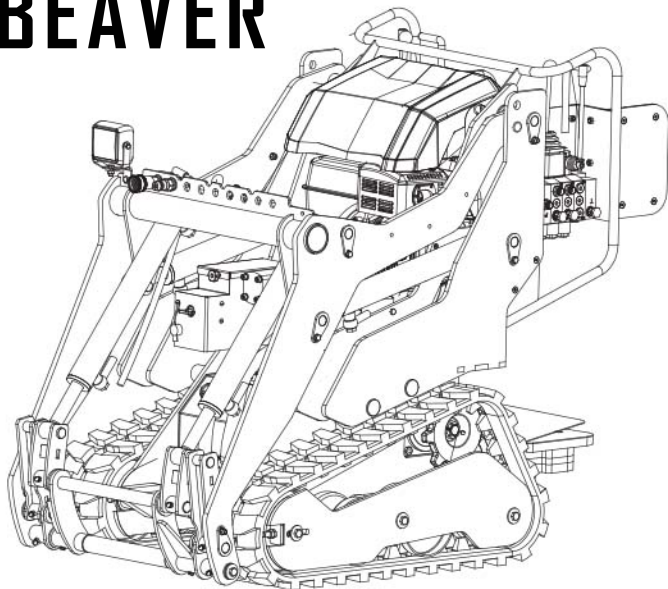


LITTLE BEAVER

Stand-On Skid Steers

Operator's Manual

MODEL NUMBER : DUESOSKID-30

SERIAL NUMBER :

Both model number and serial number may be found on the main label.
You should record both of them in a safe place for future use.

FOR YOUR SAFETY

**READ AND UNDERSTAND THE ENTIRE MANUAL BEFORE
OPERATING MACHINE**

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INTRODUCTION

You are now the proud owner of the skid steer. This skid steer is a compact product of quality engineering and manufacturing, made of fine materials and under rigid quality control systems. It will give you long, dependable and satisfactory service.

The skid steer is intended for use in various earth and materials moving activities for landscaping and construction work. It is designed to operate a wide variety of attachments, each of which performs a specialized function. Use this machine in temperatures of -15°C to 40°C. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

To obtain the best use of your skid steer, please read this manual carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. It is policy to utilize as quickly as possible every advance in our research. The immediate use of new techniques

in the manufacture of products may cause some small parts of this manual to be outdated. Distributors and dealers will have the most up-to-date information. Please do not hesitate to consult with them.



NOTE

Carefully read through this entire operator's manual before using this unit. Take special care to heed the cautions and warnings.

Specifications

Item No.	DUESOSKID-30
Engine	306 cc, 6.3 kW, 3600 rpm
Max. Loading Height (with Bucket #31501)	2500 mm
Height	1200 mm
Length (with Bucket #31501)	1990 mm
Length (with No Attachment)	1460 mm
Width	740 mm
Starting	Key-type Starter Switch and Shutdown
Ground Clearance Center	114 mm
Ground Clearance Side	62 mm
Travel Speeds	2.3 km/h
Gradeability	17°
Ground Contact Pressure	32 kPa
Track Shoe Width	180 mm
Pump Capacity	2x15 L/min
Hydraulic Reservoir	29 L
Tipping Capacity (with Bucket #31501)	200 kg
Rated Operating Capacity	200 kg
Motor Capacity	445 N.m
Net Weight (with No Attachment)	715 kg

RECYCLING AND DISPOSAL

Notes for packaging

The packaging materials are recyclable. Please dispose of packaging in an environmentally friendly manner.

Decommissioning and Disposal



When this product is decommissioned, it should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled

waste disposal, recycle it responsibly to promote the sustainable reuse of material resources.

1. Contact your local authority or local stores for advice to dispose of the waste according to local regulations.
2. Before disposing of the product, the fuel tank and oil tanks must be emptied. Use leakproof containers to collect the drained liquid and dispose of it separately. Do not dump waste liquid on the ground, or into the sewer or any water source.

SYMBOLS

The instruments and operation elements have been marked with a series of symbols in order to simplify the operation of your skid steer. These symbols represent important information about the production or instructions on its use.

Recognize Safety Information
This is the safety alert symbol. When you see this symbol on your machine or in this manual, be alert for the potential of personal injury. Follow the precautions and safe operating practices highlighted by this symbol. A signal word — DANGER, WARNING, or CAUTION — is used with the safety alert symbol. DANGER identifies the most serious hazards. DANGER and WARNING signs are located near specific hazards. General precautions are on CAUTION labels.



Safety Symbols



Read these instructions carefully.



Wear hearing protection.



Wear eye protection.



Wear safety helmet.



Do not remove or tamper with the protection and safety devices.



Do not touch parts that are hot from operation. Serious burns may result.



Keep away from moving parts.



Never start or run the engine inside a closed area.



No smoking, sparks, or flames.



Do not start engine by shorting across starter terminals.



Be aware. Flying objects may cause injury.



Be careful with your hands.



Fluid or air pressure could pierce skin and cause injury or death. Stay away.



Explosion hazard. Never use pre-heater or contact underground utilities.



Be aware of horizontal movement. Crushing can cause death or serious injury.



Crushing hazard from above. Stay away from lifted load / raised component and its range of movement.



Cutting/ Crushing hazard of hand or foot—wait for all moving parts to stop before servicing; keep away from moving parts or attachments when operating the machine; keep all guards and shields in place.



Keep away from the attachment and the lift arm.



Do not overload.



Keep away from rotating parts.



Keep bystanders away.



Shut off the engine, disconnect spark plug wire, and make certain all moving parts have stopped before cleaning, repairing, or inspecting the unit.



Electrocution hazard. Check for power lines in the area before using the machine.



Do not touch hot parts such as exhaust etc.



Gasoline and its vapors are extremely flammable and explosive.



The exhaust fumes are dangerous, containing carbon monoxide. Staying in the environment can lead to unconsciousness and death.



Do not carry passengers on any part of the machine during operation.



Do not walk on the ground during operation.



Avoid abrupt starts, stops, and turns. Abrupt movement and uneven terrain can throw operator off machine.



After operation, before leaving the machine, lower the attachment to the ground, shut off the engine and remove the key from the ignition.



Do not step off platform with load raised.



Tipping hazard.



Traveling on slopes may result in tipover.



Check behind before reversing the machine.



Tipping hazard. Always move up or down slopes with the attachment lowered and operate with the heavy end uphill.



Never lift the loads during driving. Always carry loads low.



Keep well away from cliff edges. The weight of your machine may cause the ground to give way. Machine can fall and tip over. Death or serious injury could result. Do not dig under the machine or attachment. Take care when backfilling.



Electrocution hazard. Avoid boom or arm contact with overhead power lines or other obstacles.



Cliff and high banks can fall on you. Take care when working below overhangs. Do not dig away beneath them. Look out for rock falls and soil slips.



Max. loading capacity is 200kg. Do not exceed the load capacity.



Max. loading height is 2.5m.



Warnings for the lead-acid battery.

Function Symbols



Lifting points.



Tiedown points



Fuel with gas.



Add hydraulic oil.



Horn



Battery disconnect switch



Battery / Charge.



Noise - Sound Power Level

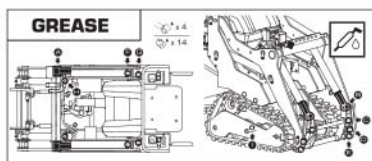


Cylinder lock.

When working under raised lift arms, shut off the engine and lock the cylinder by safety pin to prevent it falling. Crushing weight could result in death or serious injury.



1. Lower the attachment to the ground.
2. Turn off the engine.
3. Cycle the attachment drive control and disconnect hydraulic hoses.
4. Disengage lock pins by lifting handles upward.
5. Tilt mount bracket forward and back machine away from the attachment.



Greasing points.

Operation Symbols



Power indicator



Headlight



Hood lock.



Horn



Inside is instruction manual and fuel filler.



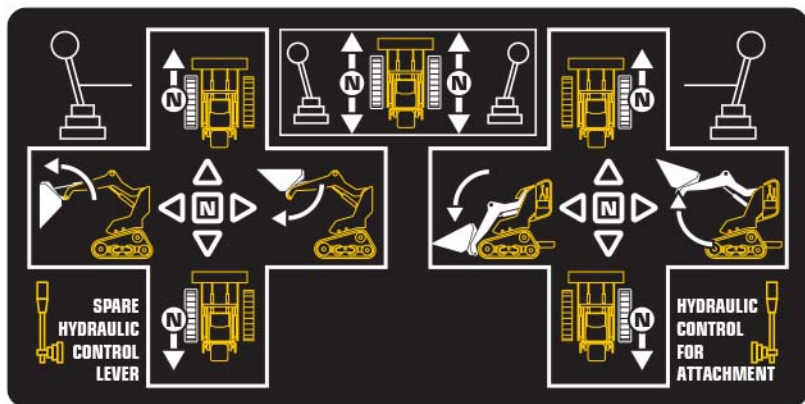
Manual tube



Top hydraulic oil level sight glass



Front hydraulic oil level sight glass



Left Drive Lever:

Forward - Backward movement controls the Forward or Reverse of the left track.

Left - Right movement tilts the attachment Downward or Upward.

Right Drive Lever:

Forward - Backward movement controls the Forward or Reverse of the right track.

Left - Right movement lower or raise the lifting arm.

Pushing both drive levers forward moves the machine forward, and vice-versa. Only operate one side drive lever to change the direction when the machine is stationary or travelling; operate the left and right drive lever in opposite directions to achieve left and right spin turn.

Hydraulic Control Lever for Attachment: Control the auxiliary hydraulics in different positions.

SAFETY

General Safety Rules

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully.

⚠ 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.*

⚠ IMPORTANT *Indicates that equipment or property damage could result if instructions are not followed.*

💡 NOTE *Gives helpful information.*

Understand your machine

1. Read and understand the operator's manual and labels affixed to the machine. Learn its application and limitation as well as the specific potential hazards peculiar to it.
2. Be thoroughly familiar with the controls and their proper operation.
3. Make sure to read and understand all the instructions and safety precautions as outlined in the Engine Manufacturer's Manual.
4. Do not allow other persons to use the machine before having informed him on the exact operation and work instructions, and be assured that the operator's manual has been read and understood.

Work Area

5. Check the surroundings carefully before using the machine or when attachments

are being attached. It is not applicable to operate in severe conditions (e.g. extreme climates, hazardous environments), where special precautions can be necessary.

6. The machine is not intended to be used in a contaminated environment.
7. Neither the machine as a whole nor its internal components are intended for use in potential explosive atmospheres.
8. During the machine use, do not allow any persons within the working range.

Personal safety

9. Do not use the machine under the influence of alcohol, medication or other substances. Fatigue is also dangerous.
10. Do not wear baggy, torn or too large clothing when working with the machine. Clothing can get caught in rotating parts or control elements which can cause accidents or injuries. Wear adequate safety clothing, e.g. safety helmet, safety shoes, eye protection, ear protection, working gloves, etc., as necessary and as prescribed by laws or statutes.
11. Do not allow passengers to get on any part of the machine during operation.

12. Keep your hands and feet away from the moving components and attachments.

Machine use and care

13. Check the mechanical parts for correct adjustments and wear. Exchange worn or damaged parts immediately. Check nuts and bolts regularly for tight fitment.
14. Before starting the machine, be absolutely sure that it has been filled with fuel, lubricated, greased and undergone other maintenance work.
15. Do not modify the machine; otherwise it could lead to unforeseen safety problems.

Safety for Children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attached to machines and the work they do.

16. Never assume that children will remain where you last saw them.
17. Keep children out of the work area and under the watchful eye of another responsible adult.
18. Be alert and shut your machine down if children enter the work area.
19. Never carry children on your machine. There is no safe place for them to ride. They may all off and be run over or interfere with your control of the machine.
20. Never allow children to operate the machine even under adult supervision.
21. Never allow children to play on the machine or on the attachment.
22. Use extra caution when backing up, look behind and down-make sure area is clear before moving.
23. When parking your machine if at all possible park on a firm, flat and level surface. Lower the attachments to the ground, remove the key from the ignition and chock the crawlers.

Specific Safety Rules

Before Operation

1. Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Use only accessories and attachments approved by the manufacturer.
2. Prepare the work site properly. Avoid operating near structures or objects that could fall onto the machine. Clear away the debris that could move unexpectedly if run over.
3. Keep bystanders away from the raised booms, attachments and unsupported load. Use barricades or a signal person to keep vehicles and pedestrians away. Coordinate hand signals before starting machine.
4. Avoid boom or arm contact with overhead power lines or other obstacles. Check for hidden holes, hindrances, soft ground and overhangs.
5. Avoid contact with gas lines, buried cables and water lines while using the machine with digger.



DANGER

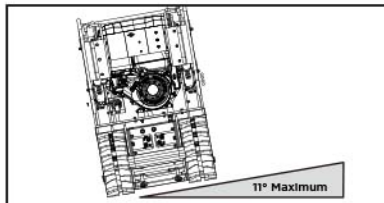
There may be buried utility lines in the work area. Digging into them may cause a shock or an explosion. Have the property or work area marked for buried lines and do not dig in marked areas. Contact your local marking service or utility company to have the property marked.

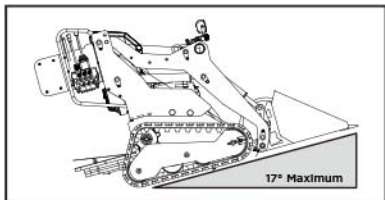
6. Keep your machine clean. Heavy soiling, grease, dust and grass can inflame and cause accidents or injuries.

Safe Operation

1. Be sure all drives are in neutral before starting the engine. Only start the engine from the operators' position.
2. Never operate with guards not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
3. Do not exceed the rated operating capacity, as the machine may become unstable, which may result in loss of control.
4. Do not carry a load with the arms raised; always carry loads close to the ground.
5. Always tie down equipment and properly stow accessories, even if traveling short distances.
6. Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. Operating the machine on any slope, hillsides or uneven terrain requires extra caution. It is essential to respect the following safety instructions:
 - Take into account the inclination of the machine along all axes.

