

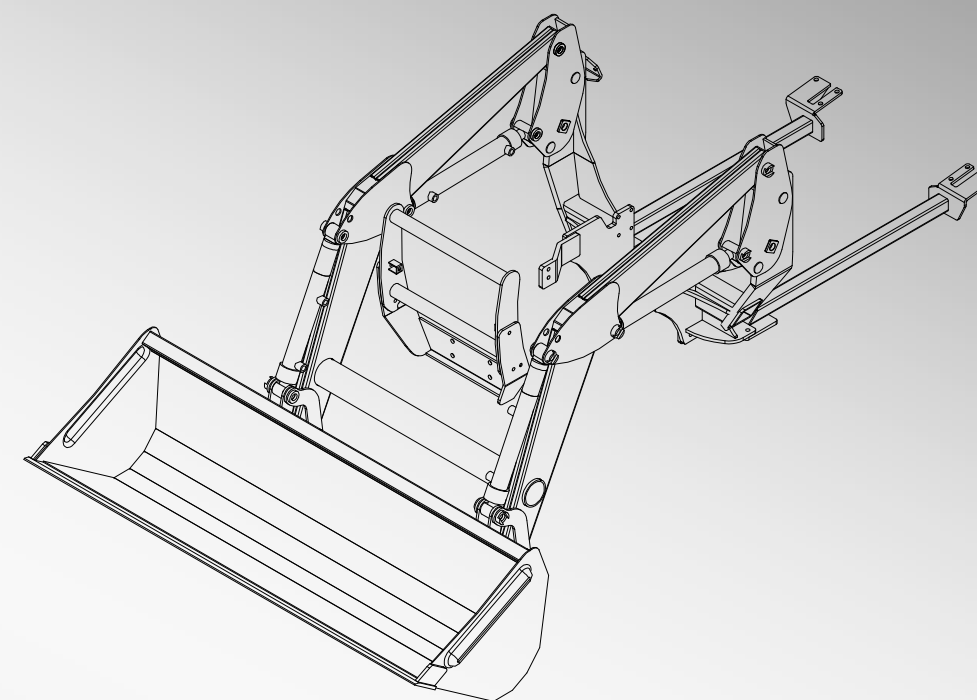
INNOVATIVE
TECHNOLOGY
PARTNER

LS LOADER OPERATOR MANUAL

LL3100

NON-SELF LEVELING TYPE

TRACTOR Model
• S3010



LS Tractor

LS LOADER

OPERATOR MANUAL

LL3100

LS TRACTOR

www.lstractor.com

LS Tractor

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P/NO FT610-MEN00-13

WARRANTY CONDITIONS

Warranty Coverage :

LS Mtron Tractor Division, herein referred to as LS Mtron, undertakes to replace or repair any part of a LS loader where damage has been proven to be caused by defects in material or workmanship.

This Warranty is valid for a period of 1 year from the date of the original retail sale. Parts replaced or repaired under the terms of this Warranty are guaranteed only until the original warranty expires. Warranty only applies to the original purchaser.

It is further understood and agreed that the defect should be immediately reported to the Selling Dealer. The Selling Dealer will generally perform Warranty repairs or replacements and the Purchaser shall deliver the LS Mtron Loader to the Dealer's place of business or repair.

The obligation of LS Mtron to the Purchaser under this Warranty is limited to the repair or replacement of defective parts by an authorized LS Mtron dealer. Repair or replacement in accordance with this Warranty shall constitute fulfillment of all liabilities of LS Mtron and the Selling Dealer in respect to LS Mtron Loaders.

There are no warranties beyond those which expressly appear herein. Any implied warranty of merchantability or fitness for a particular purpose is specifically excluded here from.

Warranty Provisions :

LS Mtron's liability under this warranty is subject to the observance by the Purchaser of the following provisions:

- ▶ The purchaser shall at all times in the operation of any LS Mtron Product, use those brands and grades of lubricating oils, lubricants or fuel and spare parts officially approved by LS Mtron.
- ▶ The LS Mtron Loaders shall have been used in accordance with the procedures specified in the Operator's Manual. This Warranty does not extend to damage resulting from misapplication, abuse, misuse, failure to perform maintenance, negligence, fire, accidents or changes or faulty mounting carried out by the Purchaser. When making a Warranty exchange of parts, the Purchaser shall compensate LS Mtron for the time that the parts have been used if they have been exposed to extreme wear.
- ▶ Compensation is not paid for physical harm, deadlock, resulting damages or other losses.
- ▶ To obtain warranty service, the Purchaser must (1) report the product defect to an authorized LS Mtron dealer and request repair within the applicable warranty term and (2) present evidence of purchase.
- ▶ The Warranty shall be void if the LS Mtron Loader has been altered or repaired outside of a LS Mtron dealership or travel of dealer personnel to customer location for Warranty repair. The customer shall also pay any premium for overtime labor requested by the customer.
- ▶ Temporary repairs or additional costs due to the work being performed after normal working hours will not be compensated.
- ▶ The above warranty is in lieu of all other warranties on LS Mtron's behalf and neither party assumes any other liability in connection with LS Mtron's Products.

Right To Make Design and Product Changes :

LS Mtron reserves the right to make changes in the design and other changes in its LS Mtron Products at any time without incurring any obligation with respect to any product previously ordered, sold or shipped.

PLEASE NOTE :

Make sure all potential operators of the this equipment review this manual and all safety messages contained within



This safety symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.

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SAFETY PRECAUTIONS

Most tractor and/or loader equipment accidents can be avoided by following simple safety precautions. The safety information given in this manual does not replace safety codes, insurance requirements, federal, state, and local laws. Make sure your machine has the correct equipment required by your local laws and regulations. Understand that your safety and the safety of other persons are measured by how you service and operate this loader.

Know the position and operations of all controls before you try to operate. Make sure you check all controls in a safe area before starting.

Read this manual completely and thoroughly and make sure you understand all controls. All equipment has a limit. Make sure you are aware of the stability and load characteristics of this loader before you begin operation.



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.



SAFETY PRECAUTIONS



READ MANUALS AND DECALS

- ▶ Read and understand both the tractor and the loader Operator Manuals and all decals before using the loader.
- ▶ Lack of knowledge can lead to accidents.
- ▶ It is the loader owner's responsibility to make sure anyone operating the loader reads and understands this manual first before operating the machine.
- ▶ Follow all safety, operating, and service instructions.
- ▶ Replace damaged or illegible safety labels. See following pages for required labels.

ROPS AND SEAT BELT

- ▶ Equip your tractor with an approved rollover-protective structure (ROPS) or ROPS Cab and seat belt for your protection.
- ▶ ROPS (Roll-Over Protective Structures) and seat belt equipped tractors are recommended for operator use in all loader operations.
- ▶ Operator should wear safety hard hat, safety glasses, safety shoes, and other PPE. Avoid wearing loose clothing or jewelry that may catch in moving parts.
- ▶ Use seat belt as specified by tractor/ROPS manufacturer.

YOURSELF

- ▶ Do not stand, walk, or work under a raised loader bucket or attachment unless it is securely blocked and held in position.
- ▶ Operate controls only when properly seated in the operator's seat.
- ▶ Only one person, the operator, should be on the machine when it is in operation.
- ▶ Accidental movement of valve handle/handles or leak in the hydraulic system could cause the loader to drop, or attachment to dump, causing severe injury.

OTHERS

- ▶ Do not allow anyone in loader work area, under raised loader, or to reach through the loader boom when the bucket or attachment is raised.
- ▶ A frequent cause of personal injury or death is persons falling off and being run over. Inadvertent movement of the loader or attachment could result in serious injury or death.
- ▶ Do not permit others to ride on your tractor, loader, bucket, or any attachment.
- ▶ Do not lift or carry anyone on buckets, forks, probes, or any other portion of the loader or loader attachments.
- ▶ Do not allow children or unqualified persons to operate equipment.

SAFETY PRECAUTIONS



SAFETY PRECAUTIONS



PREPERATION

- ▶ Move the wheels to the tractor manufacturer's widest recommended settings to increase stability.
- ▶ For better stability, always use a tractor equipped with a wide front axle, never use a tractor equipped with a tricycle type front axle.
- ▶ Add rear ballast or rear weight to the tractor to compensate for the load and increase stability.
- ▶ Add recommended rear tire liquid weight or rear wheel weights for increased stability.
- ▶ Do not modify, alter, or permit anyone else to modify or alter the loader, any of its components, or any loader function without first consulting a LS Mtron dealer.
- ▶ Assemble, remove, and reinstall the loader only as directed in this manual. Failure to do this could result in serious personal injury or death.
- ▶ The loader may shift during shipping and handling, making it unstable on the pallet. Support loader with an overhead hoist or other suitable means prior to removing bands or attaching straps securing loader to pallet. Failure to do so could result in accidental tip-over of the loader that could cause serious injury to you and/or bystanders.

BEFORE OPERATION

- ▶ Before starting the engine of your tractor, make sure all operating controls are in park lock or neutral position.
- ▶ Be certain lights and safety markings, as provided by the tractor manufacturer, are clean and operating when transporting the tractor/loader on public roads. Be certain that the Slow Moving Vehicle (SMV) emblem is visible. Check with local law enforcement for specific requirements.

OPERATION

- ▶ Add wheel ballast and/or rear weight to counterbalance tractor/loader for stability at maximum loader capacity.
- ▶ Additional counterweight requirements will vary with loader attachments and equipment application.
- ▶ Move and turn the tractor at low speeds.
- ▶ Carry loader boom at a low position during normal operation.
- ▶ Never travel at high speeds with bucket loaded.
- ▶ Use caution when operating the loader with a raised bucket or attachment.
- ▶ Avoid driving over loose fill, rocks, holes, or anything that may be dangerous for loader operation or movement.
- ▶ Allow for the loader length when making turns.
- ▶ Use caution when handling loose or unstable loads.
- ▶ Gradually stop the loader boom when lowering or lifting loads.
- ▶ When using remote hydraulic tractor valves on some tractors, the loader lift and dump cylinders will continue moving unless the valve handle/handles are manually returned to neutral, or until relief pressure is reached at the ends of piston strokes. Observe the bucket movement and maintain control with valve handle/handles.
- ▶ Travel speed should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments, and holes. Reduce speed when turning, crossing slopes, and on rough, slick or muddy surfaces.
- ▶ A loader attachment should be transported in a low position at slow ground speeds. Make turns slowly and use the tractor brakes cautiously. A loaded attachment in the raised position alters the center of gravity location of the machine and increases the possibility of mishaps.
- ▶ Be careful during loading, transporting, and stacking to minimize rolling bales and tractor tip over.
- ▶ Do not use buckets, forks, or other attachments without bale retaining devices.
- ▶ Operate the tractor and loader such that complete control and machine stability is maintained at all times.
- ▶ When using a loader, be alert of bucket or attachment position at all times. Loader in raised position with bucket or attachment rolled back can dump material onto tractor causing damage or injury to tractor and/or operator.

SAFETY PRECAUTIONS



SAFETY PRECAUTIONS



LARGE HEAVY OBJECTS

- ▶ Never use loader for handling large heavy objects, such as large round or rectangular bales, logs, and oil drums unless loader is equipped with attachment that is designed to handle such objects.
- ▶ Handling large heavy objects can be extremely dangerous due to danger of rolling the tractor over.
- ▶ Handling large heavy objects can be extremely dangerous due to danger of upending the tractor.
- ▶ Handling large heavy objects can be extremely dangerous due to danger of the object rolling or sliding down the loader boom onto the operator.
- ▶ If you must handle large heavy objects, protect yourself by using caution, moving slowly, and avoiding bumps and rough ground.
- ▶ If you must handle large heavy objects, protect yourself by never lifting load higher than necessary to clear the ground.
- ▶ If you must handle large heavy objects, protect yourself by adding rear ballast to the tractor to compensate for weight of load.
- ▶ If you must handle large heavy objects, protect yourself by never lifting large heavy objects that may roll or fall on the operator.
- ▶ Never lift any load from any point of the loader with a chain, rope or cable unless loader is equipped with a Factory approved attachment that was designed and built for this type of lifting. Always follow lifting instructions included with these attachments.
- ▶ Use only Factory bale probe or bale retaining device handler attachment when handling round bales.
- ▶ Do not handle large square bales without a retaining device handler attachment.
- ▶ Do not use buckets, forks, or other attachments without bale retaining devices.
- ▶ Do not use loader for handling large, heavy objects such as logs, tanks, etc.

SLOPES

- ▶ Stay off of slopes too steep for safe operation.
- ▶ Shift down before you start up or down a hill with a heavy load. Avoid "free wheeling".
- ▶ Use extreme caution when operating on a slope.
- ▶ Always operate up and down the slope, never across the slope.

ELECTRICAL

- ▶ Avoid contact with overhead wires, power lines, and obstacles when loader bucket or attachment is raised.
- ▶ Electrocutation from power lines can occur with or without contact.
- ▶ Check for underground utilities before digging below grade level.
- ▶ Contact with overhead power lines can cause severe electrical burns or death from electrocution. Make sure there is enough clearance between raised equipment and overhead power lines.

HYDRAULIC

- ▶ Do not tamper with the relief valve setting. This will void warranty and could cause damage to loader and/or tractor.
- ▶ Pouring hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Do not use HANDS to search for suspected leaks. If injured by escaping fluid, obtain medical treatment immediately.
- ▶ Visually check for hydraulic leaks and broken, missing or malfunctioning parts. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. Escaping hydraulic fluid or diesel fuel leaking under pressure can have sufficient force to penetrate the skin and cause serious infection or other personal injury. If injured by leaking fluid, seek medical attention immediately.
- ▶ To prevent personal injury, relieve all pressure before disconnecting fluid lines.
- ▶ Before applying hydraulic pressure, make sure all hydraulic connections are tight and components are in good condition.
- ▶ Be sure to purge all the air from the hydraulic system before attempting to raise or lower this machine.

SAFETY PRECAUTIONS



SAFETY PRECAUTIONS



- ▶ When using remote hydraulic tractor valves on some tractors, the loader lift and dump cylinders will continue moving unless the valve handle/handles are manually returned to neutral, or until relief pressure is reached at the ends of piston strokes. Observe the bucket or attachment movement and maintain control with valve handle/handles.
- ▶ Raised loader or boom can fall due to hydraulic system failure.
- ▶ To avoid serious injury or death: Block up or securely support loader and boom before working underneath.
- ▶ To avoid serious injury or death: Purge all air from hydraulic system before attempting to raise or lower loader or boom.
- ▶ To avoid serious injury or death: Stand clear if lowering or raising loader or boom.
- ▶ Do not use hand or skin to check for hydraulic leaks. Use cardboard or wood. Wear eye protection.
- ▶ High pressure oil leaks can penetrate skin causing serious injury and gangrene. Consult a physician immediately.
- ▶ Lower the loader or boom and release hydraulic pressure before loosening fittings.

