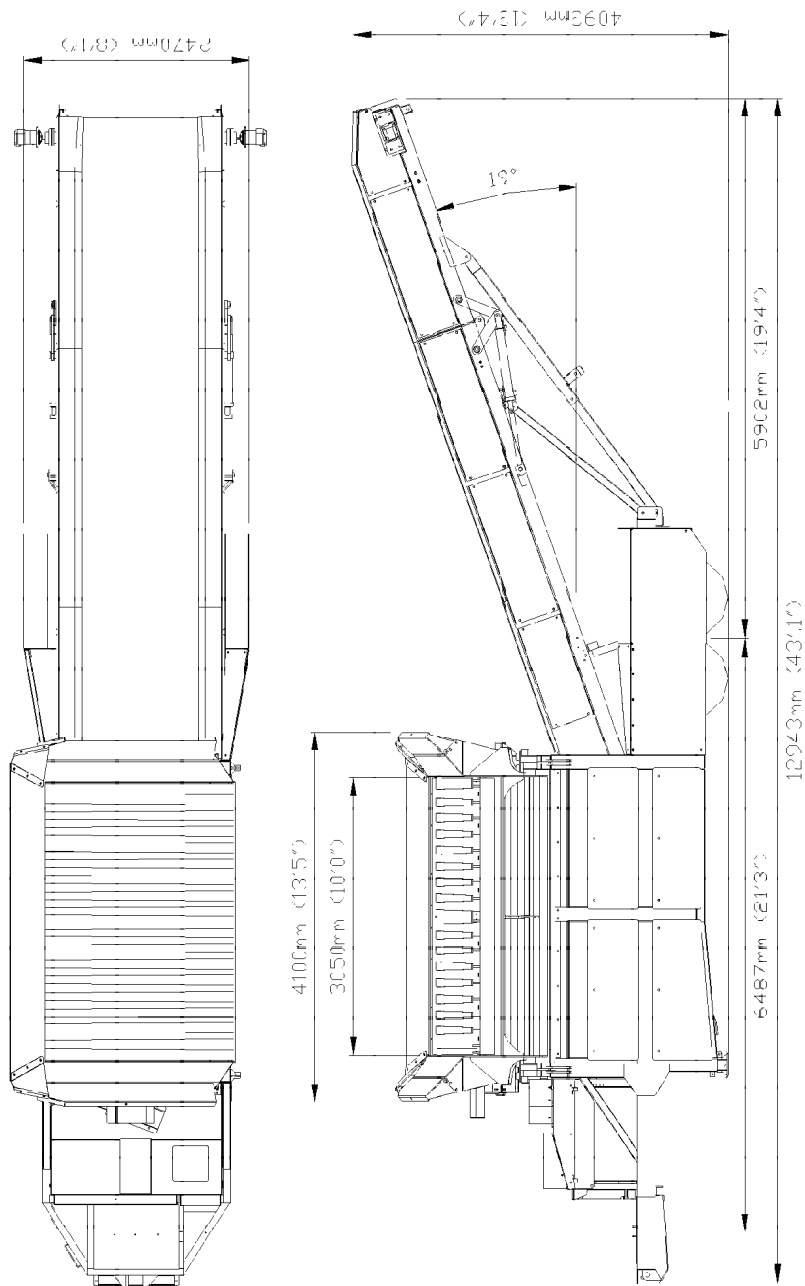
9.1 Designs

9.1.1 General plan(Powergrid 800)

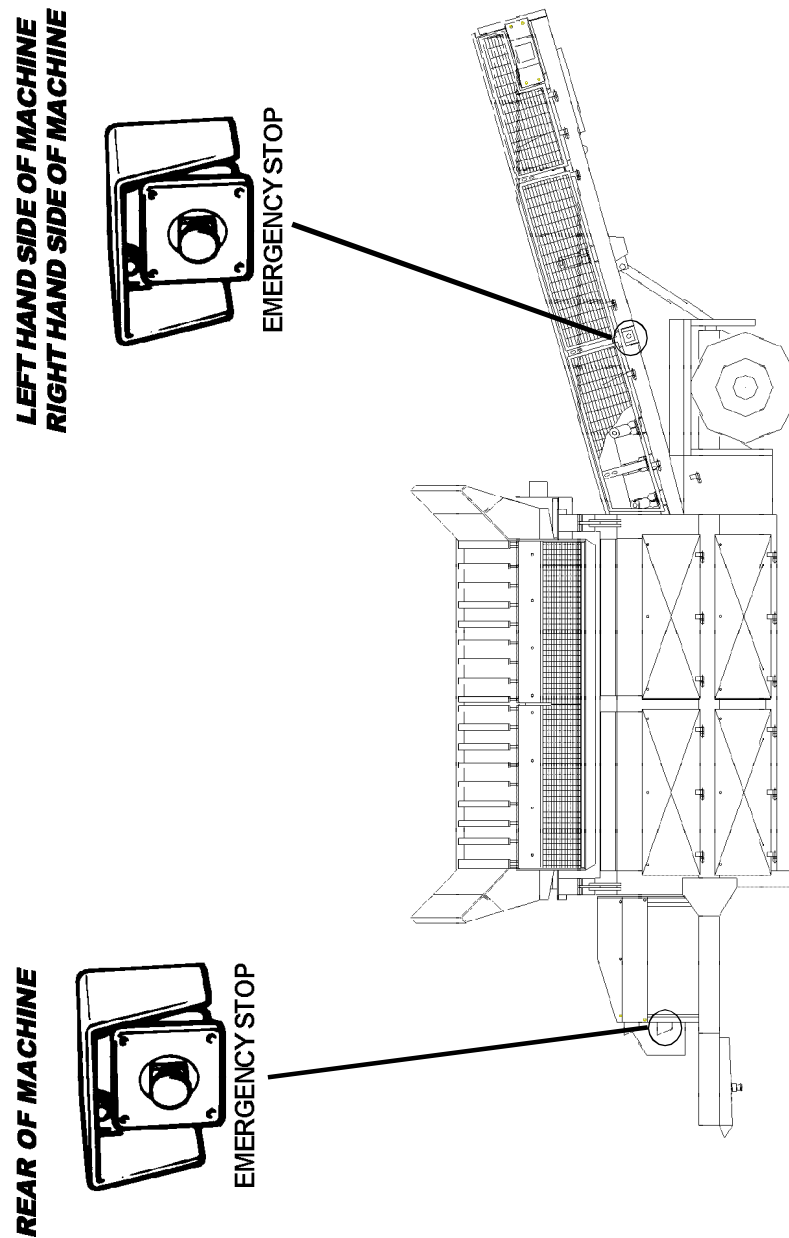


