

MODEL TMG-TBH84**3-Point Swing Backhoe Attachment**

- Please read and understand the product manual completely before assembly
- Check against the parts list to make sure all parts are received
- Wear proper safety goggles or other protective gears while in assembly
- Do not return the product to dealer. They are not equipped to handle your requests.

Missing parts or have questions on assembly?

Please call: 1-877-761-2819 or email: cs@tmgindustrial.com

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Important Safety Information

Safety at All Times

Careful operation is your best assurance against an accident. All operators, no matter how much experience they may have, should carefully read this manual and other related manuals, or have the manuals read to them, before operating the power machine and this implement.

- Thoroughly read and understand the “Safety Label” section. Read all instructions noted on them.
- Do not operate the equipment while under the influence of drugs or alcohol as they impair the ability to safely and properly operate the equipment.
- The operator should be familiar with all functions of the tractor and attached implement, and be able to handle emergencies quickly.
- Make sure all guards and shields appropriate for the operation are in place and secured before operating the implement.
- Keep all bystanders away from equipment and work area.
- Start tractor from the driver’s seat with hydraulic controls in neutral.
- Operate tractor and controls from the driver’s seat only.
- Never dismount from a moving tractor or leave tractor unattended with engine running.
- Do not allow anyone to stand between tractor and implement while backing up to implement.
- Keep hands, feet, and clothing away from power-driven parts.
- While transporting and operating equipment, watch out for objects overhead and along side such as fences, trees, buildings, wires, etc.
- Do not turn tractor so tight as to cause hitched implement to ride up on the tractor’s rear wheel.
- Store implement in a safe and secure area where children normally do not play. When needed, secure implement against falling with support blocks.

Look for the Safety Alert Symbol

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

Be Aware of Signal Words

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



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



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



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

Be Aware of Special Notices

Special notices are intended to point out important and helpful information that should be followed. They are usually placed inside a box. They are:

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

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

Safety Precautions for Children

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

- Never assume children will remain where you last saw them.
- Keep children out of the work area and under the watchful eye of a responsible adult.
- Be alert and shut the implement and tractor down if children enter the work area.
- Never carry children on the tractor or implement. There is not a safe place for them to ride. They may fall off and be run



over or interfere with the control of the power machine.

- Never allow children to operate the power machine, even under adult supervision.
- Never allow children to play on the power machine or implement.
- Use extra caution when backing up. Before the tractor starts to move, look down and behind to make sure the area is clear.

Tractor Shutdown & Storage

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

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

Transport Safely

- Comply with federal, state, and local laws.
- Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with tie downs and chains.
- Sudden braking can cause a towed trailer to swerve unexpectedly. Reduce speed if towed trailer is not equipped with brakes.
- Avoid contact with any overhead utility lines or electrically charged conductors.
- Always drive with load on end of loader arms low to the ground.
- Always drive straight up and down steep inclines with heavy end of skid steer on the "uphill" side.
- Engage park brake when stopped on an incline.
- Maximum transport speed for an attached equipment is 20 mph (32 km/h). DO NOT EXCEED. Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrains require a slower speed.
- As a guideline, use the following maximum speed weight ratios for attached equipment:
20 mph (32 km/h) when weight of attached equipment is less than or equal to the weight of machine towing the equipment.
10 mph (16 km/h) when weight of attached equipment exceeds weight of machine towing equipment but not more than double the weight.
- **IMPORTANT:** Do not tow a load that is more than double the weight of the vehicle towing the load.

Practice Safe Maintenance

- Understand procedure before doing work. Refer to the Operator's Manual for additional information.
- Work on a level surface in a clean dry area that is well-lit.
- Lower implement to the ground and follow all shutdown procedures before leaving the operator's seat to perform maintenance.
- Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- Use properly grounded electrical outlets and tools.
- Use correct tools and equipment for the job that are in good condition.
- Allow equipment to cool before working on it.
- Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement. ⚠
Inspect all parts. Make certain parts are in good condition & installed properly.
- Replace parts on this implement with genuine TMG parts only. Do not alter this implement in a way which will adversely



affect its performance.

- Do not grease or oil implement while it is in operation. ○ Remove buildup of grease, oil, or debris.
- Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- Remove all tools and unused parts from equipment before operation.
- Do not weld or torch on galvanized metal as it will release toxic fumes.

Prepare for Emergencies

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

Wear Personal Protective Equipment (PPE)

- Wear protective clothing and equipment appropriate for the job such as safety shoes, safety glasses, hard hat, dust mask, and ear plugs.
- Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.

Avoid High Pressure Fluids

- Escaping fluid under pressure will penetrate the skin or eyes causing serious injury.
- Relieve all residual pressure before disconnecting hydraulic lines or performing work on the hydraulic system.
- Make sure all hydraulic fluid connections are properly tightened/torqued and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- DO NOT DELAY. If an accident occurs, seek immediate emergency medical care or gangrene may result.

Use Safety Lights and Devices

- A Slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night. Use the Slow Moving Vehicle (SMV) sign when on public roads.
- Flashing warning lights and turn signals are recommended whenever driving on public roads.

Use Seat Belt and ROPS

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

Keep Riders Off Machinery

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

Avoid crystalline Silica (quartz) Dust

Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis).

There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.

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

Handle Chemicals Properly

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

Safety Labels

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

1. Keep all safety labels clean and legible.
2. Refer to this section for proper label placement. Replace all damaged or missing labels.
3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by TMG. When ordering new components make sure the correct safety labels are included in the request.
4. Refer to this section for proper label placement. To install new labels:
 - a. Clean surface area where label is to be placed.
 - b. Spray soapy water onto the cleaned area.
 - c. Peel backing from label and press label firmly onto the surface.
 - d. Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.



WARNING

TO PREVENT BODILY INJURY

- Read operating instructions before use. Follow all safety precautions.
- Inspect the backhoe daily for loosened, bent or broken parts.
- Before transporting, attach slow moving vehicle sign and engage boom and swing locks.
- When backhoe is in transport position, a minimum of 25% of tractor and equipment weight must be on tractor front wheels.
- Enter and exit operator's seat only between stabilizers and tires.
- Avoid digging near stabilizers to keep them on solid ground.
- Control backhoe from operator's seat only.
- Keep all guards in place.
- When operating backhoe, keep bystanders away from vicinity of stabilizers and boom work area.
- Keep others away from backhoe and tractor while working.
- Before digging, make sure that there are no underground obstacles such as cables or pipelines. Watch for overhead hazards such as wires.
- Do not repair or service the backhoe unless it is mounted and securely supported by the tractor. Loss of oil or removal of parts could cause the backhoe to collapse.
- Do not use the backhoe for lifting, transporting or providing a work platform for personnel.
- Before leaving the backhoe unattended, raise boom and install transport locks. Fold in the arm and bucket. Turn off engine and remove key.

TMG-ATTA-2002

WARNING

TO PREVENT BODILY INJURY

1. Swing must be locked in center position when detaching backhoe from tractor
2. When attaching/detaching backhoe, stand between stabilizer and rear tire

TMG-ATTA-2000

Warning: To prevent bodily injury



WARNING

PREVENT INJURIES CAUSED BY INSTABILITY

Ensure the tractor front weight is sufficient.

Digging forces can lift and turn tractor over. Improve balance with stabilizers by removing weight from tractor rear tires without lifting them off the ground.

TMG-ATTA-2003

Warning: Prevent injuries caused by instability

WARNING

Adjust tractor speed accordingly to maintain precision of control.

TMG-ATTA-2004

Warning: Adjust tractor speed accordingly to maintain precision of control

WARNING

CRUSH HAZARD

STAY CLEAR OF THIS AREA DURING OPERATION

TMG-GNRL-0000

WARNING

CRUSH HAZARD

STAY CLEAR OF THIS AREA DURING OPERATION

TMG-GNRL-0005

Warning: Crush Hazard

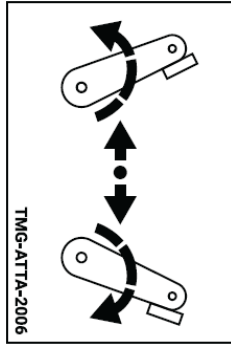
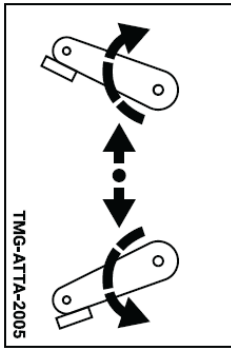
CAUTION

GREASE IT!

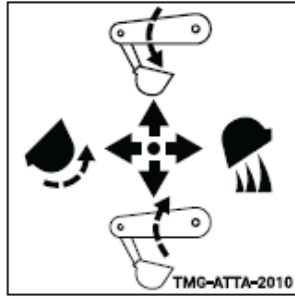
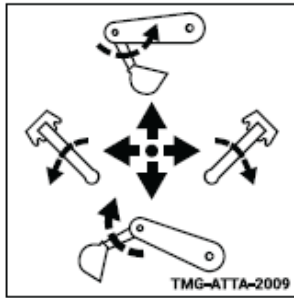
To avoid damage to the backhoe, lubricate the points indicated in operating manual prior to operation.

TMG-ATTA-2012

Caution: Grease all the points before operating

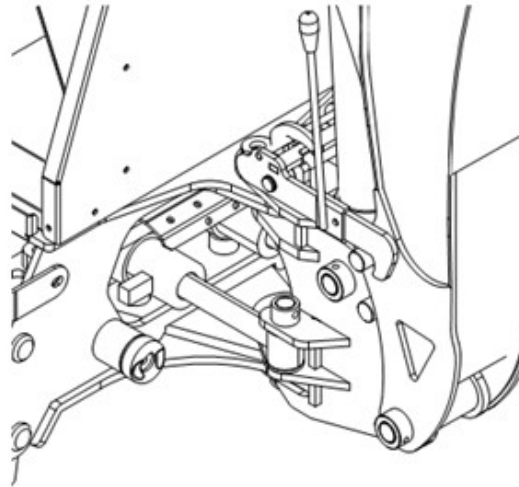
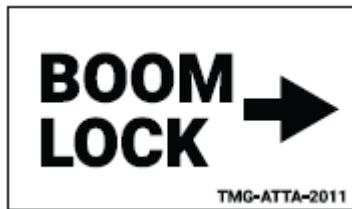


Stabilizers controls



Crowd and swing controls

Boom and bucket controls



Boom Lock: 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.

BE SURE remove the lock pin before you start operating the backhoe!

Introduction

We congratulate you on choosing this high quality hydraulic backhoe! The purpose of this instruction manual is to help you maintain and use your backhoe. Read the instruction manual carefully. It contains information and guidance that will help you achieve years of reliable service and performance. The backhoe has been designed to require only little maintenance (cleaning and lubricating). Some of the instructions are general due to unknown and varying conditions. If you have any doubt or problems, please contact your dealer or the importer. We wish you safe and pleasant work with this tool!