AFTER OPERATION

- ▶ Before leaving the tractor seat, lower attachment or loader boom to ground, stop engine, lock parking brakes, put all controls in neutral, relieve hydraulic pressure, and remove key before leaving operator's seat.
- ▶ Before disconnecting hydraulic lines, relieve all hydraulic pressure.
- ▶ Make sure all parked loaders on stands are on a hard level surface with all safety devices engaged to prevent loader from falling and being damaged or injuring someone.
- ▶ Always park loader with bucket attached to loader.
- ▶ When a front loader is mounted on the tractor, enter and exit the operator's seat only from left side of the tractor.
- ▶ Always park loader with a Factory attachment attached to the loader.
- ▶ Special care should be taken to park or store attachments with points or sharp edges in a safe manner.
- ▶ Make sure all parked loaders are on a hard level surface. Engage all safety devices to prevent loader from falling and being damaged or injuring someone. Do not repair loader if it is not mounted on the tractor. Loss of hydraulic fluid or removal of parts could cause loader to collapse resulting in injury.

REPAIR

- ▶ Visually check for hydraulic leaks and broken, missing, or malfunctioning parts. Make necessary repairs before operation.
- ▶ To keep mounting kit hardware from loosening during loader operation, hardware must be torqued to specifications notes in operator manual.
- ▶ Always wear safety goggles when servicing or repairing the machine.
- ▶ When servicing or replacing pins in cylinder ends, bucket, etc, always use a brass drift and hammer. Failure to do so could result in injury from flying metal fragments.
- ▶ Never tow from any point of the loader with a chain, rope, or cable. Doing so could cause a roll over or serious damage to the loader.

SAFETY DECALS

Safety Decal Locations

Important:

Warning decal CK12-3001, located on the left hand Mid-mount and Warning Decal CK12-3002, CK12-3003 located on the loader right hand Mid-Mount are visible when getting on tractor.

Care of Safety Decals.

- ▶ Keep safety decals clean and free of obstructing material.
- ▶ Clean safety decals with soap and water and dry with a soft cloth.
- ▶ If a component with a safety decal(s) affixed is replaced with a new part, make sure new safety decal(s) are attached in the same location(s) as the replaced components.
- ▶ Mount new safety decals by applying on a clean dry surface and pressing air bubbles to outside edges.



Warning CK12-3001



Warning CK12-3003



Warning CK12-3002



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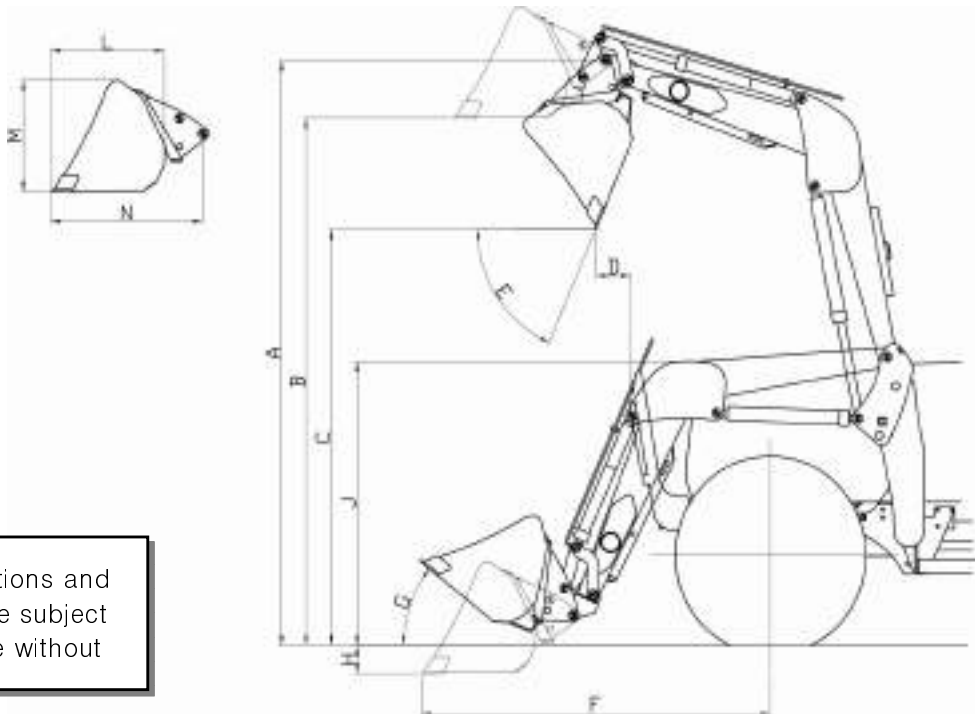


3101E-00403



3101E-00404

LOADER SPECIFICATION



Specifications and design are subject to change without

* Specifications shown are based on ASAE Standards.

Loader Model : LL3100

Tractor Model : S3010

with out self leveling type

A. Maximum Lift Height	2,390 mm	94.1 "
B. Clearance with Attachment Level	2,147 mm	84.5 "
C. Clearance with Attachment Dumped	1,635 mm	64.4 "
D. Reach at Maximum Height	596 mm	23.5 "
E. Maximum Dump Angle	43 °	43 °
F. Reach with Attachment on Ground	1,791 mm	70.5 "
G. Attachment Rollback Angle	40 °	40 °
H. Digging Depth Below Grade	248 mm	9.8 "
J. Overall Height in Carry Position	1,074 mm	42.3 "
L. Depth of Attachment (to back of inner shell)	592 mm	23.3 "
M. Height of Attachment	480 mm	18.9 "
N. Depth of Attachment (to pivot pin)	800 mm	31.5 "
Loader Total Weight	500 kg	1102.3 lb
Weight of Boom Assembly	340 kg	749.6 lb
Weight of Mounting Frame	160 kg	352.7 lb
Lift Capacity to Full Height at Pivot Pins	680 kgf	1,500 lb
Breakout Force at Ground Level, Pivot Pins	853 kgf	1,880 lb
Rated Flow (Tractor System)	22.5 l/min.	5.94 gpm
Lift Cylinder	Ø50x408ST mm	Ø2x16.1ST "
Bucket Cylinder	Ø50x345ST mm	Ø2x13.6ST "
Attachment used for specification	1,676 mm	66 "
Bucket Capacity	0.41 m³	14.5 ft³
Hydraulic System	Tractor pump w/loader control valve	

-Standard : Bucket Level indicator

INTRODUCTION

The purpose of this manual is to assist you in maintaining and operating your loader. Read it carefully, it furnishes information and instructions that will help you achieve years of dependable performance. Some information may be general in nature due to unknown and varying conditions. However, through experience and these instructions, you should be able to develop operating procedures suitable to your particular situation.

"Right" and "Left" as used throughout this manual are determined by facing the direction the machine will travel when in use.

The photos, illustrations and data used in this manual are current at the time of printing, but due to possible in-line production changes, your machine may vary slightly in detail. The manufacturer reserves the right to redesign the machine as may be necessary without notification.

► **Important:**

Illustrations used in this manual may not show all safety equipment that is recommended to ensure safe operation of tractor and loader. Refer to the Safety Precautions section of this manual for information concerning safety. consult your dealer for further information.

► **Warranty Registration**

The Delivery and Warranty Registration forms must be filled out and signed to validate your warranty protection. The items on the form under "I hereby Acknowledge" should be read and understood. The terms and conditions of the warranty on this machine are specified in the front of this manual.

► **Serial Number and Location**

The serial number is important information about the machine and it may be necessary to know it before obtaining the correct replacement part. The serial number plate is located on the LH(left hand) inside of front area of boom. The serial number should be recorded on the Delivery and Registration form and also below for your reference.

LS Mtron LL3100 Loader Serial Number Information

LOADER SERIAL NUMBER _____

DATE PURCHASED _____

DEALER NAME _____

AND TELEPHONE NUMBER _____

TRACTOR PREPARATION

Rear Counterweight



CAUTION:

Add recommended rear tire liquid weight, rear wheel or rear ballast for increased stability.



CAUTION:

Do not exceed the manufacturer's rating for maximum gross vehicle weight. Refer to Operator's Manual or ROPS serial plate provided with tractor.

The use of adequate counterweight to counter balance for maximum loader capacity is required for safe loader operation.

Weight added to rear of the tractor provides better traction and easier, more efficient loader operation. The tractor can be counter weighted by filling rear tires with liquid calcium solution and/or by the installation of rear wheel weights.

Additional counterweight requirements will vary with loader attachments and equipment applications. Additional weight can be added by installation of Three Point Hitch mounted ballast.



CAUTION:

The tractor/loader must only be operated with all safety equipment properly installed.

▶ TRACTOR TIRES

Selection of tires(size, profile, tread type) should be restricted to tire recommendations as specified by *LS Mtron*

▶ Tire Inflation

Front tires must be maintained at the maximum recommended inflation to maintain normal tire profile with the added weight of loader/material.

Rear tires must be maintained at equal pressure within the recommended tire inflation range. Unequal rear tire inflation can prevent loader attachment from contacting the ground across its full width.



CAUTION:

Certain specific conditions may not permit safe use of loader at loader rating or may require more careful restricted operation at the rated load.

Refer to Tractor Operator's Manual for specific recommendations on counterweight

▶ ROPS System

The tractor must be equipped with an approved ROPS System to ensure adequate operator's protection.

▶ Tractor Hydraulic System

Tractor operation in a loader application significantly increase demands on the tractor Hydraulic System. Check the tractor Hydraulic system fluid level daily. Refer to your tractor Operator's Manual maintenance section for instructions regarding tractor hydraulic system maintenance.

Adhere to recommendation in your Tractor Operator's Manual concerning hydraulic fluid and filter specifications, and change intervals.

▶ Wheel Tread Settings

Tractor front wheel tread setting must be restricted to wheel tread spacing recommended in the tractor Operator's Manual.

▶ Front Counterweight

Use of front counterweight is not recommended when tractor is being used in a loader application. Front counterweight adds unnecessary front axle load in loader applications.

LOADER OPERATION



CAUTION:

The tractor/loader should only be operated with all safety equipment properly installed.

► **Precautionary Notes**

Do not lower the edge of the bucket too low for loading. Keep the bottom of the bucket level with the ground when loading.

► **Important:** Do not use the bucket for pushing down material with bucket cylinders partially extended. Damage to the cylinders may result.

► **Important:** Do not operate bucket cylinders without bucket, it may damage to the bucket cylinders.

► **Important:** Do not tip bucket cutting edge down (fully extended bucket cylinders) during backfilling/backgrading operations.

► **Important:** Operation with front tractor wheels off the ground is not recommended.

Position vehicle to be loaded as near the pile as possible and in such a direction as to minimize the amount of tractor turning required to dump.

Do not lower the loader with the tractor engine shut off.

Keep the unit clean and perform regular service. Observe safety messages whenever cleaning, servicing, or lubricating.

We urge you to follow this advice:

1. Read and understand this manual as well as the Tractor Operator's Manual.
2. Remember and observe the Safety Precautions brought to your attention in this manual, the tractor manual and on the machinery itself.
3. Use good common sense in the everyday operation of this unit.
Safety recommendations can never be all-inclusive and you are responsible for watching out for and avoiding unsafe conditions.
4. Never exceed the limits of a piece of machinery. If its ability to do a job or to do so safely is in question, don't try it.

5. Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new loader and tractor.



CAUTION: When lowering a heavy load, ease it downward slowly. Never drop a

loaded attachment and "catch it hydraulically". Stopping a load after it has gained downward momentum places undue strain on the unit and may cause unnecessary damage to the loader or tractor or even worse, personal injury.



CAUTION: Before disconnecting hydraulic lines, relieve all hydraulic pressure.

Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic oil seek medical attention immediately.



CAUTION: Do not operate the loader if the fittings are leaking or if the hoses are

damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

► **Initial Loader Operation**

Before operating the loader, fully raise and lower the boom two or three times. Then raise the bucket approximately four(4) feet above the ground and cycle the bucket cylinders three times. Lower the bucket to the ground. Check the tractor hydraulic oil and the correct oil level.



CAUTION:

Before leaving the machine, stop the engine, remove the key, place all controls in neutral, and either set the parking brake or place tractor in park as equipped.

Always keep cylinders in a retracted position when the loader is not in use to guard against rust and contamination which may cause damage to the cylinder rods or hydraulic system.

► **Cold Weather Operation**

For smooth operation in cold weather, let the tractor warm up. Slowly cycle the lift and bucket cylinders several times to warm the oil in the hydraulic system. The loader may operate erratically until the hydraulic oil has warmed to operating temperatures.

LOADER OPERATION



CAUTION:

Operate controls only when seated in the operator's seat.

► **Loading Bucket**

For the most efficient loading, slowly drive the tractor straight into the material to be loaded and increase speed only after contact has been made. Roll the attachment back a small amount and slowly lift to break away the material. As the load increase, continue rolling the attachment back so as to get the maximum load. Remove the top levels first when loading from large piles of material. When bucket is full, raise loader so the bucket is clear of material and slowly back out of the pile.

► **Dumping Bucket**

When in the dump area slowly drive the tractor forward and raise the loader at the same time. Raise the loader to the height needed to dump the bucket. Make sure to keep a level bucket position to prevent spilling from the bucket. Dump the bucket, and keep all movements smooth.

► **Transporting a Loaded Bucket**

Transport material with the bucket as low as possible to prevent spilling and keep maximum stability. The loader must be in a position that will not block the operators' vision. a loaded bucket must not be transported in the upright position or at excessive speed.

Observe the following safety warning when transporting a loaded bucket.



CAUTION:

When using a loader, be aware of bucket location at all times. When raising a loader with bucket rolled back, material can dump onto tractor causing damage to tractor or injury to operator.



WARNING:

Contact with overhead power lines can cause severe electrical burns or death from electrocution. Make sure there is clearance between raised equipment and over head power lines.



CAUTION:

Stop the loader arms gradually when lowering or lifting.



WARNING:

A loaded Bucket should be transported in a low position at low ground speeds. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position alters the center of gravity location of the machine and increases the possibility of accidents.



CAUTION:

Do not stand, walk or work under a raised loader unless it is securely blocked or held in position. Accidental movement of a control lever or leak in th hydraulic system could cause the loader to drop, or attachment to dump, resulting in serious injury or death.

► **Scraping**

When scraping, the Boom lever must be used to keep the bucket on the ground horizontally. The bucket must be kept level to the ground during scraping operations.