Maximum lateral inclination: 11°
Maximum longitudinal inclination: 17°





- Operate the machine up and down slopes with heavy end of machine uphill and the load close to the ground. Weight distribution changes with the attachments. An empty bucket makes the rear of the machine the heavy end, and a full bucket makes the front of the machine the heavy end. Most other attachments make the front of the machine the heavy end.
 - Raising the loader arms on a slope will affect the stability of the machine. Whenever possible, keep the loader arms in the lowered position when on slopes.
 - Removing an attachment on a slope will make the rear of the traction unit heavy.
 - Keep all movements on slopes slow and gradual. Do not make sudden changes in speed or direction.
 - Avoid starting or stopping on a slope. If the traction unit loses traction, proceed slowly, straight down the slope.
 - Avoid turning on slopes. If you must turn, turn slowly and keep the heavy end of the traction unit uphill.
 - Do not park the traction unit on a hillside or slope without lowering the attachment to the ground and chocking the tracks.
7. The rubber tracks fitted to the machine allow for many modes of movement. It's important to not the following points, in order to avoid premature wear of the rubber tracks.
- Traveling or a U-turn on sharp-edged objects or on stair treads causes extreme stress on the tracks which can break the track or produce notches on the running surface.
 - Make sure that no foreign objects get caught in the rubber track. Foreign bodies put the tracks under extreme stresses and can cause them to crack.
- Avoid getting fuel or oil on the rubber tracks. If fuel or oil has been spilled on the rubber track, it must be cleaned.
 - Avoid sharp turns on road surfaces with a high coefficient of friction, for example on concrete or asphalt pavements
8. Do not operate near drop-offs, ditches, or embankments. The traction unit could suddenly turnover if a track goes over the edge of a cliff or ditch, or if an edge caves in.
9. Do not operate on wet grass. Reduced traction could cause sliding.
10. Watch out at all times where the machine is being moved to. Keep an eye out for hindrances.
11. Get on and off the safely and use the handrails to keep yourself well balanced. Do not jump on or off the machine, whether stationary or in motion.

After Operation

Before leaving the machine,

- Bring the machine to hard even ground.
- Lower attachments on the ground.
- Disengage the auxiliary hydraulics.
- Stop the engine and remove the key.

Maintenance

Before doing maintenance work on the skid steer, place the machine on even solid ground, lower the attachments on the ground and stop the engine.



If you need to work under raised lift arms, shut off the engine and lock the cylinder by safety pin to prevent it falling.



WARNING

Crushing weight could result in death or serious injury.

Start maintenance work carefully, e.g. loosen screws slowly so that oil will not squirt out.

1. Before doing work on the engine, the exhaust system, the heat protection shield and the hydraulics, let the skid steer cool down

sufficiently.

2. Turn off the engine at all times when filling with fuel. Avoid spilling and overfilling of fuel.
3. Smoking is prohibited while fuelling and handling the battery! Keep sparks and fire away from the fuel tank and battery. Flammable gases escape from the battery.
4. When the battery is dead, it can be started by pull the recoil starter.
5. To avoid short-circuiting the battery, always remove the earth cable first and attach the plus cable first.
6. Keep a first-aid box and a fire extinguisher at hand at all times.
7. Leaking hydraulic fluid has enough pressure to penetrate the skin and cause serious injuries. Leakages from pin holes can be totally invisible. Do not use the bare hand for checking on possible leakages. Always use a piece of wood or cardboard. It is strongly recommended you use a face mask or eye protection.
8. To avoid leakage of battery acid which contains heavy metals, do not throw the battery away.
9. Observe all laws and regulations concerning the disposal of used oil, coolants, solvents, hydraulic fluids, battery acids and batteries.
10. To avoid fire, do not heat the hydraulic components (tanks, pipes, hoses, cylinders) before they have been drained and washed.
11. Use a face mask or eye protection to protect the eyes and respiratory system against dust and other foreign particles.
12. Use no parts which are lined with asbestos. Do not use these kinds of parts even if they can be installed.
13. Water can damage electronics. When cleaning equipment, do not spray electrical components with water.
14. Fire prevention

Skid steer and some attachments have components that are at high temperatures under normal operating conditions. The primary source of high temperatures is the engine and exhaust system. The electrical system, if damaged or incorrectly maintained,

can be a source of arcing or sparks.

The following fire prevention guidelines will help to keep your equipment up and running efficiently and keep the risk of fire to a minimum.

- Blow off all accumulated debris near hot engine exhaust components such as cylinder head of gasoline engine and exhaust manifold as well as exhaust pipes and muffler more frequently when working in severe conditions.
- Clean out all accumulated flammable debris such as leaves, straw, pine needles, branches, bark, small wood chips and any other combustible materials from inside the machine belly pans or lower unit structures as well as from area in proximity to the engine.
- Inspect all fuel lines and hydraulic hoses for wear or for deterioration. Replace them immediately if they begin to leak.
- Examine electrical wiring and connectors frequently for damage. Repair any wires that are loose or frayed before operating the machine. Clean all electrical connections and tighten all electrical connections as necessary.
- Inspect the exhaust system daily for any signs of leakage. Check for broken pipes and muffler and also for loose or missing bolts, nuts and clamps. If any exhaust leaks or fractured parts are found, repairs must be completed prior to operation.
- Always keep a multipurpose fire extinguisher on or near the machine. Be familiar with the operation of the fire extinguisher.

Hydraulic Hazard

1. If oil gets into the eyes, rinse them immediately with pure water, then consult a doctor immediately.
2. Skin and clothing must not come into contact with hydraulic oil. Parts of the skin which has entered in contact with hydraulic oil should be - if possible, immediately - washed thoroughly both with soap and water, otherwise the oil may irritate the skin and cause dermatosis; If hydraulic oil is splashed or spilled on clothing, change immediately.

3. If a person has inhaled hydraulic oil fumes (mist), seek medical advice immediately. In the event of a leak in the hydraulic system, do not start or stop the machine immediately.
4. Do not search for oil leaks with your bare hands, and in general without having coated the equipment with adequate personal protection (work clothes, glasses and gloves).



The hydraulic oil, during work of the machine, rises in temperature. The risk of burns must be taken into account.

Emergency Procedures

⚠ WARNING *Warning Underground utilities. Contact can cause death or serious injury. Locate and verify underground utilities before digging or drilling.*



Before operating any equipment, review emergency procedures and check that all safety precautions have been taken.

EMERGENCY SHUTDOWN: Shut off machine.

Electric Strike Description

When working near electric cables, remember the following:

- Electricity follows all paths to ground, not just path of least resistance.
- Pipes, hoses, and cables will conduct electricity back to all equipment.
- Low voltage current can injure or kill. Many work-related electrocutions result from contact with less than 440 volts.

Most electric strikes are not noticeable, but indications of a strike include:

- power outage
- smoke
- explosion
- popping noises
- arcing electricity

If any of these occur, assume an electric strike has occurred.

If an Electric Line is Damaged

If you suspect an electric line has been damaged, DO NOT MOVE. Take the following actions. The order and degree of action will

depend on the situation.

- If you are on the machine, REMAIN ON MACHINE. Raise attachments and drive from immediate area.
- If you are off the machine,
- DO NOT TOUCH ANY EQUIPMENT.
- If you must leave the area, take small steps with feet close together to reduce the hazard of being shocked from one foot to the other.
- Warn people nearby that an electric strike has occurred. Instruct them to leave the area.
- Have someone contact electric company to shut off power.
- If you leave the area, do not return to jobsite or allow anyone into area until given permission by utility company.

If a Gas Line is Damaged

If you suspect a gas line has been damaged, take the following actions. The order and degree of action will depend on the situation.

- Immediately shut off engine(s), if this can be done safely and quickly.
- Remove any ignition source(s), if this can be done safely and quickly.
- Warn others that a gas line has been cut and that they should leave the area.
- After warning others to leave the area, leave jobsite as quickly as possible.
- Immediately call your local emergency phone number and utility company.
- If jobsite is along street, stop traffic from driving near jobsite.
- Do not return to jobsite until given permission by emergency personnel and utility company.

If a Fiber Optic Cable is Damaged

Do not look into cut ends of fiber optic or unidentified cable. Vision damage can occur. Contact utility company.

If Machine Catches on Fire

Perform emergency shutdown procedure and then take the following actions. The order and degree of action will depend on the situation.

- Immediately move battery disconnect switch (if equipped and accessible) to disconnect position.

- If fire is small and fire extinguisher is available, attempt to extinguish fire.
- If fire cannot be extinguished, leave area as quickly as possible and contact emergency personnel.

Safely Loading, Unloading or Lifting the Machine

⚠ WARNING *Loading or unloading a machine onto a trailer or truck increases the possibility of tip-over and could cause serious injury or death.*

- *Use extreme caution when operating a machine on a ramp.*
- *Lower the loader arms all the way down.*
- *Load or unload the machine with the heavy load end up the ramp.*
- *Avoid sudden acceleration or deceleration while driving the machine on a ramp as this could cause a loss of control or a tip-over situation.*

1. Observe all regulations concerning the transport of skid steers on public roads.
2. Use adequately long and robust ramps when loading on a truck.
3. Do not change the running direction and to avoid a tipping over. Do not try to swing attachment crosswise to the loading ramps.
4. After loading the skid steer on a truck, shut off the engine, and remove the key. Use the metal tie-down loops on the machine to securely fasten the machine to the trailer or truck with straps, chains, cable, ropes. Refer to local regulations for tie-down requirements.
5. You can also lift the machine onto the truck.
 - Remove any attachments and lift the machine using the 4 lift points.
 - Do not exceed a 20-degree angle when lifting the machine.

Noise and Vibration Emissions

The values indicated in this user manual were recorded during a test cycle carried out on an identical machine. They are valid for a machine with standard equipment. Values recorded are indicated in the technical characteristics.

Noise emission:

The noise emissions were observed according to the method defined by the ISO4871 standard for the determination of the guaranteed sound pressure level, based on Directive 2000/14/EC, Annex VI. However, the values given for noise emissions do not apply for the determination of noise emissions that occur at workstations.



Machine noise value conforms to the requirement of DIRECTIVE 2000/14/EC, declaring machine sound power level LwA: 101dB(A)

Vibrations:

The vibrations of the machine were observed on an identical machine. Exposure of the operator to vibrations for an extended period should be evaluated by the operator at the workplaces, in accordance with Directive 2002/44/EC, so that individual factors are taken into account.

Whole body vibration measured data (a_{wz}): 0.40 m/s²

Arm vibration measured data (a_{hy}): 2.38 m/s²

DEALER SERVICE

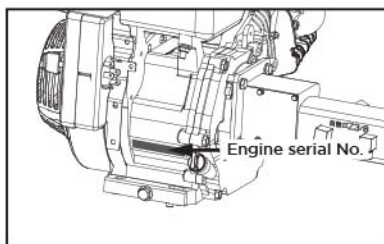
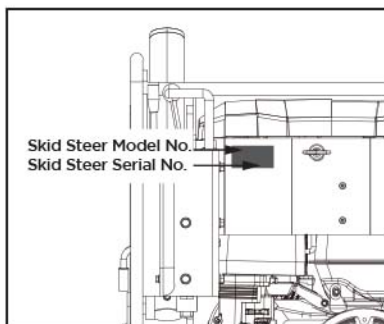
Your dealer is always ready to help so that your skid steer offers the best performance. After having carefully read this manual, you will realize that much of the routine maintenance can be done by yourself. Your dealer is responsible for servicing and the delivery of spare parts. When ordering spare parts from your dealer, always mention the serial number of the machine and the engine.

Note these numbers right away in the supplied lines.

Skid Steer Model No. _____

Skid Steer Serial No. _____

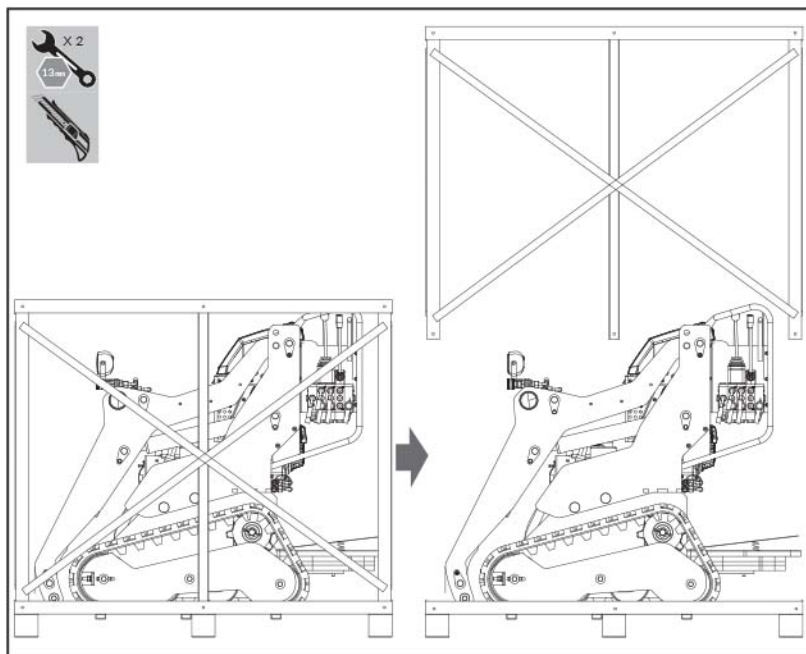
Engine Serial No. _____



UNPACKING THE CONTAINER

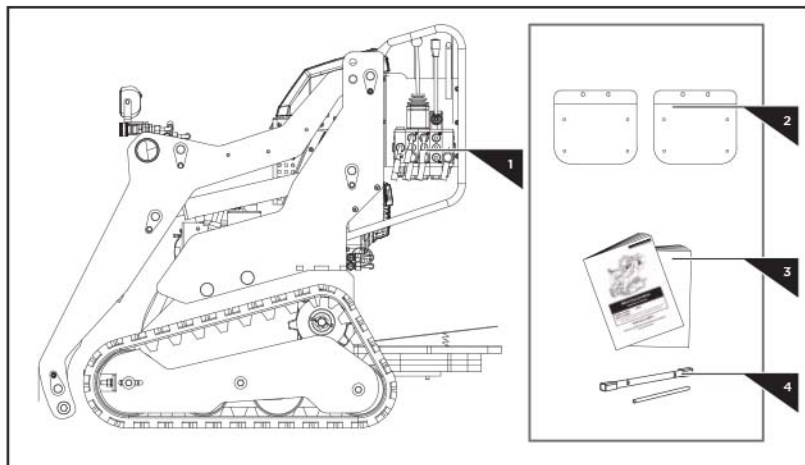
GB

Remove the M8 fixing bolts of the iron frame and take off the iron frame. Cut and remove the straps securing the machine and lift the machine down.