9.1 Designs

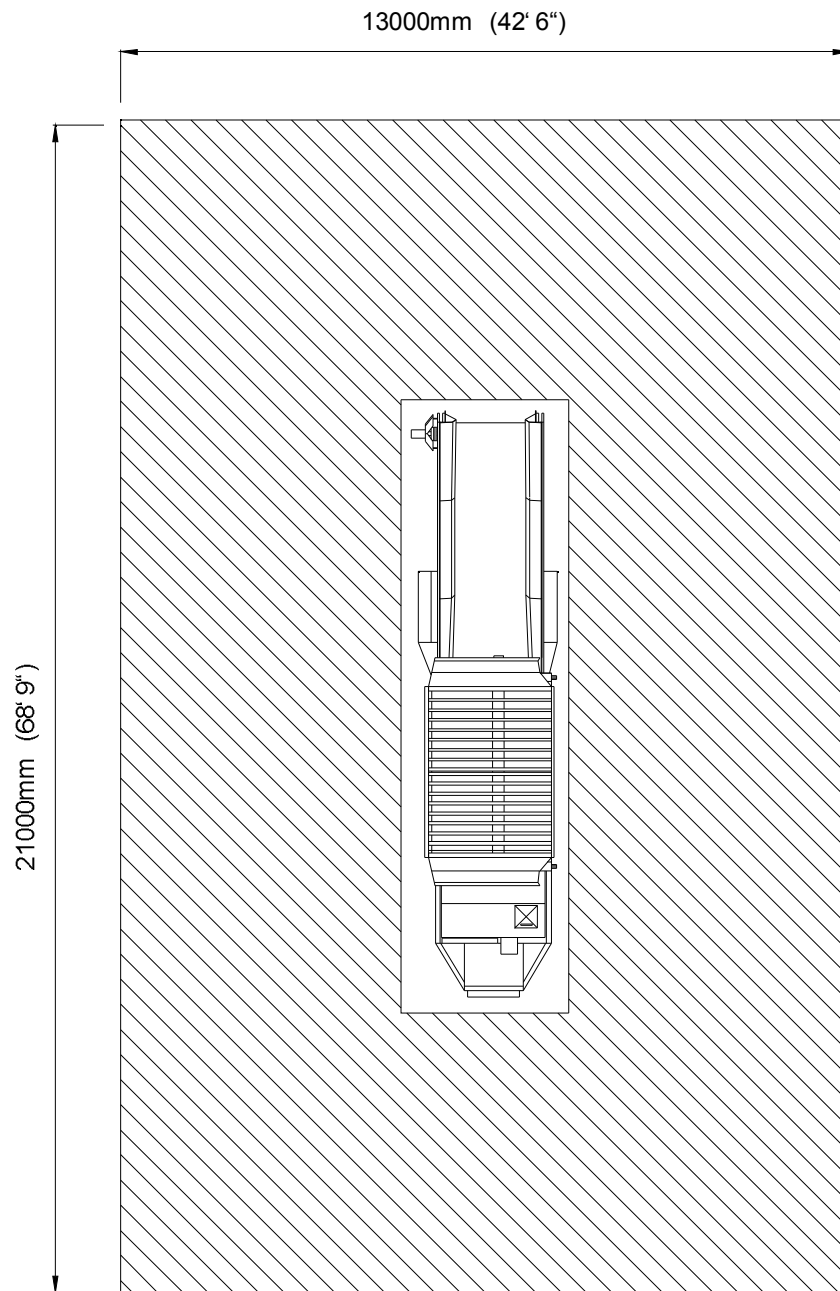
9.1.1 General plan(Powergrid 1200)



