

Middle Buster, Sub Soiler, Combo SC Middle Buster & Sub Soiler

**Hardware Kit
80900200**

THANK YOU FOR PURCHASING THIS PRODUCT

Congratulations on your purchase. Behlen Country has been in the business of providing quality equipment to landowners for more than 75 years. Our 3-Point Equipment will provide many years of service when maintained by the operator and used in accordance with the capabilities of the product. For questions about this product, or for parts inquiries, please contact our Customer Service Center listed below.

**Middle
Buster**



**Sub
Soiler**



**Combination
Sub Compact
Middle Buster
and Sub Soiler**



**Behlen[®]
COUNTRY**

CUSTOMER SERVICE CENTER

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SAFETY

READ AND FOLLOW THE INSTRUCTIONS IN THIS MANUAL, ESPECIALLY IN THE SAFETY SECTION. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.



THIS SYMBOL MEANS ATTENTION! BE ON THE ALERT! YOUR SAFETY IS INVOLVED!

TAKE NOTE! THIS SAFETY ALERT SYMBOL IS FOUND THROUGHOUT THIS MANUAL. THIS SYMBOL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CONCERNING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS.

CRITICAL TERMS:

The critical terms **CAUTION**, **WARNING**, and **DANGER** are used with the safety messages in this manual and with each safety decal. They are defined as follows:



CAUTION



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



WARNING



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



DANGER



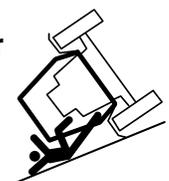
DANGER: Indicates an immediate hazardous situation that, if not avoided, **WILL** result in serious injury or death. This Critical Term is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

EQUIPMENT SAFETY GUIDELINES

• Safety of the operator and bystanders is one of the main concerns in designing and developing a Rotary Cut Mower. However, every year accidents occur which could have been avoided by a few moments of thought and a

more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions and insist those working with or for you adhere to them.

- In order to provide a better view, certain illustrations in this manual may show an assembly with a safety guard removed. However, equipment should never be operated in this condition. Keep all guards in place. If guard removal becomes necessary for repairs, reinstall the guard prior to use.
- Heed all safety decals and replace any that are not legible or missing. The locations of such safety decals are indicated in this manual.
- Never operate this equipment while using alcoholic beverages or drugs that can hinder alertness or coordination. Consult your doctor about operating this machine while taking prescription medications.
- Under no circumstances should children under the age of 18 be allowed to work with or around this equipment. Do not allow anyone to operate or assemble this equipment until they have read this manual and have developed a thorough understanding of the safety precautions and operation. Review safety instructions with all users often.
- This equipment is dangerous to anyone unfamiliar with its operation. The owner/operator is responsible for reading and following all of the instructions in the manual. The operator should be a responsible, properly qualified and physically able person familiar with farm machinery and competent in this equipment's operation.
- Never exceed the limits of a piece of machinery. If its ability to do a job, in a safe manner, is in question - **DON'T TRY IT.**
- Use a tractor equipped with a Roll Over Protective System (ROPS) and seat belts. Only properly trained people should operate this machine. Always stop the PTO, set break, shut off the tractor engine, remove the tractor key, and allow implement to come to a complete stop before dismounting tractor. **Never leave equipment unattended with tractor running.**





CAUTION



Before operating the equipment, if you have any questions regarding the proper assembly or capabilities of this product please contact your dealer.

Important Safety Information

- Working with unfamiliar equipment can lead to injuries, read this manual and the manual for your tractor before assembling or operating to acquaint yourself with the items. It is the owner's responsibility to make certain the operator 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 these product instructions completely prior to using.
- Most accidents occur because of neglect or carelessness, keep all helpers and bystanders a minimum of 25' from an operating implement. No riders should ever be allowed on the tractor.
- Personal protection equipment including safety glasses, safety shoes, and gloves are strongly recommended when using or working on your equipment.
- Never place any part of your body where it could be in danger if movement should occur during assembly, installation, operation, repairing or maintaining your equipment.
- Always check all pins, bolts and connections before operating this unit and replace if necessary.
- Only people familiar with the safety rules and operations of this unit should use this equipment.

Tractor Requirements and Preparation

The actual horsepower requirements will depend on the type of soil, operating depth, soil moisture, and operating speed.

Some small Category 0 tractors may not lift high enough to have the Sub Soiler's shank point clear the ground. In this case, a larger tractor must be used.

Check the tractor's 3-Point hydraulic lift system. It should operate up and down smoothly and have enough power to lift the implement. If adjustments need to be made, refer to your tractor's operator's manual.

Assembly and Mounting

Back the tractor up to the implement.

