BH5 BACKHOE

MachinerieDB

OPERATION & PARTS MANUAL

Please read these instructions carefully before using! Always grease all fittings and be sure to always check and fill with oil before operating! Retain this manual for future reference.

Phone: 819-350-5543

1776 161 Rd., St Valere

Specifications subject to change without notice.

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INTRODUCTION

The purpose of this manual is to assist you in maintaining and operating your Value Leader Backhoe.

Read the entire manual carefully before operating , 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 operator in backhoe seat position 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.

SAFETY PRECAUTIONS

11 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 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.

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

12 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 or backhoe. Only one person, the operator, should be on either machine when they are in operation.

Before leaving the tractor or backhoe, 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.

SAFETY PRECAUTIONS

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 any fluid lines.

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. 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 to always park backhoe on a hard level surface with all safety devices engaged to prevent backhoe from falling and being damaged or injuring someone. Stands may be required.

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 toed 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, coordination or judgment.

2. SAFETY DECALS

1. Keep safety decals clean and free of obstructing material
2. Replace damaged or missing safety decals with new decals.
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.
Note some decals appear on both sides of backhoe. #'s 1, 2, 5, 6, and 12

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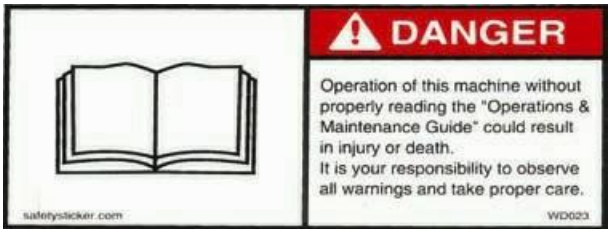
2. SAFETY DECALS

8. 

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2. SAFETY DECALS

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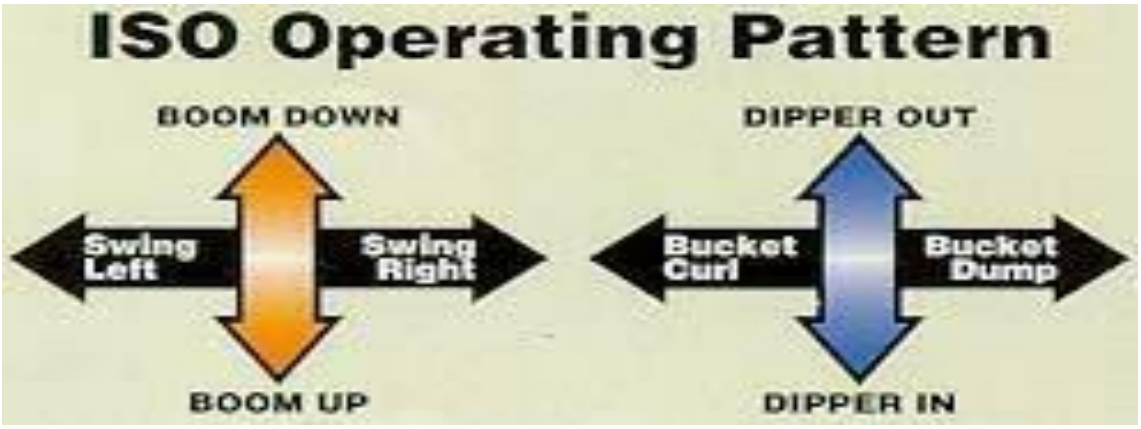


SPECIFICATIONS

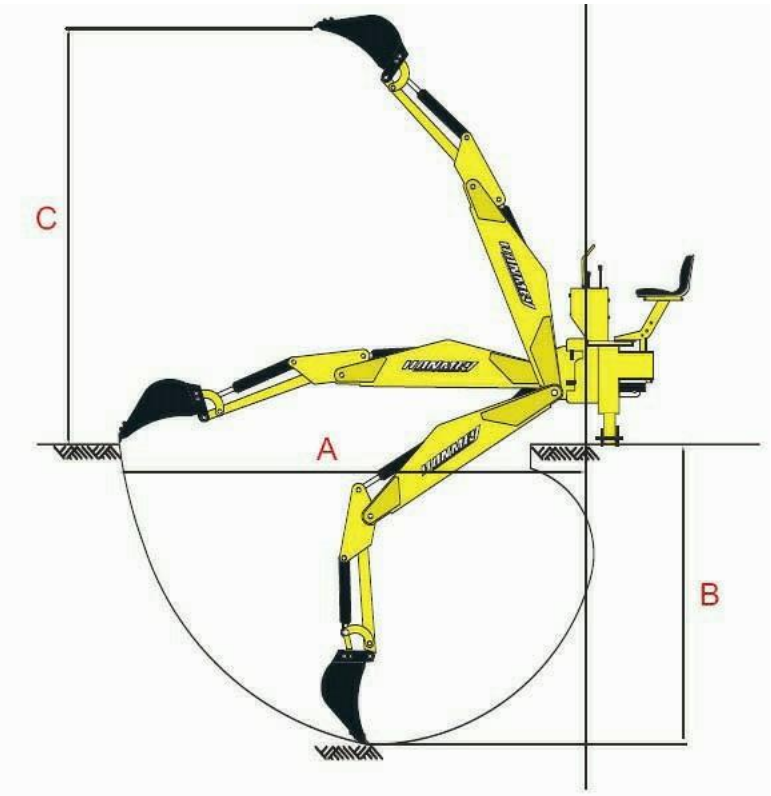
Model	BH5	BH6	BH7
Recommended Tractor HP	Sub-Compact 18HP thru 24HP	25HP+	30HP+
3 Point Hitch	Cat I	**Cat I / Cat II**	**Cat I / Cat II**
Digging Depth* (B)	5.5 ft	6.5 ft	7.5 ft
Overall Reach Out (A)	7'7"	9'0"	10'7"
Operating Height UP (C)	8'4"	9'11"	10'7"
Swing Arc (Dual Cylinder)	140 Degrees	180 Degrees	170 Degrees
Stabilizer Width	59"	59"	59"
Dipper Boom Digging Force	880 lbs.	1,385 lbs.	1,875 lbs.
Bucket Digging Force	2,245 lbs.	2,450 lbs.	2,750 lbs.
Bucket Lift Capacity Extended	650 lbs.	800 lbs.	1,100 lbs.
Bucket Size Included	7"	12" – 4 Teeth	16" – 3 Teeth
Included Bucket Capacity	0.79 (Cu Ft)	1.0 Cu Ft	1.10 Cu Ft
Bucket Rotation	160"	195°	195°
Cylinder Diameters	(1) 2.5"	3"	3"
Valve Control Valve Type	(2) (4-Way & (2) 2-Way Joystick	(2) (4-Way & (2) 2-Way Joystick	(2) (4-Way & (2) 2-Way Joystick
Hydraulic Tank Capacity	4 Gallon	4 Gallon	6 Gallon
Hydraulic Pump Details	PTO Driven w/In-Line Filter	PTO Driven w/In-Line Filter	PTO Driven w/In-Line Filter
Optional Bucket Sizes	24" ONLY	24" ONLY	24" ONLY
Warranty	1 Year	1 Year	1 Year
Weights	750 lbs.	1000 lbs.	1250 lbs.