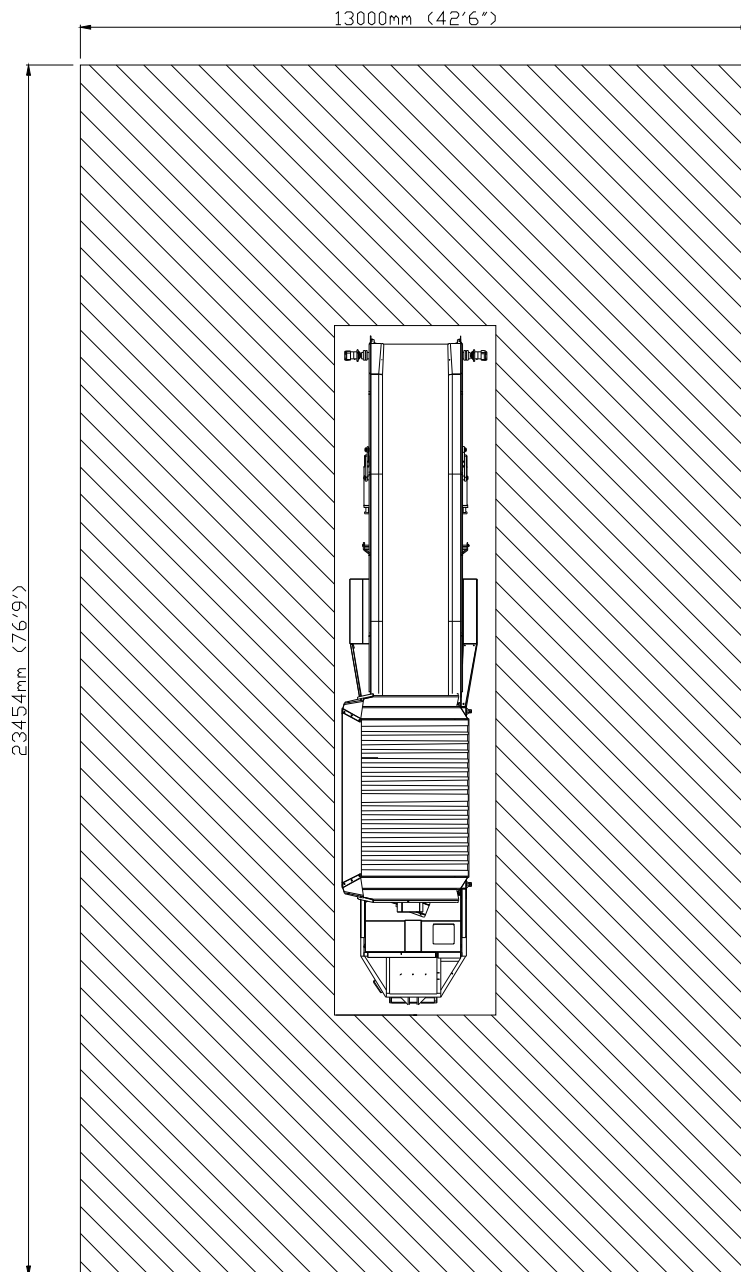
9.1.3 Position of emergency stop



