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OPERATOR'S MANUAL

GRADING SCRAPERS

G S

GS 3072

GS 4084

GS 4096

FOR FARMER FOR FAMILY

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SAFETY PRECAUTIONS

Listed below are common practices that may or may not be applicable to the products described in this manual.

Safety First

Careful operation is your best assurance against an accident.
Please be fully aware that you are responsible for the safe operation and maintenance of your implement. You must ensure that you and anyone else who is going to operate, maintain or work around the implement is familiar with the operating and maintenance procedures and related safe information contained in this manual.
This manual is prepared to guide you through all essential operations related to this implement and alert you to all good safety practices that should be strictly followed.
Please constantly bear in mind that good safety practices not only protect you but also the people around you. Incorporate these practices an inseparable part into your safety program. Make sure that who operates this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury of death by ignoring good safety practices.

- Thoroughly read and understand the "Safety Labels" section. Read all instructions noted on them.
- Do not operate the equipment while under the influence of drugs or alcohol, as they impair your ability to safely and properly operate the equipment.
- The operator should be familiar with all functions of the tractor and attached implement, and be able to handle emergencies quickly.
- Make sure all guards and shields appropriate for the operation are in place and secured before operating the implement.
- Keep all bystanders away from equipment and work area. Start tractor from the driver's seat with hydraulic controls in neutral.
- Operate tractor and controls from the driver's seat only.
- Never dismount from a moving tractor or leave tractor unattended with engine running.
- Do not allow anyone to stand between the implement and tractor while backing up to the implement.

- Keep hands, feet, and clothing away from power-driven parts.
- While transporting and operating equipment, watch out for objects overhead and along the sides such as fences, trees, buildings, wires, etc.
- Do not turn tractor so tight as to cause hitched implement to ride up on the tractor's rear wheel.
- Store implement in a safe and secure area where children normally do not play. When needed, secure implement against falling with support blocks.

Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety and extra precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. Hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

Be Aware of Signal Words

A signal word designates a degree or level of hazard seriousness. They are:

⚠ **DANGER**: Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ **WARNING**: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ **CAUTION**: Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

Be Aware of Special Notices

Special notices are intended to point out important and helpful information that should be followed. They are:

ATTENTION: Indicates that equipment or property damage could result if instructions are not followed.

NOTE: Indicates supplementary explanations that will be helpful when using the equipment.

Safety for Children

Tragedy can occur if the operator is not alert to the presence of children, Children generally are attracted to implements and their work.

- Never assume children will remain where you last saw them.

- Keep children out of the work area and under the watchful eye of a responsible adult.
- Be alert and shut the implement and tractor down if children enter the work area.
- Never carry children on the tractor or implement. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the power machine.
- Never allow children to operate the power machine, even under adult supervision.
- Never allow children to play on the power machine or implement.

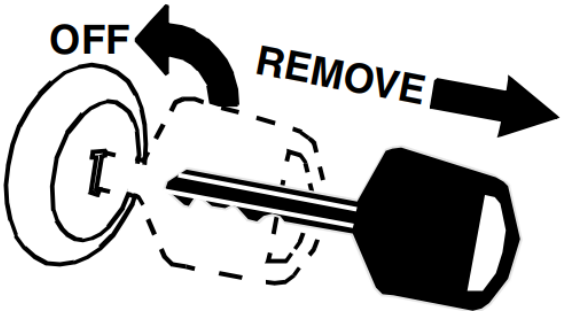
Preparation

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times

Tractor Shutdown Safety

If engaged, disengage power take-off.

Park on solid, level ground and lower implement to ground or onto support blocks.



- Put tractor in park or set park brake.
- Turn off engine and remove ignition key to prevent unauthorized starting.
- Relieve all hydraulic pressure to auxiliary hydraulic lines.
- Wait for all components to stop before leaving operator’s seat.
- Use steps, grab-handles and anti-slip surfaces when stepping on or off the tractor.
- If engaged, disengage power take-off.
- Park on solid, level ground and lower implement to ground or onto support blocks.
- Put tractor in park or set park brake.
- Turn off engine and remove ignition key to prevent unauthorized starting.
- Relieve all hydraulic pressure to auxiliary hydraulic lines.
- Wait for all components to stop before leaving operator’s seat.

- Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.

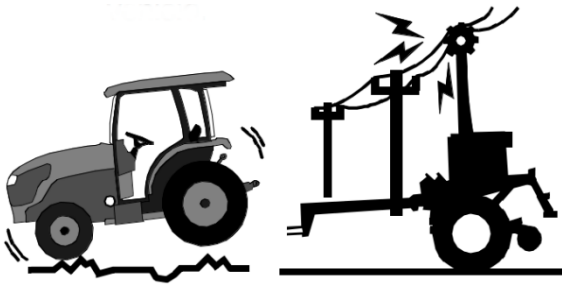
Use A Safety Chain

A safety chain will help control drawn machinery should it separate from the tractor drawbar.

Use a chain with the strength rating equal to or greater than the gross weight of the towed implement.

- Attach the chain to the tractor drawbar support or other specified anchor location. Allow only enough slack in the chain to permit turning.
- Always hitch the implement to the machine towing it. Do not use the safety chain to tow the implement.

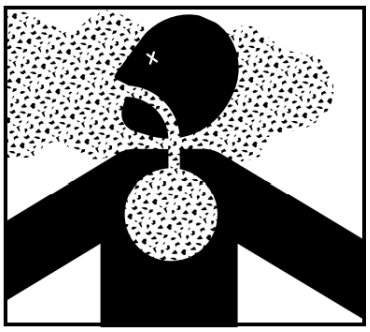
Transport Safely



- Comply with federal, state, and local laws.
- Avoid contact with any overhead utility lines or electrically charged conductors.
- Engage park brake when stopped on an incline.
- Maximum transport speed for an implement is 30 km/h. DO NOT EXCEED.
- Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
- Always comply with all state and local lighting and marking requirements.
- Never allow riders on power unit or attachment.
- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Do not operate or transport equipment while under the influence of alcohol or drugs.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.

- A minimum 20% of tractor and equipment weight must be on the tractor front wheels when attachments are in transport position. Without this weight, tractor could tip over, causing personal injury or death. The weight may be attained with a loader, front wheel weights, and ballast in tires or front tractor weights. Weigh the tractor and equipment. Do not estimate.
- Latch the tractor brakes together.
- Shift the tractor into a lower gear when transporting down steep slopes or hills. Stop slowly.
- Keep the SMV emblem and reflectors clean and visible from the rear.
- Always clean blade of foreign material.

Avoid Crystalline Silica (Quartz) Dust



Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis). There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.

- Be aware of and follow OSHA (or other local, State, or Federal) guidelines for exposure to airborne crystalline silica.
- Know the work operations where exposure to crystalline silica may occur.
- Participate in air monitoring or training programs offered by the employer.
- Be aware of and use optional equipment controls such as water sprays, local exhaust ventilation, and enclosed cabs with positive pressure air conditioning if the machine has such equipment. Otherwise respirators shall be worn.
- Where respirators are required, wear a respirator approved for protection against crystalline silica containing dust. Do not alter respirator in any way. Workers who use tight-fitting respirators can not have beards/ mustaches which interfere with the respirator seal to the face.
- If possible, change into disposable or washable work clothes at the work site; shower and change into clean clothing before leaving the work site.
- Do not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.
- Store food, drink, and personal belongings away from the work area.
- Wash hands and face before eating, drinking, smoking, or applying cosmetics after leaving the exposure area.

Operation

- Always comply with all state and local lighting and marking requirements.
- Operate only in daylight or good artificial light.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.
- Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.
- Never allow riders on power unit or attachment.
- Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt, place transmission in neutral, engage brake, and ensure all other controls are disengaged before starting power unit engine.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.
- Do not operate or transport on steep slopes.
- Do not stop, start, or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Before leaving operator’s seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.

Avoid Contact Blades

Keep away from blades to avoid death or serious injury from blade contact.

- Stay away and keep hands, feet and body away from blades, drivelines and parts until all moving elements have stopped.
- Do not put hands or feet under hood.

Maintenance Safety

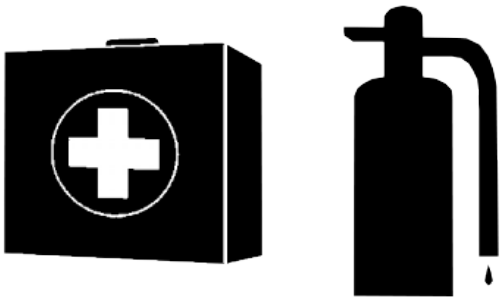
- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

- Follow good shop practices.
- Keep service area clean and dry.
- Be sure electrical outlets and tools are properly grounded.
- Use adequate light for the job at hand.
- Make sure there is plenty of ventilation. Never operate the engine of the tractor in a closed area. The exhaust gas may cause healthy problem.
- Before maintenance, shut off the tractor (See Tractor Shutdown Procedure).
- Allow equipment to cool before maintenance operation.
- Never work under the machine unless it is secured by a mechanical stand.
- Use personal protection devices such as safety goggles, hand gloves and hearing protectors, when performing any service or maintenance work. Use heavy gloves when handling blades.
- Only use original parts for service and maintenance.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all pins are properly installed to ensure unit is in a safe condition.
- Do not weld or torch on galvanized metal as it will release toxic fumes.
- Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- Disconnect battery (If the implement has the battery) ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- Do not grease or oil implement while it is in operation.
- Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing machine in service.
- Understand service procedures before doing work. Keep area clean and dry.
- Never lubricate or service machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Lower equipment to the ground. Stop the engine, remove the key, and 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 damaged parts immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off.
- Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.
- Never perform service or maintenance with engine running.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Eye protection must be used when removing or installing scarified shank clips.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.

Preparation Before Maintenance

- Be prepared if a fire starts.
- Keep a first aid kit and fire extinguisher handy.
- Keep emergency numbers for ambulance, hospital and fire department near the working area.

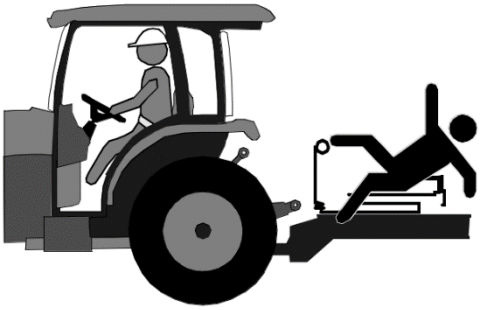


Personal Protective Equipment

- Wear protective clothing and equipment appropriate for the job such as safety shoes, safety, glasses, hard hat, dust mask, and ear plugs.
- Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.

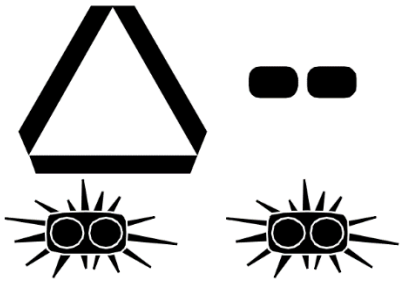
- Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.

Keep Riders Off Machinery



- Never carry riders on the tractor or implement.
- Riders obstruct operator's view and interfere with the control of the power machine.
- Riders can be struck by objects or thrown from the equipment.
- Never use the tractor or implement to lift or transport riders.

Safety Lights and Devices



- A slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night.
- Flashing warning lights and turn signals are recommended whenever driving on public roads.
- For tractors and other agriculture equipment, a Slow Moving Vehicle (SMV) sign is required when traveling on public roads.

Seat Belt and ROPS

- We recommends the use of a CAB or roll-over-protective structures (ROPS) and seat belt in almost all power machines. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the power machine should be upset.
- If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.

Handle Chemicals Properly

- Protective clothing should be worn.
- Handle all chemicals with care.
- Follow instructions on container label.
- Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- Inhaling smoke from any type of chemical fire can be a serious health hazard.
- Store or dispose of unused chemicals as specified by the chemical manufacturer.
- Make sure wheel bolts have been tightened to the specified torque.