*Digging Depth varies based on overall rear tire height

Measurements based on 16" ground clearance from Boom-Tower

OPTIONAL ATTACHMENTS – MECHANICAL THUMB & RIPPER

3. BH SERIES BACKHOE SPECIFICATIONS



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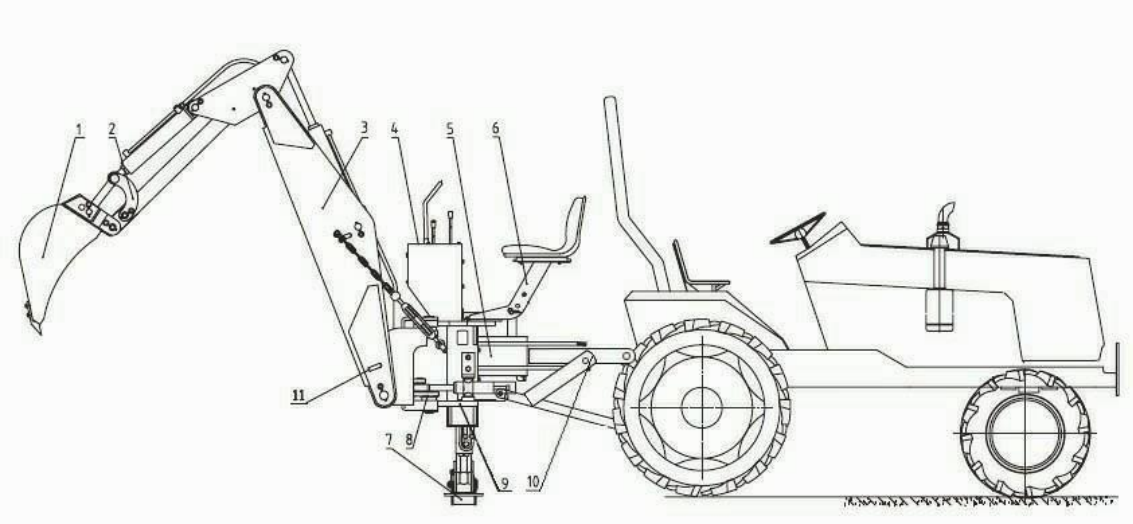


Backhoe Components

1. Bucket
2. Staff
3. Boom
4. Joystick Controls
5. Hydraulic Tank
6. Seat
7. Stabilizers
8. Swing Cylinders
9. Tower
10. 3-Pt Connections
11. Transport Lock Pin

4. TRACTOR PREPARATION

⚠ Caution: Do not exceed the manufacturer's rating for maximum gross weight. .Refer to operator's manual, dealer or manufacture.

⚠ Caution: Certain specific conditions may not permit safe use of the backhoe at backhoe rating or may require more careful restricted

4.1 ROPS System

The tractor must be equipped with an approved ROPS (Roll Over Protection System) to ensure adequate operator's protection.

4.2 Hydraulic System

The BHM series backhoe hydraulic system is powered by the tractors Power Take Off, and are fitted with an in-built hydraulic pump, tank and in-line filter system. Check fluid level daily, ensure PTO shaft is greased and change hydraulic filter as required (refer to lubrication and maintenance).

BE SURE TO FOLLOW THE DETAILED STEPS OUTLINED IN ASSEMBLY & MOUNTING BEFORE USING THE BACKHOE!

⚠ **Caution: The Tractor/Backhoe must only be operated with all safety equipment properly installed.**

4.3 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 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.

4.6 Attachment

Ensure your tractor's 3 point linkage system is fitted with sway chains before attaching the backhoe. Failure to do this can cause the backhoe to swing when traveling potentially causing bodily injury or machine damage or 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) to tractor's front end for increased stability. Refer to tractor operator's manual for specific recommendations on counter weighting tractor.

5. BACKHOE OPERATION

⚠ Caution: The Tractor/Backhoe should only be operated with all safety equipment properly installed. Keep assistants or bystanders at a safe distance from the equipment operating area.

5.1 **Precautionary Notes:**

- 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 be prepared for operating.
- Warm up and operate the tractor and backhoe carefully. Purge any air in the hydraulic lines and cylinders by fully cycling all cylinders several times. Check the fluid level in tank each after doing this.
- 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 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 or stabilizers to lift, push or pull objects. Use only to maneuver and operate the bucket.

Important:

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

Important:

Do not operate while the rear tractor wheels are off the ground by stabilizer. It is dangerous to operate the backhoe while rear wheels are off the ground.
Position vehicle so that the backhoe is as near as possible and in such a direction as to minimize the amount of backhoe turning required to dump. Keep the unit clean and perform regular service.

5. BACKHOE OPERATION

We urge you to follow this advice: Failure to do so will result in a voided warranty, personal injury or damage to equipment.

5.1

1. Read and understand this manual as well as the tractor operator's manual.
2. Remember and observe the safety precautions brought to your attention in this manual, the tractor manual and on the machinery itself.
3. Use good common sense in the everyday operation of this unit. Safety recommendations can never be all-inclusive and you are responsible for watching out for and avoiding unsafe conditions.
4. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question, don't try it.
5. Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new backhoe.

Caution: When lowering a heavy load ease it downward slowly. Never drop a loaded attachment and “catch it hydraulically” Stopping a load after it has gained download momentum places undue strain on the unit and may void your warranty causing unnecessary damage to the backhoe/tractor or even worse personal injury.

Caution: «Before disconnecting hydraulic lines relieve all hydraulic pressure. Escaping hydraulic pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic oil seek medical attention immediately.

Caution: Do not operate the backhoe if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the boom or upper arm bucket to drop suddenly voiding the warranty causing damage to the tractor/backhoe or injury to personnel.

5.2 **Initial Backhoe Operation**

Before operating the backhoe, fully raise an d lower the boom, arm, swing and stabilizers two ore 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 fill to 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 the tractor in park as equipped.

Always keep cylinders in a retracted position when backhoe is not in use to guard against rust and contamination which may cause damage to the cylinder rods or hydraulic system. Also, lock arms and boom into storage position.

5.3 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.