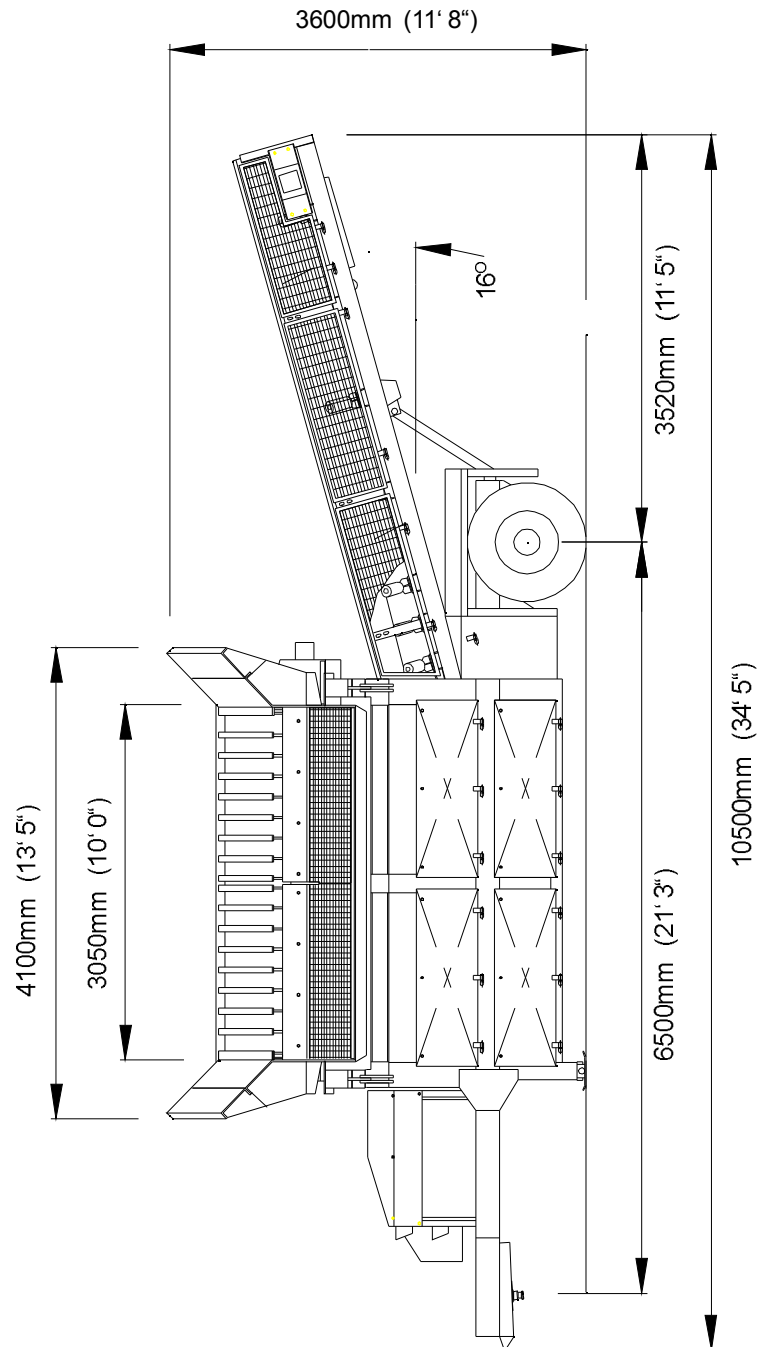
9.1.4 Work area required (Powergrid 800)