► **Backfilling/Backgrading**

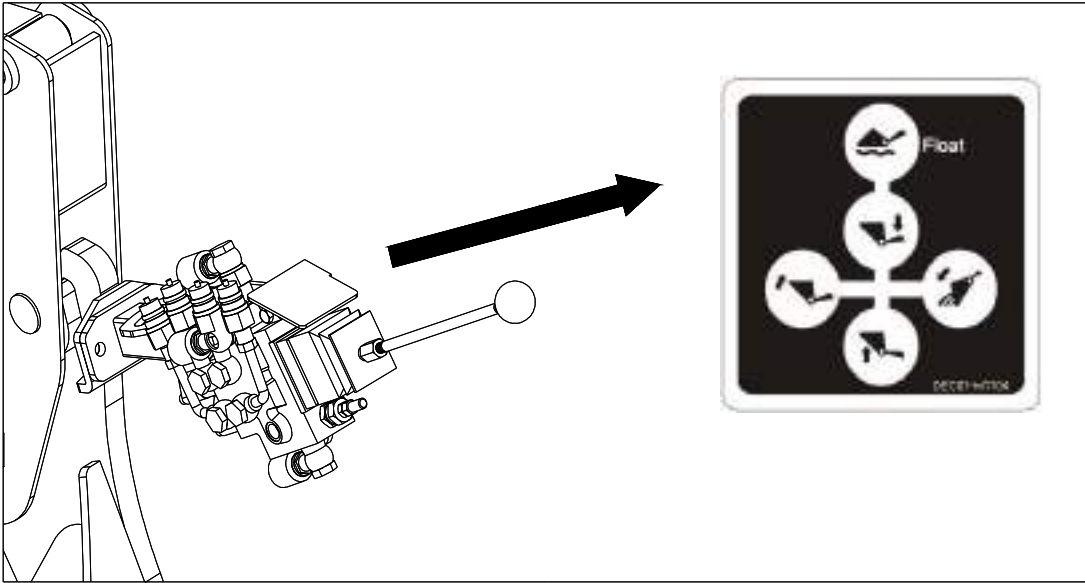
When "Backfilling" or "Backgrading", position the bucket so it is level on the ground. Do not dump material from bucket following each pass, as additional weight of material in bucket will assist in "Backgrading" and increases loader efficiency during "Backfilling".

► **Controlled Rate of Loader Functions**

By "feathering" the control lever, reduced operational speeds can be controlled. This action controls the position of the valve spool in the valve body and regulates flow of oil to/from cylinders. It is important utilize this operational practice when lowering loader boom when the bucket is loaded with material.

LOADER OPERATION

Loader Hydraulic Controls



The Single lever joystick control lever is mounts on the LL3100 From the factory.
The control lever has the safety lock function.
Lock the control lever when leaving the tractor while the Bucket is in the air.

The loader hydraulic valve lift Cylinder circuit incorporates a "float" position which allows the loader bucket to follow ground contours. The "float" position is engaged by shifting the control lever forward into "detent" until the operator pulls the control lever out of the "Detent" position.

Refer to "Scraping" operation for recommended use of "float" position.

The control valve has a neutral position that prevents movement of loader or bucket.
When the control valve is released from the work position, the spool will return to neutral.

► **Important:**

Contaminates in hydraulic oil can cause valve spools to stick. Be alert when operating loader and follow your Tractor Operator's Manual maintenance schedule.

LOADER REMOVAL



CAUTION:

Never park loader without bucket attached to the loader.



CAUTION:

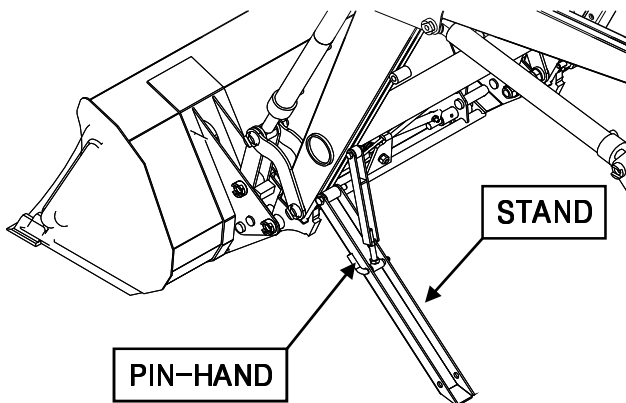
Never allow weight of tractor to be put on parking leg when removing loader.

▶ Park the tractor and loader on hard level surface.

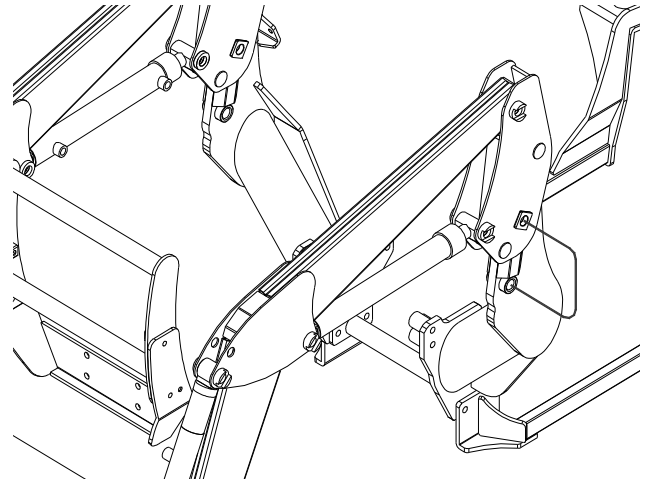
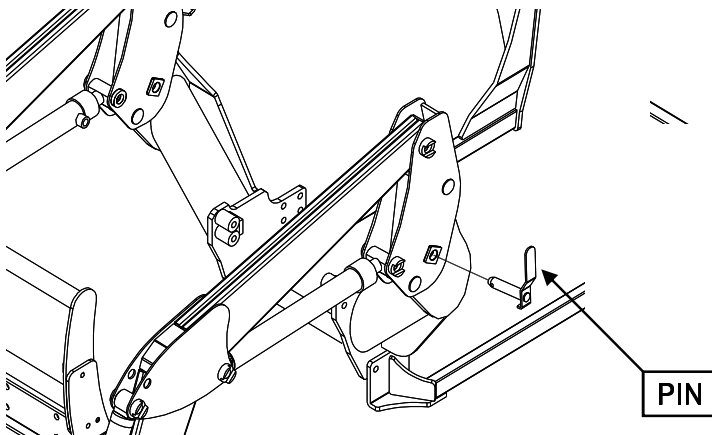
▶ Raise the boom until the bucket is about 2 feet off the ground.

▶ Set the parking legs with pin-hand and Keeper.

▶ Lower the boom until the Parking legs make contact on the ground. Tip the bucket until the bucket cutting edge touch the ground.



▶ Remove the latch pin while move the control lever back and forth slightly to make the latch pin easy.



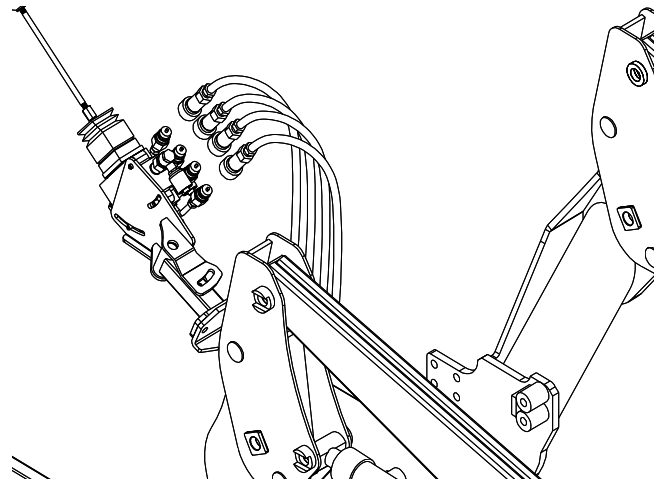
▶ Pull the control lever to raise the loader until the post.

Adjust the bucket until the bottom surface of bucket touch the ground.

▶ Move the tractor backward slowly and stop to avoid the hydraulic hoses being tighten.

▶ Stop the engine and move the control lever back and forth, left and right several times to reduce the hydraulic pressure in the hoses.

▶ Disconnect the quick couplers on the hydraulic hoses.

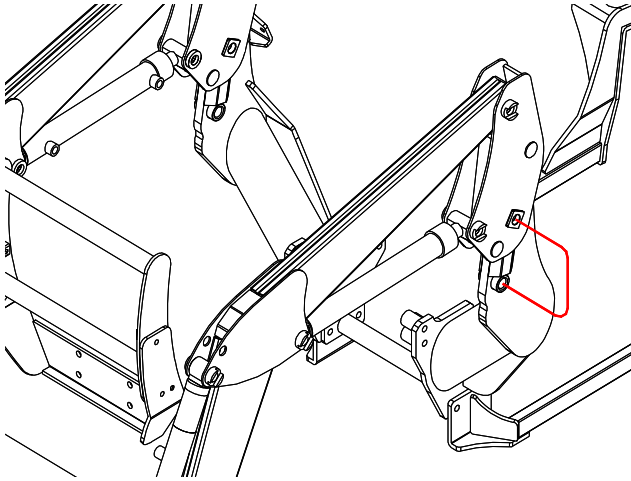


LOADER MOUNTING



CAUTION:

Never allow weight of tractor to be put on parking leg when mounting loader.

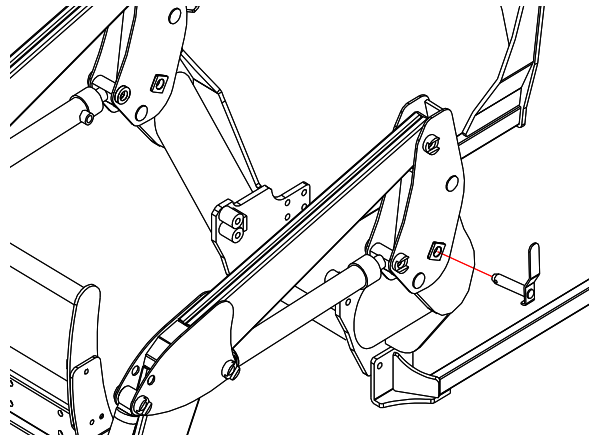


▶ Carefully drive the tractor into the loader to a position where the hydraulic hoses (Quick coupler) can be connected to the control valve block.

▶ Stop the engine and move the control lever back and forth, Left and right several times to reduce the pressure in the hydraulic hoses. Connect the hydraulic couplers match the color code rings.

▶ Start the engine and move the boom and bucket to adjust the height of post.

Be sure to check the pin welded of post is slightly higher than the hook on mounting frame.



▶ Move the tractor forward to put the post into the mounting frame. Stop the tractor

When the hook is right over the pin. Lower the mounting frame with moving the boom and bucket until it hooked securely each other.

▶ Align the latch pin holes with moving the bucket and boom. Insert the latch pins. Rubber hammer can be used to put the pin in if needed.

▶ Remove pin and keeper holding the parking legs and return to storage position. Make secure by using pin and keeper.

LUBRICATION AND MAINTERNANCE



CAUTION:

Do not perform any service or maintenance operations with loader raised off the ground. For additional access to tractor components remove loader.

► Important:

Lower the loader to the ground and relieve pressure in loader hydraulic lines prior to performing any service or maintenance operations on the tractor or loader.



CAUTION:

Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood rather than your hands to search for suspected leaks. If injured by escaping fluid, seek medical attention immediately. Serious infection or reaction can develop if correct medical treatment is not administered immediately.

Refer to "Lubrication and Maintenance Chart" for quick reference to Maintenance Operations.



CAUTION:

Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst could cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.



CAUTION:

Operate the loader from the tractor seat only.



CAUTION:

Do not stand or walk under a raised loader. Accidental movement of control lever or leak in hydraulic system could cause mainframe to drop, causing severe injury.

Check the tractor hydraulic system as outlined in the Tractor Operator's Manual.

Note:

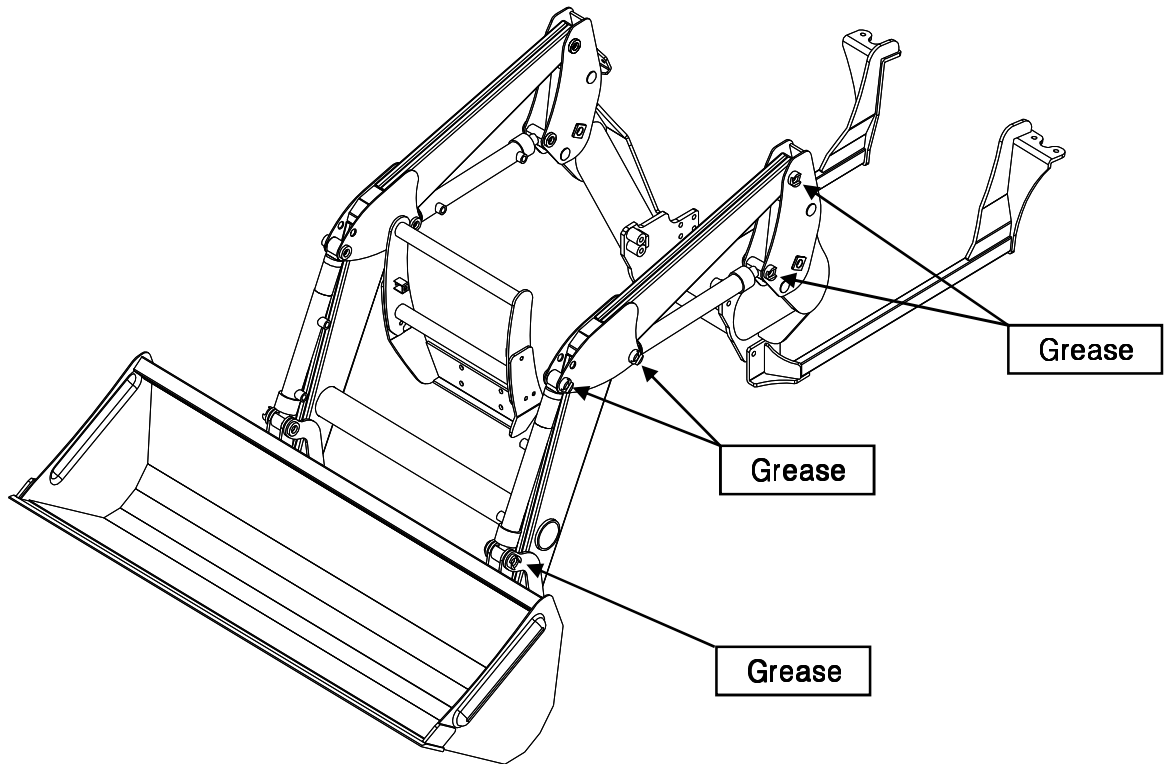
When checking hydraulic system oil level, the loader should be on the ground and bucket fully retracted(all cylinders in retracted position).

Grease all loader pivot points daily(10 hours). Refer to Tractor Operator's Manual for lubricant recommendations.

Inspect hydraulic hoses, connections, control valve and cylinders for evidence of leakage.

Tractor tires should be maintained at maximum recommended inflation to maintain normal tire profile with added weight of loader/material. Unequal rear tire inflation can result in bucket not being level to the ground.