CONTENTS SUPPLIED

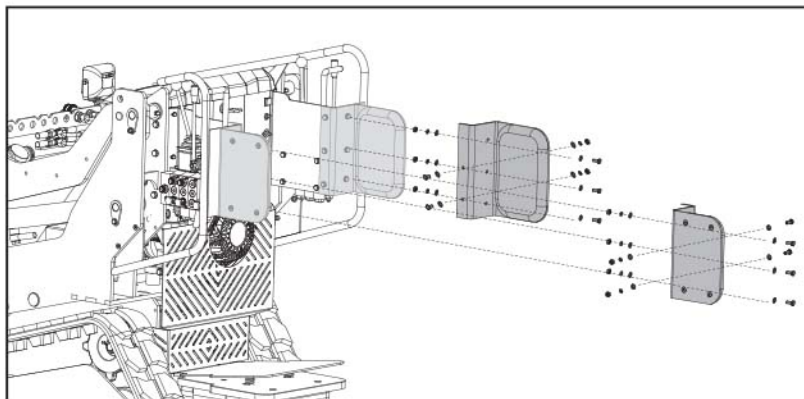
The skid steer comes mostly assembled and is shipped in carefully packed package. After all the parts have been removed from the package, you should have:



1. Skid Steer
2. Leg Rest Plates
3. Operator's Manual & Engine Manual
4. Tools for Spark Plug Assembly

ASSEMBLY

Assembly of Skid Steer



Attach the leg rest plates to the side brackets, align the holes and fix them with M8x25 bolts, washers and nuts.

Assembly of Attachments

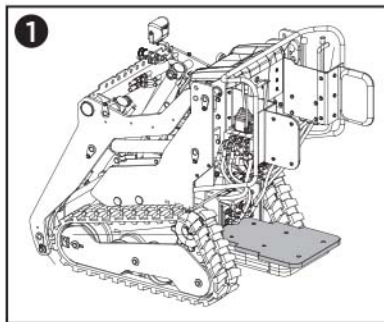
NOTE Use only approved attachments. Attachments can change the stability and operating characteristics of the machine.

IMPORTANT Before connecting attachments to machine, ensure the attachments and the mounting bracket are free of dirt and debris.

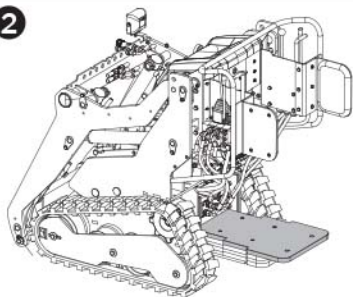
Refer to **ATTACHMENTS (SOLD SEPARATELY)** for detailed assembly instruction.

Adjustment of Driving Platform

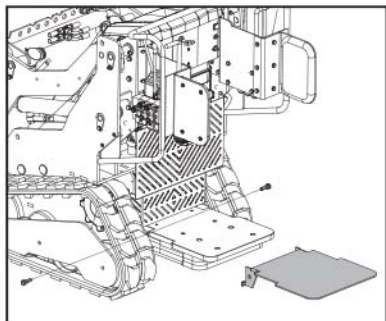
To ensure comfortable operation, the top plate of the driving platform was designed with 2 optional fixing positions.



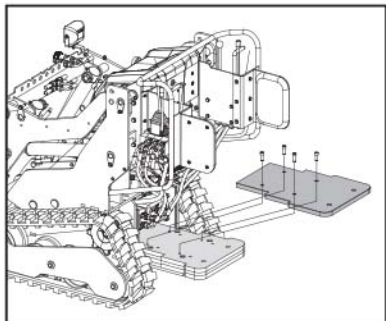
2



The top plate was fixed at position 1 in production. Before adjusting it, unscrew the bolts and remove the pedal for foot switch.



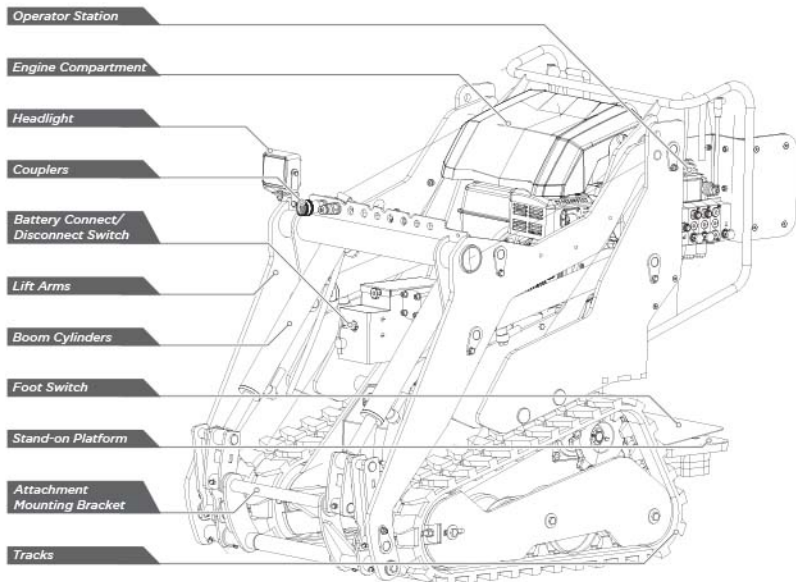
Demount the top plate and secure it at the required position with bolts.



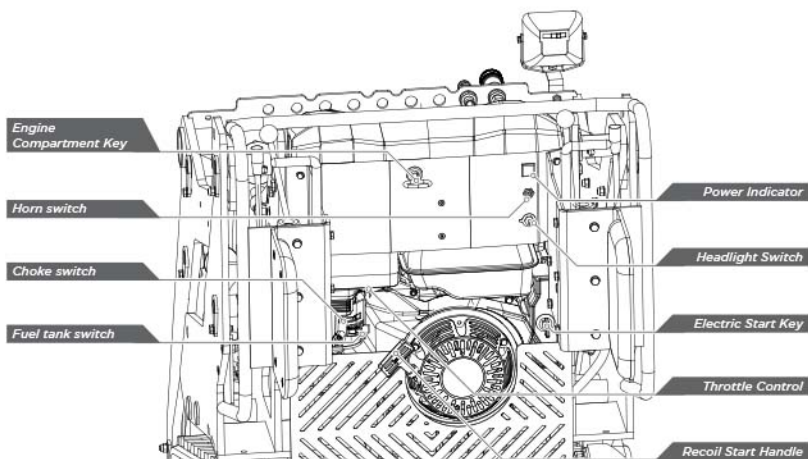
Place the pedal on top, align the holes on both sides and secure with the bolts.

DESCRIPTION OF MACHINE COMPONENTS

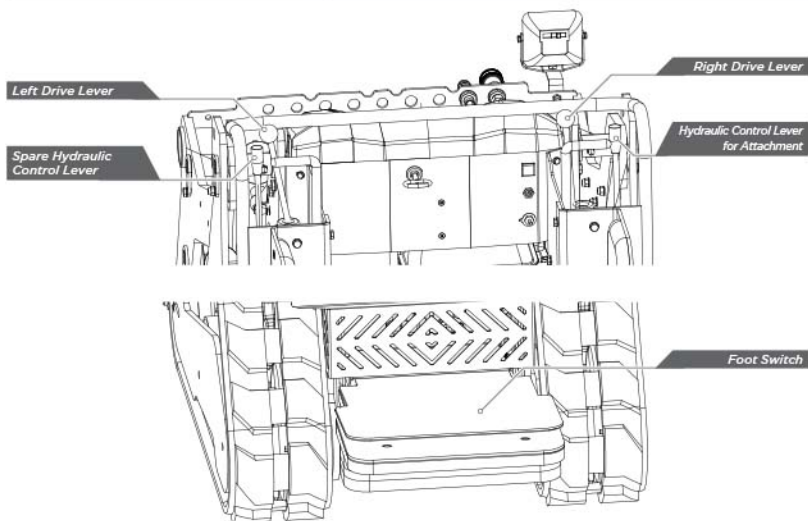
GB



Gauges and Indicators



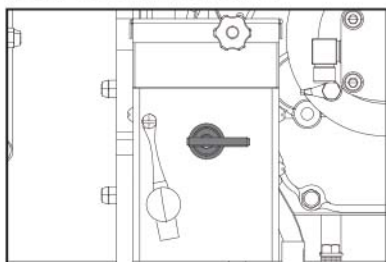
Operator Station



OPERATION

GB

Battery Connect and Disconnect



To connect, move to vertical position.

To disconnect, move to horizontal position.

NOTE Do not disconnect with engine running.

To avoid equipment damage, wait two minutes after turning engine off before disconnecting battery.

Start

Emergency Shutdown: Shut off machine.

WARNING Misuse of machine can cause death or serious injury. Read and understand the operator's manual and all other safety instructions before use. Know how to use all the controls. Before starting the engine, sound the horn to get the attention of persons standby.

To avoid injury:

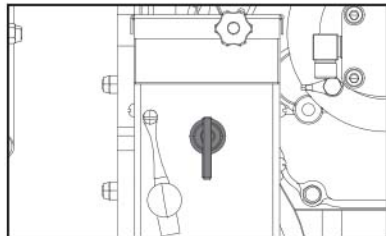
- Allow hydraulic fluid time to warm before operating in cold weather. Cold hydraulic fluid can lengthen ground drive stopping time.
- For starting in extreme temperatures, contact your dealer.

WARNING Never use pre-heater or starter fluid ! Fire or explosion can cause death or serious injury.

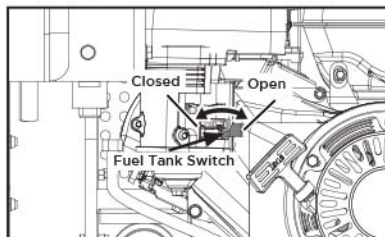
NOTE If engine turns but does not start within 10 seconds, allow starter to cool. Wait at least 30 seconds and try again.

Before Start

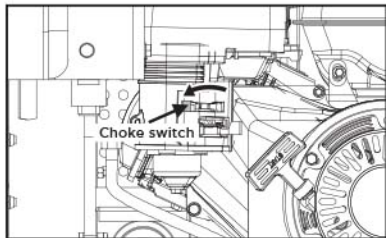
1. Make sure the battery is connected. Connect battery before first start.



2. Make sure that the fuel tank switch is at the "Open" position.

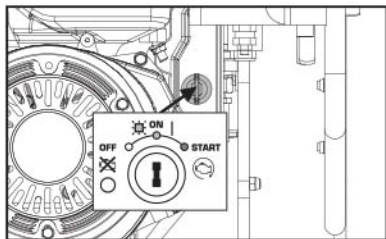


3. Ensure all the control levers are in neutral positions.
4. Pull the choke switch to the left end. No need to operate the choke switch for a hot start.



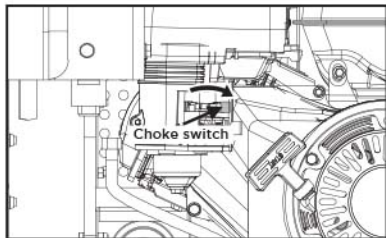
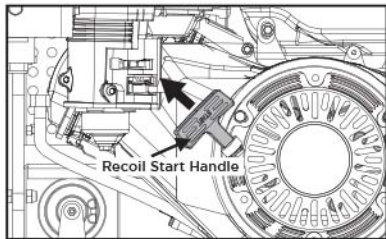
Electric Start

1. Insert the key into the starter and turn it clockwise to position "ON" to connect the circuit. The power indicator will light up. The horn can be sounded and the headlight can be turned on.
2. Continue to rotate the key clockwise to position "START" to start the engine. All the control levers will be activated.



Recoil Start

1. Make sure the electric start switch is at position "ON".
2. Pull the recoil starter handle firmly to the upper left. When the engine starts, pull the choke switch back to the right end.

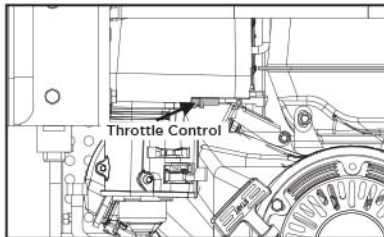


If starting machine in cold weather,

- (1) Start engine.
- (2) Warm engine and hydraulic fluid by gradually increasing engine speed for up to 30 minutes.
- (3) After warm up, carefully operate all hydraulic controls at low throttle until controls operate.

Throttle Control

Push the throttle lever to the left to increase the throttle, and pull it to the right to decrease the throttle of the gasoline engine.



Prepare

After the gasoline engine is started, the machine's hydraulic system will run. It is recommended to warm up the car for 1 minute before operating the machine.

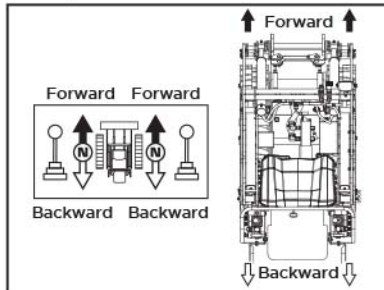
Stand on the driving platform and hold the left and right operating levers with both hands.

Steer

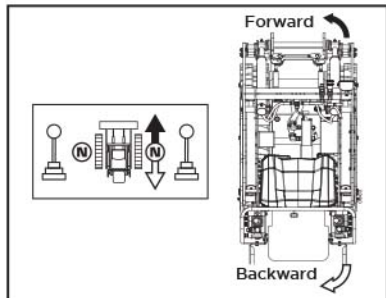
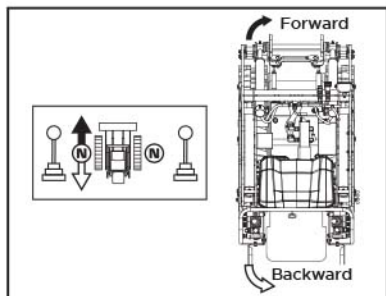
Forward-backward movement of left drive lever controls forward or reverse of the left track.

Forward-backward movement of right drive lever controls forward or reverse of the right track.

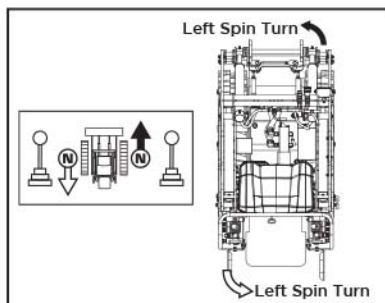
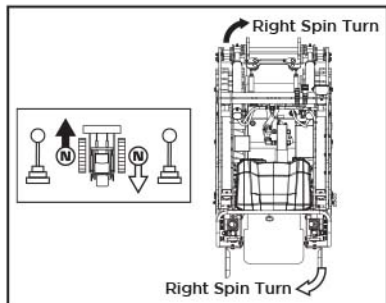
To drive forward, push both drive levers; to reverse, pull both drive levers backward.



To steer when the machine is stationary or moving, only operate one side drive lever to change the direction.



To achieve left and right spin turn, operate the left and right drive levers in opposition directions.

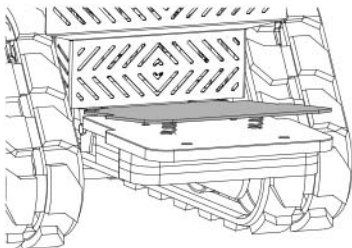


NOTE

Drive carefully in congested areas. Know machine's clearance and turning radius.

Foot Switch

The Foot Switch is a micro switch with spring loaded lever mechanism, fitted under the pedal for safety reasons. It is designed to cut the power to the engine when the operator gets off the driving platform. Therefore, the machine can only be operated while standing on the pedal.