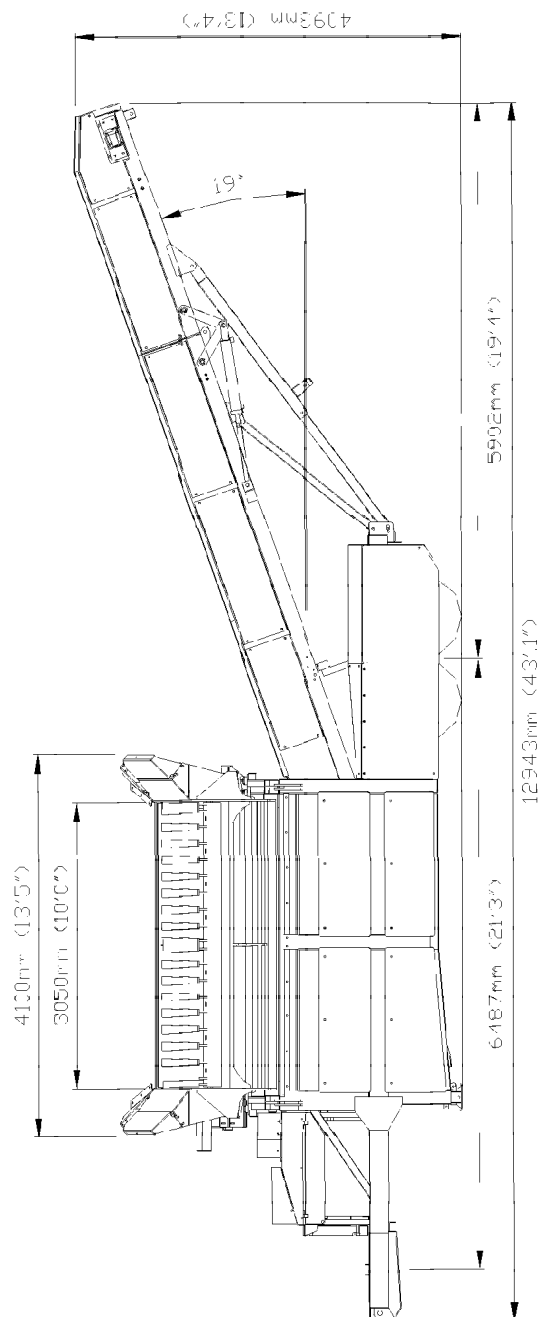
9.1.5 Work area required (Powergrid 1200)