LUBRICATION AND MAINTERNANCE



ITEM	SERVICE	SERVICE INTERVAL
Hydraulic System Oil Level	Check	Daily/10 hours
Hydraulic System Oil/Filter	Replace	As specified in Tractor Operator's Manual
Tire Inflation	Check	Weekly/50 hours
Loader Pivot Points	Lubricate	Daily/10 hours
Loader Hydraulic Lines, Hoses, Connections	Check for leaks, wear	Daily/10 hours
Lift and Bucket cylinder rod packings	Check for seepage, service as needed	Daily/10 hours
Pivot pin bolts and dust covers	Check, replace if missing	Daily/10 hours
Mid-Mount latch and lynch pins	Check, replace if necessary	Daily/10 hours
Loader mount hardware	Check visually	Daily/10 hours
Loader mount hardware	Re-torque	Every 25 hours

TROUBLE SHOOTING

This Trouble Shooting Chart is provided for reference to possible loader operational problems.

Determine the problem that best describes the operational problem being experienced and eliminate the possible causes as listed by following the correction procedures.

PROBLEM	POSSIBLE CAUSE	CORRECTION
Lift and Bucket Cylinders	Low hydraulic fluid level.	Check and replenish hydraulic fluid.
	Hydraulic hoses connected improperly.	Check and correct hydraulic hose connections.
	Hydraulic hoses to/from control valve blocked	Check for damage(kinked) hoses, etc.
	Loader control valve or tractor main relief valve stuck open.	Check system pressure. Repair or replace relief valve.
	Low system pressure supplied from hydraulic pump.	Check system pressure.
		Repair or replace pump.
	Control valve linkage broken.	Inspect. Repair as required.
	Quick disconnect coupler(s) are not fully connected or "Flow Check"	Check coupler connections.
		Replace coupler(s) if necessary.
	Hydraulic hose or tubeline blockage.	Check for evidence of damage to hoses or tubelines that would block flow of oil between cylinders and control valve.
Cylinder piston assembly defective(not sealing)	Check cylinders for internal leakage as described in service section under cylinder leakage tests.	
control valve blockage.	Inspect for blockage. Disassemble valve if necessary.	
Lift and/or Bucket Cylinders operate in wrong direction relative to control valve lever position.	Hydraulic hoses connected incorrectly.	Correct hydraulic hose connections.
Aeration of Hydraulic Fluid(Generally indicated by foamy appearance of fluid).	Low hydraulic fluid level.	Check and refill hydraulic system to proper level.
	Air leaking into suction side of hydraulic pump.	Check for loose or defective connections between reservoir and hydraulic pump.
	Hydraulic fluid foaming due to improper hydraulic oil usage.	Refer to Tractor Operator's Manual and replace hydraulic oil using recommended hydraulic oil.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
Slow or erratic lift	Low hydraulic fluid level.	Check and replenish hydraulic fluid.
	Cold hydraulic fluid.	Allow hydraulic system to warm up to operating temperature.
	Engine R.P.M. too slow(hydraulic pump R.P.M. too slow).	Increase engine speed to obtain satisfactory loader operation.
	Excessive weight in bucket. Material weight exceeds maximum specified loader capacity.	Reduce material load.
	Control valve linkage binding/defective.	Check control valve linkage and repair if worn/defective.
	Aeration of hydraulic fluid	Refer to "Aeration of Hydraulic Fluid".
	Quick disconnect coupler restriction or coupler "Flow checks"	Check coupler connections. Repair or replace.
	Hydraulic hose or tubeline restriction(hoses/tubeline) kinked or pinched.	Check hoses and tubelines for evidence of restriction.
	Lift cylinder piston assembly leakage.	Check cylinders for leakage. Repair as needed.
	Relief valve erratic or set below specifications.	Check and reset relief valve. Setting as needed.
	Control valve leaking internally.(hypassing fluid within valve).	Replace control valve and recheck operation.
Inadequate hydraulic pump capacity.	Refer to "Hydraulic Pump Capacity Inadequate"	
Inadequate lifting capacity	Engine R.P.M. too slow.	Increase engine R.P.M.
	Excessive load - material weight exceeds specified loader capacity.	Reduce Load.
	Relief valve setting below specifications.	Check and reset relief valve setting as needed.
	Lift cylinder piston assembly leakage.	Check cylinders for leakage. Repair as needed.
	Control valve leaking internally	Replace control valve and recheck operation.
	Hydraulic pump defective.	Refer to "Hydraulic Pump Capacity Inadequate".

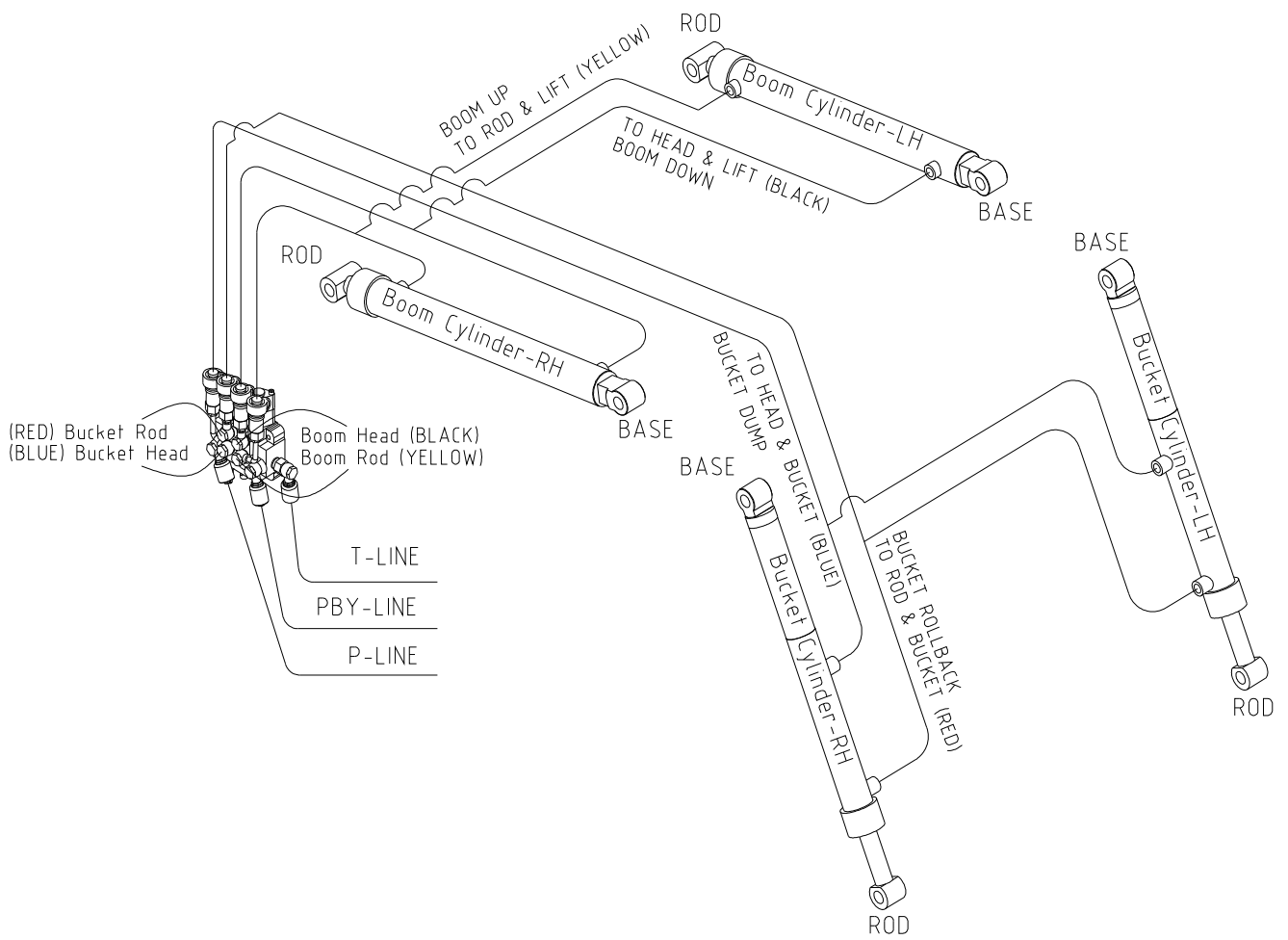
TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
System relief valve squeals.	Cold Hydraulic Fluid.	A low hydraulic fluid to warm up to operating temperature.
	Excessive load in bucket. Weight exceeds specified loader capacity.	Reduce load.
	Relief valve setting below specifications.	Check and reset valve setting as needed.
	Hydraulic hose, tubeline or quick disconnect coupler restriction.	Check for evidence of restriction in hydraulic oil flow. Repair or replace defective components.
Loader drops with control valve spool in "centered" position (no external oil leakage evident.)	Cylinder piston assembly leakage.	Check cylinders for leakage.
Note: A gradual drop over an extended period of time is a normal condition.	Control valve internal leakage.	Replace control valve and recheck.
Control valve spool(s) will not return to centered position.	Control lever linkage binding.	Determine origin of binding and repair.
	Control valve spool centering is broken.	Replace centering spring.
	Control valve spool binding in valve body spool bore.	Disassemble valve for inspection and repair.
External hydraulic fluid leakage.	Loose hydraulic connection.	Tighten loose connections.
	Defective hydraulic hose, tubeline, adapter fitting or adapter fitting o-ring.	Check for origin of oil leak and replace defective part.
	Control valve o-rings defective.	Replace defective o-rings.
	Control valve spool or body damaged or worn.	Replace control valve.
	Cylinder rod packing set leakage.	Check cylinders for leakage. Repair as needed.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
Hydraulic pump capacity inadequate.	Cold hydraulic fluid.	Allow hydraulic fluid to warm up to operating temperature.
	Engine R.P.M. too slow.	Increase engine R.P.M.
	Low hydraulic fluid supply.	Refer to Tractor Operator's Manual for service recommendations.
	Hydraulic hose restriction.	Check for evidence of restriction in hydraulic hoses.
	Hydraulic pump defective.	Refer to Tractor Operator's Manual for recommended service procedures. Replace hydraulic pump if determined to be defective.
Lift cylinder rod bend when lift cylinders extended.	Excessive shock load on lift cylinders during transport.	Replace defective parts. Review and observe proper and safe operational practices.
Bucket cutting edge wear is uneven side to side	Bucket is not level to ground.	Check rear tire inflation and adjust to level bucket to ground.
Bucket cutting edge wear rate is excessive. (Wear rate is even across full width of bucket).	Incorrect operational practices. Excessive down pressure placed on bucket when being used on hard abrasive surfaces.	Refer to operation-scraping section for correct operating procedures. Utilize float position.
Note: Extensive use of bucket on concrete or asphalt surfaces will accelerate wear rate of bucket cutting edge.	Bucket wear pads worn.	Replace wear pads.

HYDRAULIC SYSTEM SCHEMATIC



TORQUE TIGHTENING CHART

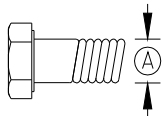
MINIMUM HARDWARE TIGHTENING TORQUES IN FOOT POUNDS (NEWTON-METERS) FOR NORMAL ASSEMBLY APPLICATIONS

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 grade as specified in the manual parts list.

Always use the proper tool for tightening hardware : SAE or SAE hardware and Metric for metric hardware. Make sure fastener threads are clean and you start thread engagement properly.

INCH HARDWARE



SAE SERIES TORQUE CHART



SAE Bolt Head
Identification

SAE Grade 2
(No Dashes)



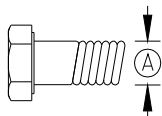
SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 radial Dashes)

Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383

METRIC HARDWARE



METRIC SERIES TORQUE CHART



Metric Bolt Head
Identification

Metric
Grade 8.8



Metric Bolt Head
Identification

Metric
Grade 10.9

Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD				MARKING ON HEAD				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21mm	109	80	151	111	116	87	163	120	14 x 1.5
16 x 2.0	24mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

PART ILLUSTRATIONS

GENERAL INFORMATION

Illustrations

The individual parts in their normal relationship to each other. Reference numbers are used in the illustrations. These numbers correspond to those in the "Number" column and are followed by the quantity required and description.

Directional Reference

"Right hand" and "left hand" sides are determined by standing at the rear of the unit and facing in the direction of forward travel.

Part Order

Orders must give the complete description, correct part number, the total amount required, the product model, all the necessary serial numbers, the method of shipment and the shipping address.

Instructions

► GROUP NAME

: Detail classification name for parts.

► SECTION NAME

: Classification name for parts.

► COMPONENTS




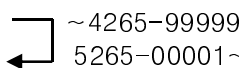
: The components of an assembly are identified by a bracket.

► NO.

: Reference numbers are assigned to parts in the figure.

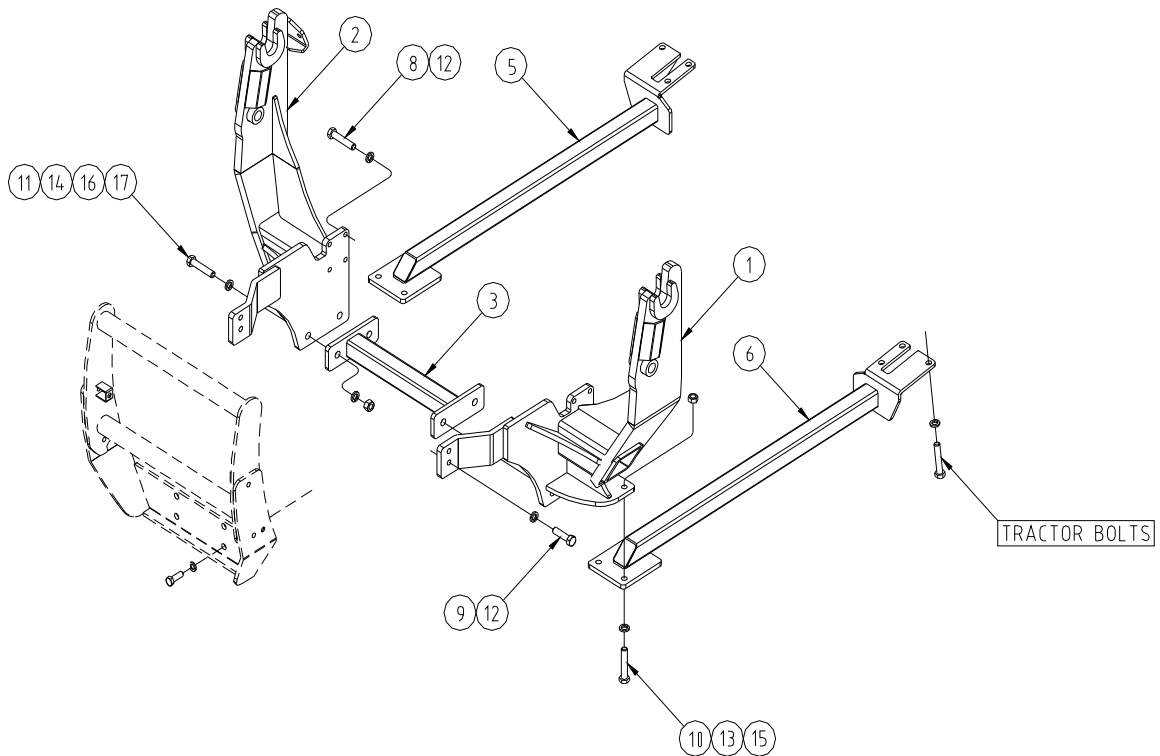
INTERCHANGEABILITY

: Indicates the interchangeability of parts due to design change

	Indicates that a new part can be used instead of an old part when you order this part, please order new part.
	indicates that either parts can be used.
	indicates that either parts can not be used.
	indicates that a part has a serial number break. When you order this part, please order a part according to the serial number of the Loader.

