

OWNER'S/ OPERATOR'S MANUAL

MODEL NO.'s
ER-30
MBP-36
MBR-2/1

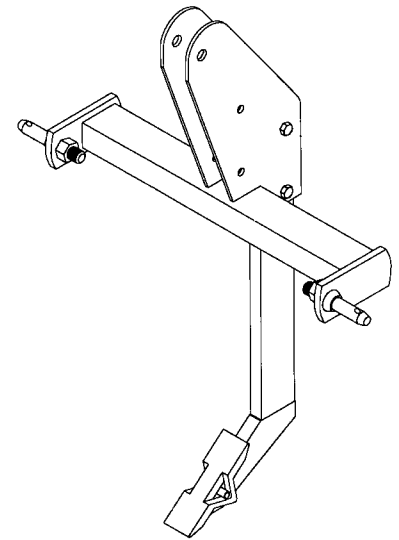
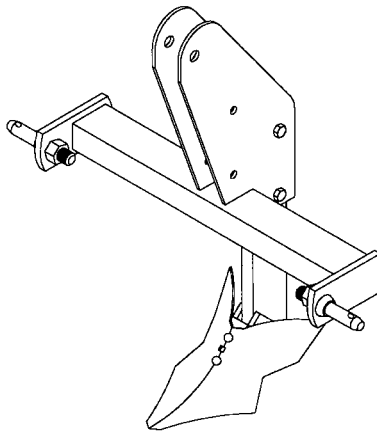


CAUTION

For Safe Operation
Read Rules And
Instructions Carefully

SINO LEEINGLES, PIDA AYUDA
A AIGUIEN QUE SI LO LEA
PARA QUE LE TRADUZCA LAS
MEDIDAS DE SEGURIDAD.

ER-30 ECONOMY SINGLE SHANK RIPPER



MBP-36 MIDDLE BUSTER PLOW

3 PT. TILLAGE EQUIPMENT

Safety Instructions
Tractor Preparation
Operating Instructions

Assembly & Mounting
Maintenance
Repair Parts



CAUTION

**THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE THOROUGHLY UNDERSTOOD
BEFORE ATTEMPTING TO BEGIN ASSEMBLING THIS MACHINE**

1. Select an area for assembly that is clean and free of any debris which might cause persons working on the assembly to trip.
2. Do not lift heavy parts or assemblies. Use crane, jack, tackle, fork trucks or other mechanical devices.
3. Preview the assembly instructions in your operator's manual before proceeding further.
4. If the assembly instructions call for parts or assemblies to be blocked up, use only blocking material that is in good condition and is capable of handling the weight of the assembly to be blocked. Also insure that the blocking material is on a clean, dry surface.
5. Never put hands, or any part of body, under blocked up assemblies if at all possible.
6. After completing assembly, thoroughly inspect the machine to be sure that all nuts, bolts, hydraulic fittings or any other fastened assemblies have been thoroughly tightened.
7. Before operating the machine, thoroughly read the operation section of your operator's manual.
8. Before operating, read the maintenance section of your operator's manual to be sure that any parts requiring lubrication, such as gearboxes, are full, to avoid any possible damage.
9. **Before operating equipment – If you have any questions regarding the proper assembly or operation, contact your dealer or representative.**

To the Owner/Operator/Dealer

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

BEFORE YOU START!!

**Read the safety messages on the implement and shown in your manual.
Observe the rules of safety and common sense!**



THIS SYMBOL MEANS

- ATTENTION!
- BECOME ALERT!
- YOUR SAFETY IS INVOLVED!

THIS SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY WARNING MESSAGES. CAREFULLY READ EACH WARNING MESSAGE THAT FOLLOWS. FAILURE TO UNDERSTAND AND OBEY A SAFETY WARNING, OR RECOGNIZE A SAFETY HAZARD, COULD RESULT IN AN INJURY OR DEATH TO YOU OR OTHERS AROUND YOU. THE OPERATOR IS ULTIMATELY RESPONSIBLE FOR THE SAFETY OF HIMSELF, AS WELL AS OTHERS, IN THE OPERATING AREA OF THE TRACTOR AND ATTACHED EQUIPMENT.

UNDERSTAND SIGNAL WORDS

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or the manufacturer directly.

IMPORTANT SAFETY INFORMATION!

Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, before assembly or operating, to acquaint yourself with the machines. It is the implement owner's responsibility, if this machine is used by any person other than yourself, is loaned or rented, to make certain that the operator, prior to operating:

1. Reads and understands the operator's manuals.
2. Is instructed in safe and proper use.



The use of this equipment is subject to certain hazards which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or your dealer, to explain it to you.

