



CLOVER
—— 嘉耘机械 ——

CHANGZHOU CLOVERAGRI MACHINERY Co., LTD.

6 JIANYE ROAD, HI-TECH, CHANGZHOU, JIANGSU, P.R. CHINA
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BACKHOE Manual

MODELS

BHM95(DK-950), BHM175(DK-1750), BHM195(DK-1950), BHM225(DK-2250),

BHSM175, BHSM195, BHSM225



JY2018030004 Rev A
manual
dated 20180307
The original instruction

Introduction

The purpose of this manual is to assist you in Maintaining and operating your CLOVER backhoe. Read it carefully, it provides information and instructions that will help you achieve years of reliable 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 position operator is facing when in use.

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

Important:

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

Serial Number and Location

The serial and model number is important information about the machine and it may be necessary to know it before obtaining the correct replacement part. The identification plate is located on the right side of control console. It is also recorded by your dealer on back page of this manual.

EC DECLARATION OF CONFORMITY

**MANUFACTURER:**

CHANGZHOU CLOVERAGRI MACHINERY CO., LTD.

ADDRESS:

6 JIANYE ROAD, HI-TECH, CHANGZHOU, JIANGSU, P.R.CHINA

NAME AND ADDRESS OF THE PERSON AUTHORISED TO COMPILE THE
TECHNICAL FILE IN THE COMMUNITY:

DELEKS S.r.l.

Via Industriale, 23 | 25028 Verolanuova (BS) | Italy

PRODUCT:

BACKHOE

MODEL:**SERIAL NO.:****PRODUCTION YEAR:**

**DECLARES THAT THE PRODUCT ABOVE COMPLIES WITH THE FOLLOWING
EC DIRECTIVES:**

MACHINERY DIRECTIVE 2006/42/EC

AND THE FOLLOWING HARMONIZED STANDARDS:

EN 16246:2012 AGRICULTURAL MACHINERY - BACKHOES - SAFETY

EN ISO 4254-1:2015 AGRICULTURAL MACHINERY — SAFETY PART 1:
GENERAL REQUIREMENTS

FULL NAME IN BLOCK SIZE: CHEN YAGANG

QUALIFICATION: VICE GENERAL MANAGER

PLACE: CHANGZHOU, P.R.CHINA

DATE:

SIGNATURE AND STAMP: _____

1,SAFETY PRECAUTIONS

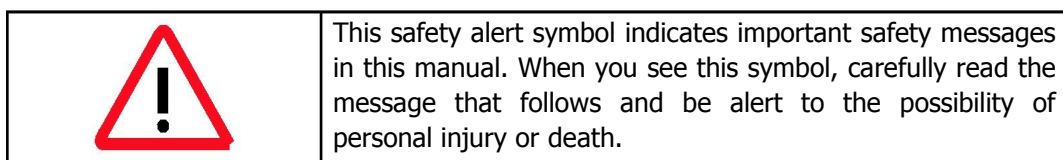
1.1 SAFETY

Understand that your safety and the safety of other persons is measured by how you service and operate this Backhoe.

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

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

The Safety Information given in this manual does not replace any safety codes, insurance needs, federal, state and local laws. Make sure your machine has the correct equipment required by your local laws and regulations.



1.2 SAFETY Precautions

Before starting the engine of your tractor, make sure all operation controls are in park lock or neutral position.

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

Equip your tractor with a ROPS cab or frame for your protection. See your tractor operator's manual for correct usage.

A frequent cause of personal injury or death is persons falling off and being run over. Do not permit others to ride on your tractor. Only one person, the operator, should be on the machine when it is in operation.

Before leaving the tractor, stop the engine, put all controls in neutral, engage the parking brake and remove the key from the ignition.

Operate the Backhoe smoothly when lowering or lifting loads.

Stay off of slopes too steep for safe operation. Shift down before you start up or down a hill with heavy load. Avoid "free wheeling"

Travel speed should be such that complete control and machine stability is maintained at all times. Where possible, avoid operation near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slick or muddy surfaces.

Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. Escaping hydraulic oil or diesel fuel leaking under pressure can have sufficient force to penetrate the skin and cause infection or other injuries. If this happens seek medical attention immediately.

To prevent personal injury, relieve all pressure before disconnecting fluid lines.

1.2.1 SAFETY Precautions

Before applying hydraulic pressure, make sure all hydraulic connections are tight and components are in good condition.