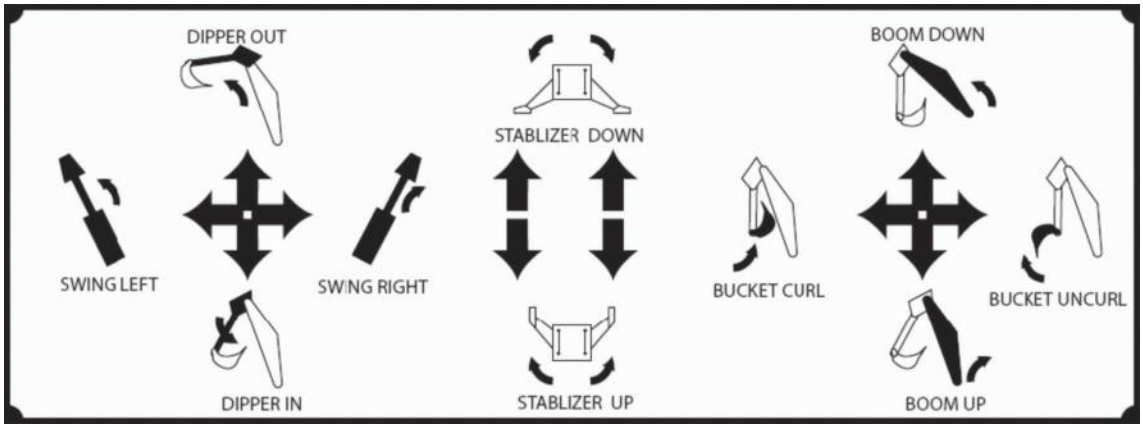
⚠ CAUTION: Operate controls only when seated in the operator's seat with seat belt on.

5.4 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.

A. Boom & Bucket Control
B. Right Stabilizer Control
C. Left Stabilizer Control
D. Dipper Arm & Swing Control

5.4 Backhoe Hydraulic Controls*



-Stabilizer Control Lever is 2 – Way of moving stabilizers up & down

- Dipper Arm & Swing Control Lever is 4 – Way of moving Dipper out or in & Swing left or right

- Boom & Bucket Control Lever is 4 – Way of moving Boom up or down & bucket curled
or uncurled.

Practice is needed to eliminate excess motion and increase operating efficiency.

Do not dig near the stabilizers as this can cause unsafe working conditions or accident.

Do not lift the tractor rear wheels off the ground with stabilizers.

- Controls are set to the ISO standard if you desire SAE pattern, contact Betstco support for information on how to change control pattern to SAE.

5.5 TRAVELING SWING AND BOOM LOCK

When transporting or dismounting backhoe, you must lock the backhoe's swing and boom. Position boom straight back and then slide pin through holes in boom & swing frame.

5.6 TRAVELING STABILIZER CLIP LOCKS

When transporting or dismounting backhoe, you must lock stabilizer lock clips. Raise stabilizers and attach the lock clips.

6. BACKHOE MOUNTING

6.1 BACKHOE ASSEMBLY

-After removing from crate.

-You may need suitable support to lift and hold backhoe behind 3 pt during assembly.

-Attach filter bracket to bracket on hydraulic tank, this may require the loosing of the hoses to acquire needed rotation, then re-tighten the hoses.

-Remove cover of hydraulic tank and fill with tractor hydraulic fluid to level indicator on side of tank.

 USE EXTREME CAUTION DURING CONNECTION TO TRACTOR

- The 3-PT mounting frame is adjustable to suit most tractor models with Cat 1 3-Pt linkage.

1. Connect tractor 3-Pt arms to lower mounting frame pins.

2. Connect PTO and move bucket down to lift boom to move main frame into vertical position. Lower stabilizers to balance backhoe. Raise lift arms until 3-pt top link frame will be close to horizontal with top link connection on tractor. See below for PTO Connection details.

3. Connect and adjust top link assembly. 1 bolt under tower (longest), 2 bolts in middle (medium length), and 1 bolt to top link.

4. Connect left hand and right hand lock out brace to the correct hole and secure the bolt and nut tightly (shortest bolts).

5. Lower and manually lock the tractor 3-pt position/Draft Lever. (See Tractor's Operation Manual)

- Attach seat with bolts & nuts provided

- Operate all cylinders in and out 2 times. Check oil level again & fill as needed

- Attach all safety labels

- Grease all 28 points as detailed below in lubrication section

6.2 PTO CONNECTION

Ensure PTO shaft is correct length, correct PTO shaft length must have a minimal overlap of 2” in drive position. See PTO Driveline manual for proper steps to reduce overall PTO driveline length. 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 universal must be less than 25 degrees, to prevent major damage.

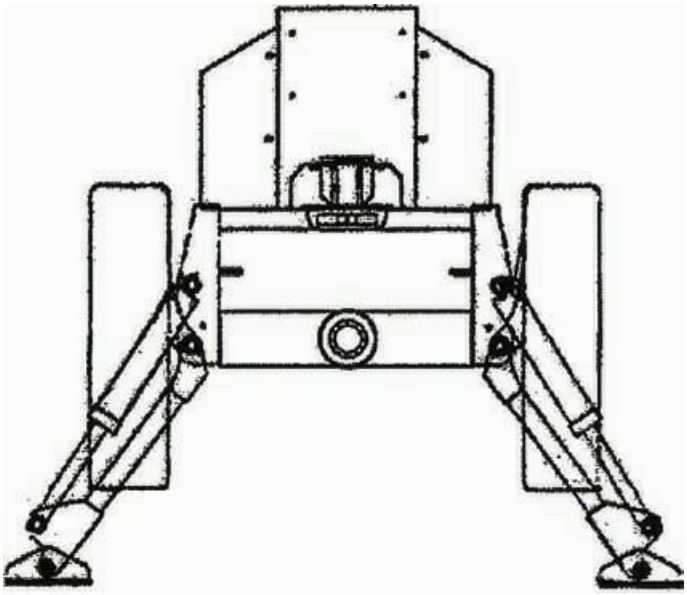
 CAUTION: Backhoe should be mounted to the tractor three point linkage.