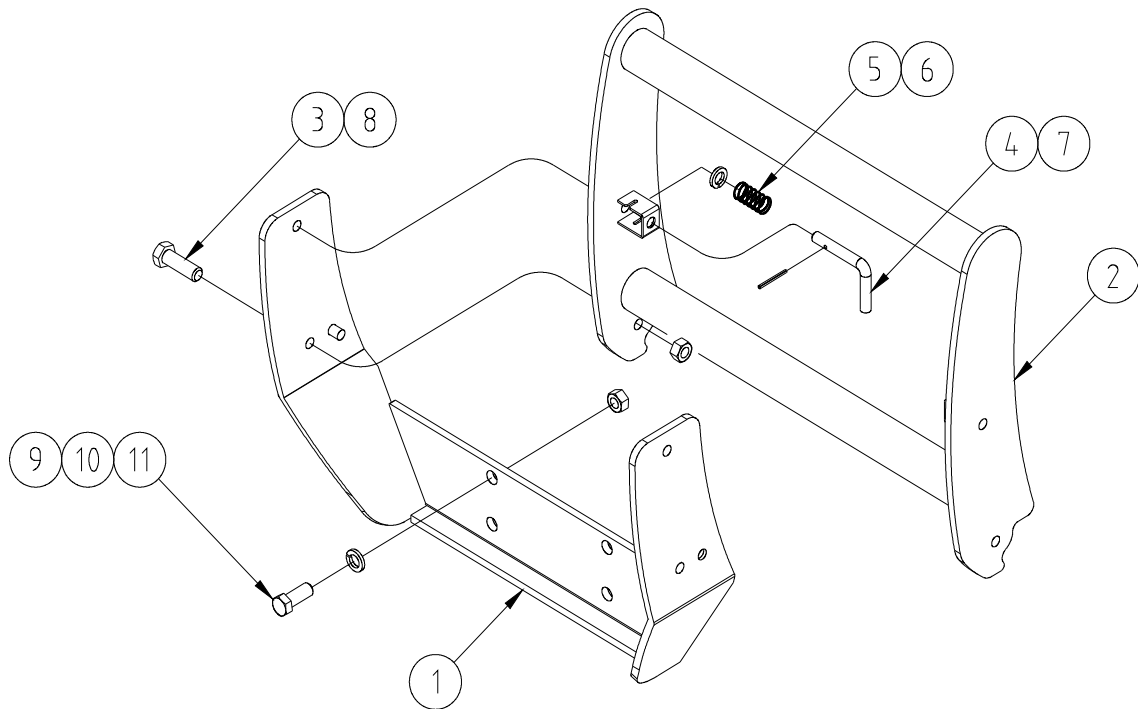
★ Due to our policy of continuously improving products, The information contained herein is subject to change without notice

MOUNTING FRAME ASSEMBLY



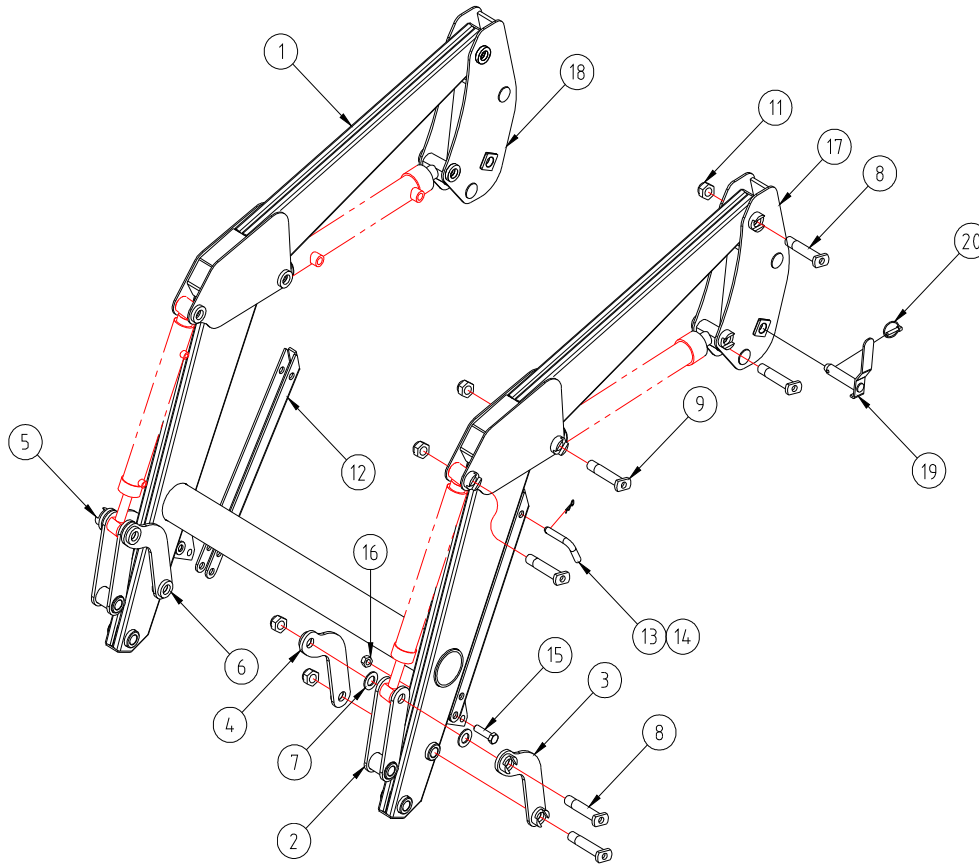
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40230727	FT610-11000	MOUNTING FRAME-LH	1SET		
2	40230730	FT610-12000	MOUNTING FRAME-RH	1SET		
3	40230733	FT610-13000	CROSS BAR	1SET		
4	40230728	FT610-11400	REAR FRAME-LH	1SET		
5	40230729	FT610-11500	REAR FRAME-RH	1SET		
8	40228616	10191-M1205-40	HEX. BOLT-HT M12-1.75P 40L	8EA		
9	40229896	10191-M1203-65	HEX. BOLT-HT M12-1.25P 65L	4EA		
10	40228622	10191-M1406-45	HEX. BOLT-HT M14-2.0P 45L	4EA		
11	40228626	10191-M1606-50	HEX. BOLT-HT M16-2.0P 50L	4EA		
12	40228642	10316-M1200	WASHER-SPRING M12	12EA		
13	40228643	10316-M1400	WASHER-SPRING M14	4EA		
14	40228644	10316-M1600	WASHER-SPRING M16	4EA		
15	40228632	10211-M1406	HEX. NUT-HT M14-2.0P	4EA		
16	40230609	10211-M1606	HEX. NUT-HT M16-2.0P	4EA		
17	40228650	10321-M1600	WASHER-PLAIN M16	8EA		

GRILL ASSEMBLY



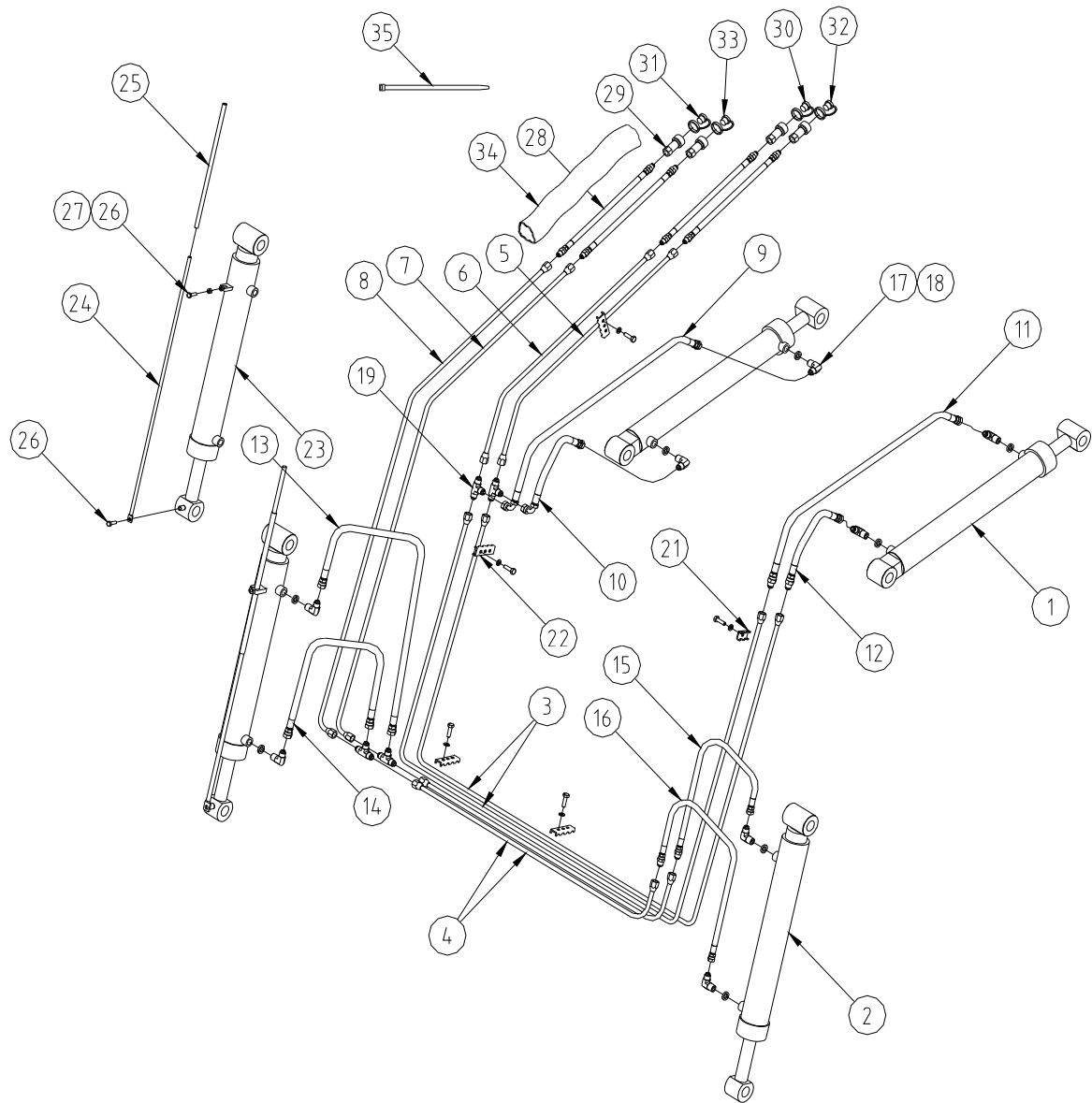
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
-	40256030	FT612-G1000-02	Grill Ass'y No.1~11	1SET		
1	40228791	FT612-11700	Grill Guard Bottom	1SET		
2	40228790	FT612-11600	Grill Guard Top	1SET		
	40256031	FT612-11600-01	Grill Guard Top	1SET	←	10.01.27~
	40256032	FT612-11600-02	Grill Guard Top	1SET	←	10.09.08~
3	40228616	10191-M1205-40	Hex. Bolt M12-1.75P 40L	2EA		
4	40228655	14011-03000	R-PIN Ø3	2EA		
	40253710	14031-04040	Spring PIN Ø4	2EA	←	10.09.08~
5	40228648	10321-M1200	Washer-Plain Ø12	2EA		
6	40228830	LK01-0203	Spring	2EA		
7	40228829	LDL01-12204	Lock Pin Ø12	2EA		
	40253709	14116-12086-01	Lock Pin Ø12	2EA	←	10.09.08~
8	40228635	1021N-M1205	Lock-Nut M12-1.75P	2EA		
9	40230601	10191-M1406-40	HEX. BOLT-HT M14-2.0P 40L	4EA		
10	40228643	10316-M1400	WASHER-SPRING M14	4EA		
11	40228632	10211-M1406	HEX. NUT-HT M14-2.0P	4EA		

BOOM ASSEMBLY



REF. NO	LS PART .NO	PART .NO	DESCRIPTION	QTY	I .C	SERIAL OR DATE
1	40228800	FTE42-11100	BOOM W.A	1SET		
2	40228836	LTF63-51410	LINK W.A	2SET		
3	40228854	LTS19-51310	LINK W.A-BUCKET	1SET		
4	40228856	LTS19-51330	LINK W.A-BUCKET	1SET		
5	40228855	LTS19-51320	LINK W.A-BUCKET	1SET		
6	40228857	LTS19-51340	LINK W.A-BUCKET	1SET		
7	40228651	10321-M2400	WASHER PLAIN M24	4EA		
8	40228661	14124-25130-N	PIN-ASS'Y M24-1.5P 130L	8SET		
9	40228659	14124-25095-N1	PIN-ASS'Y M24-1.5P 95L	4SET		
10						
11	40228633	1021M-M2404	NUT HEX. (NYLON) M24-1.5P	12EA		
12	40228834	LTF42-11701	STAND	2EA		
12	40230776	LTF42-11701-01	STAND	2EA	←	09.05.20~
13	40228849	LTS16-61201	PIN	2EA		
14	40228655	14011-03000	R-PIN	2EA		
15	40228611	10121-M1606-55	BOLT, M16-2.0P 55L	2EA		
16	40228636	1021N-M1606	NUT HEX. (NYLON), M16-2.0P	2EA		
17	40230734	FT610-21100	POST-L/H	1SET	↪	WRONG NO.
17	40230731	FT610-12100	POST-L/H	1SET	←	
18	40230735	FT610-22100	POST-R/H	1SET	↪	WRONG NO.
18	40230732	FT610-12200	POST-R/H	1SET	←	
19	40228662	14133-25113-N	Pin-W.A	2EA		
20	40228656	14021-10000	Ring Pin	2EA		