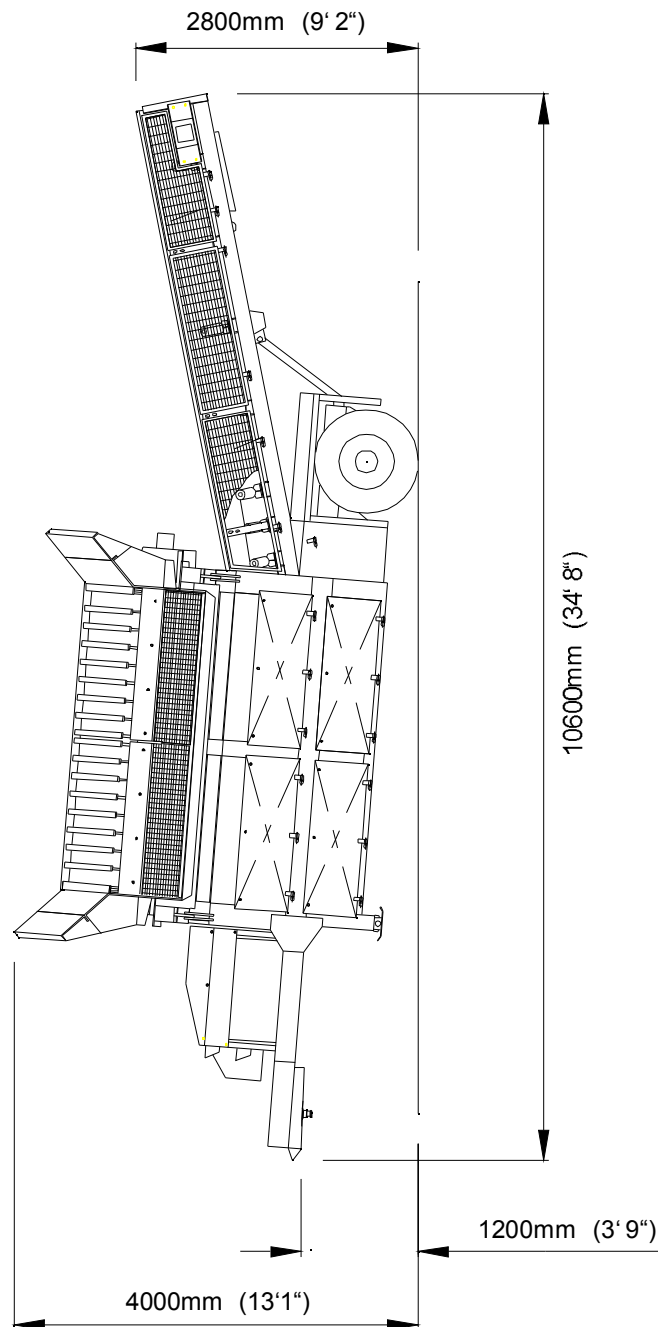
9.1.6 Working position dimensions(Powergrid 800)



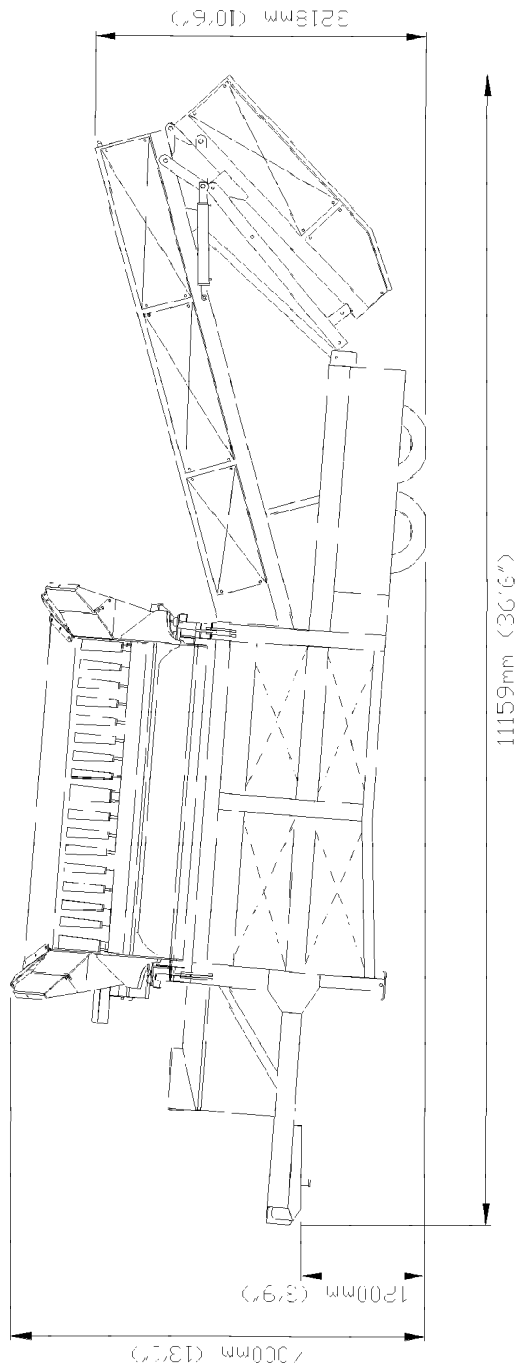
9.1.7 Working position dimensions(Powergrid 1200)