SAFETY INSTRUCTIONS (continued)



All equipment is potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices.



When the use of hand tools is required to perform any part of assembly, installation, adjustment, maintaining, repairing, removal, or moving the implement, be sure the tools used are designed and recommended by the tool manufacturer for that specific task.



Personal protection equipment including safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement.



Always use two people to handle heavy, unwieldy components during assembly, installation, removal, or moving the implement.



Never place any part of your body where it would be in danger if movement should occur during assembly, installation, operation, maintaining, repairing, removal, or moving the implement.



Never place yourself between the tractor and implement while implement is in operation.



Do not work under a raised implement unless it is securely blocked or held in position. Do not depend on the tractor hydraulic system to hold the implement in place.



A heavy load can cause instability of the tractor. Use extreme care during travel. Slow down on turns and watch out for bumps. The tractor may need front counter-weights to counter-balance the weight of the implement.



Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.



Do not allow others to ride on the tractor with an operator. Riders are subject to injury such as being struck by foreign objects or being thrown off. Riders obstruct the operator's view resulting in unsafe operation. **Never allow anyone to ride on the implement!**



Do not allow anyone who is not familiar with the safety rules and operation instructions to use this implement.



Never allow children to operate or be around equipment.



Watch for and avoid hidden obstructions, i.e., buried pipes, rocks, concrete piers, uneven concrete slabs, stumps, etc., when operating equipment.

INSTRUCTIONS

TRACTOR REQUIREMENTS AND PREPARATION

The model ER-30 Ripper and the model MBP-36 Middle Buster Plow can be used on both Category O tractors (15 hp and larger) and Category I tractors.

NOTE: Actual horsepower required will depend on type of soil, operating depth, soil moisture, and operating speed.

Check the tractor's hydraulic system. Refer to your tractor operator's manual or dealer for any adjustments necessary to put the hydraulic system in good working order. (I&T shop manuals will list most specifications and adjustment instructions – available from most farm equipment dealers.)

Be sure tires and rims are in good condition. Inflate tires to the proper recommended air pressure.

It is recommended that a ROPS (Roll-Over Protection Structure) be installed on all tractors. Contact your local dealer for a ROPS for your tractor.

NOTE: Some small category "O" hitch tractors may not lift high enough to have the ER-30 shank point clear the ground. In this case, a larger tractor must be used.



Be sure tractor is in good condition. Read all the safety precautions and make sure all tractor operators are familiar with the safety rules of operation.

ASSEMBLY AND MOUNTING

Refer to the repair parts drawing in this manual to get an idea of how the parts need to be assembled for each individual implement.

Make sure that the two $\frac{1}{2}$ " x $3\frac{1}{2}$ " bolts that connect the 3 pt. mount to the shank of your implement are grade 2 only. The lower bolt is a shear bolt and protects the tractor and the implement in case an obstruction is hit or that the operating conditions are too severe. A grade 2 bolt is a "soft" common hardware bolt.

NOTE: USE OF A GRADE 5 OR HIGHER BOLT MAY RESULT IN DAMAGE TO THE IMPLEMENT.

The model ER-30 Ripper and model MBP-36 Middle Buster Plow shanks are shipped assembled.

The model MBR-2/1 is a combination tool consisting of one 3 pt. mount with both a Ripper shank and a Middle Buster shank. By interchanging the shank assemblies on the 3 pt. mount, either tool can be used.

Make sure the lower draw pins (pull pins) are installed correctly for your tractor.

Draw pins should be assembled inward for category "O" hitch applications and outward for category I hitches.

Insert the draw pins into the ball sockets in the lower lift arms of the tractor 3 pt. hitch. Lock in place with linch pins (not furnished.)

Attach the mast of the 3 pt. main frame by installing the tractor center link (toplink) with a topline pin (not furnished.)

Adjust the topline assembly to obtain the correct angle of the implement. Check the tractor 3 pt. lift arms and adjust to level the implement from side to side.

OPERATION – ER-30 RIPPER

For proper operation, level the Ripper by adjusting the tractor linkage. This will assure that the shank will run straight.

The tractor 3 pt. hydraulic lift system should be set to transfer most of the Ripper's weight and draft to the tractor to maximize traction (There may not be a 3 pt. Draft control on some small tractors – Refer to Tractor Owner's Manual.)

The model ER-30 Ripper can loosen soil down to a depth of 10-14 inches. Compacted soil or "Hardpan" usually occurs in soil depths of 8-14 inches.