Attaching and using the backhoe will require some previous experience in tractor operation. These instructions on the operation of the backhoe are important to read even if you are experienced operator. Make sure no one operates the backhoe without receiving a proper training in the use of the equipment and they will read the instruction manual and safety instructions before use. Keep these instructions safe the whole lifetime of the equipment. Lost instruction manual will be replaced by your dealer. Remember to pass this instruction manual to any new owner of the equipment.

Application

The backhoe is designed and built for farms, drainage ditches, nurseries, golf courses, utilities, and cemeteries. An unobstructed view of the work area, comfortable positioning of the controls and walk through platform allow for hours of fatigue free work. The backhoe is attached to the tractor with 3-point hitch. The backhoe is suitable for contracting work; the spill can be loaded on a trailer or platform. The backhoe cannot be used for lifting as it may tip over.

Attaching the backhoe is fast and easy. The backhoe is attached to the tractor using 3-point connection. The control platform of the backhoe sits on top of the tractor draw hook and control levers are used from the backhoe control platform. Backhoe turns slowly and steadily 180 degrees to each side. Two hydraulic stabilizers come as standard as well as 30 cm wide bucket.

Terminology

“Right” or “Left” as used in this manual is determined by facing the direction the machine will operate while in use unless otherwise stated.

Owner Assistance

The Warranty Registration card should be filled out by the dealer at the time of purchase. This information is necessary to provide you with quality customer service. If customer service or repair parts are required contact a dealer. A dealer has trained personnel, repair parts and equipment needed to service the machine. The parts on your machine have been specially designed and should only be replaced with genuine parts.

Serial Number Plate

For prompt service always use the serial number and model number when ordering parts from your dealer. Be sure to include your serial and model numbers in correspondence also.

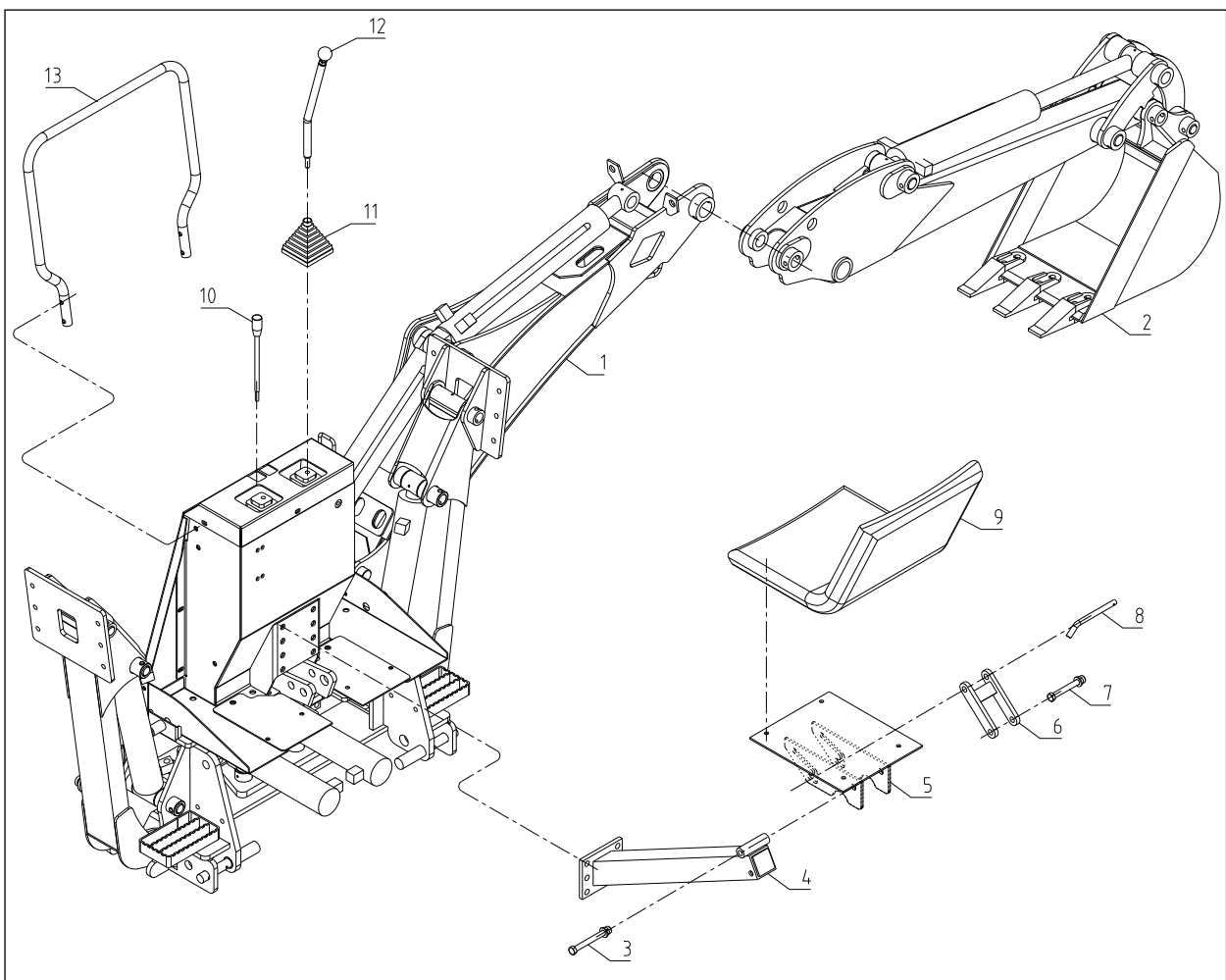


Assembly and Hook-UP

Backhoe Assembly

1. Remove all loose parts or packaging from the crate, check goods without damaged and omission.
2. Check the packing list as below,

Part No.	Ref. No.	Parts Description	Qty
1	BK215.01	Frame and Boom Assembly	1
2	BK215.02	Dipperstick and Bucket Assembly	1
3	GB/T5872-2000	Bolt-M12x115	1
4	BKN215.013	Support Seat	1
5	BK215.016	Seat Plate	1
6	BKN215.015	Link Weldment	1
7	GB/T5872-2000	Bolt-M12x100	1
8	BK215.106	Pin,φ12	1
9	BK215.033	Seat	1
10	BK215.401	Lever stick	2
11	BK215.409	Rubber Cover	2
12	BK215.040	Hand Lever	2
13	BK215.107	Guide Bar	1



3. Assembly the part 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 to the part 1(Frame and Boom Assembly), and then assemble the part 2 to part 1, you will get the backhoe assembled.

Tractor Preparation

Tractor Requirements

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used.

Hitch Category-----3-Point Cat. I & II

Power Take-Off Speed-----540 rpm

Horsepower Requirements-----40-100 hp

Rear Counterweight

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

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.

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.

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.

Wheel Tread Settings

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

Backhoe Mounting

The following instructions will help you mount the backhoe to the tractor 3-point hitch. Read all safety instructions, decals and operating instructions before operation.

Mounting Instructions

1. Reverse the backhoe to the tractor.
2. Remove the top link from the tractor.
3. If the tractor is equipped with draft control, render it inoperable. If this is not possible, adjust the draft lever to its heaviest load position.
4. Attach the 3-point hitch to the tractor using the cap screws from the single and double link, and remove the double link. Allow the hitch lock out arms to drop.
5. Check to be sure that the single link is installed onto the backhoe with pin, thrust washers, and snap rings.
6. Install the center double link onto the tractor top link location using the existing high strength pin supplied by your tractor manufacturer.
7. Connect hoses to the 180°bulkhead connectors on the console that are coming from the backhoe valve.(Left connector goes to backhoe inline filter and the right connector comes from backhoe shut-off valve). Install the connectors (from your dealer) to the hoses. Connect the male connector to the hose coming from the right side shut-off valve and the female connector to the hose coming from the left side inline filter.
8. Following the proper operating procedures listed in your tractor operator's manual, slowly back the tractor up to the backhoe. (Backhoe the tractor only close enough to connect the hydraulic system.)



WARNING!

Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks. 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.

9. Hook up the hydraulic system to the tractor with the hydraulic pressure going to the backhoe inline filter and coming from the backhoe check valve and going to the tractor.

IMPORTANT

We recommend that you involve your dealer for the initial hydraulic hook-up. Install the correct hydraulic couplers that fit your tractor onto the backhoe pressure and return hoses.

10. Start the tractor engine and operate at low RPM. Activate the tractor valve to provide hydraulic power to the backhoe. (Check for any hydraulic leaks.)

ATTENTION!

Until the backhoe is securely mounting onto the tractor, keep all people clear of your work area and make sure that no portion of the operator's body is beneath any part of the backhoe.

11. Raise the backhoe using the stabilizer and boom control levers until the swing is approximately 20 cm above ground level. Make sure the backhoe is vertical (perpendicular to the ground).
12. Back the tractor until the lower link ball joints are in line with the mounting holes in the backhoe mainframe.

NOTE

While backing tractor be aware of the location of the hydraulic hoses and top links.

13. Install the hitch pins connecting the lower links to the backhoe mainframe. Secure in place using the two pins provided.
14. Position the single top link in-between the double link, Adjust the backhoe height until at least one hole lines up between the two links. Keep backhoe vertical while adjusting the height. Install the cap screw, two hard flat washers (both sides) and lock nut provided.
15. If the hitch lock-out arms were not installed at the factory, position them to the inside of the mounting holes, and bolt into place using the two cap screws, hard flat washers (both sides), and lock nuts provided. Position the hitch lock-out arms on each side of the top links, align one of the holes (as far away from the cap screw installed in step 16 as possible), and install the cap screw, two hard flat washers (both sides), and lock nut provided.

IMPORTANT

It is important to pick a set of holes that place the backhoe in a vertical position in relationship to the ground with about 20 cm of ground clearance at the boom pivot pin.

16. Torque all mounting bolts. Refer to the torque chart of this manual.
17. Check hose routing to ensure that they are kept away from the operator during backhoe operation. Do not let them touch the ground. Secure all hydraulic lines in place for operator safety and to prevent them from being damaged.
18. Double check clearance between the backhoe operator and any solid portion of the tractor, such as the cab or ROPS. If 20 cm of head clearance is not available, DO NOT USE THIS BACKHOE ON THIS TRACTOR. Failure to observe these instructions may cause severe personal injury or death.

ATTENTION!

Do not attempt to modify the mounting in any way. Incorrect mounting or modifying of the backhoe 3-point mounting could allow the backhoe to raise up during use, resulting in injury or death.

IMPORTANT

DO NOT attempt to raise the backhoe with the 3-point hitch. The backhoe center links along with the hitch lock out arms make the backhoe a solid mount that is immovable. Any attempt to raise the backhoe with the 3-point hitch will cause the hydraulic lift oil to go over relief and eventually damage the hydraulic system due to excessive heat build-up.

Attaching Backhoe to Tractor Hydraulics

Attach male disconnects to quick disconnects on tractor. Make sure there is ample room to operate all functions of the backhoe safely. Operate backhoe slowly to fill all cylinders, hoses and valves with oil.

Should the backhoe fail to operate after connecting to tractors quick disconnect, reverse coupling.