Dig Safe – Avoid Underground Utilities

- Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- Be sure to ask how close you can work to the marks they positioned.

Storage and Disposal Safety

Storage Safety

1. Store the machine in an area away from human activity. Do keep the machine out of the children's reach. Do not permit children to play on or around the stored machine.
2. Store the machine in a dry, level area.

Disposal Safety

1. Improper disposal of oil or other waste may be hazardous to the environment.
2. When oil is emptied from the machine, it must be poured into a leak-proof container suitable for oil. It is not permissible to store oil in a container used for food or drink, in order to avoid the oil being consumed by mistake and causing serious injury. It is prohibited to spill oil on the ground, or pour it into a drain or anywhere leading to a water source.
3. Discarded oil, fuel, coolant, brake fluid, filters and batteries may not be thrown away or emptied in just any way. Contact your local authority for further information.

Safety Labels

Your implement comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

1. Keep all safety labels clean and legible.
2. Replace all damaged or missing labels.
3. When ordering new components make sure the correct safety labels are included in the request.
4. Refer to steps below for proper label placement.

a) Clean surface area where label is to be placed.

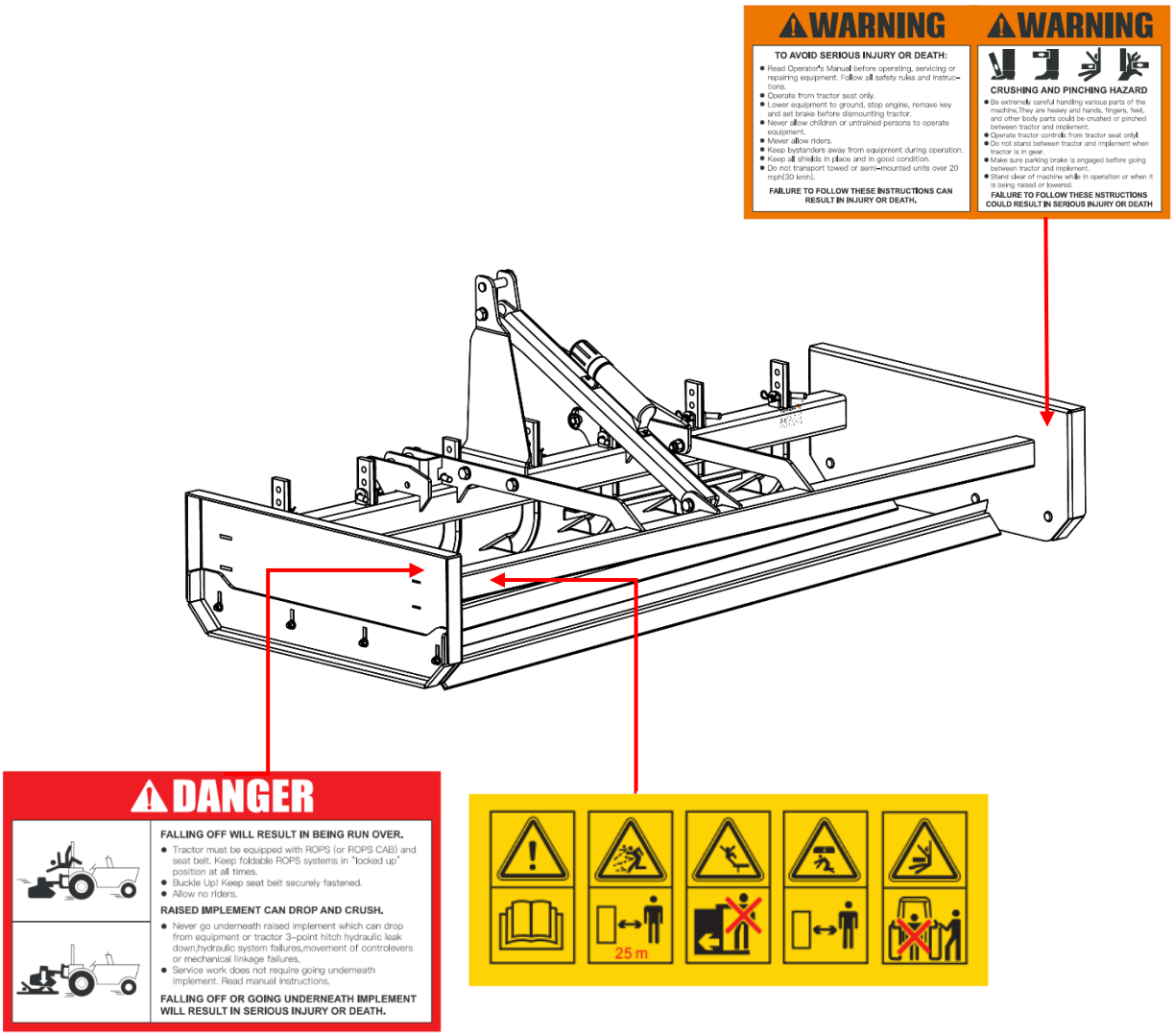
b) Spray soapy water onto the cleaned area.

c) Peel backing from label and press label firmly onto the surface.

d) Squeeze out air bubbles with edge of a card or with a similar type of straight edge.

Labels Location

Labels locations below are common practices of machine that may or may not be applicable to the products described in this manual.



PRODUCT INTRODUCTION

Listed figure is common box blade that may or may not be applicable to the products described in this manual.

See Figure 1

The box blades are designed for a wide range of applications: scarifying, scraping, leveling, grading and backfilling.

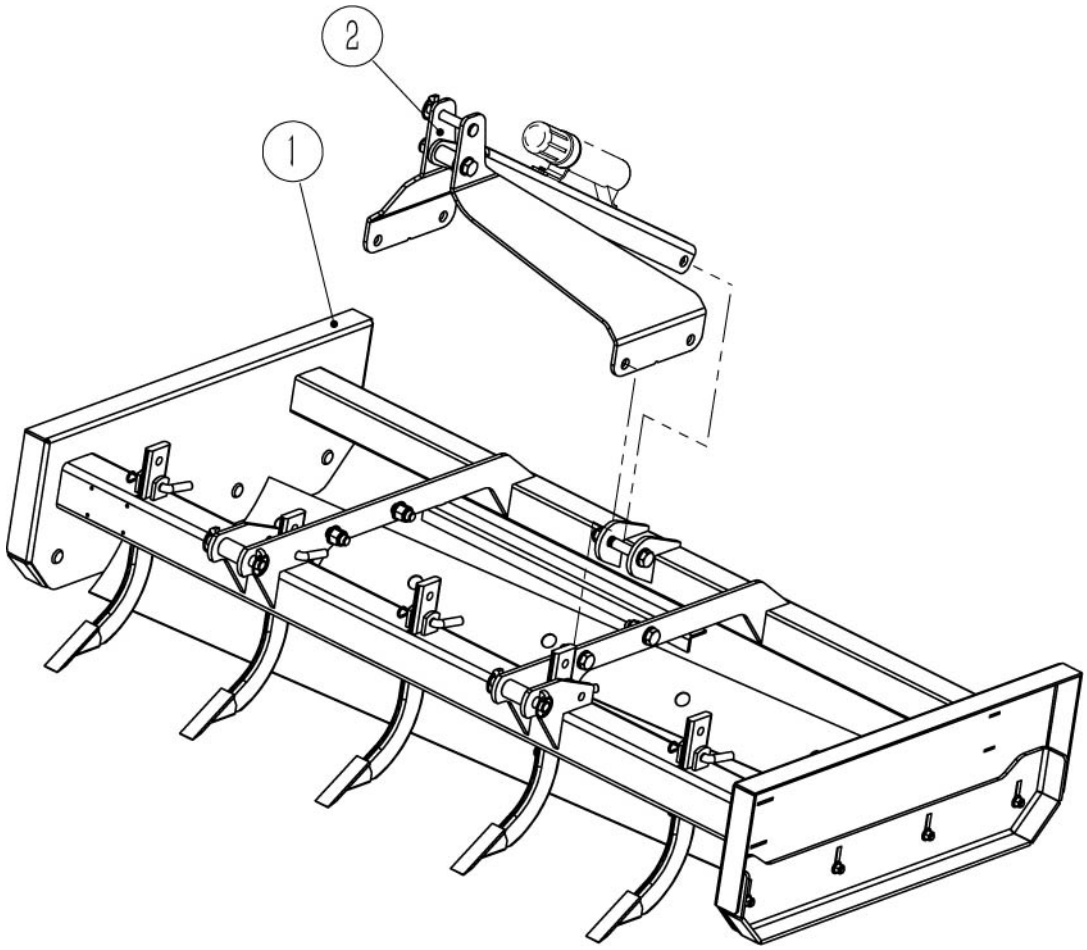


Figure 1

Main parts name and function list:

Item	Name
1	Frame assembly
2	Suspension assembly

Technical Data

Note: Specifications are provided for comparison purposes only and are subject to change without notice!

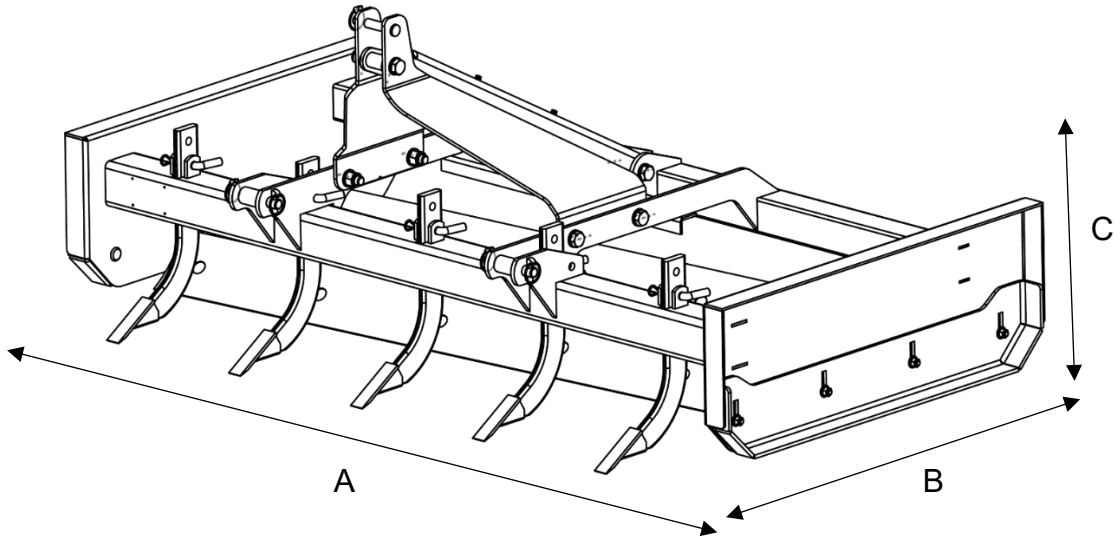


Figure 2

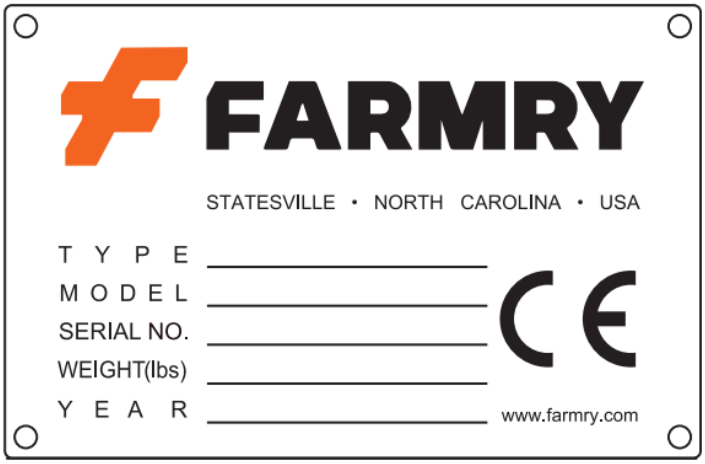
Implement specification table:

Model		GS3072	GS4084	GS4096
A	cm/in	**194.2/76.46"**	**224.8/88.5"**	**254.5/100.2"**
B		**112.4/44.25**	**122.4/48.19"**	**122.4/48.19"**
C		**85.3/33.58"**		
	cm/in	**181.2/71.34"**	**211.6/83.3"**	**241.3/95"**
	HP/kw	**45-65(33.07-47.78)**	**65-90(47.78-66.15)**	**65-90(47.78-66.15)**
	CAT.	**CAT.1/CAT.1 Quick-Hitch**	**CAT.1&CAT.2/CAT.1 Quick-Hitch /CAT.2 Quick-Hitch**	

Model		GS3072	GS4084	GS4096
Number of teeth	N	**5**	**6**	**7**
Weight	Kg/lbs	**547.8lbs(249kg)**	**744.7lbs(338.5kg)**	**806.3lbs(366.5kg)**

Implement Identification

The identification nameplate is affixed to the frame of each implement. It contains the “CE” certification brand and information about (CE is only for European region, implement identification below is for reference): the Manufacturer, Type, Serial Number, Model Number, Weight. The nameplate (Shown in the below) is for reference only and is based on the real thing.



