

INNOVATIVE
TECHNOLOGY
PARTNER

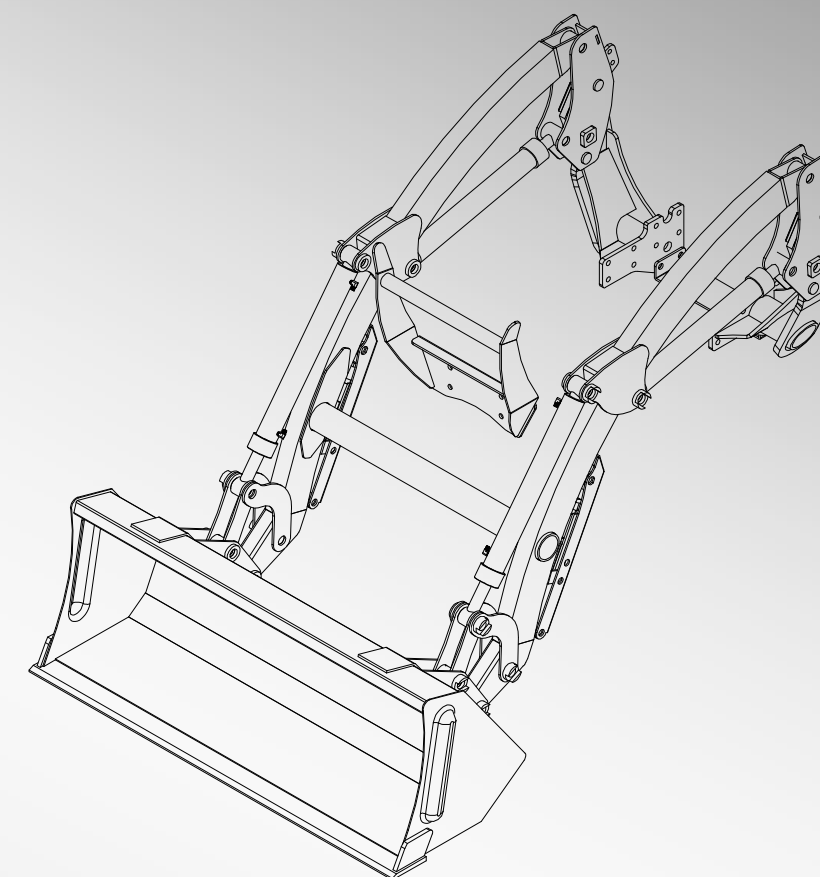
LS LOADER OPERATOR MANUAL

LL2100

NON-SELF LEVELING TYPE

TRACTOR Model

- J2020H
- J2030H



LS Tractor

LS LOADER

OPERATOR MANUAL

LL2100

LS TRACTOR

www.lstractor.com



LS Tractor USA LLC.

PO Box 70, Battleboro, NC 27809

Tel : 252-984-0700

Fax : 252-984-0701

www.lstractor.com

www.lstractorusa.com

P/NO FT609-MEN00-10

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 Mtron 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.

Table of Contents

■ Safety Precautions	-----	4
■ Safety Decals	-----	8
■ Loader Specifications – Nomal Type	-----	9
■ Loader Specifications – Bobcat Type	-----	10
■ Introduction	-----	11
■ Tractor Preparation	-----	12
■ Loader Operation	-----	13
■ Loader Removal	-----	16
■ Loader Mounting	-----	17
■ Lubrication and Maintenance	-----	18
■ Trouble Shooting	-----	20
■ Hydraulic System Schematic	-----	24
■ Torque Tightening Chart	-----	25
■ Parts Illustrations	-----	26
General Information		26
Bucket Assembly – Nomal Type		27
Bucket Assembly – Bobcat Type		28
Mounting Frame Assembly		29
Grill Assembly		30
Boom Assembly		31
Hydraulic Piping		33
Quick Attachment – Bobcat Type		35
Hydraulic Connecting – Dukin Valve		36
Hydraulic Connecting – Walvoil Valve		39
Hydraulic Connecting – Dinoil Valve		42
Boom Cylinder		45
Bucket Cylinder		47
Decals		49
■ Loader Installation	-----	50

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:

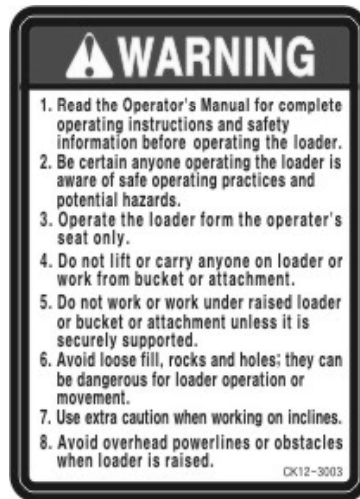
Warning decal CK12-3001, located on the left hand Mid-mount and Warning Decal CK12-3002, CK12-3003 located on the loader right hand Mid-Mount are visible when getting on tractor.

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



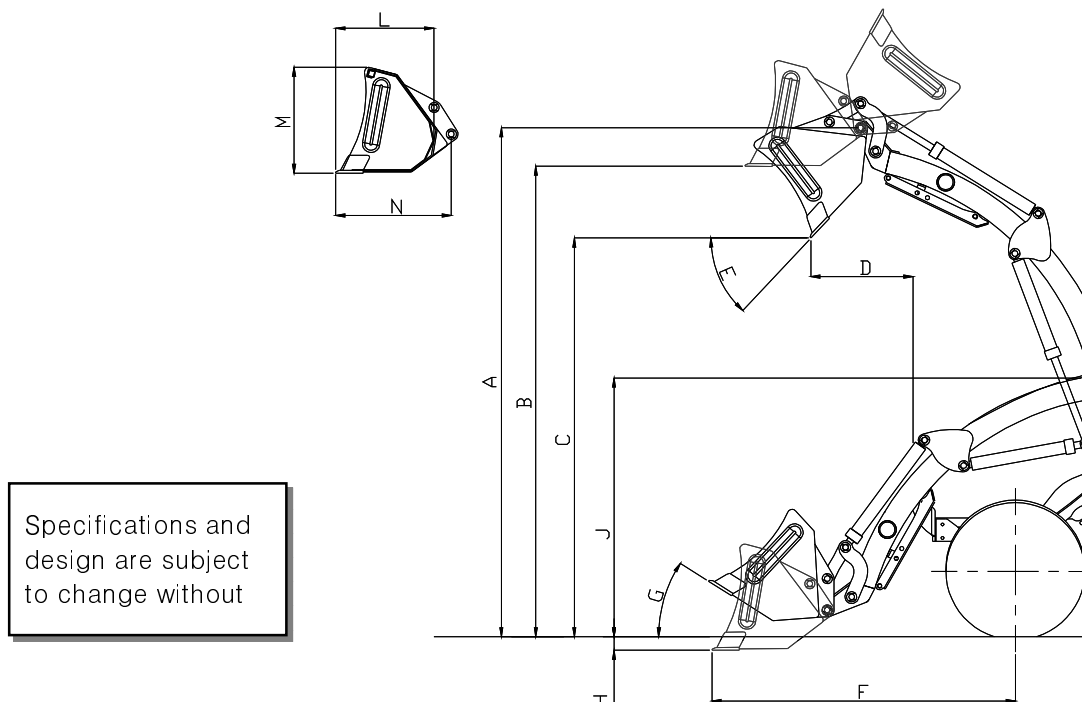
3104E-00010



3101E-00401

3101E-00402

LOADER SPECIFICATION - NOMAL TYPE



Specifications and design are subject to change without

* Specifications shown are based on ASAE Standards.

Loader Model : LL2100 (NOMAL TYPE BUCKET)

Tractor Model : J2020/J2020H/J2030/J2030H

non self leveling type

A. Maximum Lift Height	2,177 mm	85.7 "
B. Clearance with Attachment Level	2,004 mm	78.9 "
C. Clearance with Attachment Dumped	1,679 mm	66.1 "
D. Reach at Maximum Height	438 mm	17.2 "
E. Maximum Dump Angle	50 °	50 °
F. Reach with Attachment on Ground	1,412 mm	55.6 "
G. Attachment Rollback Angle	30 °	30 °
H. Digging Depth Below Grade	140 mm	5.5 "
J. Overall Height in Carry Position	1,025 mm	40.4 "
L. Depth of Attachment (to back of inner shell)	427 mm	16.8 "
M. Height of Attachment	470 mm	18.5 "
N. Depth of Attachment (to pivot pin)	507 mm	20.0 "
Loader Total Weight	224 kg	494.0 lb
Weight of Boom Assembly	119 kg	262.3 lb
Weight of Mounting Frame	105 kg	231.7 lb
Lift Capacity to Full Height at Pivot Pins	509 kgf	1,122 lb
Breakout Force at Ground Level, Pivot Pins	789 kgf	1,740 lb
Rated Flow (Tractor System)	26.98 l/min.	7.1 gpm
Lift Cylinder	30x45x550x350ST mm	1.2x1.8x21.6x13.8ST "
Bucket Cylinder	30x45x589x330ST mm	1.2x1.8x23.2x13ST "
Attachment used for specification	1,270 mm	50 "
Bucket Capacity	0.19 m ³	6.8 ft ³
Rated Operating Load	382 kg	840.4 lb
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 LL2100 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**

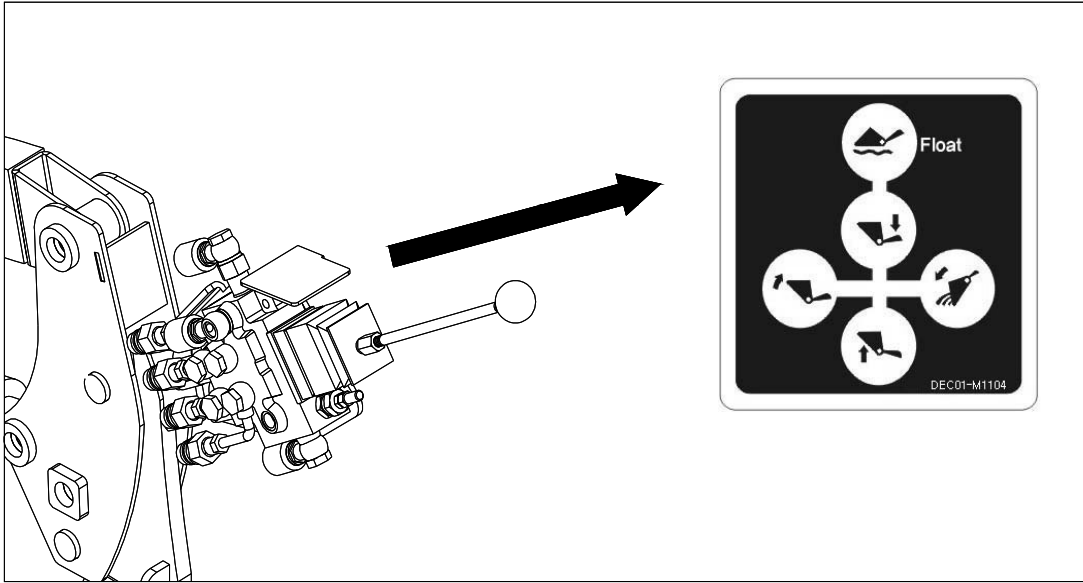
When "Backfilling" or "Backgrading", position the bucket so it is level on the ground. Do not dump material from bucket following each pass, as additional weight of material in bucket will assist in "Backgrading" and increases loader efficiency during "Backfilling".