ATTENTION

Tractor hydraulic oil supply must be maintained at proper level during initial operation. Do not overfill. Final check should be taken with backhoe in transport position.

Seat Adjustment

The backhoe seat can be adjusted to facilitate operator comfort and head clearance. There is a lever under the seat for sliding forward/backward. The seat can be adjusted on the base up/down and the base can be moved forward/backward. Before mounting the backhoe on to your loader/tractor move the seat forward and position it into the lowest position. After installation the seat may be moved back if clearance is not a factor.

Mounting Kit

The 3-point hitch adapter kit will adapt the backhoe to any three point hitch tractor. The seller makes no claims, implied or otherwise, as to the compatibility or structural integrity of any tractors when backhoe is installed with 3-point hitch. Since many models of tractors have standard category hitches and backhoes have standard category attaching points, it is possible to mount tractor/backhoe combinations that are not compatible. Dealers and/or owner must determine that compatibility between the tractor and backhoe exists.

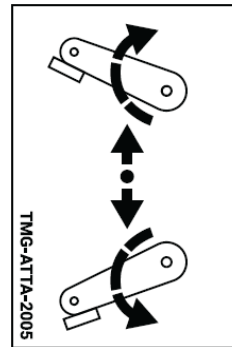
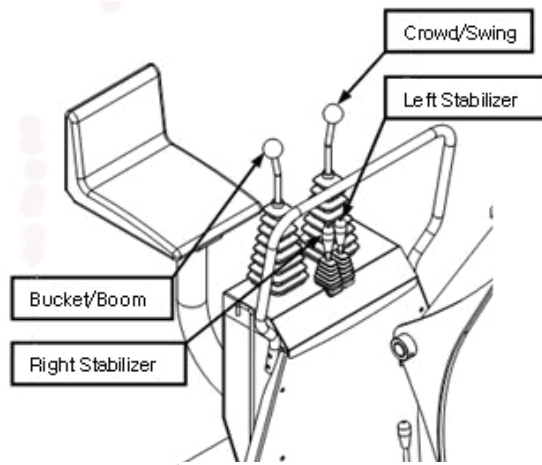
Compatibility includes, but is not limited to items such as operator clearance, hitch component strength, tractor case strength and hydraulics. Suggestions given as to hitch categories and horsepower ranges used with various models of backhoes are suggestions only and not recommendations as to suitability of any combination of tractors and backhoes.

Backhoe Operation

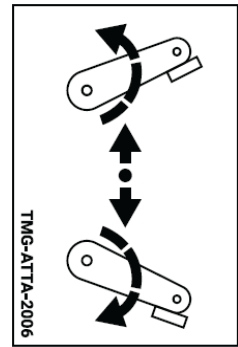
Levers

The backhoe is equipped with two hydraulic stabilizers that keep the backhoe in place and stabilize digging especially while dumping to the side. Digging is more effective with stabilizers and should be used during digging. Stabilizers extend wider than tractors rear wheels giving balance to digging.

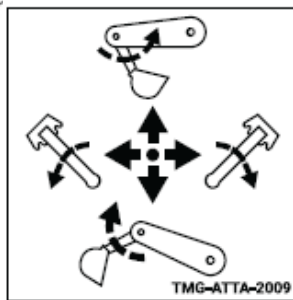
Your backhoe is operated by four different control levers. Two are for stabilizer operation and the other two operate the swing, boom, dipperstick, and the bucket functions. The information contained below will help you become familiar with the operation of each control lever. Read the safety precautions of this manual before attempting to use the backhoe. Remember, right and left when referred to on this page are determined by the operator's position seated at the backhoe controls facing the bucket.



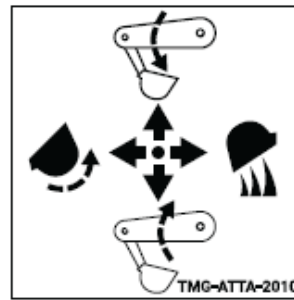
Left Stabilizer Decal



Right Stabilizer Decal



Crowd and Swing Controls Decal



Boom and Bucket Controls Decal

Do Not dig near the stabilizers to prevent an accident. Do Not lift the tractor tires with the stabilizers. Ensure that the stabilizers are set on firm ground to support tractor and backhoe.

Stabilizer Levers

Moving the stabilizer lever(s) forward will bring the backhoe stabilizer(s) "down". Moving the stabilizer lever(s) backward will raise the backhoe stabilizer(s) "up". Both stabilizers are required to be down for proper stability of the backhoe when in operation.

Boom/Swing Lever (Left Hand Lever)

Pushing the boom/swing lever forward will "lower" the boom dipstick and bucket. Full forward is the "float" position. Pulling the lever backward will "lift" the boom, dipperstick, and bucket. Pushing the boom/swing lever to the left will swing the boom and bucket to the "left". Pushing the boom/swing lever to the right will swing the boom and bucket to the "right".

Dipperstick/Bucket Lever (Right Hand Lever)

Pushing the dipperstick/bucket lever forward will move the dipperstick "out" or away from the operator. Pulling the lever backward will mover (crowd) the dipperstick "in" or toward the operator. Pushing the dipperstick/bucket lever to the left will "fill" or curl the bucket (move inward). Pushing the lever to the right will "dump" the bucket (move outward).

Bucket and Boom Levers

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

Excavation

When operating the backhoe, smoothness of technique should be strived for at all times. Smoothness will come with experience and practice at feathering the controls. Establish a flowing digging cycle to increase operator efficiency and save unnecessary wear on the machine. Observe the following points to obtain the best results and to fully utilize the digging force of the backhoe.



Check the prospective digging area for hidden utility lines before operating the backhoe or when in doubt of their location, contact the local utility companies. When operating the backhoe in an area where utilities are expected to be present, throttle the backhoe down and proceed with caution. If you feel the backhoe bucket made contact with anything out of ordinary, stop digging at once. Have the obstruction checked by hand. If a utility line has been damaged, contact the affected utility at once.

Preparing for Excavation

Before any excavating is started, it is always a good idea to plan out the job first. Various things need to be considered and taken into account prior to the actual digging. The operator should inspect the job site and take notice of any potential hazards in the area. He should have a complete understanding of the tasks he is expected to perform. Figure out what will be done with the spoil (excavated soil), will it be used to backfill or be moved out? What is the soil conditions like? Will you have to work around others? Etc. Once you have become familiar with the job site and understand the job requirements, it is time to set up for the actual digging. Position the backhoe in such a way as to minimize repositioning the unit and to maximize digging efficiency. Consider the replacement of spoil and position the backhoe to be able to dig the maximum amount of soil, accurately, while leaving enough room for the spoil removed to be piled in the desired area.

Once the unit is positioned, lower the stabilizers to the ground. The tires should still be supporting most of the vehicle weight with the stabilizer relieving only part of the weight, and mainly acting to give the unit a wider base for increased stability and to keep the unit from moving or bouncing with backhoe use. The front end loader should also be lowered if the unit is so equipped. The vehicle should at no time be supported by the stabilizers and loader with any of its wheels off the ground. Severe damage to the vehicle could result. When operating the unit on a delicate surface (such as concrete, or stone work) or on sandy, loose, or soft ground place plywood under the stabilizers to help distribute the load over a wider area.

Warm Up

Warm up actions before initial backhoe operation. Fully raise and lower the boom, dipperstick, swing and stabilizers two or three times. Fully raise the bucket from the ground and operate the bucket cylinders couple of times, lower the bucket. Check the tractor hydraulic oil level and correct it if necessary.

Front weight

Due to the hydraulic power and weight of the backhoe, it may be desirable to place additional weight for stability on the front of the tractor. To achieve the full efficiency of the backhoe, it is necessary to know the correct angle for digging. At initial contact with the ground, the boom and the dipperstick should be positioned at an angle for best penetration. The boom and dipperstick should not be extended in a straight line.

Basic digging technique

When starting an excavation, make the first cut of each section shallow, being careful to follow the exact layout of the excavation. The reason for the shallow cut is to minimize damage to the sod and to facilitate replacement.

These first cuts are also important because they will act as guides for the remaining cuts, thus getting the first few cuts as accurate as possible will help in keeping all future cuts accurate.

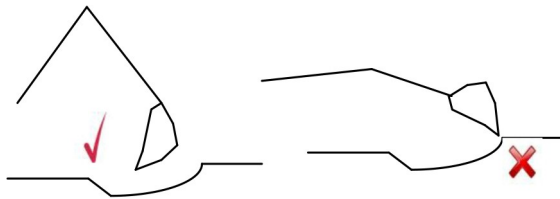
When digging with the backhoe, extend the boom, dipperstick and bucket out, away from the operator. Lower the boom and dipperstick to start the digging process. The bucket teeth should be at a 30° to 45° entry angle. As the digging starts, curl the bucket until the cutting edge is level with the horizon. Crowd the bucket in toward the operator working the bucket lever to keep the bucket level. As the bucket moves toward the operator, manipulate the boom lever to keep the cut level. At the end of the digging cycle, crowd the dipper out and completely curl the bucket while lifting it from the excavation. Once you have cleared the excavation, swing the bucket to the spoil pile. Start to dump the bucket before the pile is approached. Once the bucket is empty, swing the unit back to the excavation, positioning the bucket and dipperstick for the next cut in the process. The whole digging process should be one smooth cycle that is repeated until the excavation is completed. When the excavation has been dug to within 15 cm of the finished bottom, clear and touch up the sides of the excavation. Use the flat

sides of the bucket to scrape off any high spots.

Dislodge any exposed rocks if they seem loose. When finishing walls, finish the far wall by curling the bucket out, crowding the dipperstick out, and forcing the bucket down. To finish the closest wall, lift the bucket up and curl it in.

Once the sides are cleaned up, finish grading the bottom of the excavation. This is done by making the remaining cuts long and shallow, concentrating on making them level and smooth. Remove any remaining spoil. Check the excavation bottom for depth and levelness, making any adjusting cuts as needed.

The basic steps just listed at the same regardless of the excavation. All other digging jobs are simply variations of this basic procedure. Remember to make your cuts in smooth cycles. This will reduce operator fatigue and machine wear while increasing productivity and efficiency.



No work can be performed by dragging a full bucket. Any time the dipperstick cylinder cannot move the dipperstick, it is then necessary to actuate the bucket. This will lessen the "bite" and ease the bucket so the dipper can be moved.

The manner in which to obtain a full bucket every time is to work from the top down and taking a shallow enough "bite" to enable the operator to make a clean, smooth pass. When performing digging operations, be sure the bucket teeth are at the correct angle for break-out and ease of filling the bucket.

When the filled bucket is being raised, do not pull the dipperstick closer to the boom than necessary to clear the hole. This will eliminate the need for extending the dipperstick to dump the bucket on the spill pile. All operations should be made smoothly for efficient operation. Yanking on the control levers and jamming the bucket will not do the work, but can result in heating of the oil and inefficient operation. Once the bucket is clear of the ditch or hole, it can be swung to the side for dumping. At the start of the work, dump the material far enough to the side so there will be ample room to pile the entire spill.

