

FH-BRM Series



FHM

**FARMER-HELPER
MACHINERY COMPANY**



Do not operate for more than two consecutive hours, as this may cause warping of metal parts in the mower head.

OPERATION & PARTS MANUAL

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

BETSTCO 

RUGGED LABOR SAVING EQUIPMENT SINCE 1995

www.Betstco.com

541-895-3083 M-F 7am-4pm PST

83371 Melton Rd, Creswell OR 97426



INDEX

| | |
|--|----|
| 0. WARNING | 04 |
| 0.1 Safety | 04 |
| 0.2 Operating Personnel | 04 |
| 0.3 Warning labels on the boom & mower and attachments | 05 |
| 0.4 Literature | 07 |
| 1. INFORMATION | 08 |
| 1.1 Identification of manufacturer, boom & mower and attachments | 08 |
| 1.2 Interchangeable tool... .. | 08 |
| 1.3 Customer service | 08 |
| 1.4 For your safety | 09 |
| 1.5 Improper use | 09 |
| 2. FEATURES | 11 |
| 2.1 General features... .. | 11 |
| 2.1.1 Specifications..... | 11 |
| 2.2 Dimensions During Operation | 12 |
| 3. HOISTING | 13 |
| 3.1 Check on delivery... .. | 13 |
| 3.2 Hoisting | 13 |
| 4. INSTALLATION | 14 |
| 4.1 Connections | 14 |
| 4.2 Mower Mounting..... | 15 |
| 4.3 boom & mower - tractor organization check. | 16 |
| 4.4 boom Removal | 19 |

| | |
|---|----|
| 5. STARTING | 18 |
| 5.1 Starting | 18 |
| 5.2 Work interruption | 20 |
| 5.2.1 Short stops | 20 |
| 5.2.2 Long stops... .. | 20 |
| 5.2.3 In case of boom & mower disconnection: | 20 |
| 6. TROUBLE SHOOTING... .. | 21 |
| 6.1 Trouble shooting | 21 |
| 7. MAINTENANCE | 25 |
| 7.1 After the first 30/50 hours of operation | 25 |
| 7.2 Every 4 hours of operation... .. | 25 |
| 7.3 Every 8 hours of operation... .. | 25 |
| 7.4 After the first 50 hours of operation | 25 |
| 7.5 After long period inactivity..... | 25 |
| 7.6 Replacement shredder head cutters... .. | 25 |
| 7.6 Machine demolition and recovery of reusable material | 25 |
| 8. PARTS | 27 |
| 8.1 Boom & Mower..... | 27 |
| 8.2 Hydraulic Controls | 29 |
| 8.3 Sickle Bar | 31 |
| 8.4 Parts Order From | 33 |
| 9. WARRANTY | 33 |
| 9.1 Warranty Registration | 35 |
| 9.2 Extended Warranty | 36 |

0. WARNING

READ THIS SECTION BEFORE OPERATION !
DURING OPERATION IS TOO LATE

0.1 **Safety**

All users of boom & mowers and relating attachments must be aware that moving mechanical parts (linear or rotary) may cause serious injuries to people and extensive damage to properties.

All users must:

- follow the advise found in this manual;
- avoid improper use of the boom and its attachments;
- avoid replacing or tampering with safety devices;
- carry out maintenance works on a regular basis ;
- use only original spare parts, especially for safety-related components.

To this purpose it is necessary that:

- the original use and maintenance manual of the boom & mower and relevant attachments be available;
- such documentation be carefully read and the advice be therefore followed. Furthermore, properly trained personnel must be assigned.

0.2 **Operating Personnel**

According to their level of competence and responsibility the users of the boom & mower can be classified as:

OPERATOR - The operator does not need extensive technical knowledge, but is trained to carry out the boom and mower routine operations: for instance starting, stopping at the end of the work, routine maintenance works (cleaning, simple jamming), adjustment operations.

QUALIFIED TECHNICIAN - The qualified technician is assigned to special maintenance and repair works.

It is important that each operator act strictly within the limits of his specific competence and responsibility.

0.3 Warning labels on the boom and mower

Pay special attention to the following adhesive labels placed on the boom & mower and attachments indicating dangerous conditions.:

CAUTION: do not remove or make illegible the decalcomanias below



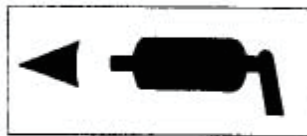
A

Maximum speed and direction or rotation of overdrive shaft. Follow strictly this indication as a higher speed of the overdrive shaft may cause severe damage to the boom & mower and attachments. This is a view taken from the rotating part front side.



B

Generic hazard: do not get near when the boom & mower is operating.



C

Greasing points where grease must be injected periodically.



D

Warns people to keep at safety distance.



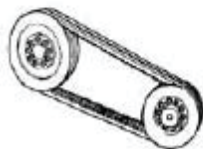
E

Warns the operator to read this manual before performing any operation.



F

Crushing and shearing danger.













G

Drive belt tension adjustment.



H

Hooking point for boom & mower and attachments hoisting.

- | | | | | | |
|---|---|---|---|--|--|
| I |  | Warns people against hooking, keep away hands from rotating tools. | P |  | Danger of wounding from liquids in pressure, follow the indications brought back in the use and maintenance book |
| L |  | Warns people against crushing, don't stop between tractor and machine. | Q |  | Fall danger, don't climb on or ride on machine. |
| M |  | Danger of dropping suspended loads, do not stay under raised parts of the machine. | R |  | Warns against crushing, dangerous area because of displacement of the mower |
| N |  | Before carrying out maintenance on the machine, shut down the motor of the tractor and take out the ignition key. | S |  | Warns against wounding hands, wait until rotating stops before handling |
| O |  | Warns against crushing of limbs, don't put hands near the belt drive. | T |  | Danger of tractor cab crushing, make sure the arm does not touch the cab. |

0.4 Danger warnings

For the safety of people and property this manual has been provided with special symbols to warn the users of potential hazards:



DANGER !

INDICATES A SERIOUS DANGER FOR THE LIFE OF THE OPERATOR AND OTHER PEOPLE



CAUTION

Indicates a risk of injury to the operator or other people



WARNING

Indicates a risk of damage, even severe, to the boom & mower and/or its

1. INFORMATION

Introduction

This section provides identification data of the manufacturer and of the boom & mower. The information supplied is recommended to all users of the boom & mower: OPERATORS and QUALIFIED TECHNICIANS .

1.1 Identification of manufacturer, boom & mower and attachments

A name plate (Fig. 1-1) with the data relating to the manufacturer and the boom & mower is applied on the machine in a clearly visible location.

Made In China

Model

Serial No:

Date MFD

CE

Fig. 1-1 Name plate

1.2 Interchangeable tool

Definition of interchangeable tool. Equipment mounted subsequently to the resale on one moving unit (tractor) modifying its main function.

1.3 Customer service

Contact the seller for questions, assistance or support..

1.4 For your safety

- Both operator and technician must know the machine well;
- Read Operation manual before using the machine;
- Do not remove safety guards while the boom & mower and/or the attachments are in motion;
- Make sure the implement never touch the ground during work;
- When the boom & mower is operating it is recommended to keep a 30 meter safety distance;
- the tractor cannot work in the immediate vicinities of cliff or steep slope, pits or diggings, since the land could yield.
- Before performing any operation on the boom & mower, such as cleaning or maintenance operations, disconnect the tractor power take-off, wait for the rotor come to a complete stop, stop the engine and disengage the Drive shaft on the tractor side;
- Do not allow anybody (people or animals) on the boom & mower during transport or operation;
- Do not wear loose clothing.
- Do not leave the workplace unattended. If the operator must itself be absented, close the tractor cabin with the key, in the case the tractor is supplied with, otherwise it's advisable to disconnect the hydraulic connections;
- Do not attempt to add or remove material from the boom & mower either with tools or with your hands or feet while the rotor is running;
- Having to leave the boom & mower operating when operator leaves tractor seat.
- Never connect the power take off when the engine is on;
- Use protected drives shafts.
- Attention: When operating in the vicinity of overhead electrical lines be careful about possible contacts with electrical lines.
- The operator should never use alcoholic or drugs that can change or alter their alert and the coordination.

1.5 Improper use

The boom & mower must NOT be used to:

- Lift weights of any kind, whether people, animals or properties;
 - Carry out digging or demolition works;
 - Advance in a reverse direction. The working direction of the boom & mower is the same as the direction of travel of the tractor when going forward.
 - Work after dark, unless the machine operation is constantly monitored by skilled operators equipped with appropriate lights to seen work area and surrounding safety area.
 - The equipment should not be used in wind speed is more than 40 Km/h / 25 mph.
 - The equipment is not to be used in closed rooms where ventilation can be unsafe or evacuation of the smoke of the tractor can be dangerous.
 - The equipment cannot work in areas with explosive atmospheres.
 - Do not use the implement in water.
-
- Failure to comply with the above prescriptions, will invalidate any form of warranty coverage.

1.6 Modes of operation

The boom & mower may operate in several modes (Fig.