► **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 LL2100 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:

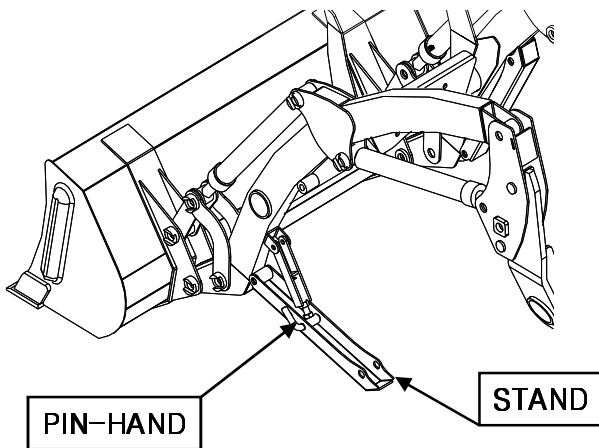
Never allow weight of tractor to be put on parking leg when removing loader.

▶ Park the tractor and loader on hard level surface.

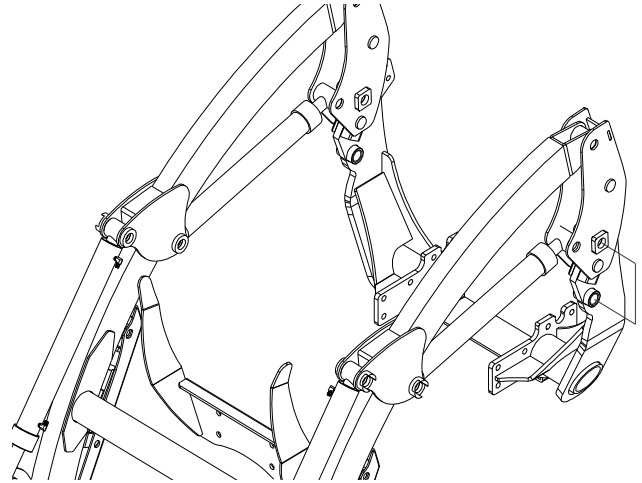
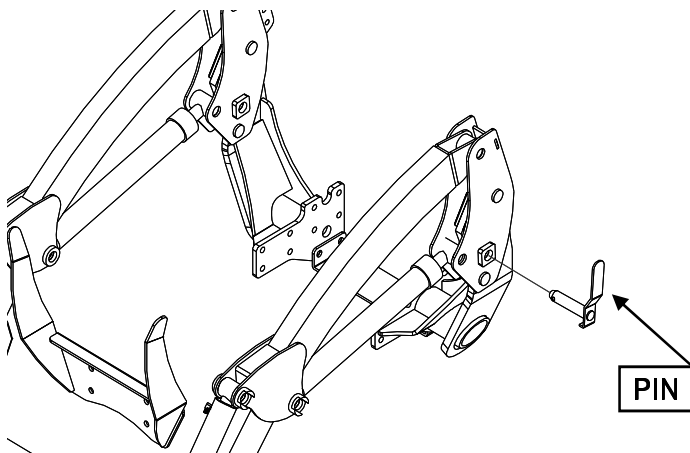
▶ Raise the boom until the bucket is about 2 feet off the ground.

▶ 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.



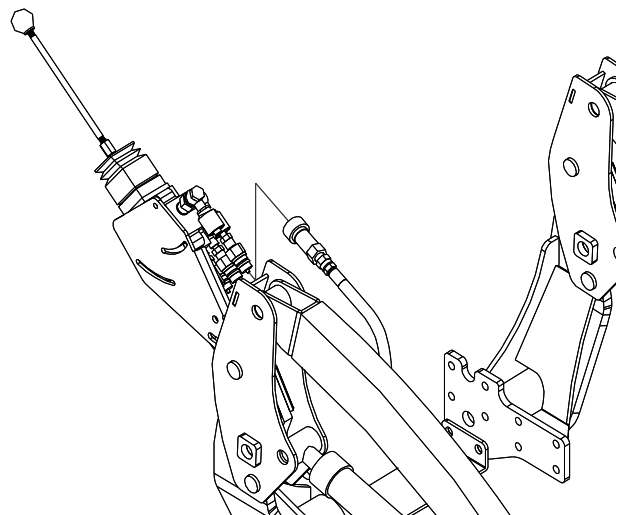
▶ Pull the control lever to raise the loader until the post.

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.

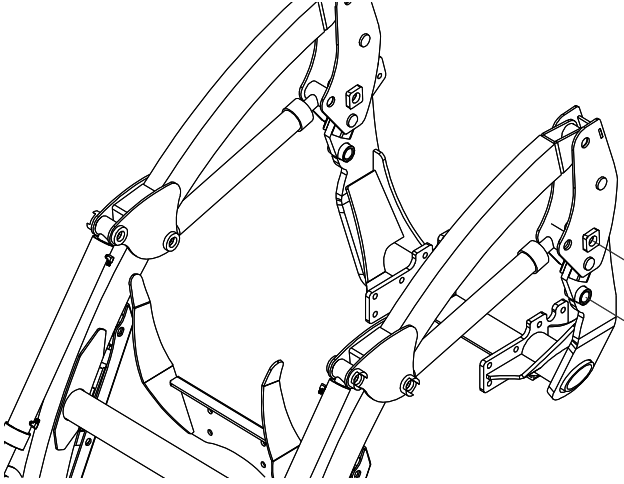


LOADER MOUNTING



CAUTION:

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

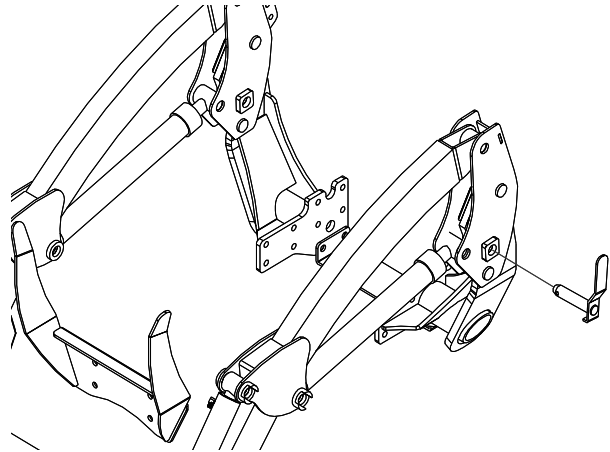


▶ Carefully drive the tractor into the loader to a position where the hydraulic hoses(Quick coupler) can be connected to the control valve block.

▶ 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 and 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:

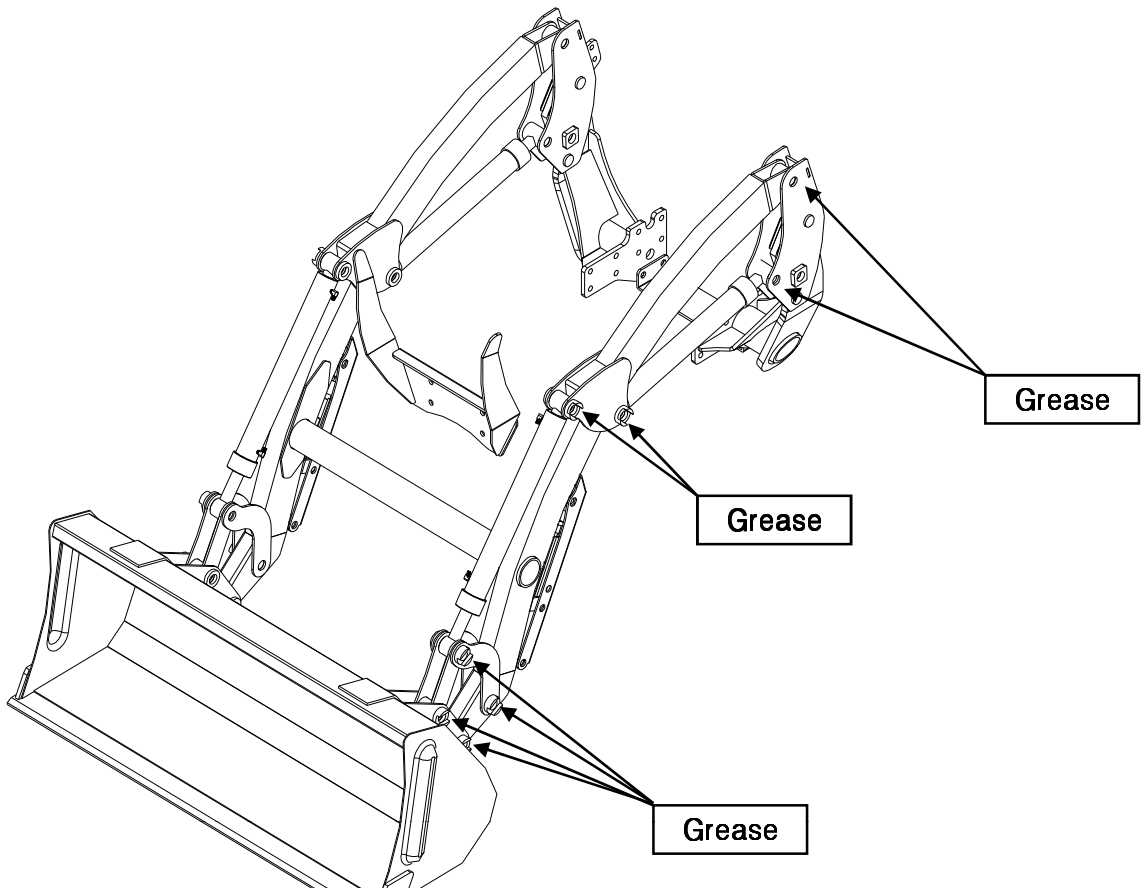
When checking hydraulic system oil level, the loader should be on the ground and bucket fully retracted(all cylinders in retracted position).