Loading trucks is performed satisfactorily with the backhoe by curling the bucket close to the dipperstick to prevent spillage from the bucket when it is raised. With the 3-point hitch mounted backhoe you can make full 180 degree swing, so it is possible to dump either side of the excavation as desired. The swing on the backhoe is completely hydraulic and needs no pin moving or other mechanical changes to make the 180 degree swing.

When digging trenches, usually it is important to obtain a level bottom. Inexperienced operators sometimes have difficulty in achieving this. Level bottoms are achieved by setting the bucket teeth on a slight angle and maintaining this angle by gradually uncurling the bucket as the dipperstick is drawn toward the operator. At the same time, pull back intermittently on the boom control lever. This will feather the boom and maintain a level bottom.

To dig a straight trench, it is best to chalk a mark about 30 cm off the center of the intended trench. Then, make a marking on the backhoe frame about 30 cm off center. The operator can maintain a straight line by keeping the mark on the backhoe directly over the chalk marking on the ground.

When digging a pipe leak, always dig along the line of pipe and never across it. Excavate around the leak to give ample room for the repair to be made.

When trenching on a slope, always start at the top and work down. When working across a slope make full use of the stabilizers on the backhoe to level the machine. Always pile the dirt on the uphill side. Caution should be exercised when working on slopes. The rate of travel on slopes, hillsides and curves should always be such that there is no danger of tipping.

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.



Special Applications

Trenching Between a Building and an Open Excavation

Start the trench at the building and trench toward the open excavation. Dig toward the open excavation until there is just enough room to move the unit out from between the trench and open excavation.

Position the unit so the backhoe swing is over the centerline of the trench connection. Dig with the backhoe at an extreme swing position and as close to the stabilizers as possible. Pile the soil on the opposite side of the trenches. Position the unit forward so the two trenches can be connected. Pile the spoil on the opposite side of the trench.

Excavating on Slopes

When digging on slopes always face the backhoe upgrade whenever possible. It may be necessary to cut a level surface in the hill for the backhoe to sit in when operating on slopes. This will allow the backhoe to sit level for digging the main excavation. Pile the spoil from the surface downhill. When digging the main excavation, pile the spoil uphill.

Pipeline Leak Repair

To check for pipeline leaks, start by digging a bell hole about six feet wide and ten feet long. Then, dig lengthwise along the pipeline to locate the leak. Once the leak is located, position the unit to dig at grade level on both sides of the pipeline. If a section of pipe is to be replaced, strip the soil from both ends of the bell hole. Enlarge the hole enough to allow the workmen adequate working space in the leak area.

Backfilling

To backfill an excavation, lower the extended bucket into the spoil pile. Curl the bucket and lift it clear of the spoil pile. Swing the bucket to the excavation and extend the bucket. Return the bucket to the spoil pile and continue the cycle until the job is completed.



Do not backfill by using the swing circuit and dragging the bucket sideways. Doing so could cause damage to the dipperstick, boom, and swing cylinders or mainframe. Avoid constant jarring or hammering contact between the spoil pile and the loaded bucket as this may cause premature wear to the backhoe pins and bushings.

Cold Weather Operation

For smooth operation in cold weather, let the tractor warm up. Slowly circle 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 temperature.



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. 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.



Do not operate the backhoe if fittings are leaking or if hoses are damaged. A sudden line burst can cause the boom, or dipperstick bucket to drop suddenly, causing damage to the tractor or backhoe or personal injury.

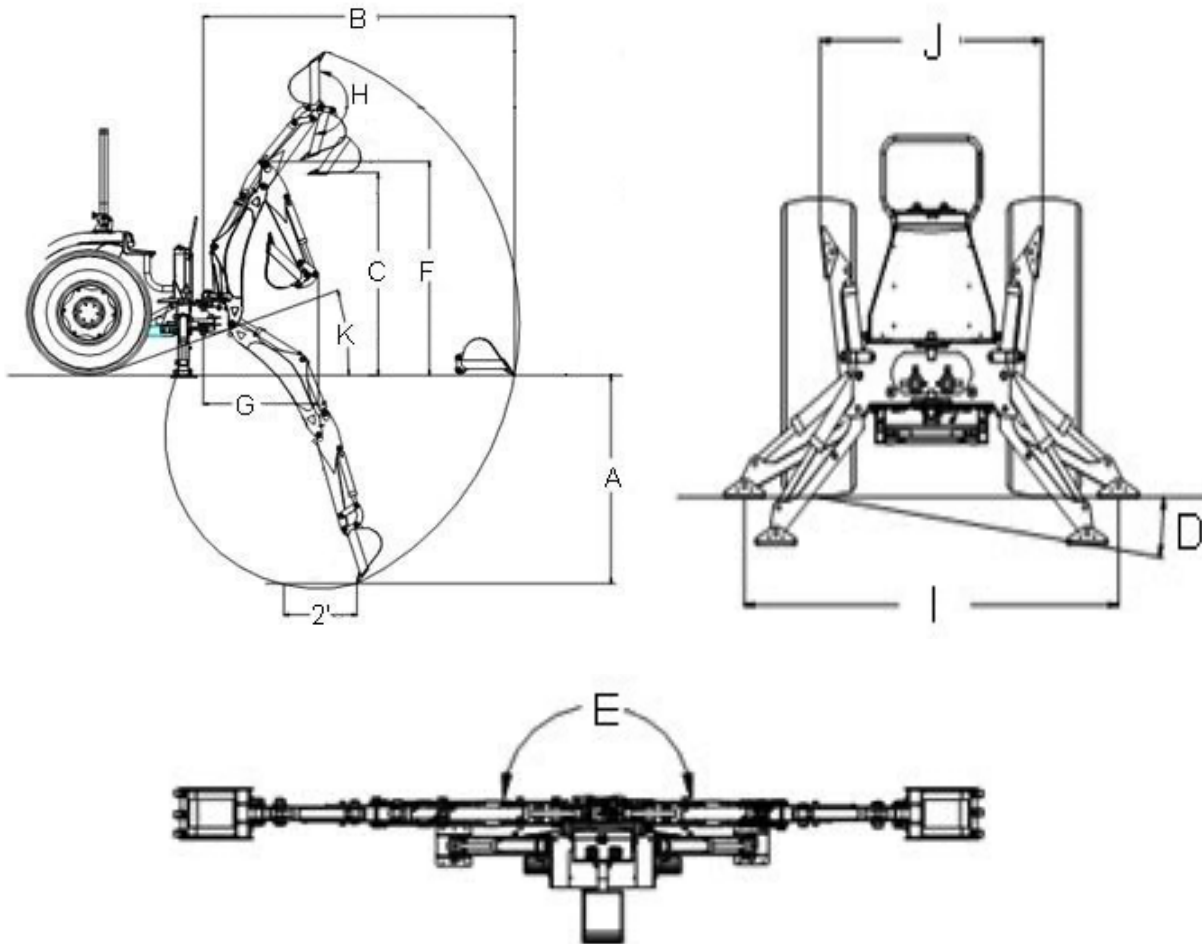


Before leaving the machine, stop the engine, remove the key, place all controls in neutral, and either set the parking brake or place tractor in park as equipped.

WARNING!

When using a backhoe, be aware of bucket and boom location at all times. When raising dipperstick with bucket rolled forward, material can spill onto non target area causing injury to assistant or damage other objects. Do not dig near stabilizers. Ground under stabilizers could collapse. Make all movements slowly and gradually when practicing operation. Operate from backhoe operators' seat only. Pay attention; be ready to stop immediately in case of an emergency. 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.

Specifications

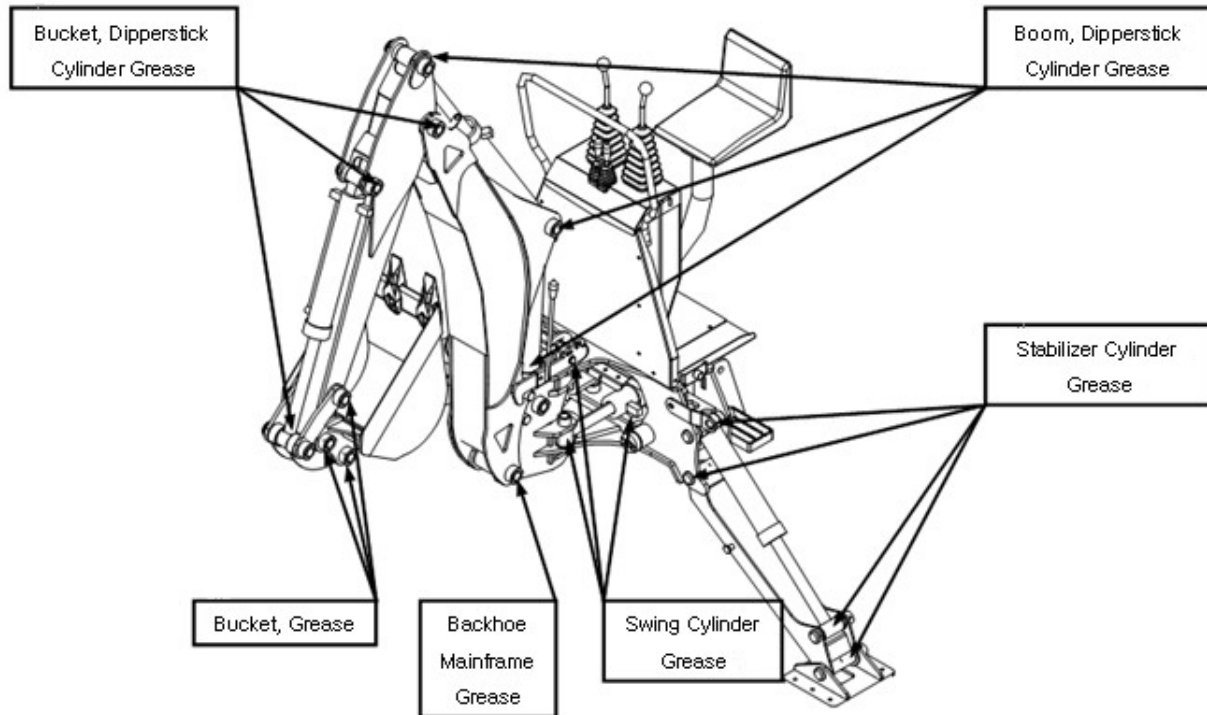


Backhoe Model		TMG-TBH84	
A	Digging Depth (two foot flat bottom)	2150mm	84"
B	Reach from center line of Swing Pivot	3200mm	126"
C	Loading Height(bucket at 60°)	1850mm	72.8"
D	Maximum Leveling Angle	10°	10°
E	Swing Arc	180°	180°
F	Transport Height (maximum)	2120mm	83.5"
G	Transport Overhang	1230mm	48.4"
H	Bucket Rotation	180°	180°
I	Stabilizer Spread (down position)	1750mm	68.9"
J	Stabilizer Spread (up position)	1180mm	46.5"
K	Angle of Departure	21°	21°
	Bucket Digging Force	1175kg	2592(lbs)
	Dipperstick Digging Force	895kg	1975(lbs)
	Operating Pressure	160bar	2320psi

Maintenance and Lubrication

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

Check all hardware after several hours of operation and regularly thereafter to ensure they are tight and secured. Replace worn, damaged, or illegible safety labels by obtaining new labels.