Contact with overhead power lines can cause severe electrical burn or electrocution.

Make sure there is enough clearance between raised equipment and overhead power lines.

Add water to rear tires or rear wheel weights for increased stability.

A backhoe attachment should be transported in a low position at slow ground speeds. Make turns slowly and use the tractor brakes cautiously. A loaded attachment in the raised position alters the center of gravity location of the machine and increases the possibility of mishaps.

Do not stand, walk or work under a raised backhoe attachment unless it is securely blocked or mechanically in position. Accidental movement of a control lever or leak in the hydraulic system could cause the backhoe to drop, or attachment to dump, causing severe injury.

Make sure all parked backhoe on stands are on a hard level surface with all safety devices engaged to prevent backhoe from falling and being damaged or injuring someone.

When using a backhoe, be alert of bucket, boom and arm position at all times.

Only operators who have been specially trained in backhoe operation and fully understand this manual can operate the backhoe.

Keep hands, feet and clothing away from all moving parts. Wear close fitting clothing and appropriate safety equipment (Which includes, steel cap shoes, protective gloves, hard hat, safety glasses and dusk mask). Prolonged exposure to loud noise can damage hearing. Wear suitable approved hearing protection such as ear muffs or plugs. Operating equipment safely requires your full attention. Do not wear radio or music headphones. Secure hair above shoulder length.

You must be in good physical and mental health to operate the backhoe safely. Do not operate the backhoe when you are ill, fatigued or under the influence of any substance or medication that could affect your vision, co-ordination or judgment.

Make sure there is enough clearance between raised equipment and overhead power lines.

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1.2.2 SAFETY Precautions

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HIVIS clothing required when operating backhoe on work sites and road sides.

2,SAFETY DECALS

Safety Decals

1. Keep safety decals clean and free of obstructing material
 2. Replace damaged or missing safety decals with new decals from your dealer.
 3. If a component with a safety decal(s) affixed is replaced with a new part, ensure new safety decal(s) are attached in the same locations on the replacement components.
- Refer below for correct location of decals. Note decals appear on both sides of backhoe.



4.



5.



6.



7.



8.



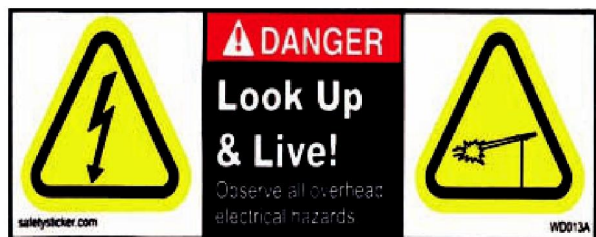
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10.



11.



Noise level

The noise testing have pointed out a Sound Pressure level equal to 84 dB(A) x 1 dB, measured in open field at a distance of 3 m. from the machine and at 1.6 m. on working land, in continuous maximum allowed working rate conditions. According to these information it is recommended to wear an individual ear protection.



WARNING



The cleaning, the regular maintenance of the machine and the periodic lubrication contribute to reduce the sound emissions of the machine.

Though there is a connection between the sound emission and the exposure level, this datum can't be used to determine if it is necessary to take some precautions. In fact other factors exist that can affect the sound exposure level, such as for example the characteristics of the working environment and the presence of other noise sources. The information about the noise level emitted by the machine will however help the user or the employer in the writing of the valuation of the dangers and risks.

IMPORTANT: There are safety devices such as fix plate and safe belt. Be sure attach them properly when you use them.