Modes of Operation

- A: mower head on the ground
- B: mower head above operator
- C: mower extended

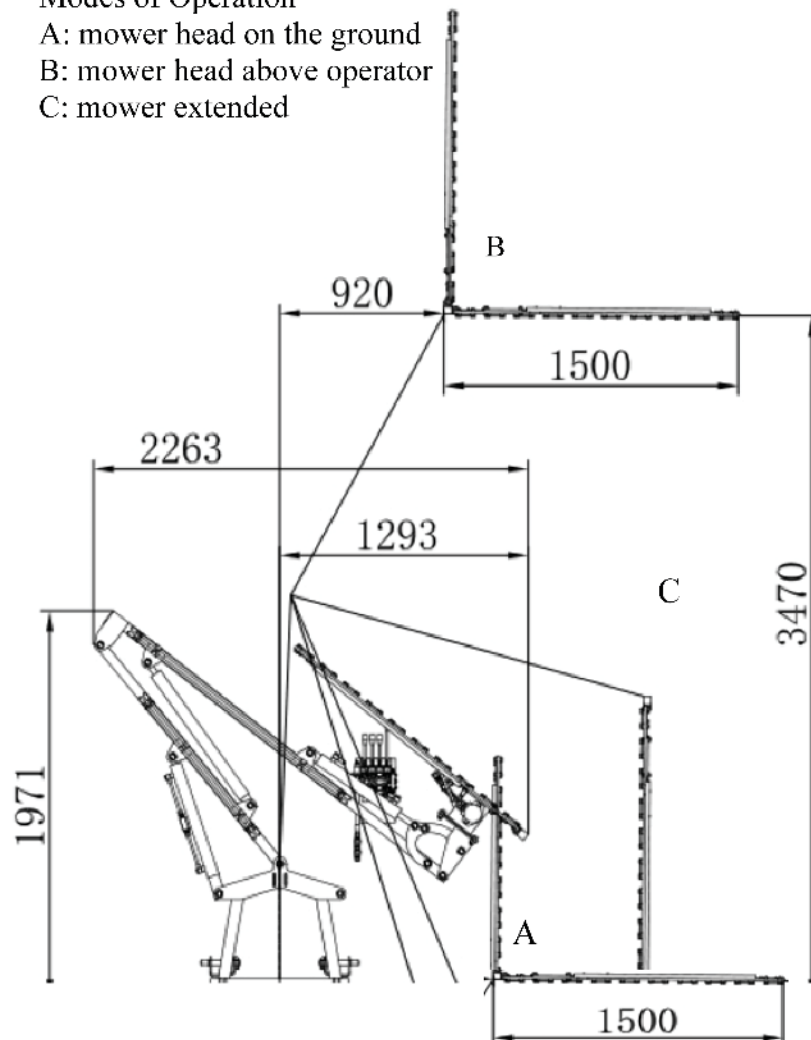


Fig. 1-2 Modes of operation

- A With the mowing head or other tool in horizontal or inclined position touching the ground ;
- B With the mowing head or other tool in horizontal or vertical position and lifted from the ground (for operating on hedges) ;
- C With the mowing head or other tool lifted from the ground and extended away from the operator.

A mode of operation is the safest one advised . However, if necessary, before operating in B , and C modes it is indispensable :

- To scour previously the working area ;
- To be assisted by other people on the ground who have checked the working area.

2. FEATURES

Introduction

This section provides an overview of the boom & mower features. All users of boom & mower are recommended to read this section: **OPERATORS** and **QUALIFIED TECHNICIANS** assigned to maintenance works.

2.1 General features

boom & mowers built in order to optimize the operator's visibility

| FH-BRM BOOM SICKLE DITCH BANK AND HEDGE TRIMMER | | | |
|---|---------------------------------|------------------|------------------|
| MODEL | FH-BRM120 | FH-BRM150 | FH-BRM180 |
| Required Hydraulic Pressure | 2250 to 3500 PSI | 2250 to 3500 PSI | 2250 to 3500 PSI |
| Required Hydraulic Flow | 8 GPM to 11 GPM | 8 GPM to 11 GPM | 8 GPM to 11 GPM |
| Unit Net Weight | 529 lbs | 552 lbs. | 573 lbs |
| Gross Shipping Weight | 564 lbs | 587 lbs. | 608 lbs |
| Mower Head Only Weight | 82 lbs. | 88 lbs. | 93 lbs. |
| Brush Cutting Diameter | 1 inch | 1 inch | 1 inch |
| Maximum Up Reach* | 136 inches+ | 136 inches+ | 136 inches+ |
| Side Reach at Maximim Up* | 36 inches+ | 36 inches+ | 36 inches+ |
| Reach at Ground* | 51 inches+ | 51 inches+ | 51 inches+ |
| * Addition of Cutting Bar Reach | 47 inches | 59 inches | 70 inches |
| Down angle (Slope) | 45 degrees | 45 degrees | 45 degrees |
| Travel Position | 49 inches Left, 51 inches Right | | |

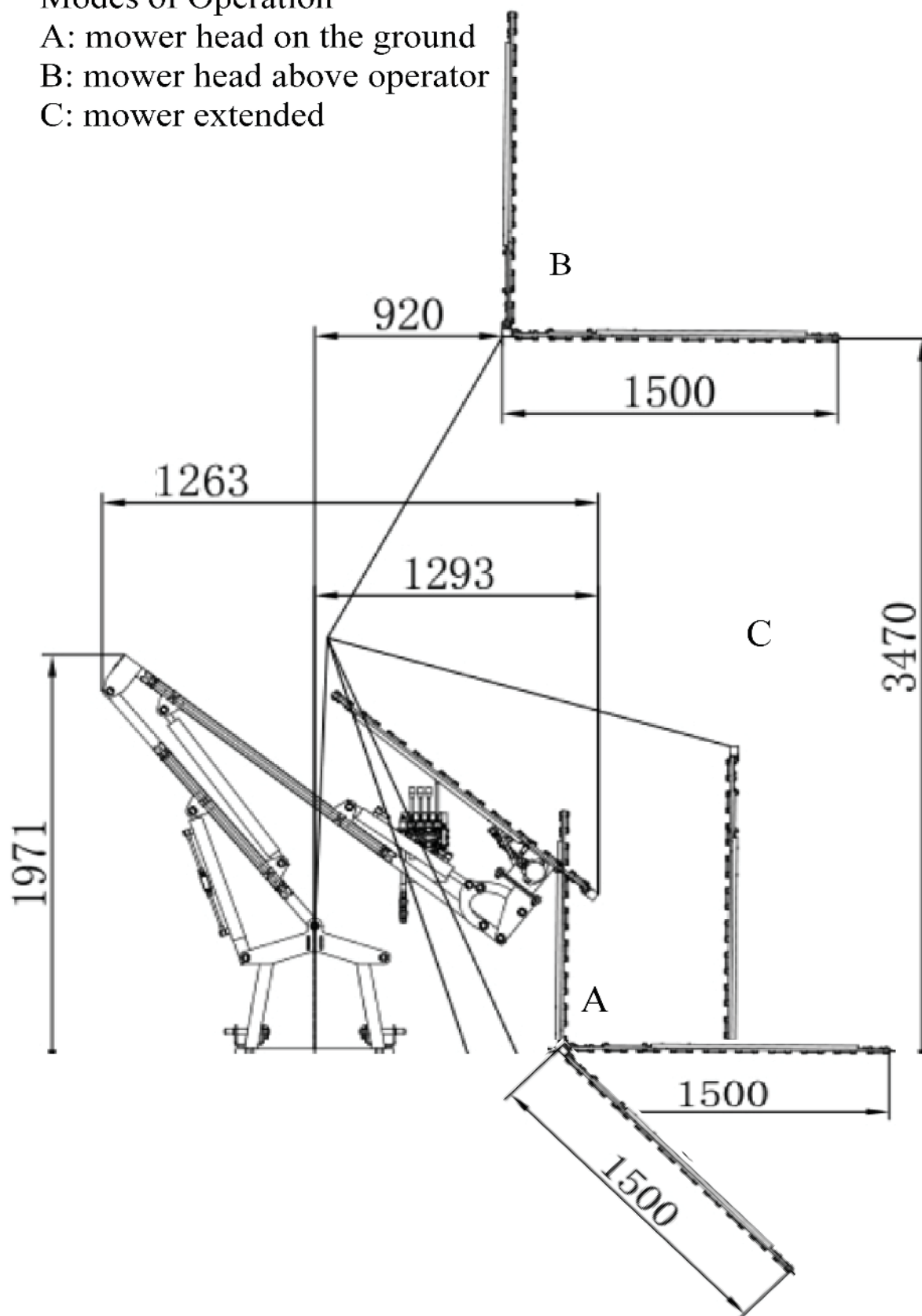
2.2 Dimensions during operation

Modes of Operation

A: mower head on the ground

B: mower head above operator

C: mower extended



3. HOISTING

Introduction

The aim of the present chapter is to supply the information for the removal and the raising of the boom & mower and its accessories. The information of this section is for for QUALIFIED TECHNICAL PERSONNEL and those trained to operate. In conditions of an emergency the use of elevator, crane and other equipment may be needed to lift the unit. The operation necessary can be carried out with raising equipment, with capacity necessary for the weight to be raised. Using a lifting accessory (stirrup, clasp, pin, etc.) to link between the hook of the raising equipment and the hooking point of the equipment. specially designed for such purpose.