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
Backhoe Pivot Points	Lubricate	Daily/10 hours
Backhoe Hydraulic Lines, Hoses, Connections	Check for leaks, wear	Daily/10 hours
Boom, Arm, 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



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.

Operate the backhoe from the operator seat only.

Do not stand or walk under a raised backhoe. Accidental movement of control lever or leak in hydraulic system could cause boom or dipperstick 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.

Troubleshooting

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, Dipperstick and Bucket Cylinders Not operating properly	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



Slow or erratic movement 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
	Hydraulic Oil viscosity too heavy or Incorrect oil	Check oil number and viscosity, Refill correct hydraulic oil
	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, Dipperstick 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.(hypassing fluid within valve).	Replace control valve and recheck operation.
Inadequate lifting capacity	Engine R.P.M. too slow.	Increase engine R.P.M
	Excessive load. Material loading exceeds specified backhoe capacity	Reduce Load
	Relief valve setting below specifications	Check and reset relief valve setting as needed.
	Bucket, Boom and Dipperstick 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".
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.

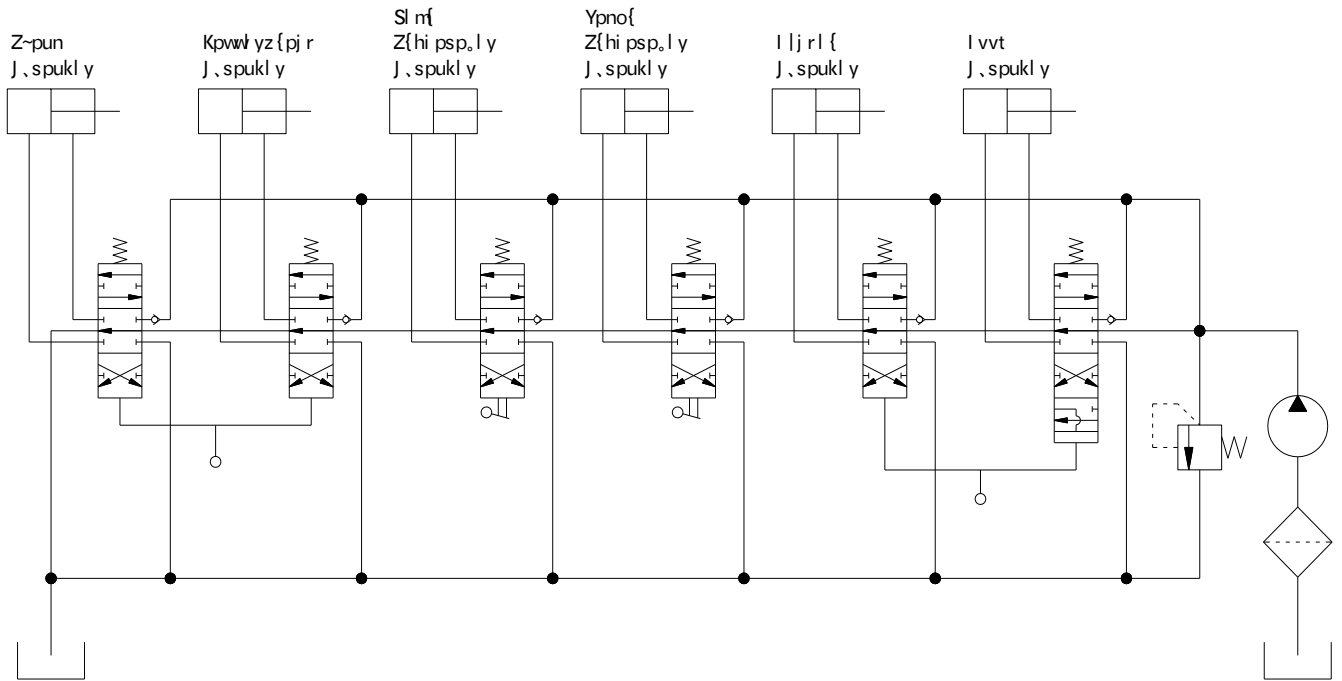


System relief valve squeals.	Cold Hydraulic Fluid	Allow hydraulic fluid to warm up to operating temperature
	Hydraulic Oil viscosity too heavy or Incorrect oil	Check oil number and viscosity, Refill correct hydraulic oil.
	Excessive load in bucket. Loading exceeds specified backhoe capacity	Reduce load
	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 valve spool in "centered" position (no external oil leakage evident) Note: A gradual drop over an extended period of time is a normal condition.	Cylinder piston assembly leakage	Check cylinders for leakage
	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 cylinders extended	Excessive shock load on cylinders during transport	Replace defective parts. Review and observe proper and safe operational practices



Hydraulic System Schematic




HYDRAULIC SYSTEM SCHEMATIC AUXILIARY HYDRAULIC VALVE PACKAGE



Appendix

TORQUE TIGHTENING CHART 1

Note: Use these torques, unless special torques are specified. Values are for UNF thread fasteners, plated or unplated as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used.




SAE Grade No.	2				5				8+			
Bolt head identification (see note 1)												
Bolt size	LB - FT		Nm		LB - FT		Nm		LB - FT		Nm	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/4	5	6	7	8	9	11	12	15	12	15	16	20
5/16	10	12	14	16	17	20.5	23	28	24	29	33	39
3/8	20	23	27	31	35	42	48	57	45	54	61	73
7/16	30	35	41	47	54	64	73	87	70	84	95	114
1/2	45	52	61	70	80	96	109	130	110	132	149	179
9/16	65	75	88	102	110	132	149	179	160	192	217	260
5/8	95	105	129	142	150	180	203	244	220	264	298	358
3/4	150	185	203	251	270	324	366	439	380	456	515	618
7/8	160	200	217	271	400	480	542	651	600	720	814	976
1	250	300	339	406	580	696	787	944	900	1080	1220	1464
1 1/8					800	880	1085	1193	1280	1440	1736	1953
1 1/4					1120	1240	1519	1681	1820	2000	2468	2712
1 3/8					1460	1680	1980	2278	2380	2720	3227	3688
1 1/2					1940	2200	2631	2983	3160	3560	4285	4827

Note 1: Bolt head identification marks as per grade. Manufacturing marks will vary. *Thick nuts must be used with Grade 8 bolt

TORQUE TIGHTENING CHART 2

METRIC FASTENER (ISO) TORQUE CHART

Note: Use these torques, unless special torques are specified. Values are UNC and UNF thread fasteners, plated or unplated as received from supplier. Fasteners can be dry or lubricated with normal engine oil. Values do not apply if graphite, moly-disulphide or other extreme pressure lubricant is used

ISO Class No.	8.8				10.9				12.9			
Bolt head identification (see note 1)												
Bolt Size	Nm		LB - FT		Nm		LB - FT		Nm		LB - FT	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
M4	3	4	2	3	4	5	3	4				
M5	6.5	8	5	6	9.5	11	7	8				
M6	10.5	12	8	9	15	17.5	11	13				
M8	26	31	19	23	37	43	27	32				
M10	52	61	38	45	73	87	54	64				
M12	90	107	66	79	125	150	93	112				
M14	144	172	106	127	200	245	149	179				
M16	217	271	160	200	310	380	230	280				
M20	434	515	320	380	610	730	450	540				
M24	675	815	500	600	1050	1275	780	940				
M30	1250	1500	920	1100	2000	2400	1470	1770				
M36	2175	2600	1600	1950	3500	4200	2580	3090				

Because of the low ductility of these fasteners, the torque range is to be determined individually for each application. As a general rule, the torque ranges specified for grade 10.9 fasteners can be used satisfactorily on 12.9 fasteners

*M14 is not a preferred size.

Note 1: Bolt head identification marks as per grade. Manufacturing mark will vary.

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.