IDENTIFICATION OF THE MACHINE



**Backhoe** 

Type	
Dimensions(L×W×H) (mm)	
Structure weight (kg)	
Power	
Serial No	
Date	

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




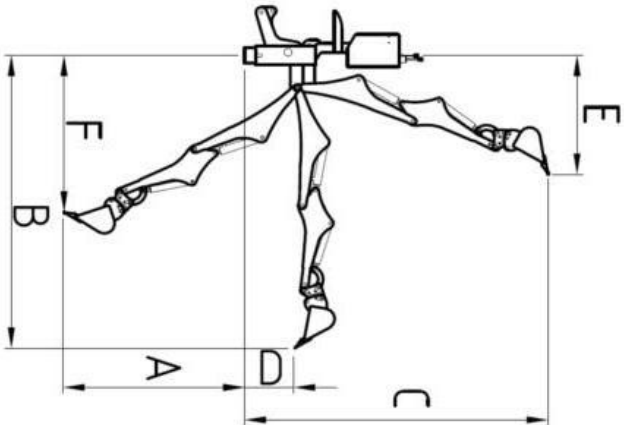
3,BACKHOE SPECIFICATION

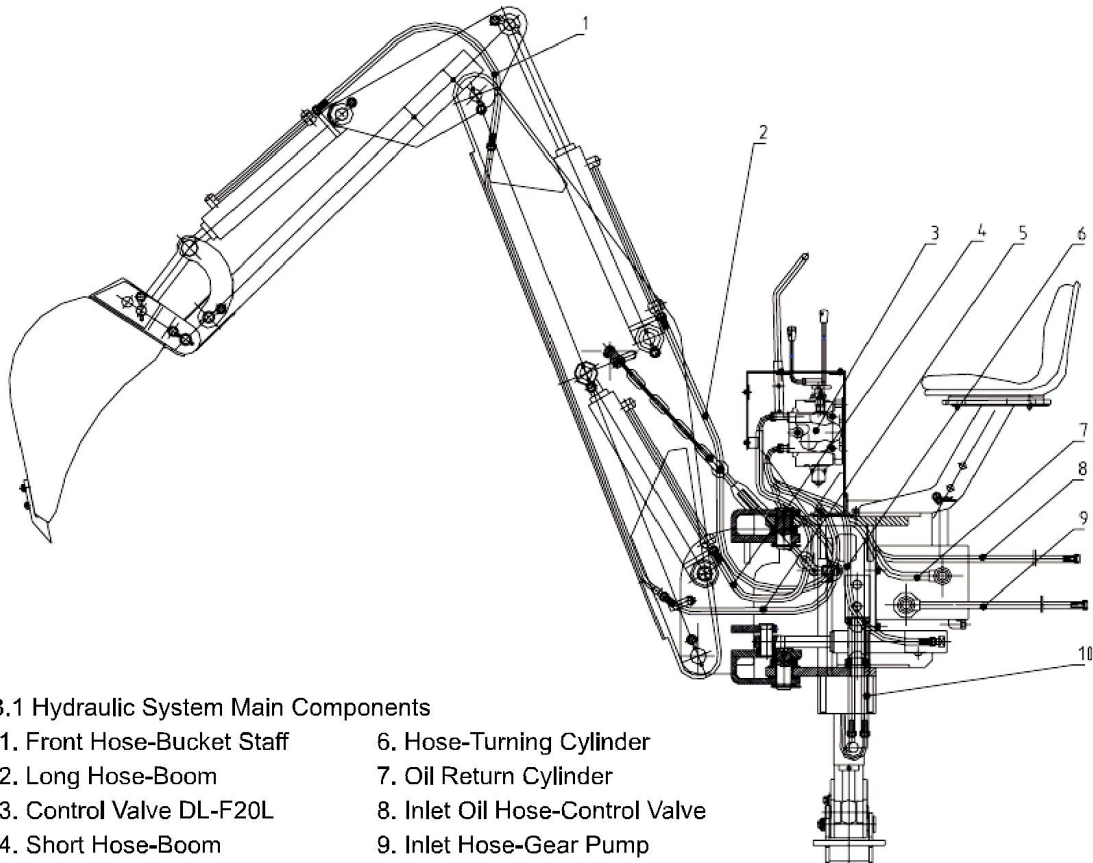
3. BRIEF INTRODUCTION

Clover series Backhoes can be attached to several Brands of wheeled tractors and tracked dozers to increase their versatility. Refer to specifications below.
They are suitable for different kinds of farm fields and garden.They are not suitable for construction use.