All the raising, loading, transport and unloading must be completed following safety rules and the operator of the lift must be acquainted with lifts safe operation.

3.1 *Check on delivery*

Upon receipt check supply for compliance with the shipping documents and make sure it did not suffer damages during transport. Please promptly notify any discrepancy or damage.

3.2 *Hoisting*



CAUTION

Before hoisting the boom & mower and/or attachments, make sure that:

- The lifting apparatus is suitable for the weight of the boom & mower and/or attachments;
- The whole area involved in the handling operations of the boom & mower and/or attachments - including the transport vehicle parking area and the boom & mower and/or attachments storage area - is inspected in advance in order to locate any “danger zones” such as electric lines and water or gas ducts. Any lines or ducts within the work area must be marked out and shut off;
- All operators keep at a safe distance to avoid being hit by ejected machine parts.

On boom & mowers and accessories special pictograms show the correct insertion points for crane hook or bridge crane.

Use the lifting hook eyelet on the boom & mower only if the machine is fully assembled.



DANGER !

FOLLOW STRICTLY THE ADVISE ABOVE. HANDLING PRACTICES OTHER THAN THOSE PRESCRIBED MAY RESULT IN BOTH SEVERE DAMAGE TO THE MACHINE AND SERIOUS INJURIES TO OPERATING PERSONNEL.

BRM Assembly instructions

Do not operate for more than two consecutive hours, as this may cause warping of metal parts in the mower head.

If you want to follow our assembly video, Scan the QR code!



Here are the tools needed to assemble this machine:



Here is the hardware you will need:



A: The Bar

B: Head Support
Bracket

C: Connector Pin

D: The Motor



E. 2x's

The Stand Legs



F: The long pin for the boom arm with lock nut.

G: The short pin for the front arm with the lock nut.

H: Stabilizer Bracket bracket bolt With lock nut.

I: 4x bolts to attach the head to the motor with lock nuts.

J: Bolt for the connector bar with lock nut.

K: 4x bolts for the motor mount with lock nuts.

L: Lock nut and washers for the connector rod.

Lets begin!



STEP 1:
Cut the straps using
wire cutters.



Step 2:
Lay the crate
down.
Use assistance.



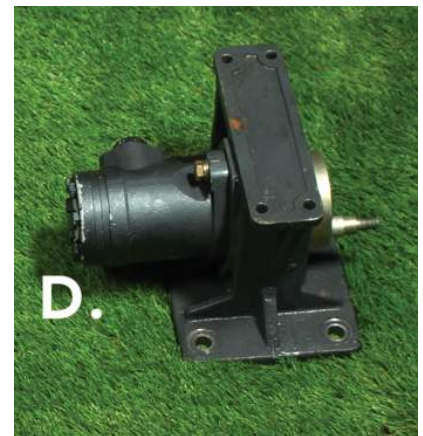
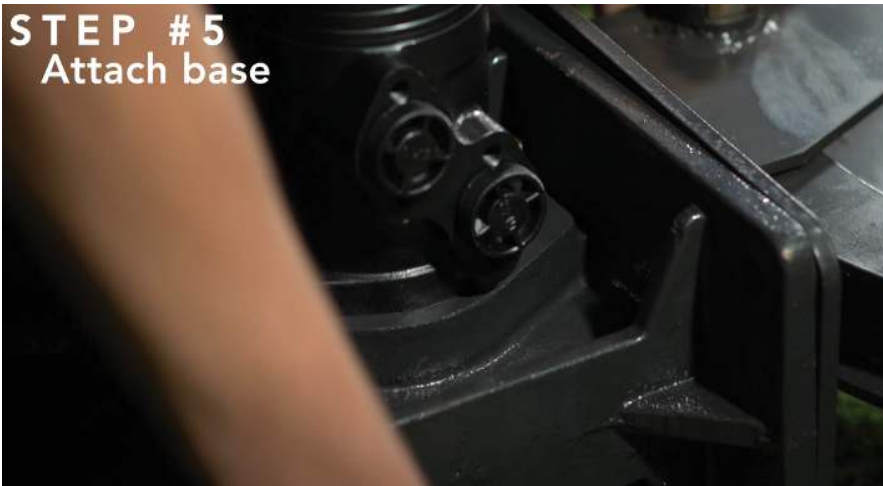
STEP 3:
Peel the tabs
up using a
hammer and a
flat head
screwdriver.

STEP #4
Remove hardware



After removing the crate, remove all parts and hardware from the machine. Use wire cutters to remove the parts.

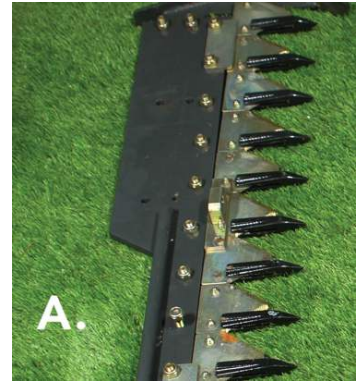
STEP #5
Attach base



Attach the motor (D) to the base of the machine using a 21mm socket and a 22mm wrench with parts K.



STEP #6
Attach cycle bar



Attach the sickle bar (A) to the motor (D), using a 16mm wrench and a 15mm Socket.
Using parts (I) shown below.



STEP #7
Attach stands



Attach the stand legs
using supplied set screws.



STEP #8

Attach connector pin



Remove the stabilizer bracket bolt from the motor head as shown below circled in red.

Make sure that the connector bolt is removed before adding the connector pin.



Install the connector pin using the washer and lock nut L. The stud should pass through the bearing on the connector rod.



Line up the connector bracket (C) with the bracket on the sickle bar (A) and attach using hardware (J).