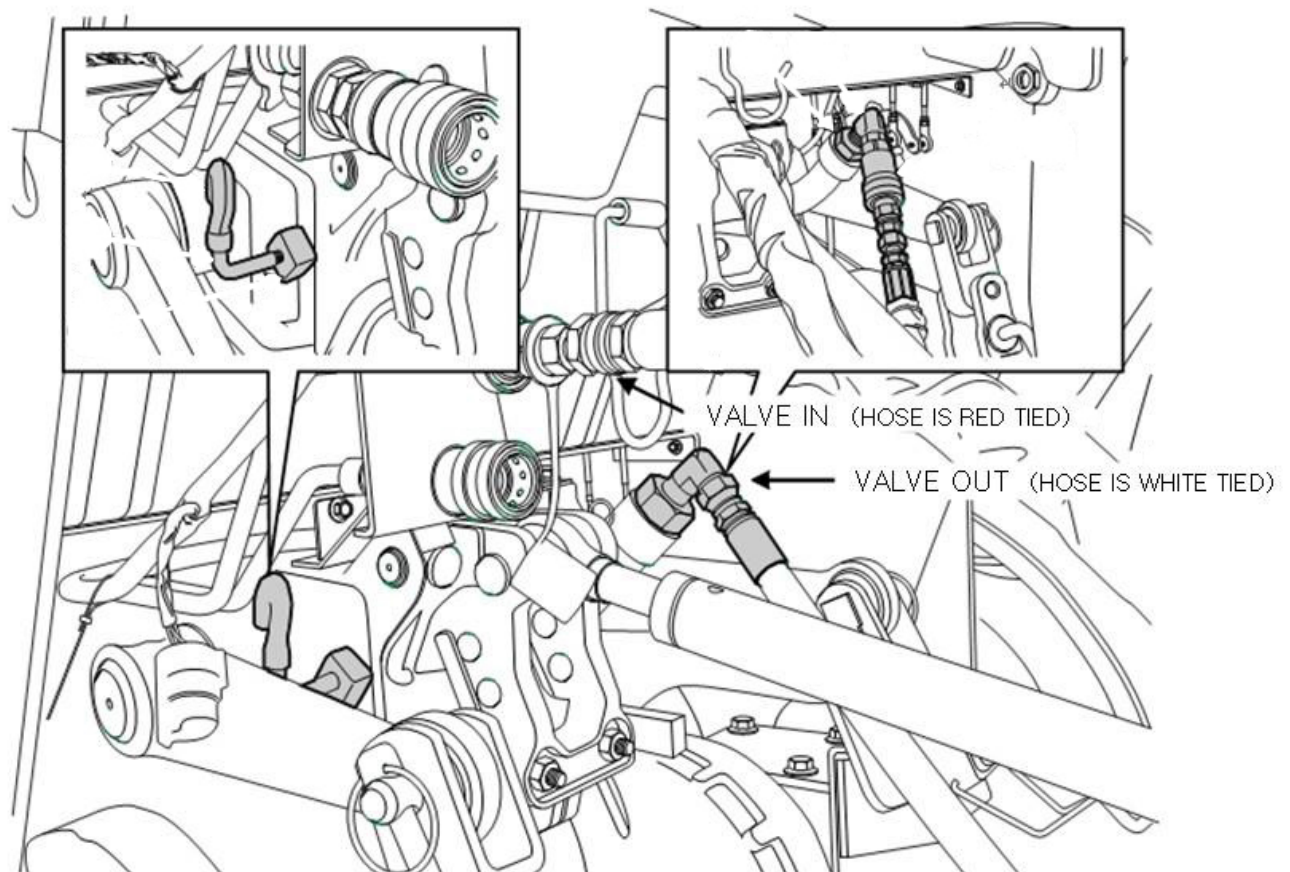
Directional Reference

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

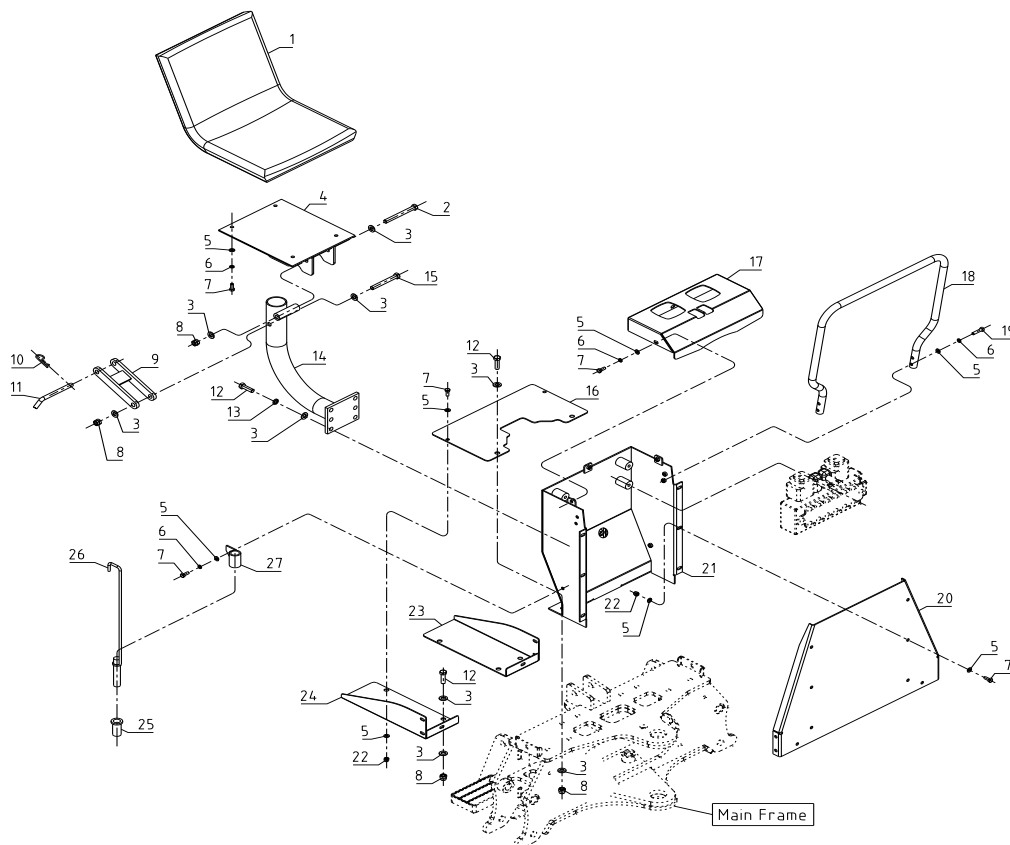
Part Order

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.

Section A. In-Out Hose Kit

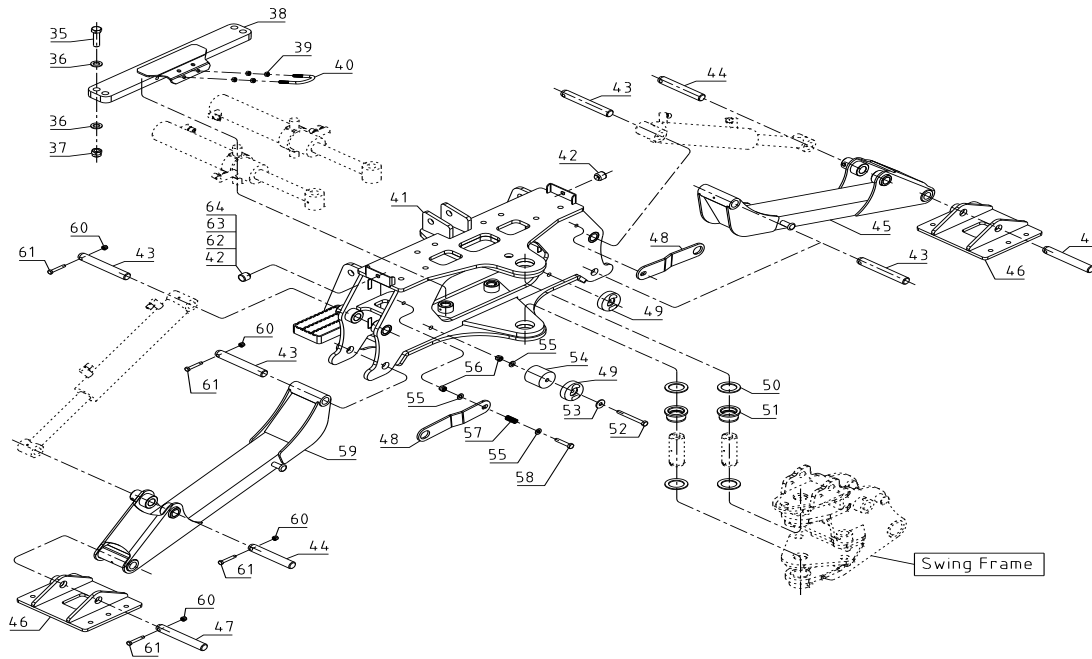


Section B. Seat, Control Assembly



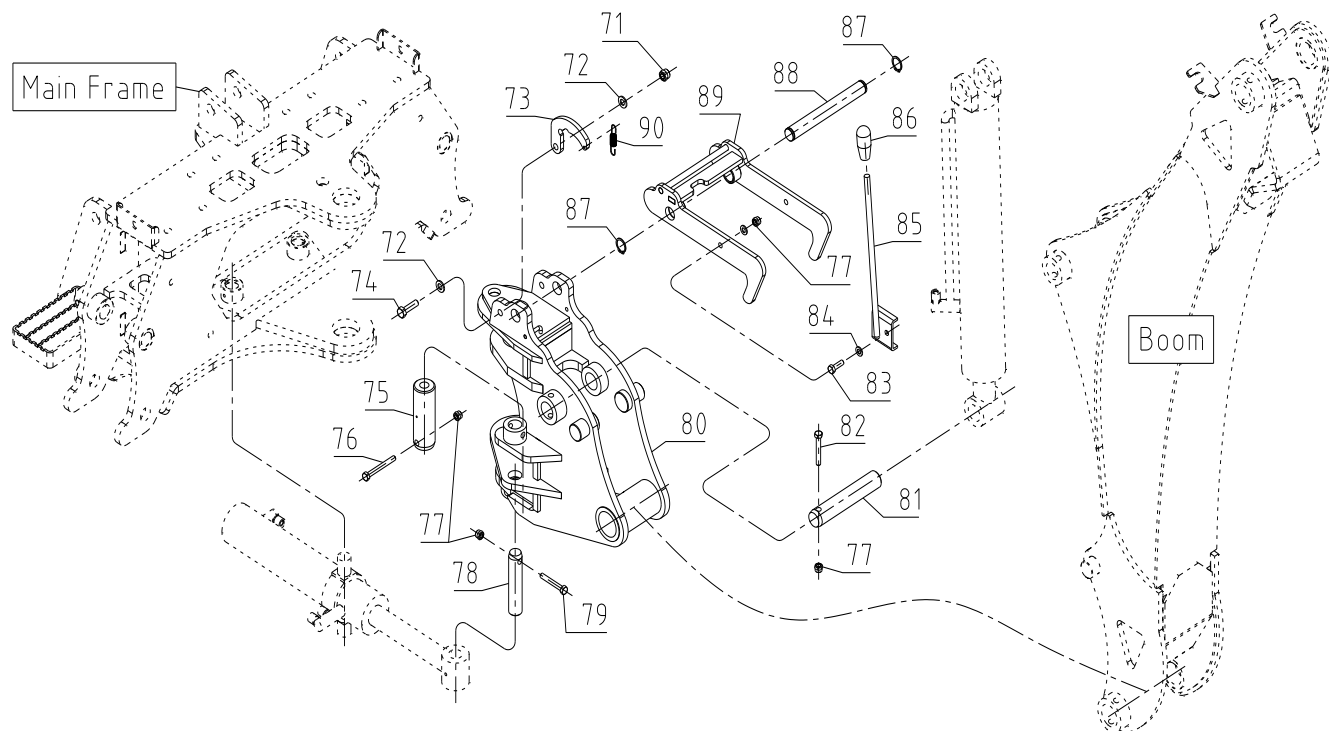
Part No.	Ref. No.	Parts Description	Qty
B1	BK215.033	Seat	1
B2	GB5782-M12x115	Bolt-M12x115	1
B3	GB97.1-12	Washer-Plain 12	24
B4	BK215.016	Seat Plate	1
B5	GB97.1-8	Washer-Plain 8	40
B6	GB93-8	Washer-Spring 8	12
B7	GB5782-M8x20	Bolt-M8x20	22
B8	GB889.1-M12	Nut Lock -M12	10
B9	BK215.015	Link Assembly	1
B10	BL25.10.110	R-Pin, $\varphi 3.2$	1
B11	BK215.106	Pin, $\varphi 12$	1
B12	GB5782-M12x40	Bolt-M12x40	12
B13	GB93-12	Washer-Spring 12	4
B14	BK215.013	Support Seat	1
B15	GB5782-M12x100	Bolt-M12x100	1
B16	BK215.104	Foot Plate-Center	1
B17	BK215.105	Top Cover	1
B18	BK215.107	Guide Bar	1
B19	GB5782-M8x35	Bolt-M8x35	4
B20	BK215.124	Front Cover	1
B21	BK215.014	Valve Room Assembly	1
B22	GB889.1-M8	Nut Lock -M8	14
B23	BK215.103	Foot Plate-LH	1
B24	BK215.102	Foot Plate-RH	1
B25	BK215.123	Rubber Boss	1
B26	BK215.027	Swing Bin	1
B27	BK215.028	Swing Pin Hanger	1