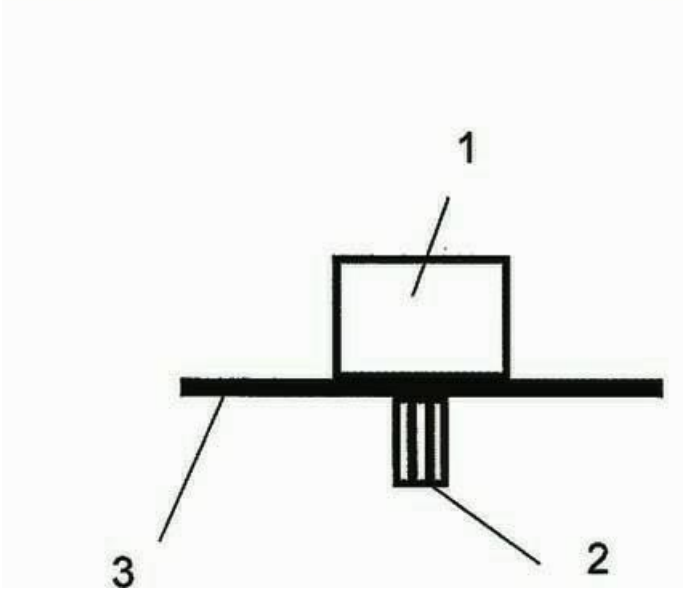
 CAUTION: Never store backhoe without bucket attached to the backhoe.

 CAUTION: Never raise 3-PT position/draft lever while backhoe is connected, damage could occur to linkage and hydraulic system or void the warranty. Use mechanical means to secure levers in down positions.

 CAUTION: It is Owner/Operator responsibility to ensure that the tractor 3-PT link & Hydraulic lift cover area is strong enough to accept 3-PT 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





SPECIFICATION	PART NO.	QTY
1. Hydraulic Pump	CBF-F425-ALPL	1
2. Hydraulic Pump Shaft	1 3/8: 6 Splines	1
3. Bracket		1

8. LUBRICATION AND MAINTENANCE

Total of 28 Grease Points
Use Lithium Based All Purpose Grease
Hydraulic Oil – Use Standard Tractor Hydraulic Fluid

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

8.0 LUBRICATION & MAINTENANCE

CAUTION: Do not perform service or maintenance operations with backhoe raised of the ground.

For additional access to tractor components remove backhoe.

IMPORTANT:Lower the backhoe to the ground and relieve pressure in the 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 and hoes 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 any 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: 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.

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).

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.

9. 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 experience 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.

9. TROUBLE SHOOTING

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 linkagae 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 choses / 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.

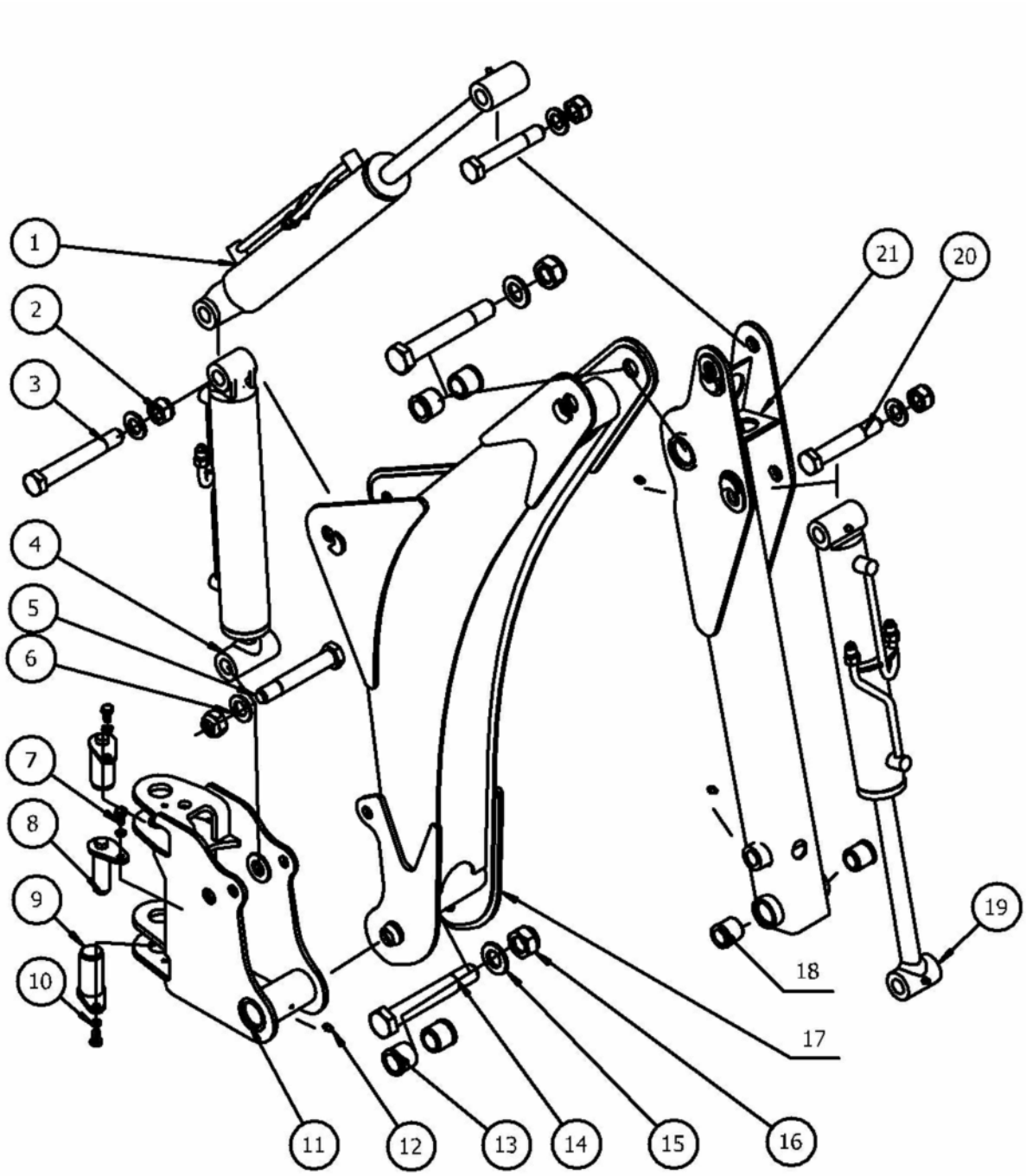
9. TROUBLE SHOOTING

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"
Aeraion 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.

9. TROUBLE SHOOTING

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.