Sickle bar bracket

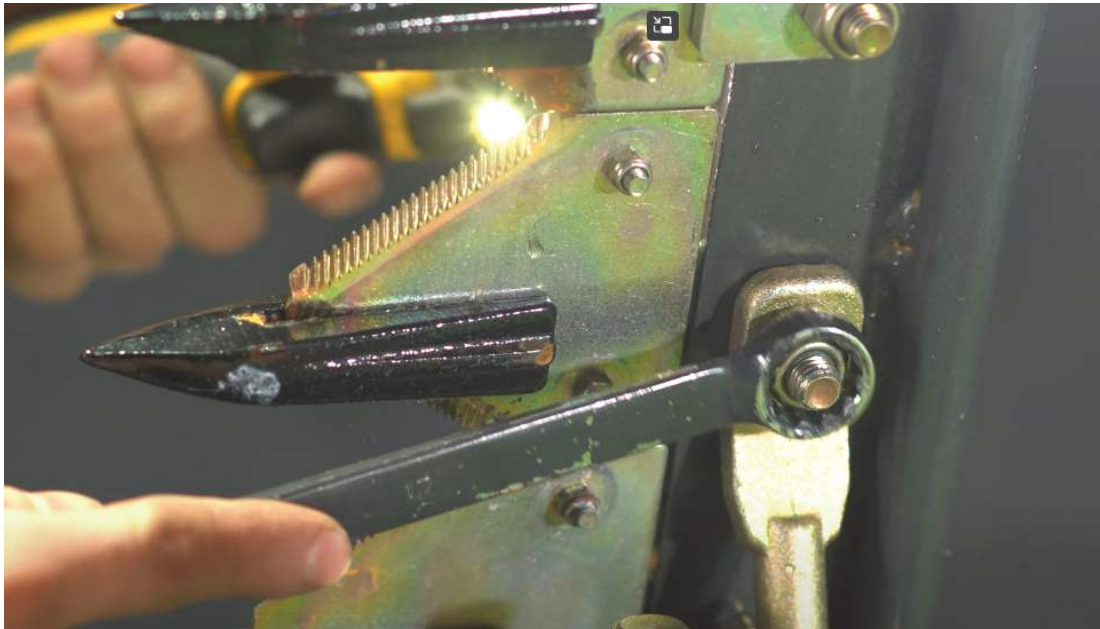


Connector Bracket on the sickle bar

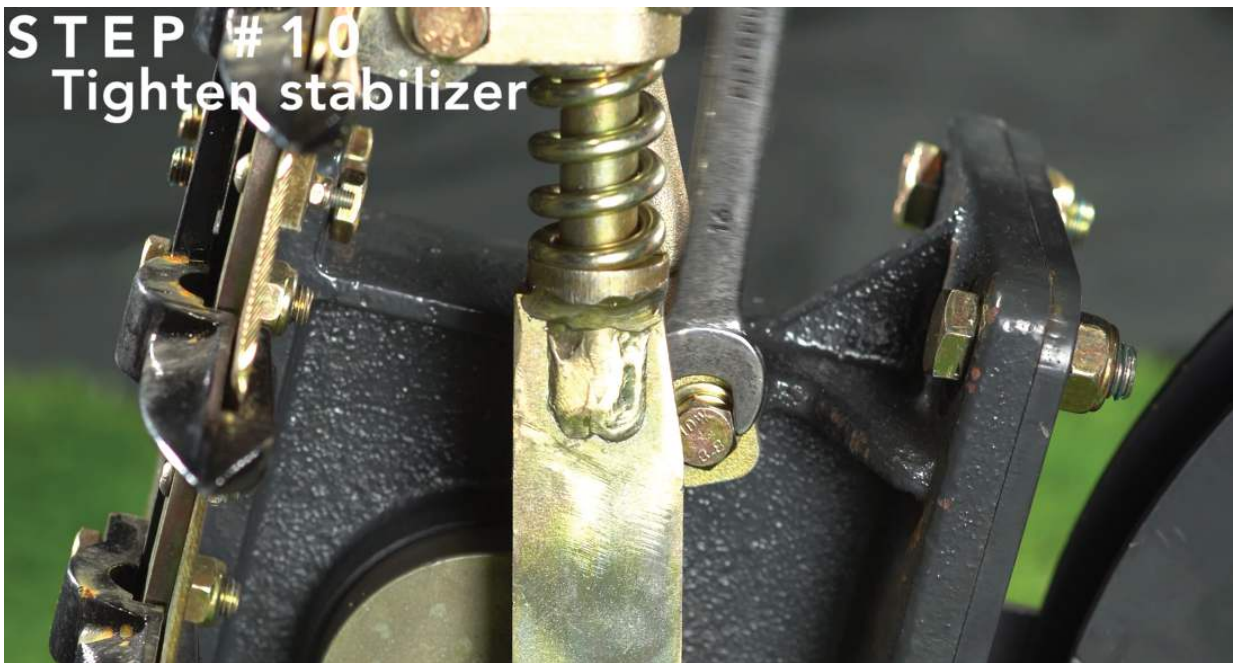


Attach the stabilizer rod (B) to the motor (D) with the screw that was removed in the previous step.

Attach the stabilizer rod to the bar with hardware (H).



STEP # 10
Tighten stabilizer



Once attached, tighten down the stabilizer rod with a 16mm wrench, 19mm wrench and a 18mm socket.

STEP # 11
Attach front cylinder



Attach the front arm cylinder with the pin and lock nut (G).



STEP # 12
Attach boom cylinder



Attach the boom cylinder with the pin and lock nut (F).

TIGHTEN ALL NUTS AND BOLTS!

BRM
Complete!



4. INSTALLATION

Introduction

The purpose of this section is to provide information for a correct coupling and installation of the boom & mower. The information found in this section is intended for the QUALIFIED TECHNICIAN , to carry out the first coupling and to determine the Drive shaft length, and for the OPERATOR for routine operation of the boom & mower.

4.1 Connections



WARNING

Before connecting tractor and boom & mower make sure that hydraulic flow and pressure of your tractors system is correct for operation of the boom mower.



WARNING

Follow strictly this indication. A higher amount of pressure may cause damage to the boom & mower..



WARNING

Tractor hydraulic system must be open system (constant flow) to power the booms control valve.



DANGER!

IN ORDER TO AVOID OPERATOR'S (AND TRACTOR'S) DAMAGES IT IS
INDISPENSABLE TO PROTECT ALL CONCERNING AREAS WITH PLEXIGLAS OR
METALLIC NETS E.G..

**Pressure relief is set at 2500 psi. Tractor Hydraulic PSI Range is 2250 to 3500 psi
Hydraulic Flow Minimum is 8.0 GPM, Hydraulic Flow Maximum is 11.0 GPM.**

**The recommended minimum operating pressure & flow is designed to be 2350
PSI at 8 GPM.**

4.2 Mower Mounting

The Boom should always be located on a level, dry area that is free of debris and other foreign objects. When attaching the boom & mower to the tractor, follow this procedure:

1. Make sure that all bystanders, especially small children are clear of the work area.
2. Make sure there is enough room and clearance to safely back up to the boom & mower.
3. Attached the Boom to to your tractors 3-point hitch. If your mower head is not attached to the boom, attach the mower head at this time.
4. Mount the Boom Mower hydraulic control valve to your tractor in an area where the operator can easily access it. Make sure the hydraulic lines can reach the couplers on the tractor.
5. Connect the control valve to your tractors hydraulic system*: The input hose is on top of the control valve, the return is on the bottom.

Note: the boom & mower may be equipped with a directional valve that will not allow reverse flow if lines are mis-connected. Improper connection can damage some hydraulic systems. We are not responsible for damage to your tractor caused by improper hydraulic connections.

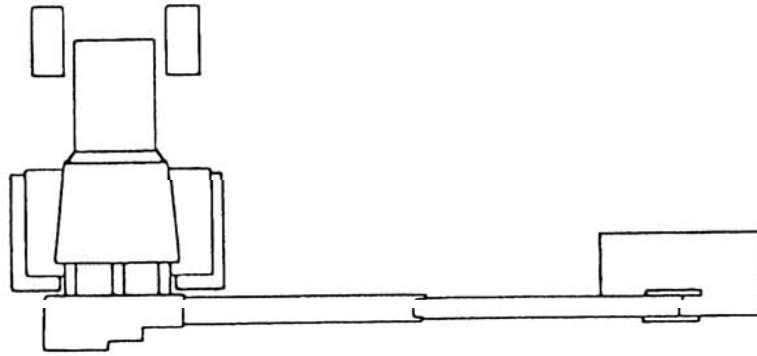
*** We provide the most common hydraulic quick connectors as courtesy. If these do not fit your tractor, You must source what you need. We cannot provide them.**

- Use a clean rag or paper towel to clean any dirt from around the coupler on the hose end and on the tractor.
- Be sure to connect to the circuit that is to power the controller has a steady flow of oil.
- Connect the hoses to the tractor couplers.
- Return line has a black nipple cover,
- Pressure line has a red nipple cover.
- Be sure the couplers are securely seated.

4.3 boom & mower operation safety test. (Fig. 4-7 A).

On boom & mower without hydraulic shrinkage, check may occur only in transversal position.

- a) Move the tractor on a flat zone ;
- b) Open fully the boom & mower in full extension working position as in fig. 4-7 A Lift the terminal tool (Mower Head) from the ground at maximum 2 - 4 inches
- c) Check tractor stability: Ensure that wheels remain always on the ground when boom & mower is at condition of the maximum extension, as in fig 4-7 A.
- d) If is doubt, place some additional weight on the terminal tool (mower head) and make sure left tires are still on the ground. Some tools will collect material as they operate and unit weight will increase.



4.4.BOOM REMOVAL

CAUTION



Move the boom & mower to flat, firm and wide place to remove the equipment.
Dump the remaining material from the terminal tool (Mower)

Use other lifting equipment to remove when the boom & mower has damage.

STEP 1. Move the tractor to boom & mower storage place.

STEP 2. Bring the boom into storage position.

STEP 3. Install the storage legs.

STEP 4. Lower the until onto the storage legs

STEP 5. Turn off the tractor engine. Relieve hydraulic pressure by actuating all the control levers in each direction, then disconnect the boom & mower hose couplers from the tractor hydraulic couplers.

STEP 6. Remove the boom control valve from your tractor.



CAUTION

Remove the boom & mower on firm level ground. Also, Do not allow the other person in the area.
Be careful to avoid injury during removal of the boom & mower.

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

STEP 7. Disconnect boom & mower from your tractors 3-point hitch.

STEP 8. Slowly pull your tractor away from the boom and mower.

5. STARTING

Introduction

The purpose of this section is to describe the boom & mower procedures before work starts. These operations may be carried out by the OPERATOR assigned to the boom & mower and more generally by all QUALIFIED TECHNICIANS .

5.1 Starting



WARNING

In winter, before starting to work, let pumps and accessory control motor idle for at least 15 minutes. In summer, if tractor oil temperature exceeds 70°C/ 160°F, stop the machine and substitute the oil of the hydraulic tank with another oil, more suitable to high temperatures. If the problem persists equip the boom & mower with a HEAT EXCHANGER.



WARNING

- If different types of the tractor are used, make sure they always meet the conditions relating to the hydraulic flow and pressure requirements of the boom & mower
- Start the boom & mower raised from the product that must be cut.

Before starting the boom & mower, make sure that the tools are not touching the ground. Any contact of the rotor tools with the ground, may:

- produce vibrations harmful for the boom & mower;
- cause them to wear quickly;
- subject the final drive to severe stresses.



WARNING

Check the hydraulic oil hoses and piping condition. If worn replace the worn hoses/pipes asking to the QUALIFIED TECHNICAL PERSONNEL.

Before hose or pipe removal block arms with safety devices.

Before starting the boom & mower ensure that all pipes and hose are installed and open for flow. If there is closed or blocked line cause serious damages to the tractor and or mower may occur. This type of damage is not covered by warranty.

Ensure to have removed all safety devices..



WARNING

Check the tractor hydraulic oil level in the tank, after connecting Boom & Mower. If necessary fill it up with proper type of hydraulic oil



WARNING

Ensure that current condition of the boom & mower head do not compromise any part of the save operation of boom & mower.