Section C. Main Frame Assembly



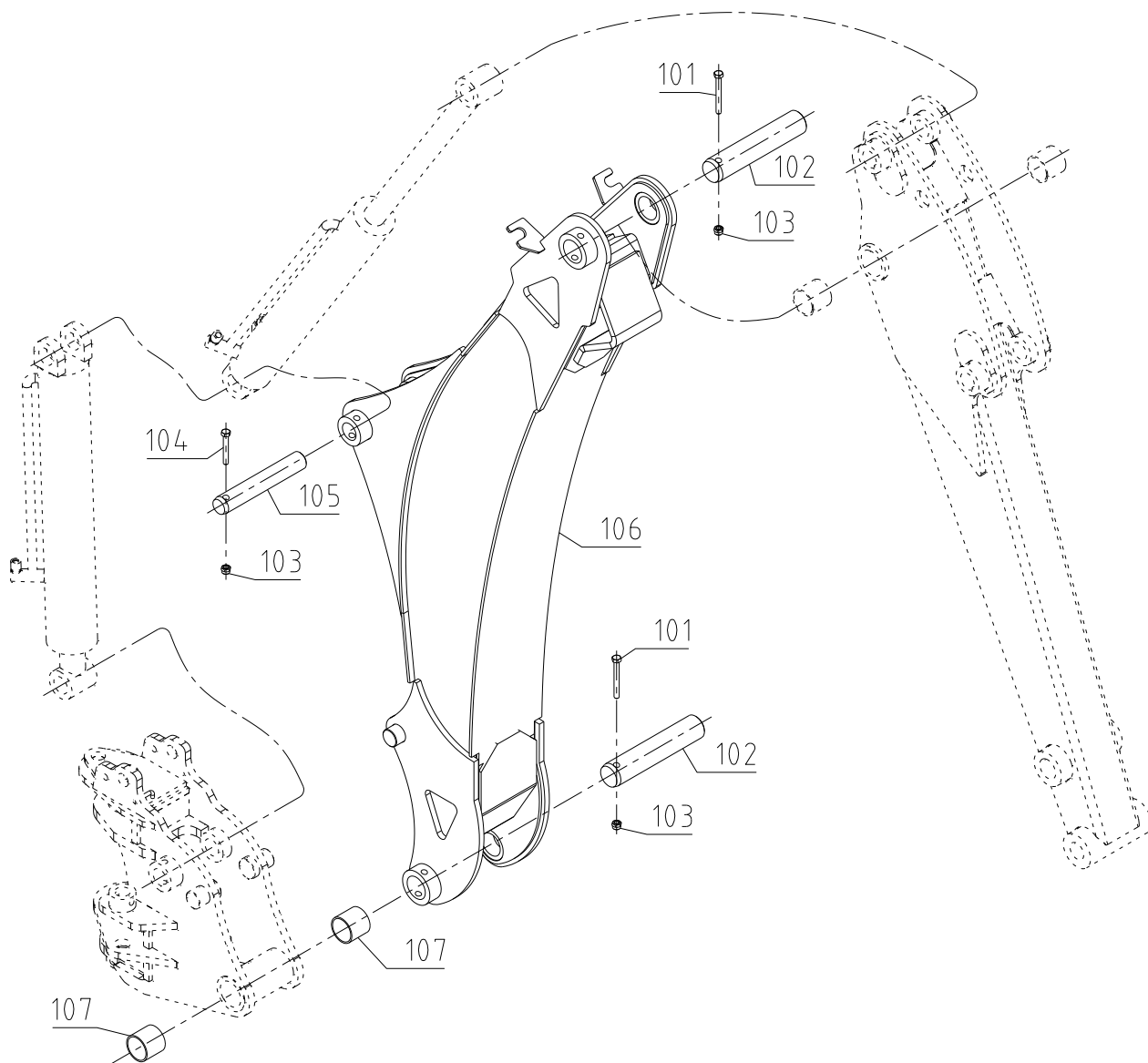
Part No.	Ref. No.	Parts Description	Qty
C35	GB5782-M16x60	Bolt-M16x60	4
C36	GB97.1-16	Washer-Plain 16	8
C37	GB889.1-M16	Nut Lock-M16	4
C38	BK215.026	Cross Bar	1
C39	GB6172.1-M8	Nut-M8	4
C40	BK215.402	U-bolt	1
C41	BK215.011	Main Frame Assembly	1
C42	BK215.128	Rubber Stop	2
C43	BK215.127	Pin, \varnothing 24.5x173	4
C44	BK215.126	Pin, \varnothing 24.5x154	2
C45	BK215.031	Stabilizer Assembly-LH	1
C46	BK215.029	Foot Plate	2
C47	BK215.125	Pin, \varnothing 24.5x166	2
C48	BK215.121	Stabilizer Lock	2
C49	BK215.131	Rubber Cushion	2
C50	BK215.130	Washer	4
C51	BK215.129	Bushing	2
C52	GB5782-M10x95	Bolt-M10x95	2
C53	GB96.2-10	Big Washer-Plain 10	2
C54	BK215.032	Bracket-Cushion	2
C55	GB97.1-10	Washer-Plain 10	6
C56	GB889.1-M10	Nut Lock-M10	4
C57	BK215.122	Spring	2
C58	GB5782-M10x50	Bolt-M10x50	2
C59	BK215.030	Stabilizer Assembly-RH	1
C60	GB889.1-M8	Nut Lock-M8	8
C61	GB5782-M8x50	Bolt-M8x50	8
C62	GB/T97.1-6	Plain Washer 6	2
C63	GB/T889.1-M6	Nut Lock-M6	2
C64	GB/T70.1-M6x40	Bolt-M6x40	2

Section D. Swing Frame Assembly



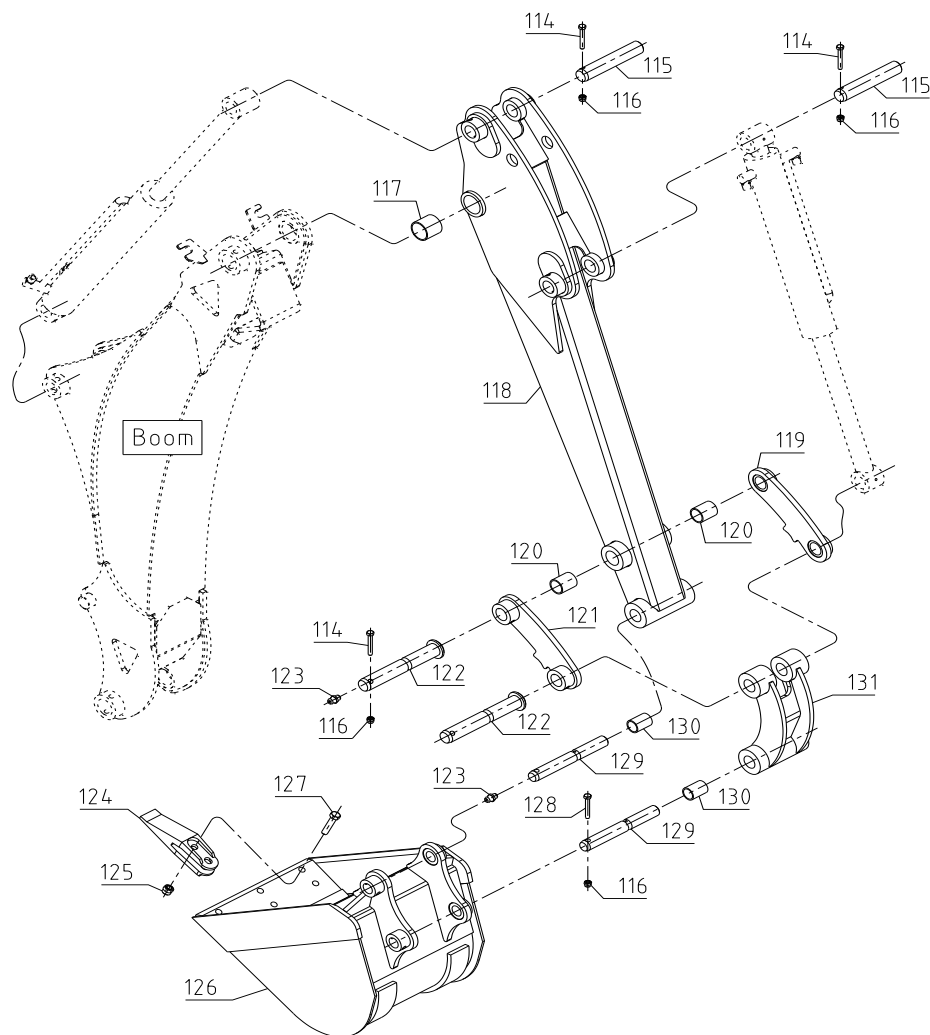
Part No.	Ref. No.	Parts Description	Qty
D71	GB889.1-M10	Nut Lock-M10	1
D72	GB97.1-10	Washer-Plain 10	2
D73	BK215.118	Lock Plate	1
D74	GB5782-M10x35	Bolt-M10x35	1
D75	BK215.101	Pin, $\varnothing 39.5 \times 115$	2
D76	GB5782-M8x70	Bolt-M8x70	2
D77	GB889.1-M8	Nut Lock-M8	6
D78	BK215.120	Pin, $\varnothing 24.5 \times 117$	2
D79	GB5782-M8x55	Bolt-M8x55	2
D80	BK215.012	Swing Frame Assembly	1
D81	BK215.112	Pin, $\varnothing 29.5 \times 161$	1
D82	GB5782-M8x60	Bolt-M8x60	1
D83	GB5782-M8x25	Bolt-M8x25	1
D84	GB97.1-8	Washer-Plain 8	2
D85	BK215.022	Handle Set	1
D86	BK215.114	Plastic Ball	1
D87	GB894.1-22	Snap Ring, 22	2
D88	BK215.117	Pin, $\varnothing 22 \times 190$	1
D89	BK215.023	Lock Frame Assembly	1
D90	BK215.119	Spring	1