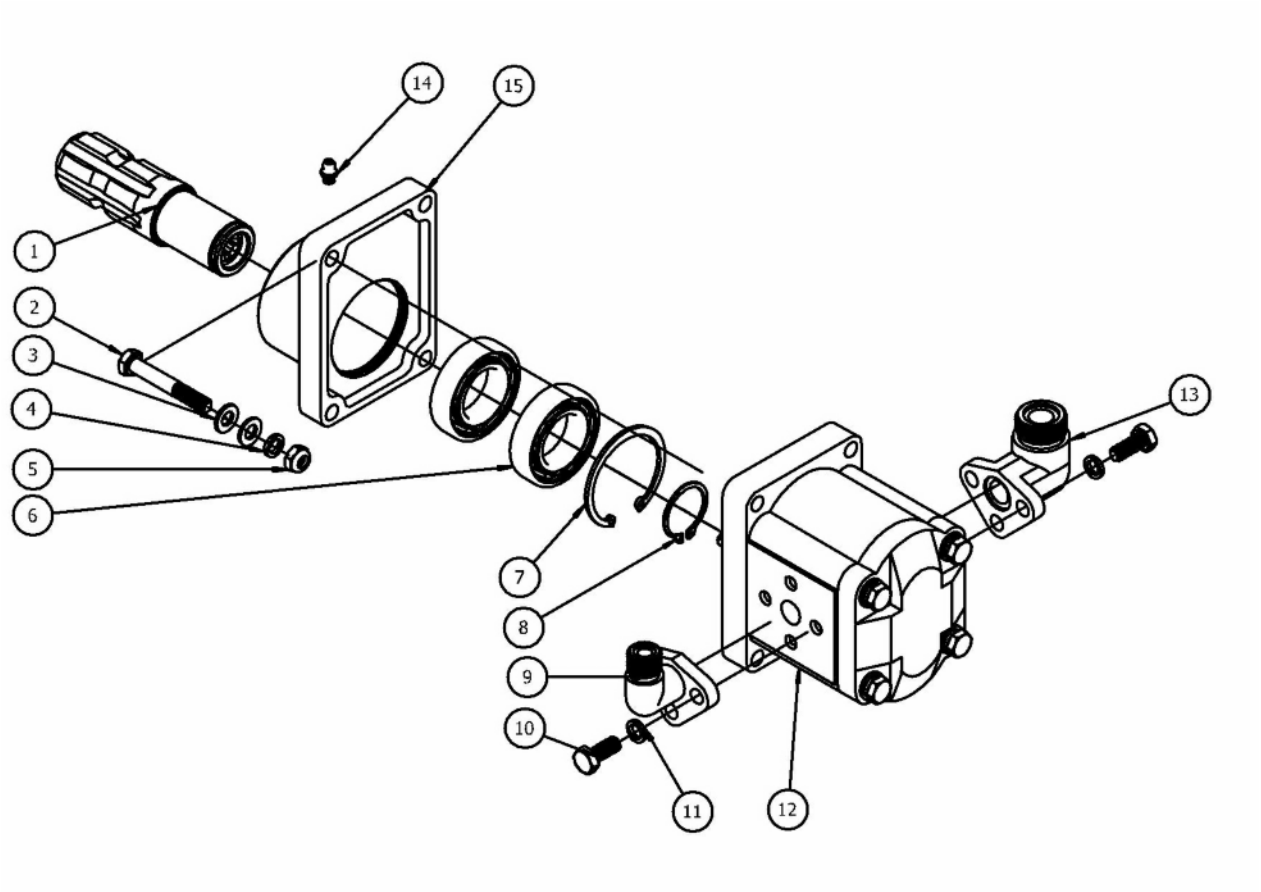
10.1 Parts Diagram - Boom



10.1 Parts Diagram - Boom

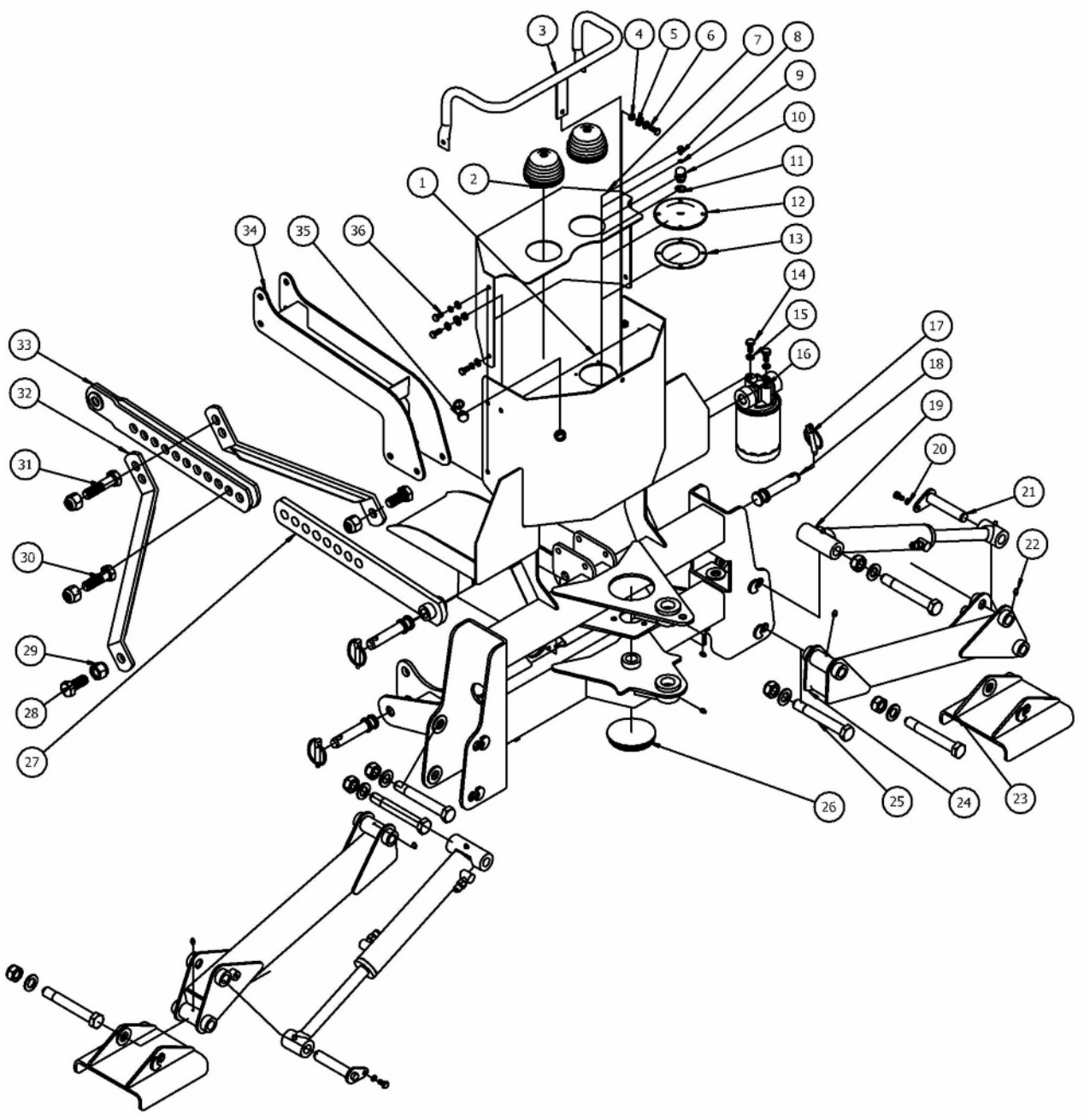
ITEM	PARTS NO	QUANTITY	PARTS NAME
1	BH-4.08.012	1	FRONT ARM CYLINDER
2	GB6184-86	4	NUT M20
3	GB27	1	BOLT M20*50
4	BH-4.08.013	1	BOOM CYLINDER
5	GB27	1	BOLT M20*130
6	GB97.1-85	4	WASHER20
7	GB5783-86	3	M8*16
8	BH-3.04.013	1	PIN
9	BH-3.04.014	2	PIN
10	GB93-87	3	WASHER
11	BH-3.04.011	1	SWING KNUCKLE
12	GB1152-89	3	OIL CUP
13	BH-3.02.102	4	BUSH
14	GB27-88	2	BOLT M248160
15	GB97.1-85	2	WASHER24
16	GB6184-86	2	NUT M24
17	BH-3.03.011	1	BOOM WELDMENT
18	BH-3.02.101	2	BUSH
19	BH-4.08.011	1	BUCKET CYLINDER
20	GB27	2	BOLT
21	BH-4.02.011	1	FRONT ARM WELDMENT