UNPACKING

After unpacking, please check the components shown in **Figure 3**. If you have any problem, please contact us freely.

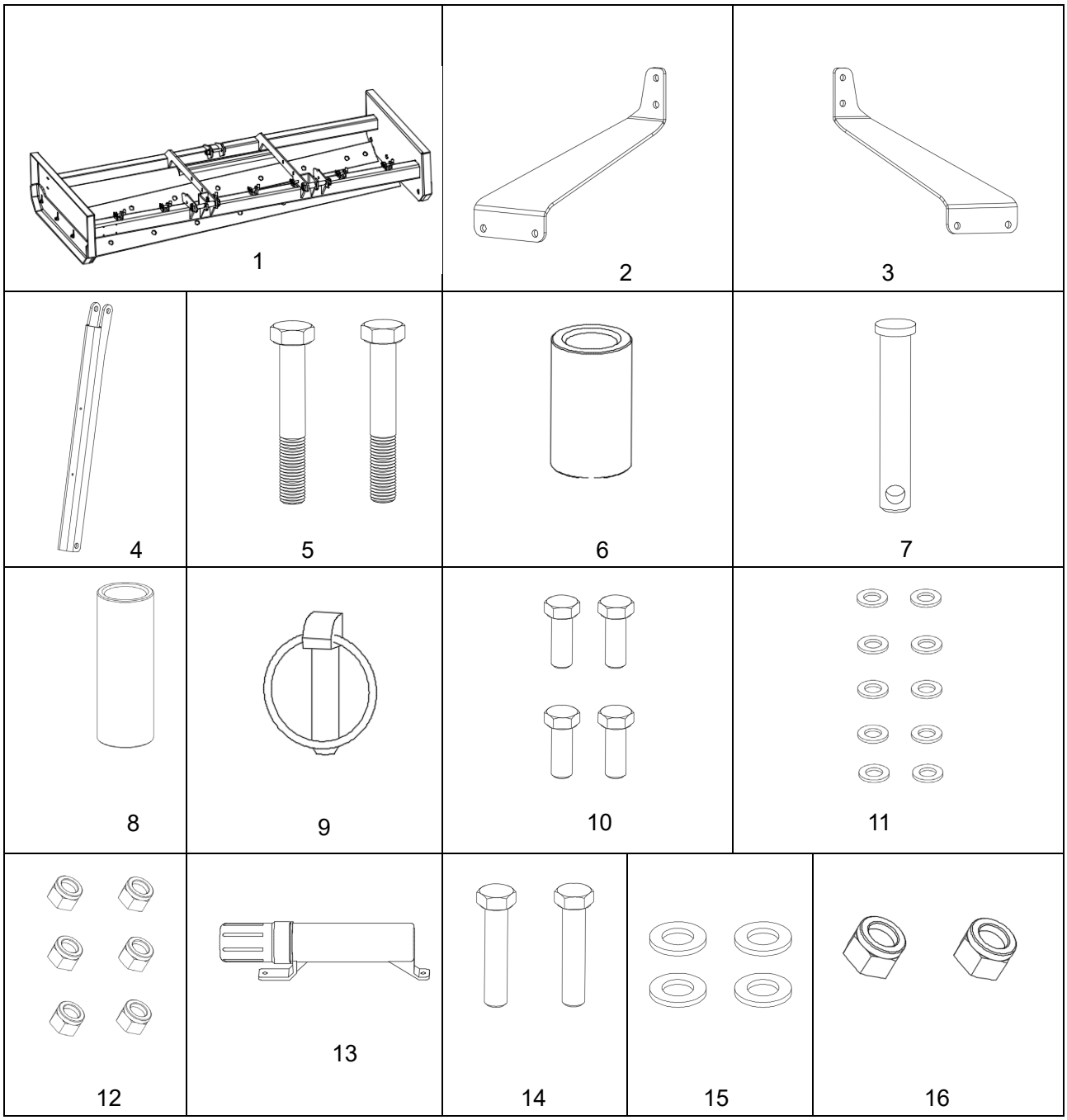


Figure 3

	Specification	Description	Qty	Packing method
1	/	Mainframe Assembly	1	single pack
2	F24037A02000-001	Right Suspension Plate	1	single pack
3	F24037A02000-002	Left Suspension Plate	1	single pack
4	F24037A02000-003	Tie Plate	1	single pack
5	GB_T5782-M20×130-8.8-EP_ZN	Hex Head Bolt	2	Bale
6	F24008A02000-003	Upper Suspension Quick Release Sleeve	1	Bale
7	MT95012	Upper Suspension Pin	1	Bale
8	F24037A02000-004	Type 2 Upper Suspension Sleeve (25.5X71)	1	Bale
9	GB_T4329-12-EP-Zn	Locking Pin	1	Bale
10	GB_T5783-M20×60-8.8-EP-Zn	Fully Threaded Hex Bolt	4	Bale
11	GB_T95-20-EP_Zn	Flat Washers	12	Bale
12	GB_T889.1-M20-8-EP_Zn	1 Non-Metallic Insert Hex Lock Nut	6	Bale
13	Blank logo-S	Small Instruction Manual Bucket	1	Bale
14	GB_T5783-M6×30-8.8-EP-Zn	Fully Threaded Hex Bolt	2	Bale
15	GB_T95-6-EP_Zn	Flat Washers	4	Bale
16	GB_T889.1-M6-8-EP_Zn	1 Non-Metallic Insert Hex Lock Nut	2	Bale

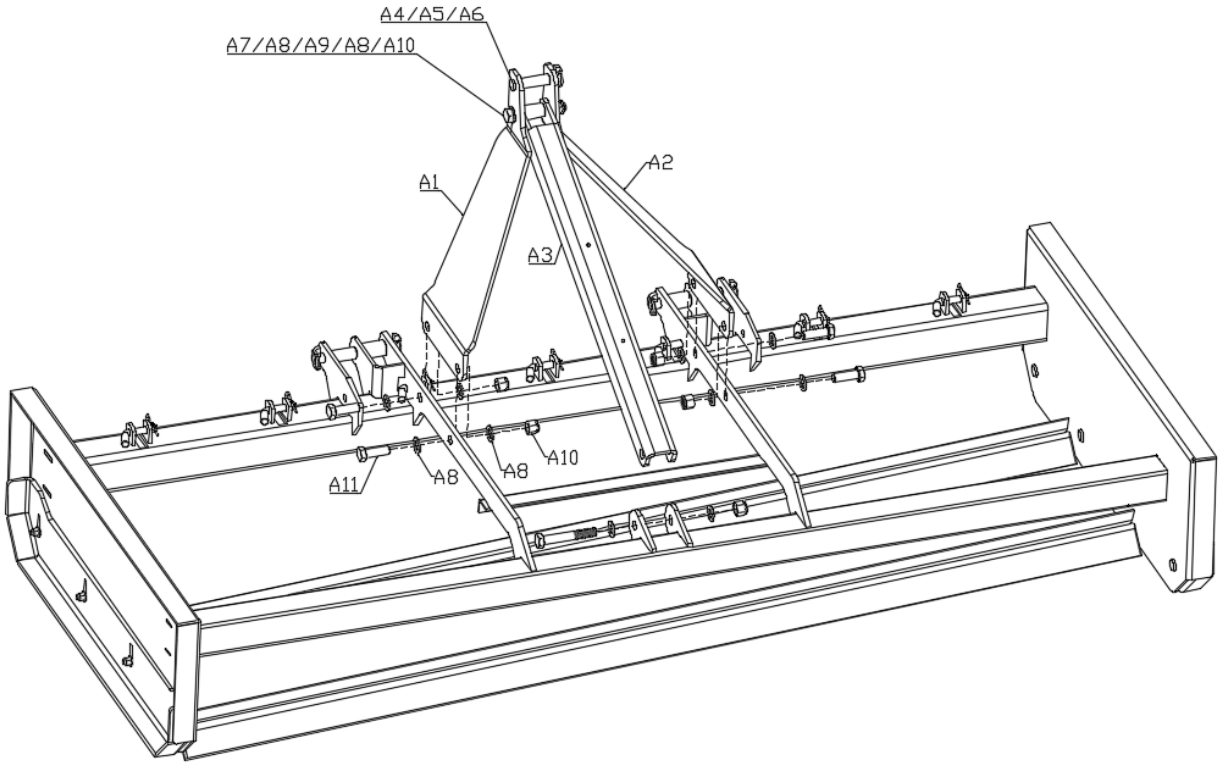
*** All numbers are not part numbers in the drawings. For correct part numbers, see explosive diagram.**

No	Description	Specification	Conditions of Use	QTY
1	Open end wrench		M20/M6 fastening	2
2	Hex key		M20/M6 fastening	1
3	hammer			1
4	Torque wrench	10-220N.m	Measuring torque	1
5	Wind gun	1280t	Match the corresponding sleeve instead of the wrench to tighten the bolt	1

ASSEMBLY & SET-UP

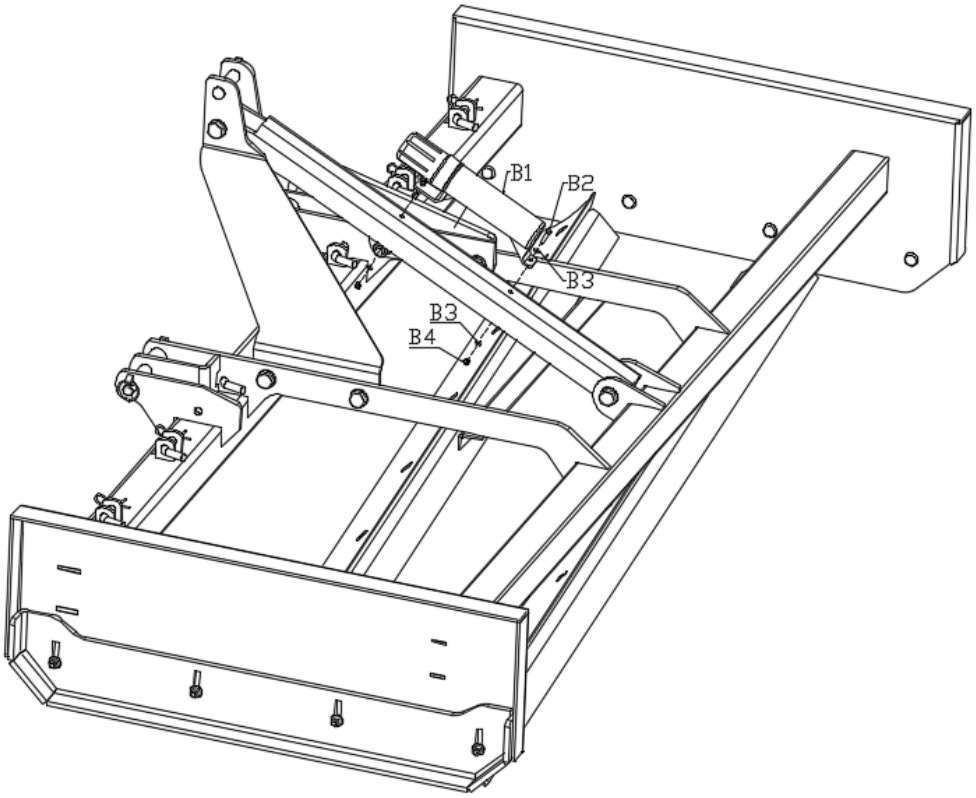
Assembly the suspension

1. Arrange and combine the two suspension plates and pull plates (A1/A2/A3) as shown in the figure, install them on the inner side of the suspension installation plate on the main frame, align the holes, and pass them through with M20*60 full-thread hexagonal bolts (A11), flat washers (A8), then tighten and fix them with flat washers (A8), M20 non-metallic inserts hexagonal lock nuts (A10).
2. Align the holes above the suspension plate, and tighten and fix them with M12*130 hexagonal head bolts (A7), flat washers (A8) , upper suspension quick-connect sleeves (A9), flat washers (A8) , lock nuts (A10). Install the upper suspension pins (A4) and Class 2 upper suspension sleeves (A5), and fix them with lock pins (A6) passing through.