Section E. Boom Assembly



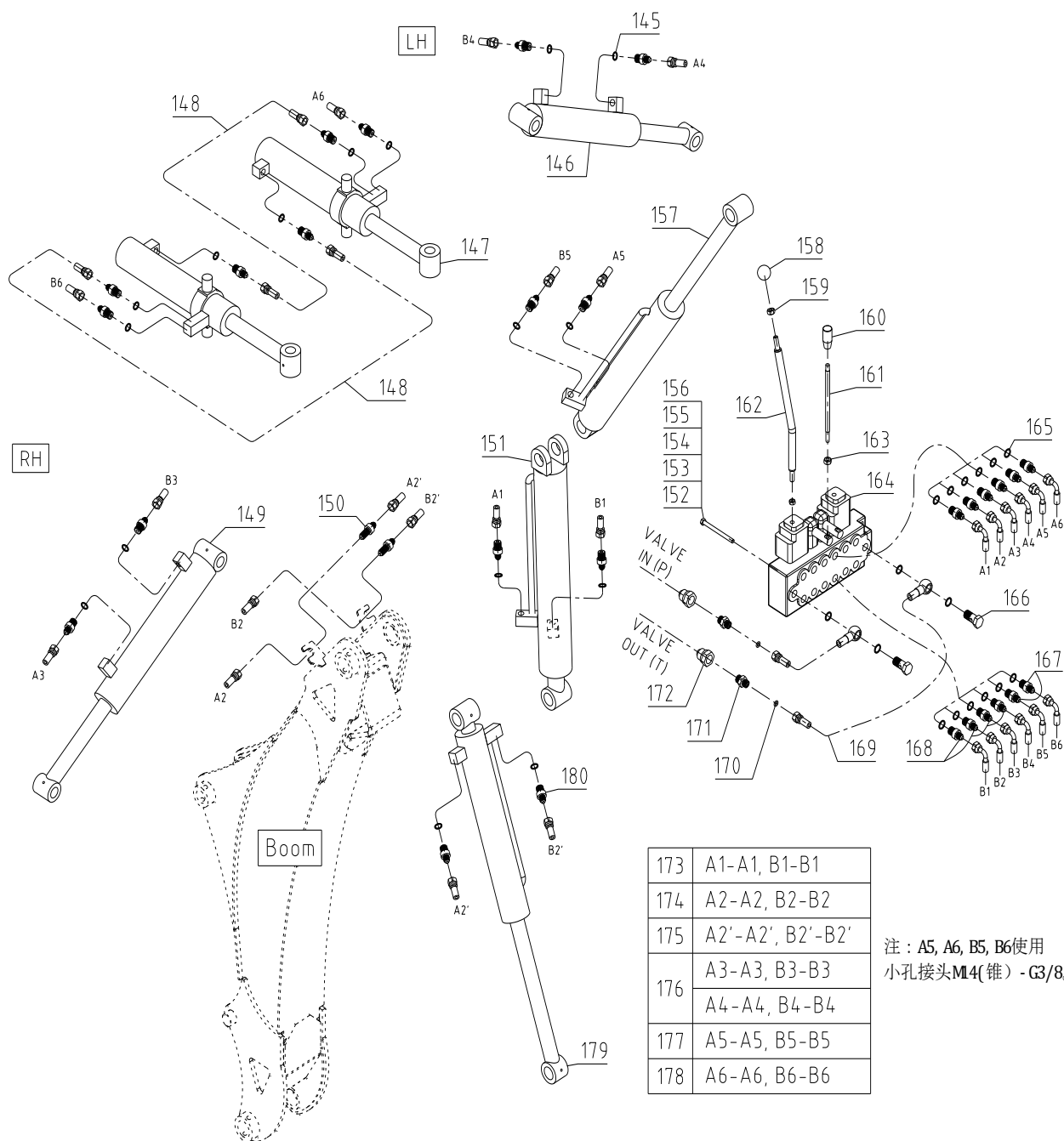
Part No.	Ref. No.	Parts Description	Qty
E101	GB5782-M8x70	Bolt-M8x70	2
E102	BK215.115	Pin, $\varphi 39.5 \times 193$	2
E103	GB889.1-M8	Nut Lock-M8	3
E104	GB5782-M8x60	Bolt-M8x60	1
E105	BK215.113	Pin, $\varphi 29.5 \times 180$	1
E106	BK215.017	Boom Assembly	1
E107	BK215.116	Bushing, $\varphi 40$	2

Section F. Bucket, Dipperstick Assembly



Part No.	Ref. No.	Parts Description	Qty
F114	GB5782-M8x60	Bolt-M8x60	4
F115	BK215.112	Pin, $\phi 29.5 \times 161$	2
F116	GB889.1-M8	Nut Lock-M8	6
F117	BK215.116	Bushing, $\phi 40$	2
F118	BK215.021	Dipperstick Assembly	1
F119	BK215.019	Link-LH	1
F120	BK215.111	Bushing, $\phi 30$	2
F121	BK215.018	Link-RH	1
F122	BK215.110	Pin, $\phi 29.5 \times 198$	2
F123	JB7940.1-M6	Grease Nipple-M6	26
F124	BK6N.01.105	Bucket Teeth	3
F125	GB889.1-M12	Nut Lock-M12	6
F126	BK215.025	Bucket Assembly	1
F127	GB5782-M12x45	Bolt-M12x45	6
F128	GB5782-M8x55	Bolt-M8x55	2
F129	BK215.108	Pin, $\phi 24.5 \times 200$	2
F130	BK215.109	Bushing, $\phi 25$	4
F131	BK215.020	Link Assembly	1

Section G. Hose Fitting Assembly



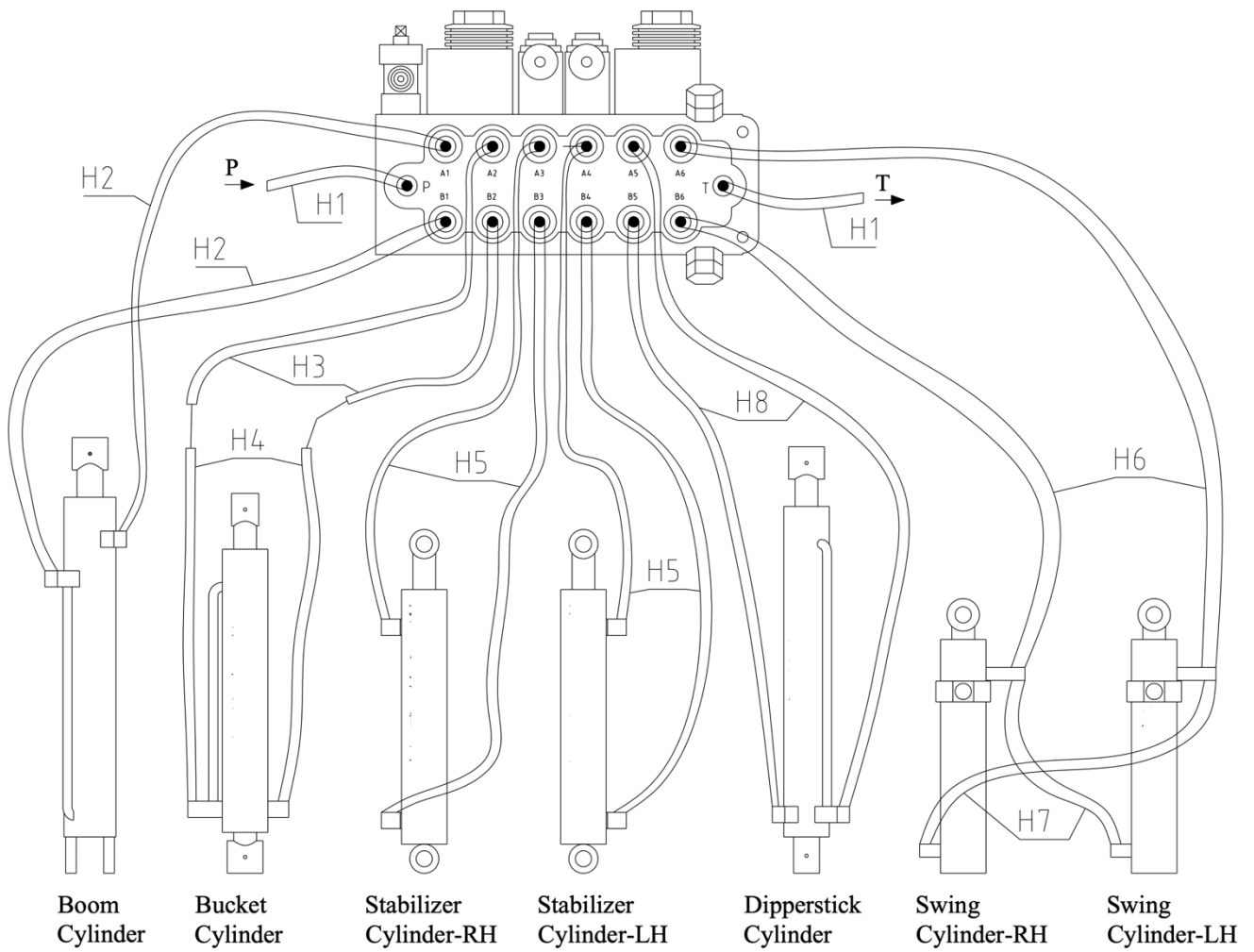
173	A1-A1, B1-B1
174	A2-A2, B2-B2
175	A2'-A2', B2'-B2'
176	A3-A3, B3-B3
	A4-A4, B4-B4
177	A5-A5, B5-B5
178	A6-A6, B6-B6

注：A5, A6, B5, B6使用小孔接头M4(锥) - G3/8。

Part No.	Ref. No.	Parts Description	Qty
G145	JB/T982-14	Combination Washer 14	16
G146	BK215.044	Stabilizer Cylinder-LH	1
G147	BK215.045	Swing Cylinder	2
G148	BK215.416	Hose, Swing To Swing	2
G149	BK215.043	Stabilizer Cylinder-RH	1
G150	BK215.406	Long Adapter, M14Z-M14Z	2
G151	BK215.041	Boom Cylinder	1
G152	GB5782-M8x100	Bolt- M8x100	2
G153	GB97.1-8	Plain-Washer 8	5
G154	GB889.1-M8	Nut Lock-M8	2
G155	GB5782-M8x60	Bolt- M8x60	1
G156	GB93-8	Spring-Washer 8	1
G157	BK215.046	Dipperstick Cylinder	1
G158	JB7271.1-M10x32	Plastic Ball-M10x32	2
G159	GB6172.1-M10	Nut-M10	4
G160	JB7271.5-M10x50	Plastic Ball-M10x50	2
G161	BK215.401	Lever stick	2
G162	BK215.040	Hand Lever	2
G163	GB/T6172.1-M8	Nut-M8	2
G164	HC-TR55/6	Control Valve	1
G165	JB/T982-18	Combination Washer 18	16
G166	BK215.403	Hollow Bolt-G3/8	2
G167	BK215.408	Adapter-2, M14Z-G3/8	4
G168	BK215.405	Adapter-1, M14Z-G3/8	8
G169	BK215.410	Hose, Valve To In Out	2
G170	GB3452.1-13x2.4	O-Ring, 13x2.4	2
G171	BL25.40.102	Adapter, M18-R1/2	2
G172	GB8606-G1/2-M	Quick Coupler-G1/2-M	2
G173	BK215.411	Hose, Valve To Boom	2
G174	BK215.412	Hose, Valve To Adapter	2
G175	BK215.413	Hose, Adapter To Bucket	2
G176	BK215.414	Hose, Valve To Stabilizer	4
G177	BK215.417	Hose,Valve To Dipperstick	2
G178	BK215.415	Hose, Valve To Swing	2
G179	BK215.042	Bucket Cylinder	1
G180	BK6N.06.104	Adapter, M14Z-M14	16



Section H. Hydraulic System Assembly



Part No.	Ref. No.	Parts Description	Qty
H1	BK215.410	Hose, Valve To In Out	2
H2	BK215.411	Hose, Valve To Boom	2
H3	BK215.412	Hose, Valve To Adapter	2
H4	BK215.413	Hose, Adapter To Bucket	2
H5	BK215.414	Hose, Valve To Stabilizer	4
H6	BK215.415	Hose, Valve To Swing	2
H7	BK215.416	Hose, Swing To Swing	2
H8	BK215.417	Hose, Valve To Dipperstick	2