Adjust the tractor lift arms so they are wide enough to go over the two lift pins on each side of the implement.

The Middle Buster plow shanks and Sub Soiler are shipped assembled. Make sure the lower draw pins (pull pins) are installed correctly for your tractor.

Insert the draw pins into the ball sockets in the lower lift arms of the tractor's 3-Point hitch, and lock into place with lynch pins.

Attach the mast of the 3-Point main frame by installing the tractor top link with the top link pin. Adjust the top link assembly to obtain the correct angle of the implement. Check the tractor's 3-Point lift arms and adjust to level the implement from side to side.

The deeper you set the implement the slower you will need to go with your tractor because of increased stress on the implement as well as the tractor.

It is recommended that ONLY tractors with wide front axles be used with either the Middle Buster or Sub Soiler. Tricycle front wheel arrangements are inherently unstable and can cause rollover accidents.

This unit is designed to be pulled by your tractor. Using any other means will void the warranty.

Underground Utilities — Contact appropriate agencies to determine if hazardous items are buried under the digging site BEFORE DIGGING! 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 the operator is properly informed. WHEN IN DOUBT, DO NOT DIG!



Middle Buster Operation

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

The tractor 3-Point hydraulic lift system should be set to transfer most of the Middle Buster's weight and draft to the tractor to maximize traction. There may not be a 3-Point draft control on some 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 make drainage ditches.

Set your 3-Point 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 several passes. (If this is required, operating the Sub Soiler first may help considerably.) The faster you drive, 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-Point top link, you can adjust the pitch of the plow shovel. In most soil conditions, the bottom of the shovel should be level or with the point down slightly. This "pitch angle" will also determine how much soil is moved.



The moldboard blade and Sub Soil shank are sharp. Exercise extreme caution when working around or near the blade. Failure to stay clear of the blade can result in serious injury.

Sub Soiler Operation

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

The tractor 3-Point hydraulic lift system should be set to transfer most of the Sub Soiler's weight and draft to the tractor to maximize traction. There may not be a 3-Point draft control on some tractors. Refer to tractor owner's manual.

The Sub Soiler can loosen soil down to a depth of 10" - 14". Compacted soil or "hardpan" soil usually occurs in soil depths of 8" - 14".

Breaking up this hardpan layer will allow better soil drainage and in dry periods, allow plant roots to go deeper to obtain moisture. Hardpan or compacted soil layers is sometimes caused by compaction from tractor wheels or foot traffic. Do **NOT** attempt to rip or subsoil when 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 Sub Soiler just below the hardpan layer. The deeper you operate the Sub Soiler, the more tractor horsepower is required.

In very hard soil or dry conditions (or with a smaller tractor), it may not be possible to operate the Sub Soiler at the desired depth. In these cases, it may be necessary to make several passes, increasing depth with each pass.

The best "shattering" action will be realized at a speed of 2-4 mph. It is not recommended to exceed 4 mph, as it will only increase fuel consumption and wear and tear on the tractor and implement.

Most soil types will require ripping or subsoiling every 2-3 years. Some soils will require it every year. It is suggested that if you subsoil a field in one direction one year, that you operate the subsoiler diagonal to that direction when you subsoil 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 planted crop. This will allow the best drainage and root development for the crop. The point of the Sub Soiler is reversible. When the first point wears

back, just knock out the roll pin, reverse the point and reinstall the roll pin.

Do not let the point wear back too far so 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 hard surface weld put on the shank.

NOTE: Do **NOT** make turns with the ripper in the ground. Damage to the ripper will occur. Always raise the implement and lower after turn has been 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 Sub Soiler along the edge of the field will cut the tree roots and stop them from leaching from the crop soil.

If you stay at least 15' from the tree trunk, cutting the roots will not harm the tree. It is usually advisable to make a few passes down to the depth necessary to cut the roots.

Combo Sub-Compact (SC) Middle Buster & Sub Soiler

The Combo Sub-Compact (SC) Middle Buster & Sub Soiler is designed to be used as either a Sub Soiler or a Middle Buster, not as a combination of both.

The Furrow and Sub Soiler Shank are attached for shipping purposes only. To use the Subsoiler, detach the Furrow. To use the Furrow, detach the Sub Soiler and reassemble with the Furrow.

The Combo Sub-Compact (SC) Middle Buster & Sub Soiler is designed for use with Category 0 hitches only. The function of the Middle Buster and the Sub Soiler are the same as the standard size models. Refer to those sections for more information on each.