Breaking up this "Hardpan" layer will allow better soil drainage and in dry periods, allow plant roots to go deeper to obtain moisture.

OPERATION – ER-30 RIPPER

(Continued)

Hardpan or compacted soil layers is sometime caused by compaction from wheel tractors or foot traffic.

Do not attempt to rip or subsoil when the soil is wet. Wet soil will not shatter and may cause more compaction.

It is recommended that you dig a hole or use a soil probe to identify the “Hardpan” layer. The objective is to operate the ripper point just below the hardpan layer.

The deeper you operate the Ripper, the more tractor horsepower and traction will be required.

In very hard soil or in dry conditions (or with a small tractor), it may not be possible to operate the ER-30 Ripper at the desired depth. In these cases, it may be necessary to make several passes. (Increase the depth with each pass until the desired depth is reached.)

The best “shattering” action will be realized at forward speed of 2½ to 4 miles per hour. It is not recommended to exceed 4 MPH as it will only increase fuel consumption, horsepower required, and wear on the tractor and implement.

Most soil types will require ripping or subsoiling every 2-3 years. Some soils will require this every year. It is suggested, that if you subsoil a field one direction one year, that you operate the Ripper diagonal to that direction when you “Rip” again. In some fields it might be best to “Rip” at an angle and then again at a cross angle in following operations.

Ripping or subsoiling passes should be from 30” to 48” apart. In garden spots it is suggested to rip directly under the row of a planned crop. This will allow the best drainage and root development for the crop.

The point of the ER-30 Ripper is reversible. When the first point wears back, just knock out the rollpin, reverse the point, and re-install the rollpin.

Do not let the point wear back so far that wear occurs on the lower shank body. In tough abrasive soils, if wear occurs on the main shank, it is recommended that you take the shank to a local welding shop and have a few beads of hardsurface weld put on the shank. This will increase the life of the shank.

NOTE: Do not make turns with the ripper in the ground. Damage to ripper will occur. Always raise implement and lower after turn is made.

ROOT CUTTING

Trees in fence rows or along the edge of woods will extend their roots out into a field to take advantage of nutrients and moisture located there. This results in poor crop performance in these locations.

Operating the subsoiler 16-20 inches deep along the edge of the field will cut the tree roots and stop them from “stealing” the nutrients and moisture from the crop.

If you stay at least 15 feet from the tree trunk, the cutting of the roots will not harm the tree.

It is usually advisable to make a few passes to make sure the subsoiler point is down to the depth necessary to cut the roots.



CAUTION!



Underground utilities – Contact appropriate agencies to determine if hazardous items are buried under the field BEFORE OPERATING! Be certain underground utilities have been called to locate underground electric, gas, telephone, and other lines. Check your telephone book for calling instructions. Be sure operator is properly informed. WHEN IN DOUBT, DO NOT SUBSOIL!

OPERATION – MBP-36 MIDDLE BUSTER PLOW

For proper operation, level the Middle Buster Plow by adjusting the tractor linkage. This will assure that the plow's shovel will run straight.

The tractor 3 pt. hydraulic lift system should be set to transfer most of the Middle Buster Plow's weight and draft to the tractor to maximize traction (There may not be a 3 pt. Draft control on some small tractors – Refer to Tractor Owner's Manual.)

The Middle Buster Plow can be used to plant and dig potatoes, form ridges for other crops, and form drainage ditches.

Set your 3 pt. hitch depth control to operate the Middle Buster Plow at the desired depth. The deeper you operate, the greater the amount of soil you will plow or “hill-up”. In dry or hard soil conditions you may need to make a few passes. (If this is required, operating the ripper first may help considerably.)

OPERATION – MBP-36 MIDDLE BUSTER PLOW (Continued)

The faster the forward speed, the further you will “throw” the soil from both sides of the plow shovel.

Operate at a speed that forms the furrow or “hilling” operation you desire.

By adjusting the length of the 3 pt. Toplink, you can adjust the pitch of the plow shovel. In most soil conditions, the bottom of the shovel should be about level or with the point down slightly. This “pitch angle” will also determine how much soil is moved.



CAUTION!

