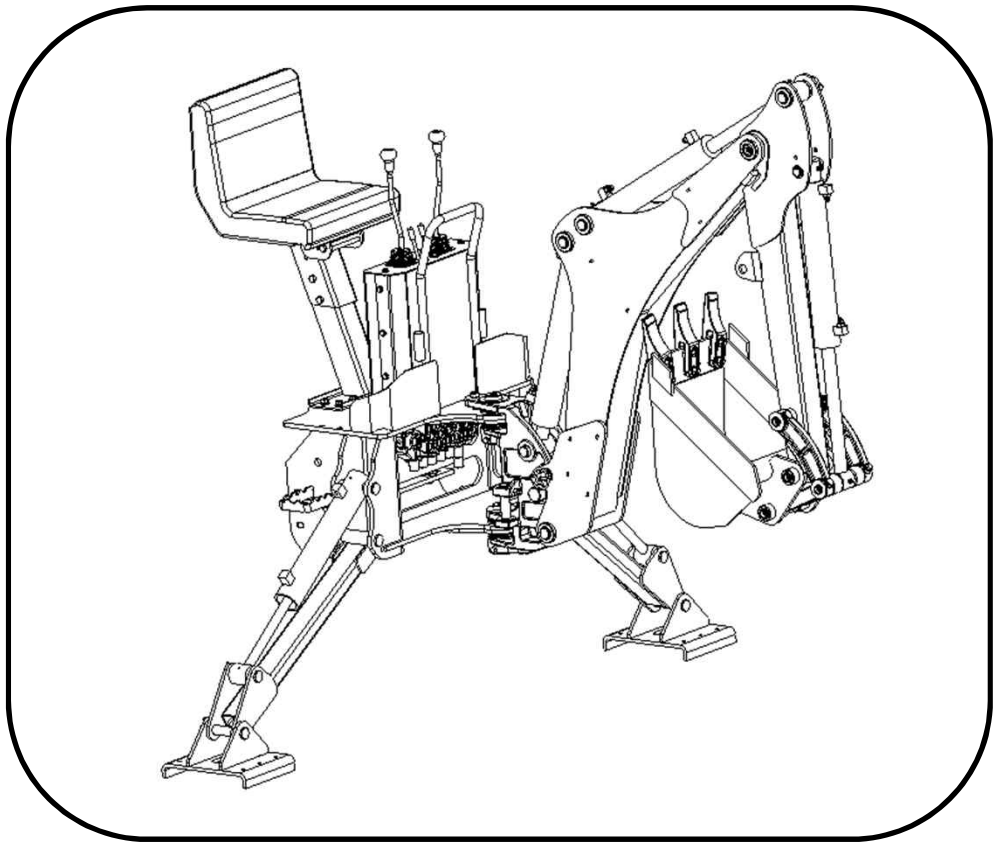
# OPERATOR'S MANUAL

# FOR BACKHOE

(TB65 MODEL)



**Limited Warranty**

Except for the Excluded Products as described below, all new products are warranted to be free from defects in material and/or workmanship during the Warranty period, in accordance with and subject to the terms and conditions of this limited Warranty.

*1.* *Excluded products*. The following products are excluded from this Limited Warranty:

(a) Any cable, parts that engages with the ground(i.e. sprockets),digging chain, bearing, teeth, tamping and/or demolition head, blade cutting edge, pilot bit, auger teeth and broom brush that either constitutes or is part of a product.

(b) Any product, merchandise or component that, in the opinion of TYM has been(1)missed; (2) modified in any unauthorized manner;(3) altered;(4) damaged;(5) involved in an accident; or(6) repaired using parts not obtained through TYM co.,LTD.

*2. Warranty period.* The Limited Warranty is provided only to those defect that occur during the warranty Period, which is the period that begins on the first to occur of;(1) the date of initial purchase by an end –user,(2) the date the product is first leased or rented, or(3) the date that is six(6) months after the date of shipment by TYM company as evidenced by the invoiced shipment date(the 'commencement date')and ends on the date that is twelve(12) months after the commencement Date.

*3. Terms and conditions of Limited Warranty.* The following terms and conditions apply to the Limited Warranty hereby provided:

*(a) Option to repair or Replace.* TYM company shall have the option to repair or replace the product.

*(b) Timely repair and Notice.* In order to obtain the Limited Warranty,(1) the product must be repaired with thirty(30) days from the date of failure, and(2) a claim under the warranty must be submitted to TYM company in writing within thirty(30) days from the date of repair.

*(c) Return of Defective part or product.* If requested by TYM company, the alleged defective part or product shall be shipped to TYM company at its manufacturing facility or other location specified by TYM company, with freight PRE-PAID by the claimant, to allow TYM company to inspect the part or product.

Claims that fail to comply with any of the above terms and conditions shall be denied.

**LIMITATIONS AND EXCLUSIONS.**

THIS LIMITED WARRANTY IN IN LIEU OF ALL OTHER WARRANTIES,EXPRESS OR IMPLIED,INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY,FITNESS FOR PARTICULAR PURPOSE AND ANY WARRANTY BASED ON A COURSE OF DEALING OR USAGE OF TRADE.

IN NO EVENT SHALL TYM COMPANY BE LIAVLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

IN NO EVENT SHALL TYM COMPANY BE LIABLE FOR ANY LOSS OR CLAIM IN AN AMOUNT IN EXCESS OF THE PURCHASE PRICE,OR AT THE OPTION OF TYM COMPANY,THE REPAIR OR REPLACEMENT,OF THE PARTICULAR PRODUCT ON WHICH ANY CLAIM OF LOSS OR DAMAGE IS BASED.THE LIMITATION OF LIABILITY APPLIES INRESPECTIVE OF WHETHER THE CLAIM IS BASED ON BREACH OF CONTRACT,BREACH OF WARRANTY,NEGLIGENCE OR OTHER CAUSE AND WHETHER THE ALLEGED IS DISCOVERABLE OR LATENT.

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## PREFACE

### GENERAL COMMENTS

Congratulations on the purchase of your new TYM BACKHOE product! This product was carefully designed and manufactured to give you many years of dependable service. Only minor maintenance(such as cleaning and lubricating) is required to keep it in top working condition. Be sure to observe all maintenance procedures and safety precautions in this manual and on any safety decals located on the product and on any equipment on which the attachment is mounted.

This manual has been designed to help you do a better, safer job. Read this manual carefully and become familiar with its contents.

WARNING **Never let anyone operate this unit without reading the "Safety Precautions" and " operating Instructions"sections of manual. Always choose hard, level ground to park the vehicle on and set the brake so the unit cannot roll.**

Unless noted otherwise, right and left sides are determined from the operator's control positioning when facing the attachment.

**NOTE: The illustrations and data used in this manual were current(according to the information available to us) at the time of printing, however, we reserve the right to redesign and change the attachment as may be necessary without notification**

### BEFORE OPERATION

The primary responsibility for safety with this equipment falls to the operator. Make sure. The equipment is operated only by trained individuals that have read and understand this manual. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

### SAFETY ALERT SYMBOL

Use only manufacturer replacement parts.Substitute parts may not meet the required standards.
Record the model and serial number of your unit on the cover of this manual. The parts department needs this information to insure that you receive the correct parts.

### SOUND AND VIBRATION

Sound pressure levels and vibration data for this attachment are influenced by many different parameters: some items are listed below(not inclusive):

- Tractor type,age,condition,with or without cab enclosure and configuration.
- Operator training,behavior,stress level.
- Job site organization, working material condition, environment.

Based on the uncertainty of the tractor, operator and job site,it is not possible to get precise machine and operator sound pressure levels or vibration levels for this attachment.

# SAFETY STATEMENTS

WARNING SIGNS IN THIS MANUAL

The following warning signs in this manual draw additional attention to items of importance for the safe and correct operation of the rotavator.

| SIGN | MEANING OF THE SIGN |
|---|---|
| ⚠ **DANGER** | THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY |
| ⚠ **WARNING** | THIS SIGNAL WORD IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY |
| ⚠ **CAUTION** | THIS SIGNAL WORD IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY |
| NOTICE | NOTICE INDICATES A PROPERTY DAMAGE MESSAGE |

# GENERAL SAFETY PRECAUTIONS

**WARNING!** **READ MANUAL PRIOR TO INSTALLATION**

⚠ Improper installation,operation,or maintenance of this equipment could result in serious injury or death.Operation and maintenance personnel should read this manual,as well as all manuals related to this equipment and the Tractor thoroughly before beginning installation,operation,or maintenance**. FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE TRACTOR's MANUAL(S).**

⚠ **READ AND UNDERSTAND ALL SAFETY STATEMENTS**

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment.Know and obey all OSHA regulations, local laws, and other professional guidelines for your operation.Know and follow good work practices when assembling,maintaining,repairing,removing,or operating this equipment.

⚠ **KNOW YOUR EQUIPMENT**

know your equipment's capabilities, dimensions and operations before operating.

Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with safety devices intacts.check all hardware to ensure it is tight.Make certain that all locking pins,latches,and connection devices are properly installed and secured. Remove and replace any damaged,fatigued,or excessively worn parts.Make certain all safety decals are in place and are legible. Keep decals clean,and replace them if they become worn and hard to read

# GENERAL SAFETY PRECAUTIONS

**WARNING! PROTECT AGAINST FLYING DEBRIS**

Always wear proper safety glasses, goggles or a face shield when driving pins in or out, or when any operation causes dust,flying debris,or any other hazardous material.

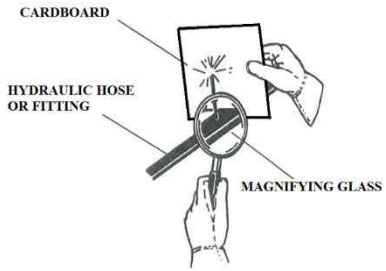
**WARNING! LOWER OR SUPPORT RAISED EQUIPMENT**

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks,logs,buckets,barrels or any other material that could suddenly collapse or shift positions.Make sure support materials is solid, not decayed,warped,twisted,or tapered. Lower booms to ground level or onto blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

**WARNING! USE CARE WITH HYDRAULIC FLUID PRESSURE**

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses,read and Tractors operator's manual for detailed instruction on connecting and disconnecting hydraulic hoses or fittings

- Keep unprotected body parts, such as face,eyes,and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a sound piece of cardboard or wood when researching for hydraulic leaks.DO NOT USE YOUR HANDS! SEE ILLUSTRATION.



# GENERAL SAFETY PRECAUTIONS

**WARNING!** **DO NOT MODIFY MACHINE OR ATTACHMENTS**

Modifications may weaken the integrity of the attachment and may impair the function,safety,life and performance of the attachment. When making repairs,use only manufacturer's genuine parts,following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS(Roll over Protection Structure) or FOPS(Falling object Protective Structure) equipment or device. Any modifications must be authorized in writing by the manufacturer.

**WARNING!** **SAFELY MAINTAIN AND REPAIR EQUIPMENT**

Do not wear loose clothing, or any accessories that can catch in moving parts.

- If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tool for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

**WARNING!** **SAFELY OPERATE EQUIPMENT**

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls.Know its capabilities,dimensions,and all safety requirements.
See your machine's manual for these instructions.

- Keep all step plates, grab bars,pedals,and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the Tractor.
- Do not operate the equipment from anywhere other than the correct operators position.
- Never leave equipment unattended with the Engine running or with this attachment in a raised position.
- Do not alter or remove any safety feature from the Tractor or this attachment.
- Know your work site safety rules as well as traffic rules and the flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation

# EQUIPMENT SAFETY PRECAUTIONS

**WARNING!**

**KNOW WHERE UTILITIES ARE**

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call your local utilities for location of buried utility lines,gas,water,and sewer, as well as any other hazard you may encounter.

**WARNING!**

**EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE**.

It is recommended to use dust suppresion,dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

**WARNING!**

**REMOVE PAINT BEFORE WELDING OR HEATING**

Hazardous fumes/dust can be generated when painted heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust, Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper contains and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

**WARNING!**

**END OF LIFE DISPOSAL**

At the completion of the useful life of the unit, drain all fluids and dismantle by separating the different materials(rubber, steel,plastic,etc).Follow all federal, state and local regulations for recycling and disposal of the fluid and components

**WARNING!**

**OPERATING THE ATTACHMENT**

- Do not exceed the lifting capacity of your Tractor.
- Operate only from the operator's station.
- When operating on slopes, drive up and down, not across. Avoid steep hillside operation,which could cause the Tractor to overturn.
- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- An operator must not use drugs or alcohol, which can change his or her alertess or coordination. An operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or she can safely operate equipment.

# EQUIPMENT SAFETY PRECAUTIONS

**WARNING!** **OPERATING THE ATTACHMENT**

- Never heap or load heavy material where the combined weight of the bucket and material could exceed the rated lifting capacity of the backhoe.
- Be sure the load does not stick out too far in front of the bucket. A light load sticking out too far can have the same tipping effect as a heavy load carried in close.
- If the load appears to be unstable, lower the load, and repositioning the load to attain stability.
- When using the Backhoe, lift the load slightly and make sure that the load is secure. If the load appears to be an unstable, lower the load, and reposition the load to attain full stability.
- Before Exiting the Tractor, lower the attachment to the ground, turn off the Tractor's Engine, remove the key and apply the brakes.

**WARNING!** **TRANSPORTING THE ATTACHMENT**

- Travel only with the attachment in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.
- When transporting on a trailer: secure attachment at recommended tie down locations using tie down accessories that are capable of maintaining attachment stability.
- When driving on public roads use safety lights,reflectors,Slow moving vehicle signs etc., to prevent accidents. Check local government regulations that may affect you.
- Do not dive close to ditches,excavators,etc,.cave in could result.
- Do not smoke when refueling the Tractor. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.

**WARNING!** **MAINTAINING THE ATTACHMENT**

- Before performing maintenance, lower the attachment to the ground, apply the brakes, turn off the engine, and remove the key.
- Never perform any work on the attachment unless you authorized and qualified to do so.Always read the operator service manual's before any repair is made. After completing maintenance or repair, check for correct functioning of the attachment. If not functioning properly, always tag" DO NOT OPERATE" until all problems are corrected.
- Worn, damaged or ,illegible safety decals must be replaced. New safety decals can be ordered from Dealer or manufacturer.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Never work under a raised attachment.

# DECALS

## DECAL REPLACEMENT

**GENERAL INFORMATION**

The following diagrams show the location of all the decals on your attachment.

The decals are identified by their parts numbers, with the reductions of the actual decals shown on the following pages. Use this information to order replacements for lost or damaged decals. Be sure you understand all decals before operating the attachment. They contain information you need to know for attachment safety(See decal explanations.)

**IMPORTANT:** Keep all safety decals clean and legible. Replace all missing, or damaged safety decals. When replacing parts with safety decals attached, the safety decals must also be replaced.

**REPLACING SAFETY DECALS**.: Clean the area of application with nonflammable solvent, then wash the same area with soap and water. Allow the surface to dry. Remove the backing from the safety decal, exposing the adhesive surface. Apply the safety decal to the position shown in the diagram, and smooth out any bubbles.