Maintenance

Cleaning and Storage

1. Make certain any safety or instruction decals are attached to the implement's 3-Point hitch. If they are lost, damaged, or painted over, order replacements from the manufacturer. Please call Behlen Country at 800-447-2751.
2. Clean unit of dirt and debris to minimize rusting and wear.
3. Keep cutting edges sharp. Sharp cutting edges work easier and better. Check more often if working in rocky soil conditions.
4. Replace any worn or damaged parts immediately.
5. Check all bolts and nuts to make sure they are tight.
6. Store the unit in a shed or under a tarp to protect it from the weather. The blade or shank should rest on boards or some other object. Keep out of soil when storing. Store in a clean, dry place away from human activity or livestock.

Trouble-shooting Guide

If you have any questions regarding the proper operation of this digger, contact your dealer or the manufacturer.

PROBLEM:

TRACTOR WILL NOT PULL IMPLEMENT

Possible Solutions:

- Insufficient horsepower - use larger, heavier tractor.
- Soil too wet - allow soil to dry.
- Soil too hard - wait for rain or irrigate.
- Points too dull - replace points.
- Insufficient traction - see tire slippage problem below.
- Attempting to operate too deep - reduce depth setting and make several passes, gradually increasing depth.

**PROBLEM:
EXCESSIVE TRACTOR TIRE SLIPPAGE**

Possible Solutions:

- Tractor too small - use larger, heavier tractor.
- Insufficient traction - add dual rear tire or more ballast. Increase draft control. Operate at a shallower depth.
- Ground was tilled prior to subsoiling (soil too loose - subsoil first).

PROBLEM: LARGE CLODS

Possible Solutions:

- Soil too hard and dry - wait for rain or irrigate.
- Operating too shallow - operate deeper - (Sub Soiler ONLY).
- Wire or foreign object on shank - remove object.

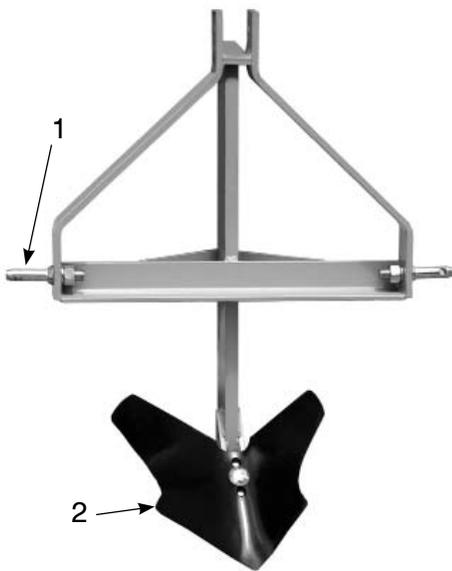
PROBLEM: EXCESSIVE POINT WEAR

Possible Solutions:

- Soil too hard and dry - wait for rain or irrigate.
- Abrasive soil - consider having points hard surfaced by local welder.

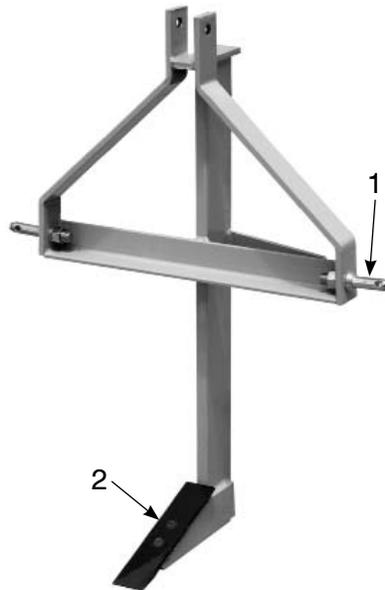
Warranty

This unit carries a 1 year warranty, with the exception of wear parts. Dated proof of purchase required on all claims.



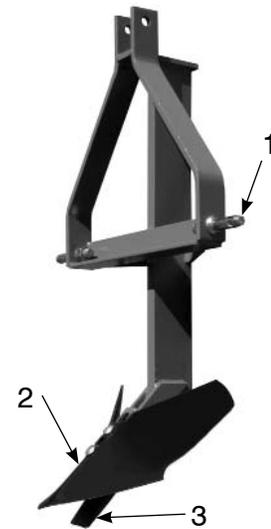
Middle Buster

No.	Part No.	Description	Qty.
1	3018352	Category 1 Lift Pin	2
2	3018368	Furrow	1



Sub Soiler

No.	Part No.	Description	Qty.
1	3018352	Category 1 Lift Pin	2
2	3018366	Sub Soiler Shank	1



Combo Sub-Compact (SC) Middle Buster & Sub Soiler

No.	Part No.	Description	Qty.
1	3018352	Category 1 Lift Pin	2
2	3018429	12" Furrow	1
3	80605795	Sub Soiler Shank	1