Operate

1. Operate the attachments.

(1) Move the left drive lever to the left or right to tilt the attachment downward or upward.



(2) Move the right drive lever to the left or right to lower or raise the lifting arm.



(3) Control the auxiliary hydraulics in different positions by the hydraulic control lever for attachment. Move the lever to the left or right to open or close the attachments like grapples and buckets, or to tilt the attachments to the left or right side, or to rotate the auger counterclockwise or clockwise.

2. Drive machine and adjust throttle as needed.

Reduce Track Wear

Rubber tracks are best suited at soil-based jobsites with minimal rocks and debris. To reduce track wear, drive slowly and make wide turns. Avoid the following:

- Spinning tracks under heavy load
- Turning on sharp objects such as stones, broken concrete, or debris
- Quick turns on asphalt or concrete
- Driving over curbs or ledges
- Driving with track edges pressed against hard walls or curbs
- Operating on corrosive materials such as salt or fertilizer

Shut Down

1. When job is complete, move machine to level ground.
2. Stop machine movement.
3. Lower lift arms to ground.

4. Return all controls to neutral.
5. Run engine at low throttle with no load for at least five minutes to cool.
6. To stop the engine, turn the key to the "OFF" position.
7. If leaving machine unattended, remove key.
8. For maintenance or long-term storage, disconnect battery using battery disconnect switch.



NOTE

Wait two minutes after shutting off machine before disconnecting battery.

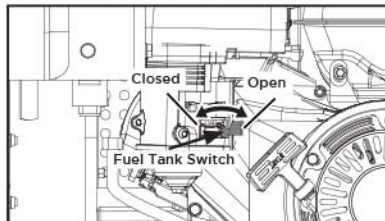
Stop fuel tank switch



CAUTION

In the case of an emergency, or should the engine in idle position and key in the off position, still run, do like as below.

Open the engine hood and push the stop lever back and hold until the engine stops.



IMPORTANT

If the engine does not stop with the key, contact your dealer.

TRANSPORT

Lift



WARNING



Lifted load. Crushing weight can cause death or serious injury. Stay away from lifted load in its range of movement.

To avoid injury: Only lift unit without attachment installed.

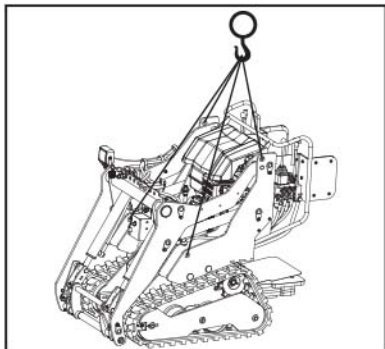
Lifting Points



Lifting points are identified by lifting decals. Lifting at other points is unsafe and can damage machinery.

Lifting Procedure

Use equipment capable of supporting the machine's size and weight to lift as shown.



Haul

WARNING Read trailer operator's manual before loading or transporting machine.



• Ensure tow vehicle has proper tow capacity rating.

• Attach trailer to vehicle before loading or unloading.

• Load and unload trailer on level ground.

• To help prevent trailer sway, load trailer so that 10-15 percent of total vehicle weight (equipment plus trailer) is on tongue.

• If loading onto tilt-bed trailer, be prepared for trailer to tilt.

Inspect Trailer

- Check hitch for wear and cracks.
- Check battery for 12V charge.
- Inspect lights for cleanliness and correct operation.
- Inspect reflectors and replace if needed.
- Check tire pressure.
- Check lug nut torque.
- Ensure trailer brakes are adjusted to come on with tow vehicle brakes.
- Check trailer bed for cracks.

Load

WARNING Horizontal movement. Crushing can cause death or serious injury.



Read and understand operator's manual and all safety instructions before use.

To avoid injury: Start and operate only from platform.

1. Start engine.
2. Set to low throttle.
3. Raise attachment clear of trailer, but keep it low.
4. Move machine to rear of trailer and align with ramps.
5. Drive forward slowly to move machine onto trailer until tie down position is reached.
7. Lower attachment to trailer bed.
8. Ensure all controls are in neutral position.
9. Shut off machine.
10. Tie down machine.

Tie Down

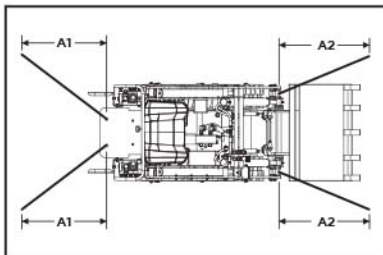


(1) Points

Tie down points are identified by tie down decals. Securing to truck or trailer at other points is unsafe and can damage machinery.

(2) Procedure

Loop a transport chain around each tie down point. See chart below for correct distances between tie down ends. Ensure tie downs are tight before transporting.



Distance	US	Metric
A1	8-30 in	20-76 cm
A2	12-40 in	30-102 cm

Unload

- Prepare trailer and ramps for unloading.
- Remove tie downs.
- Start engine.
- Raise attachment clear of trailer, but keep it low.
- Adjust to low throttle and slowly back machine down trailer or ramps.

MAINTENANCE

MAINTENANCE PRECAUTIONS

⚠ WARNING *Jobsite hazards. Exposure can cause death or serious injury. Use correct equipment and work methods. Use and maintain appropriate safety equipment.*

Misuse of machine can cause death or serious injury. Read and understand operator's manual and all other safety instructions before use. Know how to use all controls.

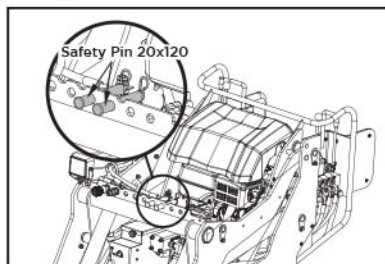
Working under Raised Lift Arms

⚠ WARNING *Raised component. Crushing can cause death or serious injury. Stay away or secure raised component with locking device, use correct equipment and procedures.*

When working under raised lift arms, shut off the engine and lock the cylinder by safety pins on both sides to prevent it falling as shown in the figure. Crushing weight could result in death or serious injury.



The safety pins are fixed at the position as shown in the figure below.



RECOMMENDED FUEL, OIL & GREASE

Recommended Fuel

Use unleaded gasoline with a pump octane rating of 86 or higher. These engines operate best on unleaded gasoline.

Do NOT use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank. Use only proper fuel containers that are properly marked.

Maximum recommended ethanol content: 10%.

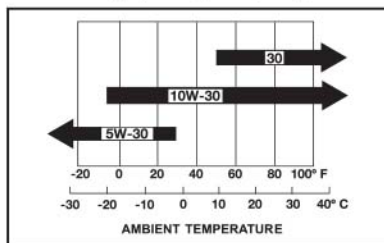
This is not compatible with E15.

Recommended Engine Oil

Engine oil affects performance and service life. Use 4-stroke automotive detergent oil.

SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area warrants.

The SAE oil viscosity and service classification are in the API label on the oil container. Use API SERVICE category SJ engine oil, or higher.



Recommended Hydraulic Oil

⚠ IMPORTANT *Before delivery, the hydraulic oil used was an ISO 32 viscosity grade.*

The recommended hydraulic oil type:

10W AW32

ASLE H-150

ISO 32

Recommended Grease

Application	Shell	Mobil	Exxon
Grease	Shell Alvania EP2	Mobilux EP2	BEACON Q2

MAINTENANCE INTERVALS

! IMPORTANT Chart indicates first instance of repeated maintenance procedures. See detailed information below.

No.	Check points	Intervals	Hour meter indicator																Consequently	Ref. page
			50	100	150	200	250	300	350	400	450	500	550	600	1000	2000				
1.	Fuel	Check	Daily check																	26
2.	Engine oil	Check	Daily check																	27
		Change	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hrs	27
3.	Hydraulic oil	Check	Daily check																	28
		Change														○	○	every 1000 hrs	28	
4.	Hydraulic suction filter element	Change														○	○	every 1000 hrs	28	
5.	Lubrication points	Check	Daily check																	29
6.	Electrical lines	Check	Daily check																	30
7.	The Whole Machine	Clean	Daily check																	30
8.	Battery condition	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hrs	30
9.	Air Cylinder / Cooling fin	Clean	Daily check																	31
10.	*Air filter element	Clean	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hrs	31
		Change				○				○					○	○	○	every 200 hrs	32	
11.	Fuel pipes and hoses	Check				○				○					○	○	○	every 200 hrs	32	
		Change																every 2 years	32	
12.	Hydraulic Hoses	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hrs	33
13.	Spark Plug	Check	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	every 50 hrs	33
		Change				○				○					○	○	○	every 200 hrs	33	
14.	Track Adjustment	Check	First check: 10 hrs																every 50 hrs	34

* Clean the air filter more frequently if used in dusty conditions.

FUEL

Check Fuel Level

CAUTION Stop the engine before fuelling.

CAUTION Do not smoke while fuelling.

1. Check the fuel level in fuel tank before startup.
2. Open the tank cap, and fill with fuel.

IMPORTANT Use unleaded gasoline with a pump octane rating of 86 or higher.

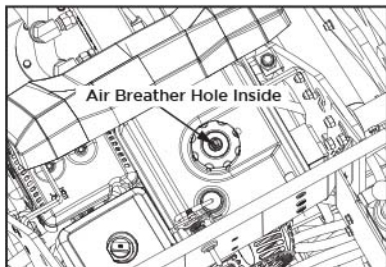


Fuel tank capacity	6L
---------------------------	----

IMPORTANT Always fill up fuel after a day's work.

IMPORTANT Fuel tank cap has an air breather hole inside. Make sure to clean the air breather when filling up with fuel.

If the air breather is clogged with mud, the fuel tank becomes under-pressurized.

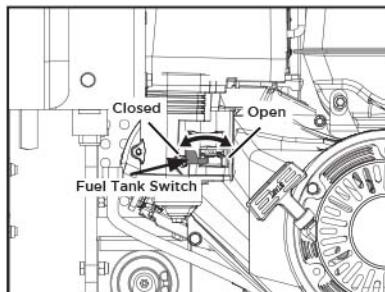


Drain the Water or Air from the Fuel Tank

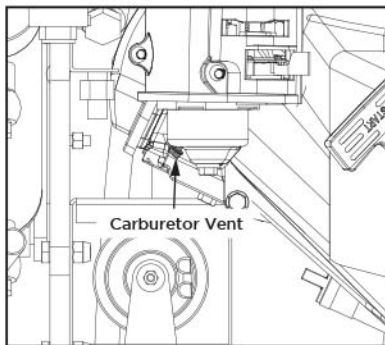
DANGER When draining water or air from the fuel, always keep away from flames.

If the gasoline engine is not used for a long time, the problem that the engine cannot be started may occur when the engine is just started. The following operations are required:

1. Close the fuel tank switch.



2. Unscrew the bolt at the carburetor vent port to drain the water or gas from the fuel.
3. Close the bolt at the carburetor vent.
4. Turn on the fuel tank switch.
5. Start the engine.



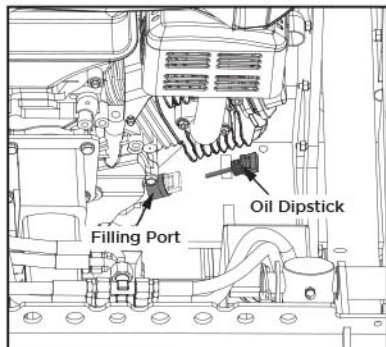
ENGINE OIL

⚠ CAUTION Stop the engine before checking the oil level.

Check before startup and every 10 hours. Change at 50 hours and every 100 hours thereafter.

Check Engine Oil Level

Insert the oil dipstick fully into the prepared opening, remove again and check the oil level; if necessary fill with oil. The machine must be on level ground when checking the oil level.



⚠ IMPORTANT Use engine oil with the correct viscosity. (According to the outside temperature)

⚠ IMPORTANT After stopping the engine, wait five minutes, then check oil level. (Skid steer must be on level ground)

Change Engine Oil

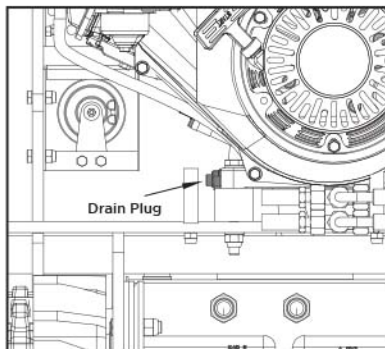
⚠ CAUTION First stop the engine and wait long enough for the oil to cool down.

1. Remove the drain plug on the underside of the engine and drain all oil.

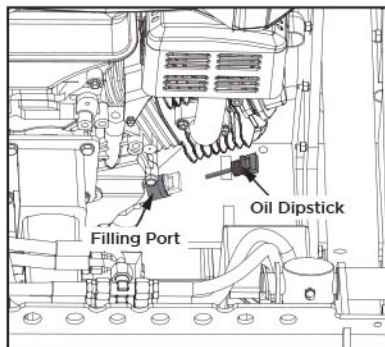
⚠ IMPORTANT Place a suitable container below the engine to catch the used oil. Dispose of used engine oil

according to local laws. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation.

2. Re-tighten the drain plug.



3. Fill with new oil up to the required level.



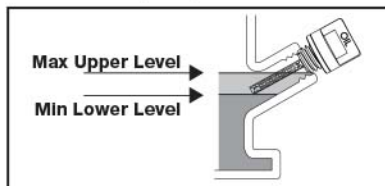
4. Let the engine idle for approx. 5min. Check the engine oil level. To check the engine oil level, insert the oil gauge completely into respective port opening and pull out again. If the oil level lies between both markings, no oil must be added.

⚠ IMPORTANT Regardless of the service hours, an engine oil change is due every 1 year.

Engine oil volumes	1.1 L
--------------------	-------

Engine Oil Capacities:

306cc - 37.2 oz (1.1 liter)



Note: Total oil capacity could be as much as 4 additional ounces over volumes above due to engine mounting angle and proper draining.

NOTE Running the engine with a low oil level can cause engine damage.

HYDRAULIC OIL

Check before startup. Change every 1000 hours.

Check Hydraulic Oil Level

CAUTION First lower the attachments on the ground and then stop the engine.

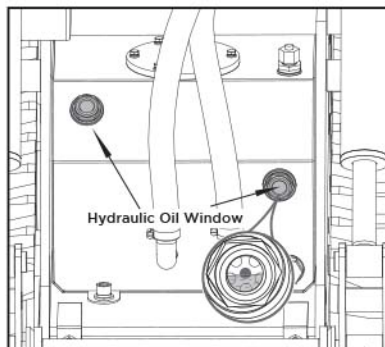
IMPORTANT Before filling with oil, wipe away all sand and dust from around the oil port. Make sure you use an identical type of hydraulic fluid.