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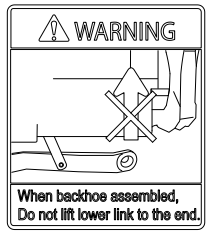
9010-500-002-0

9010-500-003-0

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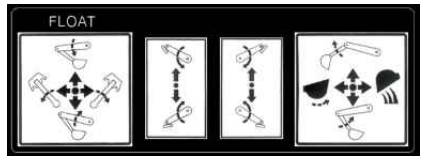


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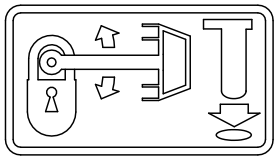

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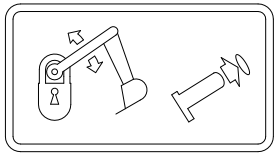

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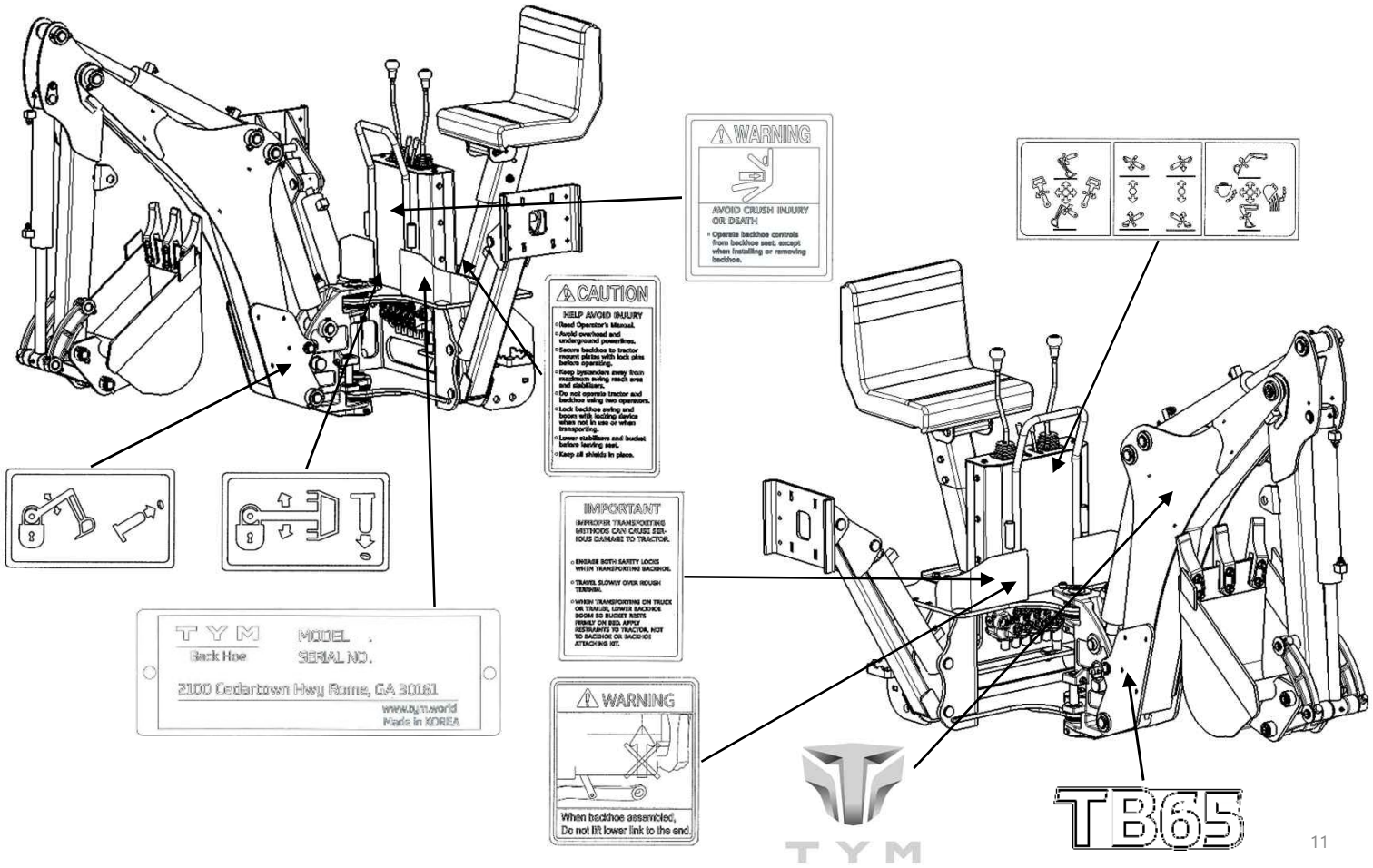
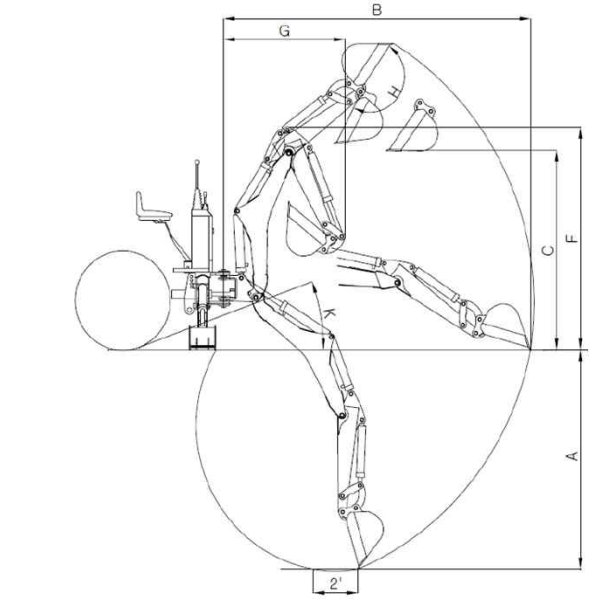
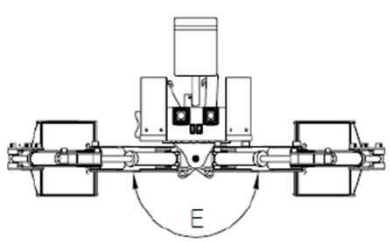
9020-500-008-0

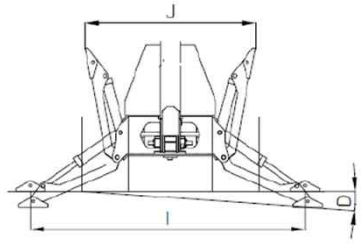
**SAFETY DECALS**



# Backhoe Specifications




Specifications and design are subject to change without prior notice.

Backhoe Model : TB65
Applied Tractor Model :

| | | | |
|---|---|---|---|
| A | Digging Depth (two foot flat bottom) | 2,042 mm (80.4") | |
| B | Reach from center line of Swing Pivot | 2,989 mm (117.7") | |
| C | Loading Height (Bucket at 60°) | 1,602 mm (63") | |
| D | Maximum Leveling Angle | 10° | |
| E | Swing Angle | 180° | |
| F | Transport height (Maximum) | 2,060 mm (81.1") | |
| G | Transport overhang | 1,162 mm (45.7") | |
| H | Bucket Rotation | 180° | |
| I | Stabilizer Spread (Down Position) | 1,792 mm (70.5") | |
| J | Stabilizer Spread (Raise Position) | 1,525 mm (60") | |
| K | Angle of Departure | 15° | |

Specifications may vary depending on tractor model, tire size and bucket used.

## Cylinders

| Cylinder | Bore Dia. | | Rod Dia. | | Retracted length | | Stroke | |
|---|---|---|---|---|---|---|---|---|
| | mm | inch | mm | inch | mm | inch | mm | Inch |
| Boom | ø65 | 2.559 | ø35 | 1.378 | 612 | 24.094 | 396 | 15.591 |
| Dipper stick | ø60 | 2.362 | ø35 | 1.378 | 508 | 20.000 | 310 | 12.205 |
| Bucket | ø60 | 2.362 | ø35 | 1.378 | 527 | 20.748 | 336 | 13.228 |
| Swing | ø60 | 2.362 | ø25 | 0.984 | 384 | 15.118 | 223 | 8.779 |
| Stabilizer | ø60 | 2.362 | ø35 | 1.378 | 450 | 17.717 | 237 | 9.331 |

## Bucket

| Part No. | Bucket | Teeth Q'ty | Struck Capacity | Heaped Capacity | Shipping weight |
|---|---|---|---|---|---|
| 9020-200-400-1 | 12" bucket | 3 | 0.85 cu.ft | 1.14cu.ft | 59 lbs. |

**Introduction.**
The purpose of this manual is to assist you in maintaining and operating your backhoe. 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.

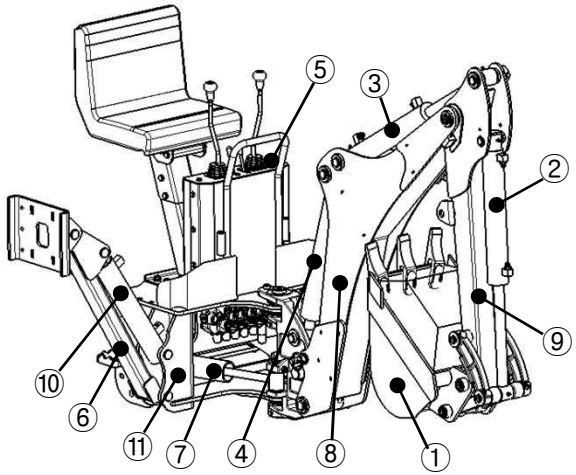
**Backhoe Components.**
Terms for backhoe components have some variations throughout the industry.

**Important:**
Illustrations used in this manual may not show all safety equipment that is recommended to ensure safe operation of tractor and backhoe. 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 is located on the front of valve cover. The serial number should be recorded on the Delivery and Registration form and also below for your reference.

1. Bucket
2. Bucket cylinder
3. Dipper stick Cylinder
4. Boom Cylinder
5. Console
6. Stabilizer
7. Swing Cylinder
8. Boom
9. Dipper stick
10. Stabilizer Cylinder
11. Main Frame




**Backhoe Serial Number information**
Date purchased
Backhoe serial Number
Sub frame serial Number
Dealer name and telephone number

# TRACTOR PREPARATION

**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.

**CAUTION**

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

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

**CAUTION**

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

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

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

**Tractor Hydraulic System**
Tractor operation in a backhoe 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.

# BACKHOE OPERATION

**CAUTION**

The tractor/backhoe should only be operated with all safety equipment properly installed. Keep assistants or bystanders a safe distance from the equipment operating area.

**Precautionary Notes**

-Check below items before operating for your safety.
-Read and understand this manual to avoid accidents.
-Check the hydraulic fitting lines to be correct and set tightly.
-Maintain and repair (if it is needed) the parts or assemblies, check bolts and pins to be sure they are positioned tightly.
-Check tractor with the tractor operator's manual that it can prepared for operating.
-Warm up and operate the tractor and backhoe carefully. Purge any air in the hydraulic lines and cylinders by fully cycling all cylinders several times.
-Check hydraulic level in the tank. It should be full (Refer to the Tractor Operator's Manual).
-Do not operate the hydraulics when not seated in the backhoe operator's seat.
-Keep all assistants out of area of operation.
-Do not operate rapidly.
-Do not allow riders other than the operator to be on the tractor while operating.

**Important:**

Use tractor engine speed that your experience permits. At first set PTO RPM of the tractor to slow.
Do not use the boom, dipper stick, swing and stabilizers to lift, push or pull objects. Use only to maneuver and operate the bucket.

**Important:**

Practice quickly turning off the engine or stopping the backhoe immediately in case of an emergency situation.

**Important:**

Do not operate while the rear tractor wheels are off the ground by stabilizer. It is dangerous to operate the backhoe while rear wheels are off the ground.

Position vehicle so that the backhoe is as near to the pile as possible and in such a direction as to minimize the amount of tractor turning required to dump.

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 backhoe 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 backhoe 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 backhoe 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 backhoe or injury to personnel.

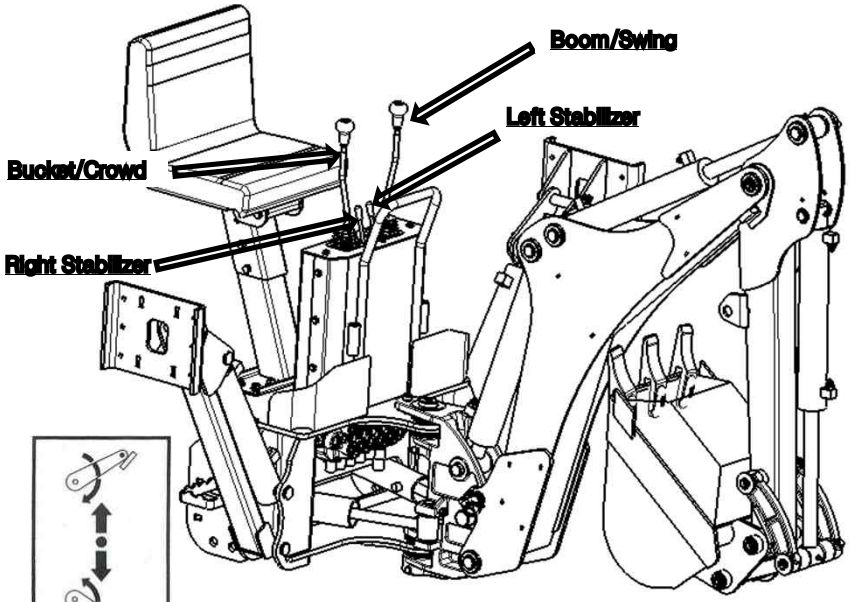
**Initial Backhoe Operation**
Before operating the backhoe, fully raise and lower the boom, arm, swing and stabilizers two or three times. Then raise the bucket above the ground and cycle the bucket cylinders three times. Lower the bucket to the ground. Check the tractor hydraulic oil and the correct oil level.

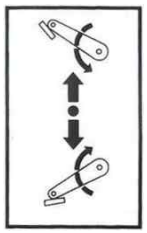
⚠ CAUTION:
Before leaving the machine, stop the engine, remove the key, place all controls in neutral, and either set the parking brake or place tractor in park as equipped.

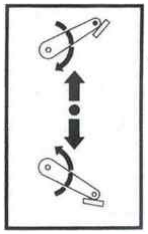
Always keep cylinders in a retracted position when the backhoe is not in use to guard against rust and contamination which may cause damage to the cylinder rods or hydraulic system.
Also, lock the swing and boom while tractor is moving and storing for an extended period of time.

**Cold Weather Operation**
For smooth operation in cold weather, let the tractor warm up. Slowly cycle all of the cylinders several times to warm the oil in the hydraulic system.
The backhoe may operate erratically until the hydraulic oil has warmed to operating temperatures.

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





Left hand Stabilizer Decal

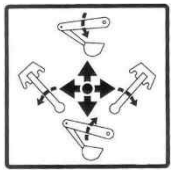

Right hand Stabilizer Decal

Push the right hand inner control lever, right stabilizer lowers. And pull up the lever, right stabilizer raises.

Do not dig near the stabilizers to avoid possible accident.

Do not lift the tractor rear wheels by stabilizers. Also, be sure the stabilizers are seated on hard ground to support. The backhoe/tractor.