Specifications of Backhoe

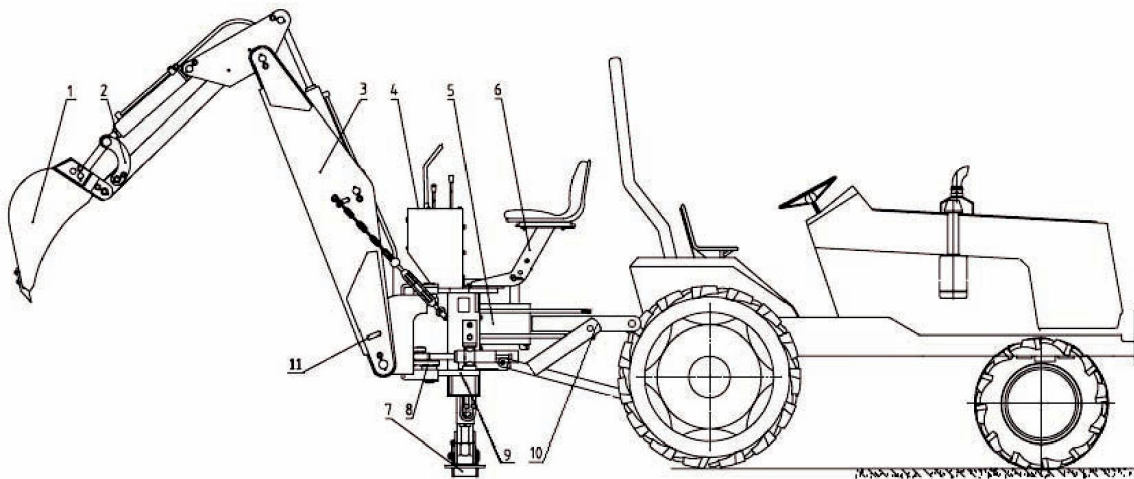
Mod												
	Min.	Max.				A	B	C	D	E	F	
BHM95 (DK-950)	18	35	180	29	540	95	250	220	40	150	140	250
BHM175 (DK-1750)	25	30	180	30	1000	175	313	260	60	220	160	540
BHM195 (DK-1950)	30	45	180	30	1000	195	338	280	60	230	170	550
BHM225 (DK-2250)	45	75	180	40	100	225	391	310	60	280	220	800
BHSM175	25	30	180	30	1000	175	313	260	60	220	160	580
BHSM195	30	45	180	30	1000	195	338	280	60	230	170	590
BHSM225	45	75	180	40	1000	225	391	310	60	280	220	840





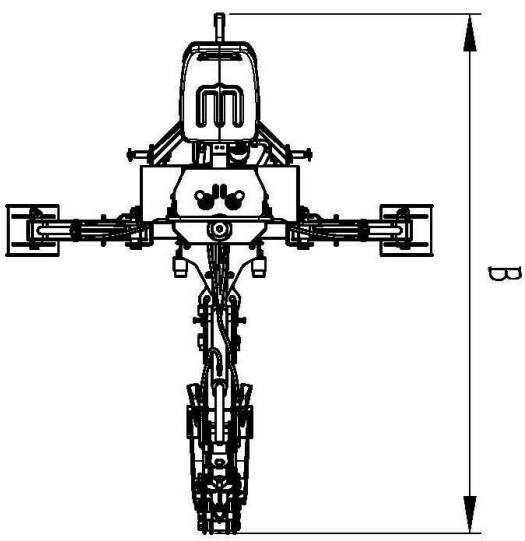
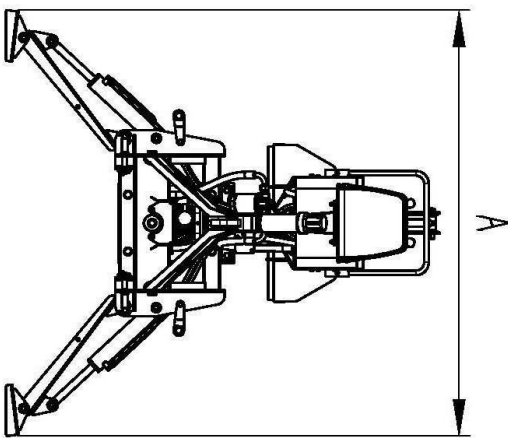
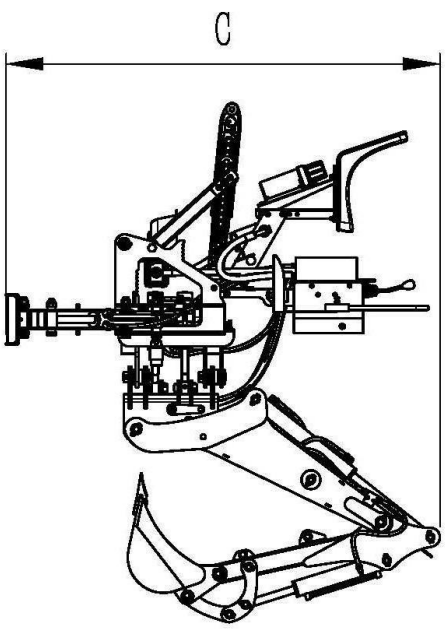
3.1 Hydraulic System Main Components