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

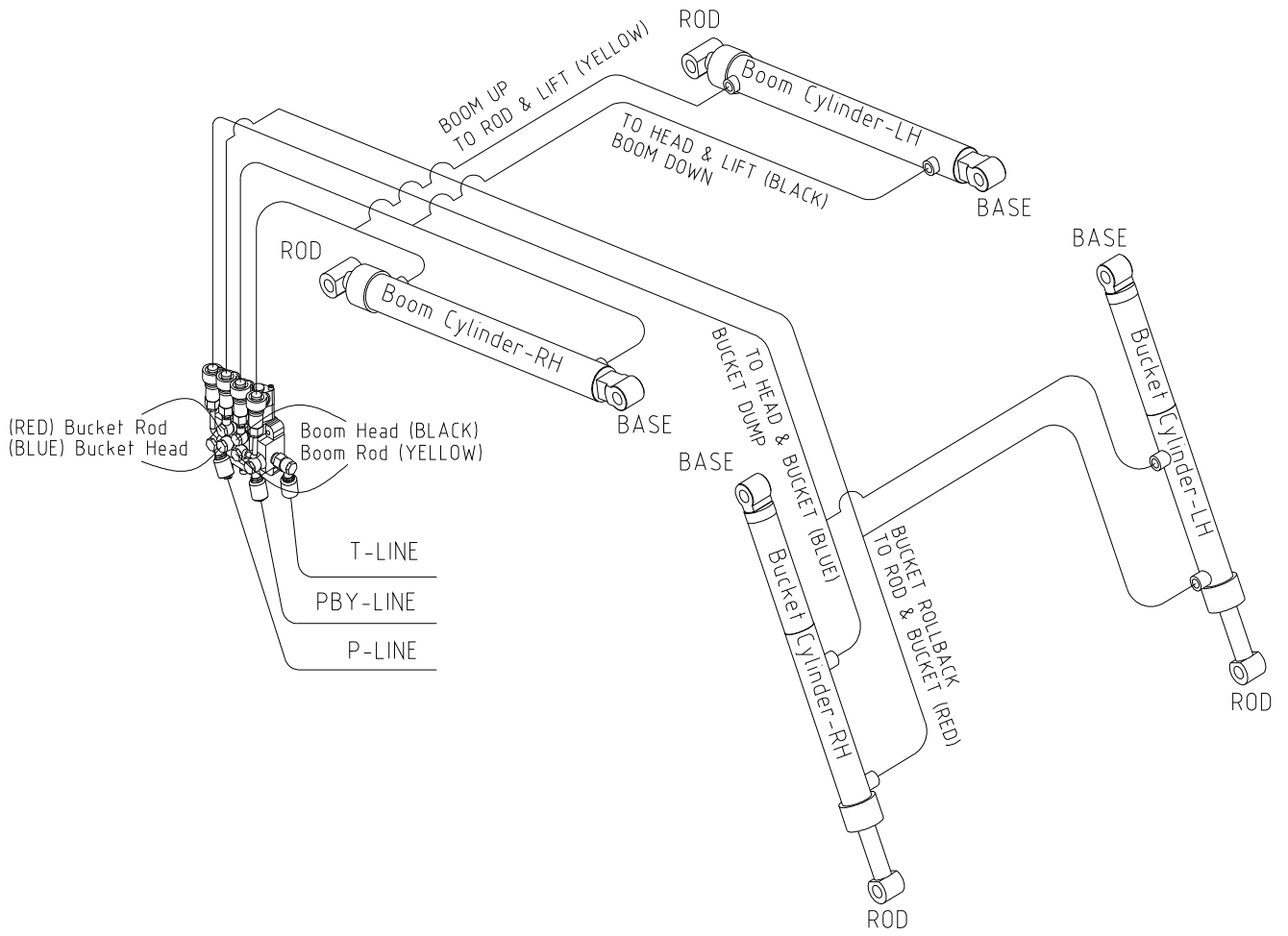
PROBLEM	POSSIBLE CAUSE	CORRECTION
System relief valve squeals.	Cold Hydraulic Fluid.	A low hydraulic fluid to warm up to operating temperature.
	Excessive load in bucket. Weight exceeds specified loader capacity.	Reduce load.
	Relief valve setting below specifications.	Check and reset valve setting as 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

AUXILIARY HYDRAULIC VALVE PACKAGE



TORQUE TIGHTENING CHART

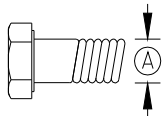
MINIMUM HARDWARE TIGHTENING TORQUES IN FOOT POUNDS (NEWTON-METERS) FOR NORMAL ASSEMBLY APPLICATIONS

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)**



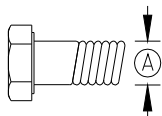
**SAE Grade 5
(3 Radial Dashes)**



**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
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.

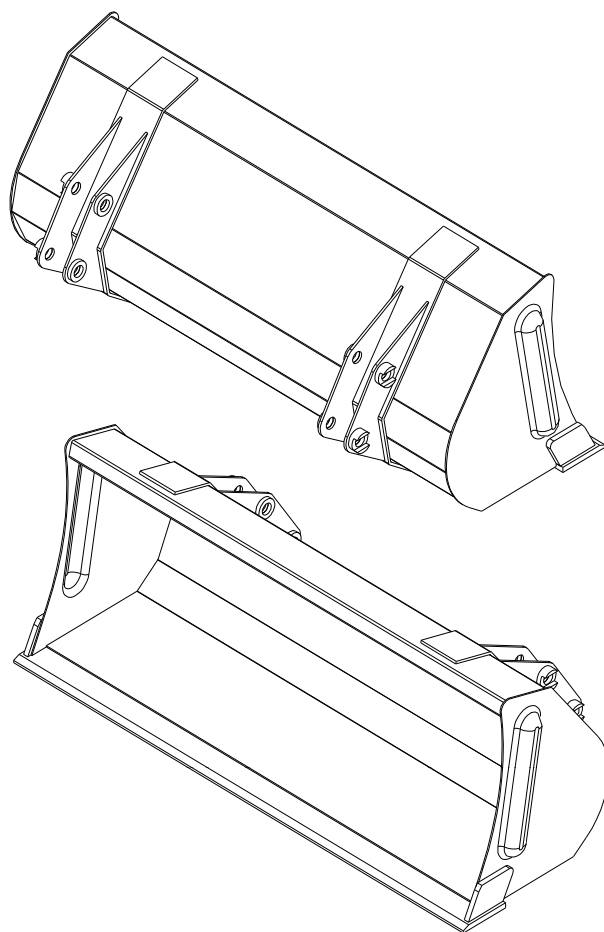
INTERCHANGEABILITY

: 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.
 ~4265-99999 5265-00001~	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.

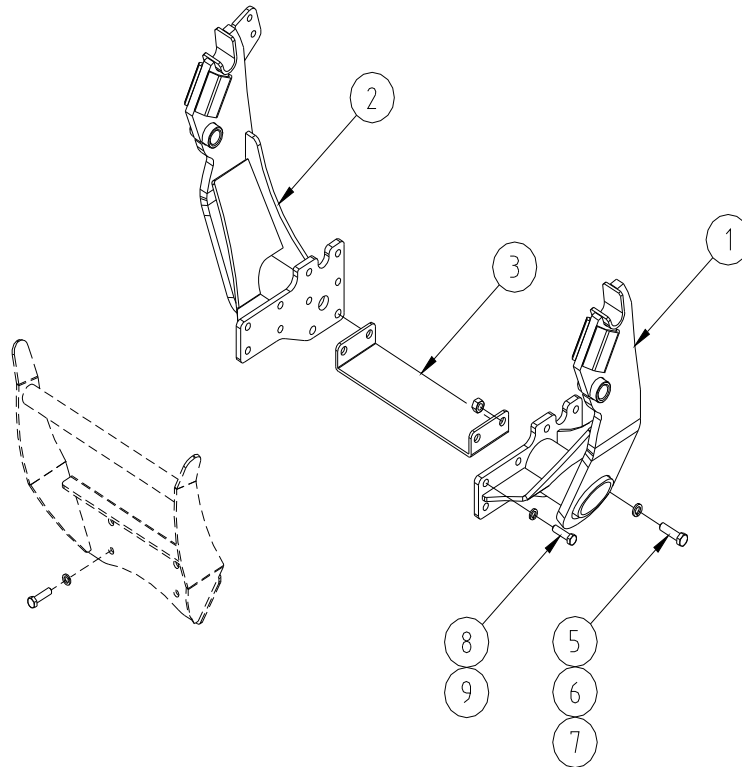
★ Due to our policy of continuously improving products, The information contained herein is subject to change without notice

BUCKET ASSEMBLY - NOMAL TYPE



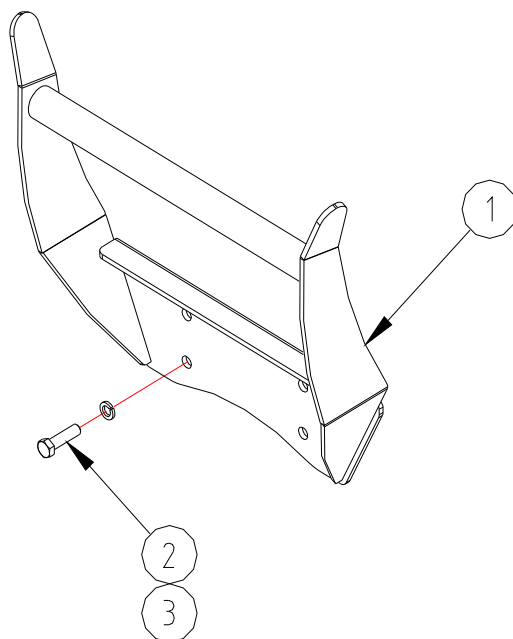
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
0	40245449	FTB01-50100	Bucket W.A (50")	1		