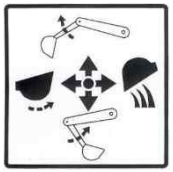
**Boom and swing controls**



Push the left hand outer control lever, boom moves down, and pull back the lever, boom moves up. Also, pushing the lever fully forward into the detent position, allows the boom to float. In the float position, the boom can drift up or down without pressure.

Move the left hand outer control lever to the left, boom swings to the left. Move lever right, backhoe boom swing moves to the right.

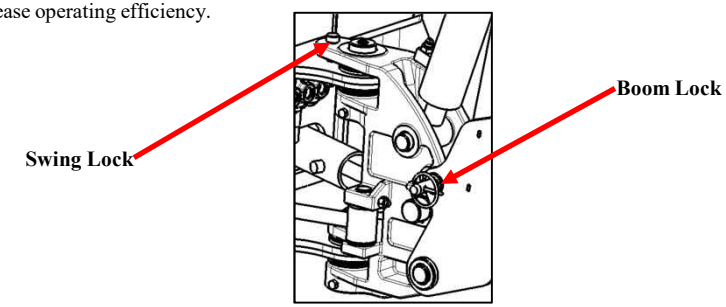
**Bucket and crowd controls**



Push the right hand outer control lever, arm(dipper stick) moves away from operator, and pull back the lever, arm(dipper stick) moves toward the operator.

Move the right hand outer control lever to the left, bucket curls in. Move lever right, bucket extends out from operator.

These two levers ( Boom and swing control lever, Bucket and crowd control lever ) provide four simultaneous operations. Both experience and practice are needed to eliminate excess motion and increase operating efficiency.




**Swing Lock and Boom Lock**

When transporting or dismounting backhoe, you must lock the backhoe's swing and boom.
Position boom straight back and drop pin through holes in swing frame and boom. When not in use, store pin in hole provided on swing frame and boom.
Observe the following safety warnings when working with your new backhoe/tractor.

CAUTION: When using a backhoe, be aware of bucket and boom location at all times.
When raising A arm(dipper stick) with bucket rolled forward, material can spill onto non target area causing injury to assistant or damage other objects.

CAUTION: Do not dig near stabilizers. Ground under stabilizers could collapse. Make all movements slow and gradual when practicing operation.

CAUTION: Operate from backhoe operators seat only. Pay attention, be ready to stop, immediately in case of an emergency.

CAUTION: To help prevent roll-over, adjust the rear wheels to their widest setting to maximize stability. Refer to your Tractor Operator's Manual for recommendations.

## BACKHOE REMOVAL

CAUTION: Move the backhoe to flat, firm and wide place to remove the equipment.

CAUTION: Do not allow to be removed without bucket and stabilizers. Also, Dump the remaining material from the bucket to empty.

WARNING: Use other lifting equipment to remove when the backhoe has damage.

STEP 1.
Move the tractor to backhoe storage place.

STEP 2.
Use the inner two levers to lower the stabilizers until they contact to the ground. Use the boom and dipperstick control lever to raise the boom & dipper stick completely.

STEP 3.
Center the boom and then lock the swing with lock pin.

STEP 4.
Using the control levers, position the dipperstick vertically, curl the bucket until its bottom is level with the ground, and lower the boom until bottom of the bucket rests on the ground.

STEP 5.
Remove pins that secure the backhoe. Sub-frame in the mounting brackets on the tractor.

STEP 6.
Using both the stabilizer and boom controls, set the backhoe sub-frame horizontally to relieve the weight of the backhoe from the mounting brackets of the tractor.

STEP 7.
Move the tractor forward slowly until the backhoe sub-frame disengages of the mounting brackets.

STEP 8.
Lower the backhoe mainframe to the ground by raising stabilizers and boom. Use the wood plate or block if necessary.

STEP 9.
Turn off the tractor engine. Relieve hydraulic pressure by actuating all the control levers in each direction, then disconnect the backhoe hose couplers from the tractor hydraulic couplers.

CAUTION: Remove the backhoe on firm level ground. Also, Do not allow the other person in the area.

CAUTION: Be careful to avoid injury during removal of the backhoe.

CAUTION: The hydraulic oil is dangerous for skin or eyes. Wash the skin and seek medical service if it is necessary.

## BACKHOE MOUNTING

CAUTION: Backhoe should be mounted on the proper sub-frame assembly.

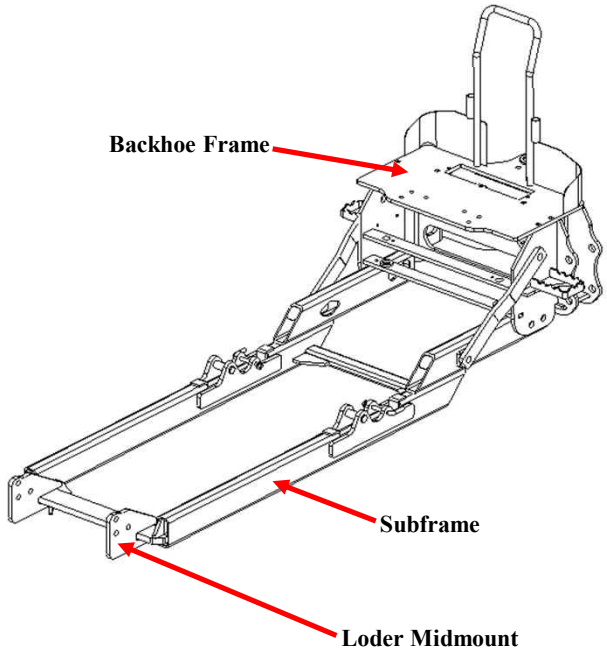
CAUTION: Never store backhoe without bucket attached to the backhoe.

STEP 1.
Attach the loader mid-mount and mounting bracket to the tractor by fit the bolts and nuts.

STEP 2.
Back tractor slowly toward the backhoe parallel to sub-frame assembly, until the couplers on the backhoe hoses are able to connect with the hose kit hydraulic couplers or tractor auxiliary couplers located rear of the tractor. Then, put the couplers to connected.

STEP 3.
Store the subframe and subframe crosser horizontally with the loader mid-mount and mounting bracket by the backhoe control lever. Also, matching these on same level

STEP 4.
Set the parking brake of the tractor, Make sure the PTO switch is in the off position



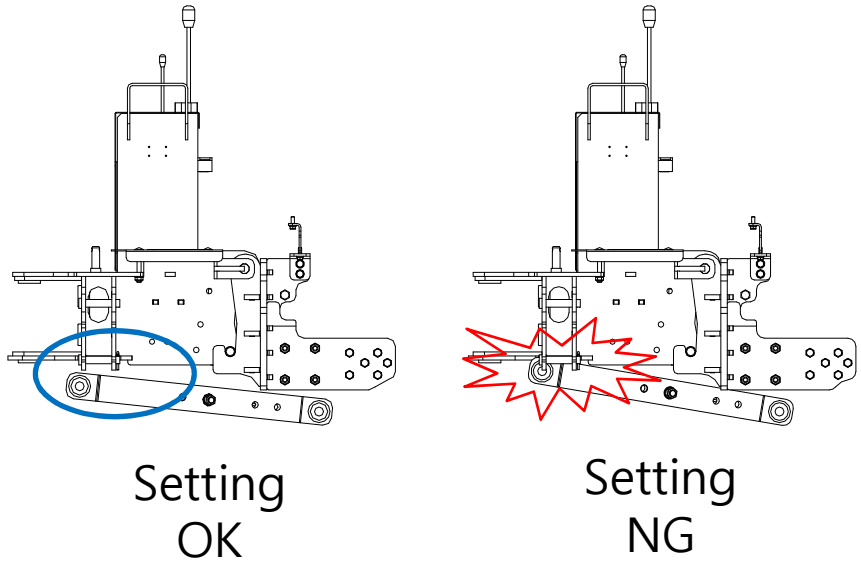
CAUTION: This is the Backhoe's Operator's manual for Safety Precautions and Tractor Preparations.

STEP 5.
Move the tractor to put the subframe front side into the loader midmount slowly. Set the subframe crosser parallel to the mounting bracket by using the backhoe control levers to lower the stabilizers and boom to raise the subframe.

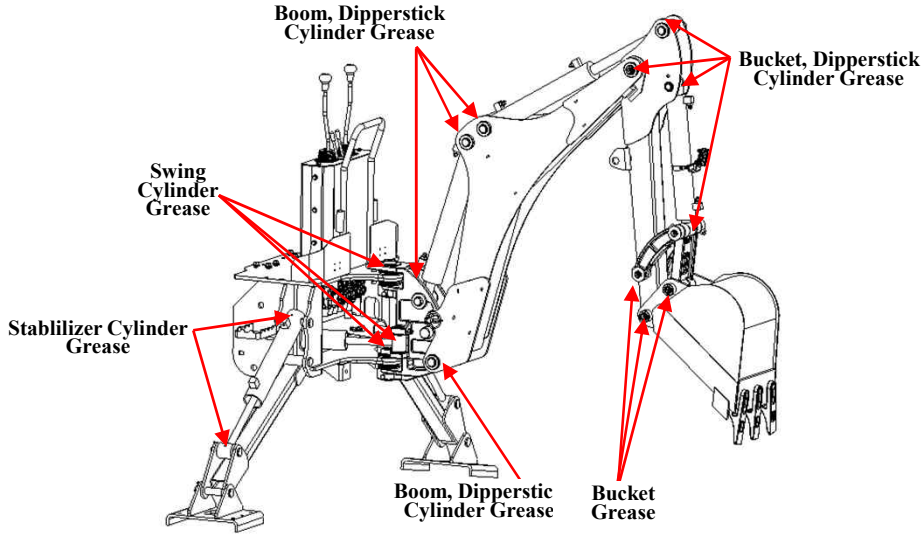
STEP 6.
Release the parking brake of tractor, move the tractor rearward very carefully until the subframe is fully engaged in both mounting devices on the tractor.

STEP 7.
Install the Mounting Bracket Pins into the holes. Raise the boom and stabilizers from the ground.

CAUTION: After attaching the backhoe to the tractor, be careful to operate the tractor so that the tractor LOWERlINK does not lift the backhoe MAINFRAME.



# LUBRICATION AND MAINTENANCE




| ITEM | SERVICE | SERVICE INTERVAL |
|---|---|---|
| Hydraulic System Oil Level | Replace | As specified in Tractor Operator's Manual |
| 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 |
| Backhoe Pivot Points | Lubricate | Daily/10 hours |
| Backhoe Hydraulic Lines, Hoses, Connections | Check for leaks, wear | Daily/10 hours |
| Boom, Dipperstick, Swing and Bucket cylinder rod packing | Check for seepage, service as needed | Daily/10 hours |
| Pivot pin bolts and dust covers | Check, replace if missing | Daily/10 hours |
| Friction of All pins | Check, replace if necessary | Daily/10 hours |
| Backhoe mount hardware | Check visually | Daily/10 hours |
| Bolts and Nut release | Re-torque | Every 25 hours |

**LUBRICATION AND MAINTENANCE**

CAUTION: Do not perform service or maintenance Operations with backhoe raised off the ground. For additional access to tractor components remove backhoe.

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

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 backhoe if the fittings are leaking or if the hoses are damaged. A sudden line burst could cause the boom, dipperstick or bucket to drop suddenly, causing damage to the tractor or backhoe or injury to personnel..

CAUTION: Operate the backhoe from the operator seat only.

CAUTION: Do not stand or walk under a raised backhoe. Accidental movement of control lever or leak in hydraulic system could cause boom or dipper stick 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 backhoe should be on the ground and bucket fully retracted(all cylinders in retracted position).
Grease all backhoe 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 backhoe/material. Unequal rear tire inflation can result in bucket not being level to the ground.

## TROUBLE SHOOTING

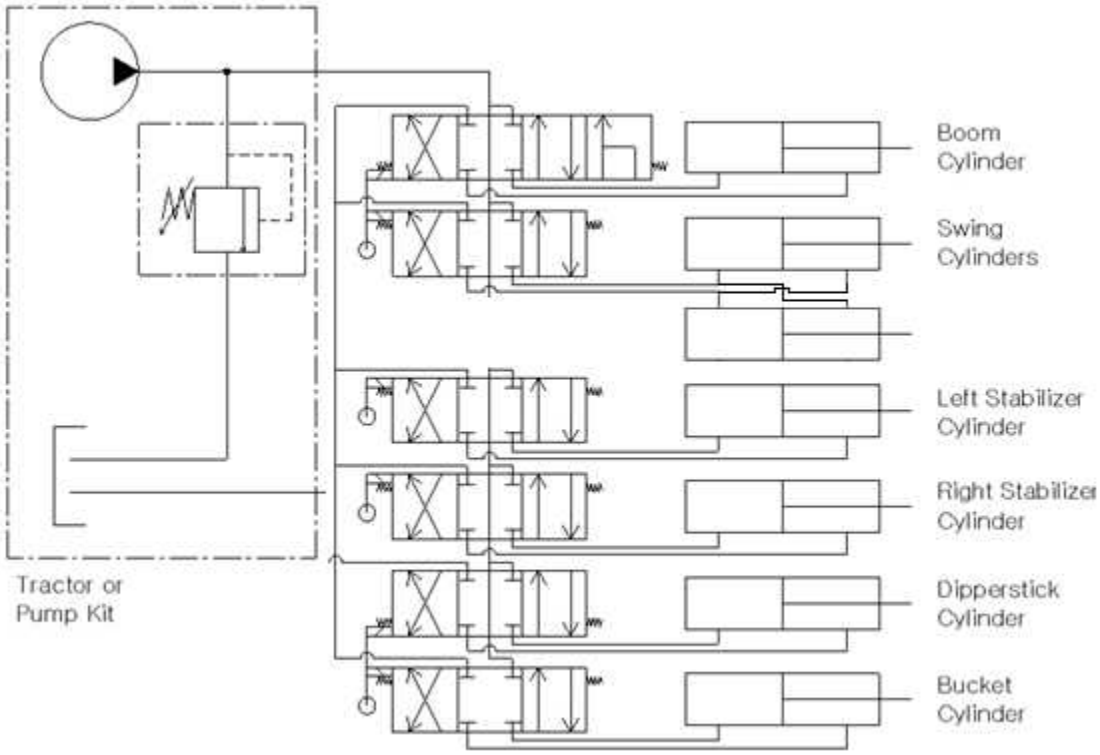
This Trouble Shooting Chart is provided for reference to possible backhoe operational problems.
Determine the problem that best describes the operational problem being experienced and eliminate the possible causes as listed by following the correction procedures.

| PROBLEM | POSSIBLE CAUSE | CORRECTION |
|---|---|---|
| Swing, Boom, Dipper stick 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. |
| | Backhoe control valve or tractor main relief valve stuck open. | Check system pressure. Repair or replace relief valve. Refer to the Tractor Operator's Manual |
| | 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 tube line blockage. | Check for evidence of damage to hoses or tube lines 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. |
| 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. |

| PROBLEM | POSSIBLE CAUSE | CORRECTION |
|---|---|---|
| Slow or erratic move of Cylinders (Noisy operation of cylinders) | 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 backhoe operation. |
| | Excessive weight in bucket. Material weight exceeds maximum specified backhoe capacity. | Reduce material load. (Digging 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 tube line restriction (hoses/tube line) kinked or pinched. | Check hoses and tube lines for evidence of restriction. |
| | Boom, Dipper stick or Bucket 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. (hy-passing fluid within valve). | Replace control valve and recheck operation. |
| | Hydraulic Oil viscosity too heavy or Incorrect oil | Check oil number and viscosity, Refill correct hydraulic oil. |
| 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. |
| | Bucket, Boom and Dipper stick 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". |

| PROBLEM | POSSIBLE CAUSE | CORRECTION |
|---|---|---|
| System relief valve squeals. | Hydraulic Oil viscosity too heavy or Incorrect oil | Check oil number and viscosity, Refill correct hydraulic oil. |
| | Excessive load in bucket. Weight exceeds specified backhoe capacity. | Reduce load. |
| | Relief valve setting below specifications. | Check and reset valve setting as needed. |
| | Hydraulic hose, tube line or quick disconnect coupler restriction. | Check for evidence of restriction in hydraulic oil flow. Repair or replace defective components. |
| Backhoe 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, tube line, 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. |
| 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. |
| 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. |

**Hydraulic system schematic**



**BOLT TORQUE**
**BOLT TORQUE SPECIFICATIONS**

## GENERAL TORQUE SPECIFICATION TABLES

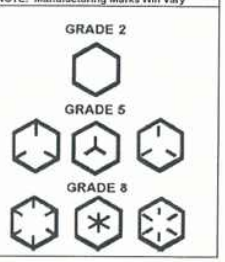
Use the following charts when determining bolt torque specifications when special torques are given. Always use grade 5 or better when replacing bolts.