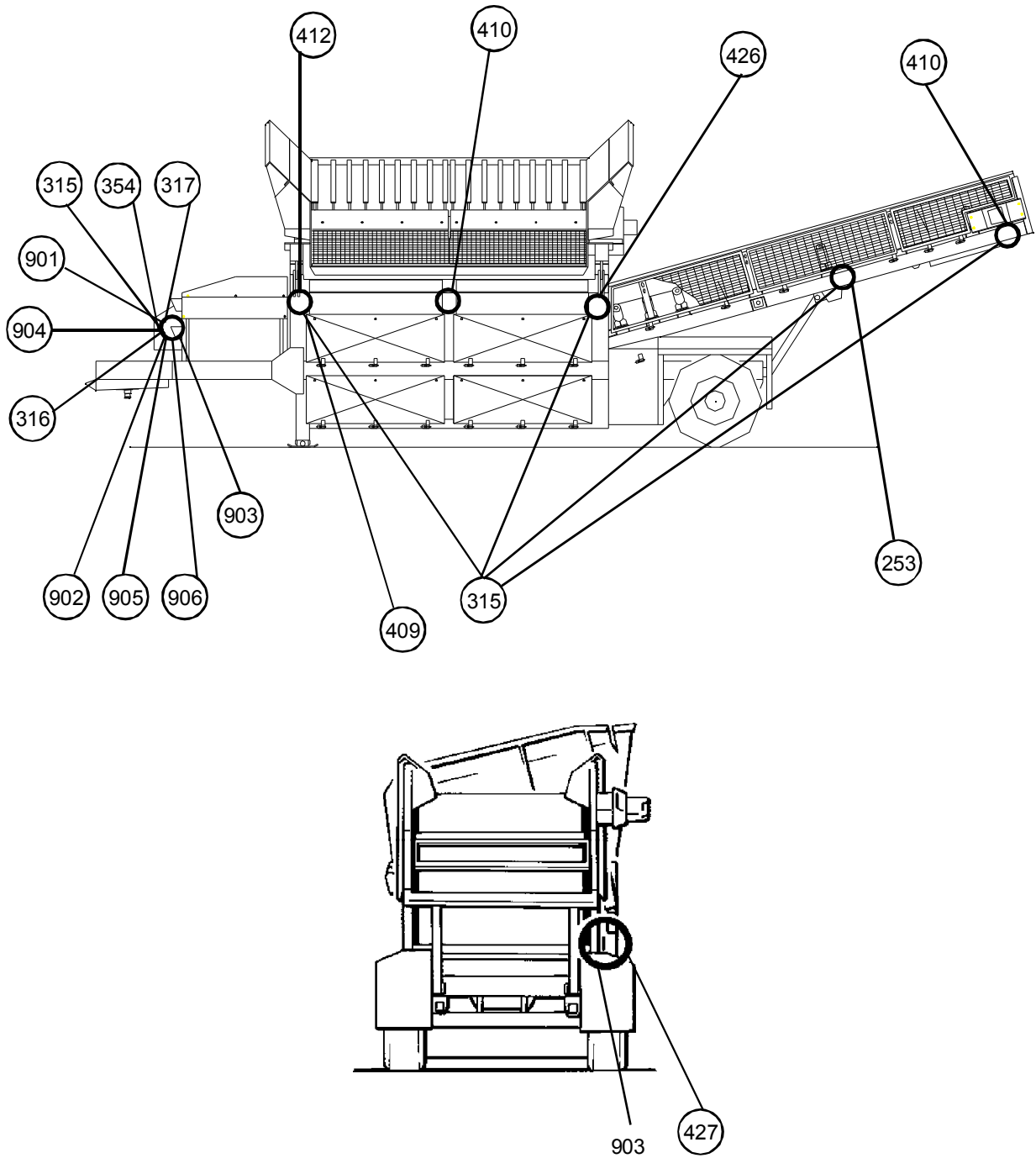
9.1.8 Transport position dimensions(Powergrid 800)