MOUNTING FRAME ASSEMBLY



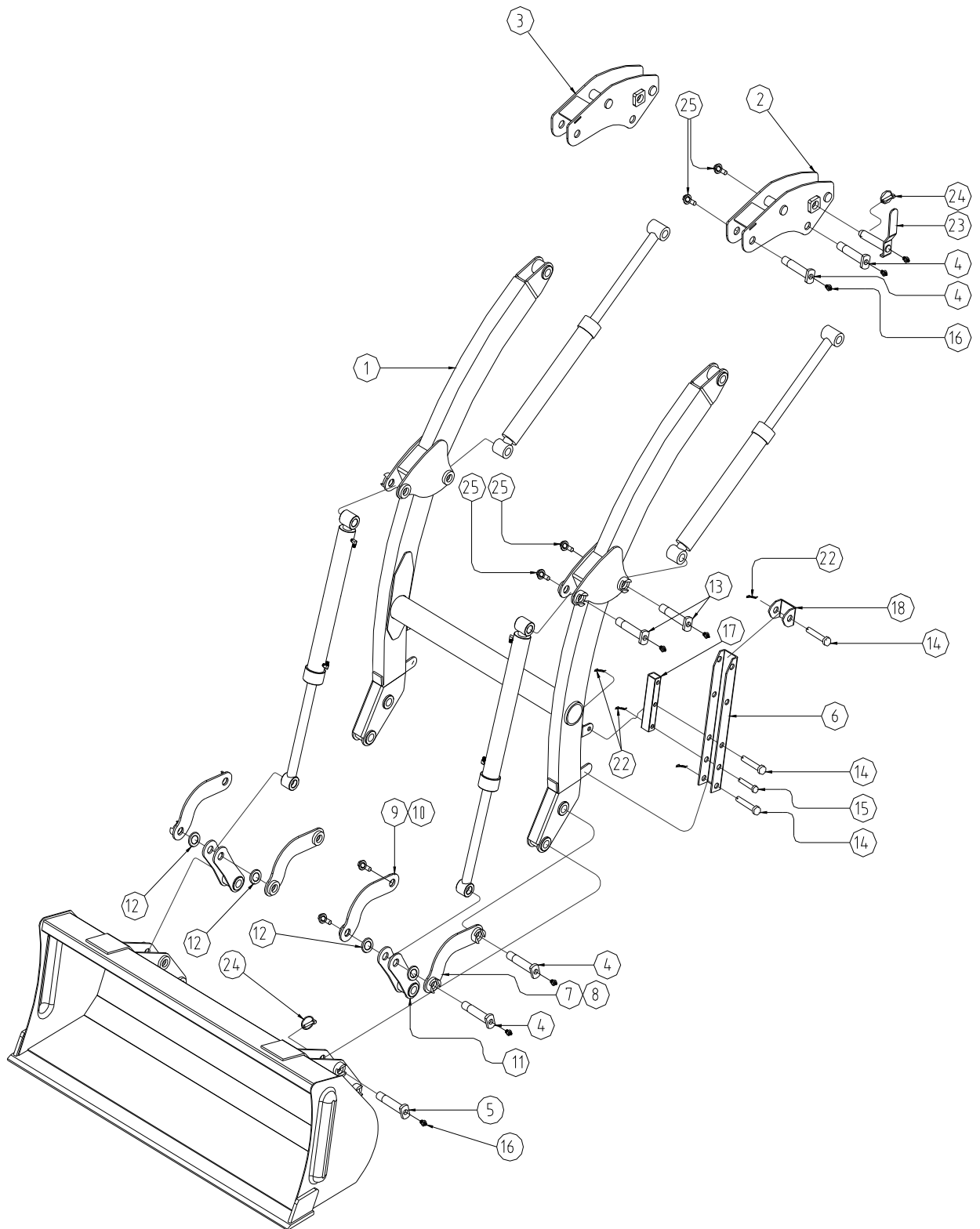
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40230721	FT609-10100	MOUNTING FRAME W.A - RH	1SET		
2	40230722	FT609-10200	MOUNTING FRAME W.A - LH	1SET		
3	40230723	FT609-10301	CROSS BAR	1SET		
3	40230724	FT609-10301-01	CROSS BAR	1SET	←	09.02.18~
5	40230601	10191-M1406-40	HEX. BOLT M14-2.0P 40L	4EA		
6	40228643	10316-M1400	WASHER-SPRING M14	4EA		
7	40228637	10261-M1406	HEX. NUT M14-2.0P	4EA		
8	40228615	10191-M1205-35	HEX. BOLT M12-1.75P 35L	20EA		
	40228616	10191-M1205-40	HEX. BOLT M12-1.75P 40L	16EA	←	09.09.23
9	40228642	10316-M1200	WASHER-SPRING M12	16EA		

GRILL ASSEMBLY



REF.NO	PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
-	40245448	FT609-G0000	GRILL ASS'Y No.1~3	1SET		09.12.03~
1	40230725	FT609-10400	GRILL	1SET		
	40230726	FT609-10400-01	GRILL	1SET	←	09.02.18~
2	40228615	10191-M1205-35	HEX. BOLT M12-1.75P 35L	4EA	←	
	40228616	10191-M1205-40	HEX. BOLT M12-1.75P 40L	4EA	←	09.09.23~
3	40228642	10316-M1200	WASHER-SPRING M12	4EA		

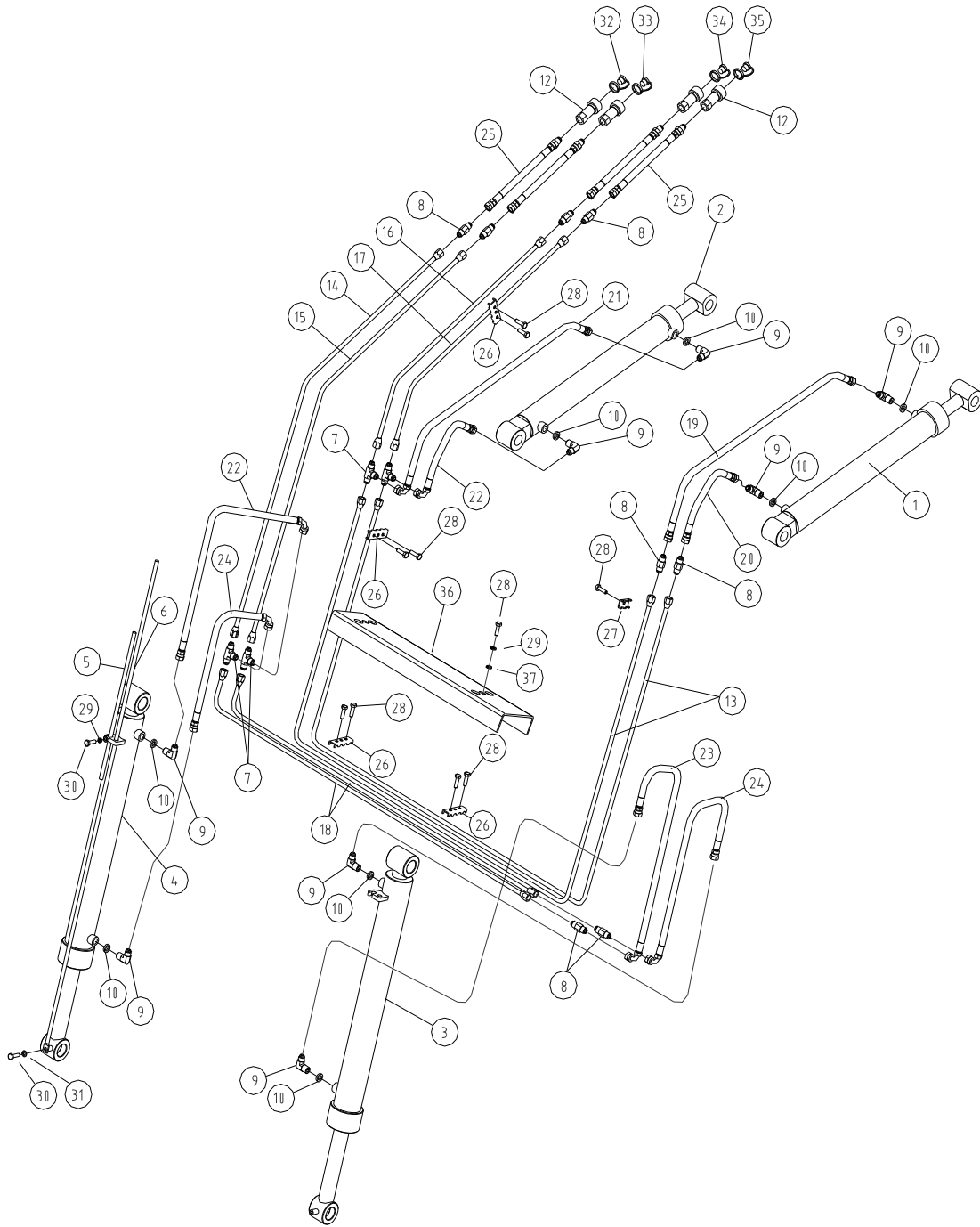
BOOM ASSEMBLY



BOOM ASSEMBLY

REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40245455	FTE30-11100	BOOM W.A	1		
2	40245456	FTE30-21100	TOP POST W.A-LH	1		
3	40245457	FTE30-22100	TOP POST W.A-RH	1		
4	40245414	14124-25095-N	PIN(B) Φ 25-95L	8		
5	40245412	14123-25105	BUCKET-PIN(D), Φ 25-117L	4		
6	40245451	FTE01-80201	LEG FIXER	2		
7	40245458	FTE30-31100	LINK W.A-BUCKET OUT-LH	1		
8	40245459	FTE30-31200	LINK W.A-BUCKET OUT-RH	1		
9	40245460	FTE30-31300	LINK W.A-BUCKET INNER-LH	1		
10	40245461	FTE30-31400	LINK W.A-BUCKET INNER-RH	1		
11	40230824	LTS16-52100-T	LINK W.A	2		
	40245453	FTE02-20200	LINK W.A	2	←	09.08.28~
12	40245416	14512-24006-01	WASHER-PLAIN, Φ 47x6T	4		
13	40245413	14124-25082-N	PIN, Φ 25-82L	4		
14	40245411	14122-10060	PIN ASS'Y Φ 10	6		
15	40245410	14122-10050	PIN ASS'Y Φ 10	2		
16	40228707	802G0-T1900	GREASE NIPPLE, PT1/8	18		
17	40230702	CK09-0101	PARKIN LEG	2		
	40245450	FTE01-80102	PARKIN LEG	2	←	09.08.07~
18	40245452	FTE01-80501	PARKING FOOT	2		
22	40228655	14011-03000	R-PIN, Φ 3	8		
23	40230819	LTS16-31500-A	PIN W.A	2		
	40230620	14133-25108-N	PIN W.A	2	←	08.12.01~
24	40228656	14021-10000	RING PIN, Φ 10	6		
25	40245406	1012S-M1004-20	BOLT SET, M10-1.5P	12		