## SAE BOLT TORQUE SPECIFICATIONS.

Note : The following torque values are for use with extreme pressure lubricants, plating or hard washer applications increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

| Bolt Size | | SAE GRADE 5 TORQUE | | | | SAE GRADE 8 TORQUE | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Pounds Feet | | Newton-Meters | | Pounds Feet | | Newton-Meters | |
| Inches | Millimeters | UNC | UNF | UNC | UNF | UNC | UNF | UNC | UNF |
| 1/4 | 6.35 | 8 | 9 | 11 | 12 | 10 | 13 | 14 | 18 |
| 5/16 | 7.94 | 14 | 19 | 19 | 23 | 20 | 25 | 27 | 34 |
| 3/8 | 9.53 | 30 | 36 | 41 | 49 | 38 | 46 | 52 | 62 |
| 7/16 | 11.11 | 46 | 54 | 62 | 73 | 60 | 71 | 81 | 96 |
| 1/2 | 12.70 | 68 | 82 | 92 | 111 | 94 | 112 | 127 | 152 |
| 9/16 | 14.29 | 94 | 112 | 127 | 152 | 136 | 163 | 184 | 221 |
| 5/8 | 15.88 | 128 | 153 | 174 | 207 | 187 | 224 | 254 | 304 |
| 3/4 | 19.05 | 230 | 275 | 312 | 373 | 323 | 395 | 438 | 536 |
| 7/8 | 22.23 | 340 | 408 | 461 | 553 | 510 | 612 | 691 | 830 |
| 1 | 25.40 | 493 | 592 | 668 | 803 | 765 | 918 | 1037 | 1245 |
| 1-1/8 | 25.58 | 680 | 748 | 922 | 1014 | 1088 | 1224 | 1475 | 1660 |
| 1-1/4 | 31.75 | 952 | 1054 | 1291 | 1429 | 1547 | 1700 | 2097 | 2305 |
| 1-3/8 | 34.93 | 1241 | 1428 | 1683 | 1936 | 2023 | 2312 | 2743 | 3135 |
| 1-1/2 | 38.10 | 1649 | 1870 | 2236 | 2535 | 2686 | 3026 | 3642 | 4103 |

Bolt head identification marks as per grade.
NOTE: Manufacturing Marks Will Vary




## METRIC BOLT TORQUE SPECIFICATIONS.

Note : The following torque values are for use with metric hard ware that is unplated and either dry or lubricated with engine oil. Reduce torque 15%,when using hardware that has extreme pressure lubricants, plating or hard washer applications.

Bolt head identification marks as per grade.

| Size of Bolt | Grade No. | Pitch (mm) | Pounds Feet | Newton-Meters | Pitch (mm) | Pounds Feet | Newton-Meters |
|---|---|---|---|---|---|---|---|
| M6 | 5.6 | 1.0 | 3.6-5.8 | 4.9-7.9 | - | - | - |
| | 8.8 | | 5.8-.4 | 7.9-12.7 | | - | - |
| | 10.9 | | 7.2-10 | 9.8-13.6 | | - | - |
| M8 | 5.6 | 1.25 | 7.2-14 | 9.8-19 | 1.0 | 12-17 | 16.3-23 |
| | 8.8 | | 17-22 | 23-29.8 | | 19-27 | 25.7-36.6 |
| | 10.9 | | 20-26 | 27.1-35.2 | | 22-31 | 29.8-42 |
| M10 | 5.6 | 1.5 | 20-25 | 27.1-33.9 | 1.25 | 20-29 | 27.1-39.3 |
| | 8.8 | | 34-40 | 46.1-54.2 | | 35-47 | 47.4-63.7 |
| | 10.9 | | 38-46 | 51.5-62.3 | | 40-52 | 54.2-70.5 |
| M12 | 5.6 | 1.75 | 28-34 | 37.9-46.1 | 1.25 | 31-41 | 42-55.6 |
| | 8.8 | | 51-59 | 69.1-79.9 | | 56-68 | 75.9-92.1 |
| | 10.9 | | 57-66 | 77.2-89.4 | | 62-75 | 84-101.6 |
| M14 | 5.6 | 2.0 | 49-56 | 66.4-75.9 | 1.5 | 52-64 | 70.5-86.7 |
| | 8.8 | | 81-93 | 109.8-126 | | 90-106 | 122-143.6 |
| | 10.9 | | 96-109 | 130,1-147.7 | | 107-124 | 145-168 |
| M16 | 5.6 | 2.0 | 67-77 | 90.8-104.3 | 1.5 | 69-83 | 93.5-112.5 |
| | 8.8 | | 116-130 | 157.2-176.2 | | 120-138 | 162.6-187 |
| | 10.9 | | 129-145 | 174.8-196.5 | | 140-158 | 189.7-214.1 |
| M18 | 5.6 | 2.0 | 88-100 | 119.2-136 | 1.5 | 100-117 | 136-158.5 |
| | 8.8 | | 150-168 | 203.3-227.6 | | 177-199 | 239.8-269.6 |
| | 10.9 | | 175-194 | 237.1-262.9 | | 202-231 | 273.7-313 |
| M20 | 5.6 | 2.5 | 108-130 | 146.3-176.2 | 1.5 | 132-150 | 178.9-203.3 |
| | 8.8 | | 186-205 | 252-277.8 | | 206-242 | 279.1-327.9 |
| | 10.9 | | 213-249 | 288.6-337.4 | | 246-289 | 333.3-391.6 |

## Warranty Registration Form & Delivery Inspection Report

**IMPORTANT!** Warranty **Void** if card is not returned within 10 days.
All Applicable sections **must** be filled in.

***This section to be filled out and signed by Dealer at time of delivery.***

Customer's Name _____
Address _____
City _____ State____ Zip_____
Phone _____

Dealer's Name _____
Address_____
City _____ State____ Zip_____

Loader / Tractor Model_____
Delivery Date_____
Brand & Model # _____
Serial # _____

**CHECK ONE:**

☐ Agricultural Use ☐ Construction Use
☐ Landscape Use ☐ Other _____

**Dealer Inspection** *(check items applicable)*

☐ All Decals Installed (see operator's manual)
☐ Hydraulic Fittings Tight & Free of Leaks
☐ Fastners Tight
☐ Review Operating & Safety Instructions
☐ Guards & Covers in Place & Secure
☐ Does Product Function Properly

I have thoroughly instructed the buyer on the above described equipment. This review included: The Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Dealer Rep. Signature:_____ Date: _____

***This section to be completed and signed by the Owner***

**QUALITY ASSURANCE RATING** **1=Excellent 2=Good 3=Average 4=unsatisfactory 5=poor**

| Question | Paladin Light Construction | Local Dealer |
|---|---|---|
| Quality of Product: Appearance | ____ | |
| Construction | ____ | |
| Quality of Service | ____ | ____ |
| Value (Priced Fairly) | ____ | ____ |
| Does it perform as claimed | ____ | |

The above described equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Owner's Signature: _____ Date: _____

**NOTE! Make one copy each for the dealer's and owner's records. Fax or mail to:**

## PART ILLUSTRATIONS

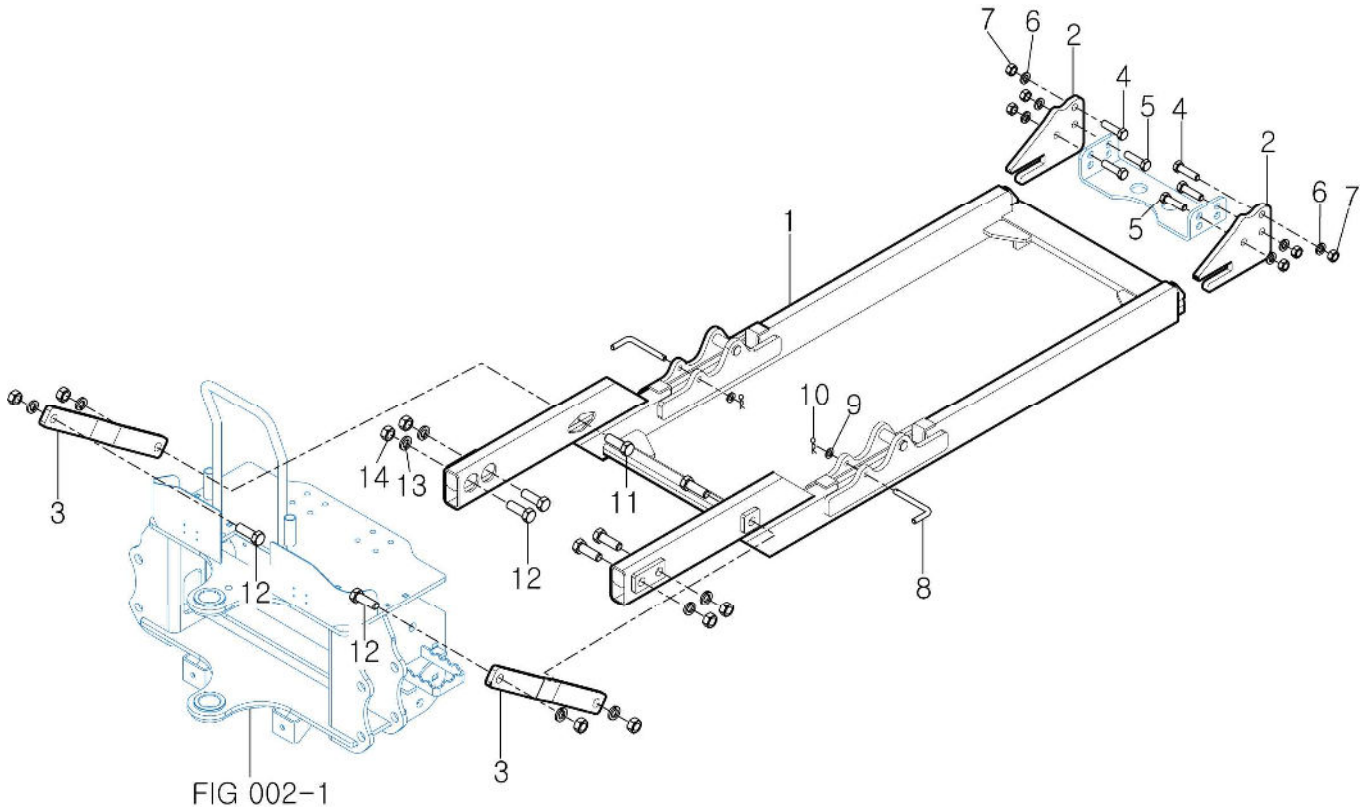
## GENERAL INFORMATION

**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.

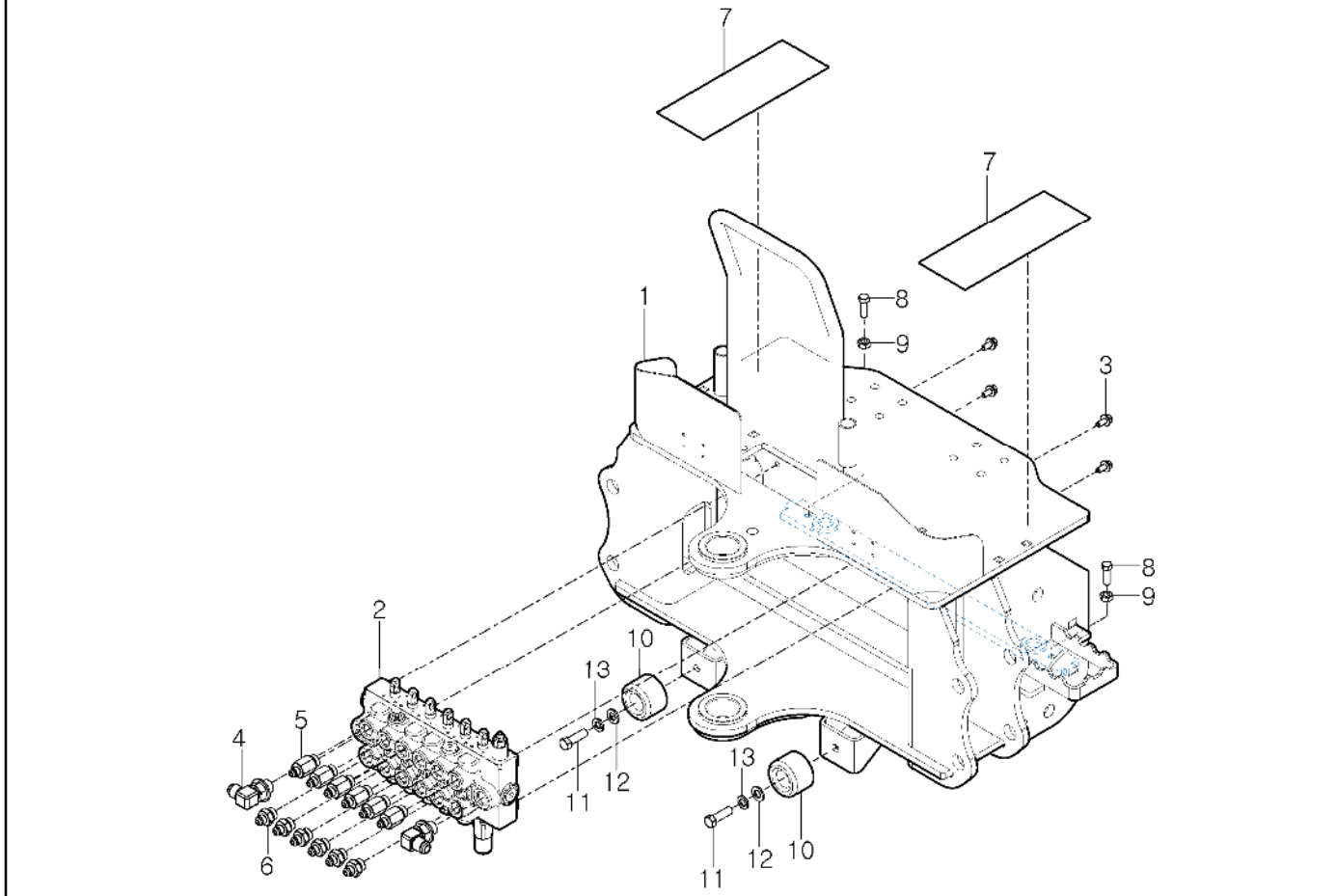
**Part Order**
Orders must give the complete description, correct part number, the total amount required, the product model, all the necessary serial numbers, the method of shipment and the shipping address.