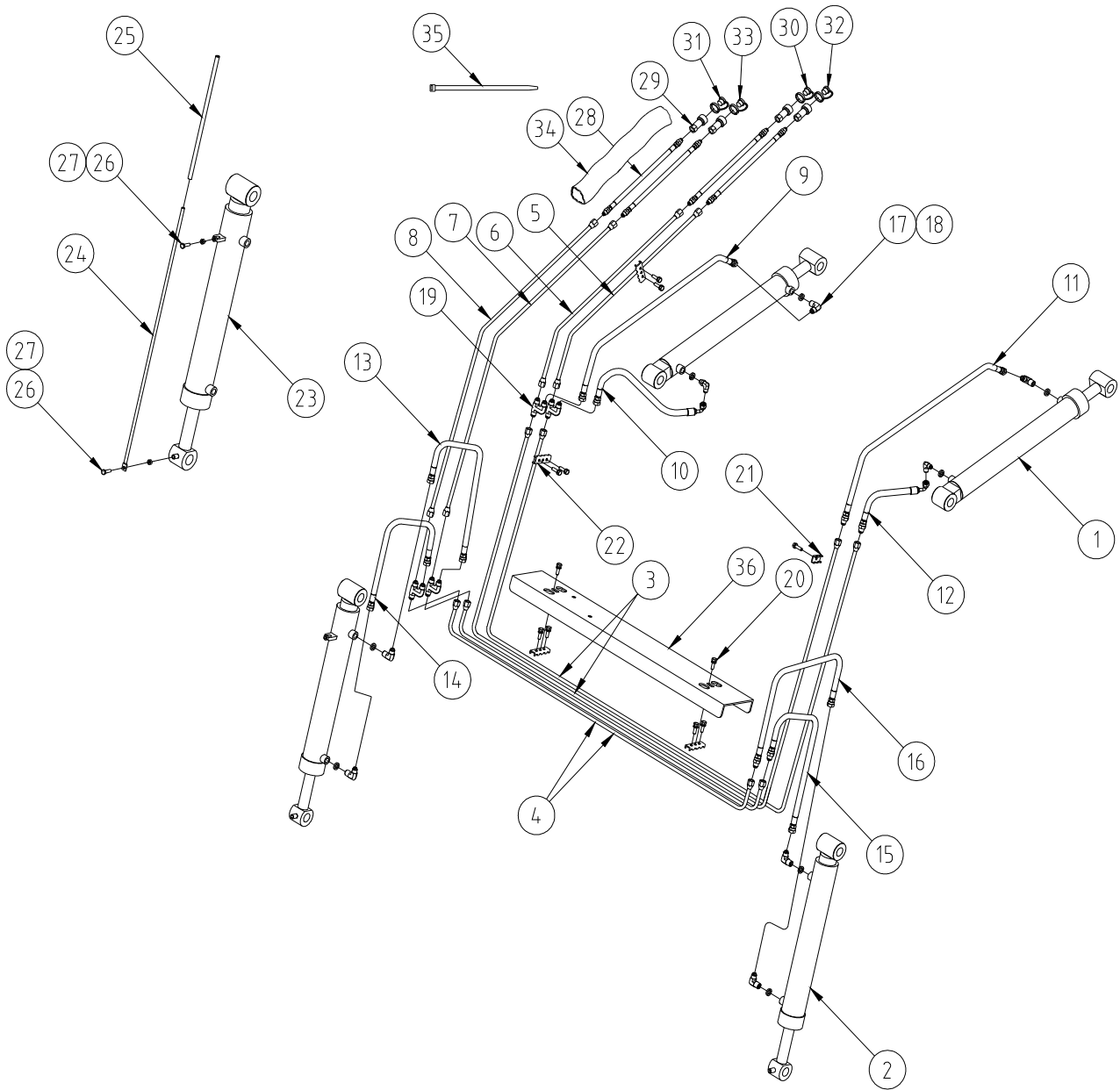
HYDRAULIC PIPING (NON SELF LEVEL T-TYPE)



HYDRAULIC PIPING (NON SELF LEVEL T-TYPE)

REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40228679	228603	BOOM CYLINDER ASS'Y	2SET		
2	40228676	228601	BUCKET CYLINDER ASS'Y-L/H	1SET		
3	40228794	FTE41-1181A	PIPE ASS'Y	2SET		
4	40228795	FTE41-1181B	PIPE ASS'Y	2SET		
5	40228796	FTE41-1181C	PIPE ASS'Y	1SET		
6	40228797	FTE41-1181D	PIPE ASS'Y	1SET		
7	40228798	FTE41-1181E	PIPE ASS'Y	1SET		
8	40228799	FTE41-1181F	PIPE ASS'Y	1SET		
9	40228747	80620-05001	HOSE ASS'Y 904(3/4-16UNF)-4(3/4-16UNF) 800L(3/8)	1SET		
10	40228748	80620-05024	HOSE ASS'Y 904(3/4-16UNF)-4(3/4-16UNF) 360L(3/8)	1SET		
11	40228743	80620-03023	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 800L(3/8)	1SET		
12	40228738	80620-03006	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 400L(3/8)	1SET		
13	40230679	80620-01025	HOSE ASS'Y 4(3/4-16UNF)-4(3/4-16UNF) 500L(3/8)	1SET	↻	
13	40228753	80620-12008	HOSE ASS'Y 454(3/4-16UNF)-4(3/4-16UNF) 500L(3/8)	1SET	←	
14	40230683	80620-01049	HOSE ASS'Y 4(3/4-16UNF)-4(3/4-16UNF) 600L(3/8)	1SET	↻	
14	40228754	80620-12009	HOSE ASS'Y 454(3/4-16UNF)-4(3/4-16UNF) 600L(3/8)	1SET	←	
15	40228738	80620-03006	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 400L(3/8)	1SET		
16	40228744	80620-03026	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 550L(3/8)	1SET		
17	40228714	802L2-P46F9-42	NIPPLE-ELBOW 3/4-16UNF, HOSExPF3/8, O-RING 90°	8EA		
18	40228756	81301-BP014	O-RING 1BP14	8EA		
19	40228719	802T2-F94F9-40	NIPPLE T-TYPE 3/4-16UNF, HOSE	4EA		
20	40228612	1012S-M0803-35	BOLT-SEM'S M8-1.25P 35L	9EA		
21	40228841	LTL26-81802	CLAMP	1EA		
22	40228840	LTL26-81801	CLAMP	4EA		
23	40228682	228702	BUCKET CYLINDER ASS'Y-R/H	1SET		
24	40228664	14711-A0011	BAR, GUAGE-LONG Ø12-1000L	1EA	↻	
24	40228663	14711-80011	BAR, GUAGE-LONG Ø12-800L	1EA	←	
25	40228666	14712-50012	BAR, GUAGE-SHORT 500L	1EA	↻	
25	40228665	14712-40012	BAR, GUAGE-SHORT 400L	1EA	←	
26	40228608	10121-M1004-30	BOLT M10-1.5P 30L	2EA		
27	40228630	10211-M1004	NUT M10-1.5P	1EA		
28	40228746	80620-04014	HOSE ASS'Y 1(P3/8)-2(3/4-16UNF) 900L(3/8)	4SET		
29	40228721	80420-T3360	QUICK COULPER, PT3/8 FEMALE	4SET		
30	40228725	8043Y-03300	DUST-CAP, 3/8" YELLOW MALE	1EA		
31	40228724	8043R-03300	DUST-CAP, 3/8" RED MALE	1EA		
32	40228723	8043K-03300	DUST-CAP, 3/8" BLACK MALE	1EA		
33	40228722	8043B-03300	DUST-CAP, 3/8" BLUE MALE	1EA		
34	40228699	50135-0700K	WEBBING 700L	1EA		
35	40228697	50120-M270K	CABLE TIE, 270mm BLACK	1EA		

HYDRAULIC PIPING (NON SELF LEVEL H-TYPE)

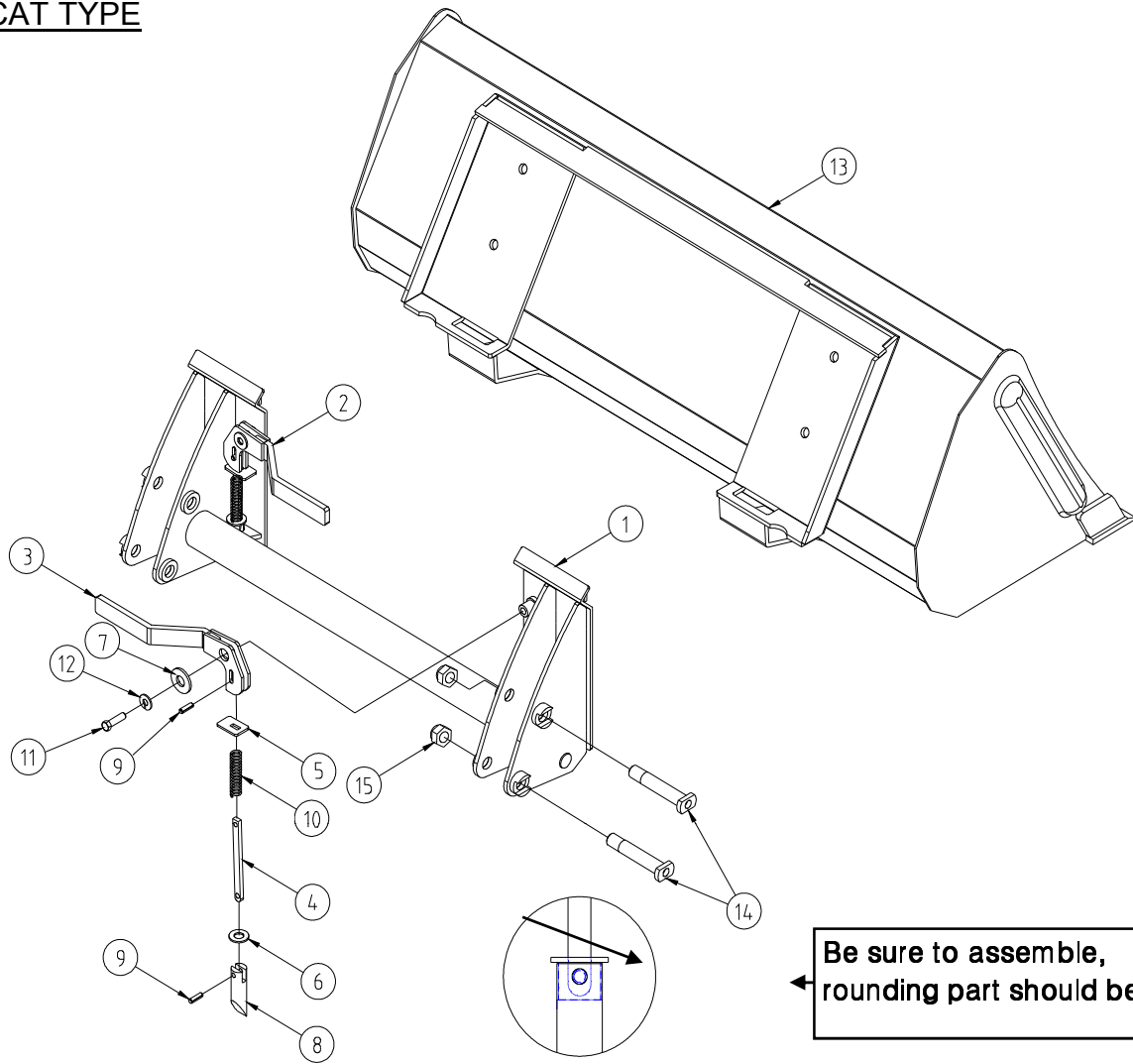


HYDRAULIC PIPING (NON SELF LEVEL H-TYPE)

REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40228679	228603	BOOM CYLINDER ASS'Y	2SET		
2	40228676	228601	BUCKET CYLINDER ASS'Y-L/H	1SET		
3	40228794	FTE41-1181A	PIPE ASS'Y	2SET		
4	40230756	FTE41-1181B-01	PIPE ASS'Y	2SET		
5	40228796	FTE41-1181C	PIPE ASS'Y	1SET		
6	40228797	FTE41-1181D	PIPE ASS'Y	1SET		
7	40230757	FTE41-1181E-01	PIPE ASS'Y	1SET		
8	40230758	FTE41-1181F-01	PIPE ASS'Y	1SET		
9	40230681	80620-01028	HOSE ASS'Y 4(3/4-16UNF)-4(3/4-16UNF) 750L(3/8)	1SET		
10	40228748	80620-05024	HOSE ASS'Y 904(3/4-16UNF)-4(3/4-16UNF) 360L(3/8)	1SET		
11	40228743	80620-03023	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 800L(3/8)	1SET		
12	40230696	80620-08003	HOSE ASS'Y 904(3/4-16UNF)-2(3/4-16UNF) 400L(3/8)	1SET		
13	40230677	80620-01002	HOSE ASS'Y 4(3/4-16UNF)-4(3/4-16UNF) 350L(3/8)	1SET		
14	40230678	80620-01003	HOSE ASS'Y 4(3/4-16UNF)-4(3/4-16UNF) 550L(3/8)	1SET		
15	40230687	80620-03027	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 350L(3/8)	1SET		
16	40228744	80620-03026	HOSE ASS'Y 4(3/4-16UNF)-2(3/4-16UNF) 550L(3/8)	1SET		
17	40228714	802L2-P46F9-42	NIPPLE-ELBOW 3/4-16UNF, HOSExPF3/8, O-RING 90°	8EA		
18	40228756	81301-BP014	O-RING 1BP14	8EA		
19	40230663	802H1-F94F9-40	NIPPLE H-TYPE 3/4-16UNF, HOSE	4EA		
20	40228612	1012S-M0803-35	BOLT-SEM'S M8-1.25P 35L	11EA		
21	40228841	LTL26-81802	CLAMP	1EA		
22	40228840	LTL26-81801	CLAMP	4EA		
23	40228682	228702	BUCKET CYLINDER ASS'Y-R/H	1SET		
24	40228663	14711-80011	BAR, GUAGE-LONG Ø12-800L	1EA		
25	40228665	14712-40012	BAR, GUAGE-SHORT Ø17.3-400L	1EA		
26	40228608	10121-M1004-30	BOLT M10-1.5P 30L	2EA		
27	40228630	10211-M1004	NUT M10-1.5P	1EA		
28	40228746	80620-04014	HOSE ASS'Y 1(PT3/8)-2(3/4-16UNF) 900L(3/8)	4SET		
29	40228721	80420-T3360	QUICK COULPER, PT3/8 FEMALE	4SET		
30	40228725	8043Y-03300	DUST-CAP, 3/8" YELLOW MALE	1EA		
31	40228724	8043R-03300	DUST-CAP, 3/8" RED MALE	1EA		
32	40228723	8043K-03300	DUST-CAP, 3/8" BLACK MALE	1EA		
33	40228722	8043B-03300	DUST-CAP, 3/8" BLUE MALE	1EA		
34	40228699	50135-0700K	WEBBING 700L	1EA		
35	40228697	50120-M270K	CABLE TIE, 270mm BLACK	1EA		
36	40228850	LTS19-17801-01	COVER, PIPE	1EA		