WARNING

Do not use the terminal tool (mower head) in or under water.



DANGER!

BEFORE STARTING , ENSURE THAT IN WORKING AREAS CANNOT CREATE CONDITIONS FOR FIRE OR EXPLOSION .

5.2 Work interruption

5.2.1 Short stops

- Disengage the Hydraulics and stop the implement;
- Stop the tractor in a safe area;
- Rest the implement in horizontal position on the ground;
- Lock the operator's cab before leaving.

5.2.2 Long stops

- Rest the terminal tool.
- Make the terminal tool touch the ground in horizontal position
- Disengage the Hydraulics and stop the implement;
- Stop the tractor in a safe area.
- Leave the driving seat only after having removed the ignition key.
- Secure the tractor and the boom & mower.

5.2.3 In case of boom & mower disconnection:

- Stop the tractor in a safe area and level area.
- Draw back completely the eventual hydraulic take-off and move boom & mower arms to the storage position making sure that the supporting arm for the terminal tool is in its maximum vertical position. The terminal tool must stand on the ground in horizontal safe position.
- Lower the stand feet and fasten them with the appropriate pins..
- Lower the hoisting arms until stand feet lean on the ground.

IMPORTANT :

- Disengage the third point system
- Disconnect the Drive shaft supporting it with the appropriate stand
- Disconnect the cables for power supply +/- (in case of electrical control or device e.g. headlights, radiator, etc).

5.3 Road carriage

Before beginning the road transport of the boom & mower particularly on the road, attached all the safety equipment supplied with it and transport locks.

During the road transfers, moderate the speed to avoid damages on holders, fixing supports of the boom & mower to the tractor.

WARNING

TIGHTEN THE 3-POINT HITCH CHAINS AS MUCH AS POSSIBLE.

6. TROUBLE SHOOTING

Introduction

This section provides a guide to solve the problems that may arise during the boom & mower operation.

6.1 Trouble shooting

For any problem, stop immediately the boom & mower and, with the terminal tool completely resting, make a systematical comparison between the current conditions of the boom & mower and the standard conditions expected (e.g. a new machine).



CAUTION

Before disengaging a tube of the hydraulic system, ensure that the system is not under pressure. A leak of oil under pressure may cause serious damages.

For the safety of operators, the machine must be fully resting and firmly parked on the ground.

No cylinder partially open and under pressure. For this purpose with the hydraulic feed lines disconnected, discharge all cylinder from the pressure by operating each control devices in both directions.

The OPERATOR OR THE QUALIFIED TECHNICIAN must be provided with personal protection equipment such a gloves, masks, glasses, etc., as required by safety standards

| | | ACTION | TROUBLE SHOOTER |
|--|--|---|-----------------|
| | | In order to check the pump working operate in the following way: check with a flow meter the correct flow of oil. Then check the pressure with a pressure meter comparing it with The one indicated on the tally Fig. 1-1 P.MAX. cylinder PUMP (BAR). If pressure is correct the problem is inside the distributor. | M |

Do not operate for more than two consecutive hours, as this may cause warping of metal parts in the mower head.

| PROBLEM | POSSIBLE CAUSE | ACTION | TROUBLE SHOOTER |
|---|-------------------------------------|--|-----------------|
| All arms of the bush mower do not work. | Hydraulic distributor blocked | In order to check the distributor working operate in the following way: Ensure that the pipe from the pump is correctly inserted. Disengage the waste pipe and check the oil flows with the right intensity. If this does not occur , replace the distributor. | M |
| | Pressure control valve blocked. | Replace the valve. | M |
| The accessory or the terminal tool stopped or does not properly work | Pressure control valve sprung. | Put the lever for terminal tool control in neutral position and, only for shredder head or rotary hoe, make the motor turn on the opposite direction in order to unlock the tool. Restore the correct gear and restart. If still does not work, call assistance. | O |
| It is impossible to control a single movement | Incorrect oil flow to the cylinder. | Check the correct oil flow pressure in pipe out-put. | M |
| | Distance control cable broken. | Replace the cable. | M |
| | Cursor eyelet broken. | Replace the cursor. | M |
| | Pressure control valve blocked. | Replace the valve. | M |
| It is impossible to control a single movement in a electrical control | Ignition key position. | Check. | O |
| | Emergency button position. | Check. | O |
| | Fuse. | Check. | O |
| | Wires cut. | Check. | M |
| | Defective switches and handlebars . | Check. | M |

| PROBLEM | POSSIBLE CAUSE | ACTION | TROUBLE SHOOTER |
|--|--|--|-----------------|
| Control lever blocked in one position | Wearing of the cursor caused by filth or rust. | Replace. Do not use even fine sand paper to take rust off otherwise cursor will be irremediably damaged. | M |
| Fan in machines with heat exchanger does not work (fan status only at temperature of 45-50 C degrees). | Fuse broken. | Replace il fuse | M |
| | Electric valve burned | Replace electric valve. | M |
| Irregular cut | Tools worn out or broken. | Replace cutters. | O |
| | Wrong placement of the supporting roll. | Set roll height. | O |
| Fast wearing of tools | Tools touch the ground. | Set cut height operating on the roll. | O |
| Unusual noises coming from the boom & mower | Poor lubrication of rotor bearings | Grease bearing | O |
| | Oil level of tank too low. | Top up level | O |
| | Oil level of overdrive too low. | Top up level. | O |
| | Incorrect flow rate | Check flow rate of tractor | |
| | Foreign bodies caught in the tool | Remove foreign body | O |
| PROBLEM | POSSIBLE CAUSE | ACTION | TROUBLE SHOOTER |
| Excessive vibrations | Excessive and irregular wear of tools. | Replace all tools. | M |
| | Cutters worn or broken | Replace all tools. | |

7. MAINTENANCE

Introduction

The purpose of this section is to outline the methods and frequency of the maintenance works.



WARNING

The maintenance works recommended in this section should be considered the minimum required to keep the boom & mower in good condition and to improve its efficiency. Additional maintenance works may be suggested by the user's experience according to the workload, the operating environment and the type of the material to be cut.



CAUTION

All maintenance operations must be carried out only when :

- boom & mower is resting;
- Hydraulics is disconnected from the tractor.
- Hydraulic plant not under pressure

7.1 After the first 30/50 hours of operation

- Check the perfect lock of nuts, connectors, pipes and clips. Recheck every 100 hours of operation.

7.2 Every 4 hours of operation

- Inject grease into lubricators zerts at grease points .

7.3 Every 8 hours of operation

- Grease all the joints of arms and cylinder ;
- Grease all the parts in movement of the boom & mower.



WARNING

Check daily the oil level in the tank. If necessary fill it up with ISO 68 oil.



CAUTION

The oil for hydraulic circuits is particularly harmful. Before starting any operation, filling or replacement, operator must be equipped with individual protection means.

Do not dissipate in environment the used oil, ask to a skilled agency for the disposal. Follow strictly the current rules regarding the disposal of toxic harmful waste.

7.4 Storing the boom & mower

The boom & mower does not require special storage conditions. If the machine is to remain inoperative for a fairly long time (3 to 4 months) it is very important that it be thoroughly cleaned, carefully washed, dried and lubricated.

7.5 After long period inactivity

After long inactivity of the boom & mower, unscrew the oil drain plug placed under the tank and let the condensation water come out, before starting the machine.



WARNING

Water spoils irremediably pumps and cylinder. It is indispensable to remove it..

7.6 Machine demolition and recovery of reusable material

boom & mower arms are basically made of the following materials:

- Steel
- Cast iron
- Aluminum
- Copper
- Different plastic materials
- Mineral oil and grease

At the moment of demolition, all material must be divided in the six categories and disposed up-to-standard.

These materials are all reusable in order to obtain once more raw materials or reusable byproducts.

boom & mower and stand position .