| FIG 001 | SUB FRAME |
|---|---|



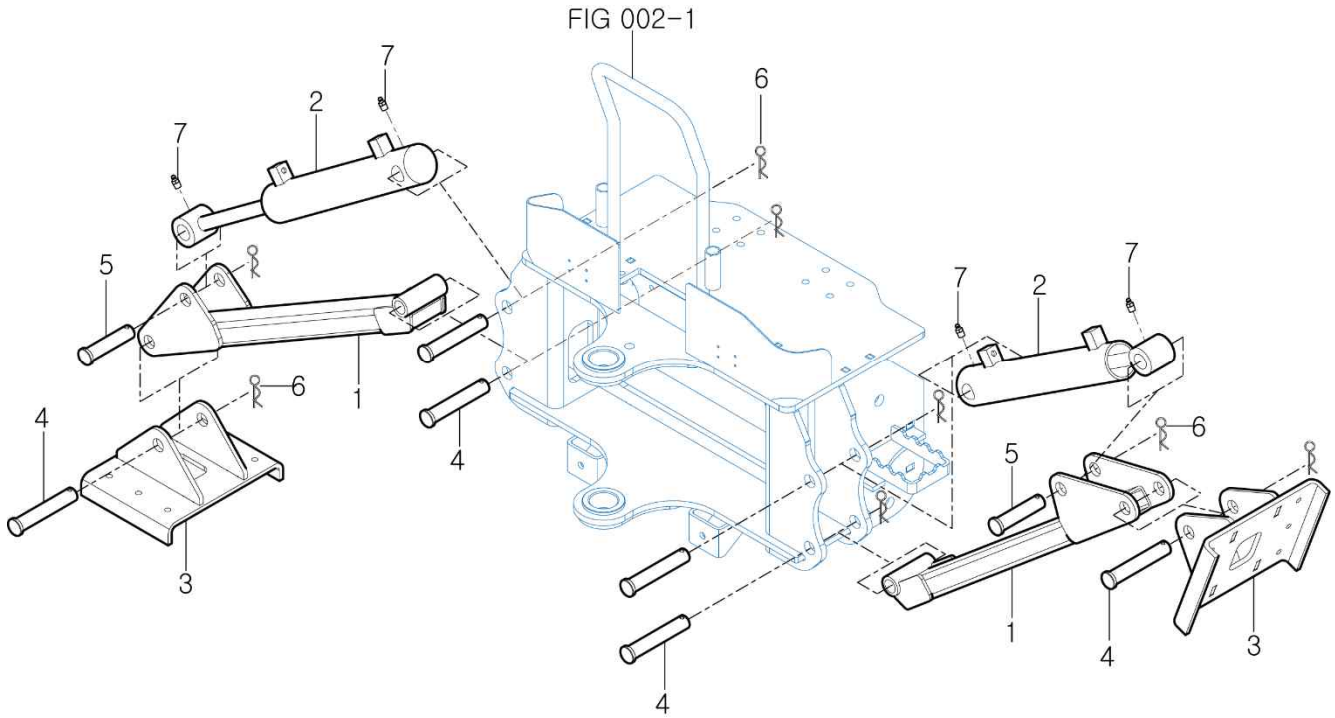
| SUB FRAME | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-400-100-0 | FRAME COMP , RAIL | | 1 | | |
| 2 | 9020-400-200-1 | BRACKET , HANGER | | 2 | | |
| 3 | 9020-400-220-0 | STAY | | 2 | | |
| 4 | V201-461-604-5 | BOLT , HEX | M16X45 | 2 | | |
| 5 | V201-461-606-0 | BOLT , HEX | M16X60 | 4 | | |
| 6 | V401-160-016-0 | WASHER , SPRING | M16 | 6 | | |
| 7 | V301-360-016-0 | NUT , HEX | M16 | 6 | | |
| 8 | 9020-400-210-0 | PIN , SUB FRAME | | 2 | | |
| 9 | V411-160-012-0 | WASHER , PLAIN | M12 | 2 | | |
| 10 | V560-160-001-2 | PIN , SNAP | 12 | 2 | | |
| 11 | V203-462-007-5 | BOLT , HEX/FINE | M20X75XP1.5 | 2 | | |
| 12 | V203-462-006-0 | BOLT , HEX/FINE | M20X60XP1.5 | 6 | | |
| 13 | V401-160-020-0 | WASHER , SPRING | M20 | 8 | | |
| 14 | V331-360-020-0 | NUT , HEX/FINE | M20XP1.5 | 8 | | |

| FIG 002 | MAIN FRAME & VALVE |
|---|---|



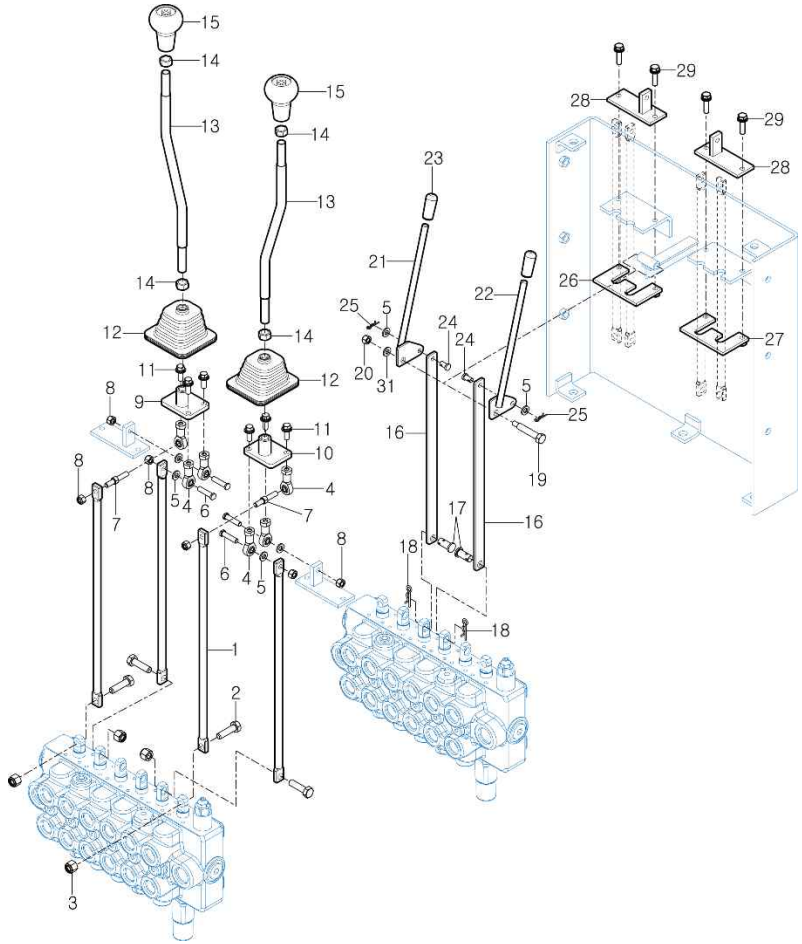
| MAIN FRAME & VALVE | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-100-1 | FRAME COMP , MAIN | | 1 | | |
| 2 | 8510-510-600-0 | VALVE , MAIN | | 1 | | |
| 3 | V218-360-802-5 | BOLT , HEX/SP | M8X25 | 4 | | |
| 4 | 9020-510-001-0 | ELBOW (UNF 7/8, PF 1/2) | UNF 7/8 – PF 1/2 | 2 | | |
| 5 | 8510-510-004-0 | UNION/LONG | UNF3/4 - UNF 9/16 | 6 | | |
| 6 | 8510-510-005-0 | UNION/SHORT | UNF3/4 - UNF 9/16 | 6 | | |
| 7 | 9010-200-014-0 | INSULATOR , ANTISLIP | | 2 | | |
| 8 | V201-361-003-0 | BOLT , HEX | M10X30 | 2 | | |
| 9 | V301-360-010-0 | NUT , HEX | M10 | 2 | | |
| 10 | 9020-100-010-0 | RUBBER , CUSHION | | 2 | | |
| 11 | V201-451-204-0 | BOLT , HEX | M12X40 | 2 | | |
| 12 | V411-160-012-0 | WASHER , PLAIN | M12 | 2 | | |
| 13 | V401-160-012-0 | WASHER , SPRING | M12 | 2 | | |

| FIG 003 | STABILIZER |
|---|---|



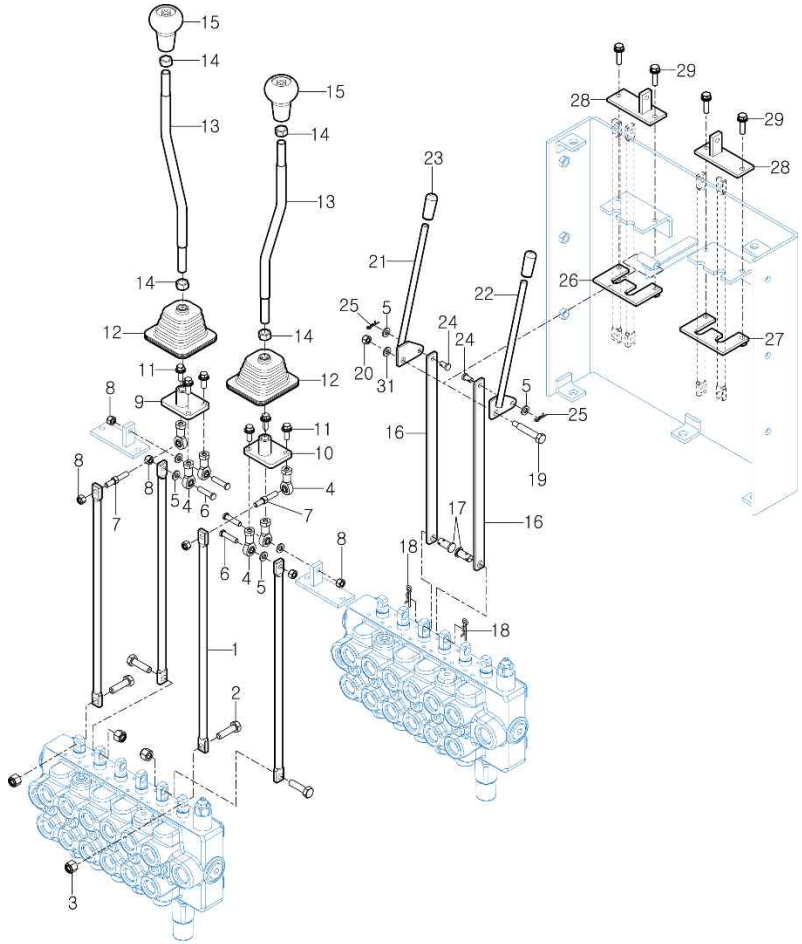
| STABILIZER | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-530-0 | STABILIZER COMP | | 2 | | |
| 2 | 9020-310-500-0 | STABILIZER CYLINDER | | 2 | | |
| 3 | 9020-200-540-1 | FOOT COMP , STABILIZER | | 2 | | |
| 4 | 9020-200-006-0 | LOCK PIN , STABILIZER/A | | 6 | | |
| 5 | 9010-200-008-0 | LOCK PIN , STABILIZER/A | | 2 | | |
| 6 | V500-195-004-5 | PIN , SPLIT | 5x45 | 8 | ~2021.03.31 | |
| | 3452-172-111-0 | PIN , HAIR (22 LOCK) | | 8 | 2021.04.01 ~ | |
| 7 | V761-150-000-0 | NIPPLE , GREASE/A-PT1/8 | | 4 | | |

| FIG 004 | LEVER |
|---|---|



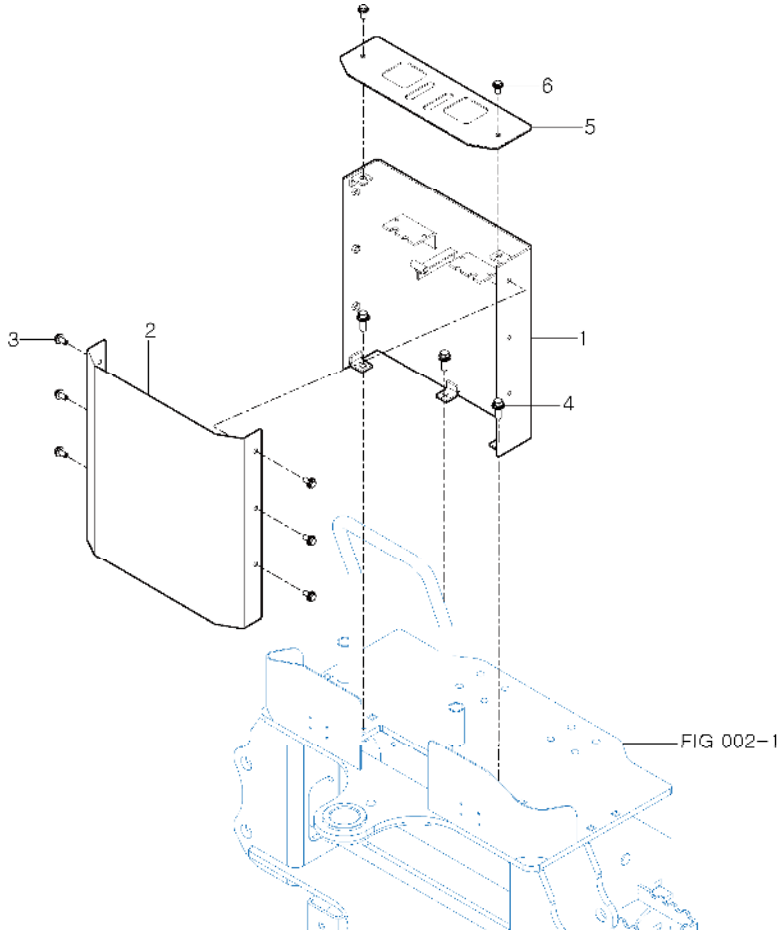
| LEVER | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-210-601-0 | ROD | | 4 | | |
| 2 | V201-360-802-5 | BOLT , HEX | M8X25 | 4 | | |
| 3 | 8420-000-023-0 | NUT , HEX/NYLON | M8 | 4 | | |
| 4 | 9010-210-650-0 | ROD END (M6) | | 6 | | |
| 5 | V411-160-006-0 | WASHER , PLAIN | M6 | 6 | | |
| 6 | 9010-210-603-0 | BOLT , HEX/SHORT | | 4 | | |
| 7 | 9010-210-604-0 | BOLT , HEX/LONG | | 2 | | |
| 8 | 1902-721-006-0 | NUT , HEX/NYLON | M6 | 6 | | |
| 9 | 9020-210-610-0 | LEVER COMP , LH | | 1 | | |
| 10 | 9020-210-620-0 | LEVER COMP , RH | | 1 | | |
| 11 | V212-360-602-0 | BOLT , HEX/SP | M6X20 | 6 | | |
| 12 | 9010-210-605-0 | BOOTS , LEVER | | 2 | | |
| 13 | 9020-210-608-0 | LEVER | | 2 | | |
| 14 | V334-360-010-0 | NUT , HEX/FINE | M10XP1.25 | 4 | | |
| 15 | 9010-219-010-0 | LEVER , GRIP | | 2 | | |
| 16 | 9020-210-607-1 | LINK A , SPOOL | | 2 | | |
| 17 | 9010-210-001-1 | PIN A , LEVER | | 2 | | |
| 18 | V560-160-001-0 | PIN , SNAP | 10 | 2 | | |
| 19 | 9010-210-606-0 | BOLT , HEX/SHOULDER | M6 | 1 | | |
| 20 | 1902-721-006-0 | NUT , HEX/NYLON | M6 | 1 | | |
| 21 | 9010-210-240-0 | LEVER A , LH | | 1 | | |