- | | |
|----------------------------|---------------------------------|
| 1. Front Hose-Bucket Staff | 6. Hose-Turning Cylinder |
| 2. Long Hose-Boom | 7. Oil Return Cylinder |
| 3. Control Valve DL-F20L | 8. Inlet Oil Hose-Control Valve |
| 4. Short Hose-Boom | 9. Inlet Hose-Gear Pump |
| 5. Rear Hose-Bucket Staff | 10. Hose-Stabilizer |



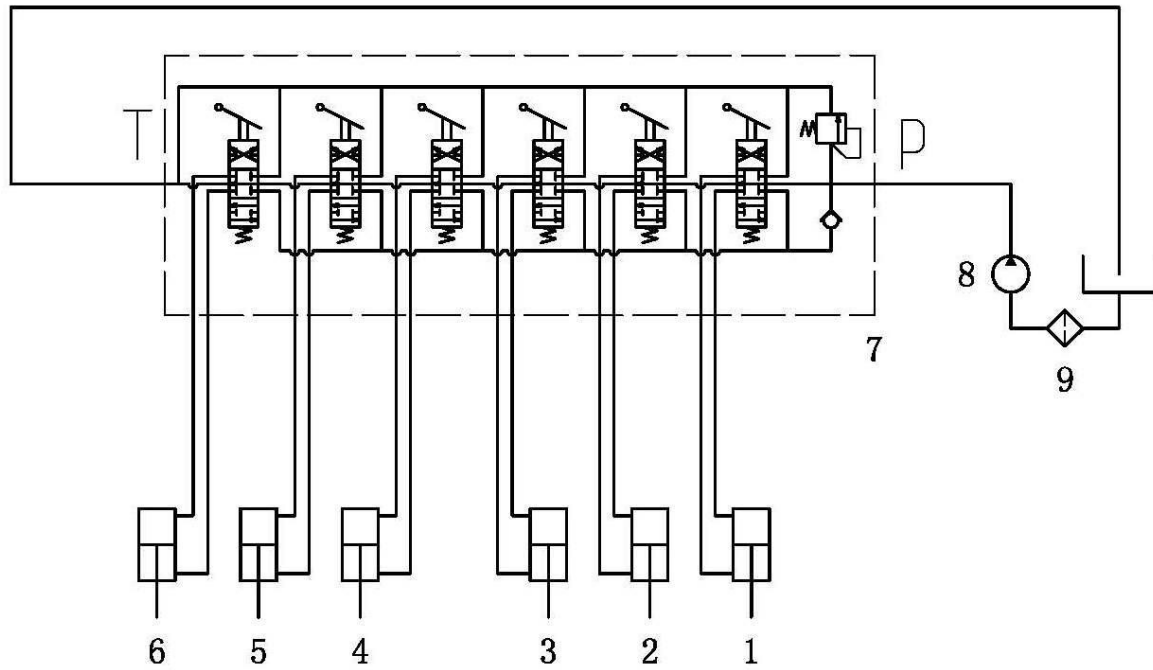
3.2 Backhoe Main Components

- | | |
|------------------------|---------------------|
| 1. Bucket | 7. Stabilizer |
| 2. Bucket Staff | 8. Swing Post |
| 3. Boom | 9. Bottom Seat |
| 4. Bracket for Control | 10. Sub A Frame |
| 5. Tank | 11. Safety Lock Pin |
| 6. Seat | |



Mod.	A(mm)	B(mm)	C(mm)
BHM95 (DK-950)	2180	1890	1650
BHM175 (DK-1750)	2030	2480	2070
BHM195 (DK-1950)	2030	2560	2180
BHM225 (DK-2250)	2650	2750	2480
BHSM175	1370	2460	2170
BHSM195	1370	2650	2280
BHSM225	1540	2770	2680

Hydraulic system



1, Main arm cylinder	2,Bucket cylinder	3,Supporting cylinder
4,Supporting cylinder	5,Swing cylinder	6,Secondary arm cylinder
7,Multi-way valve	8,Gear pump	9,Oil filter

4,TRACTOR PREPERATION

4.1 ROPS System

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

4.2 Hydraulic System

Models BHM / BHSM Series

These Models are driven by the tractors Hydraulic remotes. 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.