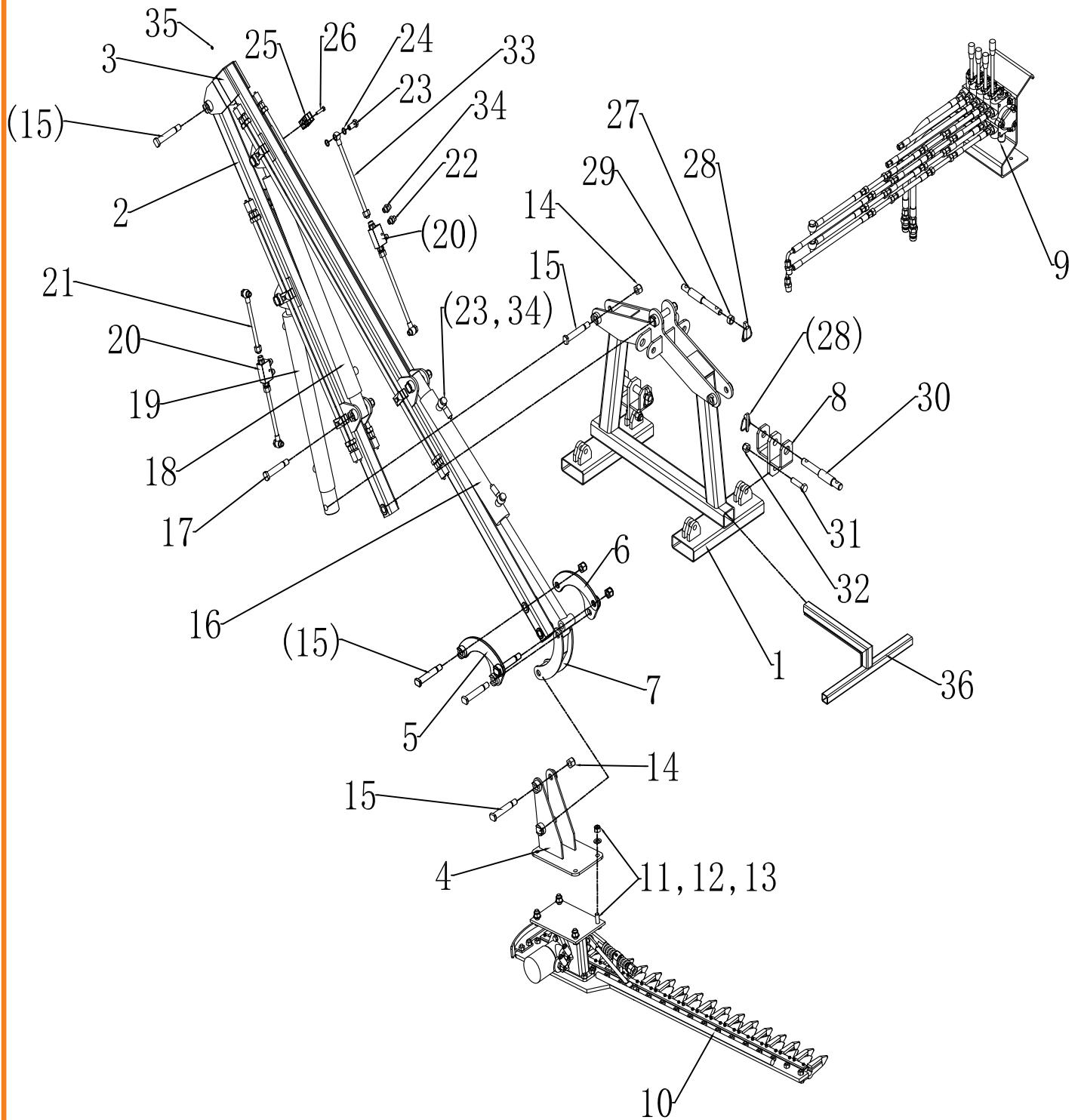


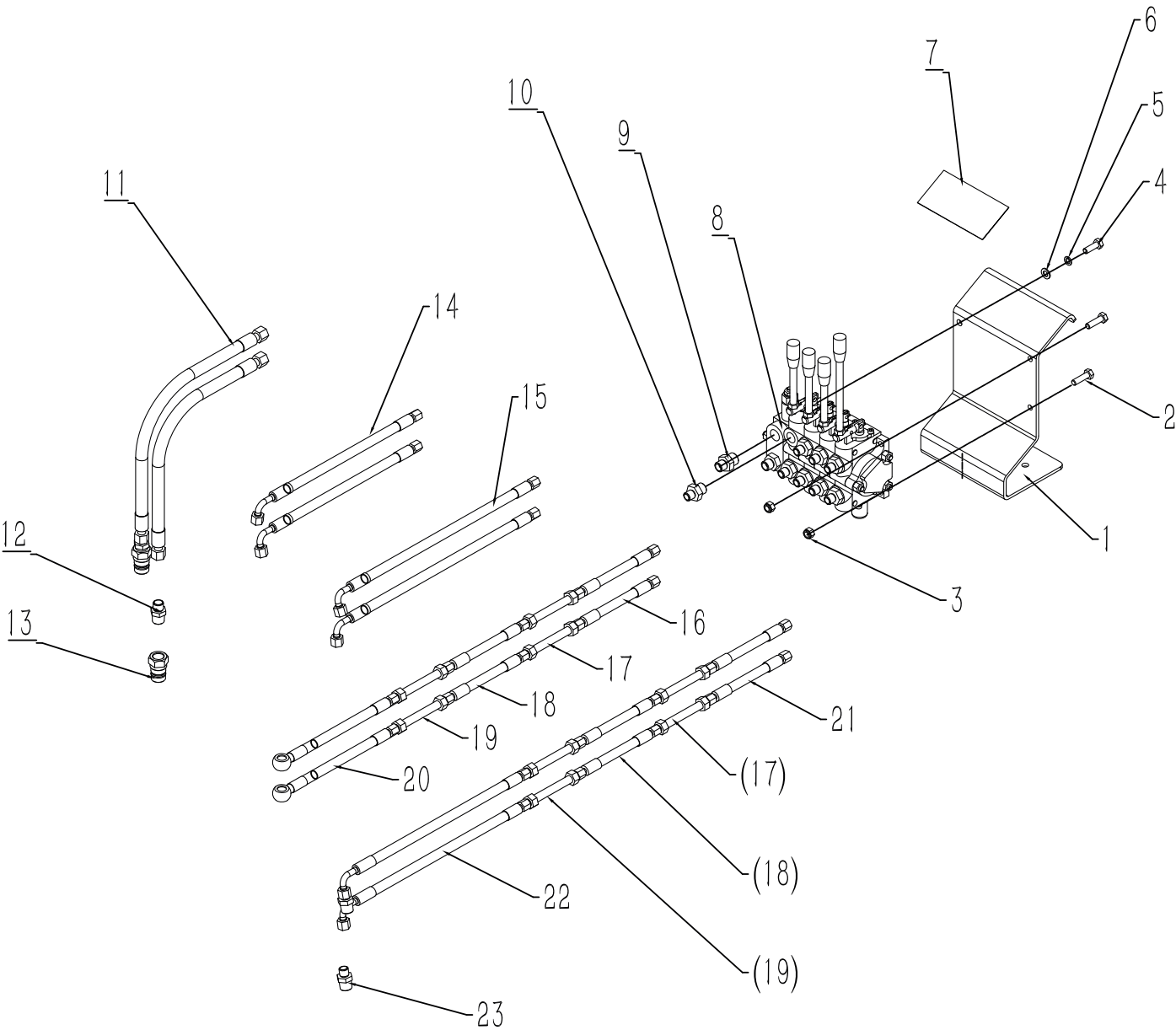
Fig. 5-1

boom & mower and stand position .

CRM150.

| No.1 | Code | Description | QTY | Remarks |
|------|-----------------|----------------------------|-----|---------|
| 1 | CRM150.011 | Main Frame Weldment | 1 | |
| 2 | CRM150.012 | Stand Weldment | 1 | |
| 3 | CRM150.013 | Swing Weldment | 1 | |
| 4 | CRM150.014 | Connection Seat Weldment | 1 | |
| 5 | CRM150.015 | Left Connecting Weldment | 1 | |
| 6 | CRM150.016 | Right Connecting Weldment | 1 | |
| 7 | CRM150.017 | Middle Connecting Weldment | 1 | |
| 8 | CRM150.018 | Lower Hanging Weldment | 1 | |
| 9 | CRM150.002 | Hydraulic System | 1 | |
| 10 | CH150.001 | Sickle Bar Mower | 1 | |
| 11 | GB5783-M14x40 | Bolt M14x40 | 4 | |
| 12 | GB97.1-14 | Washer 14 | 4 | |
| 13 | GB889.1-M14 | Lock Nut M14 | 4 | |
| 14 | GB889.1-M18x1.5 | Lock Nut M18x1.5 | 12 | |
| 15 | CRM150.101 | Axle 127 | 8 | |
| 16 | CRM150.020 | Reversal Cylinder | 1 | |
| 17 | CRM150.102 | Axle 118 | 4 | |
| 18 | CRM150.021 | Swing Cylinder | 1 | |
| 19 | CRM150.022 | Stand Cylinder | 1 | |
| 20 | FLP180.005 | Valve | 2 | |
| 21 | CRM150.023 | Oil Hose 1 | 2 | |
| 22 | CRM150.103 | Short Adapter 16-16 | 2 | |
| 23 | GB3451-M16x30 | Hydraulic Bolt M16x1.5x30 | 6 | |
| 24 | GB3451-16 | Copper Washer 16 | 12 | |
| 25 | TTP214 | Clip | 8 | |
| 26 | GB5783-M8x40 | Bolt M8x40 | 8 | |
| 27 | CRM150.104 | Sleeve | 1 | |
| 28 | LP-12 | Lock Pin 12 | 3 | |
| 29 | BH5.40.101 | Upper Pin | 1 | |
| 30 | BH5.40.108 | Low Pin | 2 | |
| 31 | GB5782-M16x60 | Bolt M16x60 | 2 | |
| 32 | GB889.1-M16 | Lock Nut M16 | 2 | |
| 33 | CRM150.024 | Oil Hose 2 | 2 | |
| 34 | CRM150.105 | Long Adapter 16-16 | 2 | |
| 35 | GB1152-M6 | Grease zerk M6 | 5 | |
| 36 | CRM150.019 | Skidder | 2 | |