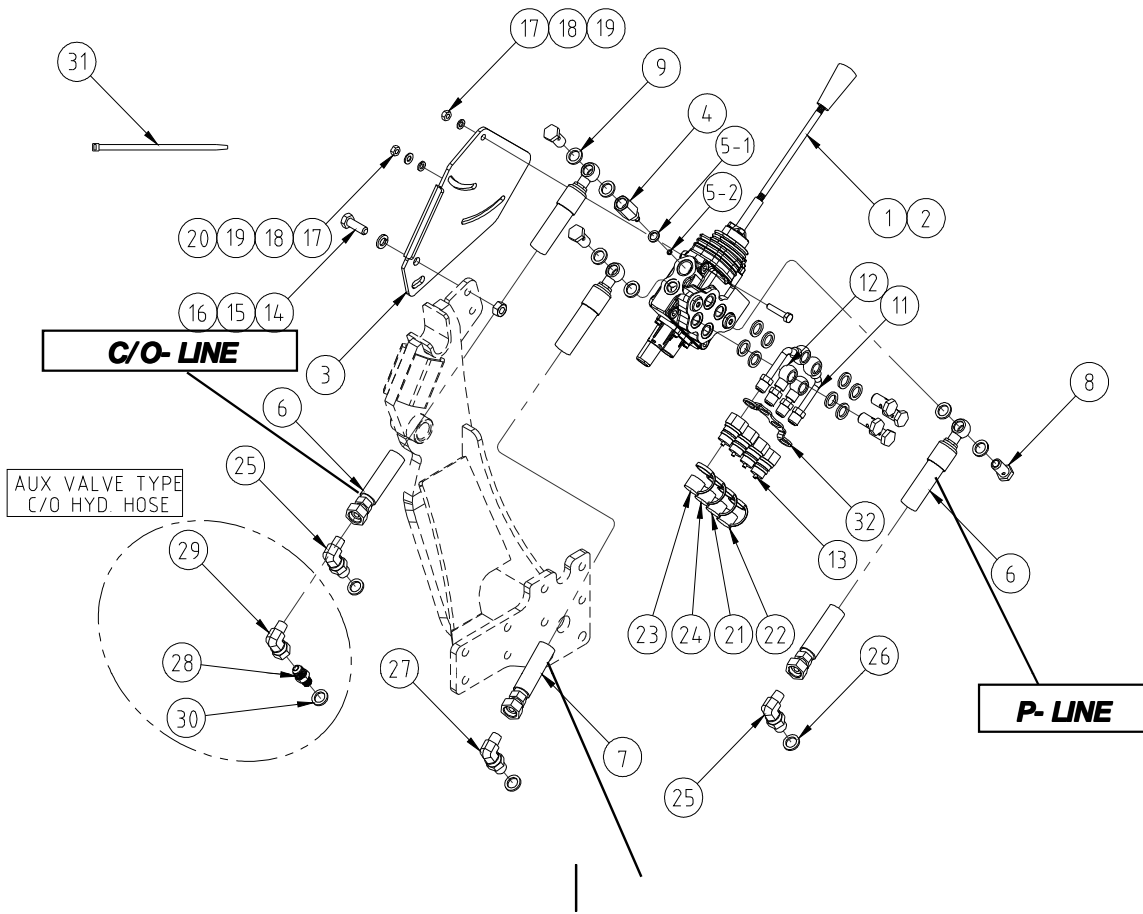
HYDRAULIC PIPING



HYDRAULIC PIPING

REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
1	40230908	223503	BOOM CYLINDER ASS'Y-LH	1		
2	40230909	223504	BOOM CYLINDER ASS'Y-RH	1		
3	40230916	225701	BUCKET CYLINDER ASS'Y-LH	1		
4	40230917	225702	BUCKET CYLINDER ASS'Y-RH	1		
5	40230759	FTF30-61101	BAR. GAUGE-SHORT, Φ 12-320L	1		
6	40230760	FTF30-61102	BAR. GAUGE-LONG, Φ 12-800L	1		
7	40230674	802T1-F75F7-50	NIPPLE, T-TYPE, 9/16-18UNF	4		
8	40230670	802N1-F75F7-50	NIPPLE, 9/16-18UNF 9/16-18UNF	6		
9	40230664	802L1-F67P2-62	NIPPLE, PF1/4(O-RING) 1/2-20UNF(90ELBOW)	8		
10	40230701	81301-BP011	O-RING, P11-HS90(Φ 2.4x Φ 10.8)	8		
11	40230669	802N1-F7574-60	NIPPLE, 9/16-18UNF, PT3/8	4		
12	40229890	0001-1001	QUICK COUPLER. PT3/8, FEMALE	4		
13	40230834	LTS16-83510	PIPE ASS'Y	2		
14	40230835	LTS16-83520-01	PIPE ASS'Y	1		
15	40230836	LTS16-83530-01	PIPE ASS'Y	1		
16	40230837	LTS16-83540	PIPE ASS'Y	1		
17	40230838	LTS16-83550	PIPE ASS'Y	1		
18	40230839	LTS16-83560-01	PIPE ASS'Y	2		
19	40230827	LTS16-82610-02	HOSE ASS'Y, 4(9/16-18UNF) 4(1/2-20UNF) L670(1/4)	1		
20	40230828	LTS16-82620-02	HOSE ASS'Y, 4(9/16-18UNF) 4(1/2-20UNF) L250(1/4)	1		
21	40230829	LTS16-82630	HOSE ASS'Y, 904(9/16-18UNF) 4(1/2-20UNF) L670(1/4)	1		
22	40230830	LTS16-82640-01	HOSE ASS'Y, 904(9/16-18UNF) 4(1/2-20UNF) L350(1/4)	2		
23	40230831	LTS16-82650-01	HOSE ASS'Y, 904(9/16-18UNF) 4(1/2-20UNF) L400(1/4)	1		
24	40230832	LTS16-82660-01	HOSE ASS'Y, 904(9/16-18UNF) 4(1/2-20UNF) L450(1/4)	2		
25	40230833	LTS16-82670-02	HOSE ASS'Y, 4(9/16-18UNF)-1(P3/8) 900L(1/4)	4		
26	40228840	LTL26-81801	CLAMP	4		
27	40228841	LTL26-81802	CLAMP	1		
28	40228612	1012S-M0803-35	BOLT-SEM'S, M8-1.25P 35L	11		
29	40228630	10211-M1004	HEX. NUT, M10-1.5P	1		
30	40229894	10121-M1004-35	HEX. BOLT M10-1.5P 35L	2		
31	40228641	10316-M1000	WASHER-SPRING Φ 10	1		
32	40228724	8043R-03300	DUST CAPS RED MALE	1		
33	40228722	8043B-03300	DUST CAPS BLUE MALE	1		
34	40228725	8043Y-03300	DUST CAPS-YELLOW MALE	1		
35	40230676	8043W-03300	DUST CAPS-WHITE MALE	1		
36	40230816	LTS16-11200-02	PLATE, COVER, 3.2T	1		

HYDRAULIC CONNECTING - DUKIN VALVE

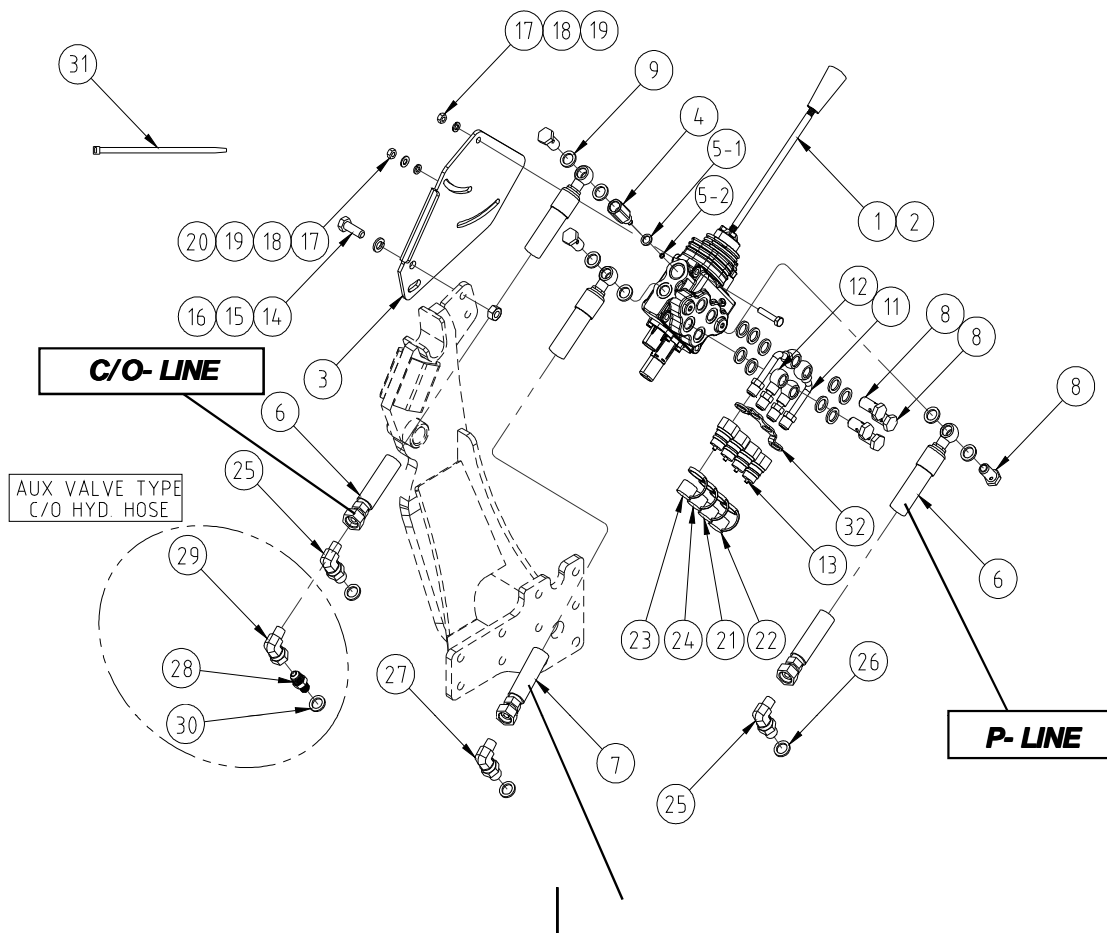


Refer to Hydraulic Connecting, page 34 and Install Loader valve to Tractor.