IMPORTANT The skid steer has been filled with hydraulic fluid before delivery. See "Recommended Oils". Do not mix different makes.

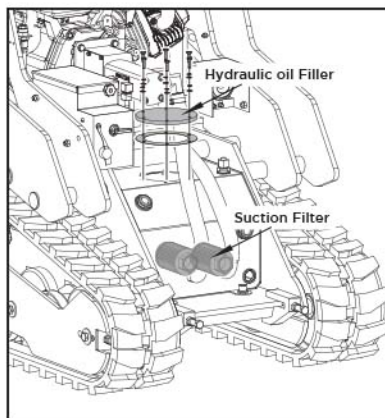
1. Move the skid steer on to level ground. Extend every cylinder rod up to its center position, place the attachment in contact with ground.
2. Check the oil level through the front sight glass under normal temperature 10 to 30 °C. Enough oil is present if the oil level lies above half.

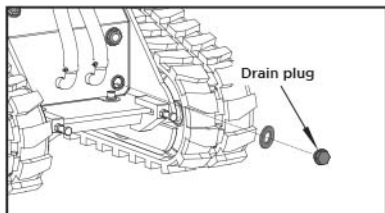
3. Should the oil level be too low, add enough oil through the oil port before starting the engine. This step is important for the protection of the hydraulic system.

IMPORTANT Observe the top sight glass while adding oil and stop it when it reaches the "FULL" position as shown in the label. Do not overfill!



Change Hydraulic Oil (Including Replacing of the Suction Filter in the Hydraulic Tank)





Hydraulic oil volumes	Hydraulic tank	30 L
	Whole oil volumes	29 L

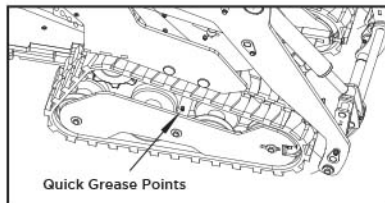
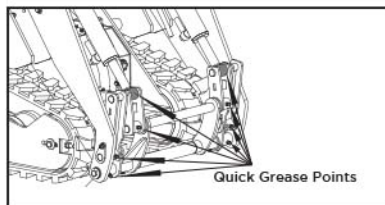
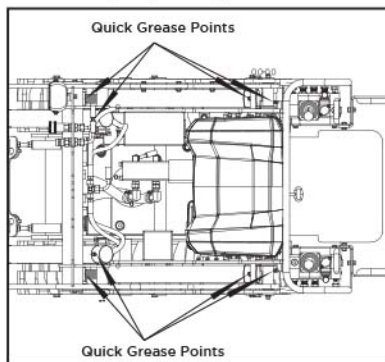
1. Changing and filling up of hydraulic oil
 - (1) Use only the recommended oils mentioned in the operator's manual when changing or topping up oil.
 - (2) When filling up oil, do not mix oils of different makes.
2. Changing the suction filter and oil
 - (1) The filter must be changed more often because of contamination resulting from the frequent assembly and disassembly of the hoses.
 - (2) Use the correct replacement filter.
 - (3) Oil change according to operating hours.

	Suction filter
Normal work	Every 1000 Hrs.

LUBRICATION

Proper lubrication and maintenance protects the skid steer from damage and failure. This skid steer has quick grease points (shown by narrow lines in the figures below), allowing lubrication for most movements. The lubrication of these pivot points must be carried out after each use or every 4 hours. Lubrication must be particularly generous on the end of the arm / loader and on the attachments, especially if they are in contact with manure or abrasive materials (sand, silica, etc.).

For more information on engine lubrication and maintenance, see your engine manual.



ELECTRICAL LINES

Cleaning of Engine and Electrical Wiring

⚠ CAUTION *Always stop the engine before cleaning the wiring, cables and engine.*

Before starting, check whether flammable substances have gathered on the battery, the cables and wiring, the muffler or on the engine. Remove thoroughly.

Checking the Electrical Circuit

Check the electrical circuit for disconnections, shorts or loose terminals daily.

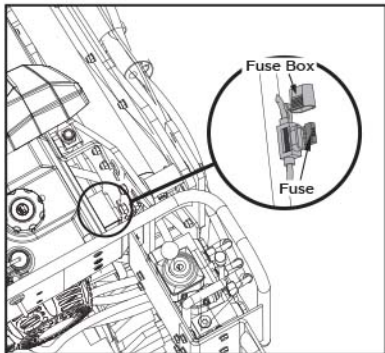
Electrical Wiring and Fuses

Check the terminals periodically for proper connections. Loose wiring or damaged cables can cause improper functioning of the electrical system. Short circuiting, electrical leaks and other expensive problems could arise. Check wiring and replace damaged components immediately.

Replacing Fuses

Slow blow fuse is provided to protect the electrical circuits. If the fusible link is blown, check the electrical circuits for problems and then replace with a new compatible slow blow fuse.

1. Remove the cover of the fuse box.
2. Replace the burn out fuse with the new fuse having the same capacity



If a fuse blows out soon after having been replaced, contact your nearest dealer. Never use a fuse other than specified.

Fuse Capacities and Circuits

No.	Capacity	Circuit
1.	10A	Working relay fuse
2.	10A	Headlight and horn fuse

THE WHOLE MACHINE

Clean the whole after a day's work.

⚠ IMPORTANT *Do not wash the skid steer with the engine running. Water could enter the air filter and damage the engine. Make sure that the air filter is kept dry.*

⚠ CAUTION *Water can damage electronics. When cleaning equipment, do not spray electrical components with water.*

BATTERY

⚠ NOTE *• Electronic components can be easily damaged by electrical surges. Jump starting can damage electronics and electrical systems, and is not recommended. Try to charge the battery instead. Use quality large diameter jumper cables capable of carrying high currents (400 amps or more). Low quality cables may not allow enough current flow to charge a dead/discharged battery.*

• Read all steps thoroughly and review illustration before performing procedure.

Check battery every 10 hours. Charge as needed.

Service

⚠ CAUTION *Batteries contain sulphuric acid which can cause severe burns. Avoid all contact with skin, eyes or clothing. Antidote - External: Rinse with plenty of water. Internal: Drink large quantities of water or milk. Call a physician*

immediately.

Eyes: Rinse with plenty of water for 15 minutes and get prompt medical attention.

Keep batteries out of the reach of children.

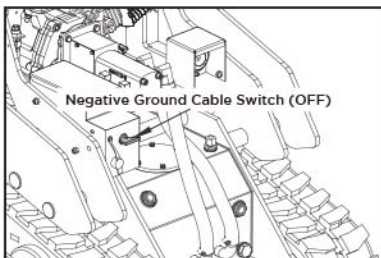
CAUTION Before inspection or dismantling the battery, be sure to turn off the engine and turn the starter switch to the "OFF" position.

CAUTION When removing the battery, always disconnect the negative ground cable first. The reverse when installing a battery, always connect the ground cable last. This prevents a possible explosion caused by sparks.

CAUTION Always wear eye protection when working with the battery.

1. Check whether the battery appearance is deformed.
2. If the battery is deformed, replace it.
3. Clean the battery cover (ventilation hole) without dust.
4. Check whether the battery terminal connection is loose. If it is loose, retighten it. Pay attention to tightening the positive screw, and make sure that the tool that used do not touch the cover.

WARNING Before tightening the positive screw, make sure to turn off the negative ground cable switch first.



Charge

CAUTION When the battery is being activated, hydrogen and oxygen gases in the battery are extremely explosive. Keep open sparks and flames away from the battery at all times, especially when charging the battery.

When disconnecting the cable from the battery, start with the negative terminal first.

When connecting the cable to the battery, start with the positive terminal first.

CAUTION Do not check battery charge by placing a metal object across the terminals.

1. To slow charge the battery, connect the battery positive terminal to the charge positive terminal and the negative to the negative, then recharge in the standard fashion.
2. A boost charge is only for emergencies. It will partially charge the battery at a high rate and in a short time.
When using a boost-charged battery, it is necessary to recharge the battery as early as possible.
Failure to do this will shorten the battery's service life.
3. When exchanging an old battery for new one, use battery of equal specification.

AIR FILTER ELEMENT

Check and clean the air filter element every 50 hours. Replace every 200 hours.

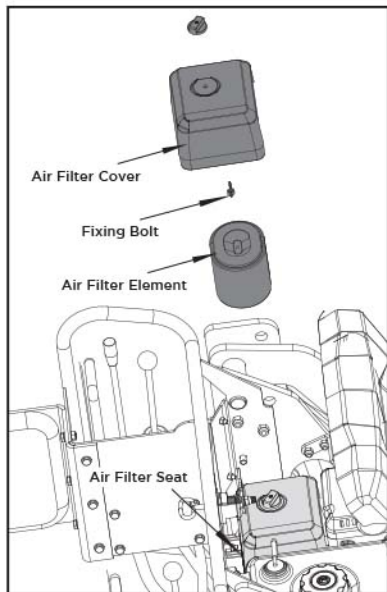
Inspection and Cleaning of the Air Filter Element

Open the engine hood and remove the dustcover. Take out only outer element, clean the element, case interior and reassemble. During reassembly, take care to install the dust-cover so that its TOP mark (arrow) faces upwards. Do not remove the inner element.

⚠ IMPORTANT *Should the machine be used in extremely dusty areas, the air filter element must be inspected and cleaned more frequently than in the specified maintenance periods.*

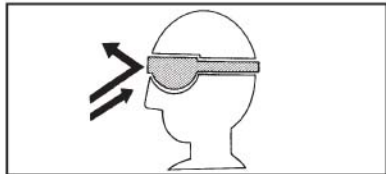
⚠ IMPORTANT *The air filter has a dry element. Keep free from oil.*

⚠ IMPORTANT *Do not run the engine without the air filter.*



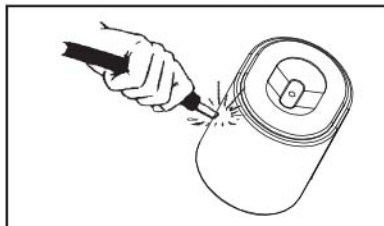
Air Filter Maintenance

⚠ CAUTION *Wear eye protection.*



Cleaning with compressed air

Pressure of compressed air must be under 205 kPa (2.1 kgf/cm), and the cartridge should be blown clean from the inside to the outside until the dust deposits are completely clear.



⚠ IMPORTANT *If the air suction is still inadequate, or the colour of the exhaust gases is abnormal even after the cleaning, the air filter element must be replaced.*

Replacing Air Filter Element

Replace the air filter element every 200 hours. Open the engine hood and remove the dustcover.

Remove and replace the outer element and inner element with new elements.

When reassembling, install the dust-cover so that its TOP mark (arrow) faces up-wards.

⚠ IMPORTANT *Shorten the replacement period if using in extremely dusty or sandy areas.*

FUEL PIPES AND HOSES

1. Check every 200 hours to see that all lines and hose clamps are tight and not damaged
2. Replace the hoses and clamps every two years or if they are found worn or damaged.

HYDRAULIC HOSES

⚠ WARNING *Pressurized fluid or air. Injection can cause death or serious injury. Refer to operator's manual for correct use.*

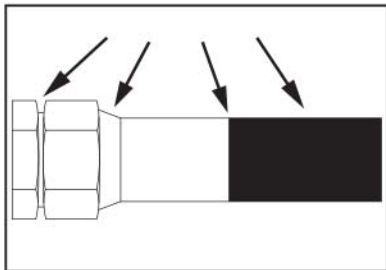
To avoid injury:

- Use a piece of cardboard or wood, rather than hands, to check for leaks.
- Before disconnecting a hydraulic line, turn engine off and operate all controls to relieve pressure.
- Lower, block, or support any raised component with a hoist.
- Cover connection with heavy cloth and loosen connector nut slightly to relieve residual pressure.

Catch all fluid in a container.

- Before using system, check that all connections are tight and all lines are undamaged.
- If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.

Check for leaks where shown before startup and every 50 hours of operation.



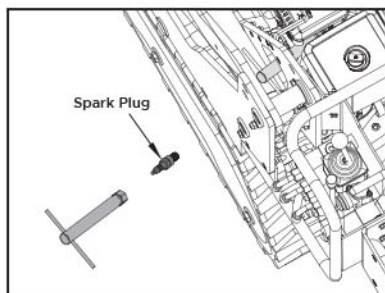
SPARK PLUG

GB

Check every 50 hours and replace after 1 year or 500 hours of use.

Checking Spark Plug

Use the special spark plug socket to remove the spark plug and check whether the ignition needle has carbon deposits. If yes, clean the carbon deposits. Replace if defective.



Spark Plug Service

F6TC, F6RTC or F6RTP (Torch) plug recommended

Cross References:

- Champion plug cross reference is: RN9YC (some tables show RN9YCC)
- NGK plug cross reference: BPR6ES
- BOSCH plug cross reference is: WR6DC

⚠ CAUTION *Using an incorrect spark plug may cause engine damage.*

1. When engine is cool, disconnect the spark plug cap and remove any debris from the spark plug area with high pressure air.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if the electrodes are worn or if the insulator is cracked or chipped. Spark plug gap should be set to 0.027 - 0.030 inches.
4. Install the spark plug carefully to avoid cross threading. Screw in spark plug by hand until it stops turning.

5. Tighten the spark plug with a 13/16-inch spark plug wrench. Tighten 1/4 turn after the spark plug seats.

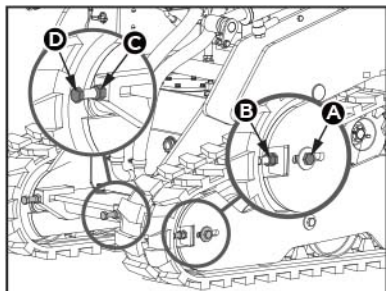
⚠ CAUTION *A loose spark plug can overheat and damage the engine. Over-tightening the spark plug can damage the threads in the cylinder head.*

6. Attach the spark plug cap. Ensure spark plug cap snaps into place securely.

TRACK ADJUSTMENT

Check before startup, after the first 10 hours, and every 50 hours thereafter. Adjust as needed.

1. Bring the machine forward one meter to loosen the track section between the toothed wheel and the front axle.



2. Rotate the bolts M12x30 (A) counterclockwise for a few turns on either side, but do not take it down.
3. Loosen the two adjusting nuts M12 (B).
4. Unscrew the locknuts M12 (C) at the front of the machine.
5. Depending on your needs, rotate the bolts M12x80 (D) clockwise to tension the track or rotate it counterclockwise to loosen the track.
6. Check the tension by pressing on the track, the part located between the drive sprocket and the front roller.
Pressing by foot slightly, a belly of 5cm is ideal.