Hydraulic control system

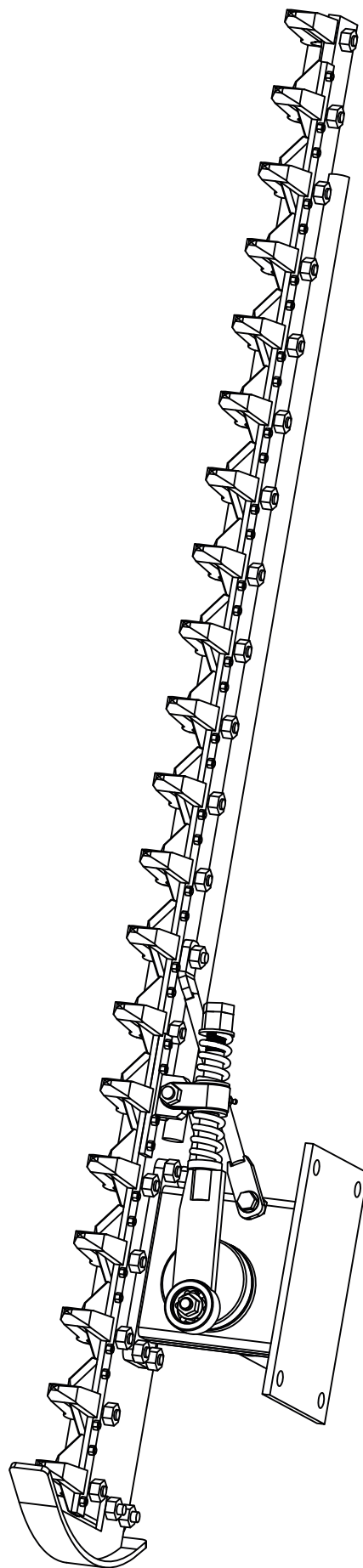


Hydraulic control system

CRM150.

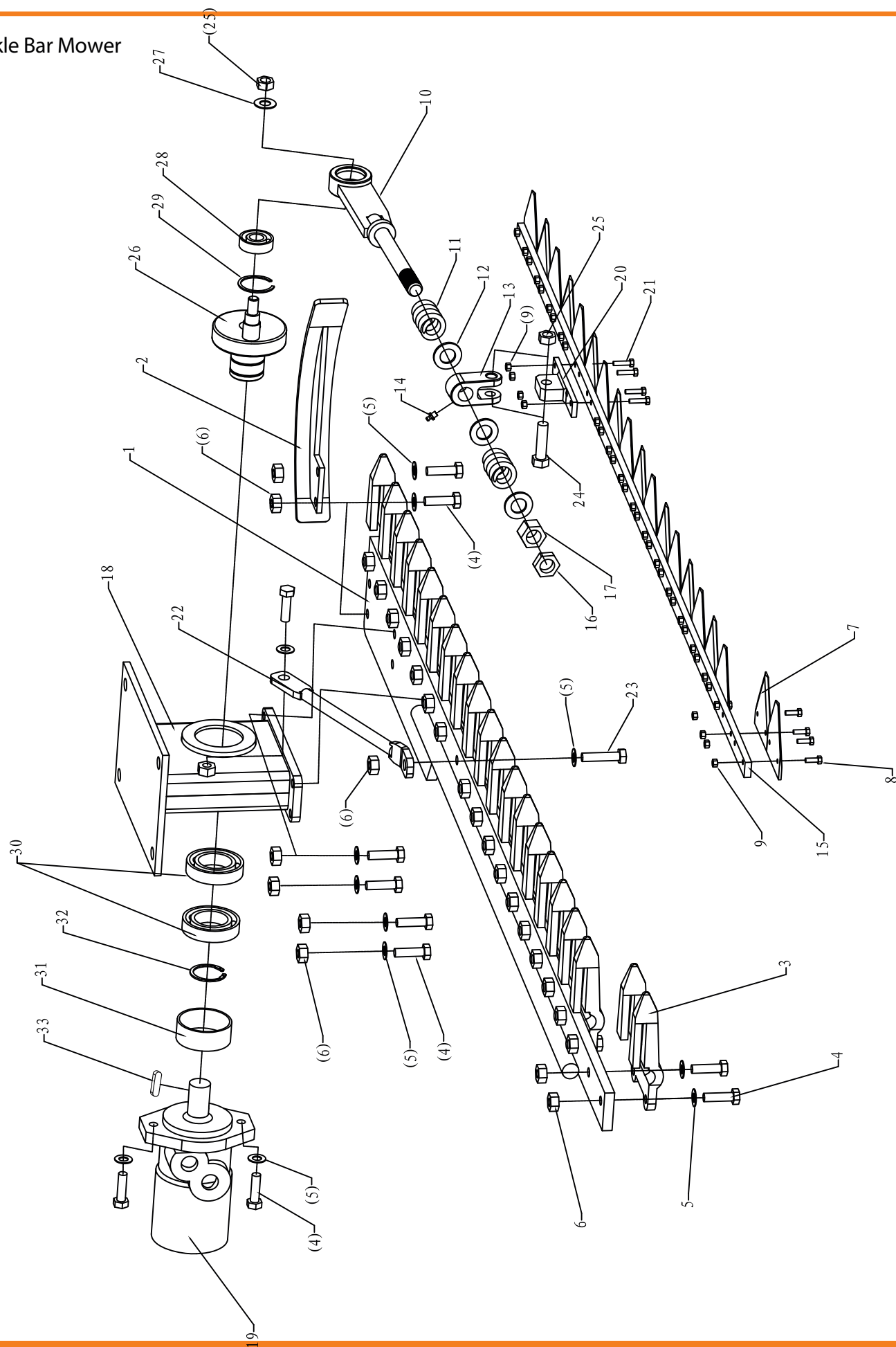
| No. | Code | Description | QT |
|-----|--------------------|---------------------------|----|
| 1 | CRM150.201 | Valve Seat | 1 |
| 2 | GB5783-M10x35 | Bolt M10x35 | 2 |
| 3 | GB889.1-M10 | Lock Nut M10 | 2 |
| 4 | GB5786-M10x1.25x30 | Bolt M10x1.25x30 | 1 |
| 5 | GB93-10 | Spring Washer 10 | 1 |
| 6 | GB97.1-10 | Washer 10 | 1 |
| 7 | CRM150.202 | Lable | 1 |
| 8 | CRM150.003 | Quadruple Multi-way Valve | 1 |
| 9 | CRM150.203 | Valve-in Adapter | 2 |
| 10 | CRM150.204 | Valve-out Adapter | 8 |
| 11 | CRM150.030 | Valve-in Oil Hose | 2 |
| 12 | CRM150.205 | Adapter R1/2-18 | 2 |
| 13 | QC-R1/2-M | Adapter R1/2-M | 2 |
| 14 | CRM150.031 | Stand Oil Hose | 2 |
| 15 | CRM150.032 | Swing Oil Hose | 2 |
| 16 | CRM150.033 | Swirl Oil Hose1 | 2 |
| 17 | CRM150.034 | Pipe 1 | 4 |
| 18 | CRM150.035 | Oil Hose | 4 |
| 19 | CRM150.036 | Pipe 2 | 4 |
| 20 | CRM150.037 | Swirl Oil Hose2 | 2 |
| 21 | CRM150.038 | Motor Oil Hose 1 | 2 |
| 22 | CRM150.039 | Motor Oil Hose 2 | 2 |
| 23 | CRM150.206 | Adapter R1/2-16 | 2 |

Sickle Bar Mower



Sickle Bar Mower

SICKLE BAR CH150 PARTS LIST



Sickle Bar Parts List

| Item | NO. | Parts Name | | Qty | Item | NO. | Parts Name | | Qty |
|------|-----------|-----------------|--------|-----|------|-------------------|-----------------|--|-----|
| 1 | CH150.011 | main frame | | 1 | 18 | CH150.014 | bearing house | | 1 |
| 2 | CH150.012 | skid | | 1 | 19 | CH150.002 | hydraulic motor | | 1 |
| 3 | CH150.101 | knife protector | | 10 | 20 | CH150.103 | block | | 1 |
| 4 | GB5783 | bolt M10X35 | M10X35 | 28 | 21 | GB5783 | bolt M5X20 | | 4 |
| 5 | GB97.1 | washer 10 | 10 | 29 | 22 | CH150.015 | supporter | | 1 |
| 6 | GB/T889.1 | locking nut M10 | M10 | 26 | 23 | GB5783 | bolt M10X45 | | 1 |
| 7 | CH150.102 | knife | | 19 | 24 | GB5783 | bolt M12X45 | | 1 |
| 8 | GB5783 | bolt M5X15 | | 34 | 25 | GB/T889.1 | locking nut M12 | | 2 |
| 9 | GB/T889.1 | locking nut M5 | | 38 | 26 | CH150.016 | bent axle | | 1 |
| 10 | CH150.013 | connector | | 1 | 27 | GB97.1 | washer 12 | | 1 |
| 11 | CH150.106 | spring | | 2 | 28 | GB/ T276-1994 | bearing 6203 | | 1 |
| 12 | GB97.1 | washer 18 | | 3 | 29 | GB893.1-86 | hole ring 40 | | 1 |
| 13 | CH150.104 | block | | 1 | 30 | GB/ T276-1994 | bearing 6008 | | 2 |
| 14 | GB1152 | grease zerk M6 | | 1 | 31 | CH150.107 | spacer | | 1 |
| 15 | CH150.105 | knife keeper | | 1 | 32 | GB894.1-86 | shaft ring 40 | | 1 |
| 16 | GB6172-86 | thin nut M18 | | 1 | 33 | GB/ T1096-2003 | key 8X7X32 | | 1 |
| 17 | GB6170-86 | nut M18 | | 1 | | | | | |