Assembly the small instruction bucket

1. Install the instruction manual bucket (B1) onto the left rear suspension plate, align the holes, and pass the M6*30 full-threaded hexagonal bolt (B2) , flat washer (B3) from top to bottom. Then, tighten and fix it with the flat washer (B3) , M20 lock nut (B4).



Tractor Shutdown

The following are basic tractor shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your tractor Operator's Manual before leaving the operator's seat.

1. Reduce engine speed and disengage power take-off if engaged.
2. Park tractor and implement on level, solid ground.
3. Lower implement to ground or onto non-concrete support blocks.

NOTE: Due to the over running clutch, the rotor blades will continue to spin after the driveline stops.

4. Put tractor in park or set park brake, turn off engine, and remove switch key to prevent unauthorized starting.
5. Relieve all hydraulic pressure to auxiliary hydraulic lines.
6. Wait for all components to come to a complete stop before leaving the operator's seat.
7. Use steps, grab-handles and anti-slip surfaces when stepping on or off the tractor.

Tractor Hook-up

⚠WARNING

- A crushing hazard exists while hooking-up and unhooking the implement. Keep people and animals away while approaching the implement or pulling away from the implement. Do not operate hydraulic controls while a person or an animal is nearby.
- Always follow "Tractor Shutdown Procedure" to power off.
- Tractor horsepower and hitch category should be within the required range. The lower 3-Point arms must be stabilized to prevent side-to-side movement.

Note:

The box blade is compatible with Category 1, 3-point tractors equipped with side swing-type lower lift arms.

1. To avoid interference with the box blade, adjust tractor drawbar to the shortest and highest position.
2. Attach the tractor's lower lift arms to the box blade and secure in place with Category 1 lift pin and lynch pin
3. Attach the tractor's top link to the top of the box blade's mast and secure with the heavy-duty top link pin and retaining pin supplied with the top link.

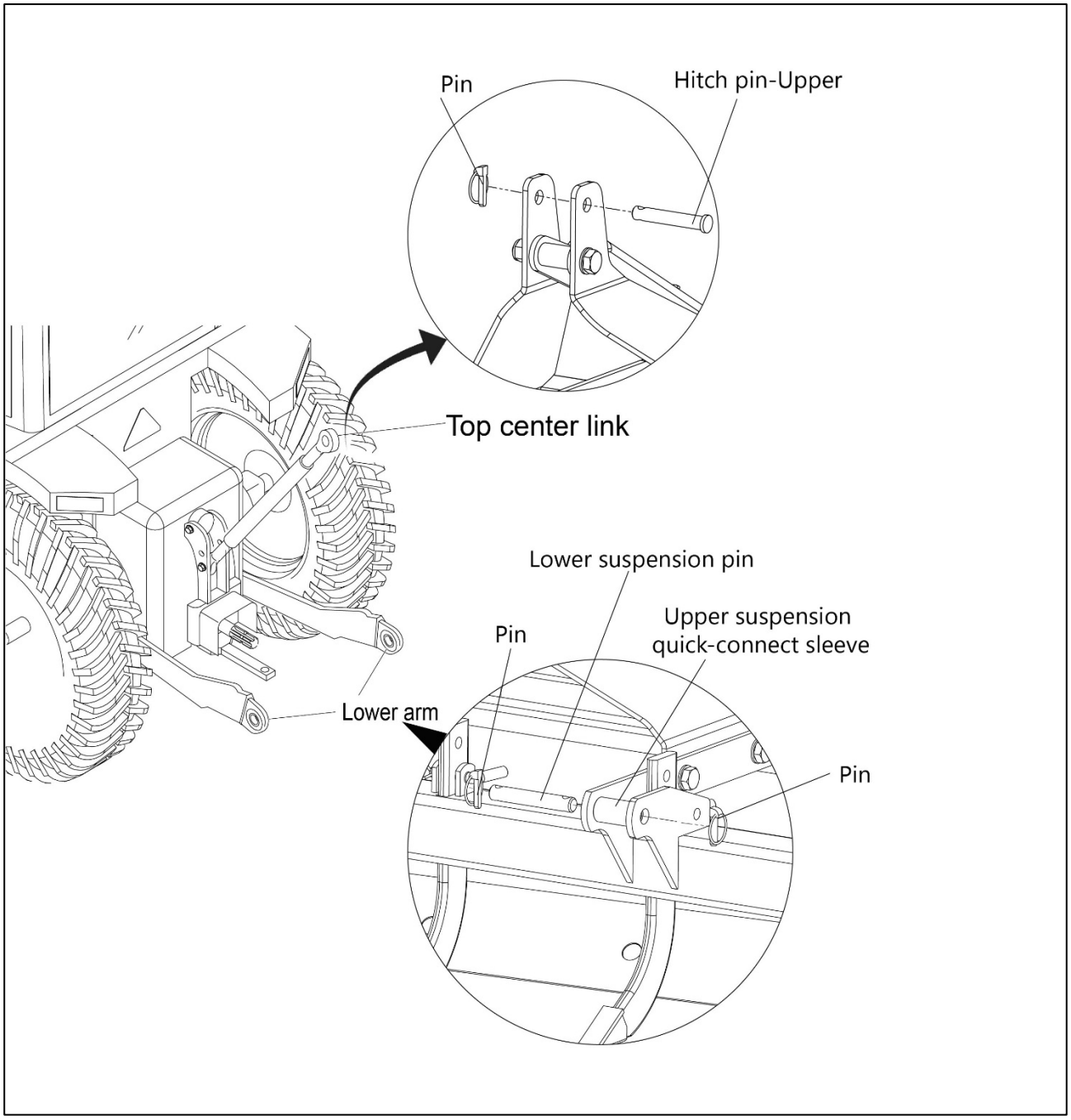
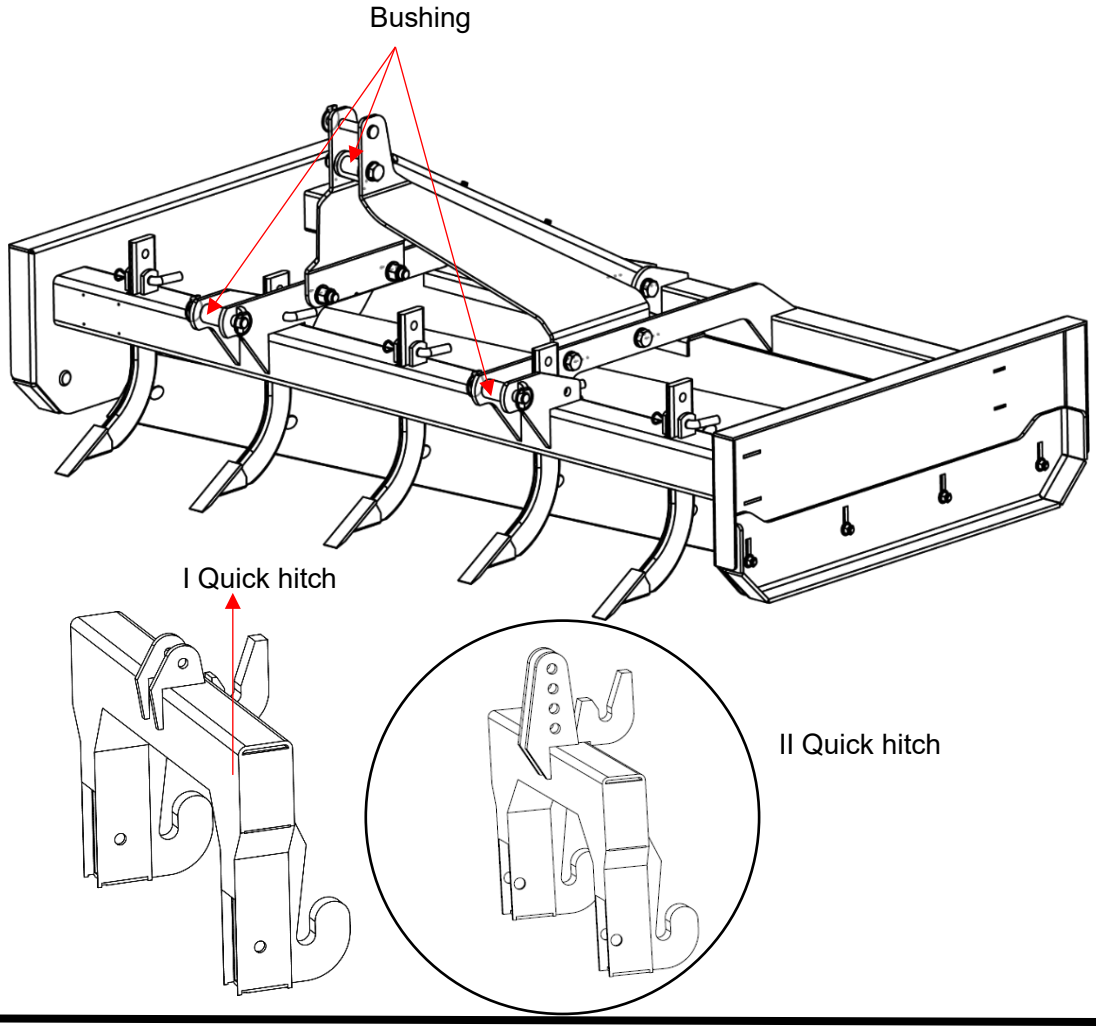

Pin
Hitch pin-Upper
Top center link
Lower suspension pin
Pin
Upper suspension
quick-connect sleeve
Lower arm
Pin

Figure 4

Tractor Hook-up

To connect tractor to implement by quick hitch:

1. Install quick hitch bushings on hitch pins.
2. Slowly push hitch control lever to lower hitch until quick coupler hooks are lower than Grading Scrapers hitch pins.
3. Back up tractor to Grading Scrapers hitch.
4. Raise hitch high enough to engage Grading Scrapers hitch pins in hooks.
5. Engage tractor parking brake and/or place transmission in “Park”. Turn off Tractor and remove key.
6. Check that quick hitch is properly engaged on Grading Scrapers hitch pins and top bushings, and lower coupler handles to lock position
7. Start tractor engine.
8. Slowly pull hitch control lever to raise land plane. Check for interference.
9. Adjust tractor center link until Grading Scrapers is level with the ground when in the down position.



OPERATION

General Operating Instructions

The operator is responsible for the safe operation of this equipment. The operator must be properly trained. Operators should be familiar with the equipment, the tractor, and all safety practices before starting operation.