10.2 Parts Diagram - Hydraulic Pump



ITEM	PARTS NO	QUANTITY	PARTS NAME
1	BH-4	1	INPUT SHAFT
2	GB5782-86	1	BOLT M8*55
3	GB97.1-85	2	WASHER8
4	GB93-87	1	WASHER8
5	GB6184-86	1	NUT M8
6	GB276-89	2	BEARING6006
7	GB893.1-86	1	CIRCLE 55
8	GB894.1-86	1	CIRCLE 30
9	LW-7.07.116	1	IN OIL CONNECTOR
10	GB5783-86	6	BOLT M8*20
11	GB93-87	6	SPRING WASNHER8
12	CBW-F314-CFH	1	BEAR PUMP
13	LW-7.07.117	1	OUT OIL CONNECTOR
14	GB1152-89	1	OIL CUP6
15	BH-4	1	BEAR SETA

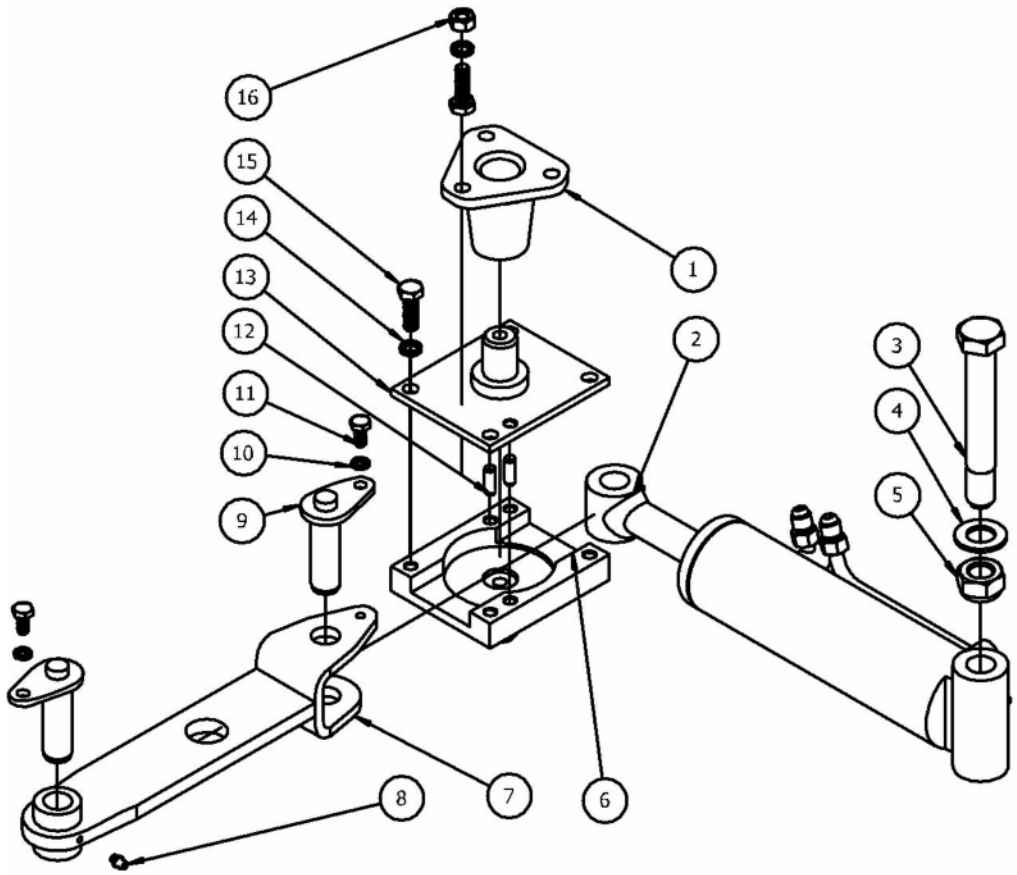
10.3 Parts Diagram Tower, Stabilizer and 3PT