| FIG 004 | LEVER |
|---|---|



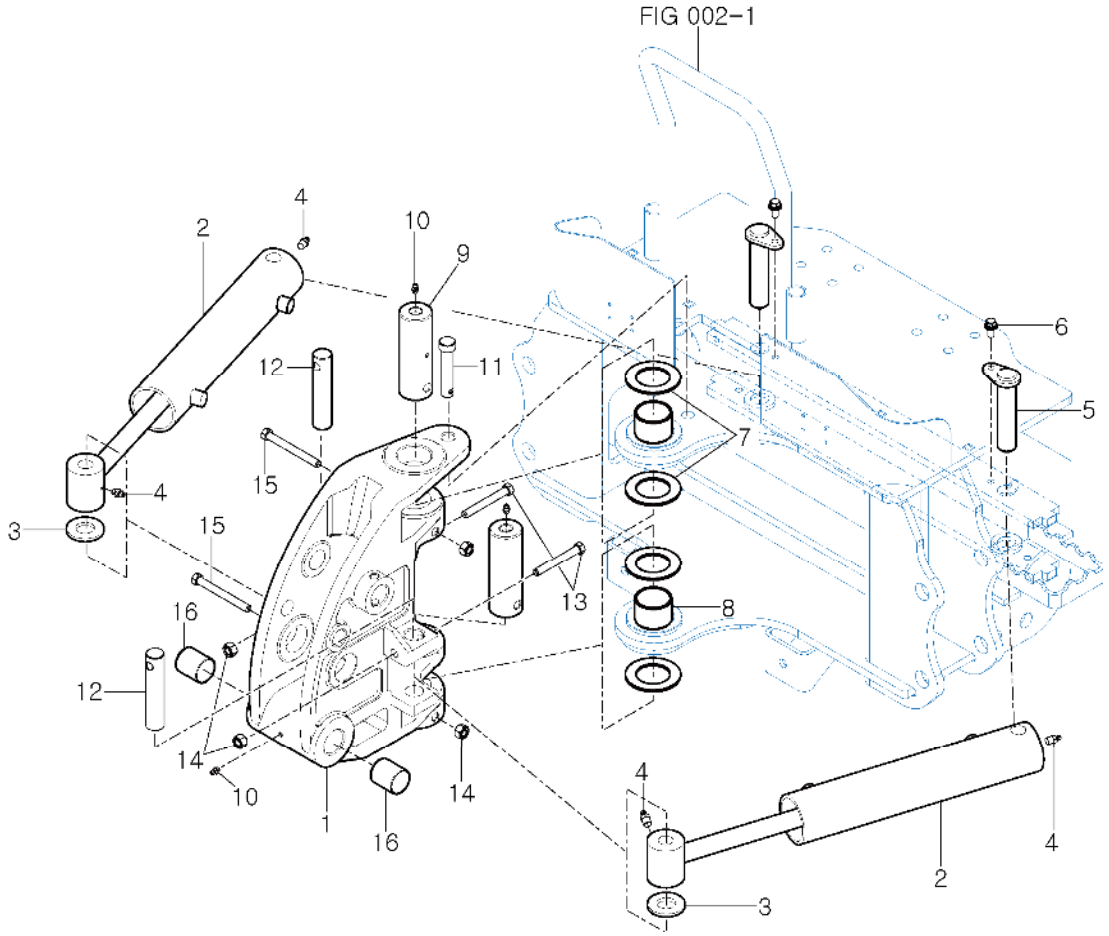
| LEVER | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 22 | 9010-210-250-0 | LEVER A , RH | | 1 | | |
| 23 | 2161-525-002-0 | GRIP , LEVER | | 2 | | |
| 24 | 9010-210-002-1 | PIN B , LEVER | | 2 | | |
| 25 | V560-160-000-6 | PIN , SNAP | 6 | 2 | | |
| 26 | 9020-210-660-0 | GUIDE COMP , RH | | 1 | | |
| 27 | 9020-210-670-0 | GUIDE COMP , LH | | 1 | | |
| 28 | 9010-210-630-1 | PLATE COMP , FIX | | 2 | | |
| 29 | V212-360-602-5 | BOLT , HEX/SP | M6X25 | 4 | | |
| 31 | V411-160-008-0 | WASHER , PLAIN | M8 | 1 | | |

| FIG 005 | VALVE COVER |
|---|---|



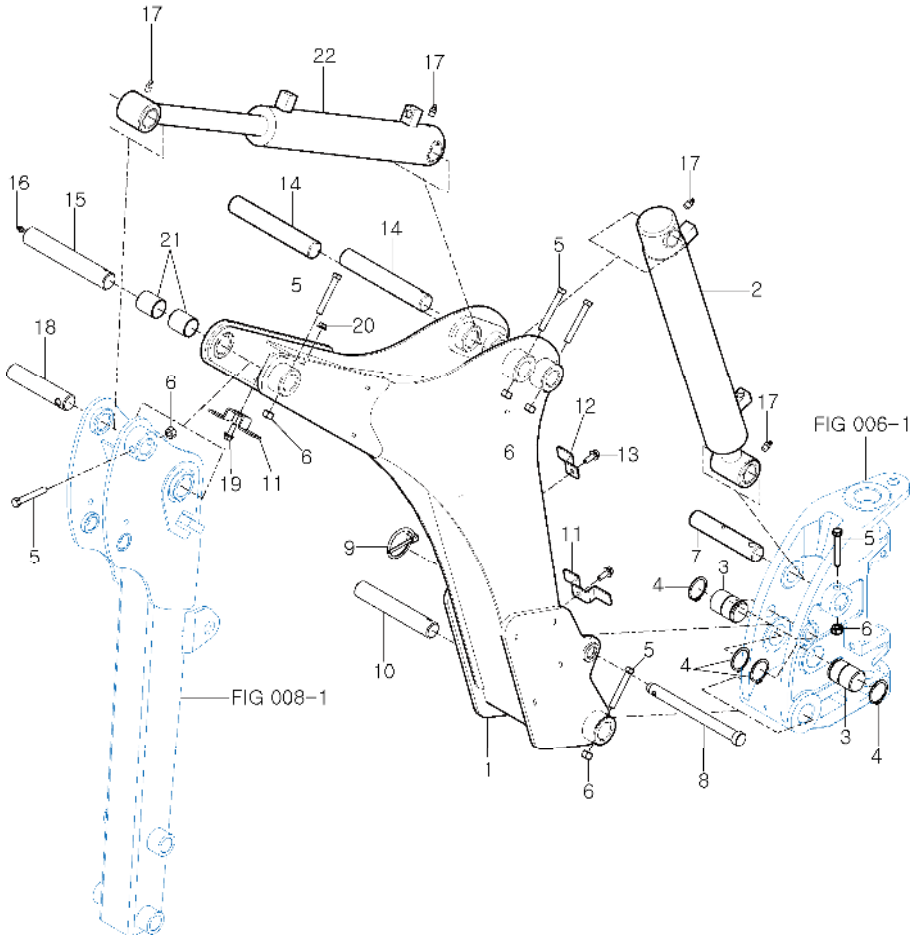
| VALVE COVER | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-210-210-1 | COVER (R) COMP | | 1 | | |
| 2 | 9020-200-051-0 | PLATE , COVER A | | 1 | | |
| 3 | V240-360-802-0 | BOLT , HEX/FLANGE | M8X20 | 6 | | |
| 4 | V218-361-003-0 | BOLT , HEX/SP | M10X30 | 3 | | |
| 5 | 9020-200-052-2 | COVER , LEVER UP | | 1 | | 2022.07.05~ |
| 6 | V240-360-802-0 | BOLT , HEX/FLANGE | M8X20 | 2 | | |

| FIG 006 | SWING BRACKET |
|---|---|



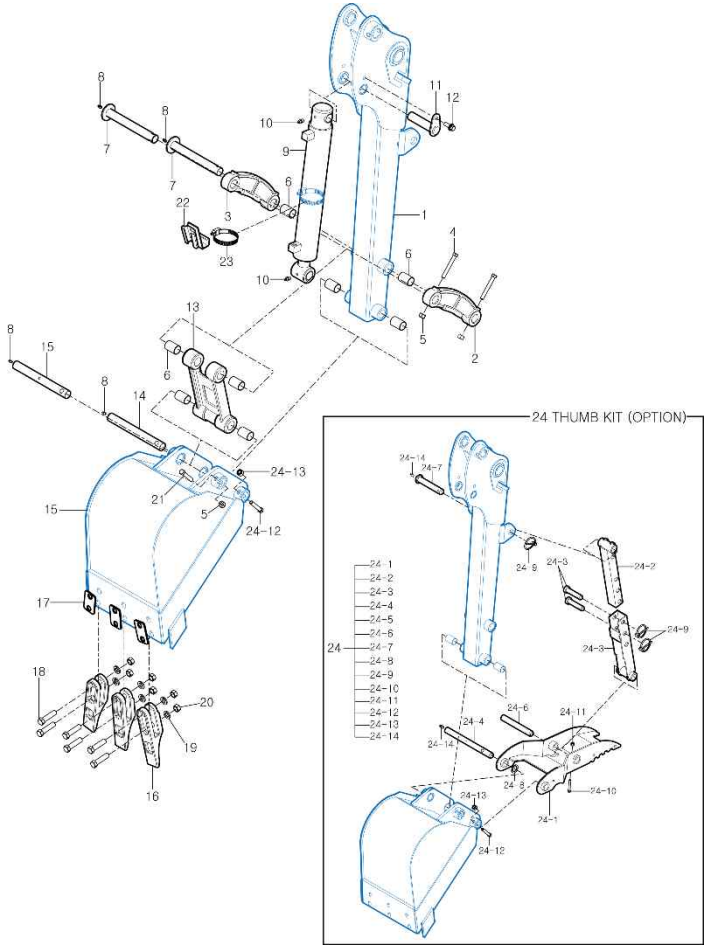
| SWING BRACKET | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-130-1 | SWING BRACKET | | 1 | | |
| 2 | 9020-310-400-0 | CYLINDER ASSY , SWING | | 2 | | |
| 3 | 9020-200-017-1 | COLLAR , SWING CYLINDER | | 2 | | |
| 4 | V761-150-000-0 | NIPPLE , GREASE/A-PT1/8 | | 4 | | |
| 5 | 9020-200-560-0 | PIN COMP | | 2 | | |
| 6 | V218-361-002-0 | BOLT , HEX/SP | M10X20 | 2 | | |
| 7 | 9020-200-002-0 | COLLAR , SWING | | 4 | | |
| 8 | 9020-200-015-0 | DU BUSH | 45X50X35L | 2 | | |
| 9 | 9020-200-621-2 | HINGE PIN , SWING | | 2 | | |
| 10 | V760-150-000-0 | NIPPLE , GREASE/A-M6F | | 3 | | |
| 11 | 9020-200-001-0 | LOCK PIN , SWING | | 1 | | |
| 12 | 9020-200-004-0 | PIN , SWING CYLINDER | | 2 | | |
| 13 | V201-461-008-0 | BOLT , HEX/SP | M10X80 | 2 | | |
| 14 | 8540-200-313-0 | NUT , HEX/NYLON | M10 | 4 | | |
| 15 | V201-461-009-5 | BOLT , HEX | M10X95 | 2 | | |
| 16 | 9020-200-016-0 | DU BUSH | 32X36X40L | 2 | | |

| FIG 007 | BOOM COMP |
|---|---|



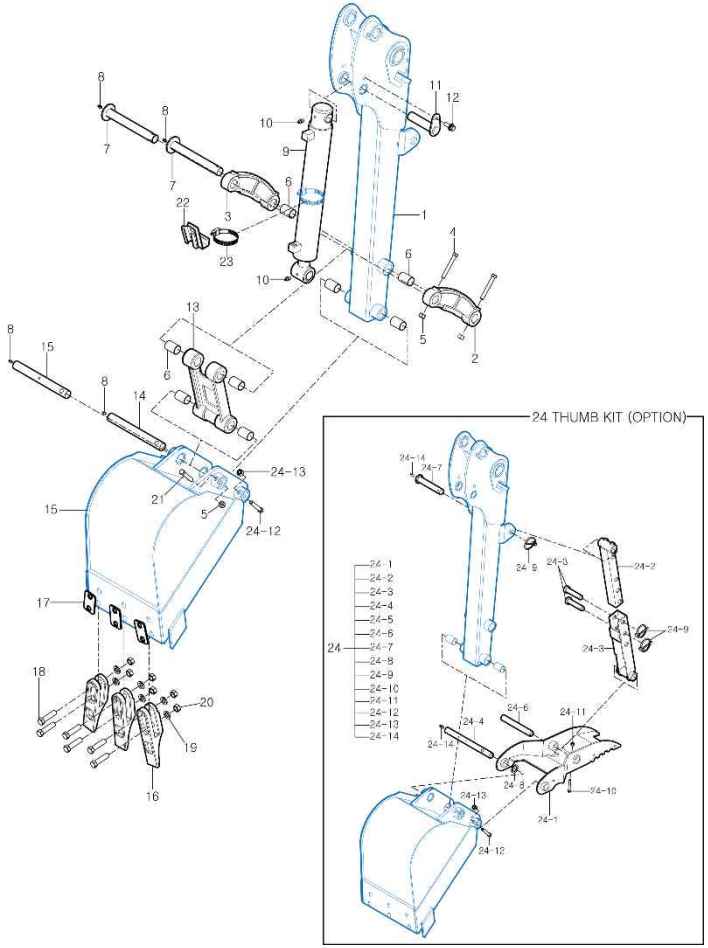
| BOOM COMP | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-200-0 | BOOM COMP | | 1 | | |
| 2 | 9020-310-100-0 | CYLINDER ASSY , BOOM | | 1 | | |
| 3 | 9020-200-003-0 | PIN , STOPPER | | 2 | | |
| 4 | V704-140-040-0 | C-RING , SHAFT | 40 | 4 | | |
| 5 | V201-461-007-0 | BOLT , HEX | M10X70 | 6 | | |
| 6 | 8540-200-313-0 | NUT , HEX/NYLON | M10 | 6 | | |
| 7 | 9020-200-007-1 | PIN A , BOOM CYLINDER | | 1 | | |
| 8 | 9010-200-006-0 | LOCK PIN , BOOM | | 1 | | |
| 9 | 9010-100-501-0 | PIN , LINCH | | 1 | | |
| 10 | 9020-200-005-0 | PIN A , BOOM | | 1 | | |
| 11 | 9020-200-011-0 | PLATE A , HOSE FIX | | 2 | | |
| 12 | 9020-200-012-0 | PLATE B , HOSE FIX | | 1 | | |
| 13 | V218-360-802-5 | BOLT , HEX/SP | M8X25 | 2 | | |
| 14 | 9020-200-008-0 | PIN B , BOOM CYLINDER | | 2 | | |
| 15 | 9020-200-009-1 | PIN C , BOOM | | 1 | | |
| 16 | V760-150-000-0 | NIPPLE , GREASE/A-M6F | | 1 | | |
| 17 | V761-150-000-0 | NIPPLE , GREASE/A-PT1/8 | | 4 | | |
| 18 | 9020-200-013-0 | PIN , DIPPERSTICK CYLINDER | | 1 | | |
| 19 | V218-360-802-5 | BOLT , HEX/SP | M8X25 | 1 | | |
| 20 | V380-260-008-0 | NUT , HEX/FLANGE | M8 | 1 | | |
| 21 | 9020-200-016-0 | DU BUSH | 32X36X40L | 2 | | |
| 22 | 9020-310-200-0 | CYLINDER ASSY , DIPPERSTICK | | 1 | | |