FHM
FARMER-HELPER
MACHINERY COMPANY

Parts Request Form

E-mail cservice@betstco.com

Name: _____

Address: _____

City State Zip: _____

Phone: _____

E-mail: _____

Model Number: _____

Serial Number: _____

Purchased From: _____

Purchase Date: _____

| Item No. | Description | Qty | Price | Amount |
|----------|-------------|-----|-------|--------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Comments:

Farmer Helper Machinery Brand LIMITED WARRANTY

Unless otherwise stated on purchase invoice, Betstco warrants to original Purchaser that Farmer Helper Machinery products are free from major defects in material under normal use and service for a period of Two (2) Years from the date the product is purchased or shipped, whichever is later.

Commercial use 180 days. Use at address that is not yours, is considered commercial use. Consumable, Expendable, Wear Items (Examples: Rubber & plastic parts, hydraulic hoses, belts, tires, cables, blades, tines, wedges, teeth, tips, chains, pins, brushes, filters, etc.) and cracked hydraulic pumps, bent or broken cylinder rods are not covered under this warranty. Warranty does not cover items that have been modified, damaged by abuse or usage not in accordance with design or maintenance.

Betstco obligation under this warranty is to repair or replace defective product upon approval by; Betstco, 83371 Melton Rd, Creswell OR 97426 that Warranty Claim is Valid. Product shall be returned upon request of Betstco Transportation charges to be prepaid by buyer. **Gasoline or diesel engines used to powered Farmer Helper Machinery products are covered by the warranty of the appropriate engine manufacture and Purchaser must look to the engine manufacture for all issues relating to engine operation.**

Betstco assumes no responsibility for labor.

PERMISSIBLE BY APPLICABLE LAW, BETSTCO HEREBY DISCLAIMS ALL WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, ANY IMPLIED WARRANTIES WITH RESPECT TO THE PRODUCT PURCHASED, WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, BETSTCO HEREBY EXPRESSLY DISCLAIMS ALL LIABILITY FOR PRODUCT DEFECT OR FAILURE, CLAIMS THAT ARE DUE TO NORMAL WEAR, PRODUCT MISUSE, ABUSE, PRODUCT MODIFICATION, IMPROPER PRODUCT SELECTION, NON-COMPLIANCE WITH ANY CODES, OR MISAPPROPRIATION. • BETSTCO MAKES NO WARRANTIES TO THOSE DEFINED AS "CONSUMERS" IN THE MAGNUSON-MOSS WARRANTY-FEDERAL TRADE COMMISSION IMPROVEMENTS ACT. THE FOREGOING EXCLUSIONS OF IMPLIED WARRANTIES DO NOT APPLY TO THE EXTENT PROHIBITED BY LAW. PLEASE REFER TO YOUR LOCAL LAWS FOR ANY SUCH PROHIBITIONS

THERE SHALL BE NO LIABILITY FOR PRODUCT LIABILITY OR LIABILITY ON THE PART OF BETSTCO FOR ANY GENERAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE SALE OR USE OF ANY PRODUCTS SOLD BY BETSTCO OR AN AGENT THEREOF. BETSTCO MAKES NO WARRANTIES, EXPRESS OR IMPLIED, (INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS OF THE PRODUCTS FOR ANY PURPOSE) WITH RESPECT TO THE PRODUCTS COVERED BY THIS AGREEMENT EXCEPT AS IN THIS PARAGRAPH OTHERWISE EXPRESSLY PROVIDED.

THIS IS THE SOLE AND ONLY WARRANTY OF Farmer Helper Machinery PRODUCTS. NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESSED OR IMPLIED, IN FACT OR BY LAW,

This warranty shall not be interpreted to render Betstco, or any authorized agent liable for injury or damages of any kind or nature, direct, consequential, or contingent, to person or property.

The sole and only remedy in regard to any defective products shall be the repair or replacement thereof as herein provided. Betstco, agent(s) of Betstco shall not be liable for any consequential, special, incidental or punitive damages resulting from or caused by any such defects.

Betstco reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligations to owners of units previously sold.

No one is authorized to alter, modify, or enlarge this warranty nor the exclusions, limitations, and reservation thereof.



WARRANTY VOID IF REGISTRATION IS NOT RECEIVED OR RECORDED ONLINE WITHIN 30 DAYS OF PURCHASE DATE OR SHIP DATE, WHICHEVER IS LATER.

REGISTRATION

Item _____ Model # _____ Purchase Date ____/____/____
Purchased From: _____ Gift Inv#/Order# _____
Owner Name: _____ Serial # (if Applicable) _____
Owner Address: _____
City: _____ County: _____ ST: _____ Zip Code: _____
Phone: _____ Email: _____

Acceptance of responsibility:

I (Purchaser) have read operators manual and Limited Warranty or someone has read/and explained all instructions to me. I understand this warranty does not cover any labor and that all disputes will be settled by binding arbitration. Binding arbitration is conducted by the Better Business Bureau (BBB) located at 4004 SW Kruse Way Place Ste 375 Lake Oswego OR 97035 or the current BBB location closest to Betstco, I acknowledge my Limited Warranty is void if any attempt to repair or replace defective parts has been made by unauthorized personnel. I acknowledge receipt of my Operators Manual and have read the Safe Operation Section. I acknowledge understanding maintenance and safe operation requirements, item specifications, operation, controls, and storage requirements. **I understand that I alone am responsible for proper maintenance, care and safe operation of this Farmer-Helper item.**

I (Purchaser) agree that persons not familiar with the operation of this item should not be allowed to use it. Children especially should not operate or be near Power Products when in use. ANYONE OPERATING VALUE-LEADER PRODUCTS SHOULD HAVE READ OPERATIONS MANUALS AND SAFETY MANUALS.

Owners Signature: x _____ Date: ____/____/____

You must sign this warranty and mail or fax copy to Betstco, 83371 Melton Rd, Creswell OR 97426. If you prefer you may complete your registration on line. This warranty is not effective unless the Purchaser completes Registration and Warranty Form within 30 days of purchase or ship date whichever is later.

Email: cservice@betstco.com

NOTE: We may refuse warranty of any kind unless Betstco, receives a completed, legible and signed warranty registration. It is the responsibility of the purchaser to assure that registration document is received by Betstco.

Email: cservice@betstco.com



2 YEAR EXTENDED WARRANTY & REGISTRATION

Farmer Helper Machinery Branded Products

2 YEAR EXTENDED WARRANTY

2 Year Extended Warranty amends to original Recorded Warranty Registration the time period of described coverage. Extended Warranty does not apply to Consumable and Expendable Items as described in Product Warranty Registration.

This Amendment does not affect any other part of recorded Warranty Registration or Policy.

No one is authorized to alter, modify, or enlarge this Amendment to original recorded warranty registration.

EXTENDED REGISTRATION & PAYMENT MUST BE RECEIVED WITHIN 30 DAYS OF PURCHASE DATE

EXTENDED WARRANTY REGISTRATION

Product & Model # : _____
Serial #: _____
Owner Name: _____
Betstco Invoice # _____

Acceptance of responsibility:

I (Purchaser) have Read and understand the Extended Warranty or someone has read/and explained all the above to me. I understand this extended warranty does not cover any labor. I have filed my Original Warranty Registration and fully understand my requirements. **I understand that I alone am responsible for proper maintenance, care and safe operation of this tractor implement.**

I (purchaser) also understand that persons not familiar with the operation of this equipment should not be allowed to use it. Children especially should not operate or be near equipment. ANYONE OPERATING EQUIPMENT SHOULD HAVE READ ALL EQUIPMENT OPERATIONS MANUALS AND SAFETY MANUALS.

Owner(s) Signature: x _____
Date: _____

You must sign this extended warranty and email to cservice@betstco.com or mail copy to Betstco, 83371 Melton Rd, Creswell OR 97426. This extended warranty is not effective unless the Purchaser mails this Registration Form within 30 days of purchase. NOTE: The manufacturer may refuse warranty of any kind unless Betstco receives a completed, legible and signed extended warranty registration. It is the responsibility of the purchaser to assure that this registration document is received by Betstco.

To Make Payment for Extended Warranty Call: 541-895-3038