The hydraulic system powering the backhoe must be compatible with the specifications of the backhoe. Refer to the minimum and maximum pressure and flow requirements shown in Backhoe Specifications. Many tractor hydraulic systems exceed the flow rate specified for your backhoe. The flow may need to be reduced to an acceptable rate by throttling the engine RPM. Adjusting the flow rate correctly could prevent sudden shock loads on the cylinders, hoses, etc. This results in a smooth operation and reduced maintenance costs and down time.

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

Models BHM / BHSM Series

These Models are driven by the tractors Power Take Off, and are fitted with an in-built Hydraulic pump and tank. Check fluid level daily, ensure PTO shaft is greased and change hydraulic filter (refer to Lubrication and Maintenance).

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

4.3 Tyre Inflation

Front Tyres must be maintained at the maximum recommended inflation to maintain normal tyre profile with the added weight of backhoe/material.

Rear tyres must be maintained at equal pressure within the recommended tyre inflation range.

Unequal rear tyre inflation can prevent backhoe attachment from controlling the ground across its full width.

4.4 Wheel Tread Settings

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

4.5 Attachment

Ensure your tractor's 3 point linkage system is fitted with sway chains before attaching the backhoe.

Failure to do so can cause the backhoe to swing when travelling potentially causing bodily injury or machine failure.

Inspect for any worn or damaged parts that are part of the connection between the tractor and backhoe. Replace if necessary with parts of suitable strength and quality.

4.6 Counter Weight

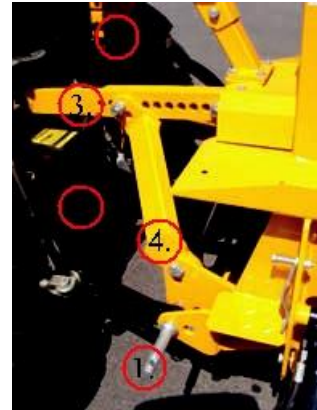
Add recommended ballast (either front weights or front end loader) in tractor's front-end for increased stability. Refer to tractor operator's manual for specific recommendations on counter weighting tractor.

5, BACKHOE MOUNTING

5.1 BACKHOE Mounting

The 3.P.L mounting frame is adjustable to suit all tractor models with Cat 1 or Cat 2 three point linkage.

1. Connect tractor 3.P.L arms to lower mounting frame pins.
2. Connect PTO or Hydraulic oil lines and move bucket down to lift boom to move main frame into vertical position.
3. Connect and Adjust top link assembly.
4. Connect left hand and right hand lock out brace to the correct hole and secure the bolt and nut tightly.
5. Lower and manually lock the tractor 3.P.L position / Draft Lever. (See Tractor's Operation Manual)



5.2 PTO CONNECTION

Ensure PTO shaft is correct length, correct PTO shaft length must have a minimal overlap of 150mm in drive position. Connect PTO shaft to tractor, PTO output shaft and backhoe hydraulic pump shaft. Check PTO shaft has suitable angle prior to operation. Angle of PTO shaft universals must be less than 25°, to prevent major damage.



5.3 HYDRAULIC CONNECTION

Connect the Hydraulic quick connectors to the tractor's hydraulic remote outlets. Detent tractor hydraulic remote's control lever forward or back for correct flow of oil to backhoe.

6, 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.

6.1 Precautionary Note.

- 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.
- Warn 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 to the specified level.
- 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 arm, 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.

6.2 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.

6.3 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 with seat belt on.

6.4 Backhoe Hydraulic Controls

The backhoe hydraulic valve features 4 control levers. Refer to the diagram below for backhoe control functions. "Left" and "Right" are determined by the direction the operator is facing when seated in the backhoe.

The Diagram is located on the rear of the control valve bracket and is visible when operating the valve.