| FIG 008 | DIPPER STICK & BUCKET COMP |
|---|---|



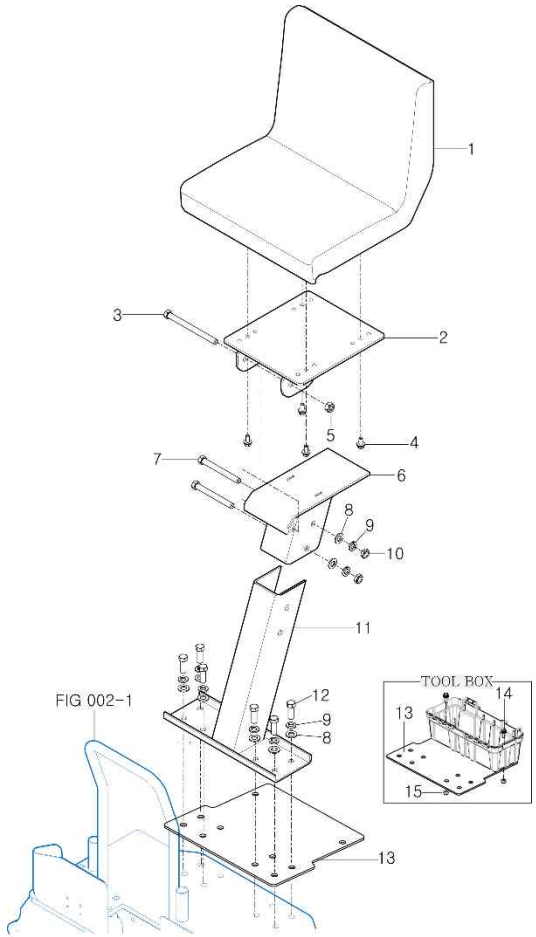
| DIPPER STICK & BUCKET COMP | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-300-1 | DIPPERSTICK COMP | | 1 | | |
| 2 | 9020-200-020-1 | BUCKET LINK/A | | 1 | | |
| 3 | 9020-200-040-1 | BUCKET LINK/C | | 1 | | |
| 4 | V201-361-007-5 | BOLT , HEX | M10X75 | 2 | | |
| 5 | 8540-200-313-0 | NUT , HEX/NYLON | | 4 | | |
| 6 | 8940-100-254-0 | DU BUSH | 25X28X40L | 8 | | |
| 7 | 9010-200-010-3 | PIN COMP/D | | 2 | | |
| 8 | V760-150-000-0 | NIPPLE , GREASE/A-M6F | | 4 | | |
| 9 | 9020-310-300-1 | CYLINDER ASSY , BUCKET | | 1 | | |
| 10 | V761-150-000-0 | NIPPLE , GREASE/A-PT1/8 | | 2 | | |
| 11 | 9020-200-640-0 | PIN COMP , BUCKET CYLINDER | | 1 | | |
| 12 | V218-361-002-0 | BOLT , HEX/SP | M10X20 | 1 | | |
| 13 | 9010-200-030-1 | BUCKET LINK/B | | 1 | | |
| 14 | 9020-200-014-1 | PIN , BUCKET | | 2 | | |
| 15 | 9020-200-400-1 | BUCKET COMP(No Tooth) | 12” (Standard) | 1 | | |
| | 9020-230-430-1 | BUCKET COMP(No Tooth) | 9” (Option) | 1 | | |
| | 9020-230-410-1 | BUCKET COMP(No Tooth) | 16” (Option) | 1 | | |
| | 9020-230-420-1 | BUCKET COMP(No Tooth) | 18” (Option) | 1 | | |
| 15-1 | 9020-210-400-1 | BUCKET COMP(With Tooth) | 12” (Standard) | 1 | | |
| | 9020-220-430-1 | BUCKET COMP(With Tooth) | 9” (Option) | 1 | | |
| | 9020-220-410-1 | BUCKET COMP(With Tooth) | 16” (Option) | 1 | | |
| | 9020-220-420-1 | BUCKET COMP(With Tooth) | 18” (Option) | 1 | | |

| FIG 008 | DIPPER STICK & BUCKET COMP |
|---|---|



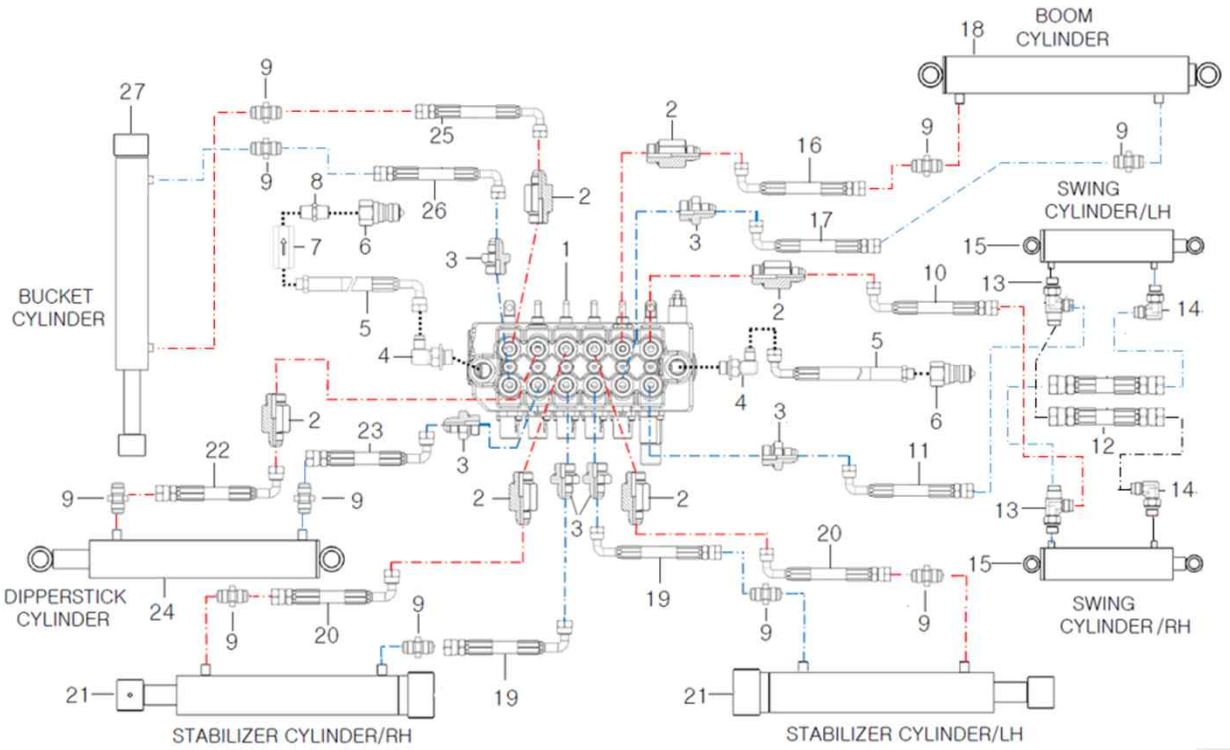
| DIPPER STICK & BUCKET COMP | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 16 | 8510-510-001-1 | TOOTH | | 3 | | |
| 17 | 9010-200-430-2 | SPACE , TOOTH | | 3 | | |
| 18 | V200-361-405-5 | BOLT , HEX | M14X55 | 6 | | |
| 19 | V401-160-014-0 | WASHER , SPRING | M14 | 6 | | |
| 20 | V304-260-014-0 | NUT , HEX | M14 | 6 | | |
| 21 | V201-361-006-0 | BOLT , HEX | M10X60 | 2 | | |
| 22 | 9010-200-460-0 | BRACKET COMP , SMV | | 1 | | |
| 23 | 1488-505-015-0 | BAND CLAMP | | 1 | | |
| 24 | TK2XA-100000 | THUMB KIT | | 1 | | |
| 24-1 | TK2XA-110000 | MAIN COMP A | | 1 | | |
| 24-2 | TK2XA-120000 | MAIN COMP B | | 1 | | |
| 24-3 | TK2XA-130000 | MAIN COMP C | | 1 | | |
| 24-4 | T66A-140031 | PIN D | | 1 | | |
| 24-5 | T50A-140000 | PIN A | | 2 | | |
| 24-6 | T50A-140020 | PIN C | | 1 | | |
| 24-7 | T85A-140101 | PIN COMP D | | 1 | | |
| 24-8 | TK2XA-140050 | SPACE B | | 1 | | |
| 24-9 | 1461-306000 | RING PIN | 6 | 3 | | |
| 24-10 | 0321-008050 | BOLT , HEX | M8X55 | 1 | | |
| 24-11 | 0410-008000 | NUT , HEX/NYLON | M8 | 1 | | |
| 24-12 | 0322-010055 | BOLT , HEX | M10X55 | 1 | | |
| 24-13 | 0410-010000 | NUT , HEX/NYLON | M10 | 1 | | |
| 24-14 | 0231-100000 | NIPPLE , GREASE/A-PT1/8 | | 2 | | |

| FIG 009 | SEAT ASSY |
|---|---|



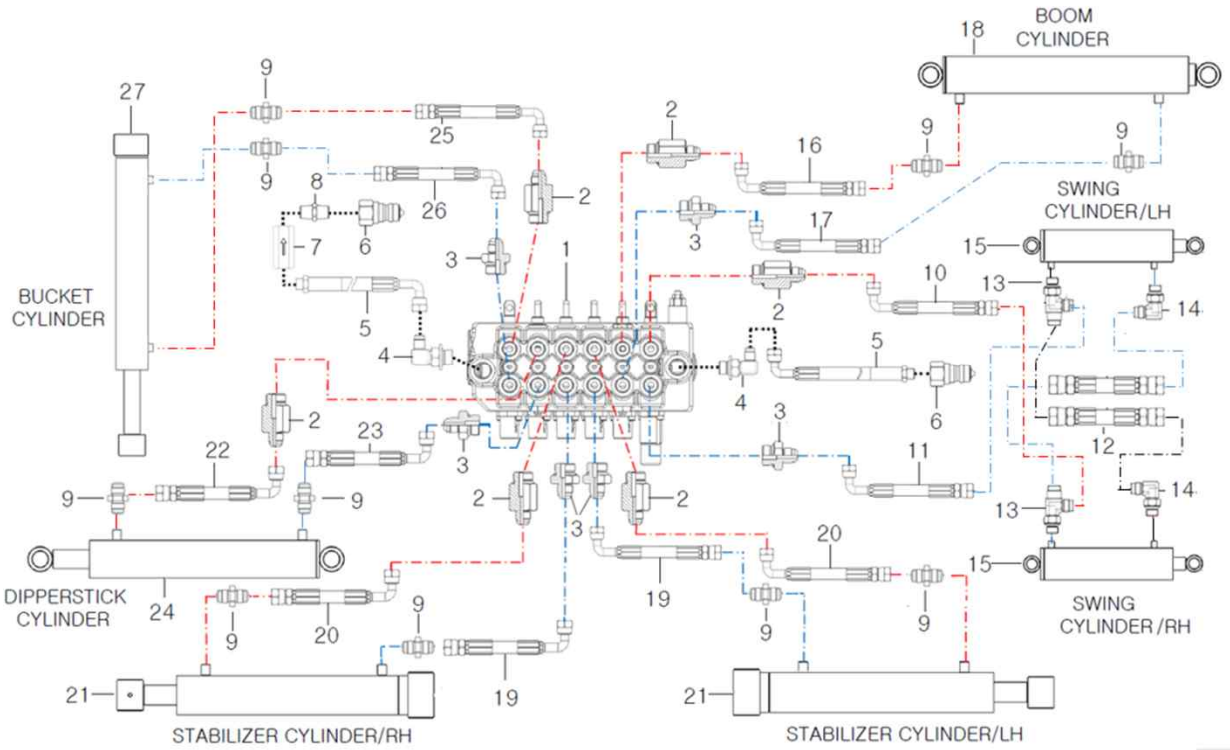
| SEAT ASSY | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-200-610-0 | SEAT ASSY | | 1 | | |
| 2 | 9020-200-430-0 | BRACKET COMP , SEAT UNDER | | 1 | | |
| 3 | V201-461-216-0 | BOLT , HEX | M12X160 | 1 | | |
| 4 | V218-360-802-0 | BOLT , HEX/SP | M8X20 | 4 | | |
| 5 | 8070-200-017-0 | NUT , HEX/NYLON | M12 | 1 | | |
| 6 | 9020-200-420-1 | BRACKET COMP , SEAT UPPER | | 1 | | |
| 7 | V201-461-211-0 | BOLT , HEX | M12X110 | 2 | | |
| 8 | V411-160-012-0 | WASHER , PLAIN | M12 | 8 | | |
| 9 | V401-160-012-0 | WASHER , SPRING | M12 | 8 | | |
| 10 | V304-360-012-0 | NUT , HEX | M12 | 2 | | |
| 11 | 9020-200-410-0 | BRACKET COMP , SEAT BASE | | 1 | | |
| 12 | V201-461-204-0 | BOLT , HEX | M12X40 | 6 | | |
| 13 | 9020-701-120-0 | BRACKET COMP , TOOL BOX | | 1 | | |
| 14 | V218-360-802-5 | BOLT , HEX/SP | M8X25(SP) | 2 | | |
| 15 | V380-260-008-0 | NUT , HEX/FLANGE | M8 | 2 | | |