HYDRAULIC CONNECTING - DUKIN VALVE

REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
1	40264339	801Z1-83000	VALVE, 3/8 SINGLE LEVER (FLOAT), COPPER WASHER Type	1		
2	40264310	801Z1-80J00	VALVE LEVER, (Lever + Nut)	1		
3	40230712	FT416-V0001	VALVE BRACKET	1		
4	40264179	801Z1-82201	CARRY OVER, PF3/8	1		
5-1	40228757	81301-BP018	O-RING, 1BP18	1		
5-2	40256035	81300-S0013	O-RING, AS568 #013	1		
6	40230695	80620-06018	P, C.0-HOSE ASS'Y, 7(PF3/8)x4(3/4-16UNF) 1650L(3/8)	2		
7	40230694	80620-06016	T-HOSE ASS'Y, 7(PF3/8)x4(1/2-20UNF) 1600L(3/8)	1		
8	40228731	805BB-1P460	NIPPLE, PF3/8"	7		
9	40228654	103E1-C0380	BOND SEAL, 3/8"	14		
11	40228733	805BD-1T467	ADAPTER, PF3/8, BenzoxPT3/8 75°	2		
12	40228732	805BD-1T461	ADAPTER, PF3/8, BenzoxPT3/8	2		
13	40228720	80410-T3360	QUICK COUPLER, PT3/8" MALE	4		
14	40229895	10121-M1205-30	HEX. BOLT, M12xP1.75xL30	2		
15	40228642	10316-M1200	WASHER-SPRING, M12	2		
16	40228631	10211-M1205	HEX. NUT, M12xP1.75	2		
17	40245405	10121-M0800-65	HEX. BOLT, M8xP1.25xL65	3		
18	40228640	10316-M0800	WASHER-SPRING, M8	3		
19	40228629	10211-M0803	HEX. NUT, M8xP1.25	3		
20	40228646	10321-M0800	WASHER-PLAIN, M8	2		
21	40228728	8044R-03300	DUST CAPS, 3/8" FEMALE, RED	1		
22	40228726	8044B-03300	DUST CAPS, 3/8" FEMALE, BLUE	1		
23	40228730	8044Y-03300	DUST CAPS, 3/8" FEMALE, YELLOW	1		
24	40228729	8044W-03300	DUST CAPS, 3/8" FEMALE, WHITE	1		
25	40230665	802L1-P26P9-42	NIPPLE, PF1/4, O-Ringx3/4-16UNF, 90°	2		
26	40230700	81300-0P011	O-RING, P11	3		
27	40230664	802L1-F67P2-62	NIPPLE, 1/2-20UNF, HosexPF1/4, O-Ring 90°	1		
28	40228716	802N2-P46F9-41	NIPPLE, PF3/8, Copperx3/4-16UNF, Hose	1		
29	40228710	802L2-F94F9-4S	NIPPLE, 3/4-16UNF, Hosex3/4-16UNF SWIVEL 90°	1		
30	40228652	103C0-C0330	COPPER WASHER, 3/8"	1		
31	40228698	50120-M540K	CABLE TIE, 540mm, BLACK	3		
32	40256039	FT307-V0001	VALVE CLAMP	1		
-	40228758	99400-00001	TEFRON TAPE	1		

HYDRAULIC CONNECTING - WALVOIL VALVE

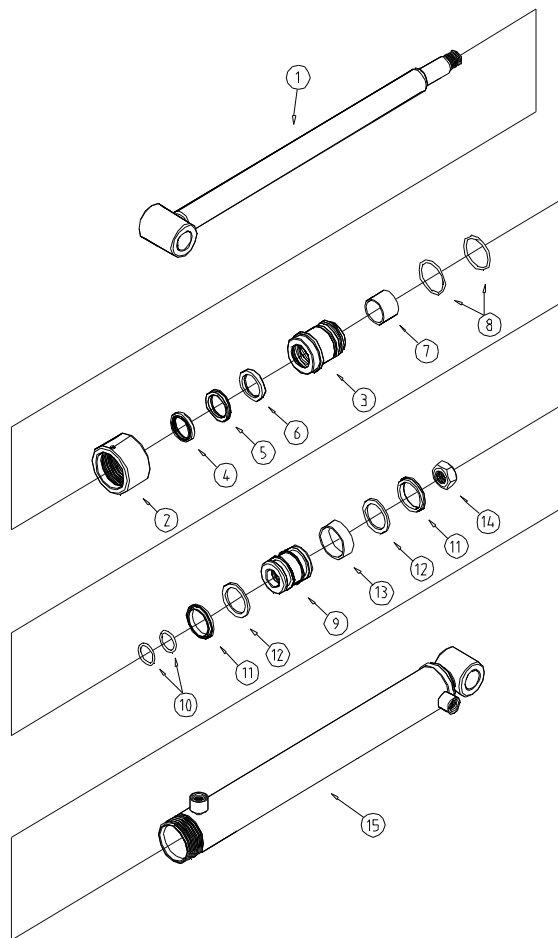


Refer to Hydraulic Connecting, page 38 and Install Loader valve to Tractor.

HYDRAULIC CONNECTING - WALVOIL VALVE

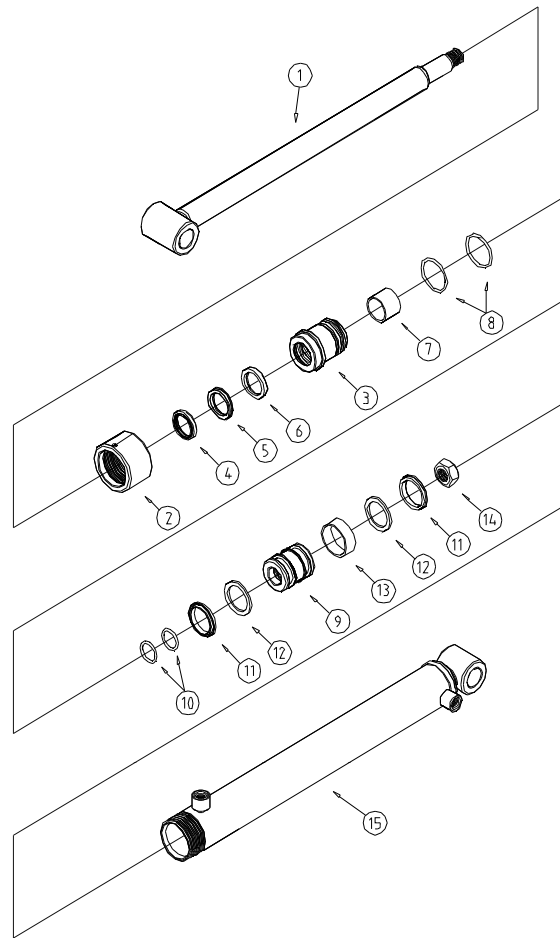
REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
1	40228706	801W1-82000	VALVE, 3/8 SINGLE LEVER (FLOAT), COPPER WASHER Type	1		09.09.23~
2	40230661	801W1-80J00	VALVE LEVER, (Lever + Nut)	1		09.09.23~
3	40230712	FT416-V0001	VALVE BRACKET	1		
4	40256026	801W1-82201	CARRY OVER, PF3/8	1		09.09.23~
5-1	40256036	81300-S0017	O-RING, AS568 #017	1		09.09.23~
5-2	40256035	81300-S0013	O-RING, AS568 #013	1		09.09.23~
6	40230695	80620-06018	P, C.O-HOSE ASS'Y, 7(PF3/8)x4(3/4-16UNF) 1650L(3/8)	2		
7	40230694	80620-06016	T-HOSE ASS'Y, 7(PF3/8)x4(1/2-20UNF) 1600L(3/8)	1		
8	40228731	805BB-1P460	NIPPLE, PF3/8"	7		
9	40228654	103E1-C0380	BOND SEAL, 3/8"	14		
11	40228733	805BD-1T467	ADAPTER, PF3/8,BenzoXPT3/8 75°	2		
12	40228732	805BD-1T461	ADAPTER, PF3/8,BenzoXPT3/8	2		
13	40228720	80410-T3360	QUICK COUPLER, PT3/8" MALE	4		
14	40229895	10121-M1205-30	HEX. BOLT, M12xP1.75xL30	2		
15	40228642	10316-M1200	WASHER-SPRING, M12	2		
16	40228631	10211-M1205	HEX. NUT, M12xP1.75	2		
17	40245405	10121-M0800-65	HEX. BOLT, M8xP1.25xL65	3		
18	40228640	10316-M0800	WASHER-SPRING, M8	3		
19	40228629	10211-M0803	HEX. NUT, M8xP1.25	3		
20	40228646	10321-M0800	WASHER-PLAIN, M8	2		
21	40228730	8044Y-03300	DUST CAPS, 3/8" FEMALE, YELLOW	1		
22	40228729	8044W-03300	DUST CAPS, 3/8" FEMALE, WHITE	1		
23	40228728	8044R-03300	DUST CAPS, 3/8" FEMALE, RED	1		
24	40228726	8044B-03300	DUST CAPS, 3/8" FEMALE, BLUE	1		
25	40230665	802L1-P26P9-42	NIPPLE, PF1/4, O-Ringx3/4-16UNF, 90°	2		
26	40230700	81300-0P011	O-RING, P11	3		
27	40230664	802L1-F67P2-62	NIPPLE, 1/2-20UNF,HosexPF1/4,0-Ring 90°	1		
28	40228716	802N2-P46F9-41	NIPPLE, PF3/8, Copperx3/4-16UNF, Hose	1		
29	40228710	802L2-F94F9-4S	NIPPLE, 3/4-16UNF, Hosex3/4-16UNF SWIVEL 90°	1		
30	40228652	103C0-C0330	COPPER WASHER, 3/8"	1		
31	40228698	50120-M540K	CABLE TIE, 540mm, BLACK	3		
32	40256039	FT307-V0001	VALVE CLAMP	1		
-	40228758	99400-00001	TEFRON TAPE	1		

BOOM CYLINDER



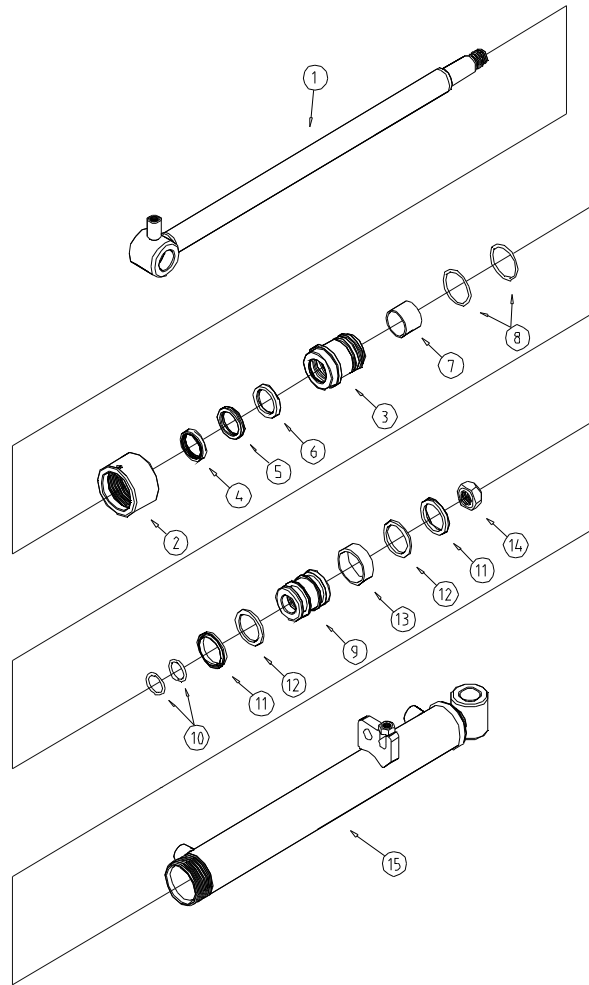
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
0	40230908	223503	BOOM CYLINDER ASS'Y-LH	1		
1	40230622	223503-R	ROD ASS'Y	1		
2	40230858	0C45-5540	CAP OUTER, Φ 45x55x40L	1		
3	40230765	1C45-3060	COVER INNER, Φ 45x30x60L	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228883	UPSK-Y030	PACKING U, SKY 30x40x6	1		
6	40228879	UPI S-1030	PACKING U, ISI 30x40x6	1		
7	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
8	40230860	OR1B-G040	O-RING, 1BG40	2		
9	40230864	PI45-2350	PISTON, Φ 45x23x50L	1		
10	40228869	OR1B-G023	O-RING, 1BG23	2		
11	40230870	UPOS-1045	PACKING U, OSI 45x35x6	2		
12	40230867	TRBR-0035	BACKUP RING, 45x35x3	2		
13	40230873	WEWR-0045	WEARING, WR 45x40x15	1		
14	40228863	NTP0-F032-D	HEX.NUT, 3/4-16UNF	1		
15	40230623	223503-T	TUBE ASS'Y-LH	1		
16	40230862	PA45-2350	SEAL KIT HEAD, No.3-8	1		
17	40230763	IA45-3060	SEAL KIT PISTON, No.9~13	1		