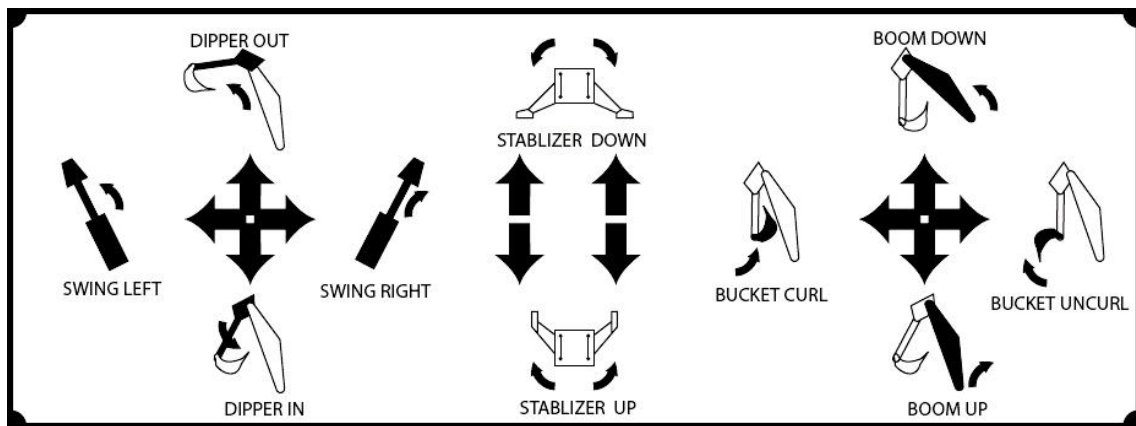


1. boom / Bucket

2. Dipper Arm / Swing

3. Right Stabilizer

4. Left Stabilizer



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

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.



LEFT: BHUF, BHEF
 BOTTOM LEFT: BHES, BHUS
 BOTTOM: Store Lock Pins



6.5 Swing Lock and Boom Lock

When transporting or dismounting backhoe, you must lock the backhoe's swing and boom. For models BHUF and BHEF, position boom straight back and the drop pin through holes in swing frame and boom. For models BHES and BHUS, side shift boom carriers to one side, swing boom to opposite side and drop pin through holes in swing frame and boom. When not in use, store pins in the adjustable top link.

6.6 STABILIZER CLIPS

Stabilizer clips are also to be used for transporting and dismounting backhoe.





CAUTION: Backhoe should be mounted to the tractor three point linkage.



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



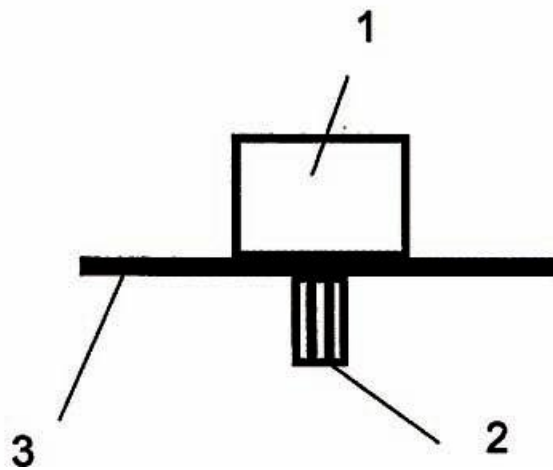
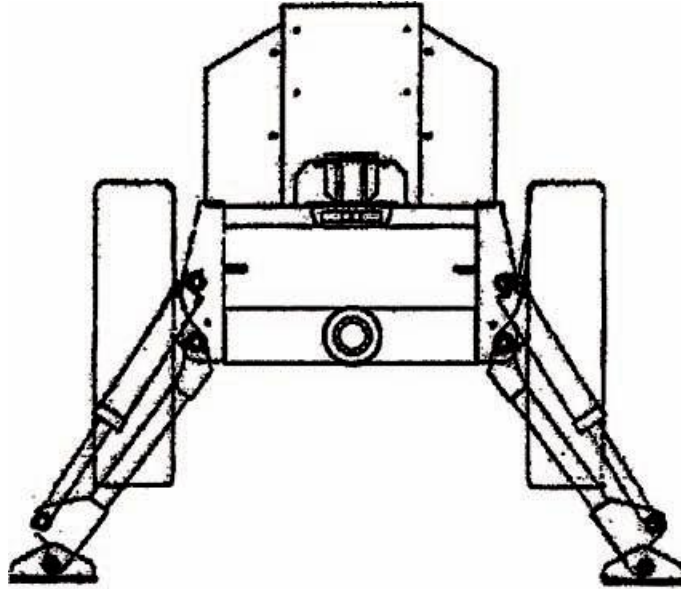
CAUTION: Never raise 3.P.L position / draft lever while backhoe is connected, damage could occur to linkage and hydraulic system. Use mechanical means to secure levers in down positions.