WARNING: Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS system in “locked up” position at all times.

- Never allow children or untrained persons to operate equipment.
- Keep bystanders away from equipment.
- Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

CAUTION : Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

Once you have familiarized yourself with the Operator’s Manual, completed the operations checklist, and properly attached your

Box Scraper to your tractor, you are now almost ready to begin work. Box Scrapers are ideal for ripping, leveling, finish grading, and backfilling applications at feedlots, outdoor arenas, building sites, and maintenance operations on farm and ranch lanes or roadways. Hopefully you have checked out your work site for any buried utility cables, pipelines, or other obstacles that you wouldn’t want to damage or encounter.

A Box Scraper’s primary purpose is grading and leveling. This function is best done at an approximate 2-4 mph (3-6.5 km/h) ground speed. With the ripper shanks raised all the way up, simply lower the Box Scraper to the ground and proceed forward. The grader blade should immediately begin shaving the soil surface and dirt or aggregate material should begin accumulating in the box. You can transfer this material by dragging it to a nearby location and then raising the Box Scraper to deposit your load. You can also achieve uniform distribution and leveling of scraped material by setting the Box Scraper to shave off high spots allowing accumulated material to flow out under the grader blade in the low spots. Occasionally the ground or surface material will be very hard and will require ripping to loosen the soil profile in order for the Box Scraper blade to be effective. If less aggressive ripping action is desired, raise all of the shanks. Achieving the desired effect will require a little experimentation and experience in your given conditions. Box Scrapers generally perform better in dry to slightly damp soil conditions.

Your Box Scraper can also be used for backfilling applications. Simply lower your Box Scraper and back the standard rear facing grader blade into the pile of dirt you are using for backfill. Continue backfilling

and pushing operations until you have successfully completed the task.
With a little practice you should become a very good operator and consistently achieve the desired results you expect with your Box Scraper

Checklist before Operation

⚠CAUTION

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the box blade. Therefore, it is absolutely essential that no one operates the machine without first having read, fully understood, and become totally familiar with the Operator's Manual. Make sure all operators have completed the Checklist below.

Before operating the machine, the following steps should be inspected carefully:

1. Check that equipment is properly and securely attached to tractor
2. Use only an agricultural tractor with horsepower within limits of the implement.
3. Check that the machine is properly attached to the tractor. Be sure retainers are used on the mounting pins.
4. Be sure extra weights are mounted on the front of the tractor, if required.
5. Check the blades. Be sure they are not damaged or broken and swing freely in their mount. Repair or replace as required.
6. Check and tighten the blade bolts.
7. Check for entangled material in all rotating parts. Remove this material.
8. Install and secure all guards, hook and covers before starting.
9. All other people shall leave the area before connecting the driving power from the tractor.
10. Before cleaning, repairing and lubricating the machine, stop the motor and take the key away with you.
11. Don't approach the machine when it is operating.
12. Check that all safety decals are installed and in good condition. Replace if damaged.
13. Check that all hardware is properly installed and secured.
14. Make sure tractor ROPS or ROPS CAB and seat belt are in good condition. Keep seat belt

securely fastened during operation.

Adjusting Grading Scrapers

The Grading Scrapers is leveled by adjusting the length of the tractor's top link.

1. Shortening the top link will raise the rear of the Grading Scrapers.
2. Lengthening the top link will lower the rear of the Grading Scrapers.

Lengthening or shortening the adjustable lift link (draft arm) changes the angle of the land plane side to side (left to right). The most common position for effective grading will be level front to back and side to side. Experience will allow the operator to determine the best setting for the application being done.

Operation

ADJUSTING TOP LINK：

The box blade is leveled by adjusting the length of the tractor's top link.

• Shortening the top link will deepen the scarify tooth penetration.

• Lengthening the top link will provide better scraping and leveling action.

Experience will allow the operator to determine the best setting for the application being done.

SCARIFYING：

1. For aggressive scarifying shorten top link allowing the unit to tilt forward further engaging the scarifies..
2. To scarify and level/grade at the same time it will be necessary to lengthen the top link more than usual to insure proper ground engagement with the rear grading blade.
3. Place the scarifies shanks in position with the points facing toward the tractor.

SCRAPING/LEVELING

1. Raise or remove the scarify shanks. Lower the box blade and drive forward to move material.
2. Adjust grading height above plane by raising the tractor draft arms and setting draft control on tractor for consistency, adjust grading height below plane by adjusting skid shoes

NOTE: When the top link is adjusted properly, both the front and rear grading blades should engage the ground and or material being leveled.

1. To change the level of the blade, shorten or lengthen the tractor lift arm tilt link to provide the correct slope.
2. Spread large piles of material by raising the unit and backing over the pile, lower unit and drive forward, once material is moved to desired location begin raising unit to leave material behind.

Make final leveling passes once material is spread.
NOTE: Top link adjustment for loose or previously scarified material will differ from adjustment for hard or compacted material.

CLEANING：

After Each Use

Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.

•1. Inspect machine and replace worn or damaged parts.

•2. Replace any safety decals that are missing or not readable

Periodically or Before Extended Storage

Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.

1. Remove the remainder using a low-pressure water spray.
2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
4. Inspect machine and replace worn or damaged parts.
5. Sand down scratches and the edges of areas of missing paint and coat with spray paint of matching color (purchase from your dealer).
6. Replace any safety decals that are missing or not readable (supplied free by your dealer). See Safety Decals section for location drawing.

SERVICE AND MAINTENANCE

Maintenance

Proper servicing and adjustments are key to the long life of any implement. With careful inspection and routine maintenance, you can avoid costly downtime and repair.

Check all bolts after using the unit for several hours to be sure they are tight.

- Make sure controls are all in the neutral position or park before starting the power machine.
- Always shut power machine down using the “Shutdown Procedure” provided in this manual before servicing, adjusting, cleaning, or maintaining the attachment.
- Allow only persons to perform maintenance on this implement who have been properly trained in its safe operation.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.
- Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.
- Always keep your body extremities out from under the shanks and cutting blades while removing, installing, and adjusting them. It is possible for the cutting blades and/or shanks to fall causing injury to your body.

Tightening Torque

Please follow the table below to identify the torque value as required.

Torque Values Chart for Common Bolt Sizes													
	Bolt Head Identification							Bolt Head Identification					
Bolt Size (inches)	Grade 2		Grade 5		Grade 8		**Bolt Size** (Metric)	5.8 Class 5.8		8.8 Class 8.8		10.9 Class 10.9	
in-tpi [1]	N · m [2]	ft-lb [3]	N · m	ft-lb	N · m	ft-lb	mm x pitch [4]	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4" - 28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16" - 18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16" - 24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8" - 16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
3/8" - 24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
7/16" - 14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
7/16" - 20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
1/2" - 13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
1/2" - 20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
9/16" - 12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160
9/16" - 18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
5/8" - 11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
5/8" - 18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
3/4" - 10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
3/4" - 16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
7/8" - 9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
7/8" - 14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1" - 8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1" - 12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1-1/8" - 7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1-1/8" - 12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1-1/4" - 7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
1-1/4" - 12	750	555	1680	1240	2730	2010	[1] in-tpi = nominal thread diameter in inches-threads per inch						
1-3/8" - 6	890	655	1990	1470	3230	2380	[2] N· m = newton-meters						
1-3/8" - 12	1010	745	2270	1670	3680	2710	[3] ft-lb= foot pounds						
1-1/2" - 6	1180	870	2640	1950	4290	3160	[4] mm x pitch = nominal thread diameter in millimeters x thread pitch						
1-1/2" - 12	1330	980	2970	2190	4820	3560							
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above. All locknuts or lubricated fasteners: Use 75% of torque value. (i.e. 1/2"-13 GR5 = 76 ft-lb; 75% of 76 or .75 x 76 = 57 ft-lb)													

- This chart is an approximate estimate of torque values.
- Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.
- Fasteners must always be replaced with the same grades as specified in the manual.
- Always use the proper tool for tightening hardware; SAE for SAE hardware and Metric for Metric hardware.
- Make sure that fastener threads are clean and that you properly start thread engagement.

Replacing the Blade

Frequently check rotor blades to make sure they are in good working condition and properly secured to the rotor.

Replace worn or damaged parts with new blades.

IMPORTANT:

- Make sure that the replacement of blade with other same weight. This will be a balance of rotor spinning.
- Recommend blade is the original factory accessories.

They are interchangeable and reversible.

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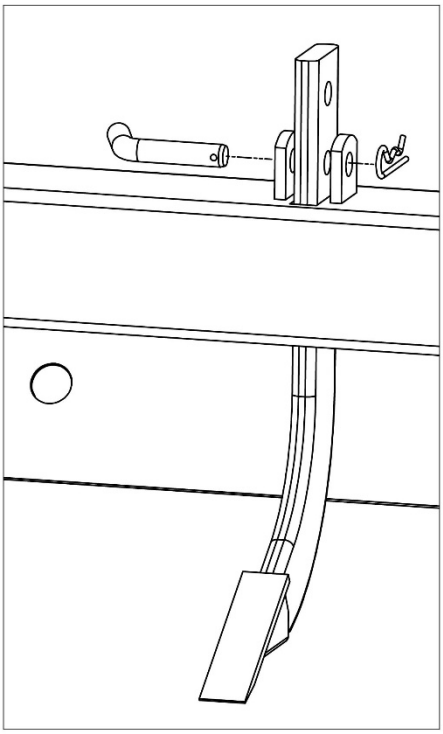
NOTE: Do not block the machine any higher than necessary to remove the shanks or cutting edge.

1. Remove pin
2. Turn cutting edge over and use new edge, or replace it if both edges have been used.



STORAGE AND TRANSPORT

Storage

Before storage the implement, you should following the steps below:

1. Remove any dirt and grease that may have accumulated on the machine and moving parts. Scrape off compacted dirt from under the hood. Clean the machine inside and out so as to avoid corrosion.
2. Check, blades, blade mounts, and blade bolts for wear and replace if necessary..
3. Recoat the parts rubbed and damaged for anti-corrosion.
4. Store the machine in a dry, level area.

Transport

⚠WARNING

- Always disengage power take-off before raising mower to transport position.
- When traveling on roadways, travel in such a way that other vehicles may pass you safely. Always use LED lights, clean reflectors, and a slow moving vehicle sign that is visible from the back to warn operators in other vehicles of your presence.
- Always comply with all federal, state, and local laws.

Before transport the implement, you should following the steps below:

1. When raising mower to transport position, be sure driveline does not contact tractor or mower. If needed, adjust and set tractor 3-point lift height to limit mower movement and to protect driveline.
2. Be sure to reduce tractor ground speed when turning, leaving enough clearance so that the mower does not contact obstacles such as buildings, trees, fences, etc.
3. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass safely.
4. When traveling over rough or hilly terrain, shift tractor to a lower gear.

TROUBLESHOOTING

Listed general troubleshooting is the common malfunction that may or may not be application to the described in this manual. If you have any problem not covered in the list, please contact us for technical supporting.