10.3 Parts Diagram Tower, Stabilizer and 3PT

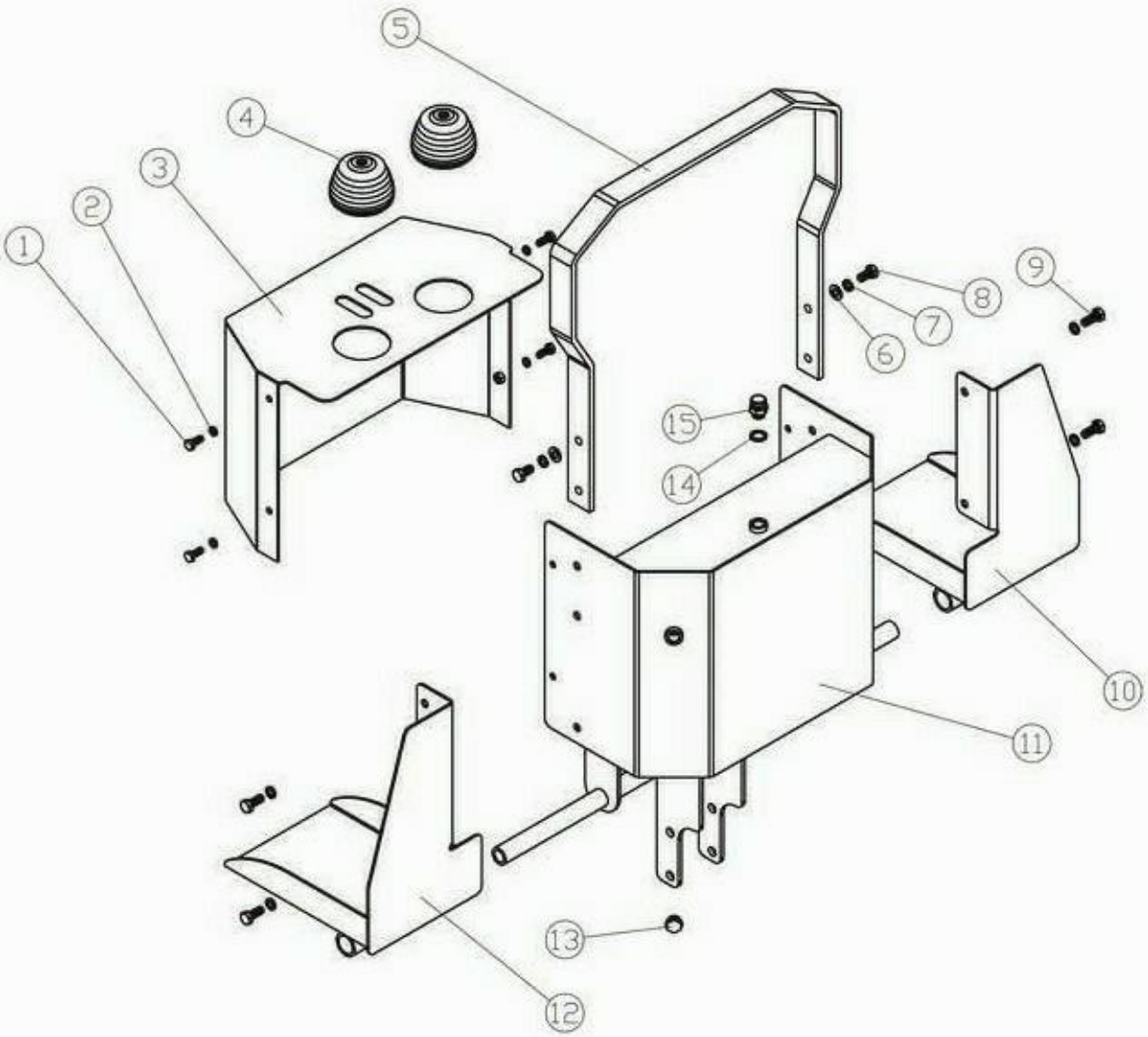
ITEM	PARTS NO	QUANTITY	PARTS NAME
1	BH-4.05.011	1	BASE WELDMENT
2	BH-6.08.105	2	Rubber cover
3	BH-3.05.018	1	Rod
4	GB6184-86	4	Nut M8
5	GB97.1-85	2	Washer 10
6	GB5783-86	3	Bolt M8x20
7	BH-4.05.015	1	Rear cover weldment
8	GB5783-86	4	Bolt M6x12
9	GB93-87	4	Washer 6
10	CBW-00.011	1	Oil plug
11		2	Dowty washer 16
12	MBH-8.08.117	1	Cover for oil tank
13	MBH-8.08.118	1	seal washer for cover of oil tank
14	GB5783-86	2	Bolt M10x20
15	GB93-87	2	Washer 10
16	YX0811A	1	Oil filter
17	200.56.011	3	Locking pin
18	BH-3.05.105	3	Pin shaft
19	BH-3.08.019	2	Cylinder for supporting leg
20	GB93-87	6	Washer 8
21	BH-8.04.020	2	Pin shaft
22	GB1152-89	6	oil cup M6
23	BH-4.06.011	2	Sipporting leg
24	BH-3.06.013	2	Supporting leg
25	GB27	6	Bolt M20x150
26		1	Rubber cover
27	MBH-5.05.018	1	Adjusting plate
28	GB5783-86	2	Bolt M20x45
29	GB6182-86	4	Nut M20
30	GB5782-86	1	Bolt M20x65
31	GB5782-86	1	Bolt M20x80
32	MBH-5.05.103	2	Suspensive plate
33	MBH-5.05.017	1	Pull plate
34	BH-4.05.016	1	Seat support weldment
35	M16×1.5	1	Oil cup M16x1.5
36	GB5783-86	6	Bolt M8x16

10.4 Parts Diagram Swing Assembly



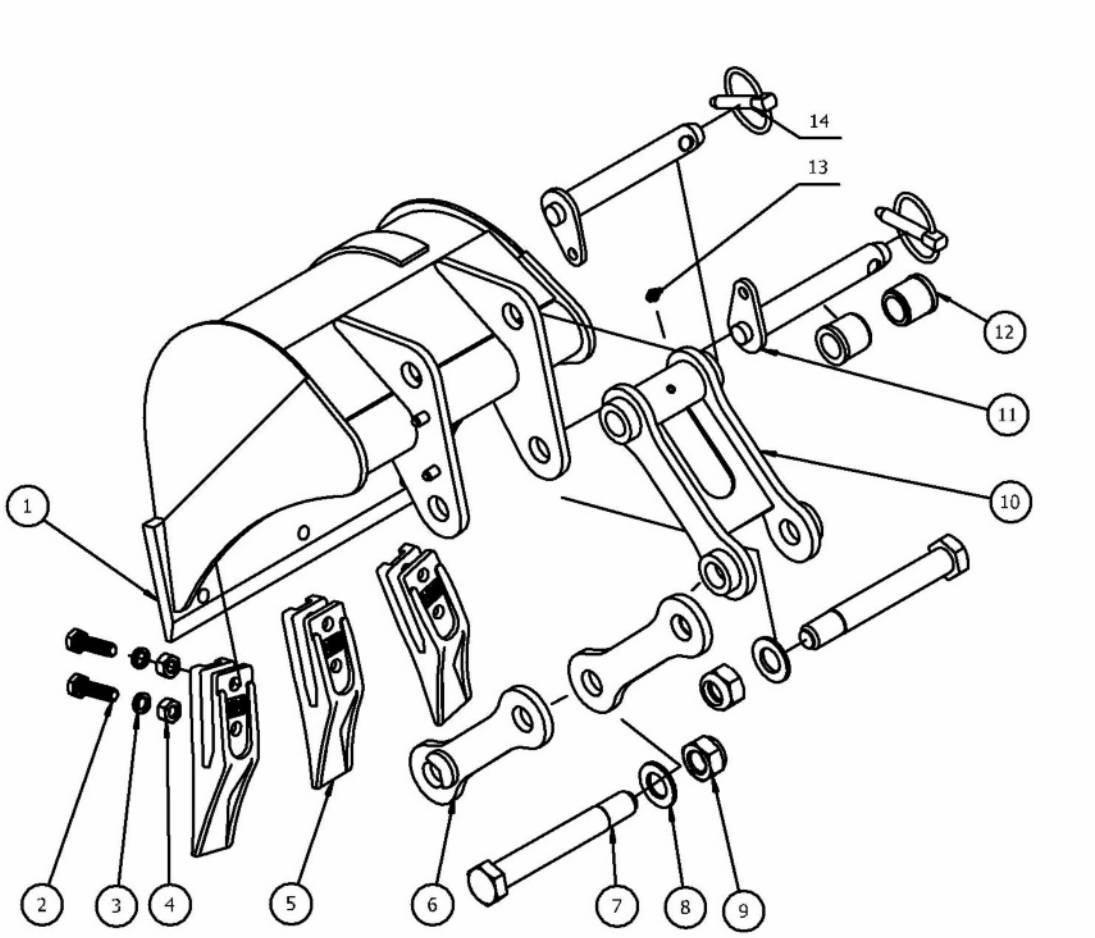
ITEM	PARTS NO	QUANTITY	PARTS NAME
1	BH-3.04.105	1	SLIP BRACKET SEAT
2	BH-3.08.023	1	SWAING CYLINDER
3	GB27	1	BOLT m20*140
4	GB97.1-85	1	WASHER 20
5	GB6184-86	1	NUT M20
6	BH-3.04.016	1	SLIP BRACKET WELDMENT
7	BH-3.04.015	1	SWING ARM WELDMENT
8	GB1152-89油	1	OIL CUP M6
9	BH-8.04.020	2	SWING ARM AXIS WELDMENT
10	GB93-87	2	WASHER 8
11	GB5783-86	2	BOLT m8*16
12	GB119-86	2	COLUMN PIN 8
13	BH-3.04.017	1	SLIP BRACKET COVER
14	GB93-87	7	SPRING WASHER 10
15	GB5783-86	7	BOLT M10*30
16	GB6170-86	3	NUT M10