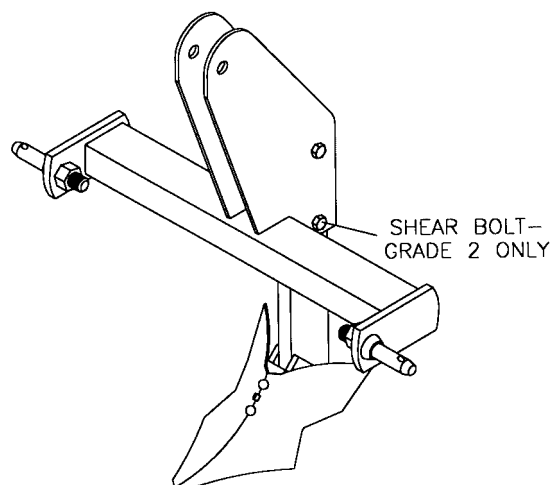
NEVER allow anyone to ride while operating this equipment and keep bystanders at a safe distance.

The operator is responsible for the safe operation of the implement. The operator must be properly trained. Operators should be familiar with the implement and tractor and all safety practices before starting operation. Read all safety rules.

MAINTENANCE

1. Check all nuts and bolts and make sure they are tight.
2. Check points for wear and damage. Replace when necessary.
3. After seasonal use, paint the shanks and points to prevent excessive rusting during extended non-use periods. This will reduce the scour time when you use the implement again.
4. **SHEAR BOLT REPLACEMENT**
If a shear bolt is sheared due to hitting an obstruction, or operating in very hard ground, replace it with a $\frac{1}{2}$ inch grade #2 bolt. (No markings on head)

NOTE: USE OF A GRADE 5 OR HARDER BOLT MAY RESULT IN DAMAGE TO THE IMPLEMENT.



TROUBLE – SHOOTING

PROBLEM: Tractor will not pull Implement

1. Insufficient horsepower – Use larger, heavier tractor.
2. Soil too wet – Let soil dry.
3. Soil too hard and dry – Wait for rain.
4. Points too dull – Replace points.
5. Insufficient traction – (See tire slippage below)
6. Attempting to operate too deep – Reduce depth setting and make several passes, gradually increasing depth.

PROBLEM: Excessive tractor tire slippage

1. Tractor too small – Use larger, heavier tractor.
2. Insufficient traction – Dual rear tire or add ballast, increase draft control, operate at shallower depth.
3. Ground was tilled prior to subsoiling (Soil too loose) – Subsoil first.

PROBLEM: Large clods

1. Soil too hard and dry – Wait for rain.
2. Operating too shallow – Operate deeper. (Ripper only)
3. Wire or foreign object on shank – Remove object.

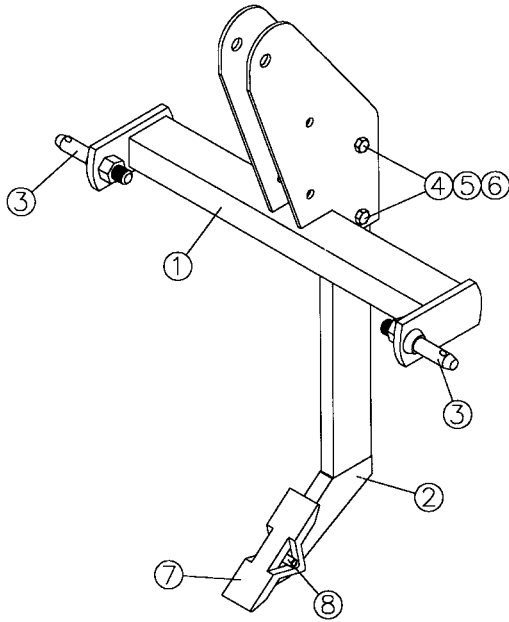
PROBLEM: Shearing pins

1. Wrong size shear bolt – Use $\frac{1}{2}$ ” grade 2.
2. Too much load – Reduce speed or operating depth.
3. Hitting rocks or obstructions – Remove (if possible).
4. Soil too hard and dry – Wait for rain.

PROBLEM: Excessive point wear

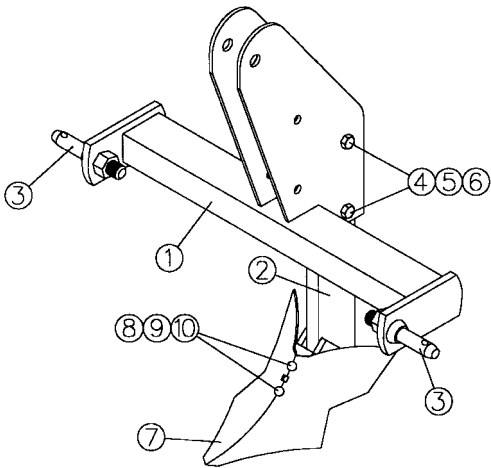
1. Soil too dry – Wait for rain.
2. Abrasive soil – Consider having points hard surfaced by local welder.