| FIG 010 | HOSE FITTING |
|---|---|



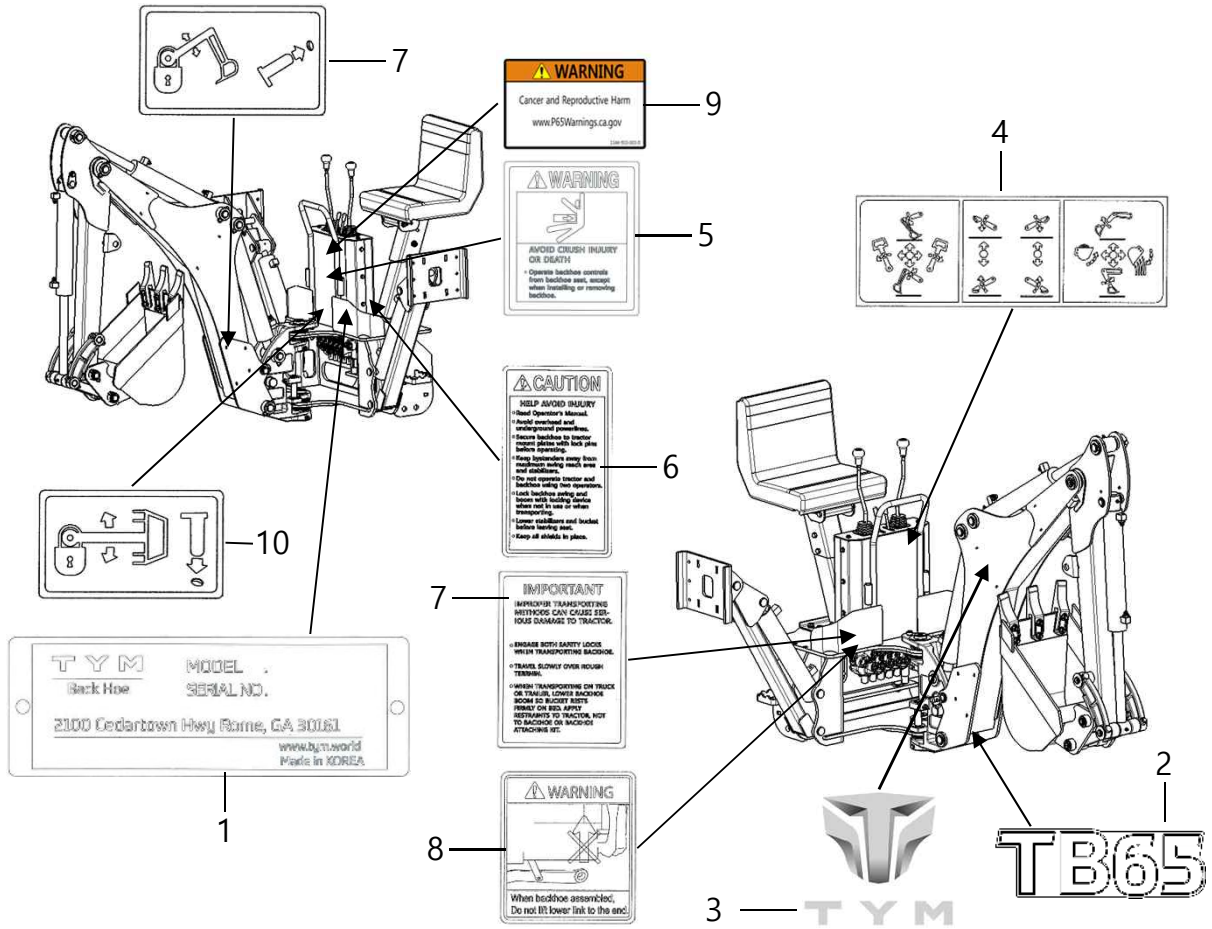
| HOSE FITTING | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 8510-510-600-0 | VALVE , MAIN | | 1 | | |
| 2 | 8510-510-004-0 | UNION/LONG | UNF3/4 - UNF 9/16 | 6 | | |
| 3 | 8510-510-005-0 | UNION/SHORT | UNF3/4 - UNF 9/16 | 6 | | |
| 4 | 9020-510-001-0 | ELBOW (UNF 7/8, PF 1/2) | UNF 7/8 – PF 1/2 | 2 | | |
| 5 | 9020-510-211-0 | HYD HOSE , P/T PORT | PF1/2 – PT1/2 | 2 | | |
| 6 | V774-001-080-1 | NIPPLE | PT1/2 | 2 | | |
| 7 | 9020-510-212-0 | CHECK VALVE | | 1 | | |
| 8 | 9020-510-213-0 | UNION | PT1/2 | 1 | | |
| 9 | 9010-510-440-0 | ADAPTER | | 10 | | |
| 10 | 9020-510-352-0 | HYD HOSE , SWING/B | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 11 | 9020-510-351-0 | HYD HOSE , SWING/B | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 12 | 9020-510-353-0 | HYD HOSE , SWING/C | UNF 9/16 - UNF 9/16 | 2 | | |
| 13 | 9020-510-002-0 | ADAPTER/T | | 2 | | |
| 14 | 9010-510-450-0 | ADAPTER , PF1/4 | UNF 9/16 – PF 1/4 | 2 | | |
| 15 | 9020-310-400-0 | CYLINDER ASSY , SWING | | 2 | | |
| 16 | 9020-510-311-1 | HYD HOSE , BOOM/TUBE | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 17 | 9020-510-312-0 | HYD HOSE , BOOM/ROD | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 18 | 9020-310-100-0 | CYLINDER ASSY , BOOM | | 1 | | |
| 19 | 9020-510-341-0 | HYD HOSE , STABILLIZER/TUBE | UNF 9/16 90° - UNF 9/16 | 2 | | |
| 20 | 9020-510-342-0 | HYD HOSE , STABILLIZER/ROD | UNF 9/16 90° - UNF 9/16 | 2 | | |
| 21 | 9020-310-500-0 | CYLINDER ASSY , STABILLIZER | | 2 | | |

| FIG 010 | HOSE FITTING |
|---|---|



| HOSE FITTING | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 22 | 9020-510-322-0 | HYD HOSE , DIP/ROD | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 23 | 9020-510-321-0 | HYD HOSE , DIP/TUBE | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 24 | 9020-310-200-0 | CYLINDER ASSY , DIPPERSTICK | | 1 | | |
| 25 | 9020-510-332-0 | HYD HOSE , BUCKET/ROD | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 26 | 9020-510-331-0 | HYD HOSE , BUCKET/TUBE | UNF 9/16 90° - UNF 9/16 | 1 | | |
| 27 | 9020-310-300-1 | CYLINDER ASSY , BUCKET | | 1 | | |

| FIG 011 | LABEL GROUP |
|---|---|



| LEVER | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9010-501-007-2 | PLATE, NAME | | 1 | | |
| 2 | 9020-500-008-0 | LABEL , TB65 | | 2 | | |
| 3 | 8513-500-003-0 | LABEL, TYM LOGO | | 2 | | |
| 4 | 9010-500-005-0 | LABEL, OPERATION | | 1 | | |
| 5 | 9010-500-003-0 | LABEL, WARNING A | | 1 | | |
| 6 | 9010-500-001-0 | LABEL, IMPORTANT | | 1 | | |
| 7 | 9010-500-002-0 | LABEL, CAUTION | | 1 | | |
| 8 | 9010-500-004-0 | LABEL, WARNING B | | 1 | | |
| 9 | 1144-910-003-0 | LABEL, Warning/California P65 B | | 1 | | |
| 10 | 9010-500-007-0 | LABEL, FIX(BOOM) | | 1 | | |
| 11 | 9010-500-006-0 | LABEL, FIX(SWING) | | 1 | | |
| | | | | | | |

| FIG 012 | ACCESSORY |
|---|---|

TOOL BOX PARTS

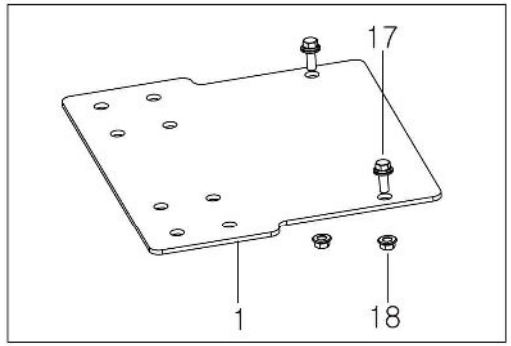



FIG 009 SEAT ASSY

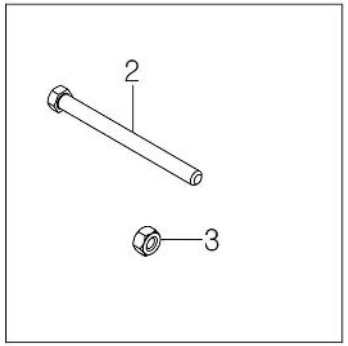
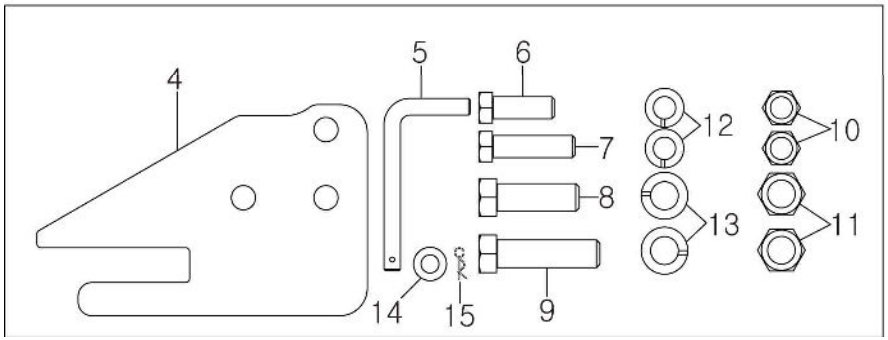
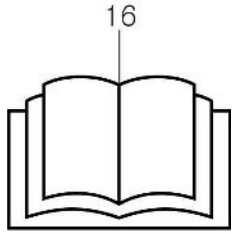
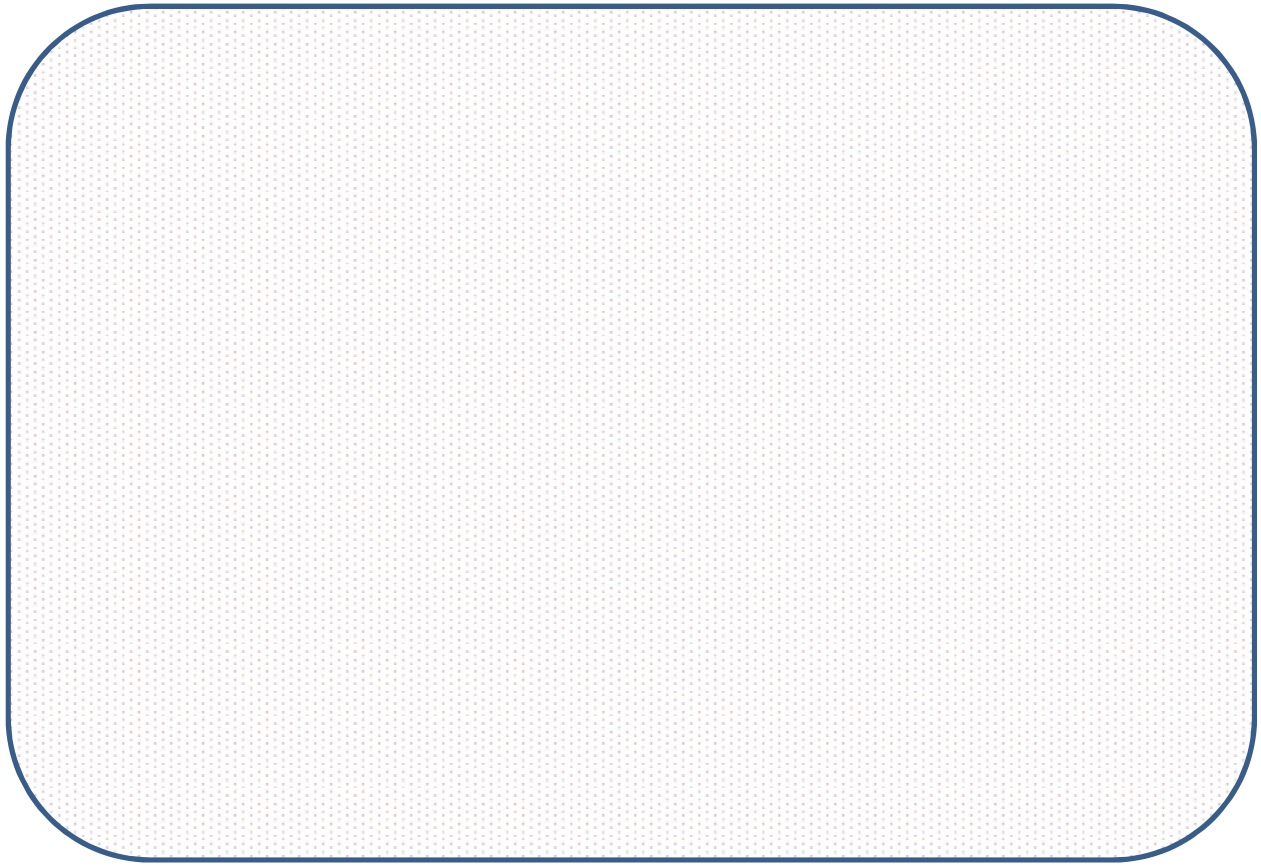



FIG 001 SUB FRAME



| ACCESSORY | | | SPEC. | Q'TY | EFFECTIVE DATE | REMARKS |
|---|---|---|---|---|---|---|
| No. | Part No. | DESCRIPTION | | | | |
| 1 | 9020-701-120-0 | BRACKET COMP , TOOL BOX | | 1 | | FIG009-13 |
| 2 | V201-461-216-0 | BOLT , HEX | M12X160 | 1 | | FIG009-03 |
| 3 | 8070-200-017-0 | NUT , HEX/NYLON | M12 | 1 | | FIG009-05 |
| 4 | 9020-400-200-1 | BRACKET , HANGER | | 2 | | FIG001-02 |
| 5 | 9020-400-210-0 | PIN , SUB FRAME | | 2 | | FIG001-08 |
| 6 | V201-461-604-5 | BOLT , HEX | M16X45 | 2 | | FIG001-04 |
| 7 | V201-461-606-0 | BOLT , HEX | M16X60 | 4 | | FIG001-05 |
| 8 | V203-462-006-0 | BOLT , HEX/FINE | M20X60XP1.5 | 6 | | FIG001-12 |
| 9 | V203-462-007-5 | BOLT , HEX/FINE | M20X75XP1.5 | 2 | | FIG001-11 |
| 10 | V301-360-016-0 | NUT , HEX | M16 | 6 | | FIG001-07 |
| 11 | V331-360-020-0 | NUT , HEX/FINE | M20XP1.5 | 8 | | FIG001-14 |
| 12 | V401-160-016-0 | WASHER , SPRING | M16 | 6 | | FIG001-06 |
| 13 | V401-160-020-0 | WASHER , SPRING | M20 | 8 | | FIG001-13 |
| 14 | V411-160-012-0 | WASHER , PLAIN | M12 | 2 | | FIG001-09 |
| 15 | V560-160-001-2 | PIN , SNAP | 12 | 2 | | FIG001-10 |
| 16 | 9020-500-009-0 | OPERATOR ' S MANUAL | | 1 | | |
| 17 | V218-360-802-5 | BOLT , HEX/SP | M8X25(SP) | 2 | | FIG009-14 |
| 18 | V380-260-008-0 | NUT , HEX/FLANGE | M8 | 2 | | FIG009-15 |

Memo.