Less than 5cm: Track is too tight, risk of damage to the hydraulic motor and rollers.
More than 5cm: Track is not tight enough, risk of untracking.

7. Depending on the result, fine-tune the settings again. Make sure that the tension is the same for both tracks.
8. Start your skid steer and move forward a few meters. Test the tension again and correct if necessary.
9. Tighten the locknuts M12 (C), adjusting nuts M12(B) and bolts M12x30 (A) to 80 N.m.

TROUBLE SHOOTING

If the skid steer does not give the desired performance, or when problems arise, refer to the table below and take appropriate measures.

Trouble		Cause	Countermeasure
Engine	Starting difficulties	The fuel cock closed	Make sure that the fuel cock is in the "Open" position.
		Air or water in the fuel system	See the instruction in section "Remove the water or air from the fuel tank" to remove the water and air.
		Oil viscosity is too high so that the engine runs sluggishly in winter	Use the hydraulic oil for Winter use.
		Battery is almost dead; Starter motor doesn't work	Do recoil start to recharge the battery
		The spark plug doesn't ignite.	Replace the spark plug
		Low Engine oil level	Add the engine oil
	Insufficient engine power	Low fuel level	Check fuel and add if necessary
		Clogged air cleaner	Clean the air filter element
	Engine suddenly stops	Low fuel level	Check fuel and add if necessary Purge the fuel system
	Abnormal exhaust gas colour	Poor fuel	Use high quality fuel
		Too much engine oil	Drain engine oil to prescribed oil level
		Choke lever closes the choke valve in the carburetor	Open the choke valve
Hydraulic system	Boom, arm, attachment and drive power is too low	Hydraulic oil level too low	Add oil
		Leakages of hoses and / or joints	Replace hose or joint
Drive system	Deviation of drive direction	Blocked through stones	Remove
		Crawler too loose or too tight	Adjust accordingly

OPERATION IN COLD WEATHER CONDITIONS

PREPARATION FOR OPERATION IN COLD WEATHER

1. Replace engine oil and hydraulic oil with those of viscosities suitable for cold weather.
2. In cold weather, battery power drops, and the battery fluid may freeze if the battery is not sufficiently charged. To prevent the battery fluid from freezing, be sure to keep the battery charged at least 75% or more of its capacity after operation. To ease next starting, it is recommended to keep the battery stored in closed or heated rooms.

PROCEDURE AFTER WORK CARRIED OUT

Clean the skid steer thoroughly after work and wipe dry. Otherwise mud and earth on the crawlers could freeze if the temperature drops below the 0°C mark. Operation of the skid steer is then not possible. Store the skid steer in a dry place; if not possible, store on wooden planks or on mats. If the skid steer is kept on damp or muddy ground, the crawlers could freeze overnight. Operation of the skid steer is then not possible.

Additionally, the hydraulic cylinders piston rods must be rubbed dry. Otherwise severe damage could occur if dirty water seeps through the seals.

LONG STORAGE

⚠ CAUTION *Do not clean the skid steer with the engine running.*

⚠ CAUTION *To avoid the danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.*

⚠ CAUTION *When storing, remove the key from the starter switch to avoid unauthorized persons from operating the skid steer and getting injured.*

Should the Skid Steer be Stored for a Longer Period of Time, Observe Following Procedures:

1. The whole skid steer should be cleaned thoroughly and in all cases stored indoors, such as a clean, dry garage or other storage area. If the skid steer has to be kept outdoors, lay out wooden planks on even ground, place the skid steer on the planks and cover completely.
2. Do an oil change and grease the skid steer.

3. Heavily grease the visible sections of the piston rods.

4. Remove the battery and store indoors.

⚠ IMPORTANT *Wash the skid steer after stopping the engine.*

If you wash the skid steer while running the engine, water may get into the air cleaner through the intakes causing engine problems.

Carefully, wash but do not splash water over the air cleaner.

Observe Following Procedures when the Machine is to be Operated after Long Storage.

1. Wipe off the grease from the hydraulic cylinder rods.
2. Turn on the engine and activate the attachments and the drive mechanisms without load in order to circulate the hydraulic oil. (If the machine is stored for longer than one month, undertake steps (1) and (2) once every month).

PERIODIC REPLACEMENT OF IMPORTANT COMPONENT PARTS

To ensure safety in operation, you are strongly requested to inspect and service the machine at regular intervals. For added safety, ask your dealer to replace the following important component parts.

These parts are prone to degradation in material or subject to wear and tear with time. It is difficult to judge how much they have been affected at regular inspection. It is therefore necessary to replace them with new ones, whether wear is visible or not after a specified time of use.

If any of them is found worn even before the specified use, it must be repaired or replaced the same way as other parts.

If any of the hose clamps is found deformed or cracked, the hose clamp must also be replaced.

For the hydraulic hoses other than the ones to be replaced periodically, inspect them for the following points. If found unusual, tighten them up, replace them.

When replacing the hydraulic hoses, change their O rings and sealings with new ones.

For replacement of the important parts, contact your dealer.

Check Hydraulic Oil Level

Inspection Interval	Check Points
Daily Checks	Oil leak at fuel and hydraulic hose connections and points
Every month	Oil leak at fuel and hydraulic hose connections and points Damages at fuel and hydraulic hose (cracks, chafing)
Every year	Oil leak at fuel and hydraulic hose connections and points Interference, deformation, degradation, twist and other damages (cracks, chafing) of fuel and hydraulic hoses

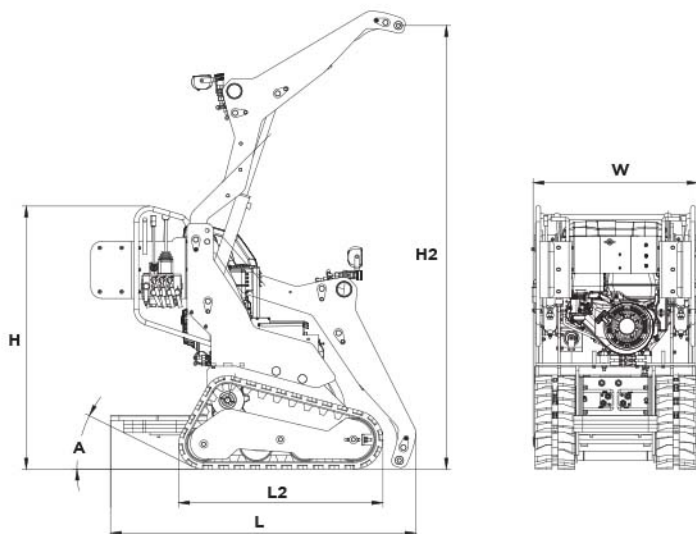
List of important component parts

No.	Component Parts	Used Place	Q'ty	Period
1	Rodless Cavity Hose for Tilting Cylinder	Tilting Cylinder Rodless Cavity - Tilting Cylinder Main Hose (Upper)	2	Every 2 years or 4000 hours
2	Rod Cavity Hose for Tilting Cylinder	Tilting Cylinder Rod Cavity - Tilting Cylinder Main Hose (Lower)	2	
3	Upper Hose for Motor (Left)	Left Travel Motor - Multi-way Valve Travel Oil Line Inlet	1	
4	Upper Hose for Motor (Right)	Right Travel Motor - Multi-way Valve Travel Oil Line Inlet	1	
5	Rod Cavity Hose for Boom Cylinder	Boom Cylinder Rod Cavity - Boom Cylinder Main Hose (Lower)	2	
6	Upper Hose for Quick Connector	Quick Connector - Multi-way Valve Attachment Oil Line Inlet	1	
7	Lower Hose for Quick Connector	Quick Connector - Multi-way Valve Attachment Oil Line Outlet	1	
8	Lower Hose for Motor	Travel Motor - Multi-way Valve Travel Oil Line Outlet	2	
9	Rodless Cavity Hose for Boom Cylinder	Boom Cylinder Rodless Cavity - Boom Cylinder Main Hose (Upper)	2	
10	Main Hose for Boom Cylinder (Upper)	Boom Cylinder - Multi-way Valve Boom Oil Line Inlet	1	
11	Main Hose for Boom Cylinder (Lower)	Tilting Cylinder - Multi-way Valve Boom Oil Line Outlet	1	
12	Main Hose for Tilting Cylinder (Upper)	Tilting Cylinder - Multi-way Valve Tilting Oil Line Inlet	1	

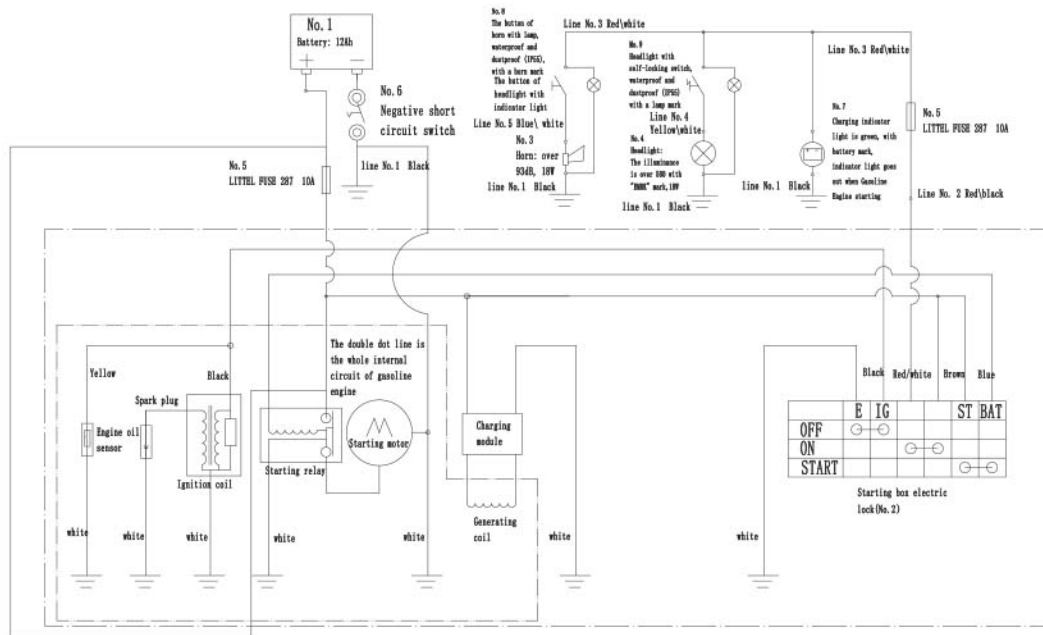
No.	Component Parts	Used Place	Q'ty	Period
13	Main Hose for Tilting Cylinder (Lower)	Tilting Cylinder - Multi-way Valve Tilting Oil Line Outlet	1	Every 2 years or 4000 hours
14	Pump Outlet Hose	Pump Outlet - Multi-way Valve	2	
15	Return Hose	Multi-way Valve Oil Return Port - Hydraulic Oil Tank	2	
16	Oil Suction Hose	Hydraulic Oil Tank - Pump Oil Suction Port	1	
17	Oil Tank Vent Hose	Hydraulic Oil Tank Vent	1	

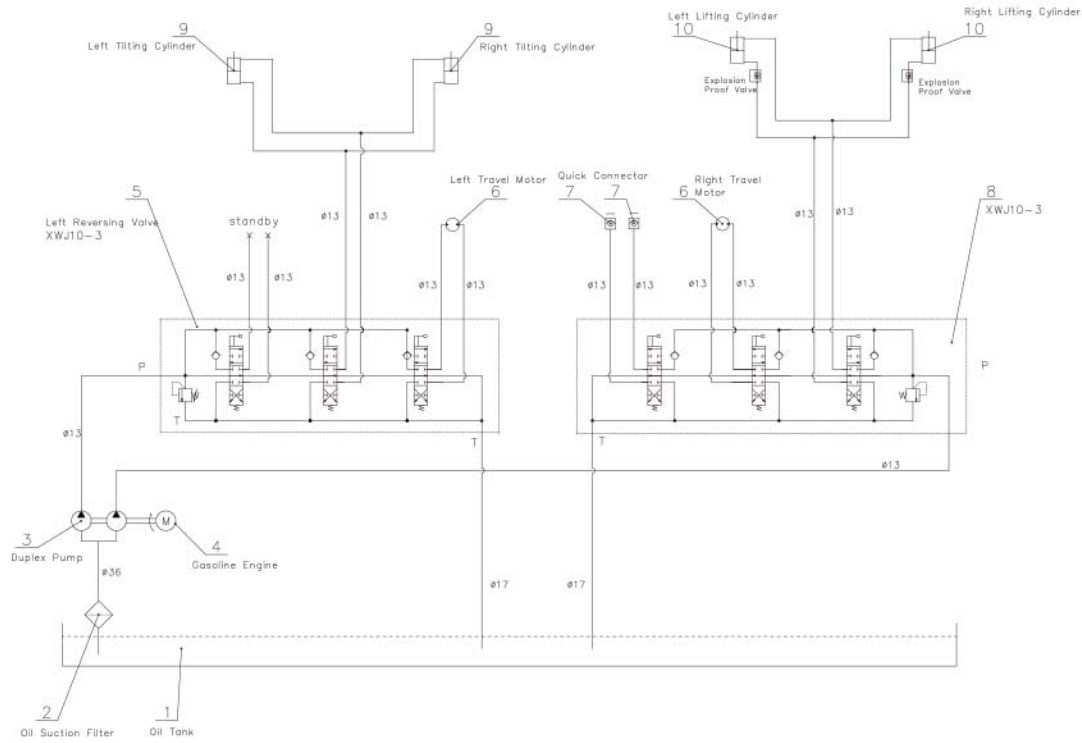
To prevent serious damage to the hydraulic system, to use only a hydraulic hose approved by dealer.