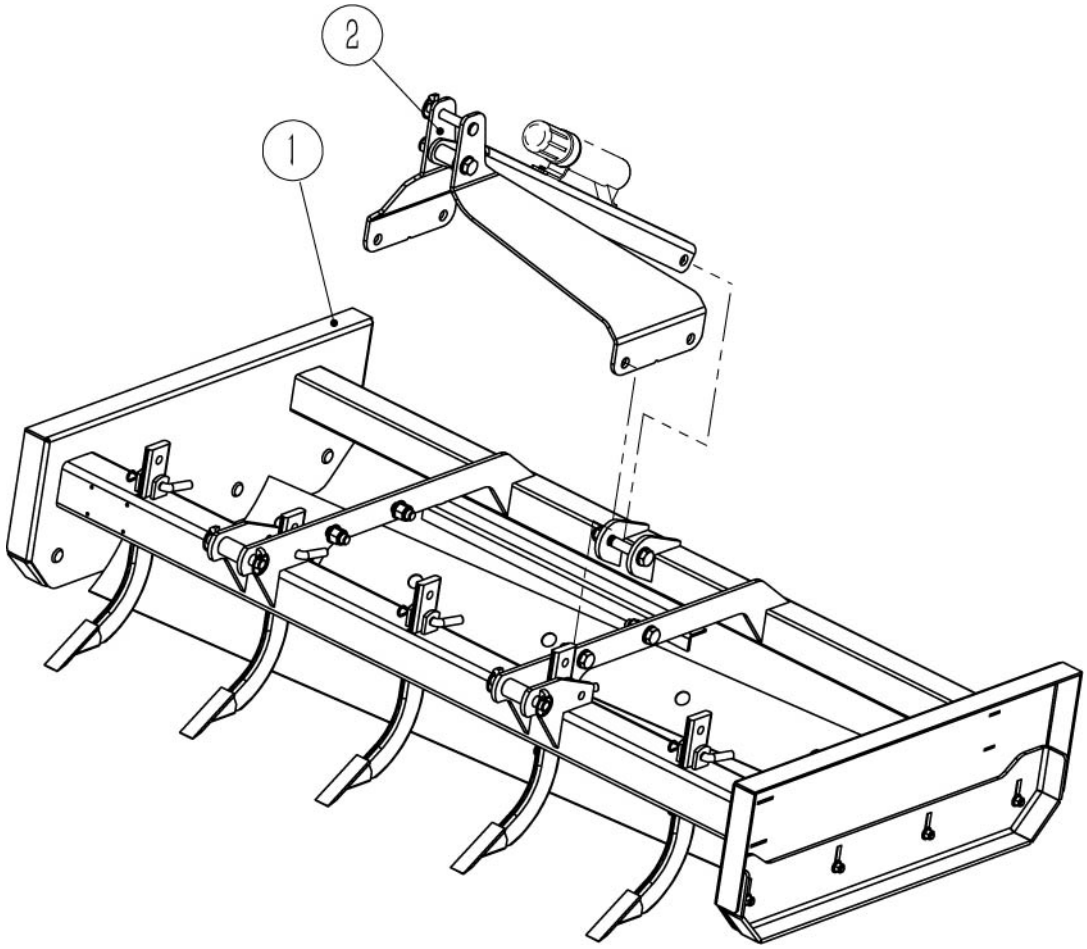
General troubleshooting list:

Malfunction	Possible Cause	Solution
Material building up on first blade	Unit tilted forward	Lengthen top link
Material not being graded by first blade/building up on second blade	Unit tilted back	Shorten top link
Unit tips up in the back when using scarifies	Front down pressure caused by scarifies	Lengthen top link more than usual when using scarifies and leveling at same time
Material spread is not level	Skid shoes not adjusted evenly	Measure skid shoe position on each side and make even
Material/rock getting bound up in the front	Scarifies not allowing adequate material flow	When leveling or spreading large media it may be necessary to remove the scarifies

EXPLODED VIEW AND PARTS LIST

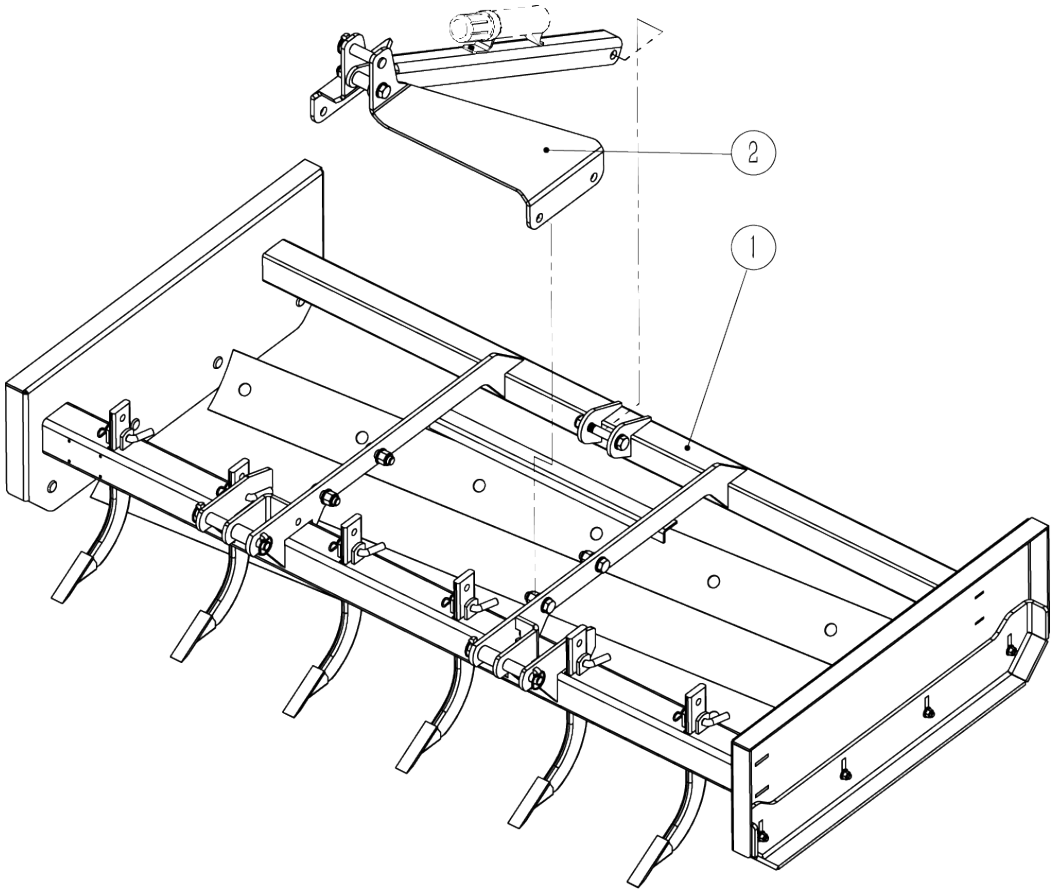
SCRAPERS

3072：



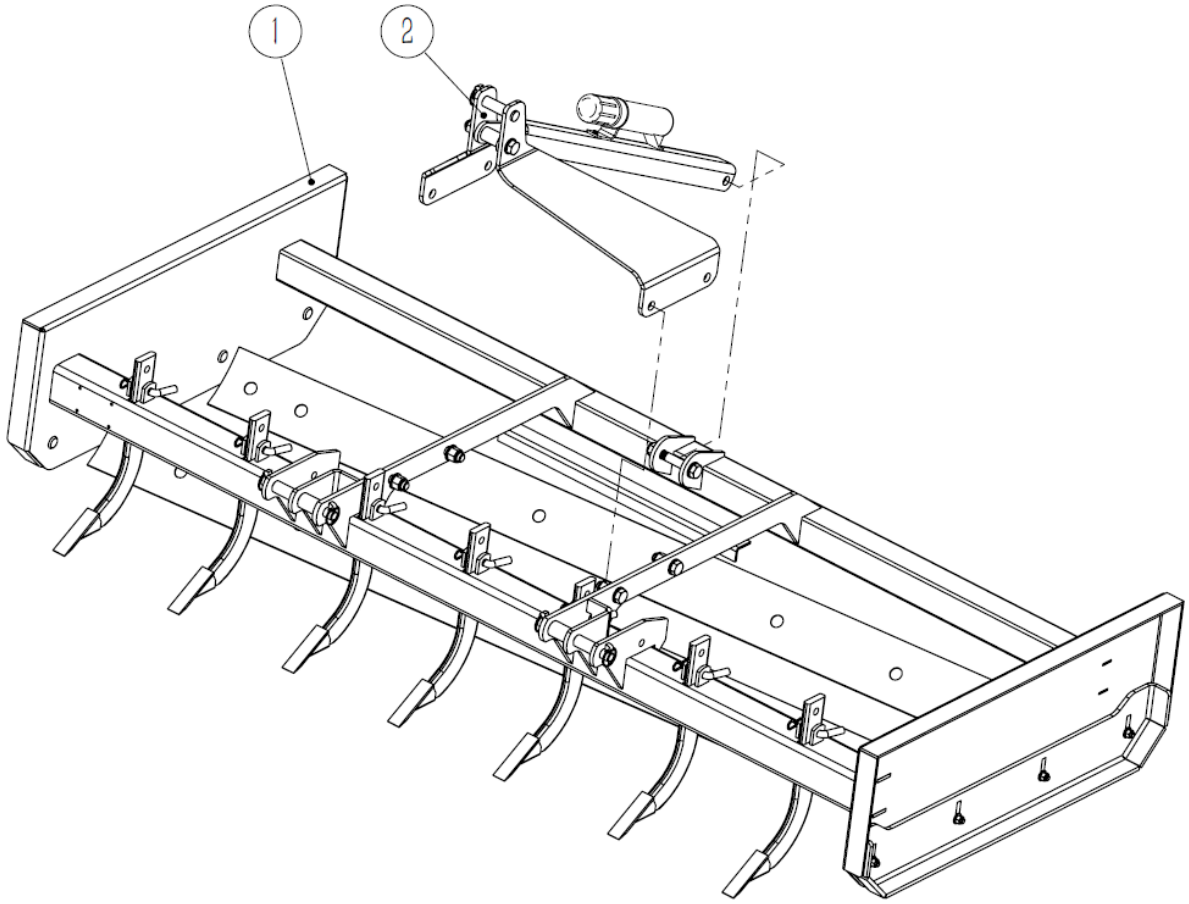
POS.	COD.	Specification	Description	Qty
1	2060108766	F24039A01000-000	Frame component	1
2	2060108767	F24039A02000-000	Suspension component	1

4084：



POS.	COD.	Specification	Description	Qty
1	2060108764	F24038A01000-000	Frame component	1
2	2060108763	F24037A02000-000	Suspension component	1

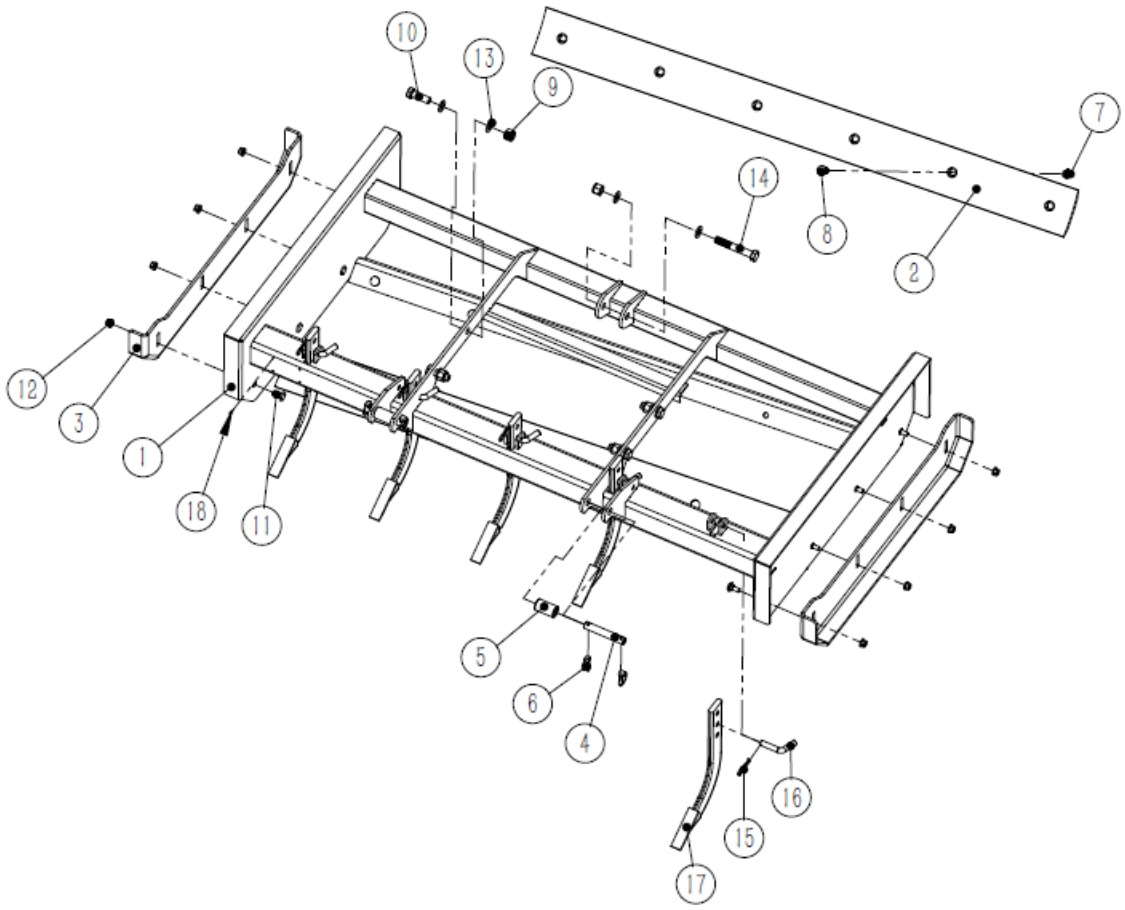
GS4096：



POS.	COD.	Specification	Description	Qty
1	2060108762	F24037A01000-000	Frame component	1
2	2060108763	F24037A02000-000	Suspension component	1