CAUTION: It is owner / Operator responsibility to ensure that the tractor 3.P.L top link & Hydraulic lift cover area is strong enough to accept 3.P.L rigid connection and backhoe while in operation as extra forces are exerted through top link. No liability can be accepted for damage to tractor.

7, HYDRAULIC PUMP ASSEMBLY

Hydraulic Pump Assembly



REF	Description	Specification	Part No.	Qty
1	Hydraulic pump			1
2	Hydraulic pump shaft	13/8"6 Splines		1
3	Bracket			1

8, MAINTENANCE

Item	Service	Service Interval
Hydraulic System Oil Level	Check	Daily / 10 Hours
Hydraulic System Oil / Filter	Replace	Every 50 Hours
Tyre Inflation	Check	Weekly / 50 Hours
Backhoe Pivot Points	Lubricate / Grease	Daily / 10 Hours
Backhoe Hydraulic Lines, Hoses, Connections	Check for leaks, wear	Daily / 10 Hours
Boom, Arm, Swing and Bucket cylinder rod packings	Check for seepage, service as needed	Daily / 10 Hours
Pivot Pin Bolts and Dust Covers	Check, replace if missing	Daily / 10 Hours
Pin Wear	Check, replace if necessary	Daily / 10 Hours
Backhoe Mount Hardware	Check visually	Daily / 10 Hours
Bolt 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, dipper arm 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 arm to drop, causing severe injury.



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

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 the tractor Operator's Manual for lubricant recommendations.

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

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

9, TROUBLE SHOOTING

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 Arm 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.	
	Safety lock pins (2) not removed	Remove and store safety pins.
	Stabilizer legs safety clip not released	Release the clips.

PROBLEM	Possible Cause	Correction
Cylinders operate in wrong direction relative to control valve lever position.	Hydraulic Hoses connected incorrectly.	Correct hydraulic hoses connections.
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
	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 work / 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 tubelines for evidence of restriction.
	Boom, Dipper arm 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. (bypassing fluid within valve).	Replace control valve and recheck operation.

PROBLEM	Possible Cause	Correction
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 Dipper arm 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 leing 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 relieve 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 the hydraulic oil flow. Repair or replace defective components.

PROBLEM	Possible Cause	Correction
Backhoe Drops with valve spool in "centred" 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 centred position	Control lever linkage binding	Determine origin of binding and repair
	Control valve spool centring is broken	Replace Centring 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-ring 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.

10, WARRANTY CONDITIONS

10.1 DURATION OF THE WARRANTY PERIOD

The manufacturer warrants all its products as free of defects in material and in workmanship for one year from the date of delivery of the machine.

10.2 WARRANTY CONDITIONS

- 1) the commitment of this warranty is limited only to the replacement and/or repair of those elements considered to be defected in material or workmanship after an inspection of our technician;
- 2) the damaged elements must be in unaltered conditions, not disassembled by unauthorized persons and furthermore must not have been subject to bad use, negligence or accidents;
- 3) labour and transport fees for the repair or replacement of defected parts are excluded from this warranty;
- 4) no warranty performed by someone other than the manufacturer shall be considered valid or binding;
- 5) the manufacturer holds the right to perform modifications without prior notice and whenever modifications take place the manufacturer shall not be obliged to carry out these modifications on products manufactured previously;
- 6) upon delivery check that the machine was not damaged during transport and that it is complete in every part. Claims must be presented by writing within 8 days from the date of delivery of the machine.

10.3 DECAY

The warranty does not cover the customer when :

- 1) The damage is due to a manoeuvre error;
- 2) The damage is due to repairs made by unauthorized people or using non original spare parts
- 3) The instructions written in this manual are not followed.

10.4 WARRANTY CERTIFICATE

Dear Customer,

We thank you and we congratulate you for having chosen a CLOVER product. Our brand is a guarantee of quality and avails of a wide net of dealers who are able to intervene and resolve any problem connected with the product that you have purchased.

The warranty validity conditions are already mentioned in the previous pages of this manual.

WARRANTY COUPON NUMBER:

MACHINE TYPE:

- **Model**.....
-
- **year of construction**.....
-
- **serial number**.....
-
- **manufacturer**.....