QUICK ATTACHMENT / BUCKET

- BOBCAT TYPE

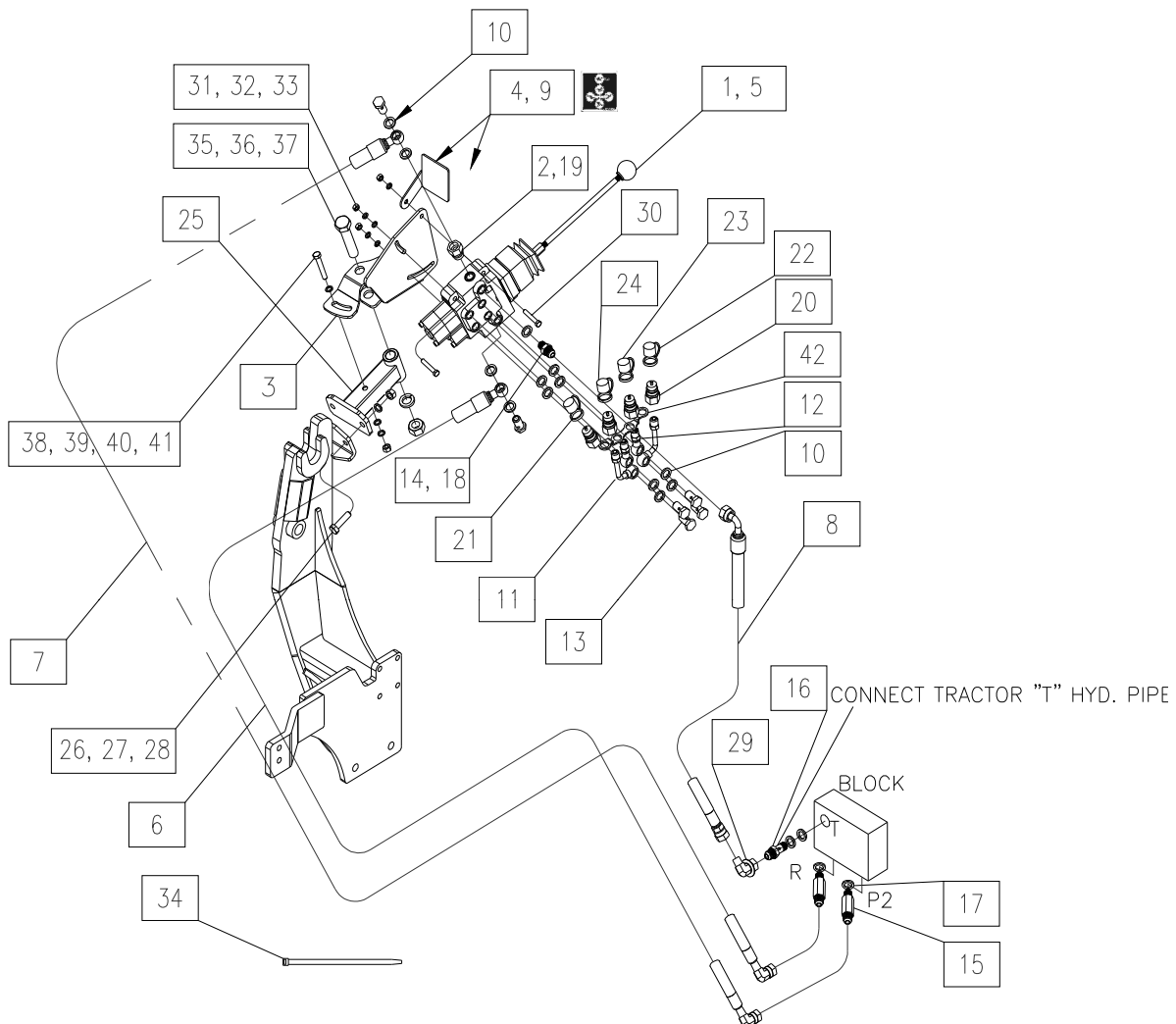


Be sure to assemble,
rounding part should be

REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
-	40230845	LTS21-46000-01	QUICK ATTA. ASS'Y, NO 1~12	1		
1	40230846	LTS21-46100	QUICK ATTA. W.A	1		
2	40230847	LTS21-46200-01	HANDLE-LH	1		
3	40230848	LTS21-46300-01	HANDLE-RH	1		
4	40230849	LTS21-46401-01	PIN LINK	2		
5	40230850	LTS21-46402	PLATE GUIDE	2		
6	40230851	LTS21-46403	WASHER #1	2		
7	40230852	LTS21-46404	WASHER #2	2		
8	40230853	LTS21-46405	PIN, $\Phi 31.5-112L$	2		
9	40230615	14031-10030	SPRING PIN, $\Phi 10-30L$	4		
10	40230854	LTS21-46407	SPRING, I.D20x130L	2		
11	40228621	10191-M1406-35	HEX. BOLT, M14-2.OP 35L	2		
12	40228643	10316-M1400	WASHER-SPRING, M14	2		
13	40230752	FTBB2-58000	Bucket W.A - BOBCAT (58")	1		
13	40264177	FTBB4-66100	Bucket W.A - BOBCAT (66")	1		2011.03.09~
14	40230616	14124-25138-N	Pin, $\Phi 25-138L$	4		
15	40228633	1021M-M2404	NUT HEX. (NYLON), M24-1.5P	4		

HYDRAULIC CONNECTING

- WALVOIL

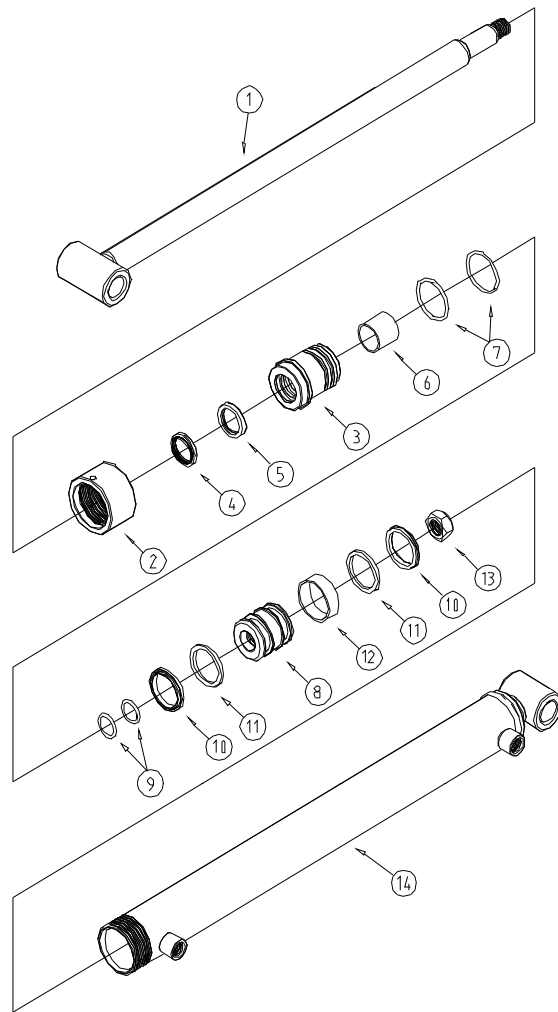


HYDRAULIC CONNECTING

- WALVOIL

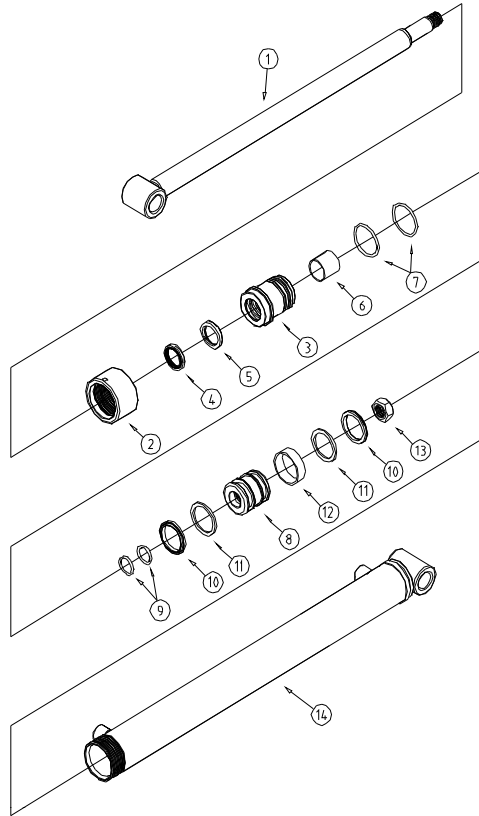
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40245420	801W1-83000	Valve, 3/8 Single lever (Float), Copper Washer Typ	1SET		
2	40230662	801W1-82101	Carry Over, PF(1/2)-PF(3/8)	1SET		
3	40228770	FT313-V0100	Valve Bracket-Top	1SET		
4	40228843	LTM25-11702	Decal Tab	1EA		
5	40230661	801W1-80J00	Valve Lever	1SET		
6	40230698	80620-10004	P-Hose Ass'y, Benzo(PF3/8)x904(3/4-16UNF) 0 ° 1400L(3/8)	1SET		
7	40230697	80620-10003	C.O-Hose Ass'y, Benzo(3/8)-904(3/4-16UNF) 0 ° 1300L(3/8)	1SET		
8	40230692	80620-05047	T-Hose Ass'y, 904(3/4-16UNF)-4(3/4-16UNF) 1300L(3/8)	1SET		
8	40230691	80620-05017	T-Hose Ass'y, 904(3/4-16UNF)-4(3/4-16UNF) 1700L(3/8)	1SET		
9	40228763	DEC01-M1104	Decal Tap Sticker	1EA		
10	40228654	103E1-C0380	Bond Seal, 3/8"	12EA		
11	40228733	805BD-1T467	Benzo Adapter, PF3/8,BenzoPT3/8 75 °	2EA		
12	40228732	805BD-1T461	Benzo Adapter, PF3/8,BenzoPT3/8	2EA		
13	40228731	805BB-1P460	Nipple, PF3/8	6EA		
14	40228716	802N2-P46F9-41	Nipple, PF3/8, COPPERx3/4-16UNF, HOSE	1EA		
15	40228717	802N2-P46F9-42	Nipple, PF3/8, O-RINGx3/4-16UNF, HOSE	2EA		
16	40230671	802N2-P46F9-4B	Nipple, PF3/8, COPPER (BENZO)x3/4-16UNF,HOSE	1EA		
17	40228756	81301-BP014	O-RING, 3/8"	2EA		
18	40228652	103C0-C0330	Copper Washer, 3/8"	1EA		
19	40228653	103E1-C0110	Bond Seal, 1/2"	1EA		
20	40228720	80410-T3360	Quick Coupler, PT3/8, Male	4EA		
21	40228728	8044R-03300	Dust Cap, 3/8" Red Female	1EA		
22	40228726	8044B-03300	Dust Cap, 3/8" Blue Female	1EA		
23	40228730	8044Y-03300	Dust Cap, 3/8" Yellow Female	1EA		
24	40228729	8044W-03300	Dust Cap, 3/8" White Female	1EA		
25	40228771	FT313-V0200	Valve Bracket-Bottom	1EA		
	40248384	FT313-V0200-01	Valve Bracket-Bottom	1EA		10.05.20~
26	40228610	10121-M1205-35	Hex. Bolt, M12-1.75P 35L	2EA		
27	40228642	10316-M1200	Washer-Spring, M12	2EA		
28	40228631	10211-M1205	Hex. Nut, M12-1.75P	2EA		
29	40228710	802L2-F94F9-4S	Nipple, 3/4-16UNF, HOSEx3/4-16UNF,Swivel 90°	1EA		
30	40228607	10121-M0803-50	Hex. Bolt, M8-1.25P 50L	3EA		
	40229893	10121-M0803-65	Hex. Bolt, M8-1.25P 65L	3EA		10.07.27~
31	40228646	10321-M0800	Washer-Plain, M8	2EA		
32	40228640	10316-M0800	Washer-Spring, M8	3EA		
33	40228629	10211-M0803	Hex. Nut, M8-1.25P	3EA		
34	40228698	50120-M540K	Cable Tie, 540mm, Black	2EA		
35	40228628	10191-M2007-B0	Hex. Bolt, M20-2.5P 110L	1EA		
36	40228639	10261-M2007	Hex. Nut, M20-2.5P	1EA		
37	40228645	10316-M2000	Washer, Spring, M20	1EA		
38	40228609	10121-M1004-65	Hex. Bolt, M10-1.5P 65L	1EA		
39	40228630	10211-M1004	Hex. Nut, M10-1.5P	1EA		
40	40228641	10316-M1000	Washer-Spring, M10	1EA		
41	40228647	10321-M1000	Washer-Plain, M10	2EA		
42	40256039	FT307-V0001	Valve clamp	1EA		
-	40228758	99400-00001	TEFRON TAPE	1EA		

BOOM CYLINDER



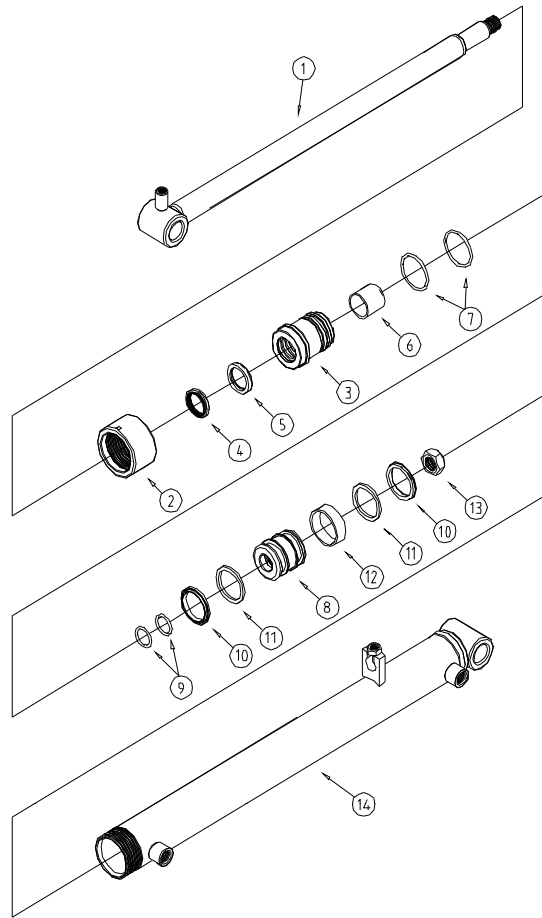
REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
0	40228679	228603	BOOM CYLINDER ASS'Y $\Phi 30 \times 50 \times 612L$ (408ST)	1		
1	40228680	228603-R	ROD ASS'Y	1		
2	40228865	0C50-6037	CAP OUTER, $\Phi 50 \times 60 \times 37L$	1		
	40228821	1A50-3055	COVER INNER ASS'Y No.3~7	1		
3	40228825	1C50-3055	COVER INNER $\Phi 50 \times 30 \times 55L$	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228879	UPI5-1030	PACKING U, ISI 30x40x6	1		
6	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
7	40228871	OR1B-G045	O-RING, 1BG45	2		
	40228873	PA50-2350	Piston Ass'y No.8~12	1		
8	40228875	PI50-2350	PISTON. $\Phi 50 \times 23 \times 50L$	1		
9	40228869	OR1B-G023	O-RING, 1BG23	2		
10	40228881	UPOS-1050	PACKING U, OSI 50x40x6	2		
11	40228877	TRBR-0050	BACKUP RING, 50x40x3	2		
12	40228885	WEWR-0050	WEARING, WR 50x45x15	1		
13	40228863	NTP0-F032-D	NUT, 3/4-16UNF	1		
14	40228681	228603-T	TUBE ASS'Y	1		