Frame component

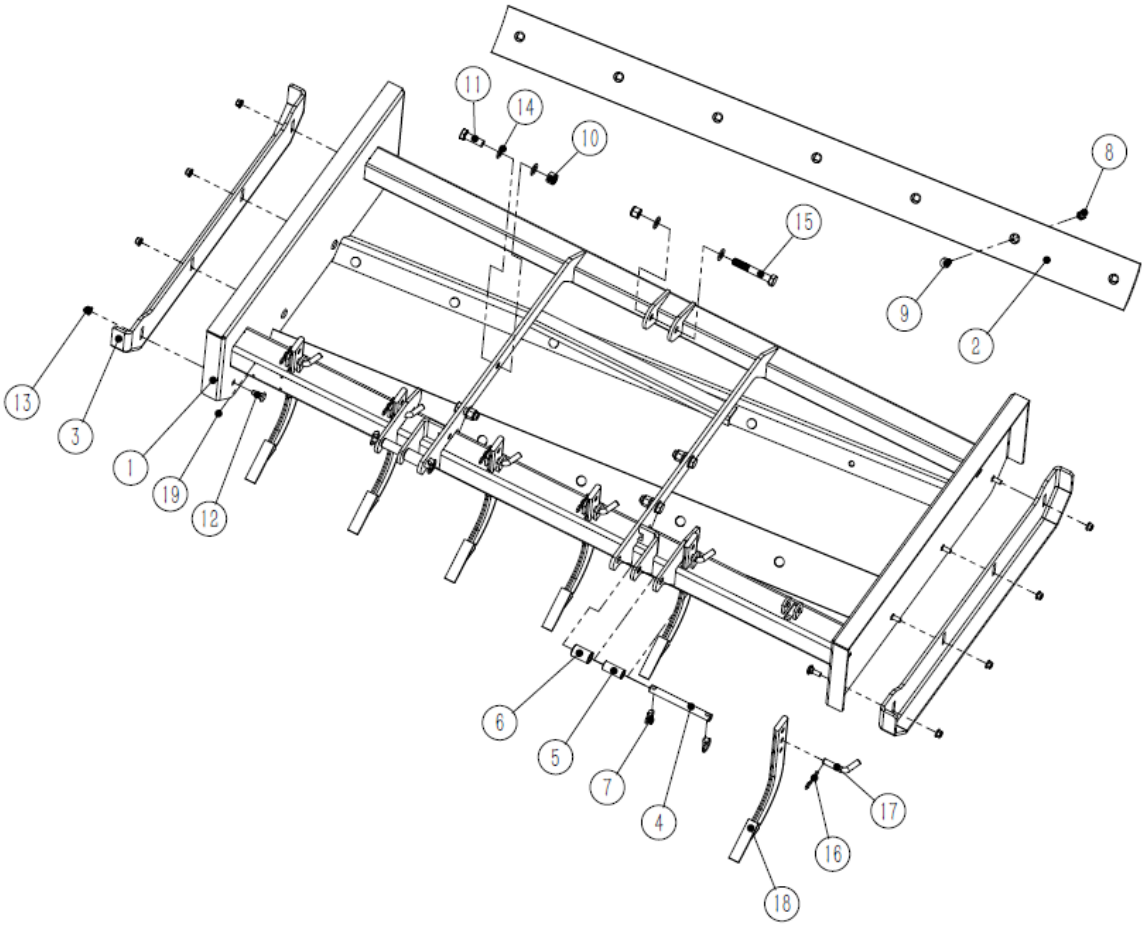
GS3072：



POS.	COD.	Specification	Description	Qty
1	2020008835	F24039A01100-000	Frame weldment	1
2	3220400630	F24016A01000-001	Grading blade	2
3	2000007192	F24039A01000-001	Skid shoe	2
4	2010005662	F24009A01000-003	Lower suspension pin	2
5	2010005663	F24009A01000-004	Hang Lower suspension quick change sleeve pin	2
6	3120400007	GB/T4329-12-EP•Zn	Pin	4
7	3051400626	5 / 8-11UNC-2B	All-metal torque type hexagonal locknuts	12

POS.	COD.	Specification	Description	Qty
8	3041600631	5 / 8-11UNC-2A	Countersunk head square neck plow bolt 5/8*1.75	12
9	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	5
10	3040100139	GB/T5783-M20×60-8.8-EP•Zn	Full-thread hexagon bolts	4
11	3041700612	GB_T794-M12×30-8.8-EP_Zn	Strengthened cap head square neck bolt	8
12	3051400611	GB_T6187-M12-8-EP_Zn	Full metal hex flange locking nut	8
13	3080100011	GB/T95-20-EP•Zn	Flat washer	10
14	3040300076	GB/T5782-M20×130-8.8-EP•Zn	Hexagon head bolts	1
15	3120400008	Din11024-4-EP•Zn	R Pin	5
16	2010005659	F24008A01000-006	Hang pin	5
17	3220200639	F24034B01200-000	Loose shovel assembly	5
18	3070100001	GB/T12618.4-3×10	Open end Oind rivets	4

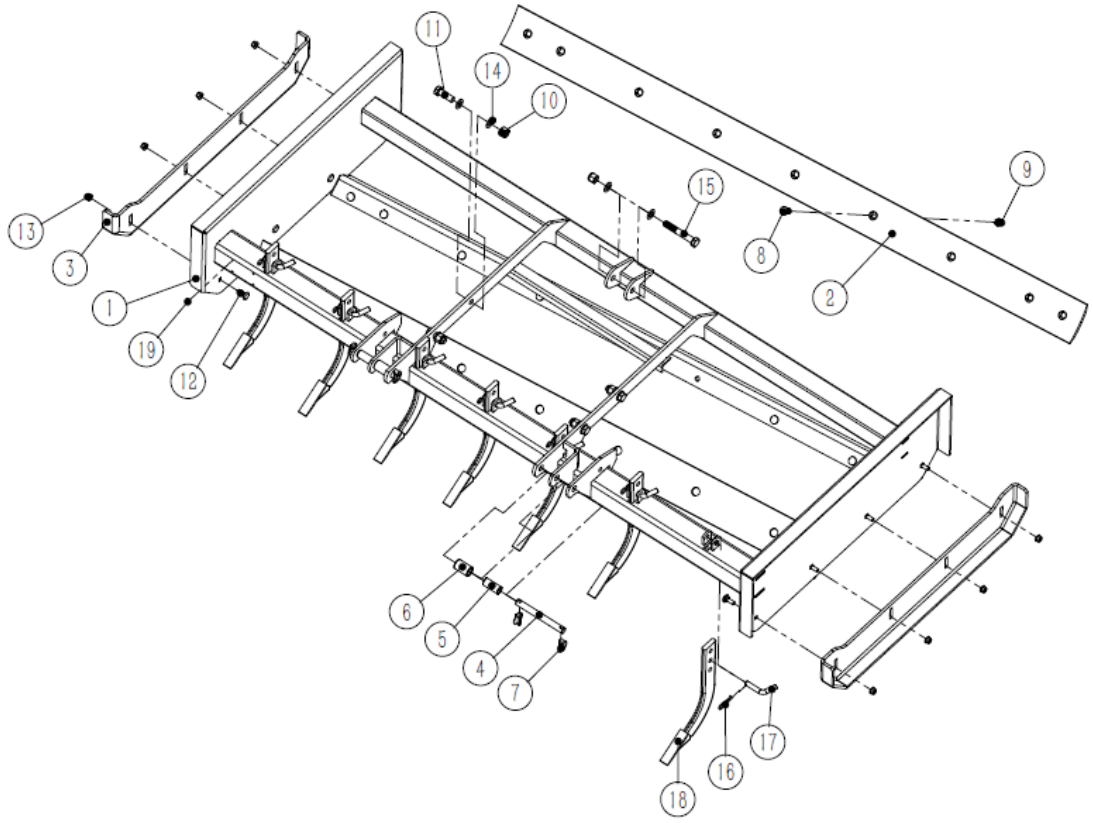
GS4084:



POS.	COD.	Specification	Description	Qty
1	2020008834	F24038A01100-000	Frame weldment	1
2	3220400628	F24017A01000-002	Grading blade	2
3	2000007188	F24037A01000-001	Skid shoe	2
4	2010005656	F24008A01000-003	Lower suspension pin	2
5	2010005657	F24008A01000-004	Type 2 lower suspension quick sleeve	2
6	2010005658	F24008A01000-005	Hang Lower suspension quick change sleeve pin	2
7	3120400007	GB/T4329-12-EP•Zn	Pin	4
8	3051400626	5 / 8-11UNC-2B	All-metal torque type hexagonal locknuts	14

POS.	COD.	Specification	Description	Qty
9	3041600631	5／8-11UNC-2A	Countersunk head square neck plow bolt 5/8*1.75	14
10	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	5
11	3040100139	GB/T5783-M20×60-8.8-EP•Zn	Full-thread hexagon bolts	4
12	3041700004	GB/T794-M12×35-8.8-EP•Zn	Reinforced half-round head square neck Bolt	8
13	3051400611	GB_T6187-M12-8-EP_Zn	Full metal hex flange locking nut	8
14	3080100011	GB/T95-20-EP•Zn	Flat washer	10
15	3040300076	GB/T5782-M20×130-8.8-EP•Zn	Hexagon head bolts	1
16	3120400008	Din11024-4-EP•Zn	R Pin	6
17	2010005659	F24008A01000-006	Hang pin	6
18	3220200639	F24034B01200-000	Loose shovel assembly	6
19	3070100603	GB/T12618.4-3×15	Open end Oind rivets	4

GS4096:



POS.	COD.	Specification	Description	Qty
1	2020008833	F24037A01100-000	Frame weldment	1
2	3220400614	F24008A01000-002	Grading blade	2
3	2000007188	F24037A01000-001	Skid shoe	2
4	2010005656	F24008A01000-003	Lower suspension pin	2
5	2010005657	F24008A01000-004	Type 2 lower suspension quick sleeve	2
6	2010005658	F24008A01000-005	Hang Lower suspension quick change sleeve pin	2
7	3120400007	GB/T4329-12-EP•Zn	Pin	4
8	3041600631	5 / 8-11UNC-2A	Countersunk head square neck plow bolt 5/8*1.75	18
9	3051400626	5 / 8-11UNC-2B	All-metal torque type hexagonal locknuts	18
10	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	5