EXPLODED PARTS VIEW



ER-30 ECONOMY SINGLE SHANK RIPPER

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	800401	Main Frame Weldment	1
2	800421	Shank Weldment	1
3	590108	Draw Pin (AK-578)	2
4	2503109	Bolt 1/2" – 13NC x 3 1/2" Hex Head	2
5	2502002	Washer 1/2" Springlock	2
6	2500003	Nut 1/2" – 13NC Full Hex	2
7	800425	Ripper Point 1/2" x 8"	1
8	2504179	Roll Pin 1/2" x 2"	1



MBP-36 MIDDLE BUSTER PLOW

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	800401	Main Frame Weldment	1
2	800405	Shank Weldment	1
3	590108	Draw Pin (AK-578)	2
4	2503109	Bolt 1/2" – 13NC x 3 1/2" Hex Head	2
5	2502002	Washer 1/2" Springlock	2
6	2500003	Nut 1/2" – 13NC Full Hex	2
7	800308	Middle Buster Shovel	1
8	2503245	Bolt 7/16" – 14NC x 4" Carriage Head	2
9	2502006	Washer 7/16" Springlock	2
10	2500012	Nut 7/16" – 14NC Full Hex	2



**SAFETY . . .
YOU CAN LIVE WITH IT!**

SAFETY PRECAUTIONS

**MOST ACCIDENTS OCCUR BECAUSE OF NEGLIGENCE OR CARELESSNESS.
AVOID NEEDLESS ACCIDENTS BY FOLLOWING ALL OF THE SAFETY PRECAUTIONS LISTED BELOW.**

- Machinery should be operated only by those who are responsible and are authorized to do so.
- Stop the engine, lower all equipment, lock the brakes, and remove the ignition key before dismounting from the tractor.
- Never stand between tractor and implement while tractor is being backed to hitch.
- Loose fitting clothing should not be worn, to avoid catching on various parts.
- Detach implement in area where children normally do not play.
- When performing adjustments or maintenance on an implement, first lower it to the ground or block it securely at a workable height.
- Only a qualified operator should be permitted on tractor when in operation; no riders allowed.
- Make certain everyone is in the clear before starting tractor or raising or lowering equipment.
- Operate the tractor and implement only while seated in the driver's seat.
- Reduce speed when transporting mounted implements to avoid bouncing and momentary loss of steering control.
- A heavy load can cause instability of the tractor. Use extreme care during road travel. Slow down on turns and watch out for bumps. Tractor may need front counter-weights to counter-balance the weight of the implement.
- Reduce speed on hillsides or curves so there is no danger of tipping.
- Avoid driving too close to the edge of ditches or creeks.
- Do not transport implement on public roads without reflectors and slow moving vehicle emblem in daylight and with approved warning lights at night and other periods of poor visibility.
- Due to the width of some implements, use extra caution on highways, farm roads, and when approaching gates.
- Always be sure the implement is in the proper position for transport.
- Keep alert and watch the front as well as the rear when working with the implement.

OWNER'S/ OPERATOR'S MANUAL

**MODEL NO.'s
ER-30
MBP-36
MBR-2/1**

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

1. PART NUMBER
2. PART DESCRIPTION
3. MODEL NUMBER
4. NAME OF ITEM

OCTOBER 2001

***Please work, drive, play and live each day with care
and concern for your safety and that of your family
and fellow citizens.***

**MAKE EVERY DAY
A HOLIDAY FROM ACCIDENTS**

SMALL 3 PT. TILLAGE EQUIPMENT

Cat. O/I 3 pt. Hitch Tractors (from 15 to 35 H.P.)

LIMITED WARRANTY

W orksaver warrants its implements, parts and accessories to be free from defects in materials and workmanship for a period of six (6) months from date of purchase. Upon written approval, W orksaver will repair or exchange without charge any part, which upon examination by W orksaver or its authorized agent, shall disclose to be defective.

This does not apply to (1) parts that have worn out in normal use, (2) parts broken because of improper assembly or operation by the customer, (3) parts accidentally damaged, (4) failure of parts traceable to improper care, (5) parts failing through use of implement for purposes other than those for which it was designed.

The obligations assumed by W orksaver and the limitations expressed herein are in lieu of all other warranties expressed or implied.

W O R K S A V E R , I N C .

P.O. BOX 100 LITCHFIELD, IL 62056-0100 (217) 324-5973

WEB: <http://www.worksaver.com> E-MAIL: sales@worksaver.com