10.5 Parts Diagram Tower Parts



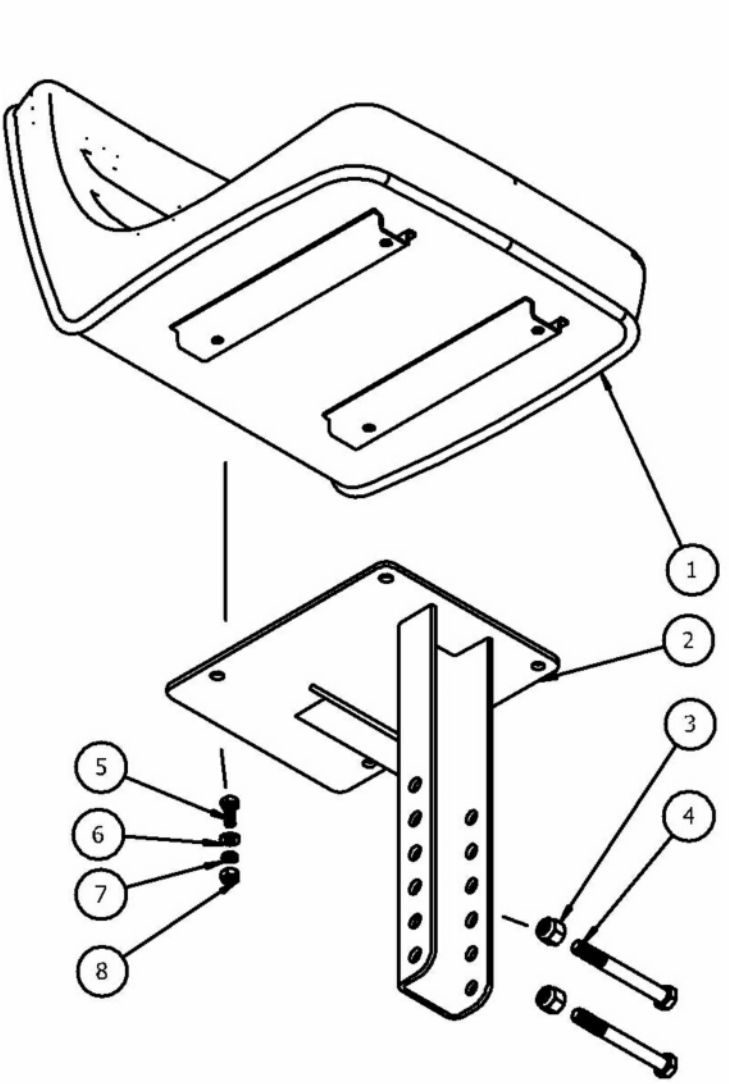
OPERATION PANNEL AND OIL TANK				
Ser.No		Name & Specification	Quantity	Remarks
1	GB5783-86	Bolt M8X20	4	
2	GB93-87	Spring lock washer 8	4	
3	MBH-5.05.015	Up cover board	1	
4	BH-6.08.105	Rubber cover	2	
5	MBH-5.05.106	Handrail	1	
6	GB97.1-85	Plain washer 10	2	
7	GB93-87	Spring lock washer 10	6	
8	GB5783-86	Bolt M10X20	2	
9	GB5783-86	Bolt M10X25	4	
10	MBH-5.05.013	Base frame weldment	1	
11	MBH-6.05.014	Bracket of valve weld	1	
12	MBH-5.05.012	Base frame weldment	1	
13		Oil indicator M16x1.5	1	
14		bonded washer 16	1	
15	CBW-00.011	bolt to plug oil	1	

10.6 Parts Diagram Bucket



ITEM	PARTS NO	QUANTITY	PARTS NAME
1	MBH-4.01.001	1	BUCKET ASSEMBLY
2	GB5783-86	6	BOLT M10*37
3	GB93-87	6	WASHER 10
4	GB6170-86	6	NUT M10
5	MBH-4.01.101	3	BUCKET TEETH
6	BH-3.02.012	2	SWING BOARD WELDMENT
7	GB27	2	BOLT M10*150
8	GB97.1-85	2	WASHER20
9	GB6184-86	2	NUT M20
10	BH-3.02.014	1	CONNECT BOARD WELDMENT
11	BH-4.02.015	2	BUCKET PIN ASSMEBLY
12	BH-3.02.101	2	BUSH
13	GB1152-89	1	OIL CUP M6
14	200.56.011	2	LOCKING PIN ASSEMBLY

10.7 Parts Diagram Seat



ITEM	PARTS NO	QUANTITY	PARTS NAME
1	LW-7.06.101	1	SEAT
2	MBH-5.07.011	1	ADJUST WELDMENT
3	GB6182-86	2	NUT M12
4	GB5782-86	2	BOLT M12*103
5	GB5783-86	1	BOLT M8*20
6	GB97.1-85	1	WASHER8
7	GB93-87	1	WASHER8
8	GB6170-86	1	NUT M8