POS.	COD.	Specification	Description	Qty
11	3040100139	GB/T5783-M20×60-8.8-EP•Zn	Full-thread hexagon bolts	4
12	3041700004	GB/T794-M12×35-8.8-EP•Zn	Reinforced half-round head square neck Bolt	8
13	3051400611	GB_T6187-M12-8-EP•Zn	Full metal hex flange locking nut	8
14	3080100011	GB/T95-20-EP•Zn	Flat washer	10
15	3040300076	GB/T5782-M20×130-8.8-EP•Zn	Hexagon head bolts	1
16	3120400008	Din11024-4-EP•Zn	R Pin	7
17	2010005659	F24008A01000-006	Hang pin	7
18	3220200639	F24034B01200-000	Loose shovel assembly	7
19	3070100603	GB/T12618.4-3×15	Open end Oind rivets	4

SUSPENSION ASSEMBLY

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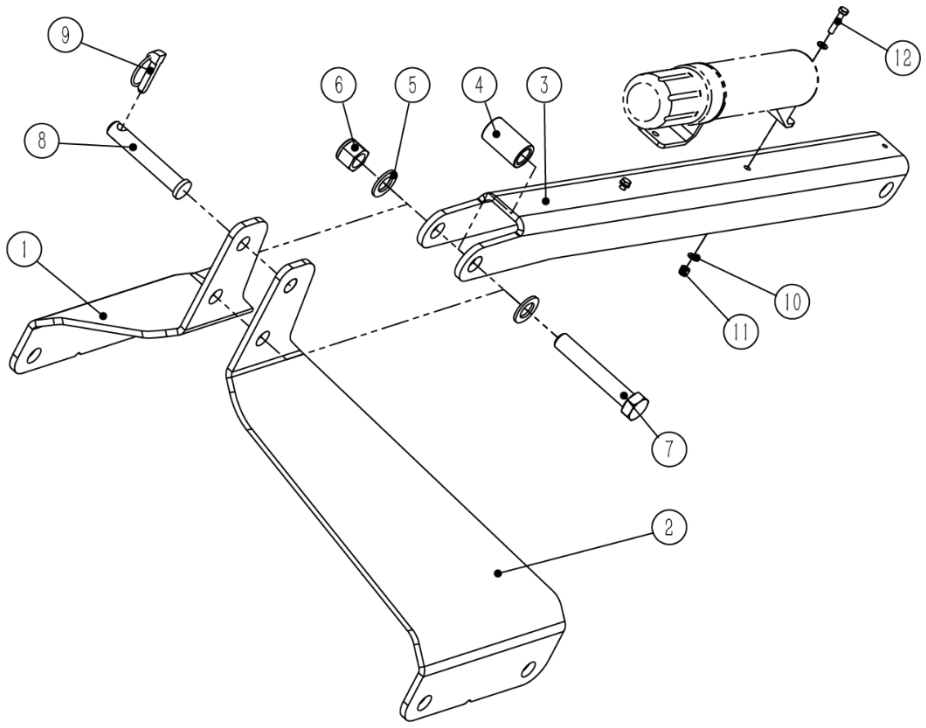
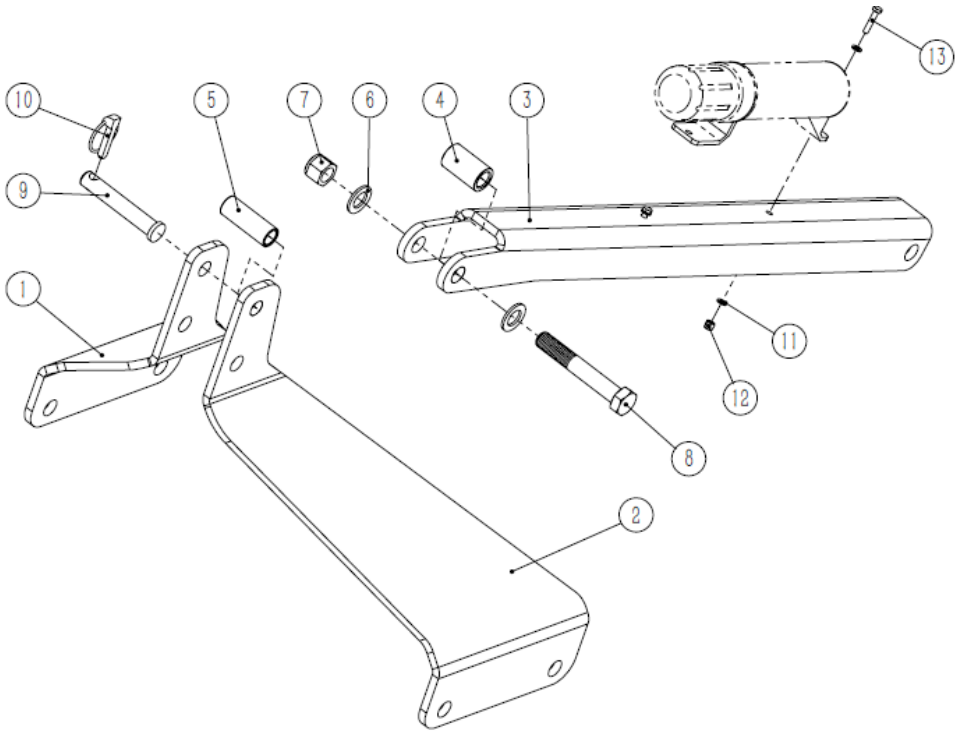


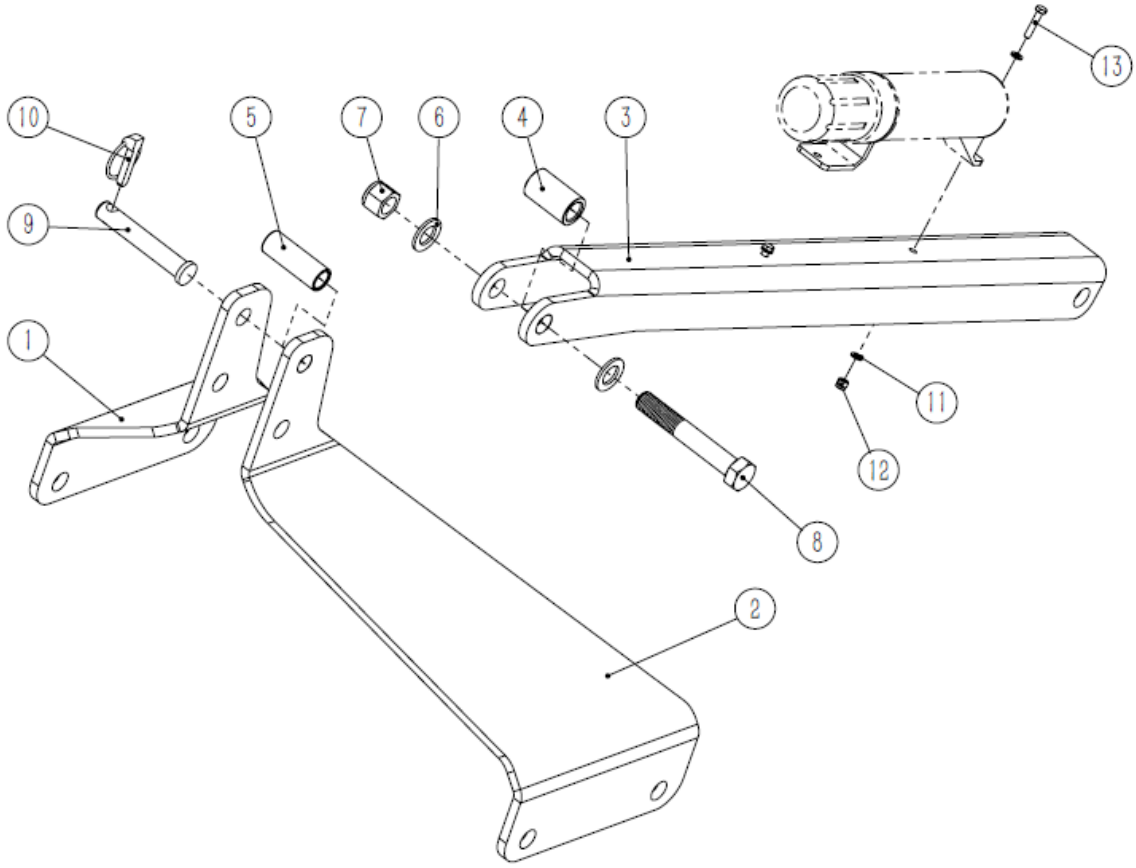
POS.	COD.	Specification	Description	Qty
1	2000007193	F24039A02000-001	Right suspension panel	1
2	2000007194	F24039A02000-002	Left suspension panel	1
3	2000007195	F24039A02000-003	Pulling plate	1
4	2010005661	F24008A02000-003	Upper suspension quick-connect sleeve	1
5	3080100011	GB/T95-20-EP•Zn	Flat washer	2
6	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	1
7	3040300075	GB/T5782-M20×120-8.8-EP•Zn	Hexagon head bolts	1
8	3120500007	MT95012	Hitch pin-Upper	1
9	3120400007	GB/T4329-12-EP•Zn	Pin	1
10	3080100003	GB/T95-6-EP•Zn	Plain washer	4
11	3050500002	GB/T889.1-M6-8-EP•Zn	Locknut	2
12	3040100009	GB/T5783-M6×30-8.8-EP•Zn	Full-thread hexagon bolts	2

GS4084：



POS.	COD.	Specification	Description	Qty
1	2000007189	F24037A02000-001	Right suspension panel	1
2	2000007190	F24037A02000-002	Left suspension panel	1
3	2000007191	F24037A02000-003	Pulling plate	1
4	2010005661	F24008A02000-003	Upper suspension quick-connect sleeve	1
5	2010006628	F24037A02000-004	Type 2 upper suspension sleeve	1
6	3080100011	GB/T95-20-EP•Zn	Flat washer	2
7	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	1
8	3040300076	GB/T5782-M20×130-8.8-EP•Zn	Hexagon head bolts	1
9	3120500007	MT95012	Hitch pin-Upper	1
10	3120400007	GB/T4329-12-EP•Zn	Pin	1
11	3080100003	GB/T95-6-EP•Zn	Plain washer	4
12	3050500002	GB/T889.1-M6-8-EP•Zn	Locknut	2
13	3040100009	GB/T5783-M6×30-8.8-EP•Zn	Full-thread hexagon bolts	2

GS4096:



POS.	COD.	Specification	Description	Qty
1	2000007189	F24037A02000-001	Right suspension panel	1
2	2000007190	F24037A02000-002	Left suspension panel	1
3	2000007191	F24037A02000-003	Pulling plate	1
4	2010005661	F24008A02000-003	Upper suspension quick-connect sleeve	1
5	2010006628	F24037A02000-004	Type 2 upper suspension sleeve	1
6	3080100011	GB/T95-20-EP•Zn	Flat washer	2
7	3050500011	GB/T889.1-M20-8-EP•Zn	Locknut	1
8	3040300076	GB/T5782-M20×130-8.8-EP•Zn	Hexagon head bolts	1
9	3120500007	MT95012	Hitch pin-Upper	1
10	3120400007	GB/T4329-12-EP•Zn	Pin	1

POS.	COD.	Specification	Description	Qty
11	3080100003	GB/T95-6-EP•Zn	Plain washer	4
12	3050500002	GB/T889.1-M6-8-EP•Zn	Locknut	2
13	3040100009	GB/T5783-M6×30-8.8-EP•Zn	Full-thread hexagon bolts	2

WARRANTY

The Manufacturer warrants to the original purchaser that this product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit and Driveline: 12 months Parts and Labor

Gearbox: 36 months on all components.

Blades and Belts: Consumables materials

This Warranty is limited to the replacement of any defective part by the Manufacturer and the installation by the dealer of any such replacement part, and does not cover common wear items. The Manufacturer reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Manufacturer's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Manufacturer dealer. The Manufacturer reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Manufacturer liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, the Manufacturer shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

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