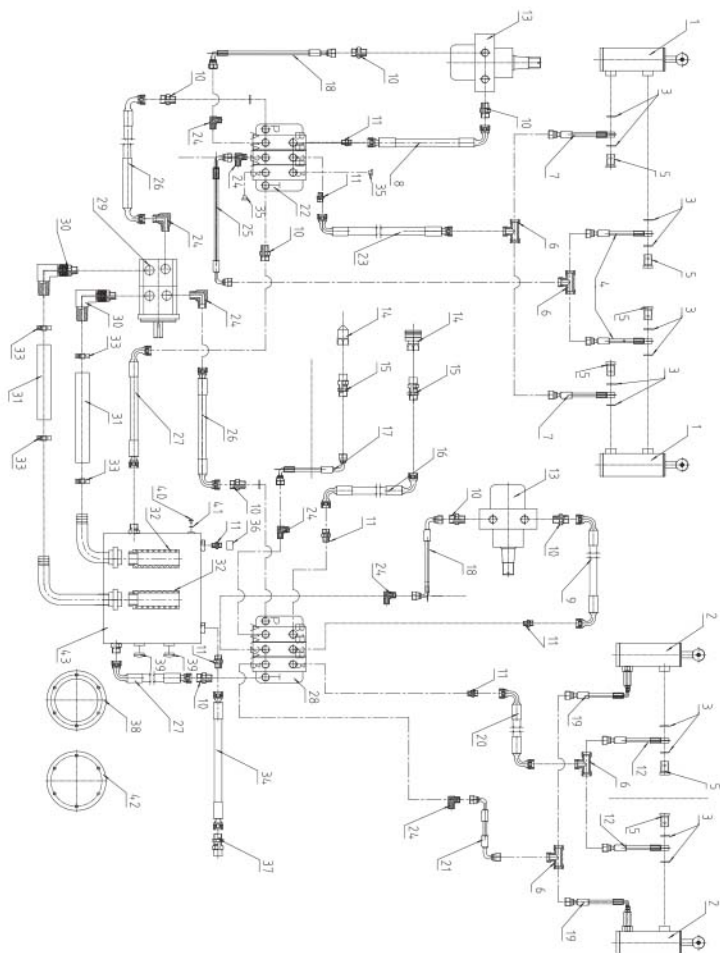
MAIN DIMENSIONS



Dimensions		Data
A	Angle of departure	26.23°
H	Overall height of machine	1200 mm
H2	Height to bucket Hinge Pin	2000 mm
L	Overall length of machine	1393 mm
L2	Track Length	930 mm
W	Overall width of the machine	751 mm



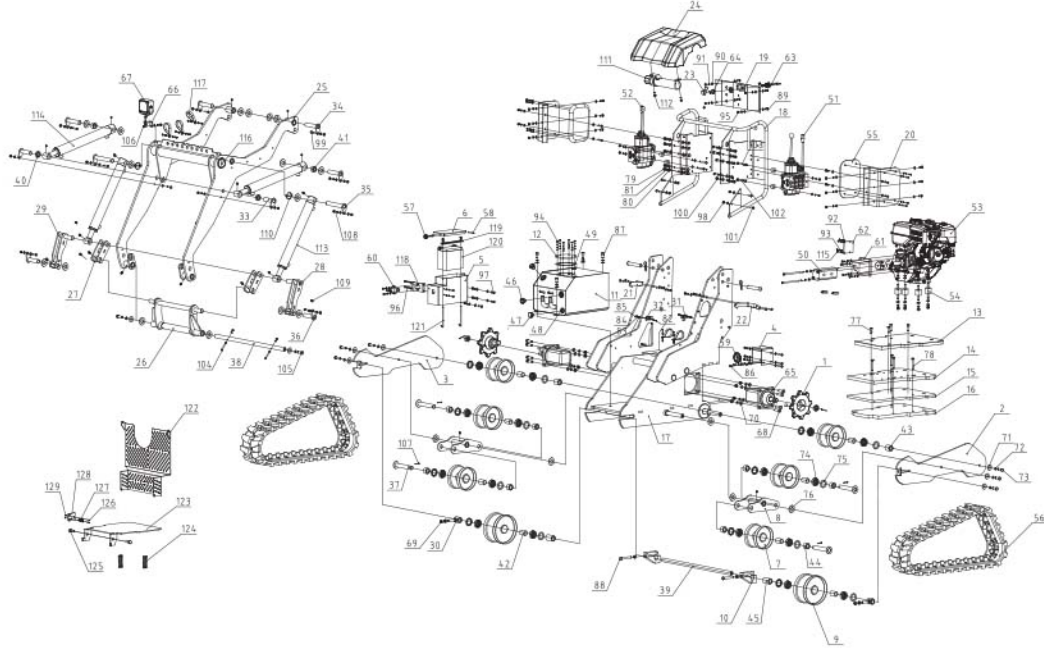




Parts List

No.	Description	Q'ty
1	Cylinder Assy.	2
2	Cylinder Assy.	2
3	Bonded Washer	16
4	Rod Cavity Hose for Tilting Cylinder	2
5	G3/8 Hollow Bolt	8
6	T-Connector	4
7	Rodless Cavity Hose for Tilting Cylinder	2
8	Upper Hose for Motor (Left)	1
9	Upper Hose for Motor (Right)	1
10	Straight Connector	8
11	Straight Connector	7
12	Rod Cavity Hose for Boom Cylinder	2
13	Hydraulic Motor	2
14	G3/8 Quick Connector	1
15	Extended Connector	2
16	Upper Hose for Quick Connector	1
17	Lower Hose for Quick Connector	1
18	Lower Hose for Motor	2
19	Rodless Cavity Hose for Boom Cylinder	2
20	Main Hose for Boom Cylinder (Upper)	1
21	Main Hose for Boom Cylinder (Lower)	1

No.	Description	Q'ty
22	Left Reversing Valve	1
23	Main Tilting Hose (Upper)	1
24	Right-angle Connector	7
25	Main Tilting Hose (Lower)	1
26	Pump Outlet Hose	2
27	Return Hose	2
28	Right Reversing Valve	1
29	Duplex Pump	1
30	Inlet Right-angle Connector for Pump	2
31	Oil Suction Hose	1
32	Mesh Filter	2
33	Hose Hoop	4
34	Oil Tank Vent Hose	1
35	Plug Screw	2
36	Oil Tank Seal Joint	1
37	Oil Tank Vent Joint	1
38	Oil Tank Cap Gasket	1
39	Oil Level Sight Glass	2
40	Hex. Screw Plug	1
41	Bonded Washer	1
42	Oil Tank Cap	1
43	Oil Tank	1



Parts List

No.	Description	Q'ty
1	Drive Sprocket	2
2	Left Guard Plate	1
3	Right Guard Plate	1
4	Horn Bracket	1
5	Battery Box	1
6	Battery Box Cover	1
7	Support Roller	6
8	Swing Bracket	2
9	Front Idler	2
10	Tensioning Block	2
11	Hydraulic Tank	1
12	Hydraulic Tank Cover	1
13	Driving Platform Plate	1
14	Rear Counterweight A	1
15	Rear Counterweight B	1
16	Rear Counterweight C	1
17	Chassis	1
18	Handle Frame	1
19	Dashboard	1
20	Leg Rest Plate	2
21	Cover Bracket - R	1
22	Cover Bracket - L	1
23	Hook	1
24	Engine Compartment Cover	1
25	Boom	1
26	Rocker	1
27	Connecting Rod	2
28	Left Swing Link	1
29	Right Swing Link	1
30	Outer Spacer for Front Idler	1
31	Oil Drain Plug Fixing Plate	1
32	Ventilation Pipe Fixing L Plate	1
33	Axis Pin 25*89	2
34	Axis Pin 25*119	4
35	Axis Pin 25*180	2
36	Axis Pin 25*103	2
37	Axis Pin 25*160	4
38	Long Pin 25*710	1

No.	Description	Q'ty
39	Axle 25*710	1
40	Spacer Bush 25*38*10	2
41	Spacer Bush 25*38*20	2
42	Bearing Spacer Bush 26*33*46	8
43	Outer Spacer for Support Roller 25*38*41	2
44	Swing Roller Spacer Bush 25*38*26	8
45	Inner Spacer for Front Idler 5*38*59	2
46	Oil Level Sight Glass	2
47	Hex. Screw Plug	1
48	Combination Washer	1
49	Oil Tank Cap Gasket	1
50	Duplex Gear Pump	1
51	Right Reversing Valve	1
52	Left Reversing Valve	1
53	Gasoline Engine	1
54	Vibration Absorbing Support	4
55	Cushion Pad	2
56	Rubber Track	2
57	Torx Knob	1
58	Double-ended Slotted Pin	1
59	Horn (DC12V 105dB)	1
60	Battery Negative Switch	1
61	Gear Pump Bracket	1
62	Gear Pump Bracket Cover	1
63	Lock Core (40mm) with Key	1
64	Torsion Spring	1
65	Hydraulic Motor	2
66	Headlight Mounting Plate	1
67	Headlight	1
68	Hex Nut M12	14
69	Hex Bolt M12*45	8
70	Flat Washer 12	12
71	Flat Washer 12	8
72	Spring Washer 12	20
73	Hex Bolt M12*35	6
74	Bearing 6205-2RS	16
75	Oil Seal D52*d38*7	16

No.	Description	Q'ty
76	Flat Washer 24	18
77	Hexagon Socket Head Screws M10*30	4
78	Hex Bolt M10*60	4
79	Hex Nut M10	19
80	Flat Washer 10	29
81	Spring Washer 10	19
82	Hex Bolt M6*35	5
83	Flat Washer 6	44
84	Spring Washer 6	39
85	Hex Nut M6	16
86	Hex Bolt M6*20	12
87	Hexagon Socket Head Screw M12*25	4
88	Hex Bolt M12*80	2
89	Hex Bolt M8*25	20
90	Flat Washer 8	50
91	Spring Washer 8	34
92	Flat Washer 4	4
93	Spring Washer 4	4
94	Hex Bolt M6*25	12
95	Hex Nut M8	30
96	Hex Bolt M6*12	4
97	Hex Bolt M8*20	6
98	Hex Locknut M8	14
99	Hexagon Countersunk Head Screw M8*30	4
100	Hex Bolt M10*35	10
101	Hexagon Countersunk Head Screw M8*25	6
102	Hex Bolt M8*80	2
103	Hex Bolt M8*85	2
104	Hex Bolt M6*50	2
105	Hex Bolt M12*30	2
106	Hex Bolt M10*25	1
107	Cotter Pin 5*35	4
108	Hex Bolt M8*35	6
109	Oil Cup M6	18
110	Clip	2
111	Manual Tube	1
112	Hex Bolt M8*16	2
113	Cylinder Assembly	2

No.	Description	Q'ty
114	Cylinder Assembly	2
115	Hex Bolt M4*12	4
116	End Cap	2
117	Pipe Clamp (Ø55)	2
118	Negative Switch Mounting Plate	1
119	Battery Fixing Plate	1
120	Battery	1
121	Battery Hook	2
122	Rear Guard	1
123	Pedal	1
124	Reset Spring	2
125	Hex Bolt M6*16	2
126	Cross Headed Screw M3*20	2
127	Micro Switch	1
128	Micro Switch Mounting Plate	1
129	Hex Locknut M3	2

ATTACHMENTS (SOLD SEPARATELY)

INTRODUCTION

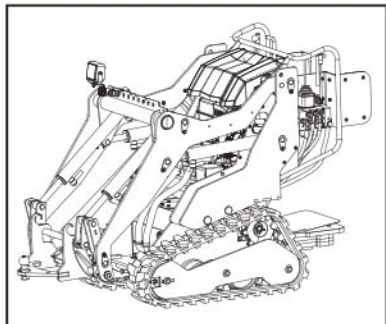
The skid steer has been designed to work with many different attachments for a wide variety of jobs with higher efficiency.

Ball Mount Hitch Receiver 16050

The ball mount hitch receiver is used to couple the skid steer to your trailer for short distance transfers.

Specification: Ø50 mm

⚠ IMPORTANT *Ensure the weight of the trailer being towed is smaller or equal to the skid steer.*

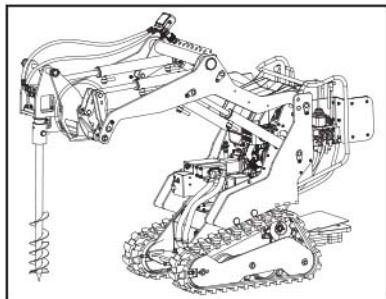


Post Hole Diggers with Auger 30641 / 30642

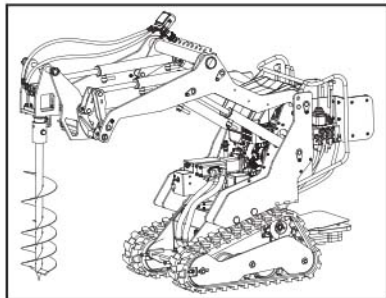
With auger kits, the skid steer is ideal for fast post hole digging with convenient and safe operation. It is widely used in landscaping, planting, fences, fruit trees fertilizing, geophysical prospecting, road construction and other fields.

Specification

	30641	30642
Spiral Pitch	100 mm	200 mm
Auger Diameter	100 mm	200 mm
Max. Speed	50 rpm	50 rpm
Weight	49 kg	52 kg



30641



30642

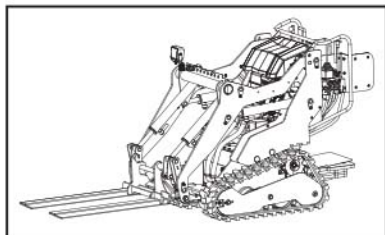
Pallet Forks 31318

Skid steer with pallet forks can handle different types of goods, including boxes, wooden boards, steel plates, cement and various materials on pallets. It can realize stacking, destacking, loading, unloading and short-distance transportation of goods, which greatly saves manpower.

Because they're small, they can work well in tight spaces, which is useful in cities or small work areas where big machines can't fit easily. These forks can quickly and accurately lift and place heavy loads

Specification

Max. Load	150 kg
Pallet Size	600x800 mm
Overall Dimension	1035x550x290 mm
Weight	28 kg

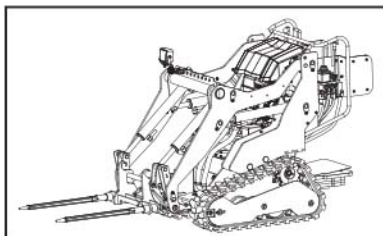


Bale Spear 31355

Bale Spear is used for moving round or square hay bales and straw bales in farms. It will provide the durability and strength you need while transporting hay bales.

Specification

Spear Size	800x500 mm
Weight	22 kg

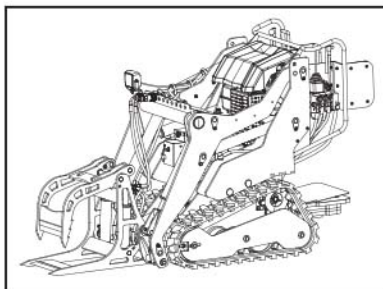
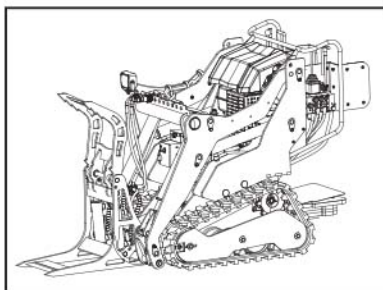


Log Grapple 31375

Equipped with the log grapple, the skid steer is able to handle your log grabs, tree roots pickups, land clearing jobs and other heavy short-distance moving tasks.