BOOM CYLINDER



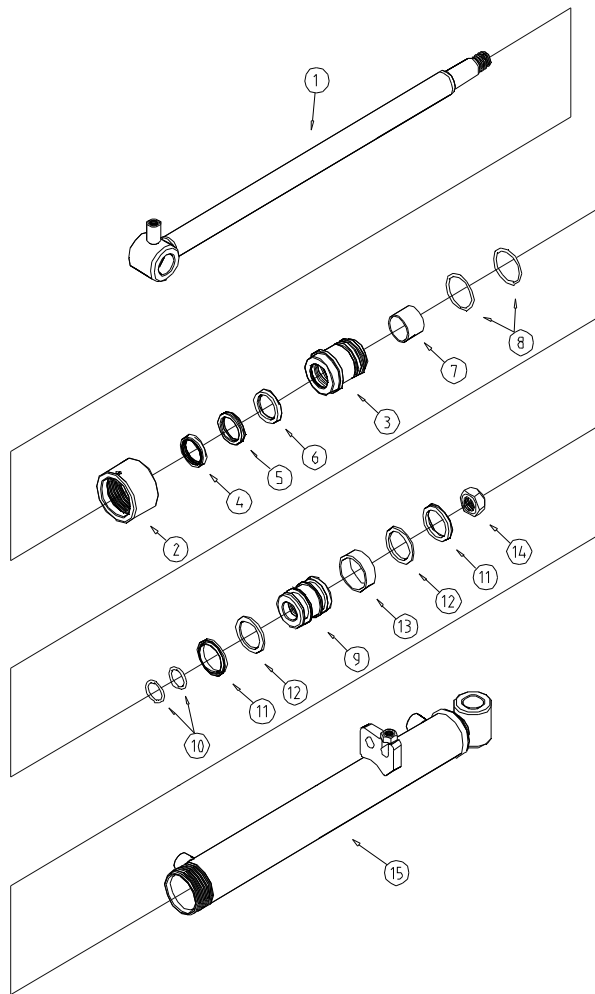
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
0	40230909	223504	BOOM CYLINDER ASS'Y-RH	1		
1	40244638	223504-R	ROD ASS'Y	1		
2	40230858	0C45-5540	CAP OUTER, Φ 45x55x40L	1		
3	40230765	1C45-3060	COVER INNER, Φ 45x30x60L	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228883	UPSK-Y030	PACKING U, SKY 30x40x6	1		
6	40228879	UPI S-1030	PACKING U, ISI 30x40x6	1		
7	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
8	40230860	OR1B-G040	O-RING, 1BG40	2		
9	40230864	PI45-2350	PISTON, Φ 45x23x50L	1		
10	40228869	OR1B-G023	O-RING, 1BG23	2		
11	40230870	UPOS-1045	PACKING U, OSI 45x35x6	2		
12	40230867	TRBR-0035	BACKUP RING, 45x35x3	2		
13	40230873	WEWR-0045	WEARING, WR 45x40x15	1		
14	40228863	NTP0-F032-D	HEX.NUT, 3/4-16UNF	1		
15	40244639	223504-T	TUBE ASS'Y-RH	1		
16	40230862	PA45-2350	SEAL KIT HEAD, No.3-8	1		
17	40230763	IA45-3060	SEAL KIT PISTON, No.9~13	1		

BUCKET CYLINDER



REF.NO	LS PART.NO	PART.NO	DESCRIPTION	QTY	I.C	SERIAL OR DATE
0	40230916	225701	BUCKET CYLINDER ASS'Y-LH	1		
1	40230624	225701-R	ROD ASS'Y	1		
2	40230858	OC45-5540	CAP OUTER, $\Phi 45 \times 55 \times 40L$	1		
3	40230765	IC45-3060	COVER INNER, $\Phi 45 \times 30 \times 60L$	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228883	UPSK-Y030	PACKING U, SKY 30x40x6	1		
6	40228879	UPI S-I030	PACKING U, ISI 30x40x6	1		
7	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
8	40230860	OR1B-G040	O-RING, 1BG40	2		
9	40230864	PI45-2350	PISTON, $\Phi 45 \times 23 \times 50L$	1		
10	40228869	OR1B-G023	O-RING, 1BG23	2		
11	40230870	UPOS-I045	PACKING U, OSI 45x35x6	2		
12	40230867	TRBR-0035	BACKUP RING, 45x35x3	2		
13	40230873	WEWR-0045	WEARING, WR 45x40x15	1		
14	40228863	NTP0-F032-D	NUT, 3/4-16UNF	1		
15	40230625	225701-T	TUBE ASS'Y-LH	1		
16	40230862	PA45-2350	SEAL KIT HEAD, No.3~8	1		
17	40230763	IA45-3060	SEAL KIT PISTON, No.9~13	1		

BUCKET CYLINDER



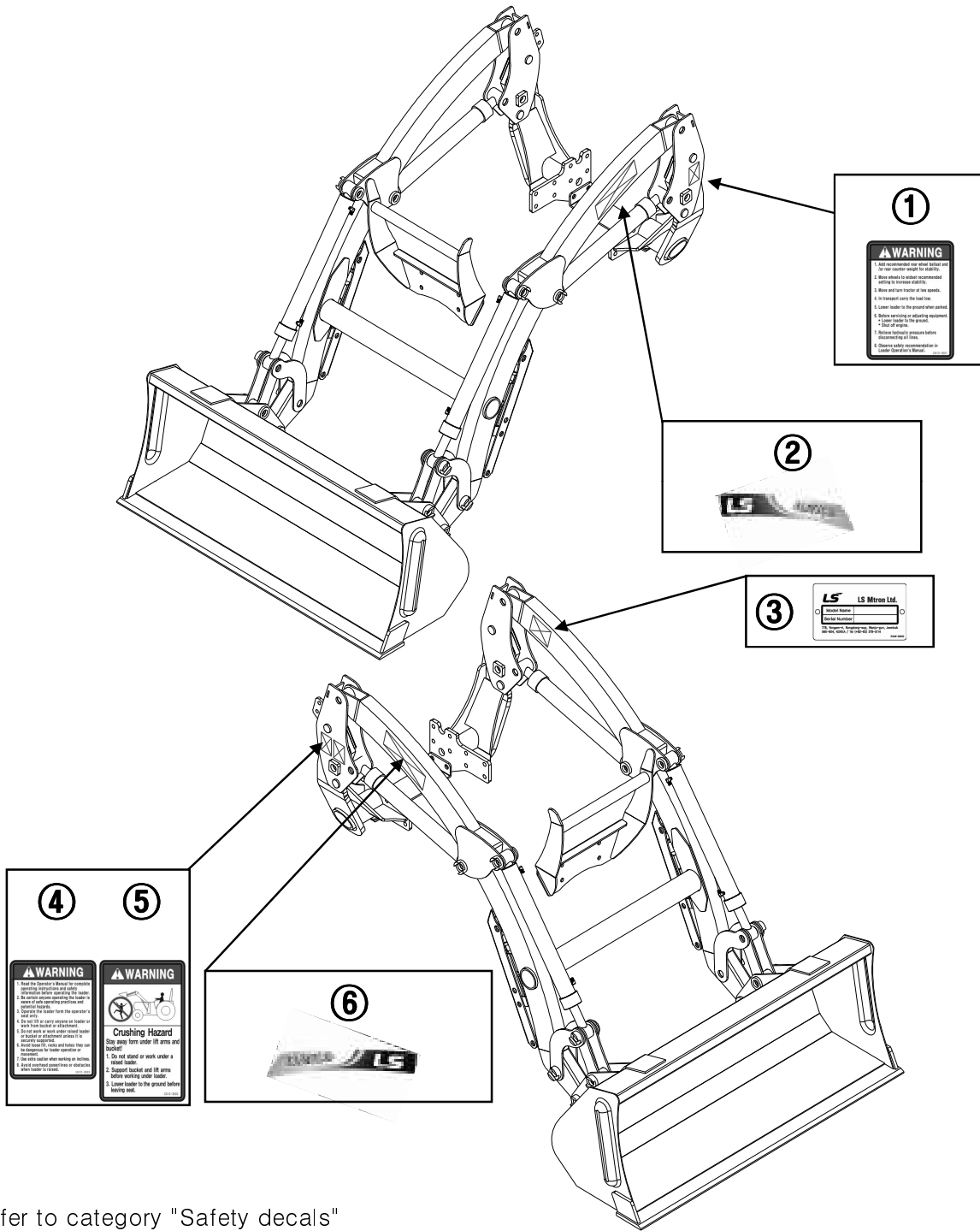
REF. NO	LS PART. NO	PART. NO	DESCRIPTION	QTY	I. C	SERIAL OR DATE
0	40230917	225702	BUCKET CYLINDER ASS'Y-RH	1		
1	40244641	225702-R	ROD ASS'Y	1		
2	40230858	OC45-5540	CAP OUTER, $\Phi 45 \times 55 \times 40L$	1		
3	40230765	IC45-3060	COVER INNER, $\Phi 45 \times 30 \times 60L$	1		
4	40228765	DSSD-R030	DUST, SDR 30x38x5/6.5	1		
5	40228883	UPSK-Y030	PACKING U, SKY 30x40x6	1		
6	40228879	UPIS-I030	PACKING U, ISI 30x40x6	1		
7	40228767	DU03-0025	BUSHING DU, 30x34x25	1		
8	40230860	OR1B-G040	O-RING, 1BG40	2		
9	40230864	PI45-2350	PISTON, $\Phi 45 \times 23 \times 50L$	1		
10	40228869	OR1B-G023	O-RING, 1BG23	2		
11	40230870	UPOS-I045	PACKING U, OSI 45x35x6	2		
12	40230867	TRBR-0035	BACKUP RING, 45x35x3	2		
13	40230873	WEWR-0045	WEARING, WR 45x40x15	1		
14	40228863	NTP0-F032-D	NUT, 3/4-16UNF	1		
15	40244642	225702-T	TUBE ASS'Y-RH	1		
16	40230862	PA45-2350	SEAL KIT HEAD, No.3~8	1		
17	40230763	IA45-3060	SEAL KIT PISTON, No.9~13	1		