9.1.9 Transport position dimensions(Powergrid 1200)

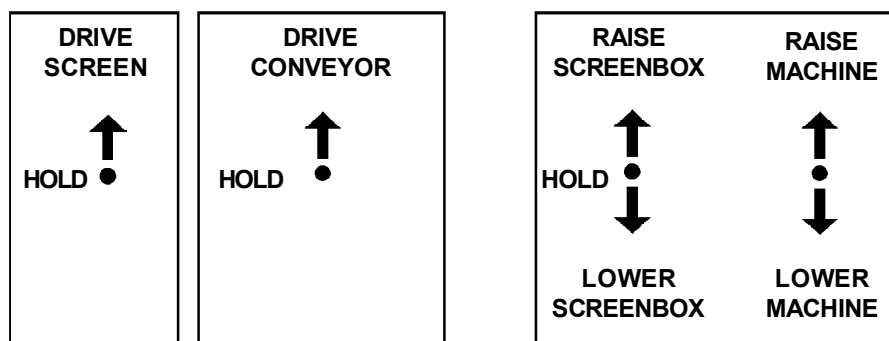


9.1.10 Position of warning labels



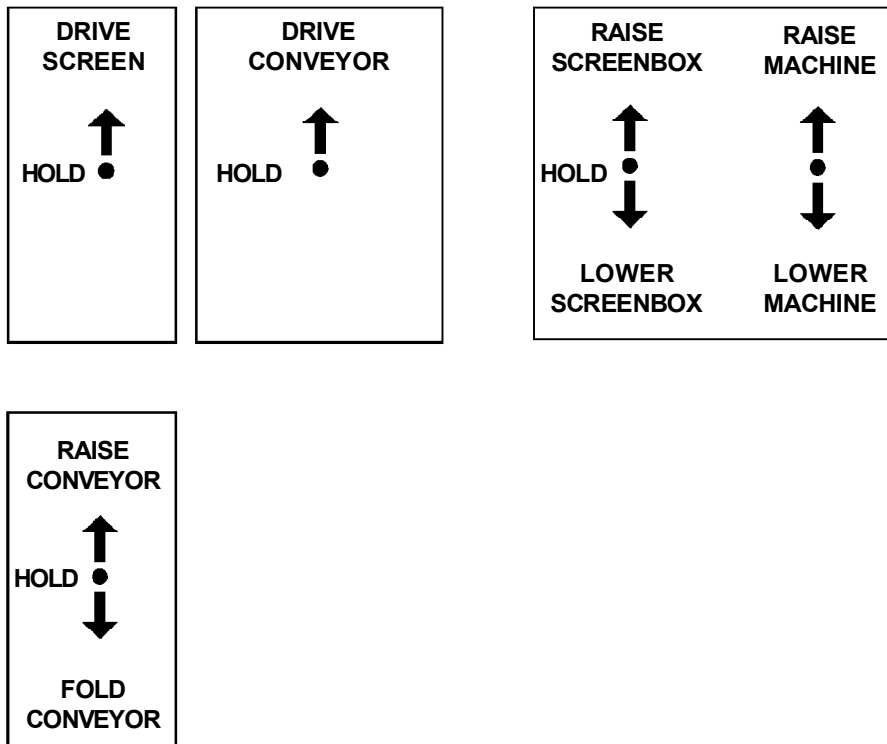
POWERGRID 800

9.1.11 Control valve labels



POWERGRID 1200

9.1.12 Control valve labels



9.1.13 Noise levels

Noise levels for the POWERGRID engine BF4L2011 (running on empty)