Specification

Working Width	340 mm
Max. Opening	880 mm
Weight	64 kg

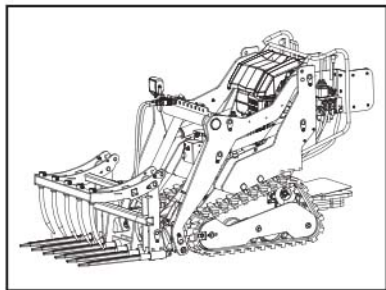
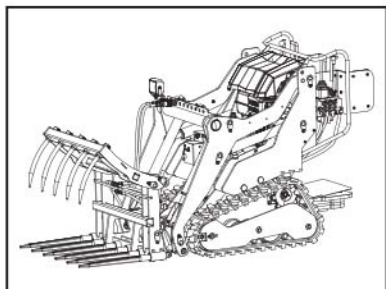


Grapple Bucket 31390

This grapple bucket is mainly used to clean and load the compacted animal manure or bedding accumulated on the farm floor.

Specification

Max. Opening	750 mm
Effective Teeth Length	520 mm
Weight	109 kg

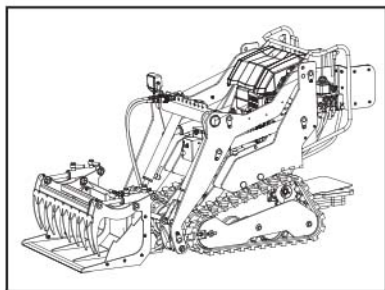
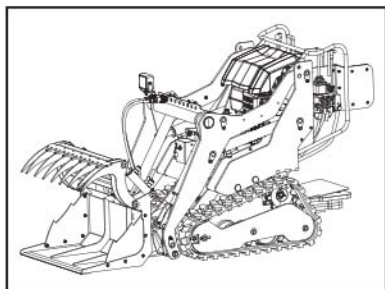


Grapple Bucket 31395

This Grapple Bucket is perfect for grabbing and hauling baled or loose hay, brush and other debris.

Specification

Working Width	770 mm
Capacity	80 L
Max. Opening	498 mm
Weight	79 kg



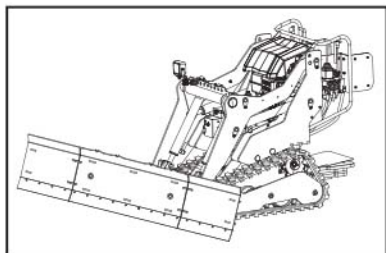
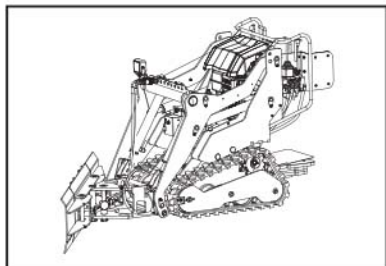
Plow Blade with Extensions 31492

The plow blade with extensions can be used for snow plowing, dozing and grain collecting. Using a pivot system, it can tilt left and right max. 36.5° without adjusting the direction of the whole machine.

While pushing heavy materials at tilted angle on left or right side, better dismount the extension of the same side to reduce resistance.

Specification

Working Width	1600 mm
Height	395 mm
Max. Tilting Angle	36.5°
Weight	88 kg

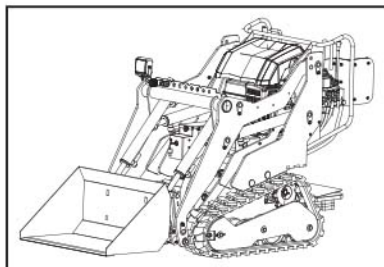


Low Profile Buckets with Smooth Edge 31501/31503

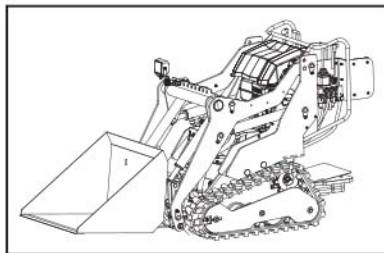
Low profile skid steer buckets with smooth edge serve an important purpose in various construction and landscaping tasks. These buckets are designed to be flat and close to the ground. This makes them useful for tasks that require scooping, loading and transporting materials in tight spaces. They are also valuable for grading and leveling in landscaping.

Specification

	31501	31503
Capacity	80 L	130 L
Working Width	735 mm	735 mm
Height	385 mm	533 mm
Weight	35 kg	48 kg



30501



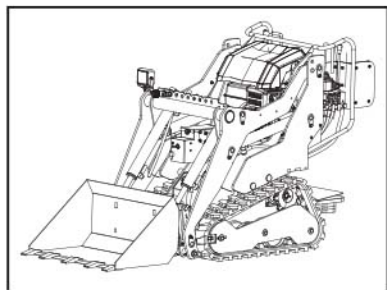
30503

Low Profile Buckets with Teeth 31502

The main purpose of low-profile skid steer buckets with teeth is to scoop and transport materials like dirt, gravel, and rocks. They have sharp teeth on the front edge that dig into the ground and grab onto materials, making it easier to pick them up. On farms, these buckets are super handy for tasks like moving hay, cleaning out animal pens, and clearing debris.

Specification

Capacity	80 L
Working Width	735 mm
Height	385 mm
Weight	38 kg

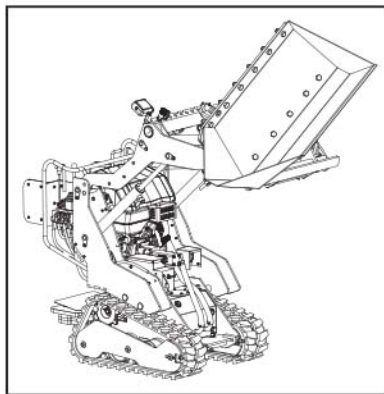
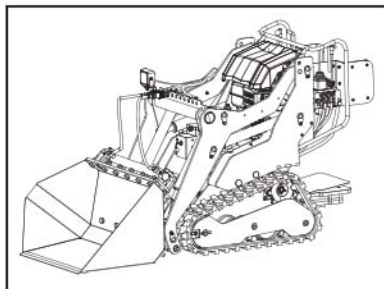


Tilting Bucket 31504

The tilt bucket is a grading bucket with an integrated hydraulic cylinder, allowing the bucket to be tilted to right side by 80°. It saves you time on countless jobs by simply tilting the bucket instead of having to reposition the entire machine. It is ideal for land clearing, landscaping and backfilling.

Specification

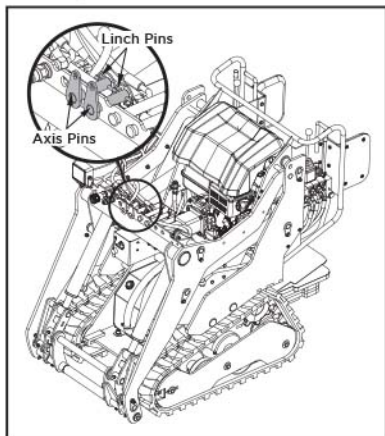
Capacity	130 L
Working Width	1130 mm
Height	570 mm
Tilting Angle	80°
Weight	107 kg



Installation

Attachments Fixing Parts

There are two axis pins and linch pins fixed on the skid steer, as shown in the figure, which are used to secure all the attachments to the mounting bracket.



Hydraulic Hoses Connection

If the attachment requires hydraulic power for operation, connect hydraulic hoses.

⚠ WARNING *Pressurized fluid or air. Injection can cause death or serious injury. Refer to operator's manual for correct use.*

To avoid injury:

- Use a piece of cardboard or wood, rather than hands, to check for leaks.
- Before disconnecting a hydraulic line, turn engine off and operate all controls to relieve pressure.
- Lower, block, or support any raised component with a hoist.
- Cover connection with heavy cloth and loosen connector nut slightly to relieve residual pressure.

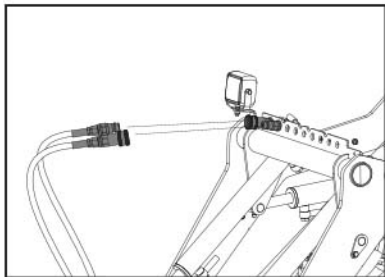
Catch all fluid in a container.

• Before using system, check that all connections are tight and all lines are undamaged.

• If you are injured, seek immediate medical attention from a doctor familiar with this type of injury.

⚠ CAUTION *Hot parts. Contact can cause burns. Only touch when cool or wear gloves.*

1. Cycle attachment drive control to relieve residual pressure at hydraulic couplers.
2. Remove dirt and debris from hydraulic couplers.
3. Connect the hose with male coupler to female coupler on machine.
4. Connect the hose with female coupler to the male coupler on machine.
5. Ensure hose connections are secure by pulling on hoses.



Specific Steps for Different Attachments

Ball Mount Hitch Receiver 16050

Pallet Forks 31318

Bale Spear 31355

Low Profile Buckets with Smooth Edge 31501/
31503

Low Profile Buckets with Teeth 31502

1. Position the attachment assembly on level surface with enough space behind it to accommodate machine.
2. Start engine and drive the skid steer toward the attachment.
3. Lower the lifting arm and tilt the mounting bracket down to a proper angle, so that the

upper shaft A of the bracket can fall into the groove B of the attachment connector. Tilt the mounting bracket up to hook the attachment.

4. Raise the lifting arm, so that the lower shaft

C hangs in groove D. Secure the lower connection with axis pins and linch pins. Lower the arm to place the attachment on the ground.

16050	31318
31355	31501
31502	31503

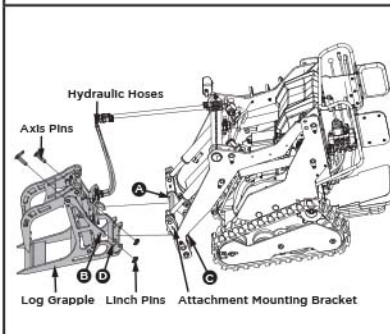
Log Grapple 31375
Grapple Bucket 31390/31395
Tilting Bucket 31504

1. Position the attachment assembly on level surface with enough space behind it to accommodate machine.
2. Start engine and drive the skid steer toward the attachment.
3. Lower the lifting arm and tilt the mounting bracket down to a proper angle, so that the upper shaft A of the bracket can fall into

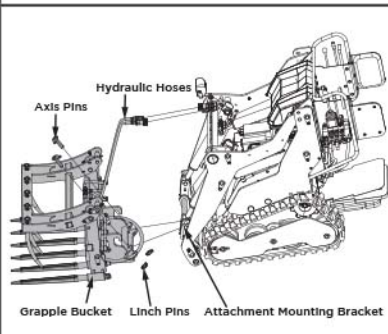
the groove B of the attachment connector. Tilt the mounting bracket up to hook the attachment.

4. Raise the lifting arm, so that the lower shaft C hangs in groove D. Secure the lower connection with axis pins and linch pins. Lower the arm to place the attachment on the ground.
5. Shut down the engine and connect hydraulic hoses following the steps in "Hydraulic Hoses Connection".

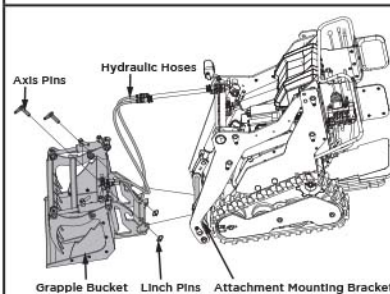
31375



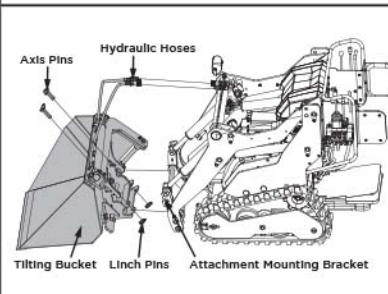
31390



31395

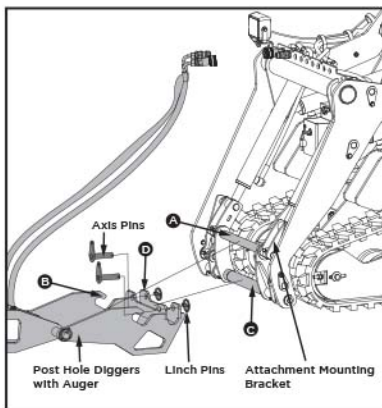
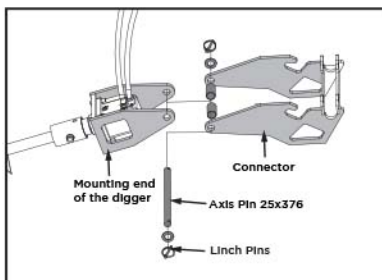


31504



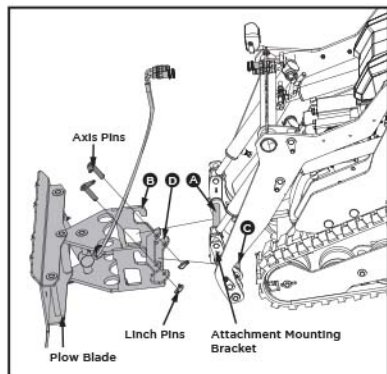
Post Hole Diggers with Auger 30641 / 30642

1. Take down the pins, washers and bushes from the connector of the post hole digger with auger. Place the mounting end of the digger in the middle of the open end of the connector and insert two bushes against inside of the connector plates as shown in the figure. Align the holes, pass the axis pin 25x376 through it and secure the connection with washers and linch pins.
2. Position the assembled post hole digger on level surface with enough space behind it to accommodate machine. Start engine and drive the skid steer toward the post hole digger with auger.
3. Lower the lifting arm and tilt the mounting bracket down to a proper angle, so that the upper shaft A of the bracket can fall into the groove B of the attachment connector. Tilt the mounting bracket up to hook the attachment.
4. Raise the lifting arm, so that the lower shaft C hangs in groove D. Secure the lower connection with axis pins and linch pins. Lower the arm to place the attachment on the ground.
5. Shut down the engine and connect hydraulic hoses following the steps in "Hydraulic Hoses Connection".



Plow Blade with Extensions 31492

1. Place the plow blade assembly without extensions on level surface with enough space behind it to accommodate machine. Start engine and drive the skid steer toward it.
2. Lower the lifting arm and tilt the mounting bracket down to a proper angle, so that the upper shaft A of the bracket can fall into the groove B of the attachment connector. Tilt the mounting bracket up to hook the attachment.
3. Raise the lifting arm, so that the lower shaft C hangs in groove D. Secure the lower connection with axis pins and linch pins. Lower the arm to place the attachment on the ground.
4. Shut down the engine and connect hydraulic hoses following the steps in "Hydraulic Hoses Connection".



5. When a bigger working width is required, attach the one extension to the middle plow blade as shown in the figure, making the hook of the extension hitch the vertical pin. Align the holes and secure the connection with pin 20x120 and linch pin. Repeat the steps for the other side.