DECALS



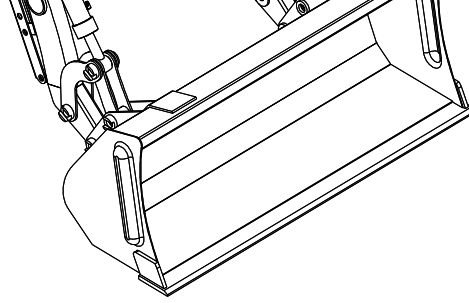
CAUTION :



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	40228760	CK12-3001	DECAL, Warning	1		
2	40264183	3101E-00401	DECAL, MODEL-LL2100	1		
3	40244643	3104E-00009	NAME PLATE	1		
	40230653	3104E-00010	NAME PLATE	1		
4	40228761	CK12-3002	DECAL, WARNING	1		
5	40228762	CK12-3003	DECAL, WARNING	1		
6	40264184	3101E-00402	DECAL, MODEL-LL2100	1		

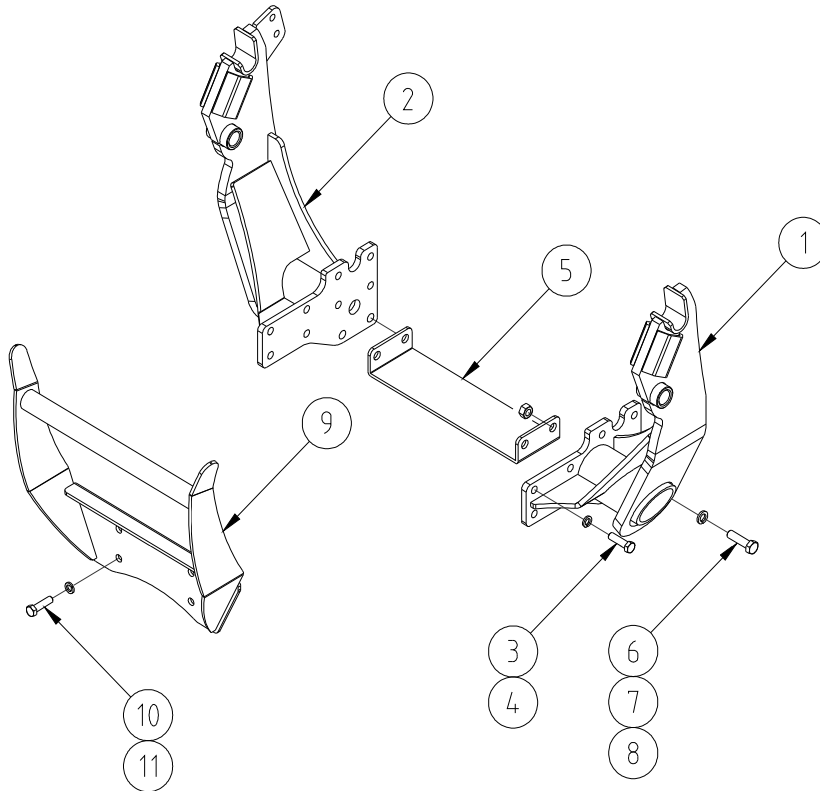
LOADER INSTALLATION

◆ Position the loader on a hard level surface. The more level the surface the easier the loader is to install.

► **IMPORTANT:** Do not tighten any hardware until all components are attached onto the tractor.



CAUTION: Lift and support all loader components safely.



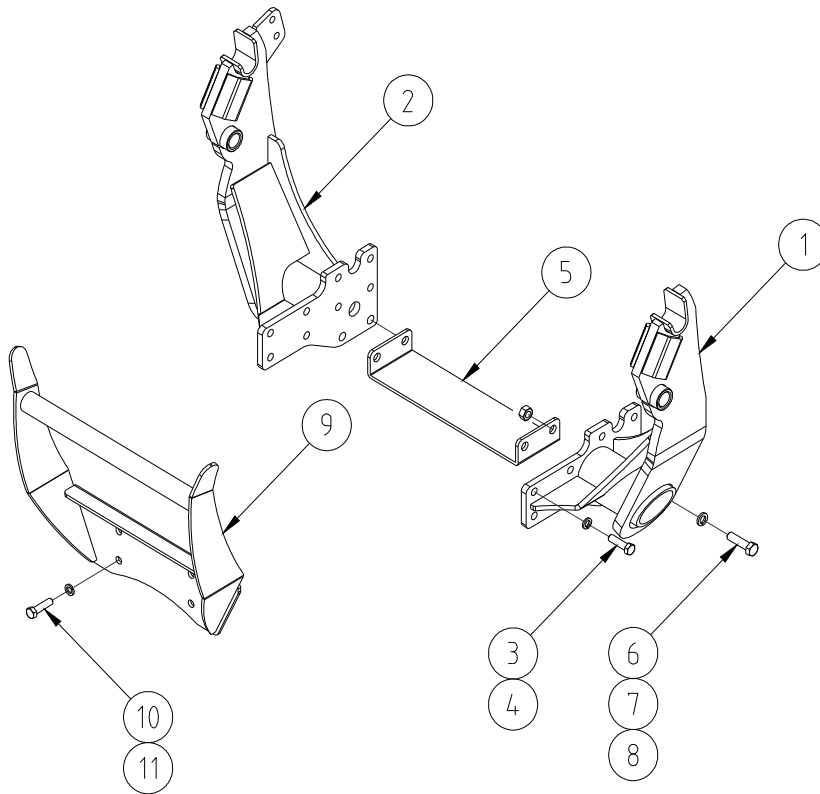
► Using a hoist, install Mounting Frame LH/RH.

- (1) **Mounting Frame LH-1EA**
- (2) **Mounting Frame RH-1EA**
- (3) **Hex. Bolt M12-1.75P 40L-16EA**
- (4) **Washer Spring M12-16EA**

► Install Under Cross Bar And Rear Frame LH/RH.

- (5) **Under Cross Bar-1EA**
- (6) **Hex. Bolt M14-2.0P 40L-4EA**
- (7) **Hex Nut M14x2.0P-4EA**
- (8) **Washer Spring M14-4EA**

LOADER INSTALLATION



► Install Grille Guard

(9) Grille-1 EA

(10) Hex. Bolt M12-1.75P 40L-4EA

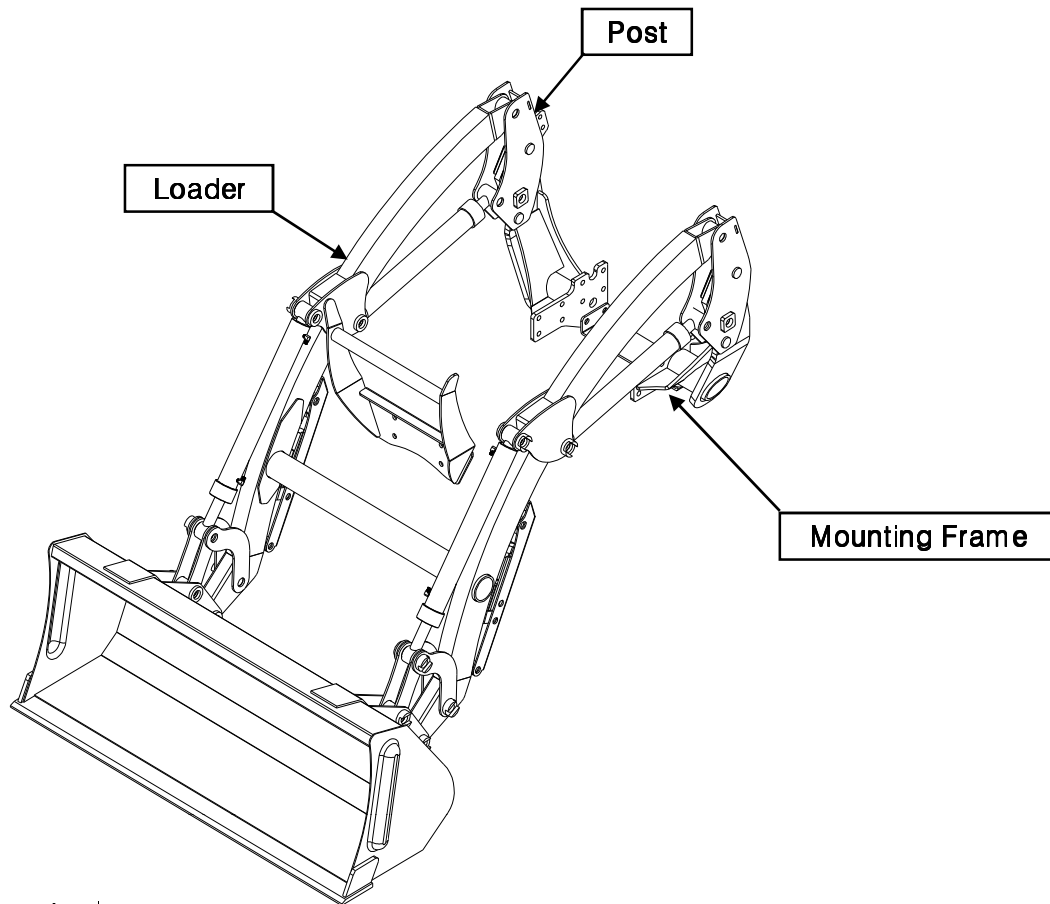
(11) Washer Plain M12-4EA

Verify that all mounting kit hardware has been torqued as specified before installing loader.

- Identify hardware size and grade.
- Refer to Torque Chart, page 24 and find correct torque for your hardware size and grade.
- Torque hardware to this specification unless otherwise specified.

► IMPORTANT NOTE: To keep mounting kit hardware from loosening during loader operation, hardware must be torque to specifications.

LOADER INSTALLATION



- ▶ Install Boom Ass'y.
Hang the groove on the pin located on Mounting Frame.