BUCKET CYCLINDER L/H



REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
0	40228676	228601	BUCKET CYLINDER ASS'Y L/H $\Phi 30 \times 50 \times 589L$ (360ST)	1		
1	40228677	228601-R	ROD ASS'Y	1		
2	40228865	0C50-6037	CAP OUTER, $\Phi 50 \times 60 \times 37L$	1		
	40228821	1A50-3055	COVER INNER ASS'Y No.3~7	1		
3	40228825	1C50-3055	COVER INNER $\Phi 50 \times 30 \times 55L$	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228879	UPI5-1030	PACKING U, ISI 30x40x6	1		
6	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
7	40228871	OR1B-G045	O-RING, 1BG45	2		
	40228873	PA50-2350	Piston Ass'y No.8~12	1		
8	40228875	PI50-2350	PISTON, $\Phi 50 \times 23 \times 50L$	1		
9	40228869	OR1B-G023	O-RING, 1BG23	2		
10	40228881	UPOS-1050	PACKING U, OSI 50x40x6	2		
11	40228877	TRBR-0050	BACKUP RING, 50x40x3	2		
12	40228885	WEWR-0050	WEARING, WR 50x45x15	1		
13	40228863	NTP0-F032-D	NUT, 3/4-16UNF	1		
14	40228678	228601-T	TUBE ASS'Y	1		

BUCKET CYCLINDER R/H



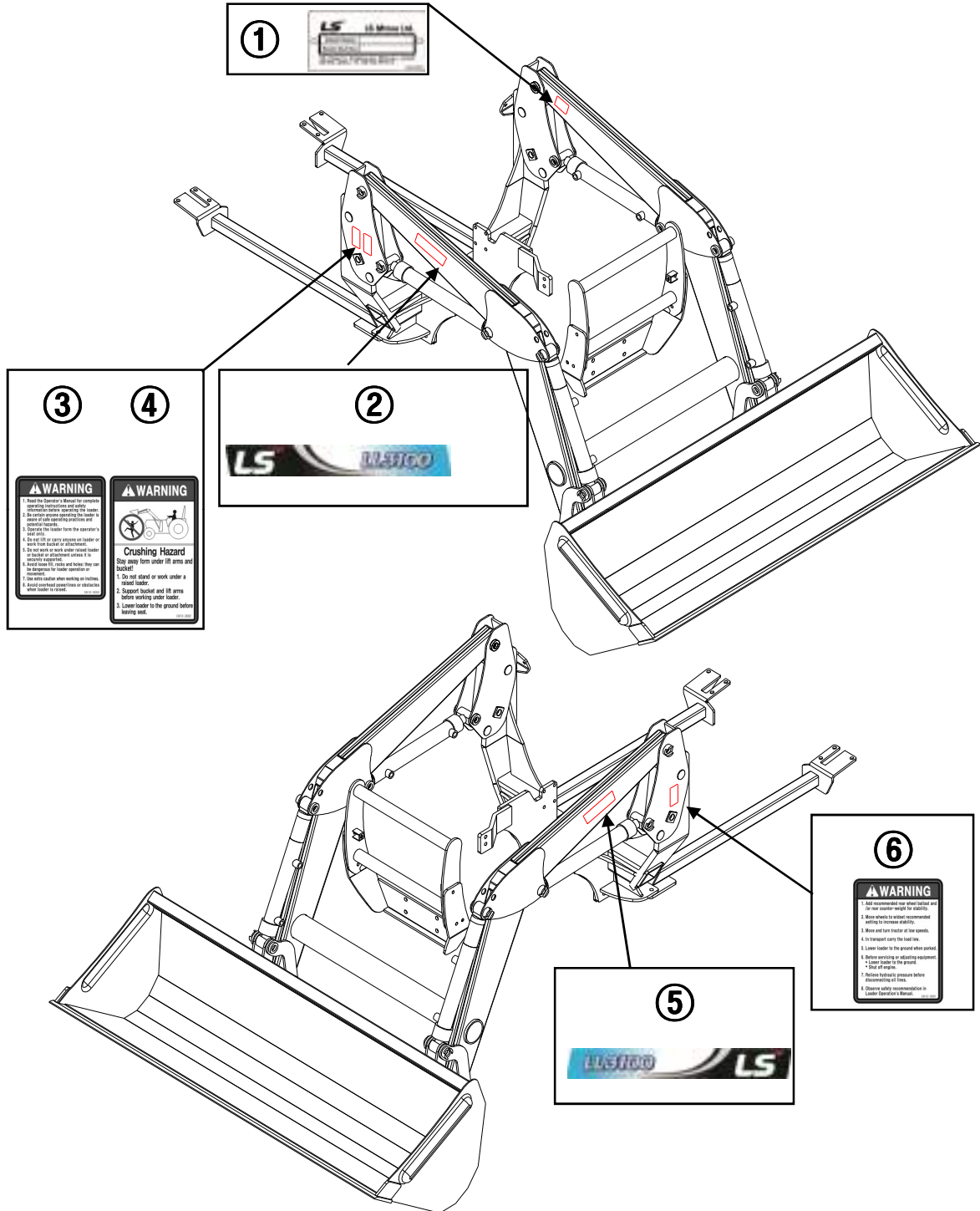
REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
0	40228682	228702	BUCKET CYLINDER ASS'Y R/H Φ 30x50x589L (360ST)	1		
1	40228683	228702-R	ROD ASS'Y	1		
2	40228865	0C50-6037	CAP OUTER, Φ 50x60x37L	1		
	40228821	1A50-3055	COVER INNER ASS'Y No.3~7	1		
3	40228825	1C50-3055	COVER INNER Φ 50x30x55L	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228879	UPI5-I030	PACKING U, ISI 30x40x6	1		
6	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
7	40228871	OR1B-G045	O-RING, 1BG45	2		
	40228873	PA50-2350	Piston Ass'y No.8~12	1		
8	40228875	PI50-2350	PISTON. Φ 50x23x50L	1		
9	40228869	OR1B-G023	O-RING, 1BG23	2		
10	40228881	UPOS-I050	PACKING U, OSI 50x40x6	2		
11	40228877	TRBR-0050	BACKUP RING, 50x40x3	2		
12	40228885	WEWR-0050	WEARING, WR 50x45x15	1		
13	40228863	NTPO-F032-D	NUT, 3/4-16UNF, LOCK	1		
14	40228684	228702-T	TUBE ASS'Y	1		

DECALS



CAUTION :

Read and refer to the Tractor Operation Manual or Decals on the Tractor, and Loader Decals on as shown.



Refer to category "Safety decals"

DECALS

REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
1	40230653	3104E-00010	NAME PLATE	1		
2	40264186	3101E-00404	DECAL , MODEL-LL3100(P	1		
3	40228761	CK12-3002	DECAL , WARNING	1		
4	40228762	CK12-3003	DECAL , WARNING	1		
5	40264185	3101E-00403	DECAL , MODEL-LL3100(L	1		
6	40228760	CK12-3001	DECAL , WARNING	1		
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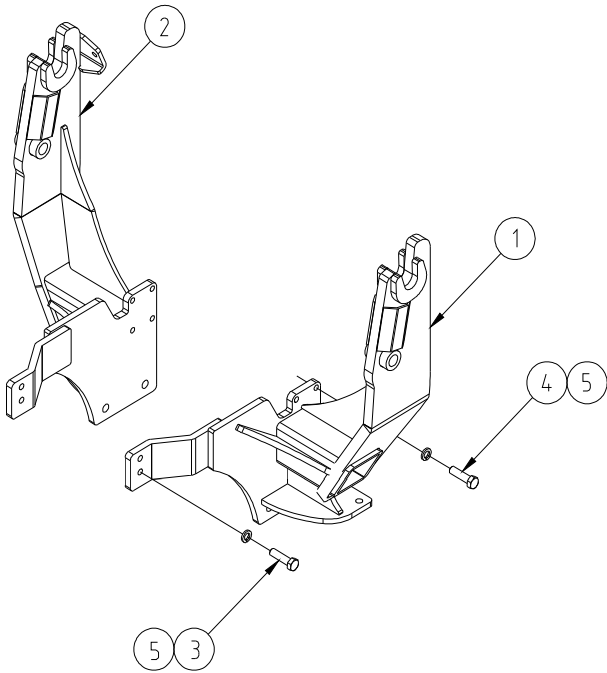
LOADER INSTALLATION



CAUTION: See your Loader Operator's manual for Safety Precautions and Tractor Preparations.

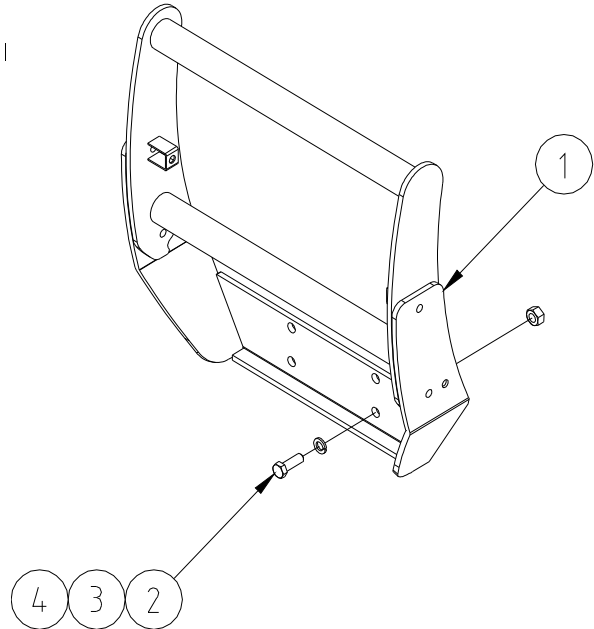
STEP 1. Position tractor on hard level surface.

STEP 2. Release loader, bucket and mount kit box from |



STEP 3. Install Mounting Frame-LH and Mounting Frame-RH.

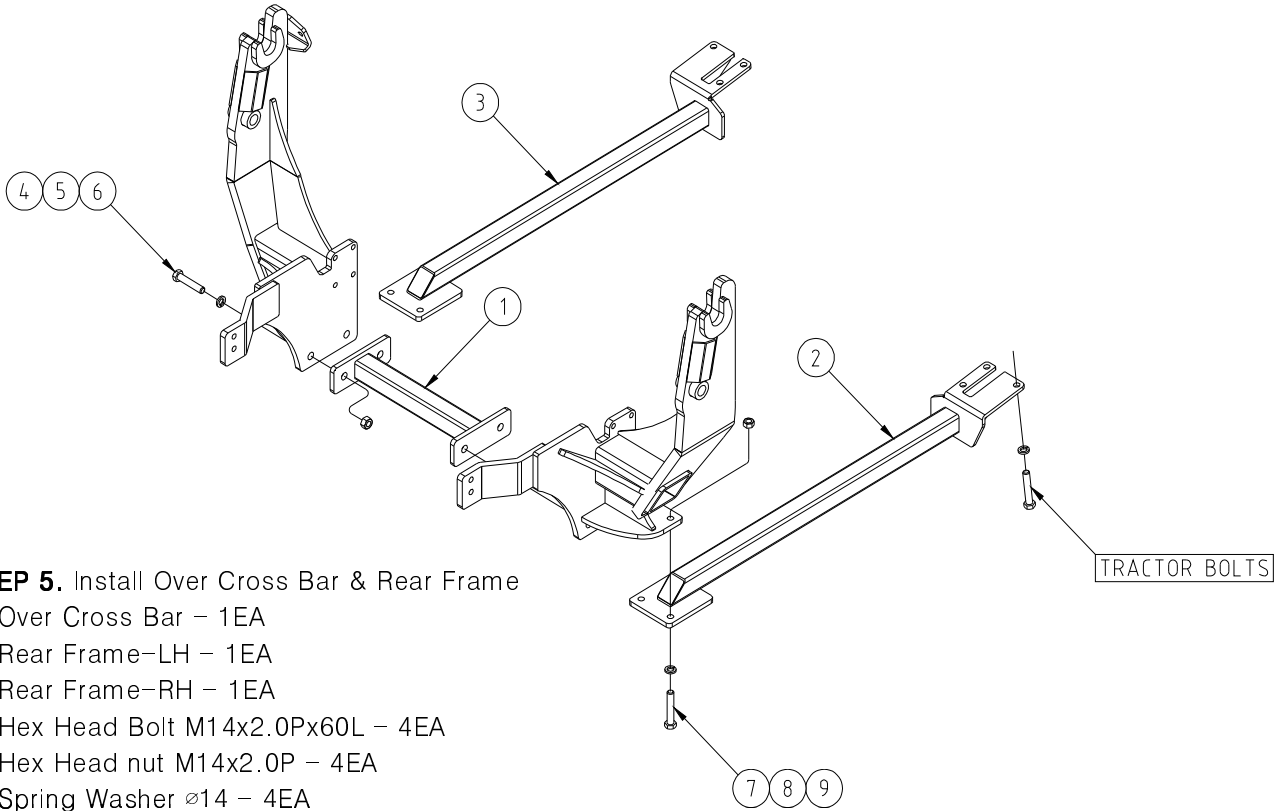
- ① Mounting Frame-LH - 1EA
- ② Mounting Frame-RH - 1EA
- ③ Hex Head Bolt M12-1.75P 65L - 4EA
- ④ Hex Head Bolt M12-1.75P 40L - 8EA
- ⑤ Spring Wahser \varnothing 12 - 12EA



STEP 4. Install Front Grill

- ① Front Grill - 1EA
- ② Hex Head Bolt M14-2.0P 40L - 4EA
- ③ Spring Washer \varnothing 14 - 4EA
- ④ Hex Head Nut M14-2.0P - 4EA

LOADER INSTALLATION



STEP 5. Install Over Cross Bar & Rear Frame

- ① Over Cross Bar – 1EA
- ② Rear Frame-LH – 1EA
- ③ Rear Frame-RH – 1EA
- ④ Hex Head Bolt M14x2.0Px60L – 4EA
- ⑤ Hex Head nut M14x2.0P – 4EA
- ⑥ Spring Washer \varnothing 14 – 4EA
- ⑦ Hex Head Bolt M14x2.0Px45L – 4EA
- ⑧ Spring Washer \varnothing 14 – 4EA

STEP 6. Install Boom Ass'y

Hang the groove on the pin located on Mounting Frame.

